

INVITATION FOR BID
IFB #13-2959-OV
Flood Drain Improvements, 26th Avenue West
(9th Street West to 5th Street West)

Manatee County, a political subdivision of the State of Florida, (hereinafter the "County") 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.

NON-MANDATORY 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 **November 13, 2013 at 11:00 AM Location: Public Works Location, 1022 26th Avenue East, Bradenton, FL 34208, Conference Room "A"**. Attendance is not mandatory, but is highly encouraged.

NOTE: Article B.05 Inspection of Site (page 16) – All potential Contractors, it is mandatory that a site visit be performed at each location to familiarize yourselves with the full scope of the construction site

DEADLINE FOR CLARIFICATION REQUESTS: **November 26th, 2013 at 5:00 PM**

TIME AND DATE DUE: **December 17, 2013 at 3:00 PM**

Important Note: Lobbying is prohibited (reference Bid Article A.08).

This projects is funded by a United States Department of Housing and Urban Development Community Development Block Grant (CDBG), as administered through Manatee County. There are federal regulations applied to the duration of the project's lifecycle. Bidders shall comply with such requirements, as outlined in Section E, "Compliance with Federal Laws." Federal and State Guidelines for this procurement.

FOR INFORMATION CONTACT:
Olga Valcich, CPPB, Contract Specialist
(941) 749-3055, Fax (941) 749-3034
Olga.valcich@mymanatee.org
Manatee County Financial Management Department
Purchasing Division

AUTHORIZED FOR RELEASE: DWW

Table of Contents
IFB #13-2959-OV

Sec A Information to Bidders..... 3 - 13

Sec B Basis of Award..... 14 - 16

Sec C General Terms and Conditions of the Contract 17 - 26

Sec D Specifications..... 27 - 30

Sec E Compliance with Federal Laws 31 - 35

Sec F Manatee County Local Preference 36- 39

Sec G Bid Form 40- 40A, 40B, 40C - 41

Sec H Certification Forms..... 42 – 45

Contractor’s Questionnaire.....00430-1 – 00430-4

Technical Specifications.....121 total pages

Williams Testing Pipeline Inspection and Rehabilitation Report.....72 total pages

DVD’s, CCTV inspection of the 30” RCP associated with the project.....2 Discs
(1 and 2 and 2 of 2) (See Section D, Specifications, pages 27 – 30)

Southwest Florida Water Management District’s Project Exemption4 total pages

Construction Plans.....5 total pages

Forms of Agreement (Section 00500) 00500-1 – 00500-6

Public Construction Bond..... 3 total pages

General Conditions (Section 00700)..... 00700-1 – 00700-20

General (Wage) Decision Number: FL130165 09/27/2013 FL165 Type: Heavy
Manatee County FL..... (5 total pages).....Attachment A

Grant Report Forms.....(8 total pages).....Attachment B

Anti-Lobbying Form (3 total pages)..... Attachment C

Mailing Label.....1 total page

SECTION A INFORMATION TO BIDDERS

A.01 OPENING LOCATION

Sealed Bids will be **publicly opened** at **Manatee County Purchasing Division, 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.

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 the Manatee County Purchasing Division 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 the Purchasing Division. 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 respondent's request and expense.

A.02 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 #13-2959-OV, Flood Drain Improvements, 26th Avenue West (9th Street West to 5th Street West)"** with your company name.

Address package to: Manatee County Purchasing Division
 1112 Manatee Avenue West, Suite 803
 Bradenton, Florida 34205

A.03 BID DOCUMENTS

Bids on <http://www.mymanatee.org>, Bid documents and the notices of Intent to Awards related to those Bids are available for download in a portable document format (.PDF) file on the Manatee County web page on the Purchasing tab under "Bids." You may view and print these files using Adobe Acrobat software. You may download a free copy of this software (Adobe) from the Owner's web page if you do not have it.

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 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. A link to that service, <http://www.DemandStar.com>, is provided on this web site under the Tab "DemandStar". Participation in the DemandStar system is not a requirement for doing business with Manatee County.

A.03 BID DOCUMENT (Continued)

Note: The County posts the Notice of Intent to Award seven (7) calendar days prior to the effective date of the award.

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

A.04 SECURING DOCUMENTS

Complete individual copies of the Bid documents for the project and/or products are available for public inspection at the Manatee County Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205, or by calling (941) 749-3014. Appointments are encouraged. Documents are available between the hours of 9:00 AM and 4:00 PM, Monday through Friday, with the exception of holidays. A complete set of Bid documents must be used in preparing Bids. The County assumes no responsibility for errors and misinterpretations resulting from the use of incomplete sets of Bid documents.

A two part DVD (discs 1 of 2 and 2 of 2) of the CCTV inspection of the 30" RCP associated with this project are made a part of this Bidding Document. Discs may be obtained by calling the above number.

A.05 MODIFICATION OF BID SPECIFICATIONS

If a Bidder wishes to recommend changes to the Bid specifications, the Bidder shall furnish in writing, data and information necessary to aid the Owner in evaluating the request to modify the specifications. The Owner is not obligated to make any changes to the Bid specifications. Unless an addendum is issued, the Bid specifications shall remain unaltered. **Bidders must fully comply with the Bid specifications, terms, and conditions**

A.06 DEADLINE FOR CLARIFICATION REQUESTS

November 26, 2013 at 5:00 PM shall be the deadline to submit all inquiries, suggestions, or requests concerning interpretation, clarification or additional information pertaining to the Invitation for Bids to Manatee County Purchasing.

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.

A.07 CLARIFICATION & ADDENDA

Each Bidder shall examine all Invitation for Bids document and shall judge all matters relating to the adequacy and accuracy of such document. Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to the Invitation for Bids shall be made through the Manatee County Purchasing Division.

A.07 CLARIFICATION & ADDENDA (Continued)

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 document on the Purchasing Division's web page at <http://www.mymanatee.org> which can be accessed by clicking on the "Purchasing" button and then clicking on the "Bids" 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.

A.08 LOBBYING

After the issuance of any Invitation For Bid, prospective Bidders, or any agent, representative or person acting at the request of such Bidder shall not contact, communicate with or discuss any matter relating in any way to the Invitation for Bid with any officer, agent or employee of Manatee County other than the Purchasing Official or as directed in the Invitation For Bid. This prohibition includes the act of carbon copying officers, agents or employees of Manatee County on email correspondence. This requirement begins with the issuance of an Invitation for Bid, and ends upon execution of the final Contract or when the invitation has been canceled. Violators of this prohibition shall be subject to sanctions as provided in the Manatee County Purchasing Code of Law Chapter 2-26.

A.09 UNBALANCED BIDDING PROHIBITED

Manatee County recognizes that large and/or complex projects will often result in a variety of methods, sources and prices. However, where in the opinion of the County such variation does not appear to be justified, given Bid specifications and industry and market conditions, the Bid will be presumed to be unbalanced. Examples of unbalanced Bids will include:

1. Bids showing omissions, alterations of form, additions not specified or required conditional or unauthorized alternate Bids.
2. Bids quoting prices that substantially deviate, either higher or lower, from those included in the Bids of competitive Bidders for the same line item unit costs.
3. Bids where the unit costs offered are in excess of or below reasonable cost analysis values.

In the event the County determines that a Bid is presumed unbalanced, it will request the opportunity to, and reserves the right to, review all sources quotes, Bids, price lists, letters of intent, etc., which the Bidder obtained and upon which the Bidder relied upon to develop the Bid. The County reserves the right to reject as non-responsive any presumptive unbalanced Bids where the Bidder is unable to demonstrate the validity and/or necessity of the unbalanced unit costs.

A.10 FRONT END LOADING OF BID PRICING PROHIBITED

Prices offered for performance and/or acquisition activities to occur early in the project schedule, such as: mobilization, clearing and grubbing; or maintenance of traffic, that are substantially higher than pricing of competitive Bidders within the same portion of the project schedule, will be presumed to be front end loaded. Front end loaded Bids could reasonably appear to be an attempt to obtain unjustified early payments creating a risk of insufficient incentive for the Contractor to complete the work or otherwise creating an appearance of an under-capitalized Bidder.

In the event the County determines that a Bid is presumed to be front end loaded, it will request the opportunity to, and reserves the right to, review all source quotes, Bids, price lists, letters of intent, etc., which the Bidder obtained and upon which the Bidder relied upon to develop the pricing or acquisition timing for these Bid items. The County reserves the right to reject as non-responsive any presumptive front end loaded Bids where the Bidder is unable to demonstrate the validity and/or necessity of the front end loaded costs.

A.11 WITHDRAWAL OF OFFERS

Contractors may withdraw offers as follows: a) Mistakes discovered before the opening of a solicitation may be withdrawn by written notice from the Bidder submitting the offer. This request must be received in the office designated for receipt of offers in the solicitation document prior to the time set for delivery and opening of the offers. A copy of the request shall be retained and the unopened offer returned to that Contractor. b) After the responses to a solicitation are opened or a selection has been determined, but before a Contract is signed, a Contractor alleging a material mistake of fact may be permitted to withdraw their offer if: (1) the mistake is clearly evident on the solicitation document; or (2) the Bidder submits evidence which clearly and convincingly demonstrates that a mistake was made. Request to withdraw and offer must be in writing and approved by the Purchasing Official.

A.12 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 or services set forth in the attached specifications until one or more of the Bids have been duly accepted by the County.

A.13 BID EXPENSES

All expenses for making Bids to the County are to be borne by the Bidder

A.14 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.

A.14 RESERVED RIGHTS (Continued)

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 meets or exceeds the quality of goods and/or services set forth in the attached specifications 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 the 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 furnish the 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.15 APPLICABLE LAWS

Bidder 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 Ordinance as amended. Any actual or prospective Bidder 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 Manatee County Code of Laws.

A.16 COLLUSION

By offering a submission to this Invitation for Bid, the Bidder certifies that he has not divulged, discussed or compared their Bid with other Bidder, 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:

- 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;

A.16 COLLUSION (Continued)

- 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.17 CODE OF ETHICS

With respect to this Bid, if any Bidder violates, directly or indirectly, the ethics provisions of the Manatee County Purchasing Ordinance and/or Florida criminal or civil laws related to public procurement, including but not limited to Florida Statutes Chapter 112, Part II, Code of Ethics for Public Officers and Employees, such Bidder will be disqualified from eligibility to perform Work described in this Invitation for Bid, and may also be disqualified from furnishing future goods or services to, and from submitting any future Bids to supply goods or services to, Manatee County.

By submitting a Bid, the Bidder represents to the County that all statements made and materials submitted are truthful, with no relevant facts withheld. If a Bidder is determined to have been untruthful in its Bid or any related presentation, such Bidder will be disqualified from eligibility to perform the Work described in this Invitation for Bid, and may also be disqualified from furnishing future goods or services to, and from submitting any future Bids to supply goods or services to, Manatee County.

A.18 BID FORMS

Bids must be submitted on attached County forms, although additional pages may be attached. **Bidders must fully complete all pages of the Bid Forms. Bid Forms must be executed by an authorized signatory who has the legal authority to make the offer and bind the company. Bidders must fully comply with all Bid specifications, terms and conditions.** 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.

A.19 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.20 PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES

A person or affiliate who has been placed on the State's convicted vendor list following a conviction for a public crime entity crime, as that term is defined in Florida Statute (F.S.) § 287.133, may not submit a Bid, Proposal, or reply on a Contract to provide any goods or services to a public entity, may not submit a Bid, Proposal, or reply on a Contract with a public entity for the construction or repair of a public building or public work; may not submit Bids, Proposals or replies on leases of real property to a public entity; may not be

A.20 PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES (Continued)

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 F.S. § 287.017 for CATEGORY TWO for a period of thirty-six (36) months following the date of being placed on the convicted list.

In addition, the Manatee County Code of Laws prohibits the award of any Contract to any person or entity who/which has, within the past five (5) years, been convicted of, or admitted to in court or sworn to under oath, a public entity crime or of any environmental law that, in the reasonable opinion of the Purchasing Official establishes reasonable grounds to believe the person or business entity will not conduct business in a responsible matter. To insure compliance with the foregoing, the Coe requires all persons or entities desiring to Contract with the County to execute and file with the Purchasing Official an affidavit, executed under the pain and penalties of perjury, confirming that person, entity and any person(s) affiliated with the entity, does not have such a record and is therefore eligible to seek and be awarded business with the County. In the case of a business entity other than a partnership or a corporation, such affidavit shall be executed by an authorized agent of the entity. In the case of a partnership, such affidavit shall be executed by the general partner(s). A Public Contracting and Environmental Crimes Certification form is attached for this purpose.

A.21 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.

A.22 TAXES

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

A.23 DESCRIPTIVE INFORMATION

Unless otherwise specifically provided in the specifications, 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 specifications, 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.

A.24 AMERICANS WITH 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.25 EQUAL EMPLOYMENT OPPORTUNITY CLAUSE

In accordance with the provisions of Title VI of the Civil Rights Act of 1964 and Title 15 Part 8 of the Code of Federal Regulations, Manatee County hereby notifies all prospective offerors that they will affirmatively ensure minority business enterprises will be afforded full opportunity to participate 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 of Contract.

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.

A.27 MATHEMATICAL ERRORS

In the event of multiplication/extension error(s), the unit price shall prevail. In the event of addition error(s) the extension totals will prevail. All Bids shall be reviewed mathematically and corrected, if necessary, using these standards, prior to additional evaluation.

A.28 DISCLOSURE

Upon receipt, all inquires and responses to inquires related to this Invitation for Bid become "Public Records", and are subject to public disclosure consistent with Chapter 119, Florida Statutes.

Bids become subject to disclosure thirty (30) days after the opening or if a notice of intended Award decision is made earlier than this time as provided in F.S. 119.071(1)(b).

No announcement or review of the offer shall be conducted at the public opening.

Based on the above, Manatee County will receive Bids at the date and time stated, and will make public at the opening the names of the business entities of all that submitted an offer and any amount presented as a total offer without any verification of the mathematics or the completeness of the offer.

A.28 DISCLOSURE (Continued)

If the County rejects all Bids and concurrently notices its intent to reissue the solicitation, the rejected Bids are exempt from public disclosure until such time as the County provides notice of an intended decision concerning the reissued solicitation or until the County withdraws the reissued solicitation. A Bid is not exempt for longer than 12 months after the initial notice rejecting all Bids.

“Pursuant to Florida Statutes 119.0701, to extent successful Bidder is performing services on behalf of the County, successful Bidder must:

- a. Keep and maintain public records that ordinarily and necessarily would be required by the County in order to perform the service;
- b. Provide the public with access to public records on the same terms and conditions that the County would provide and at a cost that does not exceed the cost provided in Florida Statutes, Chapter 119, or as otherwise provided by law;
- c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law, and;
- d. Meet all requirements for retaining public records and transfer, at no cost to the County all public records in possession of successful Bidder upon termination of the awarded Contract and/or PO and destroy any duplicate public records that are exempt or confidential from public records disclosure requirements. All records stored electronically must be provided to the County in a format that is compatible with the County’s information technology systems.

A.29 SECTION 3 REQUIREMENTS

The purpose of Section 3 is to ensure that economic opportunities generated from HUD funded (partially or fully) projects will be directed to low- and very low-income persons. See Bid Article E.02 for the Section 3 Clause. The following minimum thresholds have been set by HUD for determining compliance with Section 3 requirements:

1. All Contractors/Subcontractors must attempt to fill at least 30% of newly created positions with Section 3 residents.
2. All prime Contractors must attempt to award at least 25% of the total cost all Subcontracts for Section 3 covered Contracts to Section 3 businesses.
3. A combination of 1 and 2 above.

A.29 SECTION 3 REQUIREMENTS (Continued)**Demonstrating Compliance with Section 3 Resident Requirements**

All Contractors and Subcontractors must attempt to provide training and/or employment opportunities, as prioritized below, for at least thirty percent (30%) of newly created positions required for the project:

- i. Section 3 residents residing in the service area or neighborhood in which the Section 3 covered project is located (category 1 residents)
- ii. Participants in HUD Youth build Programs (category 2 residents)
- iii. Homeless persons residing in the service area or neighborhood in which the Section 3 covered project is located
- iv. Other Section 3 residents

All prime Contractors must attempt to award Subcontracts to Section 3 businesses whenever feasible, as prioritized below:

- i. A business that is 51 percent or more owned by Section 3 residents; or
- ii. A business whose permanent, full time employees include persons, at least 30 percent of whom are currently Section 3 residents, or within 3 years of the date of first employment with the business were Section 3 residents; or
- iii. A business that provides evidence of a commitment to sub-Contract in excess of 25 percent of the dollar award of all sub-Contractors to be awarded to businesses that meet the qualifications set forth in paragraphs 1 & 2 above

Manatee County is required to document Section 3 employment/training opportunities annually, on the Section 3 Summary Report, Economic Opportunities for Low- and Very Low Income Persons; Form HUD 60002 (Attachment B). Each Contractor/Subcontractor is required to assist Manatee County in HUD reporting requirements by submitting a Contractor and Subcontractor Report (Attachment B) with the first certified payrolls for each project. During the duration of the project, subsequent reports may be required to document any additional Section 3 hiring.

All efforts undertaken by each Contractor/Subcontractor to meet Section 3 requirements must be documented, regardless of whether those efforts result in job training or creation. The Bidder selected for this project will be required to submit a Section 3 Plan for each Contractor/Subcontractor, which includes but is not limited to all efforts that will be undertaken to address Section 3 requirements, such as names and payroll histories of existing employees that will be utilized for the project, hiring needs by job classification, and efforts to secure Section 3 business concerns/residents.

For assistance in obtaining Section 3 status, Contractors can contact the Manatee County Neighborhood Services Department (Bill O'Shea) at (941) 748-4501, extension 6858 for information. Section 3 status is not a requirement for award of this Contract, but will be given preference in award evaluation.

A.30 E-VERIFICATION

Contractor shall utilize the U.S. Department of Homeland Security's E-Verify system, in accordance with the terms governing use of the system, to confirm the employment eligibility of;

1. all persons employed by the Contractor during the term of the Contract to perform employment duties within Florida; and
2. all persons, including Subcontractors, assigned by the Contractor to perform work pursuant to the Contract with the State Agency.

A.31 DAVIS-BACON WAGE DETERMINATION ACT

Davis-Bacon Wage Determination Act for Prevailing Wages, General Decision Number FL 130165 / 09/27/2013 / FL165 is made a part of this Invitation for Bid.

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

END OF SECTION A

SECTION B

BASIS OF AWARD

B.01 BASIS OF AWARD

Award, with preference given to certified Minority or Woman Business Enterprises and Section 3 businesses (MBE/WBE/SEC3), shall be to the responsive, responsible bidder(s) meeting specifications and having the lowest Total Base Bid Price and/or the lowest Total Base Bid Price w/ Bid Alternates 1 and 2. Only one (1) award shall be made. The County has the sole authority to select the Base Bid OR the Base Bid w/ Bid Alternates, whichever is in the best interest of the County 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 this Bid Document to the County's satisfaction within the prescribed time.

NOTE: Inspection of the project site is a prerequisite for award.

Based upon the requirements of the Community Development Block Grant, the Bid received from a MBE/WBE/SEC3 shall be given preference in award, if it is reasonable and no more than 10% higher than the Bid of the lowest, responsive and responsible Bidder. If no responsive Bid received by a MBE/WBE/SEC3 is within 10% of the lowest responsive Bid from any qualified Bidder, the award shall be made to the qualified Bidder with the lowest responsive, responsible Bid.

Whenever two or more Bids are equal with respect to price, quality and service, the Bid received from a MBE/WBE/SEC3 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 or neither of these Bids are received from a certified MBE/WBE/SEC3 business, the Bid received from a local business shall be given preference in award. If neither of the tie Bids received are from a MBE/WBE/SEC3 or a local business, the award shall be determined by a chance drawing conducted by the Purchasing Division 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.

B.02 SUBCONTRACTORS

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 of the County for the proper completion of all Work to be executed under this Contract.

The employment of unauthorized aliens by any vendor is considered a violation of Section 274 (e) of the Immigration and Employment Act. If the vendor knowingly employs unauthorized aliens, such violation shall be cause for unilateral cancellation of this agreement.

B.03 QUALIFICATION OF BIDDERS

No person who is not certified or registered as a General Contractor OR an Underground Utility and Excavation Contractor may bid this project. The Contractor shall have continuously held certification or registration for a period of at least three (3) consecutive years immediately prior to the day the Bid is submitted in order to be qualified to bid on this project. In the event that a Bidder is a business organization, including a partnership, corporation, business trust or other legal entity as set forth in F.S. 489.119(2), then the Bidder shall only be qualified to bid on this project if: 1) the Bidder (the business organization) is on the day the Bid is submitted, and for at least three (3) consecutive years immediately prior to the day the Bid is submitted has been, in continuous existence, properly licensed and registered as required by Florida law; and/or 2) the Bidder, on the day the Bid is submitted, has a certified or registered Qualifying Agent, as required by F.S. 489.119, and that Qualifying Agent has been the same Qualifying Agent of the Bidder for a period of at least three (3) consecutive years immediately prior to the day the Bid is submitted.

Reference Section 01001 of the Technical Specification , Contractor Qualification Requirements, pages 5, 6 and 7 for additional Qualification Requirements.

Proof of General Contractor OR Underground Utility and Excavation Contractor's license shall be submitted with this Bid.

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

All Prime Contractors and Subcontractors identified in the bid submittal must register with Suncoast Workforce, an employer recruiting service organization. Contractors should contact Peter Kiziu at the Suncost Workforce Office. Office located at 3030 University Parkway, Sarasota, FL 34243 phone: (941) 358-4080, Ext. 3136, cell: (941) 586-3548, fax: (941) 358-2944. Email: PKIZU@Suncoastworkforce.org.

To be considered for award of this project, the Contractor shall not be debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension."

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 herein.

B.03 QUALIFICATIONS OF BIDDERS (Continued)**Bidders are to submit with their Bid:**

1. Proof of registration with the Suncoast Workforce Office
2. MBE/WBE/SEC3 must provide proof of certification
3. Section G (Bid Forms) pages 40-40A, 40B, 40C - 41
4. Section H Certification Forms (2) pages 42 - 45
5. Copy of Firm's Policy or program relating to a Drug Free Workplace
6. Anti-Lobbying Form (See Attachment "C" of IFB)
7. Copy of the license (s)

B.04 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 document to County. (Note: Contract must be approved in accordance with the Manatee County Code of Laws, Chapter 2-26, Manatee County Purchasing Ordinance and the Standards and Procedures approved by the County Administrator).

B.05 INSPECTION OF SITE

Inspection of the site is a requirement to be considered for award of this Bid. Prior to submitting a Bid, each Bidder shall examine the site and all conditions thereon fully familiarizing themselves with the full scope of the project. Failure to become familiar with site conditions will in no way relieve the successful Bidder from the necessity of furnishing any materials or performing any Work that is required to complete the project in accordance with the plans and specifications. **Visit shall be acknowledged in Section G, Bid Form, page 40.**

END OF SECTION

SECTION C
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 the 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 day from the date the Contract Time commences to run. Bid(s) shall be based on a **150 Calendar day completion for the base bid and / or the base bid plus alternates. PROJECT SHALL BE COMPLETED BY JUNE 30, 2014.**

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 County the sum of **\$884.00** 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 standard pay application 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.

C.05 PAYMENT (Continued)

The amount of said estimate after deducting any required retainage and all previous payments shall be due and payable to the Contractor, twenty (20) business days if County is its own Engineer of Record (EOR) or twenty-five (25) business days if outside agent approval is required after the pay estimate has been approved by the agent for the County.

In accordance with the Prompt Payment Act, F.S. § 218.735(7), a Punch List shall be formulated.

Time allowed for development of punch list:

1. Awarded Contracts with an estimated cost of less than \$10 million will be within thirty (30) calendar days after reaching substantial completion. Substantial completion is defined as reaching beneficial occupancy or use.
2. Awarded Contracts with a cost of \$10 million dollars or more will be within thirty (30) calendar days OR if extended by Contract, up to sixty (60) calendar days after reaching substantial completion. Substantial completion is defined as reaching beneficial occupancy or use.

The final Contract completion date must be at least thirty (30) days after delivery of the list of items. If the list is not provided to the awarded Contractor by the agreed upon date, the Contract completion time must be extended by the number of days the County exceeds the delivery date.

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.

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.

C.05 PAYMENT (Continued)

When the Contactor has completed the Work in compliance with the terms of the Contract document, he shall notify the County in writing that this project is ready for final inspection. The County will then advise the Contractor as to the arrangement 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 document.

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 10% of the total Work in place shall be withheld until 50% of the Work has been completed. After 50% completion, the retainage shall be reduced to 5% of the total Work in place until final completion and acceptance of the Work by the County. Upon final acceptance, the remaining retainage shall be included in the final payment.

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 County 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 purpose and function of the project as defined, detailed, and specified herein.

The County 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.

C.07 WARRANTY AND GUARANTEE PROVISIONS (Continued)

These warranty and guarantee provisions create no limitations on the County as to any claims or actions for breach of guaranty or breach of warranty that the County might have against parties other than the Contractor, and do not constitute exclusive remedies of the County against the Contractor.

C.08 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.09 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.

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.

C.12 INDEMNIFICATION (Continued)

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 F. S. §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 ten (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 Worker's Compensation Act or any other coverage required by the Contract document which are customarily insured under Part One of the standard Worker's Compensation Policy.

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

(Each Accident)	<u>\$100,000</u>
(Disease-Policy Limit)	<u>\$500,000</u>
(Disease-Each Employee)	<u>\$100,000</u>

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) to a Commercial General Liability Policy with the following minimum limits.

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

C.14 INSURANCE (Continued)

b. Commercial General Liability (Continued)

ADDITIONAL INSURED: Manatee County, a political subdivision of the State of Florida, shall be specifically named as additional insured on the Commercial General Liability Policy.

c. Business Auto Policy

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

ADDITIONAL INSURED: Manatee County, a political subdivision of the State of Florida, shall be specifically named as additional insured on the Business Auto Policy.

d. County's 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 County and the County'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).

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 Policies

Certificates of Insurance in triplicate evidencing the insurance coverage specified herein shall be filed with the Purchasing Official before operations are begun.

C.14 INSURANCE (Continued)

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, and title of the project. All insurance policies required herein shall be issued by companies that are authorized to do business under the laws of the State of Florida and hold an A.M. Best rating of A- or better. Insurance, as specified herein, shall remain in force and effect for the duration of the project including any warranty period.

- h. **Complete Policies:** The entire and complete insurance policies required herein shall be provided to the County on request.

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 Official 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.

- i. **Certification Requirements** - In order for the certificate of insurance to be accepted it must comply with the following:
1. The certificate holder shall be:
**Manatee County Board of Commissioners,
a political subdivision of the State of Florida
P.O. Box 1000
Bradenton, FL 34206-1000
IFB #13-2959-OV, Flood Drain Improvements,
26th Avenue West (9th Street West to 5th Street West)**
 2. Certificate shall be mailed to:
**Manatee County Purchasing Division
1112 Manatee Avenue West, Suite 803
Bradenton, FL 34205
Attn: Olga Valcich, CPPB
Contract Specialist
Email: olga.valcich@mymanatee.org**

C.14 INSURANCE (Continued)

j. By way of its submission of a Bid hereto, Bidder:

1. Represents that Bidder maintains, and will maintain during the term of any Contract arising from this solicitation, insurance coverage from responsible companies duly authorized to do business in the State of Florida, as set forth in this solicitation; and
2. Agree that, upon County's request, appropriate evidence of the insurance requirements set forth in this solicitation will be produced by Bidder within ten (10) calendar days from the date of request.
3. Agree that, insurance should not be cancelled without thirty (30) days notice to County and must be endorsed to provide same. Failure of Bidder to obtain and maintain proper amounts of insurance as called for herein shall constitute a material breach of Contract by the successful Bidder.

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 ten (10) calendar days after being notified of the Intent to Award.** The Bidder further agrees that failure to execute and deliver said form of Contract **within ten (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. 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

The successful Bidder shall furnish surety bonds using the Public Construction Bond form prescribed in F.S. § 255.05, which is provided herein, 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. Failure to provide the required bonds on the prescribed form may result in successful Bidder being deemed nonresponsive. Bonds must be in the form prescribed in F.S. § 255.05, and must not contain notice, demand or other terms and conditions, including informal pre-claim meetings, not provided for in F.S. § 255.05.

Surety of such bonds shall be in an amount equal to the Bid Award (100% each) issued by a duly authorized and nationally recognized surety company, authorized to do business in the State of Florida, satisfactory to this County. The attorney-in-fact who signs the bonds must file the bonds, a certificate and effective dated copy of the power-of-attorney. Performance and Payment Bonds shall be issued to Manatee County, a

C.16 PERFORMANCE AND PAYMENT (Continued)

political subdivision of the State of Florida, within ten (10) calendar days after notification of Intent to Award.

In addition, pursuant to F.S. § 255.05(1)(b), prior to commencing Work, the Contractor shall be responsible and bear all costs associated to record the Performance and Payment Bond with the Manatee County Clerk of the Circuit Court. A certified copy of said recording shall be furnished to the Purchasing Division upon filing. Pursuant to F.S. § 255.05(1)(b), the County will make no payment to the Contractor until the Contractor has complied with this paragraph.

Furnishing of the recorded 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 the successful Bidder to execute such Contract and to supply the required bonds shall be just cause for cancellation 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 ninety (90) days after the opening of the Bid, 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 those provisions.

C.17 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 extent specifically provided above.

C.18 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.19 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.

C.20 BE GREEN

All Bidders are encouraged to use as many environmentally preferable “green” products, materials, supplies, etc. as possible in order to promote a safe and healthy environment. Environmentally preferable are products or services that have a reduced adverse effect on the environment. Provide detail of your organization’s initiative and its ability to meet the goal of environmental sustainability.

END OF SECTION “C”

SECTION D SPECIFICATIONS

D.01 THE WORK

The Work included in this Bid consists of all labor, materials, equipment and incidentals required to “Cure-In-Place Pipe” (CIPP) line, an existing 30-inch drainage pipe located along 26th Avenue West, between 9th Street West and 5th Street West in Bradenton, FL.

As part of this Invitation for Bid, in addition to the Specifications, Plans, Written Pipeline Inspection and Rehabilitation Reports, Contractors shall be responsible to obtain a set of DVDs of the CCTV Inspection of the 30” RCP associated with this project.

The two part DVD (discs 1 of 2 and 2 of 2) may be obtained by contacting the Purchasing Division’s office between the hours of 9:00 AM and 4:00 PM, Monday through Friday, excluding County holidays.

A complete set of Bid documents must be used in preparing Bids. The County assumes no responsibility for errors and misinterpretations resulting from the use of incomplete sets of Bid documents.

The successful Contractor shall furnish all shop drawings, work drawings, labor, materials, equipment, tools, services and incidentals necessary to complete all Work required by these specifications.

The successful Contractor shall perform the Work complete, in place and ready for continuous service and shall include any repairs, replacements, and/or restoration required as a result of damages caused prior to acceptance by the County.

The successful Contractor shall furnish and install all materials, equipment and labor which is reasonably and properly inferable and necessary for the proper completion of the Work, whether specifically indicated in the Bid documents or not.

D.02 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 County 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 County. If County, after due investigation, has reasonable objection to any proposed Subcontractor, supplier, other person or organization, County 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.

D.02 SUBCONTRACTORS, SUPPLIERS AND OTHERS (Continued)

If apparent successful Bidder declines to make any such substitution, County may award the Contract to the next lowest qualified Bidder that proposes to use acceptable Subcontractors, suppliers, and other persons who County 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 County for the proper completion of all Work to be executed under this Contract.

D.03 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.

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.04 EXAMINATION OF BID DOCUMENT 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 County of all conflicts, errors, or discrepancies in the Bid documents.

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 Bid documents. County will provide each Bidder access to the site to conduct such explorations and tests.

D.04 EXAMINATION OF BID DOCUMENT AND SITE(Continued)

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 Bid 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 County unless otherwise provided in the Bid documents.

D.05 MATERIALS AND WORKMANSHIP

All materials and apparatus required for this Work, except as specifically specified otherwise, shall be new, of first class quality, and shall be furnished, delivered, connected and finished in every detail. Construction shall be prescribed by good industry practice and in accordance with manufacturer's recommendations for the type being installed.

Use skilled workman trained and experienced in the necessary trades and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this section.

D.06 REGULATIONS AND MATERIAL DISPOSAL

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

D.07 PROJECT CLOSE-OUT

Clean construction site and remove any and all excess materials. Correct any damages to property that may have occurred as a result of installation and/or delivery. Repair and patch all surfaces cut for installation. The Contractor shall remedy any deficiencies promptly should the County determine any Work is incomplete or defective.

When the County determines the Work is acceptable in accordance with this Invitation for Bid, the Contractor shall provide the close out submittals, including but Not necessarily limited to the following:

- 1 set Certificate of Warranties
- 1 set Manufacturer's Product Literature (when applicable)
- 1 set Project Record Drawings
- 1 set Subcontractor Information (when applicable)

D.08 DISCRETIONARY WORK

This Bid Item entails minor increases (that may be directed by staff) or minor modification items not Bid which were unforeseen and necessary during the construction to provide a safe, complete project in accordance with Bid documents. (This will not affect the requirement for change orders involving major modifications to the project.) Payment for all Work under this item shall be made only at the County's discretion in order to satisfactorily complete the project. In general, this item is for unanticipated conflicts and/or design changes required during construction which are necessary to complete the project without changing the initial Scope of Work and without costly delays.

D.09 PROGRESS REQUIREMENTS

All Work done under this Contract shall be done with a minimum of inconvenience to the private property owners in the area. The Contractor shall coordinate his Work with private property owners such that existing utility services are maintained and they have access to their property at all times.

END OF SECTION "D"

SECTION E
COMPLIANCE WITH FEDERAL LAWS

E.01 GENERAL PROVISIONS

- a) Equal Employment Opportunity – Contractor is required to comply with EO 11246, “Equal Employment Opportunity,” as amended by E.O 11246, Equal Employment Opportunity,” as amended by E.O. 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and as supplemented by regulations at 41 CFR, Part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”; and
- b) Copeland “Anti-Kickback” Act (18 U.S.C. 874 and 40 U.S. 276c) Contractor is required to comply with the Copeland “Anti-Kickback” Act (18 USC 874), as supplemented by Department of Labor Regulations (29 CFR Pat 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each Contractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he is otherwise entitled; and
- c) Rights to Inventions Made Under a Contract – Contractor shall comply with 37 CFR part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by HUD; and
- d) Byrd Anti-Lobbying Amendment (31 U.S.C., 1352) – Contractor is required to file the required certification for Bids over \$100,000. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal Contract, grant or other award covered by 31 USC 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award; and
- e) Debarment and Suspension – No Contract shall be made to parties listed on the General Services Administration’s List of Parties Excluded from Federal Procurement or Non-procurement Programs in accordance with E.O.s 12549 and 12689, “Debarment and Suspension,” as set forth at 24 CFR part 24. This list contains the names of parties debarred, suspended, or otherwise excluded by agencies, and Contractors declared ineligible under statutory or regulatory authority other than E.O 12549. Contractors with awards that exceed the small

E.01 GENERAL PROVISIONS (Continued)

purchase threshold shall provide the required certification regarding its exclusion status and that of its principal employees; and

- f) Drug-Free Workplace Requirements – The Drug-Free Workplace Act of 1988 (42 U.S.C. 701) requires grantees (including individuals) of federal agencies, as a prior condition of being awarded a grant, to certify that they will provide drug-free workplaces. Contractor is required to comply with drug-free workplace requirements in accordance with the Act and with HUDs rules at 24 CFR part 24, subpart F; and

E.02 SECTION 3 CLAUSE

- a) The work to be performed under this Contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended; 12 U.S.C. 1701u (Section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- b) The parties to this Contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement Section 3. As evidenced by their execution of this Contract, the parties to this Contract certify that they are under no Contractual or other impediment that would prevent them from complying with the part 135 regulations.
- c) The Contractor agrees to send each labor organization or representative of workers with which the Contractor has a collective bargaining agreement or other understanding; if any, a notice advising the labor organization or workers' representative of the Contractor's commitments under this Section 3 Clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.
- d) The Contractor agrees to include this Section 3 clause in every Subcontract subject to compliance with regulations in 24 CFR Part 135; and agrees to take appropriate action, as provided in an applicable provision of the Subcontract or in:

E.02 SECTION 3 CLAUSE (Continued)

- a) this section 3 clause; upon a finding that the Subcontractor is in violation of the regulations in 24 CFR part 135. The Contractor will not Subcontract with any Subcontractor where the Contractor has notice or knowledge that the Subcontractor has been found in violation of regulations in 24 CFR Part 135
- b) The Contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the Contractor is selected but before the Contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the Contractor's obligations under 24 CFR part 135.
- f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this Contract for default, and debarment or suspension from future HUD assisted Contracts.
- g) With respect to work performed in connection with section 3 covered Indian housing assistance; section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this Contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of Contracts and Subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this Contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

E.03 FEDERAL REQUIREMENTS FOR CONSTRUCTION PROJECTS

- a) **Davis Bacon Act**, as amended (40 U.S.C. 267a to a-7) – **Contractor is required to comply with the Davis-Bacon Act** (40 U.S.C 276a to a-7) and as supplemented by Department of Labor regulations (29 CFR part 5, "Labor Standards Provisions Applicable to Contracts governing Federally Financed and Assisted Construction"). Under this Act, Contractors shall be required to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination made by the Secretary of labor. In addition, Contractors shall be required to pay wages not less than once a week. **(See Attachment "A" for Current Federal Wage Decision); and**

E.03 FEDERAL REQUIREMENTS FOR CONSTRUCTION PROJECTS (Continued)

- b) Contract Work Hours and Safety Standards Act (40 U.S.C. 327 through 333) Contractor is required to comply with Sections 103 and 107 of the Contract Work Hours Safety Standards Act (40 U.S.C. 327-333), as supplemented by Department of Labor regulations (29 CFR, Part 5). Under Section 102 of the Act, each Contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours.

Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than 1 ½ times the basic rate of pay for all hours worked in excess of 40 hours in the work week. Section 107 of the Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous; and

- c) Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), as amended – Contractor is required to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251 et seq.); and

E.04 BONDING REQUIREMENTS FOR PROJECTS OVER \$100,000

- a) A Bid guarantee equivalent to five percent (5%) of the Bid price is required. The “Bid guarantee” shall consist of a firm commitment such as a Bid bond, certified check, or other negotiable instrument which must be submitted with the Bid as assurance that the Bidder will, upon acceptance of his Bid, execute such Contractual document as may be required within the time specified; and
- b) Performance bond on the part of the Contractor for 100 percent of the Contract price. A “performance bond” is one executed in connection with a Contract to secure fulfillment of all the Contractor’s obligations under such Contract; and
- c) A payment bond on the part of the Contractor for 100% of the Contract price. A “payment bond” is one executed in connection with a Contract to assure payment is required by law of all persons supplying labor and material in the execution of the work provided for in the Contract.

E.05 LABOR STANDARDS (PROJECTS OVER \$2,000)

The following Federal Labor Standards provisions are in effect and must be complied with by all Contractors and Subcontractors. As before mentioned it is mandatory that these legislative acts are complied with. Specific reporting requirements include, but shall not be limited to the following:

E.05 LABOR STANDARDS (PROJECTS OVER \$2,000) (Continued)

- a) Federal Wage Decision for Manatee County in Florida. Per the Davis-Bacon Act, these are applicable prevailing federal wage rates for this project. There are no State prevailing wage rates. These wage rates will be compared against those posted by the U.S. Department of Labor.

In the event the Federal Wage Decision has been updated, bidders will be notified via an Addendum with the current Federal Wage Decision.

- b) United States Department of Labor, Payroll Form WH-347 (Attachment B) (OMB Approval No. 1215-0149) with accompanying Statement of Compliance. Per the Davis-Bacon Act and the Copeland Act, the awarded Contractor and its Subcontractor's are required to submit weekly payrolls, being accompanied by the Statement of Compliance, bearing an original signature; and
- c) United States Department of Housing and Urban Development and the Office of Labor Relations, Record of Employee Interview, Form HUD-11 (OMB Approval No 2501-0009) (Attachment B). Employees of the Contractor and its sub-Contractors will be interviewed at different intervals for public recording purposes only, and is used to measure compliance with the Federal Labor Standards.

END OF SECTION "E"

SECTION F
MANATEE COUNTY LOCAL PREFERENCE LAW AND VENDOR REGISTRATION

F.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 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 of the Bid, 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 on line registration: **www.mymanatee.org**

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

F.02 SECTION 2-26-6 LOCAL PREFERENCE, TIE BIDS, LOCAL BUSINESS DEFINED

1. Unless otherwise specified, 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. Local preference shall not apply to the following categories of Contracts:

F.02 SECTION 2-26-6 LOCAL PREFERENCE, TIE BIDS, LOCAL BUSINESS DEFINED (Continued)

- a. Goods or services provided under a cooperative purchasing agreement or similar "piggyback" Contract;
 - b. Contracts for professional services subject to Florida Statute § 287.055, the Consultants' Competitive Negotiation Act, except as provided for in subsection (e) above;
 - c. 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;
 - d. Purchases or Contracts made pursuant to a non-competitive award process, unless otherwise provided by this section;
 - e. 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.
7. To qualify for local preference under this section, a local business must certify to the County that it:
- a. 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;
 - b. 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
 - c. 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.

**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] _____

Business Phone Number: _____

Email Address: _____

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 G
BID FORM**

For: IFB #13-2959-OV, Flood Drain Improvements, 26th Avenue West (9th Street
West to 5th Street West)

**TOTAL BASE BID PRICE \$ _____ (Based on a *Completion Time* of 150
Calendar days)**

**TOTAL BASE BID PRICE W/BID ALTERNATES 1 AND 2 \$ _____
(Based on a *Completion time* of 150 Calendar days)**

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 package, in its entirety, including but not limited to, all 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: **(Complete all fields)**

Print Person's Name: _____

Address: _____ Phone: _____

Date: _____ FL Contractor License # _____

License in the Name of: _____

Bidder is a MBE: ___ WBE: ___ SEC3 ___ Certification _____

AUTHORIZED SIGNATURE(S):

Name and Title of Above Signer(s)

CO. MAILING

ADDRESS: _____

STATE OF INCORPORATION _____ (if applicable)

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

Email address: _____

I, _____ on [date] _____ **attest that I have visited the project
site to familiarize myself with the full Scope of Work required for this Bid.**

Acknowledge Addendum No. _____ Dated: _____ Acknowledge Addendum No. _____ Dated: _____

BID FORM (Submit In Triplicate)

IFB #13-2959-OV, FLOOD DRAIN IMPROVEMENTS, 26TH AVENUE WEST (9th Street West to 5th Street West)

BID ITEM DESCRIPTION	ITEM DESCRIPTION	QUANTITY	U/M	UNIT PRICE \$	EXTENDED PRICE \$
1	CIPP LINER 30" x 15mm FINISH THICKNESS FOR 30" EXISTING PIPE LOCATED BETWEEN CB-2 AND CB-10 OF THE PLANS.	946	LF	\$	\$
2	REMOVE AND REPLACE EXISTING THROAT INLET WITH NEW THROAT INLET STRUCTURE, CB-2 (COMPLETE, INCLUDES RESTORATION AND CURB TRANSITIONS)	1	LS	\$	\$
3	REMOVE AND REPLACE EXISTING THROAT INLET WITH NEW THROAT INLET STRUCTURE - CB-5 (COMPLETE, INCLUDES RESTORATION AND CURB TRANSITIONS)	1	LS	\$	\$
4	REMOVE AND REPLACE EXISTING JUNCTION BOX TOP - CB-8 (COMPLETE, INCLUDES RESTORATION)	1	LS	\$	\$
5	CONSTRUCTION SURVEYING AND RECORD DRAWINGS (INCLUDES COLLECTION OF RECORD INFORMATION AND RECORD DRAWING PREPARATION)	1	LS	\$	\$
6	MOBILIZATION	1	LS	\$	\$
7	MAINTENANCE OF TRAFFIC (INCLUDES PREPARATION OF MOT PLANS)	1	LS	\$	\$
8	DISCRETIONARY WORK				\$15,000.00
TOTAL BASE BID PRICE FOR BID ITEMS 1 THROUGH 8					\$
NUMBER OF DAYS TO COMPLETE THE PROJECT: 150 CALENDAR DAYS					

BIDDER: _____

AUTHORIZED SIGNATURE: _____

IFB #13-2959-OV, FLOOD DRAIN IMPROVEMENTS, 26TH AVENUE WEST (9th Street West to 5th Street West)						
BID ITEM DESCRIPTION	ITEM DESCRIPTION	QUANTITY	U/M	UNIT PRICE \$	EXTENDED PRICE \$	
ALTERNATES:						
1	CIPP LINER 30" X 15mm FINISH THICKNESS FOR 30" existing pipe located between CB-1A and CB-2	301	LF	\$	\$	
2	FURNISH AND INSTALL NEW STORM MANHOLE, CB-1A, (COMPLETE, INCLUDES RESTORATION)	1	LS	\$	\$	
SUBTOTAL ALTERNATES 1 AND 2 ONLY						
TOTAL BASE BID (Items 1 through 8) AND BID ALTERNATES 1 AND 2						
<p>The BIDDER must submit a Bid for Bid Items 1 through 8 and the sum of these Bid Items will be considered the Total Amount of the Base Bid. The BIDDER must also submit pricing for Bid Alternates Items 1 and 2. The Bidder must submit a Bid on all listed Bid Items or the Bid shall be considered incomplete. The County reserves the right to accept or reject all Bids. The AWARD shall be made to the lowest responsive, responsible bidder meeting specifications and having the lowest TOTAL BASE BID AND/OR the lowest TOTAL BASE BID AND BID ALTERNATES 1 and 2. Only one (1) award shall be made. The County has the sole authority to select the BASE BID AND/OR THE BASE BID AND BID ALTERNATES 1 and 2, whichever is in the best interest of the County.</p>						

BIDDER: _____

AUTHORIZED SIGNATURE: _____

BID FORM (Submit In Triplicate) (SUBCONTRACTOR'S % FORM)

IFB #13-2959-OV, FLOOD DRAIN IMPROVEMENTS, 26TH AVENUE WEST (9th Street West to 5th Street West)

BID ITEM DESCRIPTION	ITEM DESCRIPTION	WORK BY SUBCONTRACTOR		DESCRIPTION OF WORK BY SUBCONTRACTOR
		%	MBE/WBE	
1	100			
2	101			
3	102			
4	103			
5	200			
6	201			
7	202			
ALTERNATES:				
1	300			
2	301			

This is a duplication of the Bid items where the Bidder shall state the percentage of work (of each item listed) and a description of the work which shall be performed by a Subcontractor.

BIDDER: _____

AUTHORIZED SIGNATURE: _____

**SECTION G
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. #13-2959-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 is: _____.
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:

<u>Trench Safety Measure (Description)</u>	<u>Units of Measure (LF, SY)</u>	<u>Unit Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>
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 _____, 2013.
(impress official seal)

Notary Public, State of Florida

My commission expires: _____

SECTION H

**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 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 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
Public Contracting and Environmental Crimes Certification (Continued)

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 judgment has been reversed by a court of competent jurisdiction, shall prove the same with documentation satisfactory to the County's Purchasing Official. 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 _____, 20__ by _____

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

Notary Public Signature My commission expires _____

[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 H

Drug Free Work Place Certification

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 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

(Cont'd.)

(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
- (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.

[Signature]

STATE OF FLORIDA
COUNTY OF _____

Sworn to and subscribed before me this ___ day of _____, 201___ by _____

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

Notary Public Signature My commission expires _____

[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 00430
CONTRACTOR'S QUESTIONNAIRE
(Submit in Triplicate)

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

THIS QUESTIONNAIRE MUST BE COMPLETED AND SUBMITTED WITH YOUR BID

1. License #: _____

License Issued to: _____

Date License Received (MM/DD/YR): _____

Company Name: _____

Company's Physical Address

City _____ State of Incorporation, if applicable _____ (Zip Code)

(____) _____ Telephone Number; (____) _____ Fax
Number

Email Address: _____

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 ventures' and the same if any venture are 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? _____ Is this firm in bankruptcy? _____

BIDDER: _____

4. (Continued)

Has license ever been suspended, revoked, removed or under investigation?

5. The system proposed (materials, methods, workmanship) must be proven through previous successful installations to an extent and nature satisfactory to the County and the Engineer that is commensurate with the size of the project being proposed. Since CIPP is intended to have a 50-year design life, only products deemed to have this performance will be accepted. Describe and give the date and County of the last three government OR private work of similar scope you have completed which are similar in cost, type, size and nature as the one proposed (for a public entity), include contact name and phone number. Provide the budget, actual cost, size and summary of work for each project. Attach additional pages as necessary. (Note: If listing a Manatee County reference, they should not be directly associated with this project).

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? Or provide projects not completed within Contract time. 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. 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? Have you visited the site(s)? _____
Provide date(s) of site visit: _____

10. 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?

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

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

13. What equipment do you own to accomplish this Work? (A listing may be attached

Bidder: _____

14. What equipment will you purchase/rent for the Work? (Specify which)

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

Surety's Name: _____

Surety's Address: _____

Surety's Address: _____

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

Phone: (_____) _____

Email _____

BIDDER: _____



**FLOOD DRAIN IMPROVEMENTS
26TH AVENUE WEST
(9TH ST. WEST TO 5TH ST. WEST)**

TECHNICAL SPECIFICATIONS

PREPARED FOR

MANATEE COUNTY BOARD OF COUNTY COMMISSIONERS

AUGUST 2013

Received 10/9/13



Stantec Consulting Services Inc.
6900 Professional Parkway East
Sarasota, FL 34240

Stantec

TECHNICAL SPECIFICATIONS

for

FLOOD DRAIN IMPROVEMENTS 26TH AVENUE WEST (9TH ST. WEST TO 5TH ST. WEST)

PREPARED FOR

**MANATEE COUNTY BOARD OF COUNTY COMMISSIONERS
P.O. Box 1000
BRADENTON, FLORIDA 34206**

PREPARED BY

**STANTEC CONSULTING SERVICES INC.
6900 PROFESSIONAL PARKWAY EAST
SARASOTA, FLORIDA 34240**

**FLOOD DRAIN IMPROVEMENTS
26TH AVENUE WEST
(9TH ST. WEST TO 5TH ST. WEST)
TABLE OF CONTENTS**

PART I – MEASUREMENT AND PAYMENT

PART II – STANTEC TECHNICAL SPECIFICATIONS

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01001	SUPPLEMENTARY TECHNICAL SPECIFICATIONS AND SPECIAL PROVISIONS
SECTION 01050	SURVEYING (PROVIDED BY CONTRACTOR)
SECTION 01300	SHOP DRAWINGS
SECTION 01310	PROGRESS SCHEDULES
SECTION 01411	TESTING SERVICES (PROVIDED BY CONTRACTOR)
SECTION 01510	TEMPORARY UTILITIES AND CONTROLS
SECTION 01600	MATERIAL AND EQUIPMENT
SECTION 01675	PRE-CONSTRUCTION VIDEO RECORD (FOR ABOVE GROUND FACILITIES)
SECTION 01700	CONTRACT CLOSE-OUT

DIVISION 2 - SITE AND UTILITY WORK

SECTION 02703	TRENCHING AND BACKFILLING FOR PIPING
SECTION 02704	TEMPORARY TRAFFIC CONTROL
SECTION 02705	RESTORATION AND GENERAL REQUIREMENTS
SECTION 02707	STORM SEWERS, PIPE AND STRUCTURES
SECTION 02813	SEEDING, MULCHING, AND SODDING
SECTION 02814	CONCRETE CURBS, GUTTERS, MANHOLE FRAMES, STORM INLETS, ETC.
SECTION 02817	CLEARING AND GRUBBING
SECTION 02820	EXCAVATION AND EMBANKMENT
SECTION 02911	ASPHALTIC CONCRETE
SECTION 02912	BASE COURSE, PRIME AND TACK COAT, AND STABILIZED SUBGRADE
SECTION 02924	PAVEMENT MARKING, STRIPING, AND SIGNS

PART III – FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION

SECTION 430	PIPE CULVERTS
SECTION 431	PIPE LINER
SECTION 948	MISCELLANEOUS TYPES OF PIPE

PART I – MEASUREMENT AND PAYMENT

FLOOD DRAIN IMPROVEMENTS 26TH AVENUE WEST

Manatee County, Florida

MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section. See the construction plans listed below for reference:

Construction plans by Stantec:

Sheets 1 – 5 of 5

1.2 SUMMARY

- A. The scope of this section of the Contract Documents is to further define the items included in each Bid Item in the Bid Form section of the Contract Documents. Payment will be made based on the specified items included in the description in this section for each bid item.
- B. All contract prices included in the Bid Form section will be full compensation for all shop drawings, working drawings, labor, materials, tools, testing, restoration, equipment and incidentals necessary to complete the construction as shown on the Drawings and/or as specified in the Contract Documents to be performed under this Contract. Actual quantities of each item contracted on a unit price basis will be determined upon completion of the construction and payment will be based on actual quantities. Payment for all items listed in the Bid Form will constitute full compensation for all work shown and/or specified to be performed under this Contract.
- C. The quantities shown are approximate in-place quantities and are given only as a basis of calculation upon which the award of the Contract is to be made. The Owner/Engineer does not assume any responsibility for the final quantities, nor shall the Contractor claim misunderstanding or discrepancies because of such estimate of quantities. Final payment will be made only for satisfactorily completed in-place quantity of each item that is bid on a unit price basis.
- D. No payment will be made for work constructed outside the authorized limits of work.
- E. Unless otherwise specified for the particular items involved, all measurements of distance shall be taken horizontally.
- F. Where payment for items is shown to be paid for on a lump sum basis, no separate or additional payment will be made for any item of work required to complete the lump sum items. Lump sum items shall be complete, tested and fully operable prior to request for final payment. Contractor may be required to provide a break-down of the lump sum items.

FLOOD DRAIN IMPROVEMENTS 26TH AVENUE WEST

Manatee County, Florida

MEASUREMENT AND PAYMENT

- G. Access to the site is provided by the existing 26th Avenue West.
- H. Separate payment will be made for the items of work described herein and listed on the Bid Form. Any related work not specifically listed, but required for satisfactory completion of the work associated with the bid item shall be considered to be included in the scope of the appropriate listed bid items.

1.3 UNIT PRICE

- A. Actual quantities of each item contracted on a unit price basis will be determined upon completion of the construction and payment will be based on actual quantities.

1.4 BID ITEM DESCRIPTIONS

- A. A general description of the bid items contained in the various Bid Sections are described below. All items of work referenced in the contract documents, plans, and specifications shall be included in the various lump sum and unit prices in the contract if not specifically included as a pay item on the bid form.

Bid Items 100 - 103 (DRAINAGE): The various bid items for DRAINAGE shall include all CIPP lining and removal/replacement of existing drainage structures where indicated on the plans. The CIPP liner pay item shall include all incidentals needed to install the CIPP liner including pipe cleaning/desilting (pre- and post-installation), root cutting, CCTV inspection (pre- and post-installation), dewatering, removal/disposal of debris, and construction water meter installation/payment. **This section includes full compensation for furnishing all labor, materials, tools, equipment, testing, restoration, and incidentals and for doing all the work involved with these bid items in accordance with the contract documents, plans, and specifications.**

Bid Items 200 - 202 (MISCELLANEOUS): The various pay items for MISCELLANEOUS shall include construction survey/stakeout/record survey/record drawings, mobilization, miscellaneous permits not already obtained by the County, bonding required per the contract documents, and maintenance of traffic. **This section includes preparation of traffic control plans as required for maintenance of traffic, as well as full compensation for furnishing all labor, materials, tools, equipment, testing, restoration, and incidentals and for doing all the work involved with these bid items in accordance with the contract documents, plans, and specifications.**

Bid Items 300 - 301 (ADD ALTERNATES): The various pay items for ADD ALTERNATES shall include all CIPP lining and furnishing/installing a new drainage structure where indicated on the plans as a bid alternate. The CIPP liner pay item shall include all incidentals needed to install the CIPP liner including pipe cleaning/desilting (pre- and post-installation), root cutting, CCTV inspection (pre- and post-installation), dewatering, removal/disposal of debris, and construction water meter installation/payment. **This section includes full compensation for furnishing all labor, materials, tools, equipment, testing, restoration, and incidentals and for doing all the work involved with these bid items in accordance with the contract documents, plans, and specifications.**

SECTION 01001
SUPPLEMENTARY TECHNICAL SPECIFICATIONS AND SPECIAL PROVISIONS

PART 1 SUPPLEMENTARY TECHNICAL SPECIFICATIONS

1.01 SUMMARY

- A. This section includes Supplementary Technical Specifications, which amend or supplement the technical specifications of these Contract Documents. All specifications not amended or supplemented remain in full force and effect.

1.02 CHANGES

- A. Section 02813, Seeding, Mulching, and Sodding
 - 1. Paragraph 4.02: Replace paragraph with the following: "Payment for the cost of sodding, grassing and mulching, or hydroseeding/mulching shall be included in the various lump sum structure removal/replacement bid items. Payment shall constitute full compensation for furnishing all labor, materials, equipment, and all other incidentals necessary to complete the restoration work in accordance with the plans and specifications".
- B. Section 02814, Concrete Curbs, Gutters, Manhole Frames, Storm Inlets, Etc.
 - 1. Paragraph 4.01.A.: The sentence shall be removed and replaced with the following: "Payment shall be made on a lump sum price basis in accordance with the construction contract and bid items".
 - 2. Paragraph 4.01.B.1.: Replace paragraph with the following: "Unless otherwise specified in the various bid items, payment for the cost of concrete curbs, gutters, sidewalks, walkways, driveways, medians, and valley crossings shall be included in the various lump sum structure removal/replacement bid items. Payment shall constitute full compensation for furnishing all labor, materials, equipment, and all other incidentals necessary to complete the restoration work in accordance with the plans and specifications".
- C. Section 02911, Asphaltic Concrete
 - 1. Paragraph 3.01.D.: FM1-T166 shall be replaced with ASTM D1559.
 - 2. Paragraph 4.02.A.: Replace paragraph with the following: "Unless otherwise specified in the various bid items, payment for the cost of asphaltic concrete surface shall be included in the various lump sum structure removal/replacement bid items. Payment shall constitute full compensation for furnishing all labor, materials, equipment, and all other incidentals necessary to complete the restoration work in accordance with the plans and specifications".

PART II – STANTEC TECHNICAL SPECIFICATIONS

- D. Section 02912, Base Course, Prime and Tack Coat, and Stabilized Subgrade
 - 1. Paragraphs 4.04.A. and B.: Replace paragraphs with the following: "Unless otherwise specified in the various bid items, payment for the cost of prime and tack coat shall be included in the various lump sum structure removal/replacement bid items. Payment shall constitute full compensation for furnishing all labor, materials, equipment, and all other incidentals necessary to complete the restoration work in accordance with the plans and specifications".
- E. Section 02924, Pavement Marking, Striping, and Signs
 - 1. Paragraph 4.01.A: Replace paragraph with the following: "Payment for the cost of pavement marking, striping, reflectors, and signage shall be included in the various lump sum structure removal/replacement bid items. Payment shall constitute full compensation for furnishing all labor, materials, equipment, and all other incidentals necessary to complete the restoration work in accordance with the plans and specifications".

1.03 ADDITIONS

- A. Section 01411, Testing Services (Provided by Contractor)
 - 1. Add to the first paragraph under 4.01.B: Testing reports shall be provided with each Application for Payment request made by the CONTRACTOR. The testing reports shall include all required testing results for each requested pay item. The ENGINEER and/or COUNTY may withhold payment of pay items if passing testing reports are not provided.
- B. Section 02912, Base Course, Prime and Tack Coat, and Stabilized Subgrade
 - 1. Add Paragraph 2.05 – Superpave Asphalt Base (Type B-12.5)
 - A. General
 - 1. The construction of the asphalt base shall be in general conformance with Section 234 of the latest edition of the FDOT Standard Specifications for Road and Bridge Construction.
 - 2. Prior to asphalt base installation, the CONTRACTOR shall submit to the ENGINEER a project specific asphalt mix design from the plant. The plant shall certify that the mix design meets FDOT specifications for Superpave Asphalt Base (Type B-12.5).
 - B. Compaction
 - 1. The complete asphalt base will be accepted with respect to in-place density when the following criteria has been met:

- a. Ninety-five percent of laboratory density (ASTM D1559) has been achieved.
- b. Laboratory density (ASTM D1559) will be determined from a sample of the hot mix obtained in the field.
- c. In-place density will be determined from field cores obtained during thickness evaluation.

C. Tests (Allowable Deficiencies - Thickness)

1. The average thickness of the compaction in-place mixture shall be determined as shown on the construction plans typical cross-section(s) for that particular roadway(s) to be constructed. The pavement shall not be approved or accepted unless the following criteria has been met:
 - a. The compacted in-place pavement has not exceeded a deficiency of $\frac{1}{4}$ inch in thickness as determined by the measured depths of two-inch diameter cores taken at random at a rate of one every 500 SY.
 - b. Core lengths shall not exceed the average pavement thickness by more than three-eighths inch and shall be calculated as the next lower thickness.
 - c. All testing required such as mixture, density, cores, etc. shall be the responsibility of the CONTRACTOR with the testing performed by an independent testing laboratory, testing results submitted to and approved by the ENGINEER.

D. Measurement and Payment

1. Unless otherwise specified in the various bid items, payment for the cost of asphaltic base shall be included in the various lump sum structure removal/replacement bid items. Payment shall constitute full compensation for furnishing all labor, materials, equipment, and all other incidentals necessary to complete the restoration work in accordance with the plans and specifications.

PART 2 SPECIAL PROVISIONS

These Special Provisions amend or supplement the contract documents and are intended to set forth conditions and requirements that are unique for this project. All other provisions not amended or supplemented shall remain in full force and effect. In case of a discrepancy, these Special Provisions shall govern over any other written specification or drawing.

- SP-1 The CONTRACTOR shall provide accurate, detailed, and complete (signed and sealed) record drawings, mylars, and a CD containing AutoCAD files of all record drawing sheets to the ENGINEER. The record drawings shall be signed and sealed by a Florida registered land surveyor. The record drawings shall meet the requirements of SWFWMD and Manatee County and shall be included in the cost of the project.
- SP-2 The CONTRACTOR shall be responsible for obtaining any required temporary dewatering permits through the Florida Department of Environmental Protection (FDEP) and shall provide copies to the OWNER and ENGINEER.
- SP-3 Unless otherwise noted in the plans and specifications, excess fill material/debris shall be removed from the site and disposed of by the CONTRACTOR and shall be included in the cost of the project.
- SP-4 The CONTRACTOR must have the all approved permits readily available at the job site prior to beginning construction. The CONTRACTOR shall be responsible for adhering to all applicable permit conditions. The CONTRACTOR is responsible for obtaining all local, state and federal construction permits not furnished by the COUNTY/ENGINEER, including any right-of-way use permits that may be necessary.
- SP-5 The CONTRACTOR shall be responsible for calling Sunshine State One to obtain information on existing utilities in project vicinity. The CONTRACTOR shall notify and cooperate with utility companies and agencies when the CONTRACTOR's operations are close to existing facilities in order to provide time for the utilities to stake the location of their existing facilities. The CONTRACTOR shall cooperate with the utility company and provide schedules, etc., when requested.

The drawings may or may not indicate the presence of existing utilities or facilities in the project area. Existing above or underground utilities, structures, or facilities that are shown on the plans are based on best information made available to the ENGINEER. The existing facilities may be in locations different than those shown on the drawings. It shall be the responsibility of the CONTRACTOR to acquaint himself with the exact location and to avoid conflict with all existing facilities. Where underground or aboveground utilities, structures, or facilities are damaged, they shall be immediately repaired to the specifications of the owner of the utility. If the owner of the utility elects to make such repairs with his own forces, CONTRACTOR shall make arrangements as to protect the COUNTY from all damages. Where such conflicts are unavoidable, every effort shall be made to construct the work so as to cause as little interference as possible with services rendered by the structure disturbed.

- SP-6 Measurement and payment for the Mobilization Bid Item shall include full compensation for the required 100 percent (100%) Performance Bond, 100 Percent (100%) Payment Bond,

all required insurance for the project, and any permits not already obtained by the County. This may include those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site and for the establishment of temporary offices, safety equipment and first aid supplies, and sanitary and other facilities/utilities. The mobilization pay item also includes demobilization of all equipment, personnel, supplies and incidentals from the project site upon final completion. Payment for mobilization shall not exceed 10 percent (10%) of the total Contract cost unless the Contractor can prove to the County that his actual mobilization cost exceeds 10 percent (10%). The basis of payment for all work associated with Mobilization shall be paid for under the Lump Sum Pay Item and in accordance with the following schedule:

Percent of Total Contract Amount Earned	Allowable Percent of the Lump Sum Price for Mobilization
5	25
10	50
25	75
100	100

- SP-7 The CONTRACTOR shall perform all of the work in accordance with applicable OSHA standards. Emphasis shall be placed upon the requirements for entering confined spaces and with the equipment being utilized for pipe renewal.
- SP-8 Pre-installation requirements shall include silt/debris/root removal and by-pass pumping to successfully install the liner system. A detailed pre-installation CCTV inspection performed in accordance with ASTM standards by NASSCO PACP certified CCTV inspection personnel shall occur after the removal of silt, roots, and other debris, but prior to the installation of the CIPP liner. A radial view (pan and tilt) TV camera shall be used. Pre-installation CCTV inspection reports shall include data reports, written logs, and video logs. The CONTRACTOR shall provide two (2) video DVD recordings and two (2) hard copies of the pre-installation CCTV inspection reports to the County for review prior to CIPP liner installation.
- SP-9 CONTRACTOR Qualification Requirements: The system proposed (materials, methods, workmanship) must be proven through previous successful installations to an extent and nature satisfactory to the County and the Engineer that is commensurate with the size of the project being proposed. Since CIPP is intended to have a 50-year design life, only products deemed to have this performance will be accepted.

Prior to CONTRACTOR selection, Products and Installers shall submit documentation demonstrating that they meet all of the following criteria to be deemed commercially acceptable:

For a Product to be considered Commercially Proven, a minimum of 250,000 linear feet must have been successfully installed. The Manufacturer (Licensor) shall have

completed sufficient enough testing to document that the materials and the method(s) of installation proposed will produce the desired long-term performance.

For an Installer to be considered Commercially Proven, the Installer must satisfy all insurance, financial, and bonding requirements of the County, and must provide proof of three (3) or more CIPP installation projects which have been in use successfully for three (3) or more years. The referenced projects shall include the installation of 30" CIPP liner or larger. The Installer's key personnel shall have at least 100,000 linear feet of successful experience (included in this experience shall be a sufficient quantity of installations in the sizes proposed for this project).

SP-10 The liquid thermosetting resin used to impregnate the tube shall produce a properly cured tube which will be resistant to abrasion due to solids, grit and sand. The cured tube shall also be resistant to corrosion to due acids and gases such as sulfuric acid, carbonic acid, hydrogen sulfide, methane and carbon monoxide. The resin selected shall have proven resistance to normal stormwater flows.

The CIPP system installed shall meet the chemical resistance requirements of ASTM D5813. CIPP samples tested shall be of fabric tube and the specific resin proposed for actual construction. It is required that CIPP samples without plastic coating meet these chemical testing requirements. A certification may be submitted, by the CONTRACTOR, from the manufacturer, verifying that the chemical resistance of the CIPP meets the contract requirements.

SP-11 Quality Assurance: The CONTRACTOR shall prepare a sample for each installation of CIPP. The samples shall be flat plate samples for diameters of CIPP 18" and larger. The flat plate samples shall be taken directly from the wet out tube, clamped between flat plates, and cured in the downtube. The flat plate samples shall be tested for initial physical properties only.

The installed CIPP thickness shall be measured for each line section installed in accordance with ASTM standards.

In addition to physically sampling the finished CIPP, the CONTRACTOR shall perform a detailed post-installation CCTV inspection in accordance with ASTM standards by NASSCO PACP certified CCTV inspection personnel. A radial view (pan and tilt) TV camera shall be used. The finished liner shall be continuous over the entire length of the installation and shall be free of significant visual defects, foreign inclusions, damage, deflection, dry spots, pinholes, leaks, delamination, and other defects. Post-installation CCTV inspection reports shall include data reports, written logs, and unedited digital video logs. The CONTRACTOR shall provide two (2) video DVD recordings and two (2) hard copies of the post-installation CCTV inspection reports within ten (10) working days of the liner installation. The reports shall note the inspection date, debris, as well as any other defects in the liner, including, but not limited to, gouges, cracks, bumps, or bulges. If post-installation inspection documentation is not submitted within ten (10) working days, the County may at its discretion suspend any further installation of the CIPP until the post-installation documentation is submitted. As a result of this suspension, no additional working days will be added to the contract, nor will any adjustment be made for increase in cost. Immediately prior to conducting the post-installation CCTV

inspection, the CONTRACTOR shall thoroughly clean the newly installed liner removing all debris and build-up that may have accumulated, at no additional cost to the County.

SP-12 Submittals: Prior to CONTRACTOR selection, the CONTRACTOR shall submit the following information:

1. Manufacturer's certification that the materials to be used meet the referenced standards and specifications.
2. License or certificate verifying Manufacturer's/Licenser's approval of the installer.
3. Proposed equipment and procedures for accomplishing the work.
4. Lining Manufacturer's product data and instructions for resin and catalyst system.
5. Submittals signed and sealed by an engineer licensed in the State of Florida verifying that the structural capacity of the finished liner is capable of withstanding the dead and live loads. All pipeline sections to be repaired and lined shall, following CIPP lining, be capable of withstanding the existing soil dead load over the pipe section and an H-20 traffic live loading, assuming the water table is at ground surface elevation. For the purposes of verifying the liner structural capacity, it shall be assumed that the existing pipeline sections are fully deteriorated. The product installed shall have a minimum expected lifetime of fifty (50) years. In no case shall the liner thickness be less than the minimum liner thickness as called for in the Bid Form.

END OF SECTION 01001

**SECTION 01050
SURVEYING (PROVIDED BY CONTRACTOR)**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Survey requirements for the project.

1.02 QUALITY CONTROL

- A. Employ a Land Surveyor registered in the State of Florida and acceptable to ENGINEER and OWNER to perform survey functions in this section.

1.03 SUBMITTALS

- A. Submit name, address, and telephone number of Surveyor before starting survey work.
- B. On request, submit documentation verifying accuracy of survey work.
- C. Submit a copy of registered site drawing and certificate signed by the Land Surveyor that the elevations and locations of the work are in conformance with Contract Documents.

1.04 PROJECT RECORD DOCUMENTS

- A. Maintain a complete and accurate log of control and survey work as it progresses.

1.05 EXAMINATION

- A. Verify locations of survey control points and reference points prior to starting work.
- B. Promptly notify ENGINEER of any discrepancies discovered.

1.06 SURVEY REFERENCE POINTS

- A. CONTRACTOR shall locate and protect survey control and reference points.
- B. Control datum for survey is that indicated on drawings.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to ENGINEER the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. The Registered Surveyor shall replace dislocated survey control points based on original survey control. Make no changes without prior written notice to ENGINEER.

1.07 SURVEY REQUIREMENTS

- A. Provide field engineering services. Utilize recognized engineering survey practices.
- B. Establish a minimum of two permanent benchmarks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.
- C. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, and ground floor elevations.
- D. Periodically verify layouts by same means.

1.08 SURVEYS FOR MEASUREMENT AND PAYMENT

- A. Perform surveys to determine quantities of unit cost work, including control surveys to establish measurement reference lines. Notify ENGINEER prior to starting work.
- B. CONTRACTOR's Surveyor shall sign field notes or keep duplicate field notes.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. The cost of the work specified in this section shall be included in all the various pay items or work items described in the schedule and no separate payment will be made, unless a separate pay item is established in the Contract Documents.

END OF SECTION 01050

**SECTION 01300
SHOP DRAWINGS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Shop drawing submittal procedures.

1.02 PROCEDURES

- A. Deliver a minimum of six copies of submittals to ENGINEER at address listed on cover sheet of specifications. Distribution is two copies for the ENGINEER, two copies for the OWNER and two copies returned to the CONTRACTOR. If additional copies are required by the CONTRACTOR, they shall submit them.
- B. Transmit each item under ENGINEER-accepted form. Identify Project, CONTRACTOR, Subcontractor, and major supplier. Identify pertinent drawing sheet and specification section number as appropriate. Identify deviations from contract documents. Approve all submittals prior to forwarding to ENGINEER by stamping and signing approval stamp. Provide space for CONTRACTOR and ENGINEER review stamps.
- C. After ENGINEER review of submittal, revise and resubmit as required, identifying changes made since previous submittal.
- D. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.
- E. Prior to any submittals, a Schedule of Shop Drawings must be submitted and approved by ENGINEER.

PART 2 PRODUCTS

2.01 SHOP DRAWING SUBMITTAL

- A. All Precast Structures, Frames, Grates, and Covers
- B. Manufacturer's catalog cuts and technical data, including recommended installation procedures for the CIPP liner
- C. Concrete, Flowable Fill, Asphalt Mix Design
- D. Curb Ramp Detectable Warning Mats

PART 3 EXECUTION

Not Used

PART 4 **MEASUREMENT AND PAYMENT**

- A. The cost of the work specified in this section shall be included in all the various pay items or work items described in the schedule and no separate payment will be made unless a separate pay item is established in the Contract Documents.

END OF SECTION 01300

**SECTION 01310
PROGRESS SCHEDULES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Scheduling requirements, including submittal and revision procedures.

1.02 FORMAT

- A. Unless otherwise specified, the CONTRACTOR shall submit a schedule of activities in either of the forms listed below:
 - 1. A horizontal bar chart (minimum sheet size 24" x 36") with separate bar for each major work item. The time sequence shall be designated horizontally at the top of the chart in weeks, months and years. The position of each activity bar shall indicate the work period from beginning to the end of each activity work period.
 - 2. A logic diagram or CPM of all activities showing description, duration, early and late start/finish dates, predecessors, successors, and float time.

1.03 CONTENT

- A. The list of activities shall represent the complete scope of the project and shall be subject to approval by the OWNER's representative.
- B. Show complete sequence of construction by activity, with dates for beginning and completion of each activity listed.

1.04 REVISIONS TO SCHEDULES

- A. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
- B. Show accumulated percentage of completion of each activity, and total percentage of work completed as of the Application for Payment date.
- C. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
- D. Provide narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken, or proposed, and its effect.

1.05 SUBMITTALS

- A. Submit preliminary outline schedules within 15 days after date of OWNER-CONTRACTOR Agreement for coordination with OWNER's requirements. After review, submit detailed schedules within 15 days, modified to accommodate revisions recommended by ENGINEER.

- B. Submit revised progress schedules with each Application for Payment.

1.06 SUBMITTAL

- A. Submit six copies of schedules to ENGINEER.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. The cost of the work specified in this section shall be included in all the various pay items or work items described in the schedule and no separate payment will be made, unless a separate pay item is established in the Contract Documents.

END OF SECTION 01310

**SECTION 01411
TESTING SERVICES
(PROVIDED BY CONTRACTOR)**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Responsibilities of the CONTRACTOR, OWNER, and Testing Laboratory regarding specified tests.
- B. Report specifications.

1.02 SELECTION AND PAYMENT

- A. Unless otherwise stated in the Contract Documents, the CONTRACTOR will select and pay for the services of an independent testing laboratory to perform tests required by the technical specifications.
- B. Cost of retests due to failures shall be paid for by the CONTRACTOR in the form of a deduction from the contract amount.
- C. Utilization of a testing laboratory shall in no way relieve the CONTRACTOR of any obligation to perform work in accordance with the requirements of the Contract Documents.

1.03 SCHEDULING TESTS

- A. The CONTRACTOR will furnish the name of the testing laboratory to the OWNER at the preconstruction conference.
- B. The CONTRACTOR shall be responsible for scheduling each test by notifying the designated laboratory 24 hours prior to the time the test is to be taken.
- C. The specific requirements, including the type and amount of testing, shall be in accordance with the technical specifications or as otherwise stated in the Contract Documents.
- D. Ample time shall be allowed for the testing process by the CONTRACTOR, since an extension of time will not be allowed for testing delays or retests due to failures.

1.04 QUALITY ASSURANCE

- A. All tests shall be performed by qualified personnel under the direction and control of a Professional Engineer registered in the State of Florida and specializing in Geotechnical or Material analysis as applicable.
- B. In addition to the tests required by the Contract Documents, the OWNER's Representative may direct the testing laboratory to take any other tests or material inspections that he feels necessary to achieve the quality of construction that is specified in the Contract Documents.

1.05 LABORATORY RESPONSIBILITIES

- A. Perform inspection, sampling, and testing in accordance with the Contract Documents.
- B. Provide qualified personnel to perform all phases of required services and cooperate with OWNER's Representative and CONTRACTOR in the performance of those services.
- C. Ascertain compliance of materials and related procedures with requirements of the Contract Documents.
- D. Promptly notify the CONTRACTOR and the OWNER's Representative of any irregularities or non-conformance of work, materials, or product.
- E. Perform additional inspections or tests requested by the OWNER's Representative.
- F. Attend pre-construction conferences and progress meetings.

1.06 LABORATORY REPORTS

- A. After each inspection or test, promptly submit a laboratory report to the OWNER, the OWNER's Representative, and the CONTRACTOR.
- B. The report shall include the following:
 - 1. Date of report.
 - 2. Project title and number.
 - 3. Date, time, and location of each sample extraction or inspection.
 - 4. Identification of material and method of test.
 - 5. Results of tests.
 - 6. Evaluation of conformance to contract specifications.
 - 7. Notification of retest requirement due to test failure.
 - 8. Site map showing testing locations.
 - 9. At the completion of construction the testing firm shall provide a certification signed and sealed by a professional engineer licensed in the state of Florida, certifying that the testing program has been completed in accordance with the project specifications and that the completed project complies with the testing criteria contained in the project plans and specifications.

1.07 LIMITS ON TESTING LABORATORY AUTHORITY

- A. Laboratory may not release, revoke or alter the requirements of the Contract Documents.

- B. Laboratory may not approve or accept any portion of the work.
- C. Laboratory may not assume any duties of the CONTRACTOR.
- D. Laboratory has no authority to stop the work.

1.08 CONTRACTOR RESPONSIBILITIES

- A. Submit proposed mix designs and samples of proposed materials to the designated laboratory as required by the Contract Documents or as requested by the OWNER's Representative.
- B. Provide access to the site for any tests or inspections.
- C. Provide labor and facilities to obtain, handle, store, and cure test samples and to facilitate material inspection.
- D. Cooperate with laboratory personnel to maximize the efficiency of the testing procedure by periodically updating the construction schedule and adhering to the 24-hour advance notice requirement for tests.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. In accordance with Article 1.02, Selection and Payment, this section.
- B. Testing Services (Provided by CONTRACTOR)

Where no separate pay item for Testing Services (provided by CONTRACTOR) is established in the Contract Documents, the cost of all such work specified in this section shall be included in the prices for the other pay items which are included in the contract and no additional compensation will be allowed.

When an item of Testing Services (provided by CONTRACTOR) is included in the Contract Documents, the lump sum price and payment for such item shall be full compensation for all work and costs specified in this section except as may be specifically covered for payment under other items.

END OF SECTION 01411

**SECTION 01510
TEMPORARY UTILITIES AND CONTROLS**

PART 1 GENERAL

1.01 REQUIREMENTS

- A. Furnish, install, maintain and remove temporary utilities required for construction. See other sections for additional utilities coordination.

1.02 TEMPORARY TRAILER LOCATION

The CONTRACTOR shall obtain approval from the OWNER for any proposed temporary trailer (office) location on site.

1.03 REQUIREMENTS OF REGULATORY AGENCIES

- A. Comply with National Electric Code.
- B. Comply with federal, state and local codes and regulations and with utility company requirements.
- C. Comply with County Health Department Regulations.

PART 2 PRODUCTS

2.01 MATERIALS, GENERAL

- A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

2.02 TEMPORARY ELECTRICITY AND LIGHTING

- A. Arrange with utility company and OWNER to provide service required for power and lighting, and pay all costs for service and for power used in the construction, testing and trial operation prior to final acceptance of the work by the OWNER as stipulated by the ENGINEER.
- B. Install circuit and branch wiring, with area distribution boxes located so that power and lighting are available throughout the construction by the use of construction type power cords.
- C. Provide adequate artificial lighting for all areas of work when natural light is not adequate for work, and for areas accessible to the public.

2.03 TEMPORARY HEAT AND VENTILATION

- A. Provide temporary heat and ventilation as required to maintain adequate environmental conditions to facilitate progress of the work, to meet specified minimum conditions for the

installation of materials, and to protect materials and finishes from damage due to temperature or humidity.

- B. Provide adequate forced ventilation of enclosed areas for curing of installed materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors or gases.
- C. Portable heaters shall be standard approved units complete with controls.
- D. Pay all costs of installation, maintenance, operation and removal, and for fuel consumed.
- E. Provide connections to existing facilities, extend and supplement with temporary units as required to comply with requirements. Pay all costs of installation, maintenance, operation and removal.

2.04 TEMPORARY TELEPHONE SERVICE

- A. Arrange with local telephone service company.
- B. Pay all costs for installation, maintenance and removal, and service charges.

2.05 TEMPORARY WATER

- A. Provide and pay for all required water for construction and consumptive purposes.
- B. CONTRACTOR may utilize existing on-site water supply system for water needed for construction purposes. However, all water used shall be coordinated with the utility company. A temporary meter and backflow prevention device may be required.
- C. Temporary potable water piping shall be chlorinated prior to use to remove bacteriological contaminants.

2.06 TEMPORARY SANITARY FACILITIES

- A. Provide sanitary facilities in compliance with laws and regulations.
- B. Service, clean and maintain facilities and enclosures.

2.07 EROSION AND PROPERTY CONTROL

- A. Flow of drains and sewers maintained: Adequate provisions shall be made for the flow of sewers, drains and water courses encountered during construction, and the lines and structures which may have been disturbed shall be immediately restored to their original condition at the expense of the CONTRACTOR.
- B. Property Protection: Trees, grass, fences, signboards, poles and all other property shall be protected unless their removal is authorized; and any property damage shall be satisfactorily restored by the CONTRACTOR and at the expense of the CONTRACTOR.

- C. Provide all means necessary for prevention, control and abatement of erosion, siltation and water pollution resulting from construction until final acceptance by OWNER. Provide for mulching, sodding, sandbagging, berms, slope drains, sedimentation structures, or other devices necessary to meet county, state and federal regulation.

2.08 CLEANING DURING CONSTRUCTION

- A. Control accumulation of waste materials and rubbish; periodically dispose of off-site.
- B. Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

2.09 CHEMICALS, HAZARDOUS WASTES, AND PETROLEUM PRODUCTS

- A. All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with manufacturer's instructions or government regulations as applicable. The CONTRACTOR shall legally dispose of and clean the project site of all chemicals, hazardous wastes, and petroleum products placed or used on the site by the CONTRACTOR.

PART 3 EXECUTION

3.01 REMOVAL

- A. Completely remove temporary materials and equipment when their use is no longer required as determined by the ENGINEER.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.
- C. Restore permanent facilities used for temporary services to specified condition.

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Unless otherwise specified in the Contract Documents, the cost of temporary utilities and control shall be included in the various lump sum and unit prices in the contract.

END OF SECTION 01510

**SECTION 01600
MATERIAL AND EQUIPMENT**

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This section provides general guidelines for products provided, including their transportation and handling, storage and protection, options, substitutions and systems demonstration.

1.02 SUBSTITUTIONS

- A. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- B. Request constitutes a representation that CONTRACTOR:
 - 1. Has investigated proposed product and determined that it meets or exceeds, in all aspects, specified product.
 - 2. Will provide the same warranty for substitution as for specified product.
 - 3. Will coordinate installation and make other changes which may be required for work to be complete in all respects.
 - 4. Waives claims for additional costs which may subsequently become apparent.
- C. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.
- D. ENGINEER will determine acceptability of proposed substitution, and will notify CONTRACTOR of acceptance or rejection in writing within a reasonable time.

PART 2 PRODUCTS

- 2.01** Only new materials and equipment shall be incorporated in the work. All material and equipment furnished by CONTRACTOR shall be subject to inspection and approved by ENGINEER.
- 2.02** Comply with specifications and referenced standards as minimum requirements.
- 2.03** Components required to be supplied in quantity within a specification section shall be the same, and shall be interchangeable.
- 2.04** Products specified by reference standards or by description only: Any product meeting those standards.
- 2.05** Products specified by naming one or more manufacturers with a provision for substitutions: Submit a request for substitution for any manufacturer not specifically named.

PART 3 EXECUTION

3.01 TRANSPORTATION AND HANDLING

- A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

3.02 STORAGE AND PROTECTION

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with weather-tight enclosure as recommended by manufacturer. Provide ventilation to avoid condensation.
- C. Store loose granular materials on solid surfaces in a well-drained area. Prevent mixing with foreign matter.
- D. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.
- E. Materials, which in the opinion of the ENGINEER, have become so damaged as to be unfit for the use intended or specified shall be removed from the site of the work. CONTRACTOR shall receive no compensation for the damaged material or its removal.

3.03 SYSTEMS DEMONSTRATION

- A. Prior to final inspection, demonstrate operation of each system to ENGINEER and OWNER.
- B. Instruct OWNER's personnel in operation, adjustment, and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. The cost of the work in this section shall be included in all the various pay items or work items described in the schedule and no separate payment will be made, unless a separate pay item is established in the Contract Documents.

END OF SECTION 01600

**SECTION 01675
PRE-CONSTRUCTION VIDEO RECORD
(FOR ABOVE GROUND FACILITIES)**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements for pre-construction color audio-video tape.

1.02 SCOPE

- A. Prior to commencing work, take a continuous color audio-video tape recording along entire length of Project to serve as a record of pre-construction conditions for the above ground facilities.

1.03 APPROVAL

- A. NO CONSTRUCTION SHALL BEGIN prior to submittal of tapes covering construction area by CONTRACTOR. ENGINEER shall have authority to reject all or any portion of a videotape not conforming to specifications and order that it be redone at no additional charge. CONTRACTOR shall reschedule unacceptable coverage within five days after being notified. All tapes and written records shall become property of the OWNER.

PART 2 PRODUCTS

2.01 AUDIO-VIDEO TAPES

- A. Audio-video tapes shall be new. The tapes shall be high grade, one-half inch high energy, extended still frame capable, a VHS, color video cassette for a color video cassette recorder.

PART 3 EXECUTION

3.01 EQUIPMENT

- A. Furnish all equipment, accessories, materials and labor to perform this service. Audio-video system shall reproduce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls or any other form of imperfection. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume, clarity and be free from distortion and interruptions.

3.02 RECORDED INFORMATION - AUDIO

- A. Each tape shall begin with current date, project name and OWNER and followed by general location, i.e., name of street, house address, viewing side and direction of progress. Recording shall contain the narrative commentary of electrographer, recorded simultaneously with their fixed elevation video record of the zone of influence of construction.

3.03 RECORDED INFORMATION - VIDEO

- A. All video recordings must display the date and time of recording. Date information shall contain the month, day and year. Time information shall contain the hour and minutes. Additional information shall be displayed periodically. Such information shall include, but not be limited to, project name and number, name of street, house address, direction of travel and the viewing side. This transparent information shall appear on the extreme upper left hand third of the screen.

3.04 LIGHTING

- A. Perform all taping during times of good visibility. No taping shall be done during precipitation, mist or fog.

3.05 SPEED OF TRAVEL

- A. Rate of speed in the general direction of travel of the vehicle used during taping shall not exceed 75 feet per minute. Planning, zoom-in and zoom-out rates shall be sufficiently controlled to maintain a clear view of the object.

3.06 AREA OF COVERAGE

- A. Tape coverage shall include all surface features located within the zone of influence of construction supported by appropriate audio coverage. Such coverage shall include, but not be limited to, existing driveways, sidewalks, curbs, pavements, ditches, mailboxes, landscaping, culverts, fences, signs, headwalls and trees that are contiguous or tree limbs that overhang onto the area of proposed construction activity.

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Unless otherwise specified in the Contract Documents, the cost of the pre-construction video shall be included in the various lump sum and unit prices in the contract.

END OF SECTION 01675

**SECTION 01700
CONTRACT CLOSE-OUT**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Requirements and procedures for Contract Closeout.

1.02 CLOSE-OUT PROCEDURES

- A. Comply with procedures stated in General Conditions of the contract for issuance of Certificate of Substantial Completion.
- B. When CONTRACTOR considers work has reached final completion, submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for ENGINEER's inspection.
- C. In addition to submittals required by the conditions of the contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted contract sum, previous payments, and sum remaining due.
- D. When ENGINEER finds the work is acceptable for final acceptance, close-out documents shall be submitted.

1.03 FINAL CLEANING

- A. Execute prior to final inspections.
- B. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition. Clean or replace filters of mechanical equipment. Clean roofs, gutters, downspouts, and drainage systems.
- C. Clean site, sweep paved areas, rake clean other surfaces.
- D. Remove waste and surplus materials, rubbish, and construction facilities from the project and from the site.

1.04 PROJECT RECORD DOCUMENTS

- A. Store documents separate from those used for construction.
- B. Keep documents current; do not permanently conceal any work until required information has been recorded.
- C. At Contract close-out, submit documents with transmittal letter containing date, project title, CONTRACTOR's name and address, list of documents, and signature of CONTRACTOR.

1.05 WARRANTIES AND BONDS

- A. Provide duplicate, notarized copies. Execute CONTRACTOR's submittals and assemble documents executed by subcontractors, suppliers, and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.
- B. Submit material prior to final application for payment. For equipment put into use with OWNER's permission during construction, submit within 30 days after first operation. For items of work delayed materially beyond date of substantial completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.06 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, and maintenance materials in quantities specified in each section, in addition to that used for construction of work. Delivery to OWNER and obtain receipt prior to final payment.

1.07 EVIDENCE OF PAYMENT AND RELEASE OF LIENS

- A. Submit complete and legally effective releases or waivers of all liens filed in connection with the work in compliance with Contract Documents.

1.08 FINAL APPLICATION FOR PAYMENT

- A. Submit final application for payment in accordance with procedures and requirements stated in the Contract Conditions.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Unless otherwise specified in the Contract Documents, the cost of complying with this section of the specifications shall be included in the various lump sum and unit prices in the contract.

END OF SECTION 01700

**SECTION 02703
TRENCHING AND BACKFILLING FOR PIPING**

PART 1 GENERAL

1.01 SCOPE

- A. The work specified in this section consists of the excavation, bedding, and backfilling of trenches for water main, storm sewer, sanitary sewer, force main, irrigation lines, and utility lines. Also included is the excavation and backfilling of pertinent structures, such as manholes, inlets, pump stations, etc.

1.02 REFERENCES

- A. Referenced standards or specifications such as ASTM, AASHTO, or AWWA, shall be the latest edition.
- B. Stantec Specifications Sections:

02817 CLEARING AND GRUBBING
02820 EXCAVATION AND EMBANKMENT
- C. Attachments

Figure A (Section 02703)

1.03 SUPPLEMENTAL REQUIREMENTS

- A. The requirements in this section are the minimum for this project. Any additional requirements stated in the Contract Documents or otherwise specified by the manufacturer or any governmental agency in a permit, code, or ordinance shall take precedence over the requirements of this section.

1.04 SUBSURFACE CONDITIONS

- A. The CONTRACTOR shall be responsible for determining the subsurface conditions in areas where excavation can be anticipated. The type of soil, depth and thickness of rock and unsuitable materials, ground water table, and other factors that affect cost shall be evaluated prior to submitting a bid.
- B. The method used to determine subsurface conditions shall be the responsibility of the CONTRACTOR. Soil borings (if provided) only supply information in the exact location of each boring; therefore, on-site exploration of the subsurface is the CONTRACTOR's responsibility. All on-site exploration shall be scheduled with the OWNER and coordinated with jurisdictional agencies and utility companies.

1.05 PROTECTION

- A. With the exception of sheeted excavations for deep pipe installations, wet wells or other poured in place construction activity, all excavations or trenches shall be backfilled immediately after the work is completed. The CONTRACTOR shall plan the daily construction activity whereby trenches are backfilled and compacted in accordance with the accompanying specifications at the end of each work day. Should it be necessary for reasons other than standard construction procedures to leave an excavation open the CONTRACTOR shall isolate and protect the workers and the general public from the entire excavation by barricades, fences, signs, lights or other devices required by the contract documents and/or local agency codes.

- B. The CONTRACTOR shall comply with the applicable trench safety standards specifically set forth in Florida's Trench Safety Act.
- C. Pavement, sidewalk, driveway, curb and gutter, and other structures shall be protected from damage during excavation wherever possible and as directed in the Contract Documents.

PART 2 PRODUCTS

2.01 BEDDING MATERIALS

- A. Crushed stone bedding material: Crushed, washed, and graded in accordance with ASTM C-33, gradation 67.
- B. Sand bedding: Clean sand, free of clay, silt, debris, roots, vegetation, or rock larger than one-half inch in diameter.
- C. Clean 3/8 inch washed shell material.

2.02 BACKFILLING MATERIALS

- A. Select fill: Materials excavated from the limits of construction or imported that conform to AASHTO Standard M-145, Groups A-1 and A-3 and free of rocks or gravel, clay, silt, debris, roots and vegetation.
- B. Common fill: Material that conforms to AASHTO Standard M-145, Groups A-1, A-2, or A-3, free of rocks or gravel, clay, silt, debris, roots and vegetation.

PART 3 EXECUTION

3.01 PREPARATION

- A. Investigate existing conditions and identify line and grade stakes as applicable. Arrange for placement of materials required to minimize the duration of open trenches or excavated areas.
- B. Install well points or other approved methods of dewatering as required so that the discharged water complies with all pertinent ordinances, codes, permits, or requirements of the Contract Documents.
- C. Implement traffic control and protective devices as may be applicable.
- D. For pipe lines placed above the natural ground, embankment shall be placed and compacted to an elevation of at least two feet above the top of the pipe and to a width equal to four pipe diameters prior to trench excavation. The minimum side slopes shall be six feet (horizontal) to one foot (vertical).

3.02 CLEARING AND GRUBBING

- A. Prior to trench excavation, the existing surface that will be disturbed by the excavation operation shall be cleared and grubbed in accordance with WilsonMiller Specification Section 02817 CLEARING AND GRUBBING.

- B. The limits of clearing and grubbing for this section shall be as shown on the plans or as otherwise specified in the Contract Documents. Where the clearing limits are not shown or stated, the limits of clearing and grubbing shall be the smallest area that will facilitate the construction of work specified.

3.03 TRENCH WIDTH

- A. Trenches for pipe construction shall be excavated to a width that will provide enough working space next to the pipe and facilitate proper compaction of backfill material around the haunches of the pipe. All such trench excavation shall comply with the manufacturer's recommendations for the type of pipe used.
- B. Excavation for structures such as manholes, inlets, pump stations, etc. shall be large enough to provide adequate working room. A minimum distance of two feet shall be provided between the outside edge of the structures and the side or wall of the excavation to allow for proper backfilling and compaction.

3.04. EXCAVATION

- A. All trenches shall be excavated by open cut unless otherwise indicated in the Contract Documents.
- B. The length of the open cut trench that is excavated ahead of the pipe laying operation shall not exceed half of the normal daily production length. The excavation and pipe laying operation shall be coordinated so that all pipe laid in one day is fully backfilled except for the last length of pipe in an unfinished run between structures.

3.05 ROCK EXCAVATION

- A. Where rock is encountered during the performance of work specified in this section, the rock shall be excavated in accordance with WilsonMiller Specifications Section 02820 EXCAVATION AND EMBANKMENT.

3.06 UNSUITABLE MATERIALS

- A. Where materials unsuitable for backfilling are encountered during trench excavation, these materials shall be separated from the suitable materials and disposed of off-site or utilized on-site in embankment areas as authorized by the OWNER's Representative.

3.07 REPLACEMENT MATERIAL

- A. Where unsuitable material including rock larger than six inches is excavated and hauled off-site, replacement material shall be acquired from on-site excavation as provided by the Contract Documents or as authorized by the OWNER. Where replacement material is not available from the site, the CONTRACTOR shall furnish fill material from an off-site borrow source. Only materials that conform to Article 2.02 of this section may be used for backfilling operations unless otherwise specified in the Contract Documents or authorized in writing by the OWNER's Representative.

3.08 PREPARATION OF TRENCH BOTTOM

- A. Where rock is encountered at the bottom of the trench, the trench shall be undercut to a depth of at least six inches below the bottom of the pipe to allow for a bedding cushion above the rock.

- B. Where muck, roots or other organic materials are encountered at the bottom of the trench, the trench shall be undercut to remove the unsuitable material to the satisfaction of the OWNER's Representative.
- C. The CONTRACTOR shall dewater the excavation operation as required to provide a dry trench bottom. Prior to beginning work CONTRACTOR shall prepare their dewatering plan and obtain all necessary permits.

3.09 BEDDING

- A. Where the exposed material at the bottom of the trench meets the requirements of Article 2.01 this section, the existing material may be used as bedding, provided it is compacted.
- B. Where the bottom of the trench has been undercut to remove rock or unsuitable material, the bottom shall be brought up to grade by placing and compacting bedding materials conforming to the requirements of Article 2.01 this section.
- C. In exceptionally wet conditions, the CONTRACTOR may request permission from the OWNER's representative to lay the pipe in water. If that request is authorized, the CONTRACTOR shall undercut the existing bottom a minimum of six inches and replace with "bedding material" conforming to Article 2.01A or 2.01C this section. This bedding material shall be tamped and consolidated to provide a solid and unyielding base for the pipe. During this operation, the CONTRACTOR shall continue the dewatering process to facilitate adequate installation of the pipe or structure and to permit observation of the process by the OWNER's representative. The additional undercut excavation, crushed stone bedding, and other associated costs shall be at the CONTRACTOR's expense and no extra compensation will be allowed.

3.10 BACKFILLING

- A. Backfilling of pipe trenches shall be done in three stages as follows:
 - 1. First Stage: Material above the bedding and beneath the haunches compacted in six-inch layers.
 - 2. Second Stage: Material along the sides of the pipe up to at least one foot above the top of the pipe compacted in six-inch layers.
 - 3. Third Stage: Material above the second stage up to the bottom of the subgrade or the finished surface as applicable compacted in 12-inch layers.
- B. Backfilling of structures shall be done in 12- inch compacted layers up to the top of the completed or partially completed structure.
- C. Materials used for backfilling shall comply with the requirements of Article 2.02 this section or as otherwise authorized in writing by the OWNER's representative. For backfilling of pipe, "Select Fill" shall be used for the first and second stages. "Common Fill" shall be used for the third stage of pipe backfill and for backfilling structures.

3.11 COMPACTION

- A. The compaction requirements for backfilling pipe trenches and around structures are listed below under the following categories. These requirements are the minimum percentages of the maximum density determined by the "Modified Proctor Density" (ASTM D-1557).
1. Under and adjacent (within ten feet) to pavement shall be 95 percent except within three feet of bottom of subbase grade it shall be 98 percent.
 2. Not under pavement: Any area outside the 10 feet referred to above shall be 95% for all stages.
- These requirements are the minimum percentages of the maximum density determined by the "Modified Proctor Density" (ASTM D-1557).
3. Under and adjacent (within ten feet) to structures shall be 95 percent except within three feet of finished grade it shall be 98 percent.
- B. The CONTRACTOR shall add water or dry out the material used for backfilling until the moisture content is within two percent of the optimum moisture required to achieve the maximum compaction.
- C. A density test shall be taken for each 300 lineal foot section of trench or part thereof for each layer.
- D. A density test shall be taken for every other layer for each structure.

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Unless otherwise specified in the Contract Documents, the cost of trenching and backfilling shall be included in the various lump sum and unit prices in the contract.

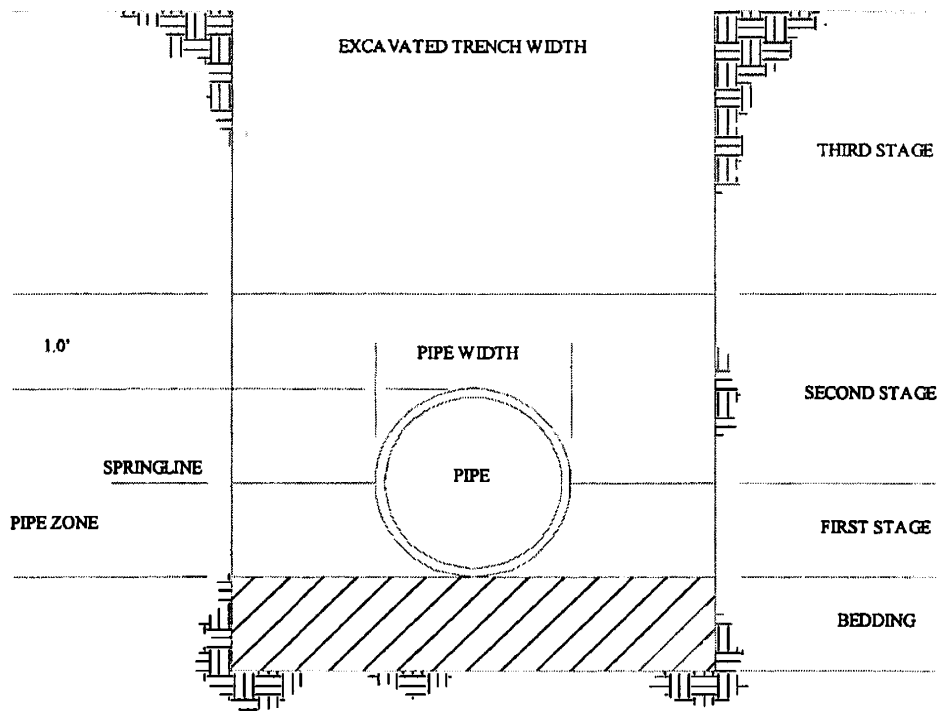


FIGURE A

N.T.S.

END OF SECTION 02703

**SECTION 02704
TEMPORARY TRAFFIC CONTROL**

PART 1 GENERAL

1.01 SCOPE

- A. This section specifies temporary traffic control for the project as shown on the plans and/or called for in the specifications. In general, all temporary traffic control shall comply with the latest editions of the Florida Department of Transportation's Standard Specifications for Road and Bridge Construction, herein referred to as FDOTSPEC, the Florida Department of Transportation's Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System, Index 600, and the Federal Highway Administration's Manual on Uniform Traffic Control Devices, Part 6, Temporary Traffic Control.
- B. The main objective of this section is to provide safe and efficient movement of vehicles, bicyclists and pedestrians through or around the work zone, and protect workers and equipment from the traveling public.

The secondary objective of this section is to provide efficient completion of the construction or maintenance activity causing the interruption of normal roadway use, and protection of the work in progress.

1.02 SPECIFICATIONS AND STANDARDS

- A. The work specified in this section shall be in accordance with the documents identified in Article 1.01.A. and the requirements of the authority having jurisdiction over the operation and maintenance of the roadway, bicycle and/or pedestrian path.

PART 2 PRODUCTS

2.01 MATERIALS

- A. All materials used for temporary traffic control, including but not limited to signs, signals, pavement markings, channelizing devices, warning lights and barriers shall meet the requirements of the documents identified in Articles 1.01.A. and 1.02.A.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. All work required for temporary traffic control shall be executed in accordance with the requirements of the documents identified in Articles 1.01.A. and 1.02.A.

3.02 SPECIFIC REQUIREMENTS

- A. In addition to the CONTRACTOR providing a worksite traffic supervisor in accordance with FDOTSPEC Section 102-3.2, the Traffic Control Plan (TCP) shall be installed, maintained and removed under the direct supervision of an individual who is certified by a Florida Department of Transportation (FDOT) approved training agency, which meets the FDOT's maintenance of traffic training requirement for intermediate or advanced training.
- B. The CONTRACTOR will maintain the existing number of lanes of traffic in each direction at all times by using existing or constructing temporary pavement. There shall be no lane closures or road closures without the prior written approval of the ENGINEER and the authority having jurisdiction over the operation and maintenance of the roadway.
- C. The CONTRACTOR shall not provide detours to re-route vehicle, bicycle and/or pedestrian traffic around the work zone without prior written approval from the ENGINEER and the authority having jurisdiction over the operation and maintenance of the roadways.
- D. If approved by the ENGINEER and the authority having jurisdiction over the operation and maintenance of the roadway, the CONTRACTOR may concurrently construct portions of the work from different phases.
- E. If the CONTRACTOR cannot maintain the existing access to a current residence or business, then the CONTRACTOR shall provide an alternate access, as approved by the ENGINEER.
- F. All surfaces used to maintain traffic through the work zone shall be paved.
- G. Any alterations to the approved traffic patterns must be reviewed and approved by the ENGINEER prior to implementation, unless the alterations are required to avoid eminent danger to the public or the workers present within the approved work zone.
- H. All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time, temporary traffic control devices that are no longer appropriate shall be removed or covered.

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Payment for temporary traffic control shall be on a lump sum basis in accordance with the accepted proposal. Such payment shall constitute full compensation for furnishing all labor, materials, and equipment necessary to complete the construction in accordance with the plans and specifications.

END OF SECTION 02704

**SECTION 02705
RESTORATION AND GENERAL REQUIREMENTS**

PART 1 GENERAL

1.01 SCOPE

- A. The work specified in this section consists of restoring existing surfaces or any improvements such as but not limited to pavement, curb and gutter, sidewalk, structures, signs, or landscaping damaged during construction.

1.02 SPECIFICATIONS AND STANDARDS REFERENCE

- A. Any reference to a supplementary specification or standard such as ASTM, AWWA, AASHTO, is intended to be a reference to the latest edition of that specification or standard.
- B. All references to "FDOTSPEC" shall mean the latest edition of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction."
- C. Stantec Specifications Section:

02703 TRENCHING AND BACKFILLING FOR PIPING

PART 2 PRODUCTS

2.01 MATERIALS

- A. Flexible Pavement: Comply with requirements of Sections 901, 902, 911, 913, 914, 916, and 917 of the FDOTSPEC.
- B. Concrete Pavement, Driveway, Sidewalk, Curb and Gutter: Comply with requirements of Sections 901, 902, 921, 923, 924, and 925 of the FDOTSPEC.
- C. Grassing: Comply with requirements of Section 981, 982, and 983 of the FDOTSPEC.

PART 3 EXECUTION

3.01 GENERAL

- A. Existing property damaged during construction shall be restored to a condition at least equal to the original condition of the property, unless otherwise specified in the Contract Documents.
- B. Existing roadway or drainage improvements damaged within a roadway or drainage right-of-way or easement shall be restored in accordance with the requirements of the state, county, and city agencies having jurisdiction thereof.

3.02 UNDERGROUND FACILITIES

- A. Existing underground utilities and drainage systems damaged during construction shall be immediately repaired to the specifications of the owner of the damaged system. Where the utility owner elects to make said repairs under their direction, the CONTRACTOR shall pay for such repair costs directly.
- B. Where damage to existing underground utilities is anticipated due to unavoidable conflicts, the CONTRACTOR shall construct their work so as to cause the least amount of interruption of service as possible.
- C. Where construction changes the land surface elevation and existing valve boxes are present, the valve box will be extended or reduced by means of new extension pieces of proper length for the finished grade.

3.03 TRENCHING AND BACKFILLING

- A. Any trenching and backfilling required to satisfy the requirements of this section shall be in accordance with Section 02703, TRENCHING AND BACKFILLING FOR PIPING.

3.04 PAVEMENT CUTS

- A. On dead end streets, collector streets, and high traffic streets, trenching and pipe laying shall be performed in such a manner that at least one-way traffic is maintained at all times.
- B. All trench lines across existing pavements, driveways, sidewalks, curbs, etc. shall be saw cut in straight parallel lines prior to trench excavation.
- C. CONTRACTOR shall exercise care to minimize amount of pavement, sidewalk, driveways, and curbing to be removed.

3.05 CONCRETE PAVEMENT, CURB AND GUTTER, ETC.

- A. Concrete pavement, driveway, sidewalk, and curb and gutter damaged during construction shall be restored to the same dimensions as that removed or as specified in the Contract Documents. All such restoration shall be in accordance with the applicable Sections 345, 350, 520, 522, of FDOTSPEC.
- B. Prior to placing concrete, the subgrade shall be compacted to at least 98% of the maximum density determined by the "Modified Proctor Density" (ASTM D-1557).

3.06 FLEXIBLE PAVEMENT

- A. Stabilized subgrade damaged during construction shall be restored in accordance with Section 160 of FDOTSPEC. The restored stabilized subgrade shall have a minimum bearing value of LBR-40, and be compacted to at least 98% of the maximum density determined by the "Modified Proctor Density" (ASTM D-1557).

- B. Soil cement or shell base damaged during construction shall be restored in accordance with Section 200 of FDOTSPEC. The minimum density of the restored base shall be 98% of the maximum density determined by the "Modified Proctor Density" (ASTM D-1557). After completion of the base course, a bituminous prime coat shall be applied in accordance with Section 300 of FDOTSPEC when applicable prior to placement of asphalt surface course.
- C. Asphalt surfaces damaged during construction shall be replaced with a similar surface in accordance with Section 330 of FDOTSPEC. The material used shall be the same type and the thickness of that damaged, except that the minimum thickness shall be one inch. In the case of multiple layers, each layer or course of the damaged asphalt surface shall be reconstructed to duplicate the original.

3.07 LANDSCAPING AND MISCELLANEOUS

- A. Trees and bushes damaged during construction shall be removed and replaced with equal size and type by the CONTRACTOR at their expense unless otherwise specified in the Contract Documents.
- B. Grassed areas damaged during construction shall be repaired with the same type sod unless otherwise specified in the Contract Documents.
- C. Sodding and grassing and mulching operations shall begin within a maximum of three (3) weeks after utility installation, except in cases of front and back slopes which shall be done immediately following installation completion. Any yards or part of right-of-way in front of private property, that has a grass mat, shall be re-sod with like sod. CONTRACTOR shall maintain disturbed areas until acceptable vegetation is re-established.
- D. Areas without established grass mats in front of vacant lands shall be restored by seeding and mulching. The grass mat shall be restored to the required design or finished grade to permit proper drainage.
- E. Unimproved areas such as an open field or lot having its surface disturbed during construction shall be graded to duplicate the existing conditions and seeded and mulched unless otherwise specified in the Contract Documents.
- F. Any damage to an existing irrigation system caused by the construction operations shall be repaired by the CONTRACTOR prior to the installation of sod, seed, or other landscaping unless otherwise specified in the Contract Documents.
- G. Mailboxes, railroad ties, or any other miscellaneous items damaged during construction shall be repaired to the satisfaction of the OWNER's representative unless otherwise specified in the Contract Documents.

3.08 DENSITY TESTS

- A. Density tests shall be performed in accordance with 3.08B and elsewhere in the specifications as may apply. The CONTRACTOR shall pay for all tests related to restoration work.

- B. Field density tests shall be required for each stage of fill, stabilized subgrade, soil cement base, and asphalt surface in accordance with the frequency listed below unless otherwise authorized by the OWNER's representative.
- * Transverse Trench Crossing - one/location/stage
 - * Longitudinal Trench - one/300 LF/stage
 - * Pavement Repair - one/1000 SY/stage
- C. Concrete shall be tested for slump, air content, and compressive strength every 50 cubic yards for continuous pours. For smaller volume work, the same tests shall be taken for each separate pour. A minimum of four (4) sample cylinders shall be made when testing for compressive strength.

3.09 GENERAL REQUIREMENTS

- A. Maintenance of Service - CONTRACTOR shall provide facilities and be responsible for protection of all structures, buildings and utilities, underground, on the surface, or above ground, against trenching, dewatering or any other activity connected with work covered by this modifications of existing utilities, CONTRACTOR shall provide for maintaining continuous water electric, telephone, gas, sewage and other utilities, to all present customers of such utilities unless approval is obtained in writing from the utility company or OWNER for the interruption of such services.
- B. Existing Facilities - Underground structures shown on the plans are according to the best available information, but it shall be the responsibility of the CONTRACTOR to acquaint himself with the exact location and to avoid conflict with all existing facilities. Where underground structures are damaged, they shall be immediately repaired to the specifications of the owner of the utility. If the owner of the utility elects to make such repairs with their own forces, CONTRACTOR shall make arrangements as to protect the OWNER from all damages. Where such conflicts are unavoidable, every effort shall be made to construct the work so as to cause as little interference as possible with services rendered by the structure disturbed.
- C. Utility Installation Permits - CONTRACTOR shall obtain necessary permits for construction across public and private property, streets, railroads, telephone lines, power lines, etc. CONTRACTOR shall abide by all rules, regulations and requirements of the owner of such property in regard to construction under this contract, including giving of notices, provisions for inspection and employment of such methods of construction as may be required. Costs of any permits shall be incidental to construction and reflected in unit prices bid.
- D. Work in State Rights-of-Way - Construction in state rights-of-way shall comply with the State of Florida Department of Transportation (FDOT) Utility Accommodation Guide.
- E. Work in County/City Rights-of-Way - Construction in county/city rights-of-way shall comply with the utility accommodation manual for the agency having jurisdiction.

- F. Clearing of Excavation Corridor - Only items necessary to provide adequate work space including space for hubs, batter boards, and equipment shall be removed within the right-of-way, easement, or designated construction corridor. Trees, shrubbery, poles, mailboxes, and other items not to be removed shall be protected from damage during construction. When necessary to cut tree roots and branches, such cutting shall be performed with saws in a neat and workmanlike manner.

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. There shall be no separate payment for any work defined in this section. The cost of any such restoration work shall be included in the various work items that necessitate the restoration unless otherwise specified in the Contract Documents. Any reference to unit price payment in the FDOTSPEC shall not be applicable.

END OF SECTION 02705

**SECTION 02707
STORM SEWERS, PIPE AND STRUCTURES**

PART 1 GENERAL

1.01 SCOPE

- A. Work specified in this section consists of furnishing and installing a storm drainage system with all the component parts specified in the Contract Documents. Included are storm sewers, pipe culverts, manholes, crossing boxes, inlets, catch basins, pipe end treatments, restoration, and other similar items defined in this section.

1.02 SPECIFICATION AND STANDARDS REFERENCE

- A. Where supplementary specifications or standards such as ASTM, AWWA, AASHTO, etc., are referenced, such references shall be the latest edition.
- B. Stantec Specifications Sections:

02703 TRENCHING AND BACKFILLING FOR PIPING
02705 RESTORATION AND GENERAL REQUIREMENTS
- C. All references to "FDOTSPEC" shall mean the latest edition of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction".
- D. All references to "FDOT INDEX BOOK" shall mean the latest edition of the "FDOT Roadway and Traffic Design Standards".

PART 2 PRODUCTS

2.01 CORRUGATED ALUMINUM ALLOY CULVERTS

- A. Aluminum alloy culvert pipe shall meet requirements of Section 945, FDOTSPEC. Where bituminous-coated aluminum pipe is specified, bituminous coating shall meet requirements of AASHTO M 190, for Type A, (Fully Bituminous Coated).

2.02 CORRUGATED STEEL PIPE AND PIPE ARCH

- A. Corrugated steel pipe, including round culvert pipe, pipe arch and under-drain, and coupling bands for each type, shall conform to requirements of Section 943, FDOTSPEC. Corrugated steel pipe shall be bituminous coated, both sides, in accordance with requirements of AASHTO M 190, Type A, (Fully Bituminous Coated).

2.03 REINFORCED CONCRETE PIPE

- A. Reinforced concrete pipe materials shall conform to Section 941, FDOTSPEC.

- B. Reinforced Concrete Pipe (Round) - Unless otherwise specified, reinforced concrete pipe shall meet the requirements of ASTM Designation C 76, "Standard Specification for Reinforced Concrete Pipe", Class III, Wall Thickness B. Lifting holes will not be permitted in pipe. CONTRACTOR shall only use pipe joint lubricants supplied by or recommended by pipe manufacturer. Lubricant shall be water-soluble, non-toxic, and inhibitor to bacterial growth, and shall be non-detrimental to the elastomeric seal and pipe. Mineral oil, petroleum jelly, hydrogenated vegetable fat (i.e. Crisco(r), cooking oil, grease, etc.) shall not be used. Joints for round reinforced concrete pipe shall be made by use of "O-Ring", round synthetic rubber gaskets meeting the requirements of Sections 430-7 and 942-1, FDOTSPECS. An 18-inch wide Mirafi wrap shall be centered on each joint.
- C. Reinforced Concrete Pipe (Elliptical) - Elliptical concrete pipe shall meet the requirements of ASTM C 507, except exceptions and modifications to ASTM C 76, as specified in Section 941-1.3, FDOTSPECS shall apply also to elliptical pipe. Standard elliptical pipe shall meet requirements of Table I for Class HE-III and special elliptical pipe shall meet requirements of Table I for Class HE-IV. Lifting holes will not be permitted in pipe. Joints for elliptical concrete pipe shall be designed in accordance with ASTM C443 and AASHTO M198 and provide a rubber gasketed watertight connection. For pipe sizes greater than 58" X 91" use same joint as arch pipe. An 18-inch wide Mirafi wrap shall be centered on each joint.
- D. Reinforced Concrete Pipe (Arch Pipe) - Arch concrete pipe shall meet the requirements of ASTM C 506, except exceptions and modifications to ASTM C 76, as specified in 941.1.3., FDOTSPECS shall apply where applicable to arch pipe. Lifting holes will not be permitted in pipe. Joints for arch concrete pipe - field joints for arch concrete pipe shall be made with a pre-formed plastic gasket material. Gasket material shall meet the requirements of Section 942-2, FDOTSPECS. Material shall be "Ram Nek" as manufactured by K.T. Snyder Co. or approved equal. An 18-inch wide Mirafi wrap shall be centered on each joint.

2.04 CORRUGATED POLYETHYLENE PIPE

- A. Corrugated polyethylene pipe shall meet the requirements of AASHTO M294 specification except size range shall be expanded through 36-inch diameter. Minimum pipe values shall be as follows:

DIAMETER	INTERIOR	PIPE STIFFNESS	N FACTOR
12"	Smooth	45 psi	.12
15"	Smooth	42 psi	.12
18"	Smooth	40 psi	.12
24"	Smooth	34 psi	.12
30"	Smooth	28 psi	.12
36"	Smooth	22 psi	.12

2.05 MORTAR, BRICK, AND REINFORCING BARS

- A. Mortar used for constructing and plastering manholes, catch basins, drop inlets and junction boxes shall meet the requirements of ASTM Specification Serial Designation C 270. CONTRACTOR shall use either a Portland cement-hydrated lime mixture cement or a Portland cement mixture with masonry cement added for

improved workability. However, the same materials must be used throughout the project. Mortar materials shall be proportioned by volume and shall be as follows:

One (1) part Type I Portland Cement - ASTM C-150

Three (3) parts Aggregate (sand) - ASTM C-144

Addition of masonry cement, ASTM C-91 will be permitted to improve workability of mortar.

- B. Brick used in construction of manholes, catch basins, drop inlets and junction boxes shall be Portland cement concrete meeting the requirements of ASTM Serial Designation C-55, Grade P II.
- C. All bars shall be deformed Reinforcing Steel and shall meet the requirements of Specifications for Billet-Steel Bars for Concrete Reinforcement (ASTM A-15), and to Specifications for Deformation on Deformed Steel Bars (ASTM A-305) for concrete reinforcement. All bars shall be lapped and placed in accordance with ACI Requirements and Specifications.

2.06 STRUCTURES

- A. Structures shall be precast or cast in place. Work specified in this section shall consist of furnishing all concrete, reinforcing steel, ties, forms, labor, materials, and placing of all embedded pipe sleeves, fixtures, joist anchors, etc., necessary to complete the work shown on the plans and specified herein, all in accordance with the Southern Building Code and the American Concrete Institute Building Code Requirements for Reinforced Concrete (ACI 318). All concrete shall develop 3,000 psi compressive strength in 28 days. Coarse aggregate shall be no smaller than 1/2-inch in diameter.

2.07 IRON CASTINGS

- A. Frames, covers and gratings shall be of the type and duty shown on the plans. Iron castings shall conform to ASTM A-48, Class 30, gray cast iron. All castings shall be true to pattern in form and dimension, free from faults or other defects. Bearing surfaces between cast frames, cover and grates shall be machined fitted together and match-marked to prevent rocking. All covers shall have a concealed type pick-hole (non-penetrating), and shall have the words "storm sewer" cast thereon.

2.08 CROSSING BOXES (CONFLICT BOXES)

- A. Conflict boxes shall be constructed at the location and depth indicated on the plans and in accordance with details shown.

PART 3 EXECUTION

3.01 GENERAL

- A. Pipe and structures shall be constructed at the location and elevations specified on the plans and in accordance with the details specified in the Contract Documents.

3.02 TRENCHING AND BACKFILLING

- A. Excavation, bedding, and backfilling of trenches during the construction of a storm drainage system shall comply with the requirements of WilsonMiller Specifications Section 02703, TRENCHING AND BACKFILLING.

3.03 MATERIAL HANDLING

- A. Pipe and accessories shall be loaded and unloaded by lifting with hoists or skidding in a manner that will avoid shock or damage. Under no circumstances shall such materials be dropped. Pipe handled on skidways shall not be skidded or rolled against pipe already on the ground. In distributing material at the site of the work, each piece shall be off-loaded near the place where it is to be laid in the trench.

3.04 PIPE LAYING

- A. In general, corrugated metal pipe shall be installed in accordance with the Handbook for Steel Drainage and Highway Construction Products, published by the American Iron and Steel Institute. In general, concrete pipe shall be installed in accordance with the Concrete Pipe Installation Manual, published by the American Concrete Pipe Association.
- B. Laying of pipe in finished trenches shall be commenced at the lowest point, and shall progress up-grade. All pipe shall be carefully laid, true to the lines and grades given, with hubs up-grade and tongue end fully entered into the hub. When pipe with quadrant reinforcement, or circular pipe with elliptical reinforcement is used, pipe shall be installed in a position such that manufacturer's marks designating "top" and "bottom" of the pipe shall not be more than five degrees from the vertical plane through the longitudinal axis of the pipe. Any pipe that is not in true alignment or which shows any settlement after laying shall be taken up and re-laid without additional compensation. Pipe and joints shall be kept clean at all times.

3.05 SAND CEMENT RIP RAP

- A. Where the plans and specifications call for sand cement construction, bags shall be made of burlap. Paper bags will not be permitted.

3.06 PIPE END TREATMENTS

- A. Where storm drains connect to a lake, location of the headwall or end section shown on the plans shall be adjusted to fit the slope of the lake bank. Length of pipe at each end treatment shall be adjusted accordingly, and the quantity of pipe paid for shall be the actual length installed.
- B. If mitered ends are called for on the plans, mitered end section shall be constructed so that the top of the pipe end will match and intersect the designed slope of the lake bank, and the concrete collar slope shall conform to the mitered end detail.

- C. Storm drainage CONTRACTOR and lake excavation CONTRACTOR shall coordinate the location and installation of the headwall or mitered end section to be constructed at the lake bank. All "field adjustments" to end treatment location or elevation shall be approved by the ENGINEER of Record prior to construction.

3.07 JOINING ARCH CONCRETE PIPE

- A. Joint Design - CONTRACTOR shall furnish the ENGINEER with details in regard to configuration of the joint and the amount of gasket material required to affect a satisfactory seal. Joint surfaces which are to be in contact with the gasket material shall not be brushed or wiped with a cement slurry. Minor voids may be filled with cement slurry provided that all excess cement slurry is removed from the joint surface at the point of manufacture.
- B. Primer - Prior to application of gasket material, a primer of the type recommended by the manufacturer of the gasket material shall be applied to all joint surfaces which are to be in contact with the gasket material. The surface to be primed shall be thoroughly cleaned and dry when primer is applied.
- C. Application of Gasket - Prior to placing a section of pipe in the trench, gasket material shall be applied to form a continuous gasket around the entire circumference of the leading edge of the tongue. The paper wrapper on the exterior surface of the gasket materials shall be left in place until immediately prior to joining of sections. The gasket material shall be checked to assure it is bonded to the joint surface, immediately prior to placing a joint in the trench. Plastic gasket material shall be applied only to surfaces which are dry. A hand heating device shall be kept at the job site to dry joint surfaces immediately before application of the plastic gasket material. When the atmospheric temperature is below 60°F, plastic joint seal gaskets shall either be stored in an area warmed to above 70°F, or artificially warmed to this temperature in a manner satisfactory to the ENGINEER.
- D. Installation of Arch Concrete Pipe - Handling of a section of pipe after the gasket material has been affixed shall be carefully controlled to avoid displacement of gaskets or contamination of gasket material with dirt or other foreign material. Any gasket displaced or contaminated in handling of the pipe shall be removed and repositioned or replaced as directed. Pipe shall be installed in a dry trench. The bottom of the trench shall be carefully shaped so as to minimize the need for realignment of sections of pipe after they are placed in the trench. Care shall be taken to properly align each section of pipe to the gaskets coming into contact. Realignment of a joint after the gaskets come into contact tends to reduce the effectiveness of the seal and shall be held to a minimum. When pipes are joined, the entire joint shall be filled with gasket material and there shall be evidence of squeeze-out of gasket material for the entire internal and external circumference of the joint. Excess material on the interior of the pipe shall be trimmed to provide a smooth interior surface. After the pipe is in its final position, joint shall be carefully examined to determine the gasket material is satisfactorily adhering to all surfaces of the joint and the entire joint is filled with gasket material. If a joint is defective, the leading section of pipe shall be removed and the joint resealed.

- E. In addition to the required gasketed joint, a filter fabric jacket shall be included. The filter fabric jacket shall conform to FDOT Miscellaneous Drainage Detail Index No. 280 Sheet 1.

3.08 INSTALLATION OF CORRUGATED POLYETHYLENE PIPE

- A. Pipe shall be joined by split corrugated couplings at least seven corrugations wide and exceeding soil tightness requirements of the AASHTO Standard Specifications for Highway Bridges Section 23 (2.23.2). Unless otherwise specified by the ENGINEER, a mastic type gasket shall be utilized.
- B. Pipe and accessories shall be unloaded by using skidways, hoists or dropping on non-paved areas, in a manner that does not damage the pipe.
- C. Pipe shall be installed in accordance with ASTM 2321 specifications.

3.09 PLACING OF CONCRETE FOR STRUCTURES

- A. Concrete shall be deposited in clean wet form as nearly as practicable in its final position to avoid segregation. Concrete placing shall be carried on at such a rate that the concrete is, at all times, plastic and flows readily into the spaces between the bars. Concreting shall be a continuous operation until the panel or section is completed. Walls and slabs shall be poured monolithically unless shown otherwise on the plans. All structural concrete shall be mechanically vibrated.
- B. No concrete shall be allowed a free fall of more than four feet or allowed to strike against a vertical or inclined surface or reinforcement above point of deposit. Placing by means of pumping may be allowed, contingent upon the adequacy of the equipment for this particular work. The operation of the pump shall be such that a continuous stream of concrete without air pockets is produced.
- C. Placing of concrete shall be so regulated the pressure caused by wet concrete shall not exceed that used in the design of the forms. After the concrete has taken its initial set, care shall be exercised to avoid jarring the forms or placing any strain on the ends of projecting reinforcement.
- D. Joints between the junction box and manhole walls and incoming and out-going pipes shall be sealed with Portland Cement Mortar to form a watertight joint. All pipes in manholes or catch basins shall be sawed off flush with the inside face of the structure and sawed ends of these pipes shall be grouted with Portland Cement Mortar to a smooth uniform covering with no steel exposed.

3.10 FINAL INSPECTION OF STORM WATER SYSTEM

- A. Each sewer, upon completion, or at such time as the ENGINEER may direct, is to be cleaned and inspected. All repairs or alterations shown necessary by these inspections shall be made; all broken or cracked pipe removed; all excessive infiltration or exfiltration corrected; all deposits in pipe and manholes removed; and the sewer left clean, true to line and grade and ready for use. Each section of pipe from manhole to manhole is to show a full circle of light from either end. Each manhole shall be to the specified form and size, to the proper depth and watertight.

3.11 ADJUSTING EXISTING STRUCTURES

- A. Existing manholes, catch basins, inlets, conflict boxes, monument boxes, etc., within the limits of the proposed work, that do not conform to the finished grade of the proposed pavement, or to the finished grade designated on the plans for such structures, shall be cut down or extended, and made to conform to the grade of the new pavement, or to the designated grade of the structure if outside of the proposed pavement area. The materials and construction methods for this work shall conform to the requirements specified above. Where manholes are to be raised, the adjustment may, at the CONTRACTOR's option, be made by the use of adjustable extension rings of the type which do not require the removal of the existing manhole frame. The extension device shall provide positive locking action and shall permit adjustment in height as well as diameter. The particular type of device used shall be submitted to the ENGINEER for review.

3.12 RESTORATION

- A. Existing surfaces or property improvements damaged during the construction of work specified in this section shall be repaired in accordance with the requirements of WilsonMiller Specifications Section 02705 RESTORATION AND GENERAL REQUIREMENTS.

PART 4 MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT

- A. The quantities of storm sewer and pipe culvert to be paid for under this section shall be the lengths of the various types and sizes of pipe satisfactorily completed according to the Contract Documents. The pay quantity shall be in linear feet measured along the centerline of the pipe with no deductions for manholes, inlets, crossing boxes, or catch basins.

For pipe other than the main line where the pipe connects to a manhole, inlet, conflict box, or catch basin, the measurement of the pipe shall extend to the center of the applicable structure.

Where a pipe terminates with a headwall, endwall, mitered end or other end treatment, the measurement of the pipe shall extend to the end of the pipe. This method also applies where pipe connects to a control structure, weir, or cast in place structures.

- B. The quantities for manholes, inlets, conflict boxes, and mitered end sections paid for under this section shall be the number of the various types and sizes satisfactorily completed according to the Contract Documents.
- C. The quantities of existing structure adjustment to be paid for under this section shall be the number of existing manholes, inlets, conflict boxes or other similar structure satisfactorily adjusted, unless otherwise specified.

4.02 BASIS OF PAYMENT

- A. The quantities, determined by the methods described above, shall be paid for at the contract unit prices established for each pay item. Such payment shall constitute full compensation for all work specified in this section including all labor, materials, equipment, and other incidental costs required to construct the work defined in this section.

- B. Unless otherwise specified in the Contract Documents, restoration work shall not be paid for separately. The cost of any such restoration work shall be included in the various work items that necessitate the restoration.

END OF SECTION 02707

**SECTION 02813
SEEDING, MULCHING, AND SODDING**

PART 1 GENERAL

1.01 DESCRIPTION

- A. Work specified in this section consists of the required sodding, grassing and mulching, or hydro-seeding/mulching in conformity with the lines and grades shown on the plans.

PART 2 PRODUCTS

2.01 SODDING

- A. The sod shall be Argentine Bahia and shall be well matted with grass roots. It shall be sufficiently thick to secure a dense stand of live grass with a minimum thickness of two inches. The sod shall be live, fresh and uninjured at the time of planting. It shall be shaded and kept moist from the time of digging until planting.
- B. Fertilizer to be used shall be a standard balanced fertilizer, such as 6-6-6, 8-8-8, 10-10-10, with 25 percent organic.

2.02 GRASSING AND MULCHING

A. Seed

- 1. Unless other types of seed are called for in the plans or have been approved as an acceptable blend, permanent type grass seed shall be a mixture of 20 parts of Bermuda seed and 80 parts of Pensacola Bahia seed. Quick-growing type grass shall be species which will provide an early ground cover during the particular season when planting is done and will not later compete with the permanent grass. The separate types of seed used shall be thoroughly mixed immediately before sowing. Seed which has become wet shall not be used.
 - a. The Bermuda seed shall be an equal mixture of hulled and unhulled seed. The Pensacola Bahia seed shall be scarified seed, having a minimum active germination of 40 percent and a total germination of 85 percent. All seed shall meet the requirements of the State Department of Agriculture and Consumer Services and all applicable state laws.

B. Mulch

- 1. Unless otherwise approved by the ENGINEER, the mulch material used shall normally be dry mulch. Dry mulch shall be straw or hay consisting of oat, rye or wheat straw, or of pangola, peanut, coastal bermuda or bahia grass hay. Only undeteriorated mulch which can readily be cut into the soil shall be used.

C. Fertilizer

- 1. Commercial fertilizers shall comply with the state fertilizer laws. The numerical designations for fertilizer indicate the minimum percentages (respectively) of (1.)

total nitrogen, (2.) available phosphoric acid, and (3.) water soluble potash, contained in the fertilizer. The chemical designation shall be 12-8-8. At least 50 percent of the phosphoric acid shall be from normal super phosphate or an equivalent source which will provide a minimum of two units of sulfur. Unless otherwise approved by the ENGINEER, Type I fertilizer shall be used.

D. Dolomitic Limestone

1. Shall be an approved product, designated for agricultural use.

E. Water

1. The water used in the grassing operations may be obtained from any approved spring, pond, lake, stream or municipal source. The water shall be free of excess and harmful chemicals, acids, alkalies or any substance which might be harmful to plant growth or obnoxious to local residents or traffic. Brackish or salt water shall not be used.

F. Fertilizer Spreader

1. The device for spreading fertilizer and dolomitic limestone shall be capable of uniformly distributing the material at the specified rate.

G. Seed Spreader

1. The seed spreader shall be an approved mechanical hand spreader or other approved type of spreader.

H. Equipment for Cutting Mulch into Soil

1. The mulching equipment shall be a type capable of cutting the specified materials uniformly into the soil and to the required depth. Harrows will not be allowed.

I. Rollers

1. A cultipacker, traffic roller or other suitable equipment will be required for rolling the grassed areas.

2.03 HYDRO-SEEDING/MULCHING

A. Seed (all seed shall meet the requirements of the State Department of Agriculture)

1. Argentine Bahia - Scarified seed
2. Gulf Rye (or Brown Top Millet as approved) Note: to be used in conjunction with permanent type seed (1) above, during particular seasons when early ground cover is desired, as directed by the ENGINEER.

B. Mulch

1. The mulch material shall be wood cellulose fiber material for use in hydro-seeding slurry, especially prepared for this purpose, or an approved substitute.

2. It shall be processed in such a manner that it will contain no growth-inhibiting or germination-inhibiting factors and shall be dyed an appropriate color for readily determining the rate of spread by visual observation. It shall be manufactured in such manner that after agitation in slurry tanks, with fertilizer, grass seed and water (and with other additives which may be approved for use), the fibers in the material will readily become uniformly suspended in the solution to form a homogeneous slurry; also that when the slurry is hydraulically sprayed on the ground, the mulch material will act to form a blotter-like ground cover impregnated uniformly with grass seed, and will allow the absorption of water and permit rainfall and watering to percolate to the undersoil.

The CONTRACTOR shall, if requested, submit appropriate certification from the producer or the supplier, that the material meets all of the above requirements, based upon laboratory and field tests of the product.

The air dry weight (as defined by the Technical Association of the Pulp and Paper Industry, for wood cellulose) shall be marked on each package by the producer.

C. Fertilizer

1. The fertilizer to be used shall be a standard balance fertilizer, such as 6-6-6, 8-8-8 or 10-10-10, with 25 percent organic unless otherwise recommended for any particular area as approved by the ENGINEER. Select acid forms of recommended fertilizer if pH adjustments is indicated by soil tests.

D. Water

1. The water used in the grassing operations may be obtained from any approved spring, pond, lake, stream or municipal water system. The water shall be free of excess and harmful chemicals, acids, alkalies, or any substance which might be harmful to plant growth or produce obnoxious odor. Salt water shall not be used.

E. Equipment

1. The equipment for mixing the slurry and for applying the slurry over the areas to be seeded shall be especially designed for this purpose, and shall meet the approval of the ENGINEER. It shall be capable of applying a uniform slurry, (and of the mulch, when specified to be included), in a uniform application over the entire area to be hydro-seeded.

PART 3 EXECUTION

3.01 SODDING

- A. Immediately before the sod is placed, fertilizer shall be applied evenly at the equivalent rate of approximately 20 pounds of 6-6-6 per 1,000 square feet and shall be cut into the soil with suitable equipment.
- B. The sod shall be taken up in 12-inch by 12-inch squares, except where the plans may call for narrower strips. The sod shall be firmly embedded by light tamping.

- C. After the sod has been placed, it shall be thoroughly watered. Water shall not be applied between the hours of 8:00 AM and 4:00 PM.
- D. Sodding includes maintaining sod until growth is established. All erosion, siltation and maintaining grades is the responsibility of the CONTRACTOR until the ENGINEER determines root system has adequately "survived" and taken "hold".

3.02 GRASSING AND MULCHING

- A. Fertilizing, seeding or mulching operations will not be permitted when wind velocities exceed 15 miles per hour. Seed shall be sown only when the soil is moist and in proper condition to induce growth. No seeding shall be done when the ground is frozen, unduly wet or otherwise not in a tillable condition.
- B. Whenever a suitable length of roadway slopes or adjacent areas has been graded, it shall be made ready, approved by the ENGINEER, and grassed in accordance with these specifications. Grassing shall be incorporated into the project at the earliest practical time in the life of the contract.
- C. All grassing shall be completed on shoulder areas prior to the placement of the friction course on adjacent pavement.
- D. The several operations involved in the work shall proceed in the following sequence: Fertilizing (and/or application of limestone) and preparation of the ground, spreading of mulch, seeding, cutting-in mulch and rolling.
- E. The ground over which the seed is to be sown shall be prepared by disk-harrowing and thoroughly pulverizing the soil to a suitable depth. The prepared soil shall be loose and reasonably smooth. It shall be reasonably free of large clods, roots, and other material which will interfere with the work or subsequent mowing and maintenance operation. No subsequent operations shall be commenced until the ENGINEER has approved the condition of the prepared areas.
- F. The fertilizer and/or limestone shall be spread uniformly in one or more applications as specified below:
 - 1. An initial application of 500 pounds per acre.
 - 2. Unless otherwise directed, a second application of 400 to 500 pounds per acre shall be applied within 90 calendar days after the initial application on projects which have not been accepted prior to this time.
 - 3. Unless otherwise directed, a third application of 400 to 500 pounds per acre shall be applied within 270 to 360 calendar days after the initial application on projects which have not been accepted prior to this time.
- G. On steep slopes or other areas where machine-spreading may not be practicable, the spreading may be done by hand. Immediately after the fertilizer is spread, it shall be mixed with the soil to a depth of approximately four inches.
- H. The plans or special provisions may designate that a separate application of fertilizer and/or dolomitic limestone be made subsequent to other operations.

- I. While the soil is still loose and moist, the seed shall be scattered uniformly over the grassing area. Unless shown otherwise in the plans or the special provisions, the rate of spread for the permanent type seed mixture shall be 150 pounds per acre.
- J. Seed of an approved quick-growing species of grass, such as rye, Italian rye, millet, or other cereal grass, shall be spread in conjunction with the permanent type seed mixture. The type of quick-growing seed used shall be appropriate to provide an early ground cover during the particular season when planting is done. The rate of spread shall be 30 pounds per acre.
- K. When mulching, approximately two inches, loose thickness, of the mulch material shall then be applied uniformly over the seeded area, and the mulch material cut into the soil with the equipment specified, so as to produce a loose mulched thickness of three to four inches. Care shall be exercised that the materials are not cut too deeply into the soil.
- L. Immediately after completion of the seeding, the entire grassed or mulched area shall be rolled thoroughly with the equipment specified. At least two trips over the entire area will be required.
- M. The seeded areas shall be watered so as to provide optimum growth conditions for the establishment of the grass. In no case, however, shall the period of maintaining such moisture be less than two weeks after the planting.
- N. On steep slopes, where the use of a machine for the cutting-in process described above is not practicable, the construction operations shall be modified as follows:
 - 1. The fertilizer shall be applied uniformly, at the rate specified, and shall be raked in and thoroughly mixed with the soil to a depth of approximately two inches.
 - 2. The seeding operations shall follow the fertilizing.
 - 3. The mulch material, in lieu of being cut into the soil, may be anchored down. Anchoring shall be done by either of the following methods:
 - a. Placing a layer of soil, approximately two inches thick by nine inches wide, along the upper limits of the mulch, and spotting soil piles over the rest of the area at a maximum spacing of four feet.
 - b. Spreading a string net over the mulch, using stakes driven flush with the top of the mulch, at six foot centers, and stringing parallel and perpendicular, with diagonals in both directions.

3.03 HYDRO-SEEDING/MULCHING

- A. The ground areas to be hydro-seeded/mulched shall be clean earth, free of tree limbs, stumps, roots, rocks, etc.
- B. Seed and Fertilizer - The proportions of seed and fertilizer used in the slurry shall be as follows or as otherwise approved by the ENGINEER.
 - 1. Gulf Rye of Brown Top Millet seed at 40 pounds per acre.

2. Scarified Argentine Bahia seed at 100 pounds per acre.
 3. Apply fertilizer at the equivalent rate of 10 pounds of 6-6-6 per 1,000 square feet unless otherwise approved by the ENGINEER.
- C. Mulching - When the mulch material is to be included in the slurry mixture, it shall be applied at the rate of 1,000 pounds of mulch material per acre, when the moisture content of the "air-dry" mulch does not exceed ten percent. If this moisture content exceeds ten percent, a proportional increase of mulch material shall be made, as directed by the ENGINEER. The application of the slurry over the seeding areas shall be in accordance with the directions of the manufacturer of the hydro-seeding equipment, and as directed by the ENGINEER. The slurry mixture shall be maintained uniform by continuous agitation during the application.
- D. Watering - The hydro-seeding areas shall be watered so as to provide optimum growth conditions for the establishment of the grass. In no case, however, shall the period of maintaining such moisture be less than four weeks after planting.

3.04 MAINTENANCE

The CONTRACTOR shall, at their expense, maintain the planted or sodded areas in a satisfactory condition until final acceptance or completion of the project, whichever is the latest. Such maintenance shall include the filling, leveling and repairing of any washed or eroded areas as may become necessary, equipment damaged areas, etc. The ENGINEER, at any time, may require replanting or resodding of any areas in which the establishment of the grass stand does not appear to be developing satisfactorily. Replanting or replacement shall be at the CONTRACTOR's expense.

PART 4 MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT

The quantity to be paid for shall be the area in square yards of sodding, grassing and mulching, or hydro-seeding/mulching, completed and accepted. The quantity shall be determined by the actual measurement in place within the lines which were authorized. When this work is required for restoration due to pipeline installation, all disturbed areas will be covered.

4.02 BASIS OF PAYMENT

The quantity of sodding, grassing and mulching, or hydroseeding/mulching, as determined above, shall be paid for at the contract unit price per square yard for these items, which price and payment shall be full compensation for all labor and material, transportation and any other items necessary for satisfactorily performing the work described on the plans and in conformity with these specifications. When this work is required for restoration due to pipeline installation, the costs will be included in the pipeline unit prices.

END OF SECTION 02813

**SECTION 02814
CONCRETE CURBS, GUTTERS, MANHOLE FRAMES, STORM INLETS, ETC.**

PART 1 GENERAL

1.01 SCOPE

- A. These specifications make reference to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, hereafter referenced as FDOTSPEC. Work covered in this section consists of furnishing all labor, equipment, materials and the performing of all operations necessary for construction of:
1. All concrete curbs, gutters, walks, medians, aprons, etc.
 2. All storm water inlets including throat inlets, catch basins, and grated inlets.
 3. Adjustment or installation of sanitary and storm manhole frames and covers, or grates, inlet grates, gate-valve boxes, and other similarly exposed utilities in paved areas.

1.02 SPECIFICATION AND STANDARDS REFERENCE

- A. Where supplementary specifications or standards such as ASTM, AWWA, AASHTO, etc., are referenced, such references shall be the latest edition.

PART 2 PRODUCTS

2.01 CONCRETE CONSTRUCTION

- A. All concrete and concrete work shall conform to the following specifications unless otherwise noted on the plans. All concrete specified in this section shall attain a minimum compressive strength of 3,000 psi in 28 days.
- B. Concrete Mix Materials
1. Coarse aggregate shall be hard, clean, washed gravel or crushed stone. Minimum aggregate size shall not be larger than one inch nor smaller than one-half inch equivalent diameter. Fine aggregate shall be clean, sharp sand. Water shall be clean, fresh, free from injurious amounts of minerals, organic substances, acids or alkalis. Cement shall be Type I, domestic Portland cement, meeting the requirements of ASTM C 150.
- C. Concrete Admixtures
1. Air-entrainment admixtures in concrete are permitted in accordance with manufacturer's specifications provided specified strength and quality are maintained and unless admixtures appears to be causing abnormal field results, and total entrained air content does not exceed five percent. No other admixture of any type will be permitted without written approval of the ENGINEER.

D. Reinforcement Steel

1. Reinforcing bars shall be intermediate grade, new billet-steel, deformed bars, free of loose rust, scale, dirt or oil, and shall conform to ASTM A15 "Specifications for Billet-Steel Bars for Concrete Reinforcement." Rebar deformations shall conform to ASTM A305. Welded wire fabric for concrete reinforcement shall conform to ASTM A185, "Specifications for Welded Steel Wire Fabric for Concrete Reinforcement." All reinforcement steel shall be placed, spliced, lapped, etc. in accordance with the ACI Standard 318, Building Code Requirements For Reinforced Concrete.

E. Transit Or Ready-Mixed Concrete

1. Transit or ready-mixed concrete may be used provided it meets the requirements of ASTM C 94, Ready Mixed Concrete, and provided the central plant producing the concrete, the batching, mixing and transportation equipment, in the opinion of the ENGINEER, is suitable for the production and transportation of the specified concrete.

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

- A. Work shall be performed to lengths and cross-sections shown on the plans. Forms shall be of sufficient strength to resist pressure of the concrete without springing. Bottom forms shall not be removed within twenty-four hours after concrete has been placed. Side or top forms shall not be removed within 12 hours after concrete has been placed. Upon removal of forms, minor defects shall be corrected with a rich mix of cement mortar. Curbs, gutters, walks or medians shall be finished until a smooth surface is attained. Final finish shall be a light broom finish. When completed, concrete shall be cured as specified.

3.02 PLACING OF CONCRETE

- A. Concrete shall be deposited in clean wet forms and as nearly as practicable in its final position to avoid segregation. Concrete placing shall be carried on at such a rate the concrete is at all times plastic and flows readily into spaces between the bars. Concreting shall be a continuous operation until the panel or section is completed. All structural concrete shall be vibrated. No concrete shall be allowed a free fall of more than four feet or allowed to strike against a vertical or inclined surface or reinforcement above the point of deposit. Placing by means of pumping may be allowed, contingent upon the adequacy of the equipment for this particular work. The operation of the pump shall be such that a continuous stream of concrete without air pockets is produced. Placing of concrete shall be so regulated pressure caused by wet concrete shall not exceed that used in the design of the forms. After concrete has taken its initial set, care shall be exercised to avoid jarring the forms or placing any strain on the ends of projecting reinforcement.

3.03 MACHINE-LAYING

- A. Machine laying of work will be permitted, providing all quality conditions of conventional construction are met.

- B. As a specific requirement for machine-laid curb and gutter, contraction joints shall be sawed unless an alternate method of constructing them is approved in writing by the ENGINEER. Joints shall be sawed as soon as the concrete has hardened to the degree that excessive raveling will not occur and before uncontrolled shrinkage cracking begins. Contraction joints shall be spaced at intervals of ten feet except where a lesser interval is required for closure, but no section shall be less than four feet in length.

3.04 CURING

- A. As soon as practicable after finishing, all concrete shall be covered with burlap and kept moist for a period of seven days or, an approved membrane curing compound may be applied at the CONTRACTOR's option. Where membrane curing compound is used, no walking or other traffic will be allowed over the slab for 72 hours after application unless the surface is protected by burlap or heavy building paper. Curing shall meet the requirements of FDOTSPEC Section 520-8.

3.05 JOINTS

- A. Construction Joints: Joints not shown or specified shall be located as to least impair the strength and appearance of the work. Placement of concrete shall be carried on at such a rate that the surfaces of concrete which have not been carried to joint levels will not have attained initial set before additional concrete is placed thereon.
- B. Contraction Joints: Curbs-and-gutters, and valley gutters shall be constructed with contractions joints at intervals of ten feet except where shorter intervals are required for closures, but no joint shall be constructed at intervals of less than four feet. Sidewalks and concrete medians shall be constructed with contraction joints at intervals equal to the width of the walk or median respectively unless otherwise noted on the plans. Contraction joints may be of the open type, tooled or sawed. Construction and construction procedures of contraction joints shall conform to the specifications set forth in the FDOTSPEC.
- C. Expansion Joints: Curbs, curb-and-gutters, and valley gutters shall be constructed with expansion joints at all inlets, all radius points, all points where operations cease for any considerable time and at intervals of not more than 500 feet. Walks and concrete medians shall be constructed with expansion joints at points of walk or median termination against an unyielding surface and at intervals not to exceed 90 feet. Expansion joints shall be constructed with PVC slips encasing the reinforcing bars. Expansion joint material shall be one-half inch bituminous impregnated expansion joint material which meets the requirements of FDOTSPEC, 932-1.1. Expansion joints between the sidewalk and the curb or driveway or at fixed objects and sidewalk intersections shall be one-half-inch joints, formed with a preformed joint filler meeting the requirements specified in FDOTSPEC, 932-1.1.

3.06 CONTRACTORS RESPONSIBILITIES

- A. Prior to placing any concrete, the CONTRACTOR shall give the ENGINEER sufficient advance notice of same. No concrete shall be placed on any subgrade or in any formwork until the subgrade, formwork, reinforcing steel, anchor bolts and other imbedded items have been reviewed.
- B. CONTRACTOR is fully responsible for all concrete and concrete work and finishes, and shall reject all delivered concrete and finishes not meeting these specifications. CONTRACTOR shall also be responsible for securing laboratory tests or reports if such tests or reports are requested by ENGINEER.
- C. ENGINEER may, at their discretion, request that specified tests be conducted and reports furnished at the CONTRACTOR's expense. Normally the ENGINEER will not require testing of more than one set of four compression test cylinders per 50 cubic yards, (or part thereof). In no case shall there be less than one test for each day concrete is poured.
- D. From each test, one cylinder shall be tested by the laboratory at seven days, and two at 28 days, or as directed by the ENGINEER. One cylinder shall be kept as a reserve.

3.07 EXCAVATION AND BACKFILL

- A. Excavation shall be to the required depth, and supporting earth, base, or subgrade shall be compacted. When the plans call for a stabilized subgrade under the curb or gutter, subgrade shall be stabilized, and tested if required, as set forth elsewhere in these specifications and as indicated on the plans. When the plans call for a soil-cement base, subgrade supporting the curb or gutter shall be compacted by watering, rolling or tamping to 95 percent of maximum density as determined by AASHTO-T-180. Subgrades for walks and concrete medians shall be compacted to a firm, even surface, by means of rolling, watering and/or tamping.
- B. After the concrete has set sufficiently, but not later than three days after placing, the spaces in front and back shall be backfilled with suitable material and compacted. When street bases are to be constructed adjacent to curbs, gutters, etc., the curbs, gutters, etc., shall be properly backfilled and shall cure for a period of not less than three days before any base material is placed against it.

3.08 STORM WATER INLETS

- A. Construction of storm water inlets shall include all work and materials necessary for final construction by CONTRACTOR of throat inlets, catch basins, grated manholes, or other storm water inlets.
- B. Construction of throat inlets shall be to the lines, elevations and dimensions shown on the plans and include forming of the throat and construction of the top slab with frame and cover, and supporting walls.

- C. Construction of grated inlets, catch basins, manholes, etc. shall be to the elevations and dimensions shown on the plans. Construction shall include any reasonable adjustment and realignment of the grate necessary (if grates are installed by the previous CONTRACTOR), or the installation of inlet grates. Frames shall be secured in mortar and the mortar struck smooth inside and out.

3.09 MANHOLE FRAMES AND COVERS

- A. Manhole frames with covers or grates in paved areas shall be installed/adjusted flush with the final paved surface. Frames and covers shall be milled to prevent rocking of the cover when passed over by a motor vehicle. Frames shall be secured in mortar or concrete and surfaces struck smooth inside and out. Gate valve boxes and other similarly exposed utilities shall be raised or lowered as required to insure a flush, even surface with the adjacent paved area.

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Payment shall be made on a unit price basis in accordance with the construction contract.
- B. Units of payment stated in the contract cover the following:
 - 1. **Concrete Curbs, Gutters, Walks, Medians and Valley Crossing:** Payment for concrete curb-and-gutters, vertical curbs, and valley gutters shall be on the basis of actual lineal feet in place. Payment for valley crossings shall be on a per unit basis. Concrete medians shall be paid on the basis of actual square feet in place. Concrete walks shall be paid on the basis of actual linear feet completed unless otherwise noted. Concrete aprons, inlet channels, etc., shall be paid on the basis of actual square feet completed, unless otherwise noted. Unit cost for the construction of the above stated work shall include all equipment, labor and materials; shall include all excavation, trenching, subgrade compaction, backfilling, etc., necessary to perform the work in accordance with the plans, specifications, and good construction practices.
 - 2. **Storm Water Inlets:** Payment for storm water inlets, as defined herein, shall be on a unit basis. Unit cost of construction shall include all labor, equipment, materials, excavation, backfilling, structural adjustments, etc., necessary to perform the work in accordance with the plans, specifications and good construction practice. Payment for the installation or adjustment of manhole frames and covers or grates shall be included in the cost of storm water inlets. Unit costs shall include all materials, equipment, labor backfilling, etc., necessary to perform the work in accordance with the plans, specifications, and good construction practice. Costs for adjustment of gate-valve boxes and other similar utilities in paved areas shall be considered as incidental.

END OF SECTION 02814

**SECTION 02817
CLEARING AND GRUBBING**

PART 1 GENERAL

1.01 SCOPE

- A. Work specified in this section consists of clearing and grubbing within areas specified in the Contract Documents or as directed by the OWNER's representative. Work under this section includes removal and disposal of all trees, brush, stumps, grass, roots, and other such protruding objects. Also included is the removal and disposal of buildings, structures, existing pavement, other existing facilities, and debris not required to remain or to be salvaged that is necessary to prepare the area for the proposed construction. CONTRACTOR shall notify all utility companies or utility owners (both public or private) of their intent to perform such work and shall coordinate field location of utility lines prior to commencement of construction.

- B. Other miscellaneous work considered necessary for the complete preparation of the overall project site is also included under this section. Work includes, but is not limited to, the following:
 - 1. Plugging of wells encountered within the project limits which are to be abandoned.
 - 2. Leveling and restoration of terrain outside the limits of construction for purposes of facilitating maintenance and other post-construction operations.
 - 3. Trimming of certain trees and shrubs within project limits for utilization in subsequent landscaping of the project.
 - 4. Plugging or sealing of culvert pipes or other structures to prevent erosion or collapse of adjacent soils.

1.02 SPECIFICATION AND STANDARDS REFERENCE

- A. Where supplementary specifications or standards such as ASTM, AWWA, AASHTO, etc. are referenced, such references shall be latest edition.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 CLEARING AND GRUBBING

- A. Clearing and Grubbing shall consist of complete removal and disposal of all items stated in Article 1.01 which are not specified for removal under other items of the contract. The CONTRACTOR shall obtain all permits/approvals necessary for

disposal at their own expense. The CONTRACTOR shall obtain tree removal permits.

B. Unless otherwise shown in the plans or Contract Documents, Standard Clearing and Grubbing shall be done within the following areas:

1. All areas where any type of excavation is to be done.
2. All areas where any type of embankment will be constructed.
3. All areas where any type of structure, including pipe culverts or pipe lines, will be installed or constructed.
4. All areas where any type of pavement will be constructed.
5. Other areas designated in the plans or by the specifications.

C. Depths of Removal

1. In areas listed below, all roots and other debris shall be removed to a depth of at least one foot below ground surface. The surface shall then be plowed to a depth of at least six inches and all roots exposed shall be removed to a depth of at least one foot. All stumps including subsurface roots shall be completely removed to the satisfaction of the ENGINEER. Trees shall be removed so roots are pulled out rather than broken or sawed off. Areas requiring the removal methods stated in this paragraph are as follows:
 - a. Excavation areas where the excavated material is to be used in embankment construction under permanent structures such as but not limited to pavement and buildings.
 - b. Embankment areas under permanent structures such as but not limited to pavement, buildings, sewage treatment facilities, bridges, etc.
 - c. Excavation areas where roots or similar vegetation in the top one foot would interfere with disking, harrowing, or finish grading operations prior to seeding or landscaping.
 - d. Lots and building areas.
2. In all other excavation areas not listed above where clearing and grubbing is to be done, all roots, stumps, and debris protruding through or appearing on the surface of the completed excavation shall be removed or cut off below the excavated surface.
3. In all other embankment areas not listed above where clearing and grubbing is to be done, all roots, stumps, and debris protruding through or appearing on the surface shall be removed to a depth of at least one foot below the surface but no plowing or harrowing will be required in these areas.

- D. **Trees to Remain:** As an exception to the above provisions, where so directed by the OWNER's representative, desirable trees within the clearing limits shall be protected, left standing, and trimmed to prevent damage to limbs during construction. No equipment shall stand, stop, or travel across or inside the drip line of any trees or vegetation designated to be saved or protected.
- E. **Boulders:** Any boulders laying on the top of the existing surface or otherwise encountered during the clearing and grubbing shall be removed and disposed of by the CONTRACTOR in areas provided by the CONTRACTOR. As an alternate to off-site disposal and at the CONTRACTOR's expense, he may elect to utilize these boulders in embankments provided the conditions of Article 3.04 in Section 02820 are satisfied. Any breaking or splitting of boulders that may be necessary to comply with size requirements for embankment shall be incidental to the cost of clearing and grubbing. No boulders or rock shall be left or placed in building pads, lots, or building embankment areas.

3.02 SELECTIVE CLEARING AND GRUBBING

- A. Selective clearing and grubbing shall consist of removing and disposing of all vegetation, obstructions, etc, as provided above except that in non-structural areas where the CONTRACTOR so elects, roots may be cut off flush with the ground surface. Stumps shall be completely removed. Undergrowth shall be completely removed except in areas designated by the OWNER's representative for aesthetic purposes.
- B. Desirable trees, that are designated by the OWNER's representative to remain, shall be protected and trimmed in such a way to avoid damage to limbs during construction.

3.03 SPECIAL CLEARING AND GRUBBING

- A. In certain areas that are inaccessible by machines or are considered environmentally sensitive, ENGINEER may specify Special Clearing and Grubbing. Where listed as a separate pay item, Special Clearing and Grubbing shall consist of removal and disposal of all trees, brush stumps, roots, debris or other objects protruding through the surface by cutting off flush with the ground surface. The use of any machinery that would disturb the original ground surface condition will not be permitted.

3.04 ERADICATION OF EXOTIC VEGETATION

- A. Where listed as a separate pay item, Eradication of Exotic Vegetation shall consist of removal and disposal of Australian Pine, Melaleuca, Brazilian Pepper, and other species specifically stated on the plans or specified herein. Also included shall be the removal of the subsurface root system for each exotics.
- B. In areas where removal is modified to permit cutting off flush with in the ground surface, stump and root system shall be treated with an agency approved chemical herbicide that will ensure the eradication of the root system.

- C. Within the limits established for the Eradication of Exotic Vegetation, all other trees, brush, etc. not classified as exotic shall be removed, unless designated in the field by the OWNER's representative to remain. The removal and disposal of non-exotic vegetation shall conform to the provisions of Article 3.01.

3.05 REMOVAL OF EXISTING PAVEMENT

- A. Work specified in this article consists of the removing and disposing of existing pavement surfaces such as, but not limited to, pavement, sidewalk, curb, and gutter where shown in the plans, or required to be removed during construction operations, or as required by the ENGINEER.

3.06 REMOVAL OF EXISTING STRUCTURES

- A. Work specified in this article shall include removal and disposal of existing buildings, bridges, pipes, and structures of whatever type as specifically shown in the plans to be removed or as otherwise specified for removal in the Contract Documents. Also included are structures of whatever type or portions thereof which are encountered during construction operations. Where partial removal of a structure is approved by the ENGINEER, the portion of the existing structure shall be backfilled, plugged, or filled in such a way that will prevent the settlement, movement, erosion or collapse of the adjacent soils.

3.07 BURNING ON-SITE

- A. Unless otherwise stated in the Contract Documents, burning may be permitted within the project limits provided the burning operation complies with all applicable laws, ordinances, and other regulatory agencies. All permits required shall be obtained by the CONTRACTOR prior to the start of burning and all permit regulations shall be strictly adhered to. All burning shall be done at locations where trees and shrubs adjacent to the cleared area will not be harmed.

3.08 DISPOSAL OF MATERIALS

- A. Timber, stumps, roots, brush, boulders, rubbish, and other objectionable material resulting from work specified in this section shall be disposed of off-site in locations provided by the CONTRACTOR.

3.09 OWNERSHIP OF MATERIALS

- A. Except as may be otherwise stated in the Contract Documents, all buildings, structures, appurtenances and other materials removed by the CONTRACTOR shall become the property of the CONTRACTOR, to be disposed of in areas provided by him.

PART 4 MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT

- A. General: For the various items of work specified in this section when listed as a separate pay item, payment shall be made by the unit price or the lump sum amount as established in the Contract Documents. Where no separate pay item is

established, the cost of all such work shall be included in the various scheduled items of work specified in the Contract Documents, except as provided below.

- B. **Clearing and Grubbing:** Measurement of Clearing and Grubbing shall include only the areas specified in the Contract Documents that are required to be cleared to permit the construction of the various items of work. Areas that are cleared for convenience, access, or other purposes that are not a requirement of construction will not be measured for payment.
- C. **Selective Clearing and Grubbing:** Measurement of Selective Clearing and Grubbing shall include all areas shown in the plans or designated in the field by the OWNER's representative. This measurement shall include the total area within the limits of Selective Clearing and Grubbing and no deduction shall be made for areas in which desirable trees and brush are designated to remain. Where the limits of Selective Clearing and Grubbing are shown on the plans or otherwise established in the Contract Documents but no separate pay item established, the measurement of such work shall be included in the quantity or lump sum amount of "Clearing and Grubbing".
- D. **Special Clearing and Grubbing:** Measurement of Special Clearing and Grubbing shall include all areas shown in the plans or designated in the field by the OWNER's representative. This measurement shall include only actual areas cleared by the hand method and shall not include areas cleared by other methods or areas that remain in their original condition. Where the limits of Special Clearing and Grubbing are shown on the plans or otherwise established in the Contract Documents but no separate pay item established, the measurement of such work shall be included in the quantity or lump sum amount of "Clearing and Grubbing".
- E. **Eradication of Exotic Vegetation:** Measurement of Eradication of Exotic Vegetation shall include areas shown on the plans or designated in the field by the OWNER's representative. This measurement shall include the total area within the limits established for Eradication of Exotic Vegetation and include the areas within these limits where non-exotic vegetation is removed. Where the OWNER's representative has designated desirable vegetation to remain within these limits, no deduction of area shall be made for the "saved" areas.

Where limits of Eradication of Exotic Vegetation are shown on the plans or otherwise established in the Contract Documents but no separate pay item established, the measurement of such work shall be included in the quantity or lump sum amount of "Clearing and Grubbing."
- F. **Removal of Existing Pavement:** When a separate pay item is established for the Removal of Existing Pavement, the quantity to be paid shall be by the square yard for the actual quantity removed and disposed of off-site. For curb and gutter, slope pavement, and other irregular areas, the measurement shall be generally taken as an approximate horizontal surface. Where lump sum payment is provided, such payment shall be compensation for the removal of areas shown on the plans or otherwise specified in the Contract Documents.

Where a separate pay item is established for curb, gutter, or curb and gutter removal, the measurement shall be measured by the lineal foot at the flow line of the gutter or at the top of curb where there is no gutter. Where separate pay has

not been provided for curb or curb and gutter removal, the measurement shall be included in the area for pavement removal as stated above.

When no separate payment is provided for the Removal of Existing Pavement and no applicable item of excavation or embankment covering such work is listed, the costs of this work shall be included in the contract price for the item of Clearing and Grubbing or for the pipe or other structure of which the pavement removal is required.

- G. **Removal of Existing Structures:** When separate payment for Removal of Existing Structures or Removal of Existing Buildings is provided, the work shall be paid for at the contract lump sum price. When direct payment is not provided, the cost of such removal and disposal shall be included in the contract price for Clearing and Grubbing or if no clearing and grubbing is included, in the compensation for the other items covering the new structure to be constructed.
- H. **Burning:** Unless otherwise specified in the Contract Documents, and where permitted, burning shall be considered as being part of the process of disposing of materials and the cost of such work shall be included in the item which requires the disposal of materials.

4.02 BASIS FOR PAYMENT

- A. **General:** Prices and payments for the various work items included in this section shall constitute full compensation for all work described herein and shall include all removal, disposal, protecting, trimming, breaking, plugging, eradication, or any other items specified in this section.
- B. **Pay Items:** For all work specified in this section, payment shall be made in accordance with the list of pay items established or as otherwise defined in the Contract Documents. The description of a pay item in the proposal section may vary from the descriptions stated in this section.

END OF SECTION 02817

**SECTION 02820
EXCAVATION AND EMBANKMENT**

PART 1 GENERAL

1.01 SCOPE

- A. Work specified in this section consists of excavation and embankment required for roadways, lakes, ditches, swales, berms, canals, parking areas, site fill, building pads, retention areas, structure excavation, and other similar work described herein or shown on the plans. This section includes preparation of subgrades, construction of embankments, utilization or disposal of materials excavated, and compaction and finish grading of excavated areas and embankments. All work shall conform to the proposed alignment, elevations, slopes, and cross-sections shown on the plans.

1.02 SPECIFICATION AND STANDARDS REFERENCE

- A. Where supplementary specifications or standards such as ASTM, AWWA, AASHTO, etc. are referenced, such references shall be latest edition.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 CLASSIFICATION OF EXCAVATION

- A. General: Included in the excavation under this section are materials of whatever nature encountered within the required limits of excavation (except material removed during clearing and grubbing). Determination of sub-surface conditions and its effect on construction costs are the sole responsibility of the CONTRACTOR. Sub-surface conditions between soil borings that may be provided can vary greatly from those conditions found at the location where the sample was extracted.

Locating existing underground utilities shall be the responsibility of the CONTRACTOR. In the event of any utility conflict, the CONTRACTOR shall immediately inform the utility company, OWNER and the ENGINEER of the conflict. CONTRACTOR shall be responsible for the immediate repair of any utility lines damaged during construction. CONTRACTOR shall notify all utility companies or utility owners, both public or private of their intent to perform such work and coordinate field location of utility lines prior to commencement of construction.

Where separate classification is provided in the proposal, excavation specified under this section may be listed as any of the following classes: (1) Regular Excavation, (2) Swale Excavation, (3) Subsoil Excavation, (4) Rock Excavation, (5) Lake Excavation (unclassified).

For any of the above classifications not specifically listed as a separate pay item in the proposal or included as part of another pay item, all excavation of such type shall be

included under the item of Regular Excavation. If the item of Regular Excavation is not listed in the proposal, all costs included in the excavation of roadway, swales, subsoil, rock, lakes, structures (including utilization or disposal of materials) shall be incidental to the general cost of the project and no additional compensation will be allowed.

- B. **Regular Excavation:** Regular Excavation shall consist of excavation of materials necessary for construction of roadways, ditches, sidewalks, building pads, retention ponds, and other surfaces as shown in the plans. Excavated material suitable for embankment shall be utilized in areas requiring fill with all excess material spread or stockpiled on site where shown on the plans or as directed by the OWNER's representative.
- C. **Swale Excavation:** Swale Excavation shall consist of excavation of swales and ditches as indicated on the plans and shall include the utilization of suitable excavated materials in areas requiring fill with all excess material spread or stockpiled on site where shown on the plans or as directed by the OWNER's representative.
- D. **Subsoil Excavation:** Subsoil Excavation shall consist of the excavation and off-site disposal of muck, clay, roots, or any other material that is determined to be unsuitable by the OWNER's Geotechnical Engineer in its original position and that is excavated below the finished grading template. If provided in the plans or Contract Documents unsuitable material shall be stockpiled in areas on site designated by the OWNER.
- E. **Rock Excavation:** Rock Excavation shall consist of excavation of rock and boulders necessary for construction of roadways, ditches, lakes, and other cut sections shown on the plans. It shall also include the utilization and disposal of excavated rock and boulders according to Articles 3.02, 3.03, and 3.04 in this section.

For the purpose of classifying rock excavation as a pay item, the rock strata encountered shall be of such thickness and hardness as to preclude removal by using a modern 3/4 yard hydraulic backhoe maintained in excellent operating condition, Caterpillar 235 or equal.

- F. **Rock Blasting:** All blasting is strictly prohibited.
- G. **Lake Excavation (Unclassified):** Lake Excavation (Unclassified) shall consist of excavation of all material necessary for construction of lakes according to the depths, dimensions, side slopes, and in the locations shown in the plans. It shall also include the utilization of excavated materials and the disposal of unsuitable materials in accordance with Articles 3.02 and 3.03 in this section. All materials excavated shall be considered as "unclassified". CONTRACTOR shall be responsible for any investigation of sub-surface conditions and subsequent determination of the amount of rock, roots, and other materials to be incorporated into his price.

CONTRACTOR shall construct the lake banks in strict accordance with the ordinances or laws governing the excavation. All slopes must be equal to the specified slopes. The bottom of the lake shall not be excavated below the specified depth without prior written approval of the OWNER and the governing agency.

- H. **Structure Excavation:** Work specified in this sub-article consists of excavating for bridge foundations, box culverts, pipe culverts, sewers, pipe lines, retaining walls, pump stations, manholes, inlets, catch basins, sewage and water treatment plants and other similar type facilities shown on the plans. It shall also include (1) the construction and removal of cofferdams, sheeting, bracing, etc.; (2) dewatering; (3) disposal of structures (of whatever type) encountered during excavation; (4) disposal of unsuitable materials; (5) bedding materials; (6) backfilling and the compacting thereof; (7) utilization of excess suitable materials according to article 3.02 this section.

Material excavated (of whatever nature) shall be classified for utilization or disposal according to Articles 3.02 and 3.03. The excavation shall be of such size and depth as to facilitate the construction and/or installation of each structure according to the location and elevations shown in the plans. Rock blasting, rock excavation, demolition of structures or foundations, or any unusual or undefined work that may be necessary to complete the excavation for a structure shall be considered as work included in Structure Excavation.

If the excavation requires the use of cofferdams, dewatering, sheeting, or bracing, all such work will be done in strict compliance with all permit requirements and any laws or ordinances that may apply to the work being performed. It shall be the responsibility of the CONTRACTOR to familiarize himself with any regulations applicable and to satisfy said regulations at his own expense.

The structure shall be constructed or laid in dry dewatered excavation unless otherwise approved by the ENGINEER. In such cases where the excavation is unstable or has water in sufficient quantities that make uniform bedding impossible, the bottom of the excavation shall be stabilized as required. If washed shell is used, it shall be a graded according to the sieve analysis listed below:

100 percent passing 1½" screen
0 percent passing 5/8" screen

After the structure is complete, backfilling shall be performed in a careful manner so as not to disturb or damage the completed structure. The backfill material shall conform to the requirements of Sub-article 3.04.C., except that the size of rock shall not exceed 3 1/2 inches in diameter. The backfill material shall be compacted to the same or greater density as the adjacent existing earth.

3.02 UTILIZATION OF EXCAVATION MATERIALS

- A. **General:** All excavated materials suitable for embankment shall be utilized in the embankment areas shown in the plans or as otherwise specified in the Contract Documents. After the requirements for embankment have been satisfied, the surplus suitable excavated material shall be deposited in areas on-site as directed by the OWNER's representative, unless otherwise specified in the Contract Documents.

On projects where excavation does not provide enough material to satisfy embankment requirements, excavated materials shall first be utilized in the roadway or other permanent structure embankment, then into other embankment areas shown in the plans.

- B. Classification of Materials:** Material shall be classified as "suitable" if it meets all the requirements of Sub-article 3.04.C. of this Section. A rock strata that can be excavated and split or screened to meet the requirements of Sub-article 3.04.C. shall be considered as "suitable" for embankment.
Material such as muck, or any other material containing excessive amounts of organic, silt, clay, or other deleterious materials shall be classified as "unsuitable" for embankment unless otherwise specified or classified by the ENGINEER.

The term "unclassified" simply refers to material that has not been defined as suitable or unsuitable.

If a dispute arises over the classification of materials, the final determination shall be made by the ENGINEER.

- C. Rock and Boulders:** Rock and boulders shall be utilized on site as embankment unless otherwise specified. In all cases, the alteration or replacement of excavated material shall be at the CONTRACTOR's expense unless otherwise provided in the plans or Contract Documents.
- D. Muck:** Although muck or other material high in organic content will not generally be permitted in embankment areas, certain conditions may require or permit its utilization. Muck will not be permitted in embankment unless specifically stated on the plans or specified herein. When so specified the placement of muck or other similar material will only be permitted outside of an imaginary downward 2:1 slope starting from the outward edge of roadway structure or other permanent structure.
- E. Top Soil:** Where top of the existing surface is high in organic content, it may be necessary to strip the topsoil and reuse it or dispose of it. Topsoil shall be stripped and stockpiled on-site for later use as a layer under sod, grassing, or in landscaped areas. When an item of topsoil is not listed as a separate pay item in the Contract Documents, the placement of the stockpiled topsoil shall be included in the item of Clearing and Grubbing or Excavation. When topsoil is listed as a pay item, it shall be placed in locations shown in the plans to a specified thickness and to a finished elevation that will allow for the placement of sod, ground cover or other landscape related surface.

The material utilized as topsoil shall be suitable for plant growth and free from appreciable quantities of hard clods, stiff clay, hardpan, gravel, brush, large roots, refuse, or other deleterious materials. The organic content shall be at least 1.5 percent. The characteristics of the material shall be such that it can be adjusted to have a pH value between 5.0 and 8.0, or as approved by the ENGINEER.

3.03 DISPOSAL OF EXCAVATED MATERIALS

- A. Disposal of Surplus Materials: Ownership of all suitable excavated materials shall be retained by the OWNER unless otherwise stated in the plans or Contract Documents to be surplus material. When so specified the surplus material shall become the property of the CONTRACTOR to be disposed of outside the project limits. The cost of the disposal and furnishing the disposal area shall be included in the item requiring excavation and no additional compensation will be given.
- B. Disposal of Unsuitable Materials: Unsuitable excavated material as defined in Sub-article 3.02.B. shall become the property of the CONTRACTOR to be disposed of outside the project limits. The cost of the disposal and furnishing the disposal area shall be included in the item requiring excavation and no additional compensation will be given.

3.04 EMBANKMENT

- A. General: Embankments shall be constructed true to lines and grades shown in the plans or ordered by the ENGINEER. Material used in embankments shall be obtained from on-site excavation and/or from off-site borrow sources secured by the CONTRACTOR.
- B. Site Preparation: Subsequent to clearing and prior to placement of embankment material, the existing earth surface shall be compacted six feet beyond the building and pavement structure limits and in other areas shown in the plans or stated in the Supplementary Conditions. The existing surface shall be compacted at a moisture content such that the specific density requirement can be attained. Soil one foot below the compacted surface shall attain a density of 95 percent of the maximum theoretical density as determined by the Modified Proctor Density (ASTM-D-1557). Field density tests shall be conducted in accordance with ASTM D-1556, D-2167, D-2922, or D-2937 (latest revisions) by a certified laboratory or soils engineer approved by the OWNER. The location and number of the tests shall be verified by the ENGINEER.
- C. Requirements for Embankment Materials: Embankments shall be constructed of material containing no muck, stumps, roots, brush, vegetable matter, rubbish, or other material that will not compact into a suitable and enduring roadbed or similar foundation. Material designated as unsuitable in the soil borings or as classified as unsuitable by the ENGINEER shall be removed from the embankment and disposed of off-site. Utilization of material in embankment construction shall be in accordance with plan details or as directed by the ENGINEER.

The maximum size of rock which will be permitted in the completed embankment are as follows:

In top 12 inches -----	3 1/2 inches
12 inches to 2 feet -----	6 inches
In the 2 feet depth below ---	Not to exceed the compacted thickness of the layer being placed

When and where approved by the ENGINEER, the CONTRACTOR may place larger rocks outside the 2-to-1 slope of any structure embankment. Where such rock is utilized in any embankment, enough fine material shall be deposited and compacted between individual rocks so as to completely fill any voids that may occur during the placement of such material. No rock shall be utilized in any building pad embankment areas.

- D. Borrow Material: The use of borrow material shall be resorted to only when sufficient quantities of suitable material are not available from the various types of excavation required on the drawings. When borrow is required the material shall conform to the requirements of article 3.04.C. and shall be approved by the ENGINEER prior to placement. Borrow material shall be obtained from areas furnished by the CONTRACTOR at his expense. Borrow sources shall comply with all local requirements applicable for the excavation and sale of fill material.
- E. Construction Requirements: Embankment material shall be placed in horizontal layers not to exceed 12 inches thickness measured loose. Each layer shall be leveled and compacted in accordance with Sub-article 3.04.F. No fill material shall be placed where area is wet. Dewatering may be required prior to filling operation, either by pumping or well pointing. Water shall not be allowed to stand on or adjacent to fill areas that could saturate the material.

When embankments are constructed on a hill or slope, slope shall be "stepped" so as to permit the embankment to be placed in horizontal layers and compacted as stated above. Upon completion of the embankment steps on a slope, steps shall be dressed to conform to the specified slope.

For any embankments not covered above, construction methods shall be approved by the ENGINEER prior to placement.

- F. Compaction Requirements: Materials shall be compacted at a moisture content such that the specific density can be attained. If necessary, water shall be added to the material, or the moisture content shall be lowered by manipulating the material or allowing it to dry, as is appropriate. Each layer of material shall be compacted by the use of a smooth drum vibratory roller or other method approved by the engineer. The top 12" of natural ground shall be compacted in accordance with the requirements listed below.

Field density tests shall be conducted in accordance with ASTM D-1556, D-2167, D-2922, or D-2937 (latest revisions) by a certified laboratory or soils engineer approved by the OWNER according to the Compaction Requirements stated below:

Embankment Area	Density ¹ Below 3'	Density ¹ 0' to 3'	Testing Frequency/Lift
Building Pads ²	95%	98%	1 Ea/2000 SF, Minimum 2 Ea/Structure
Pavement Areas ³	95%	98%	1 Ea/500 SY
Retention Areas ⁴	95%	95%	1 Ea/500 SY
Other Areas	N/A	N/A	N/A

- ¹ The percentage listed shall be the minimum acceptable amount of the maximum theoretical density as determined by the Modified Proctor Density (ASTM-D-1557).
- ² Includes future building pads and lots.
- ³ Includes any permanent pavement structure such as curb and gutter, sidewalk, roadway, shoulder, driveway, or any other similar surface.
- ⁴ Includes earth berms, water retention slopes, dikes, and other similar areas.

CONTRACTOR shall be responsible for scheduling of all soil testing. These soil testing costs shall be borne by the CONTRACTOR unless stated otherwise in the plans or specifications. Where the testing costs are borne by the OWNER, in the event of a test failure all subsequent tests required to pass density shall be at the expense of the CONTRACTOR. The OWNER may deduct this expense from the CONTRACTOR's payment or request payment directly from CONTRACTOR.

3.05 FINISH GRADING

- A. General: As a final grading operation the surface of the earthwork shall be shaped to conform to the lines, grades, and contours shown on the plans. Hand dressing will be required in confined areas where equipment operation is restricted or where the equipment finished surface is unsatisfactory in the judgment of the ENGINEER.

CONTRACTOR shall take necessary precautions to prevent erosion of slopes before and after finish grading. Any erosion of whatever consequence shall be repaired at the expense of the CONTRACTOR until final acceptance of the project.

- B. Tolerances: In final shaping of the surface of earthwork a tolerance of 0.1 foot above or below the plan elevations and contours will be allowed with the following exceptions:
1. In areas where sod, ground cover or other finish landscape surface will be used, an allowance shall be made for the thickness of sod, etc. that will result in the finish landscape elevation to be within the above tolerance.
 2. Earthwork shall be shaped to match adjacent pavement, curb, sidewalk, structures, etc. with applicable allowance for sod, etc.

PART 4 MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT

- A. General:
1. **VOLUMETRIC** – When payment is made on a volumetric basis, calculations shall be based on the method of average end areas or the grid cell method, unless the ENGINEER determines that another method will provide a more accurate result. The existing elevations shown on the plans or field survey taken by the ENGINEER shall be incorporated into the volume calculations. Should any of these existing elevations appear to be in error, the CONTRACTOR shall notify the ENGINEER in writing and resolve the dispute prior to disturbing the existing surface in question. Once the existing surface is

disturbed by clearing, excavating, or any other construction, the CONTRACTOR's right to dispute the existing elevations shown by the ENGINEER will be nullified. After the excavation or embankment is completed, the finished surface shall be measured in place by field survey paid for by the CONTRACTOR and these cross-sections shall be incorporated into the volume calculations.

2. **LOOSE VOLUME** – In special cases as shown in the Contract Documents, payment shall be made on a loose volume basis as measured in trucks or other hauling equipment. The volume capacity of each truck shall be measured and recorded by the OWNER's representative. Before unloading onsite, the OWNER's representative shall compare the loaded truck to its recorded capacity and record the actual volume on the load ticket. Only load tickets that have been so recorded and collected by OWNER's representative at the point of dumping shall be included in the quantity for payment.
 3. **LUMP SUM** – The proposal may contain items of work that are to be paid for on a lump sum basis. Additionally, the Contract Documents may provide for a lump sum payment for the entire project. The lump sum payment for individual items or for the entire project shall constitute full compensation for the completion of all work specified in the plans and specifications.
 4. **PLAN QUANTITY** – When cross-sectioning finished surfaces is not feasible, the ENGINEER may specify the final pay quantity of any item to be the original plan quantity. When so specified in the Contract Documents, such quantity will be revised only in the event that it is determined to differ by more than 10 percent of the original plan quantity. Such revisions will be determined by calculations of quantities from the plan sheets as applicable. Field measurement will not be considered except to verify that the work was accomplished in substantial compliance with the plan dimensions.
- B. **Regular Excavation:** Measurement of regular excavation shall include only the net volume of material excavated between the original ground surface and the surface of the completed earthwork. The pay quantity shall be the plan quantity in accordance with Article 4.01.A., unless otherwise stated in the Contract Documents.
- C. **Swale Excavation:** Measurement of swale excavation shall include only materials excavated within the line and grades indicated in the plans or as directed by the ENGINEER. Measurement may be by volume or lineal feet as called for in the Contract Documents.
- D. **Subsoil Excavation:** Measurement of subsoil excavation shall include only material excavated within the lines and grades indicated on the plans or as directed by the ENGINEER. Where the limits of subsoil excavation are not shown or vary from the limits shown on the plans, the pay quantity shall be determined by cross-sectioning measurements in accordance with the volumetric method described in Article 4.01.A. When the final pay quantity is more or less than the original plan quantity an appropriate adjustment shall be made to the applicable pay quantity for imported fill so that the loss or increase is compensated provided that the unsuitable material is to be disposed of off-site. A lower than plan volume will require less fill replacement and a

higher than plan volume will require more fill replacement than originally calculated. However, if the subsoil excavation is displaced by onsite excavation, a quantity adjustment will not be made. Where no separate pay item is included in the contract, all such work involving the excavation and disposal of unsuitable material shall be considered incidental to the cost of the applicable excavation item.

- E. **Rock Excavation:** When rock excavation is listed as a separate pay item in the Contract Documents, measurement of rock excavation shall be by cross-sectioning method prior to and after the rock layer is excavated. CONTRACTOR shall allow enough time between operations to facilitate this field survey work.

If Rock Excavation is not listed as a separate pay item in the Contract Documents, the cost of all such work shall be included in the unit price for Regular Excavation, Swale Excavation, Subsoil Excavation, Lake Excavation (Unclassified), or other items which may require the excavation of rock or boulders.

- F. **Lake Excavation (Unclassified):** Measurement of Lake Excavation (Unclassified) shall include only the net volume of material excavated between the ground surface and bottom of the lake using the VOLUMETRIC method as described in the first paragraph of Article 4.01.A. Any unauthorized overdigging or excavation below the plan bottom elevation will not be included in the measurement for payment.

If the sections indicate that the depths or bank slopes do not conform to the permitted design slopes or indicate that they are steeper, the CONTRACTOR shall correct the deficiency. Further, the CONTRACTOR shall pay for the expense of re-sectioning the lakes to document that said correction has been accomplished.

OWNER shall have the option of deducting the re-sectioning costs from the CONTRACTOR's payment, or the OWNER may request separate payment directly from the CONTRACTOR.

- G. **Structure Excavation:** Unless otherwise specified, there shall be no measurement for structure excavation. The cost of structure excavation shall be incidental to the cost of the applicable structure and no separate pay item will be established.
- H. **Pavement removal:** Measurement for pavement removal shall be by the square yard as measured in place prior to removal unless otherwise specified in the Contract Documents. When no separate pay item is included, the cost of such work shall be incidental to the item of clearing and grubbing or excavation as applicable.
- I. **Topsoil:** Measurement for topsoil shall be by the square yard as measured in place in locations shown in the plans or as directed by the ENGINEER. Placement of topsoil shall be to the thickness specified in the plans or Contract Documents, and it shall include the cost of furnishing the material as specified in Article 3.02.E. If enough excavated material is not available to satisfy the topsoil requirements, suitable topsoil shall be imported and the cost of furnishing and hauling this imported material shall be included in the unit price of the topsoil item.
- J. **Embankment:** When there is not enough suitable excavated material to satisfy the requirements of embankment, a separate item called Embankment or Borrow may be

established in the Contract Documents to facilitate completion. Payment will be made only for material required to complete the embankment to the plan dimensions and elevations. Material placed beyond the limits shown on the plans will not be measured for payment.

For Embankment, the pay quantity shall be the plan quantity unless otherwise stated in the plans or Contract Documents. The measurement for embankment shall be the in place volume of material placed above the original surface elevation within the dimensions and elevations indicated on the plans less the neat volume of excavation. No allowance will be made for subsidence or shrinkage.

For Borrow, the pay quantity shall be made on a loose volume basis unless otherwise specified in the plans or contract Documents. The method of measurement shall be in accordance with the second paragraph of Article 4.01.A., LOOSE VOLUME.

- K. **Berm Construction:** Measurement for Berm Construction shall include only materials excavated within the lines and grades indicated in the plans or as directed by the ENGINEER. Measurement may be by volume or lineal feet as defined in the Contract Documents.
- L. **Finish Grading:** Measurement for Finish Grading shall only include areas that require a change in elevation to meet the new design grade. Placement of sod to an existing elevation would require finish grading to facilitate placement of sod. If there is no pay item for finish grading, the cost of all such work shall be incidental to the applicable item of excavation or embankment.

4.02 BASIS OF PAYMENT

- A. **General:** Prices and payments for the various work items included in this section shall constitute full compensation for all work described herein and shall include excavation, hauling, placing, compacting, and dressing of the finish surface. Said payments shall also include the following items when no separate pay item is included in the contract:
 - 1. Removal and disposal of existing pavement
 - 2. Clearing and grubbing
 - 3. Providing disposal areas
 - 4. Furnishing of borrow areas
 - 5. Permits and waiver costs
- B. **Excavation and Embankment:** Cost of utilizing suitable excavated materials and disposing of unsuitable excavated materials shall be included in the cost of the applicable excavation item, unless otherwise stated in the plans or Contract Documents.

When separate classifications of Excavation and/or Embankment are listed as pay items in the contract, the quantities determined as provided above shall be paid at the

contract unit price per cubic yard, square yard, lineal foot or lump sum as applicable. Such payment shall constitute full compensation for all items as described in this section or as stated in the plans or Contract Documents.

- C. **PAY ITEMS:** For all work specified in this section, payment shall be made in accordance with the list of pay items established or as otherwise defined in the Contract Documents. The description of a pay item in the proposal section may vary from the descriptions stated in this section.

END OF SECTION 02820

**SECTION 02911
ASPHALTIC CONCRETE**

PART 1 GENERAL

1.01 SCOPE

- A. The work consists of the application of hot bituminous mixtures of the type and thickness specified on the construction plans which shall be composed of a mixture of:
 - 1. Aggregate.
 - 2. Mineral filler, if necessary to produce the desired stability hereinafter described; and
 - 3. Asphalt cement.
- B. The application of hot bituminous mixtures shall be properly placed upon a prepared base of the type called for on the construction plans in accordance with lines, grades, thickness, and typical section(s) shown including the conditioning of existing surface or base.

PART 2 PRODUCTS

2.01 ASPHALT MIXES

- A. Except for friction courses and base courses, the hot bituminous mixture shall be of the type called for on the construction plans and shall conform to hot mix design criteria as outlined in the latest edition of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

2.02 FRICTION COURSE

- A. The asphaltic concrete friction course shall be in accordance with Section 337, Florida Department of Transportation, Standard Specifications for Road and Bridge Construction, latest edition.

PART 3 EXECUTION

3.01 APPLICATION OF ASPHALT MIXES

- A. Limitation of Operations
 - 1. The mixture shall be spread only when the air temperature (in the shade) is above 40° Fahrenheit and rising.
 - 2. The temperature of the mixture at the time of spreading shall be within 25° Fahrenheit of the temperature set by the ENGINEER for this stage of the operation. The temperatures thus set by the ENGINEER shall be between 250° Fahrenheit and 340° Fahrenheit.

3. Any mixture caught in transit by a sudden rain may be laid only at the CONTRACTOR's risk. Should such mixture prove unsatisfactory, it shall be removed and replaced with satisfactory mixture at the CONTRACTOR's expense. In no case shall the mixture be laid while rain is falling or when there is water on the surface to be covered.

B. Joints

1. **Transverse joints:** Placing of the mixture shall be as continuous as possible and the roller shall not pass over the unprotected end of the freshly laid mixture except when the laying operation is to be discontinued long enough to permit the mixture to become chilled. When the laying operation is thus interrupted, or laying operation is to commence from a cold joint, a transverse joint shall be construction by cutting back on the previous run to expose the full depth of the mat.
2. **Longitudinal joints:** Where only a portion of the width of pavements is to be laid, the exposed edge shall be vertical. If traffic has rolled over the edge the ENGINEER may require the rolled edge trimmed back to a vertical face prior to construction the adjacent strip.
3. **General:** When the fresh mixture is laid against the exposed edges of joints (trimmed or formed) it shall be placed on close contact with the exposed edge so that an even, well compacted joint will be produced after rolling without having an open joint or unlevel surface condition.
4. **Layered placement of hot bituminous mixture shall be accomplished to cause longitudinal joints to be offset 6 to 12 inches laterally between successive layers.**

C. Finished Surface Requirements

1. For the purpose of testing the finished surface, the CONTRACTOR shall provide a 15-foot straight edge and a standard template cut to the true cross-section of the road. These shall be available at all times during construction so that the ENGINEER may check the finished surface. The CONTRACTOR shall provide and designate some employee whose duty it is to use the straight edge and template in checking all rolled surface under the direction of the ENGINEER. Vertical measurements from a string line between curbs to determine crown may be accepted as an alternate. The finished surface shall be such that it will not vary more than one-fourth inch from the 15-foot straight edge. Any irregularity of the surface exceeding the above limits shall be corrected.
2. The CONTRACTOR shall be responsible for obtaining a smooth surface on all pavement courses placed. The finished surface shall be of uniform thickness texture and compaction. The surface shall have no pulled, torn, loosened portions and shall be free of segregation, sand streaks, sand spots, ripples or roller marks, depressions that show up after initial rolling, and roller depressions. Any area of the surface which does not meet the

foregoing requirements shall be corrected at the CONTRACTOR's expense.

3. Correction of unacceptable pavement or portion thereof shall be determined in one of the following methods, only if approved by the ENGINEER:
 - a. Remove and replace - if correction is made by removing and replacing the pavement, the removal must be for the full depth of the course and extend at least 50 feet on either side of the defective area, for the full width of the paving lane.
 - b. Overlaying - if correction is made by overlaying, the overlay shall cover the length of the defective area and taper uniformly to a feather edge thickness at a minimum distance of 50 feet on either side of the defective area and for the entire width of roadway.

D. Compaction

1. The complete pavement will be accepted with respect to in-place density when the following criteria has been met:
 - a. Ninety-five percent of laboratory density (FM 1-T166) has been achieved.
 - b. Laboratory density (FM-T166) will be determined from a sample of the hot mix obtained in the field.
 - c. In-place density will be determined from field cores obtained during thickness evaluation.

E. Tests (Allowable Deficiencies - Thickness)

1. The average thickness of the compaction in-place mixture shall be determined as shown on the construction plans typical cross-section(s) for that particular roadway(s) to be constructed. The pavement shall not be approved or accepted unless the following criteria has been met:
 - a. The compacted in-place pavement has not exceeded a deficiency of $\frac{1}{4}$ inch in thickness as determined by the measured depths of two-inch diameter cores taken at random at a rate of one every 500 SY.
 - b. Not more than 20 percent of the total cores taken for than roadway (thickness and type) shall be deficient with no individual core exceeding the $\frac{1}{4}$ -inch tolerance. Roadway pavement indicating an average thickness of $1-\frac{1}{4}$ inch shall not have an individual core of less than one-inch in-place thickness.
 - c. Core lengths shall not exceed the average pavement thickness by more than three-eighths inch and shall be calculated as the next lower thickness.

- d. All testing required such as mixture, density, cores, etc. shall be the responsibility of the CONTRACTOR with the testing performed by an independent testing laboratory, testing results submitted to and approved by the ENGINEER.

F. Care to be Exercised

1. The CONTRACTOR shall use extreme care when applying prime coats, tack coats or laying the asphaltic concrete to insure the materials being applied do not come in contact with surface of adjacent structures such as but not limited to curb, inlets, etc., other than those surfaces designed for contact. Any material allowed to come in contact with surfaces other than those scheduled shall be cleaned by any method acceptable to the ENGINEER that does not destroy the function or aesthetic value of the structure. Any surface after cleaning that remains objectionable to the ENGINEER may result in removing and replacing the objectionable section. All removal, replacement or attempts to clean surfaces shall be at the CONTRACTOR's expense.
2. The CONTRACTOR shall use extreme care in using equipment adjacent to structures such as, but not limited to curbs, inlets, etc. to prevent damage to those structures such as roller scars, grader scars, etc. The ENGINEER may direct removal and replacement of those objectionable surfaces that have in his opinion destroyed the functional or aesthetic value of the structure. Cost of removal and replacement shall be at the CONTRACTOR's expense.

PART 4 MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT

- A. The quantity to be paid for under this section shall be the number of square yards of asphaltic surface and/or friction course actually completed and accepted, for the various types required by the approved plans.
- B. In determining the quantity of asphaltic concrete surface and/or friction course, the length to be used in the calculation shall be the actual length measured along the surface of the pavement and the width as specified by the approved plans.

4.02 BASIS OF PAYMENT

- A. The quantity of asphaltic concrete surface and/or friction course shall be paid for at the contract unit price per square yard for the various types required by the approved plans.
- B. The above price and payment shall be full compensation for all the work specified in this section and shall include all materials, equipment, tools, labor, testing laboratory, and incidentals necessary to complete the work.

END OF SECTION 02911

SECTION 02912
BASE COURSE, PRIME AND TACK COAT, AND STABILIZED SUBGRADE

PART 1 GENERAL

1.01 SCOPE

- A. The soil-cement base course work specified in this section consists of construction of a base course composed of soil and Portland cement uniformly mixed, moistened, compacted, finished and cured in accordance with these specifications, and shall conform to the lines, grades, thicknesses and typical cross-sections shown on the plans. The base shall be designed to have a seven-day in-situ compressive strength of 250 psi minimum. Seven-day laboratory design compressive strength shall be a minimum of 300 psi.
- B. The shell base course work specified in this section consists of construction of a base course composed of shell. It shall be constructed on the prepared subbase in accordance with these specifications and in conformity with the lines, grades, notes and typical cross-sections shown on the plans. Where so shown on the plans, the base shall be constructed in two courses. Where the plans do not specify double-course base, the base may be constructed in either one or two courses.
- C. The prime and tack coat work consists of applying bituminous materials on a previously prepared base in accordance with these specifications and in conformity with the lines, grades, dimensions and notes shown on the plans.
- D. The stabilized subgrade work shall consist of bringing the bottom of excavations and top of embankments of the roadway between the outer limits of the paving or base course to a surface conforming to the grades, lines and cross-sections shown on the plans, and to a uniform density.
- E. The base material must meet the requirements of the local transportation entity or it will not be considered.
- F. The base material specified on the drawings shall be the basis for the bid.

PART 2 PRODUCTS

2.01 SOIL CEMENT BASE

- G. Portland cement shall comply with the latest specifications for Portland cement, AASHTO M-85, AASHTO M-134 or ASTM C-150 for the type specified. A one-cubic-foot sack of Portland cement shall be considered to weight 94 pounds. The amount of cement used shall be sufficient to obtain the required compressive strength, however, under no circumstances shall the amount be more than 9 percent by weight. No minimum cement content is required.
- H. Water for use with cement shall be clean and free of substances deleterious to the hardening of the soil-cement.

- I. The soil to be used for the base course shall consist of bank-run shell, limerock, crushed portland cement concrete, approved borrow material or a combination of these materials proportioned as approved by the laboratory. The soil shall be free of organic debris, trash, roots or any other substance considered deleterious to the hardening of the soil-cement. Proposed recycled materials will be considered on a case-by-case basis.

1. Specific requirements for soil

Limerock Bearing RatioMinimum 100 (per FM S-515)

Plastic IndexMaximum 10 percent (per FM 1-T090)

Liquid IndexMaximum 25 percent (per FM 1-T089)

Gradation:	Sieve Size	Minimum % Passing
	2 - inch	100 percent
	#4	55 percent
	10	37 percent

- J. Soil cement for base construction shall have a LBR value of not less than 100. One LBR test shall be required from the source of the soil cement base material.

- K. The CONTRACTOR shall submit for approval a design mix for the soil proposed for use in soil-cement construction prepared by an independent testing laboratory approved by the ENGINEER. The design mix submittal shall include the results of tests run to verify that the soil meets the material requirements. Results of test used to establish the cement content, and a final design laboratory sample shall also be submitted. Laboratory testing for design mix evaluation shall be accomplished using water from the source proposed for use during construction. The design mix shall be submitted to the Engineer for approval a minimum of 15 calendar days prior to beginning of soil-cement construction. The minimum cement content shall be determined by Florida Test Method FM 5-520-Laboratory Design of Soil-Cement Mixtures. The soil material, used in producing a soil-cement mixture, shall be obtained from a commercial source where soil properties are consistently uniform, and the mixture shall be processed in a central mix plant that automatically weighs components and automatically records the weight of each component on a printed ticket or tape. Mixed in place soil cement will not be authorized.

2.02 SHELL BASE

The materials shall not contain excessive amounts of sand and fine particles to prevent proper bonding.

At least 97 percent of the material shall pass a 3½-inch sieve. Not less than ten percent nor more than 20 percent of the material shall pass the Number 200 sieve by washing.

The portion of the material passing the Number 40 sieve shall be non-plastic.

Shell for base construction shall have an LBR value of not less than 100. One LBR test shall be taken per each 1,500 SY area. Each source of shell base materials must be specifically approved for usage.

Each deposit proposed for use shall be inspected by the ENGINEER prior to use. Acceptance or rejection will be made on production of a uniform material consistently meeting this specification. The ENGINEER may require a certified copy of current Florida Department of Transportation (FDOT) quality assurance for each source.

2.03 CRUSHED CONCRETE BASE

Crushed concrete conforming to the gradation and other requirements of Section 204-2 of the most recent FDOT Standard Specifications for Road and Bridge Construction.

2.04 PRIME AND TACK COAT

For the prime and tack coat, any one of the following types or grades of prime and tack materials may be used at the option of the CONTRACTOR unless a particular type and grade are called for on the plans.

1. Prime Coat
 - a. Cutback Asphalt, Grade RC-70 or RC-250.
 - b. Emulsified Asphalt, Grade RS-2, SS-1, SS-1H or Special MS.
2. Tack Coat
 - a. Emulsified Asphalt, Grade S, RS-2, AE-90, SS-1, SS-1H or Special MS.

PART 3 EXECUTION

3.01 CONSTRUCTION OF SOIL CEMENT BASE

A. Equipment

3. For performing the work specified in this section, the CONTRACTOR may use any machine, combination of machines or equipment that will produce the completed soil-cement base course meeting the requirements for soil pulverization, cement application, mixing, water application, incorporation of materials, compaction, finishing and curing as controlled by these specifications. Special attention is directed to the necessity for utilizing compaction equipment which will produce the required density in a particular soil-cement blend.

B. Preparation

1. Before other construction operations are begun, the areas to be paved shall be graded and shaped as required to construct the soil-cement base in conformance with the grades, lines, thicknesses and typical cross-sections shown on the plans. Any additional soil needed shall be placed as directed by the ENGINEER. The subgrade shall be firm and able to support without displacement the construction equipment and compaction hereinafter specified. Any unsuitable soil or materials, including material retained on a three-inch sieve, shall be removed and replaced with acceptable material. Soft or yielding subgrade shall be corrected and made stable before construction proceeds.

2. The subgrade in both cuts and fills shall be compacted to density of 98 percent of the maximum density as determined by AASHTO T-180 (modified). The subgrade shall be shaped prior to making the density tests. Subgrade LBR shall be as shown on the construction plans. Test results of subgrade density and LBR shall be provided to the ENGINEER for review prior to the construction of the base material.

C. Plant Mix

1. A plant mixture of soil-cement material shall be utilized. The plant should demonstrate the ability to properly proportion the cement to obtain a uniform mix, meeting all specifications.

D. Compaction

1. Prior to the beginning of compaction the mixture shall be in a loose condition for its full depth and shall be within approximately two percent of the optimum moisture. The loose mixture shall be uniformly compacted to the specified density within three hours. During compaction operations, shaping may be required to obtain uniform compaction and required grade and cross-section. No soil cement shall be applied when the soil or subgrade is frozen. The air temperature shall be at least 40° Fahrenheit in the shade and rising, or over 50° Fahrenheit.

E. Finishing

1. After the mixture has been compacted, the surface of the soil-cement shall be shaped, if necessary, to the required lines, grades and cross-section. During shaping operations, the surface shall be lightly scarified to loosen any imprints left by the compacting or shaping equipment. The resulting surface shall then be compacted to the specified density with steel-wheel or pneumatic tire rollers, or both. Rolling shall be supplemented by broom-dragging as required. Surface compaction and finishing shall be done in such a manner as to produce, in not longer than three hours, a smooth, dense surface, free of surface compaction planes, cracks, ridges or loose materials.

F. Uniformity

1. Any portion of the soil-cement that has a density less than 95 percent of the maximum density, determined as specified, shall be corrected by additional rolling. If the time limits set forth herein have been exceeded, the base shall be left undisturbed and shall be tested (after seven days of curing) to determine its suitability. If it is found unsuitable, it shall be removed and replaced by the CONTRACTOR without additional compensation. The CONTRACTOR may, at his option, remove and replace the deficient base rather than wait for the results of the seven-day test.

G. Construction Joints

1. At the end of each day's construction, a straight transverse construction joint shall be formed by cutting back into the completed work to form a true vertical face. The construction joint thus formed shall be located so as to exclude all of that part of the base at the end of the run from being considered a part of the finished base if it

does not have full depth, is not thoroughly compacted, is not properly proportioned, or is not properly mixed.

H. Curing

1. After the soil-cement base has been finished as specified herein, it shall be protected against drying for seven days, as specified herein. The finished soil-cement base shall be maintained in a moist condition by application of water until the curing material is applied. The curing material shall not be applied until the finished soil-cement base has been inspected by the ENGINEER and such inspection has determined that the base material is hardening in a uniform and satisfactory manner. The bituminous material and construction shall be in accordance with the specifications for Prime and Tack Coat for base courses. The actual rate of application shall be sufficient to provide complete coverage without excessive runoff. At the time the bituminous material is applied, the soil-cement surface shall be dense, free of all loose and extraneous material and shall contain sufficient moisture to permit penetration of the bituminous material. Water shall be applied in sufficient quantity to fill the surface voids of the soil-cement immediately before the bituminous curing material is applied.

I. Opening to Traffic

1. After the seven-day curing period, the completed portion may be open to all traffic, provided the soil-cement is either protected or has hardened sufficiently to prevent marring or distorting of the surface by the equipment or traffic, and provided the curing as specified is not impaired.
 - a. The curing material shall be adequately maintained during the seven-day protection period so that all of the soil-cement will be covered effectively during this period.
 - b. Finished portions of soil-cement that are used by equipment during the construction of an adjoining section shall be protected in such a manner as to prevent the equipment from marring or damaging the completed work.
 - c. When the air temperature may be expected to reach the freezing point, sufficient protection from freezing shall be given the soil-cement for seven days after its construction and until it has hardened. Other curing materials such as moist earth, straw or hay may be used upon approval.

J. Maintenance

1. The CONTRACTOR shall maintain the base to a true and satisfactory surface until the wearing surface is constructed. Should any repairs of patching be necessary, they shall extend to the full depth of the base and shall be made in a manner that will assure restoration of a uniform base course conforming to the requirements of these specifications. In no case shall repairs be made by adding a thin layer of soil-cement to the completed work. The CONTRACTOR may, at his option, make full-depth repairs with concrete to small or minor areas such as manholes, inlets or the like.

K. Testing

1. Tests are a necessary part of soil-cement base construction. The following tests will be made by the laboratory:
 - a. Determinations of Cement Applied
 - b. Field Density - Tests shall be taken per each 500 SY maximum area or per each 500 feet per lane, whichever is less.
 - c. Moisture-Density Test
 - d. Bag Samples - Bag samples shall be taken at least once daily at intervals not to exceed 5,000 SY and molded in the laboratory at field moisture content based on standard proctor density test (AASHTO T-99). Each specimen shall be four inches in diameter and six inches in height. The specimens shall be cured for seven days and tested for compressive strength. The bag samples shall have a minimum strength of 250 psi.
 - e. Six-Inch Diameter Cores - For each day's placement of base material, field cores of six inch diameter shall be taken after seven days curing time at intervals of one every 500 SY or at intervals closer if necessary to isolate areas showing below minimum requirements. The cores shall be used to determine thickness of base and compression tested to determine strength of base material. The cores shall have an average compressive strength of 250 psi. The minimum compressive strength core break shall be 200 psi. Cores with less than 200 psi shall require the CONTRACTOR to isolate the area of base with additional cores and compressive tests for determining limits of the unacceptable base. That portion determined unacceptable shall be removed and replaced with new material, retested after seven days as outlined above. Where the base is more than one-half inch deficient in thickness, the area covered by this deficient base shall be replaced. The one-half inch deficiency may be accepted only if found in minor isolated areas. Additional cores will be required to determine size of deficient area.
 - f. Test Results - After receipt of the test reports from the laboratory stating that there is a satisfactory soil-cement base, the ENGINEER may allow the wearing surface to be placed.
 - g. All tests shall be performed by a testing laboratory, approved by the ENGINEER. The testing laboratory shall be under the direction of a Professional Engineer with at least five years of materials testing experience. All tests shall be performed at the CONTRACTOR's expense.

L. Grade Stakes

1. The CONTRACTOR shall make every effort to preserve the grade stakes until the job is completed. Destroyed or moved stakes shall be replaced at the CONTRACTOR's expense.

3.02 CONSTRUCTION OF SHELL BASE

A. Equipment

1. This work may be performed with any machine, combination of machine or equipment that will produce the specified results.

B. Transporting Shell

1. The shell shall be transported (over material previously spread) to the point where it is to be used. It shall then be dumped on the end of the preceding spread. In no case shall material be dumped directly on the subbase.

C. Spreading Shell

1. The shell shall be spread uniformly. All segregated areas of fine or coarse material shall be removed and replaced with well graded shell. For double-course base, the material shall be spread in two courses. The thickness of the first course shall be approximately one-half the total thickness of the finished base, or enough additional to bear the weight of the construction equipment without disturbing the subbase.

D. Compacting and Finishing Base

1. For double-course base, the first course shall be bladed if necessary to secure a uniform surface and shall be compacted to the density specified below immediately prior to spreading the second course. No other finishing of this course is required.
 - a. After spreading is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross-section after compaction. For double-course bases, this scarifying shall extend to a depth sufficient to penetrate slightly the surface of the first course.
 - b. As soon as proper conditions of moisture are attained, the material shall be compacted to a density of 98 percent of the maximum density obtainable under AASHTO Method T-180 (modified). Where the base is being constructed in one course and the specified thickness is more than six inches, the density specified above shall be obtained in both the bottom half and the top half of the base. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross-section, the compacting operations for such areas shall be completed prior to making the density determinations on the finished base.
 - c. The surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the tin-glazed or cemented surface, leaving a granular or porous condition that will allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.

- d. If, at any time, the subbase material should become mixed with the base course material, the CONTRACTOR shall excavate and remove the mixture. He shall reshape and compact the subgrade, and replace the materials removed with clean base material. The clean base material shall then be shaped and compacted as specified above.

E. Testing Surface

1. The finished surface of the base course shall be checked with a templet cut to the required cross-section and with a 15 foot straight edge laid parallel to the centerline of the road or other approved testing devices. All irregularities greater than $\pm 1/4$ inch shall be corrected by scarifying and removing or adding rock, as may be required, after which the entire areas shall be recompacted as specified herein. On every project at least one of each of the following density tests shall be made by the laboratory at intervals not exceeding 500 SY unless otherwise specified.
 - a. Modified Proctor Maximum Density Determination Tests. Tests shall be taken per each 500 SY maximum area.
 - b. Field In-Place Density Tests.

F. Thickness

1. After the base is completed, test holes shall be dug or cores taken at intervals of not more than 500 SY, or at closer intervals if necessary. Where the base is deficient in thickness, the area covered by this deficient base shall be reworked by scarifying to a depth of at least three inches and adding more base material, so that after proper compacting the thickness will conform to the plans.

All tests shall be performed by an independent testing laboratory, approved by the ENGINEER. The testing laboratory shall be under the direction of a Professional Engineer with at least five years of materials testing experience.

G. Grade Stakes

4. The CONTRACTOR shall make every effort to preserve the grade stakes until the job is completed. Destroyed or moved stakes shall be replaced at the CONTRACTOR's expense.

3.03 CONSTRUCTION OF CRUSHED CONCRETE BASE

A. Equipment

1. This work may be performed with any machine, combination of machine or equipment that will produce the specified results.

B. Transporting Crushed Concrete

1. The crushed concrete shall be transported (over material previously spread) to the point where it is to be used. It shall then be dumped on the end of the preceding spread. In no case shall material be dumped directly on the subbase.

C. Spreading Crushed Concrete

1. The crushed concrete shall be spread uniformly. All segregated areas of fine or coarse material shall be removed and replaced with well graded material. For double-course base, the material shall be spread in two courses. The thickness of the first course shall be approximately one-half the total thickness of the finished base, or enough additional to bear the weight of the construction equipment without disturbing the subbase.

D. Compacting and Finishing Base

1. For double-course base, the first course shall be bladed if necessary to secure a uniform surface and shall be compacted to the density specified below immediately prior to spreading the second course. No other finishing of this course is required.
 - a. After spreading is completed, the entire surface shall be scarified and shaped so as to produce the exact grade and cross-section after compaction. For double-course bases, this scarifying shall extend to a depth sufficient to penetrate slightly the surface of the first course.
 - b. As soon as proper conditions of moisture are attained, the material shall be compacted to a density of 98 percent of the maximum density obtainable under AASHTO Method T-180 (modified). Where the base is being constructed in one course and the specified thickness is more than six inches, the density specified above shall be obtained in both the bottom half and the top half of the base. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross-section, the compacting operations for such areas shall be completed prior to making the density determinations on the finished base.
 - c. The surface shall be "hard-planed" with a blade grader immediately prior to the application of the prime coat to remove the tin-glazed or cemented surface, leaving a granular or porous condition that will allow free penetration of the prime material. The materials planed from the base shall be removed from the base area.
 - d. If, at any time, the subbase material should become mixed with the base course material, the CONTRACTOR shall excavate and remove the mixture. He shall reshape and compact the subgrade, and replace the materials removed with clean base material. The clean base material shall then be shaped and compacted as specified above.

E. Testing Surface

1. The finished surface of the base course shall be checked with a templet cut to the required cross-section and with a 15 foot straight edge laid parallel to the centerline of the road or other approved testing devices. All irregularities greater than $\pm 1/4$ inch shall be corrected by scarifying and removing or adding rock, as may be required, after which the entire areas shall be recompacted as specified herein. On every project at least one of each of the following density tests shall be made by the laboratory at intervals not exceeding 500 SY unless otherwise specified.

- a. Modified Proctor Maximum Density Determination Tests. Tests shall be taken per each 500 SY maximum area.
- b. Field In-Place Density Tests.

F. Thickness

1. After the base is completed, test holes shall be dug or cores taken at intervals of not more than 500 SY, or at closer intervals if necessary. Where the base is deficient in thickness, the area covered by this deficient base shall be reworked by scarifying to a depth of at least three inches and adding more base material, so that after proper compacting the thickness will conform to the plans.

All tests shall be performed by an independent testing laboratory, approved by the ENGINEER. The testing laboratory shall be under the direction of a Professional Engineer with at least five years of materials testing experience.

G. Grade Stakes

1. The CONTRACTOR shall make every effort to preserve the grade stakes until the job is completed. Destroyed or moved stakes shall be replaced at the CONTRACTOR's expense.

3.04 APPLICATION OF PRIME AND TACK COAT

A. Equipment

1. This work may be performed with any machines, combination of machines, or equipment that will produce the specified results.

B. Cleaning the Base

1. Before any bituminous material is applied, all loose material, dust, caked clay and foreign materials which might prevent proper bond with existing surface shall be moved to the shoulders. Particular care shall be taken to clean the outer edges of the strip to be treated in order to insure that the tack coat will adhere. Where the prime or tack coat is applied adjacent to the curb and gutter or valley gutter, such concrete surfaces are to be protected and kept free of bituminous material.

C. Weather Limitations

1. No bituminous material shall be applied when the temperature of the air is less than 40° Fahrenheit in the shade, or when the weather conditions or the condition of the existing surface is unsuitable.

D. Application of Prime Coat

1. The surface to be primed shall be clean and contain optimum moisture. The temperature of the prime material shall be between 100° and 150° Fahrenheit. The exact temperature shall be such as will insure uniform distribution. The material shall be applied by means of a pressure distributor.

The amount of bituminous material applied shall be at the rate of approximately 0.10 to 0.25 gallons per square yard, dependent upon the type of base materials. The rate of application shall be sufficient so as to coat the surface thoroughly and uniformly without having any excess to form pools or to flow off the base. A light, uniform application of clean sand shall be applied prior to opening the primed base to traffic. To cure the prime coat in such cases, the sand shall be rolled with a traffic roller in conjunction with traffic. If warranted by traffic conditions, the application shall be made only on one-half of the width of the base at one time, care being taken to secure the correct amount of bituminous material at the joint. The base shall be sufficiently moist in order to obtain maximum penetration of the asphalt.

E. Application of Tack Coat

1. Where a bituminous surface is to be laid and a tack coat is required, both shall be applied as herein specified. On newly constructed base courses, the application of the tack coat (when one is required) shall follow the application of the prime coat, immediately before the wearing surface is applied. In general, a tack coat will not be required on primed bases, except in areas which have become excessively dirty and cannot be cleaned, or in areas where the prime has cured and lost bonding effect. The tack coat shall be applied with a pressure distributor. The bituminous material shall be heated to a suitable consistency as designated. The bituminous material shall be applied only in the amount necessary to bond the wearing surface to the base. The rate of application shall be between 0.02 and 0.08 gallons per square yard. The exact rate shall be designated by the ENGINEER. The tack coat shall be applied sufficiently in advance of the wearing surface to permit drying. However, it shall not be applied so far in advance or over such an area as to lose its adhesiveness as a result of being covered with dust or other foreign material. The tack coat shall be kept free from traffic until the wearing surface is laid.

3.05 PREPARATION OF STABILIZED SUBGRADE

A. Subbase

1. The work shall consist of bringing the bottom of excavations and the top of embankments of the roadway to a surface conforming to the grades, lines and cross sections shown on the plans.

All soft and yielding material and other portions of the subgrade which will not compact readily shall be removed and replaced with suitable material and the whole subbase brought to line and grade, allowing for subsequent compaction.

- a. All submerged stumps, roots or other organic matter encountered in the preparation of the subbase shall be removed.
- b. The subbase shall be stabilized to the minimum Bearing Ratio and depth shown on the plans. LBR tests shall be taken per each 1,500 SY area or per each 1,500 feet of roadway, whichever is less. If the natural in-place soils do not meet the required stability, sufficient borrow material for stabilization shall be uniformly mixed with in-place soils to produce the load Bearing Ratio. Material used for stabilization must be specifically approved for usage. Borrow material shall be included in the cost of subbase bid item.

- c. The stabilized subbase in both cuts and fills shall be compacted to a density as determined by AASHTO T-180 (modified). The subbase shall be shaped prior to making the density tests.
- d. The subbase shall be firm and able to support the construction equipment without displacement. The minimum density acceptable at any location will be 98 percent of the maximum density as determined by AASHTO T-180 (modified). Load Bearing Ratio determinations shall be made by the Limerock Bearing Ratio Method, Test Method D of AASHTO T-180 as modified by the Florida Department of Transportation's Research Bulletin 22-B, revised April, 1972. Soft or yielding subgrade shall be corrected and made stable before construction proceeds.
- e. Density tests shall be made before work proceeds.
- f. The required density shall be maintained until the base of pavement has been laid or until the aggregate materials for the base of pavement course have been spread in place.
- g. After the subbase has been prepared, and immediately before any base material is placed, the subbase shall be tested for substantial compliance as to crown and elevation. Material shall be removed or added, as the condition necessitates, and again stabilized and compacted to bring all portions of the subbase to the specified elevation, stability and density.

PART 4 MEASUREMENT AND PAYMENT

4.01 SOIL-CEMENT BASE

A. Method of Measurement

- 1. The quantity to be paid for under this section shall be the number of square yards of soil-cement base course actually completed and accepted. In determining the quantity of soil-cement base course, the length to be used in the calculations shall be the actual length measures along the surface of the base and the width shall be the width of the base actually constructed, both within the neat lines shown on the plans.

B. Basis of Payment

- 1. This work shall be paid for at the contract unit price per square yard of completed and accepted soil-cement base course. The contract unit price shall be full payment for furnishing all materials, equipment tools, labor, testing and incidentals necessary to complete the work and for carrying out the maintenance provisions in this specification.
- 2. Any additional earth required for the base course in accordance with Paragraph 3.01,B.1 herein, will be paid for at the contract unit price per cubic yard for excavation.
- 3. No allowance shall be made for any materials used or work done outside the lines established by the ENGINEER.

4.02 SHELL BASE

A. Method of Measurement

1. The quantity to be paid for under this section shall be the number of square yards of base acceptably completed. The length to be used in the calculation shall be the actual length measured along the surface of the completed base, and the width of the base actually constructed, both within the neat lines shown on the plans.

B. Basis of Payment

1. The quantity determined as provided above shall be paid for at the contract unit price per square yard for base, complete, in place and accepted. Such price and payment shall be full compensation for performing and completing all the work described in this section and shall include furnishing all materials, equipment, tools, labor, testing and incidentals necessary to complete the work.

4.03 CRUSHED CONCRETE BASE

A. Method of Measurement

1. The quantity to be paid for under this section shall be the number of square yards of base acceptably completed. The length to be used in the calculation shall be the actual length measured along the surface of the completed base, and the width of the base actually constructed, both within the neat lines shown on the plans.

B. Basis of Payment

1. The quantity determined as provided above shall be paid for at the contract unit price per square yard for base, complete, in place and accepted. Such price and payment shall be full compensation for performing and completing all the work described in this section and shall include furnishing all materials, equipment, tools, labor, testing and incidentals necessary to complete the work.

4.04 PRIME AND TACK COAT

A. Method of Measurement

1. The quantity to be paid for under this section shall be the number of square yards of prime or tack coat actually completed and accepted.
2. In determining the quantity of prime or tack coat, the length to be used in the calculation shall be the actual length measured along the surface of the pavement and the width shall be the width of pavement actually constructed, both within the neat lines shown on the plans.

B. Basis for Payment

1. The quantity of prime or tack coat determined, as provided in Paragraph A above, shall be paid for at the contract unit price per square yard for this item.

2. When no separate bid item for prime is provided in the proposal, the prime coat shall not be paid for directly, and the cost shall be included in the contract unit price for the base course on which it is applied.
3. When no separate bid item for tack coat is provided in the proposal, the tack coat shall not be paid for directly, and the cost shall be included in the contract unit price for the pavement to be laid over the tack coat.
4. The prices and payments provided for herein shall be full compensation for all materials (including sand covering where required) for heating, hauling and applying, and for all equipment, tools, labor and incidentals necessary to complete the work covered by this section.

4.05 STABILIZED SUBGRADE

A. Method of Measurement

1. The quantity to be paid for under this section shall be the number of square yards of subgrade acceptably completed. The length to be used in the calculation shall be the actual length measured along the surface of the completed subgrade, and the width of the subgrade actually constructed, both within the neat lines shown on the plans.

B. Basis of Payment

1. The quantity determined as provided above shall be paid for at the contract unit price per square yard for subgrade, complete, in place and accepted. Such price and payment shall be full compensation for performing and completing all the work described in this section and shall include furnishing all materials, equipment, tools, labor, testing and incidentals necessary to complete the work.

END OF SECTION 02912

**SECTION 02924
PAVEMENT MARKING, STRIPING, AND SIGNS**

PART 1 GENERAL

1.01 SCOPE

- A. This section specifies pavement traffic painting, marking, striping, and signing shown on the plans or called for in the specifications. In general, all pavement traffic painting, marking, striping, and signing shall comply with the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, hereafter referenced "FDOTSPEC" and the Manual on Uniform Traffic Control Devices, U.S. Department of Transportation, Federal Highway Administration, hereafter referenced as "MUTCD" and the Florida Department of Transportation Roadway and Traffic Design Standards, hereafter referenced by index number.

1.02 SPECIFICATION AND STANDARDS REFERENCE

- A. Where supplementary specifications or standards such as ASTM, AWWA, AASHTO, etc., are referenced, such references shall be the latest edition.

PART 2 PRODUCTS

2.01 SIGN PANELS AND POSTS

- A. Sign panels shall be aluminum. All signposts shall be steel flanged channel installed in accordance with FDOT index number 11865.

2.02 SIGN BLANKS AND FACES

- A. Regulatory and Warning signs as defined in the MUTCD shall be "High Intensity" reflectorized grade.
- B. Street name and guide signs as defined in the MUTCD shall be "Standard reflectorized grade."
- C. CONTRACTOR shall submit documentation from the sign suppliers which identifies the reflector grade of each sign. All materials shall meet the requirements of FDOTSPEC.

2.03 SIGN HARDWARE

- A. Signs shall be attached to posts in accordance with FDOT index number 11865.

2.04 PAVEMENT STRIPING AND PAINTING

- A. Thermoplastic Striping and Marking - Thermoplastic pavement striping shall be reflective and meet the requirements of FDOTSPEC, Section 711.

- B. Painted Striping and Marking - Painted striping shall be reflectorized and meet the requirements of FDOTSPEC, Section 710.

2.05 REFLECTIVE PAVEMENT MARKERS

- A. Reflective pavement markers and their installation shall meet the requirements of FDOTSPEC, Section 706.

PART 3 EXECUTION

Not Used

PART 4 MEASUREMENT AND PAYMENT

4.01 BASIS OF PAYMENT

- A. Payment for pavement marking, striping, and signing shall be on a lump sum basis in accordance with the accepted proposal. Such payment shall constitute full compensation for furnishing all labor, materials, and equipment necessary to complete the construction on accordance with the plans and specifications.

END OF SECTION 02924

**PART III – FDOT STANDARD SPECIFICATIONS FOR
ROAD AND BRIDGE CONSTRUCTION**

**SECTION 430
PIPE CULVERTS**

430-1 Description.

Furnish and install drainage pipe and end sections at the locations called for in the Plans. Furnish and construct joints and connections to existing pipes, catch basins, inlets, manholes, walls, etc., as may be required to complete the work.

Construct structural plate pipe culverts or underdrains in accordance with Sections 435 and 440.

Obtain pipe culverts from a Producer currently on the Department's list of Producers with Accepted Quality Control Programs. Producers seeking inclusion on the list shall meet the requirements of 105-3.

When the producer's Quality Control Program is suspended, accept responsibility of either obtaining drainage products from another producer with an accepted Quality Control Program or await re-approval of the producer's Quality Control Program. The Engineer will not allow changes in Contract Time or completion dates as a result of the producer's Quality Control Program suspension. Accept responsibility for all delay costs or other costs associated with the producer's Quality Control Program suspension.

430-2 Materials.

430-2.1 Pipe: Meet the following requirements:

Concrete Pipe	Section 449
Round Rubber Gaskets	Section 942
Corrugated Steel Pipe and Pipe Arch	Section 943
Corrugated Aluminum Pipe and Pipe Arch	Section 945
Corrugated Polyethylene Pipe	Section 948
Polyvinyl Chloride (PVC) Pipe	Section 948

430-2.2 Joint Materials: Use joint materials specified in 430-7 through 430-9 according to type of pipe and conditions of usage.

430-2.3 Mortar: Use mortar composed of one part Portland cement and two parts of clean, sharp sand, to which mixture the Contractor may add hydrated lime in an amount not to exceed 15% of the cement content. Use mortar within 30 minutes after its preparation.

430-3 Type of Pipe to Be Used.

430-3.1 General: When the Plans designate a type (or types) of pipe, use only the type (or choose from the types) designated. As an exception, when the Plans designate reinforced concrete pipe as Class S, Class I, Class II, Class III and Class IV, the Contractor may use non-reinforced concrete pipe up to and including 36 inch in diameter.

430-3.2 Side Drain: If the Plans do not designate a type (or types) of pipe, the Contractor may use either a minimum Class I concrete pipe, corrugated steel pipe, corrugated aluminum pipe, corrugated polyethylene pipe or PVC pipe. If one of the metal types is chosen, use the minimum gage specified in Section 943 for steel pipe or Section 945 for aluminum pipe.

Non-reinforced concrete pipe may also be substituted for concrete pipe in side drains, subject to the provisions of 430-3.1.

430-4 Laying Pipe.

430-4.1 General: Lay all pipe, true to the lines and grades given, with hubs up and tongue end fully entered into the hub. When pipe with quadrant reinforcement or circular pipe with elliptical reinforcement is used, install the pipe in a position such that the manufacturer's marks designating "top" and "bottom" of the pipe are not more than five degrees from the vertical plane through the longitudinal axis of the pipe. Do not allow departure from and return to plan alignment and grade to exceed 1/16 inch per foot of nominal pipe length, with a total of not more than 1 inch departure from theoretical line and grade. Take up and relay any pipe that is not in true alignment or which shows any settlement after laying at no additional expense to the Department.

Do not use concrete pipe with lift holes except round pipe which has a inside diameter in excess of 54 inches or any elliptical pipe.

Repair lift holes, if present, by use of a hand-placed, stiff, non-shrink, 1-to-1 mortar of cement and fine sand, after first washing out the hole with water. Completely fill the void created by the lift hole with mortar. Cover the repaired area with a 24 by 24 inches piece of filter fabric secured to the pipe. Use a Type D-3 filter fabric meeting the requirements shown on Design Standards, Index 199.

Secure the filter fabric to the pipe using a method that holds the fabric in place until the backfill is placed and compacted. Use a grout mixtures, mastics, or strapping devices to secure the fabric to the pipe.

When installing pipes in structures, construct inlet and outlet pipes of the same size and kind as the connecting pipe shown in the Plans. Extend the pipes through the walls for a distance beyond the outside surface sufficient for the intended connections, and construct the concrete around them neatly to prevent leakage along their outer surface as shown on the Design Standards, Index 201. Keep the inlet and outlet pipes flush with the inside of the wall. Resilient connectors as specified in 942-3 may be used in lieu of a masonry seal.

Furnish and install a filter fabric jacket around all pipe joints and the joint between the pipe and the structure in accordance with Design Standards, Index Nos. 201 and 280. Use fabric meeting the physical requirements of Type D-3 specified in the Design Standards, Index 199. The fabric shall extend a minimum of 12 inches beyond each side of the joint or both edges of the coupling band, if a coupling band is used. The fabric shall have a minimum width of 24 inches, and a length sufficient to provide a minimum overlap of 24 inches. Secure the filter fabric jacket against the outside of the pipe by metal or plastic strapping or by other methods approved by the Engineer.

Meet the following minimum joint standards:

Pipe Application	Minimum Standard
Storm and Cross Drains	Water-tight
Gutter Drain	Water-tight
Side Drains	Soil-tight

When rubber gaskets are to be installed in the pipe joint, the gasket shall be the sole element relied on to maintain a tight joint. Soil tight joints must be watertight to 2 psi. Water-tight joints must be water-tight to 5 psi unless a higher pressure rating is required in the Plans.

430-4.2 Trench Excavation: Excavate the trench for storm and cross drains, and side drains as specified in Section 125.

430-4.3 Foundation: Provide a suitable foundation, where the foundation material is of inadequate supporting value, as determined by the Engineer. Remove the unsuitable material and replace it with suitable material, as specified in 125-8. Where in the Engineer's opinion, the removal and replacement of unsuitable material is not practicable, he may direct alternates in the design of the pipe line, as required to provide adequate support. Minor changes in the grade or alignment will not be considered as an adequate basis for extra compensation.

Do not lay pipe on blocks or timbers, or on other unyielding material, except where the use of such devices is called for in the Plans.

430-4.4 Backfilling: Backfill around the pipe as specified in 125-8 unless specific backfilling procedures are described in the Contract Documents.

430-4.5 Plugging Pipe: When existing pipe culverts are to be permanently placed out of service, fill them with flowable fill that is non-excavatable, contains a minimum 350 lbs/cy of cementitious material and meets the requirements of Section 121 and/or plug them with masonry plugs as shown in the Plans. Install masonry plugs that are a minimum of 8 inches in thickness, in accordance with Design Standards, Index 280.

When proposed or existing pipe culverts are to be temporarily placed out of service, plug them with prefabricated plugs as shown in the Plans. Install prefabricated plugs in accordance with the manufacturer's recommendations. Do not fill or construct masonry plugs in any pipe culvert intended for current or future service.

430-4.6 End Treatment: Place an end treatment at each storm and cross drain, and side drain as shown in the Plans. Refer to the Design Standards for types of end treatment details.

As an exception to the above, when concrete mitered end sections are permitted, the Contractor may use reinforced concrete U-endwalls, if shop drawings are submitted to the Engineer for approval prior to use.

Provide end treatments for corrugated polyethylene pipe and PVC pipe as specified in Section 948, or as detailed in the Plans.

430-4.7 Metal Pipe Protection: Apply a bituminous coating to the surface area of the pipe within and 12 inches beyond the concrete or mortar seal prior to sealing, to protect corrugated steel or aluminum pipe embedded in a concrete structure, such as an inlet, manhole, junction box, endwall, or concrete jacket.

Ensure that the surface preparation, application methods (dry film thickness and conditions during application), and equipment used are in accordance with the coating manufacturers' published specifications.

Obtain the Engineer's approval of the coating products used.

430-4.8 Pipe Inspection: For pipes installed under the roadway, inspection is to be conducted when backfill reaches 3 feet above the pipe crown or upon completion of placement of the stabilized subgrade. For pipe installed within fills, including embankments confined by walls, inspection is to be conducted when compacted embankment reaches 3 feet above the pipe crown or the finished earthwork grade as specified in the Plans. Prior to conducting the inspection, provide the Engineer with a video recording schedule for videoing, dewater installed pipe, and remove all silt, debris and obstructions. Submit pipe videoing and reports to the Department for review prior to the continuation of paving.

For pipe 48 inches or less in diameter, provide the Engineer a video DVD and report using low barrel distortion video equipment with laser profile technology, non-contact

video micrometer and associated software that provides:

pipe.

1. Actual recorded length and width measurements of all cracks within the

2. Actual recorded separation measurement of all pipe joints.
3. Pipe ovality report.
4. Deflection measurements and graphical diameter analysis report in terms of x and y axis.

5. Flat analysis report.
6. Representative diameter of pipe.
7. Pipe deformation measurements, leaks, debris, or other damage or defects.
8. Deviation in pipe line and grade, joint gaps, and joint misalignment.
9. A video record of the actual speed at which the camera is traveling through the pipe, ensuring that the rate of travel does not exceed the limit defined in 430-4.8.1 below.

Laser profiling and measurement technology must be certified by the company performing the work to be in compliance with the calibration criteria posted at: <http://www.dot.state.fl.us/construction/contractorissues/laser.shtm> . Reports submitted in electronic media are preferred.

The Engineer may waive this requirement for side drains and cross drains which are short enough to inspect from each end of the pipe.

430-4.8.1 Video Report: Provide a high quality DVD in a MPEG2 format video with a standard resolution of 720 x 480. Use a camera with lighting suitable to allow a clear picture of the entire periphery of the pipe. Center the camera in the pipe both vertically and horizontally and be able to pan and tilt to a 90 degree angle with the axis of the pipe and rotating 360 degrees. Use equipment to move the camera through the pipe that will not obstruct the camera's view or interfere with proper documentation of the pipe's condition.

The video image shall be clear, focused, and relatively free from roll, static, or other image distortion qualities that would prevent the reviewer from evaluating the condition of the pipe. The video will include identification before each section of pipe filmed. The identification will include the project number, the structure number corresponding to the structure number on the set of plans for the project, size of pipe, the date and time, and indicate which pipe is being filmed if multiple pipes are connected to the structure. Notes should be taken during the video recording process. Provide the Engineer with copies of these notes along with the video.

Move the camera through the pipe at a speed not greater than 30 feet per minute. Mark the video with the distance down the pipe. The distance shall have an accuracy of one foot per 100 feet. Film the entire circumference at each joint. Stop the camera and pan when necessary to document and measure defects. Position the camera head perpendicular to all defects requiring measurement by the video micrometer.

430-4.8.2 Reinspection: At any time after reviewing the submitted pipe inspection reports, the Engineer may direct additional inspections. If no defects are observed during the reinspection, the Department will pay for the cost of the reinspections in accordance with 4-3. If defects are observed, the reinspection and all work performed to correct the defects will be done at no cost to the Department. Acceptance of all replacements or repairs will be based on video documentation of the completed work prior to Final Acceptance.

430-5 Removing Existing Pipe.

If the Plans indicate that existing pipe is to remain the property of the Department, collect and stack along the right-of-way all existing pipe or pipe arch so indicated in the Plans to be removed, or that does not conform to the lines and grades of the proposed work and that is not to be re-laid, as directed by the Engineer. Take care to prevent damage to salvageable pipe during removal and stacking operations.

430-6 Placing Pipe Under Railroad.

430-6.1 General: Construct pipe culverts under railroad tracks in accordance with the requirements of the railroad company.

Perform all the shoring under the tracks, and sheeting and bracing of the trench, required by the railroad company or deemed necessary by the Engineer in order to ensure safe and uninterrupted movement of the railroad equipment, at no expense to the Department.

430-6.2 Requirements of the Railroad Company: Install pipe using methods required by the railroad company and shown in the Contract Documents.

When the general method of installation required by the railroad company is indicated in the Plans, do not alter such method, or any other specific details of the installation which might be indicated in the Plans, without receiving approval or direction from the railroad, followed by written approval from the Engineer.

430-6.3 Notification to Railroad Company: Notify the railroad company and the Engineer at least ten days prior to the date on which pipe is to be placed under the railroad tracks.

430-6.4 Placing Pipe by Jacking: Obtain the Engineer's and the railroad company's approval of the details of the jacking method to be used, when placing pipe through the railroad embankment, before the work is started.

430-6.5 Use of Tunnel Liner: When the railroad company requires that a tunnel liner be used for placing the pipe in lieu of the jacking method, the Department will pay for the tunnel liner material separately in cases where the Contract Documents do not require the use of a tunnel liner. For these cases the Department will reimburse the Contractor for the actual cost of the liner, delivered at the site. The Department will base such cost on a liner having the minimum gage acceptable to the railroad.

430-7 Specific Requirements for Concrete Pipe.

430-7.1 Sealing Joints: Seal the pipe joints with round rubber or profile gaskets meeting the requirements of Section 449. Ensure that the gasket and the surface of the pipe joint, including the gasket recess, are clean and free from grit, dirt and other foreign matter, at the time the joints are made. In order to facilitate closure of the joint, application of a vegetable soap lubricant immediately before closing of the joint will be permitted. Prelubricated gaskets may be used in lieu of a vegetable soap lubricant when the lubricating material is certified to be inert with respect to the rubber material.

430-7.2 Laying Requirements for Concrete Pipe with Rubber Gasket Joints: Do not allow the gap between sections of pipe to exceed 5/8 inch for pipe diameters of 12 inches through 18 inches, 7/8 inch for pipe diameters of 24 through 66 inches, and 1 inch for pipe diameters 72 inches and larger. Where minor imperfections in the manufacture of the pipe create an apparent gap in excess of the tabulated gap, the Engineer will accept the joint provided that the imperfection does not exceed 1/3 the circumference of the pipe, and the rubber gasket is

1/4 inch or more past the pipe joint entrance taper. Where concrete pipes are outside of these tolerances, replace them at no expense to the Department. Do not apply mortar, joint compound, or other filler to the gap which would restrict the flexibility of the joint.

430-7.3 Field Joints for Elliptical Concrete Pipe: Use either a preformed plastic gasket material or an approved rubber gasket to make a field joint.

430-7.3.1 Plastic Gasket: Meet the following requirements when field joints are made from preformed plastic gasket material:

430-7.3.1.1 General: Install field joints in accordance with the manufacturer's instructions and the following:

430-7.3.1.2 Material: Meet the requirements of 942-2.

430-7.3.1.3 Joint Design: Ensure that the pipe manufacturer furnishes the Engineer with details regarding configuration of the joint and the amount of gasket material required to affect a satisfactory seal. Do not brush or wipe joint surfaces which are to be in contact with the gasket material with a cement slurry. Fill minor voids with cement slurry.

430-7.3.1.4 Primer: Apply a primer of the type recommended by the manufacturer of the gasket material to all joint surfaces which are to be in contact with the gasket material, prior to application of the gasket material. Thoroughly clean and dry the surface to be primed.

430-7.3.1.5 Application of Gasket: Apply gasket material to form a continuous gasket around the entire circumference of the leading edge of the tongue and the groove joint, in accordance with the detail shown on the Design Standards, Index No. 280. Do not remove the paper wrapper on the exterior surface of the gasket material until immediately prior to joining of sections. Apply plastic gasket material only to surfaces which are dry. When the atmospheric temperature is below 60°F, either store plastic joint seal gaskets in an area above 70°F, or artificially warm the gaskets to 70°F in a manner satisfactory to the Engineer.

430-7.3.1.6 Installation of Pipe: Remove and reposition or replace any displaced or contaminated gasket as directed by the Engineer. Install the pipe in a dry trench. Carefully shape the bottom of the trench to minimize the need for realignment of sections of pipe after they are placed in the trench. Hold to a minimum any realignment of a joint after the gaskets come into contact. Prior to joining the pipes, fill the entire joint with gasket material and ensure that when the pipes are joined there is evidence of squeeze-out of gasket material for the entire internal and external circumference of the joint. Trim excess material on the interior of the pipe to provide a smooth interior surface. If a joint is defective, remove the leading section of pipe and reseal the joint.

430-7.3.2 Rubber Gasket: Meet the following requirements when field joints are made with profile rubber gaskets:

430-7.3.2.1 General: Install field joints in accordance with the manufacturer's instructions and the following:

430-7.3.2.2 Material: Meet the requirements of 942-4.

430-7.3.2.3 Joint Design: Ensure that the pipe manufacturer furnishes the Engineer with details regarding configuration of the joint and gasket required to effect a satisfactory seal. Do not apply mortar, joint compound, or other filler which would restrict the flexibility of the gasket joint.

430-7.4 Requirements for Concrete Radius Pipe:

430-7.4.1 Design: Construct concrete radius pipe in segments not longer than 4 feet (along the pipe centerline), except where another length is called for in the Contract

Documents. Join each segment using round rubber gaskets. Ensure that the pipe manufacturer submits details of the proposed joint, segment length and shape for approval by the Engineer, prior to manufacture.

430-7.4.2 Pre-Assembly: Ensure that the manufacturer pre-assembles the entire radius section in his yard, in the presence of the Engineer, to ensure a proper fit for all parts. At the option of the manufacturer, the Contractor may assemble the pipe without gaskets. Consecutively number the joints on both the interior and exterior surfaces of each joint, and make match marks showing proper position of joints. Install the pipe at the project site in the same order as pre-assembly.

430-8 Specific Requirements for Corrugated Metal Pipe.

430-8.1 Field Joints:

430-8.1.1 General: Make a field joint with locking bands, as specified in Article 9 of AASHTO M 36 and AASHTO M 196M for aluminum pipe. For aluminum pipe, fabricate bands from the same alloy as the culvert sheeting.

When existing pipe to be extended is helically fabricated, make a field joint between the existing pipe and the new pipe using one of the following methods:

(1) Cut the new pipe to remove one of the re-rolled annular end sections required in Sections 943 or 945, or fabricate the pipe so that the re-rolled annular section is fabricated only on one end. Use either a spiral (helical) band with a gasket or a flat band with gaskets as required by 430-8.1.2 (2) to join the pipe sections.

(2) The Contractor may construct a concrete jacket as shown on the Design Standards, Index No. 280, provided that the minimum cover required by the Design Standards, Index No. 205 can be obtained.

430-8.1.2 Side Drain, Storm and Cross Drain, and Gutter Drains: Where corrugated metal pipe is used as side drain, storm and cross drain, or gutter drain, use a rubber or neoprene gasket of a design shown to provide a joint as specified in 430-4.

Use a gasket of one of the following dimensions:

(1) For annular joints with 1/2 inch depth corrugation: either a single gasket a minimum of 7 inches by 3/8 inch or two gaskets a minimum of 3 1/2 inches by 3/8 inch; and for annular joints with 1 inch depth corrugations: either a single gasket a minimum of 7 inches by 7/8 inch or two gaskets a minimum of 3 1/2 inches by 7/8 inch.

(2) For helical joints with 1/2 inch depth corrugation: either a single gasket a minimum of 5 inches by 1 inch or two gaskets a minimum of 3 1/2 inches by 1 inch; and for helical joints with 1 inch depth corrugations: either a single gasket a minimum of 5 inches by 1 1/2 inches or two gaskets a minimum of 3 1/2 inches by 1 1/2 inches.

(3) Such other gasket designs as may be approved by the Engineer.

If, in lieu of a single gasket spanning the joint, two gaskets are used, place these individual gaskets approximately 2 inches from each pipe end at the joint. When two gaskets are used, seal the overlapping area on the coupling band between the gaskets consistent with the joint performance specified. The Contractor may tuck a strip of preformed gasket material over the bottom lip of the band for this purpose. Use coupling bands that provide a minimum circumferential overlap of 3 inches. As the end connections on the coupling band are tightened, ensure that there is no local bending of the band or the connection. Use precurved coupling bands on pipe diameters of 24 inches or less.

Use flat gaskets meeting the requirements of ASTM D-1056, designation 2C2 or 2B3. In placing flat gaskets on pipe prior to placing the coupling band, do not stretch the gasket more than 15% of its original circumference. Use circular gaskets meeting the requirements of ASTM C-361. Do not stretch the circular gasket more than 20% of its original circumference in placing the gasket on pipe. Use preformed plastic gasket material meeting the composition requirements of 942-2.2.

Apply an approved vegetable soap lubricant, as specified for concrete pipe in 430-7.1.1.

430-8.1.3 Alternate Joint: In lieu of the above-specified combination of locking bands and flat gaskets, the Contractor may make field joints for these pipe installations by the following combinations:

(a) Use the metal bands as specified in Article 9 of AASHTO M 36M that are at least 10 1/2 inches wide and consist of a flat central section with a corrugated section near each end, designed to match the annular corrugation in the pipe with which they are to be used. Connect the bands in a manner approved by the Engineer, with a suitable fastening device such as the use of two galvanized 1/2 inch diameter bolts through a galvanized bar and galvanized strap, suitably welded to the band. Use a strap that is the same gage as the band.

Where helically corrugated pipe is to be jointed by this alternate combination, ensure that at least the last two corrugations of each pipe section are annular, and designed such that the band will engage each pipe end with the next-to-outside annular corrugation.

(b) For these bands, use a rubber gasket with a circular cross-section of the "O-ring" type conforming to ASTM C-361. Use gaskets having the following cross-sectional diameter for the given size of pipe:

Non-SI Units	
Pipe Size	Gasket Diameter
12 inches through 36 inches (with 1/2 inch depth corrugations)	13/16 inch
42 inches through 96 inches (with 1/2 inch depth corrugations)	7/8 inch
36 inches through 120 inches (with 1 inch depth corrugations)	1 3/8 inches

Use preformed gasket material to seal the overlapping area on the coupling band between gaskets.

(c) Use channel band couplers in helical pipe with ends which have been reformed and flanged specifically to receive these bands. Use channel band couplers that are of a two piece design, are fabricated from galvanized steel stock conforming to AASHTO M 36, have 2 by 2 by 3/16 inch angles fastened to the band ends to allow for proper tightening, and meet the following:

Non SI Units	
Band Thickness	Pipe Wall Thickness
0.079 inch	0.109 inch or lighter
0.109 inch	0.138 inch or heavier
3/4 inch wide	0.109 inch or lighter
1 inch wide	0.138 inch or heavier

Furnish two 1/2 inch diameter connection bolts with each band, that conform to ASTM A-307, Grade A and are electroplated in accordance with ASTM B-633.

Use a gasket with the joint that is a hydrocarbon blend of butyl rubber meeting the chemical composition and physical properties of 942-2.2. Use a 3/8 by 3/4 inch gasket for pipe fabricated from 0.109 inch or lighter material and a 3/8 by 1 inch gasket for pipe fabricated from 0.138 inch and heavier material.

The Contractor may use a flange band coupler without the gasket for all applications other than side drain, storm and cross drain, and gutter drain.

Do not use the flange band coupler to join dissimilar types of pipe.

The Contractor may join reformed flanged helical pipe to existing annular or reformed pipe having annular ends. On non-gasketed installations, use either an annular band or an alternate joint described in 430-8.1.3. On gasketed installations, use an annular band, minimum of five corrugations in width, in conjunction with two O-ring gaskets as specified in 430-8.1.3. Use mastic material to seal the area of band overlap.

The minimum joint performance standards specified in 430-4.1 apply.

430-8.2 Laying and Shape Requirements for Corrugated Metal Pipe: Install pipe using either a trench or open ditch procedure.

Check pipe shape regularly during backfilling to verify acceptability of the construction method used. Pipe deflected 5% or more of the certified actual mean diameter of the pipe at final inspection shall be replaced at no cost to the Department. Deflection measurements are taken at the point of smallest diameter on the corrugations.

430-9. Specific Requirements for Corrugated Polyethylene Pipe and Polyvinyl Chloride (PVC) Pipe.

430-9.1 Field Joints: Use gasketed joints to seal side drain, and storm and cross drain. Use gaskets meeting the requirements of Section 449. Ensure that the pipe manufacturer provides a joint design approved by the Engineer before use.

430-9.2 Installation Requirements Including Trenching, Foundation and Backfilling Operations: Check structure shape regularly during backfilling to verify acceptability of the construction method used.

Pipe deflected 5% or more of the certified actual mean diameter of the pipe at final inspection shall be replaced at no cost to the Department.

430-10 Desilting Pipe or Concrete Box Culvert.

Desilt pipe culvert and concrete box culvert as designated in the Plans.

430-11 Method of Measurement.

430-11.1 New Pipe: The quantities of storm and cross drain pipe, storm drain trench, side drain pipe and gutter drain pipe to be paid for will be plan quantity, in place and accepted. The

plan quantity will be determined from the inside wall of the structure as shown on the Plans, along the centerline of the pipe.

430-11.2 Mitered End Section: The quantity to be paid for will be the number completed and accepted.

430-12 Basis of Payment.

430-12.1 General: Prices and payments will be full compensation for all work specified in this Section, including all excavation except the volume included in the items for the grading work on the project, and except for other items specified for separate payment in Section 125; all backfilling material and compaction; disposal of surplus material; and all clearing and grubbing outside of the required limits of clearing and grubbing as shown in the Plans.

430-12.2 Removing Existing Pipe: When existing pipe is removed and replaced with new pipe approximately at the same location, the cost of excavating and removing the old pipe and of its disposal will be included in the Contract unit price for clearing and grubbing.

430-12.3 Site Restoration: The cost of restoring the site, as specified in 125-11, that is disturbed, solely for the purpose of constructing pipe culvert, will be included in the Contract unit price for the pipe culvert, unless designated specifically to be paid for under other items.

430-12.4 Plugging Pipes: The cost of temporarily plugging a pipe culvert, either proposed or existing, will be incidental to the contract unit price for new pipe culvert.

The cost of filling and/or plugging an existing pipe culvert that is to be permanently placed out of service will be paid for at the contract unit price for filling and plugging pipe, per cubic yard. Price and payment will be full compensation for flowable fill, masonry, concrete, mortar, and all labor and materials necessary to complete the work.

When the project includes no quantities for new pipe culverts, and temporary plugs are required for existing pipe culverts, the cost will be considered as extra work, in accordance with 4-3.5.

430-12.5 Desilting Pipe: Desilting Pipe will be paid for at the contract unit price per foot for each pipe desilted. Price and payment will be full compensation for furnishing all equipment, tools and labor, disposal of silt and debris, and all incidentals necessary for satisfactorily performing the work.

430-12.6 Desilting Concrete Box Culverts: Price and payment will be full compensation for all work required.

430-12.7 Flared End Sections: Price and payment will be full compensation for all work and materials required.

430-12.8 Mitered End Sections: Price and payment will be full compensation for all pipe, grates when required, fasteners, reinforcing, connectors, anchors, concrete, sealants, jackets and coupling bands, and all work required.

430-12.9 Railroad Requirements: Where pipe culvert is constructed under railroad tracks, the Contract unit price for the pipe culvert will include the costs of any jacking operations and the operation of placing the pipe by use of a tunnel liner, (except as specified for unanticipated tunnel liner, in 430-6.5, where reimbursement is to be made for such unanticipated liner), and all other work necessary to meet the requirements of the railroad company, excluding the costs of watchman or flagman services provided by the railroad company, except as provided below.

The Department will reimburse the Contractor for the actual costs of any trestle bridge work which is performed by the railroad's forces, as billed to him by the railroad, less the

value of any salvage materials derived there from, whether such salvage materials are retained by the railroad company or by the Contractor. When the work of shoring and bracing is to be performed by the railroad, such fact will be stipulated in the Contract Documents and the Contractor will be required to pay to the railroad the amount of such costs, which amount will be reimbursed to him by the Department. The Contract unit price for the pipe culvert shall include the costs of all other work of shoring and bracing.

430-12.10 Payment Items: Payment will be made under:

- Item No. 430- 17- Pipe Culvert Optional Material - per foot.
- Item No. 430- 94- Desilting Pipe – per foot.
- Item No. 430- 96- Polyvinyl Chloride Pipe - per foot.
- Item No. 430- 98- Mitered End Section - each.
- Item No. 430-200- Flared End Sections - each.
- Item No. 430-610- U-Endwall - each.
- Item No. 430-830- Filling and Plugging Pipe – cubic yard.
- Item No. 430-950- Desilting Concrete Box Culvert – per cubic yard.

SECTION 431 PIPE LINER

431-1 Description.

Rehabilitate drainage pipe by installing a pipe liner in accordance with the requirements of this Section. The Plans will indicate the location of the pipe to be rehabilitated, the material composition and the alternate liner types that may be used to rehabilitate the pipe, and the method of liner installation.

431-2 Materials.

Meet the requirements of Section 948.

431-3 Pre-installation Requirements.

Prior to installing the pipe liner, inspect the host pipe and ensure that it is clean, dry and stable. Inspect the host pipe by means of closed circuit television. The closed circuit television inspection may be augmented by a visual inspection in which persons enter a host pipe to inspect it, at no additional cost to the Department. Obtain written approval from the Engineer prior to allowing persons to enter a host pipe. Furnish all equipment necessary to inspect, remove silt and other debris, and dewater the host pipe to the satisfaction of the Engineer. Seal cracks and joints using an approved chemical grout of either acrylamide base gel, acrylic base gel, urethane base gel, or urethane base foam. Place flowable fill as directed by the Engineer to maintain the stability of the host pipe.

431-4 Installation Methods.

431-4.1 General: Install the liner using one of, or a combination of, the following methods: sliplining, inverting, pulling/pushing, spiral winding, paneling, coating, or bursting. Seal or grout the annular space between the interior of the host pipe and the exterior of the liner according to the liner manufacturer's written instructions.

431-4.2 Sliplining: Use either polyethylene, high density polyethylene, polyvinyl chloride, fiberglass, steel or aluminum pipe liner. Install the liner by joining discrete lengths, panels or segments of the pipe liner in a manhole or other access point and inserting the liner into the host pipe.

431-4.2.1 Polyethylene: Install polyethylene pipe liner in accordance with ASTM F-585. The manufacturer's written instructions may be substituted for ASTM F-585 with written permission from the Engineer.

431-4.2.2 High density polyethylene: Install high density polyethylene pipe liner in accordance with ASTM F-585. The manufacturer's written instructions may be substituted for ASTM F-585 with written permission from the Engineer.

431-4.2.3 Polyvinyl chloride: Install polyvinyl chloride pipe liner in accordance with ASTM F-1698.

431-4.2.4 Fiberglass, steel or aluminum: Install fiberglass, steel or aluminum pipe liner in accordance with the manufacturer's written instructions.

431-4.3 Inverting: Install a resin impregnated felt tube pipe liner into the host pipe, and cure in place, in accordance with ASTM F-1216.

431-4.4 Pulling/Pushing: Install the liner in accordance with the manufacturer's written instructions. Protect the pipe liner end using a device that uniformly distributes the applied load around the perimeter of the liner. Continuously monitor the applied load,

and do not stretch the liner by more than 1% of its original length. For liner lengths of 100 feet or less, the end protection device may be omitted, with written permission from the Engineer. Do not seal the liner ends or begin grouting prior to 24 hours after liner installation.

431-4.5 Spiral Winding: Install the pipe liner in accordance with ASTM F-1698 or ASTM F-1741.

431-4.6 Paneling: Install the pipe liner in accordance with the manufacturer's written instructions. Limit paneling to host pipes having 90 inch or greater internal diameters. Do not place panels where a liner joint will lie along or near the crown of the host pipe.

431-4.7 Coating: Use materials and install the pipe liner in accordance with the manufacturer's written instructions.

431-4.8 Bursting: Install the pipe liner in accordance with the manufacturer's written instructions. Limit bursting to vitrified clay or concrete crossdrain or sidedrain pipe having no lateral connections or risers. Further limit bursting to locations where no part of the host pipe passes within 5 feet of any buried utility or pavement base material.

431-5 Acceptance.

Inspect the complete rehabilitation by means of closed circuit television. Obtain written approval from the Engineer prior to allowing persons to enter a host pipe. Provide the Engineer with videos of all preliminary and final inspections.

431-6 Method of Measurement.

The quantity of pipe liner to be paid for will be the length, per foot, of pipe liner installed and accepted, measured along the centerline of the pipe, from end to end.

The quantity of flowable fill to be paid for will be in accordance with Section 121.

The quantity of desilting pipe to be paid for will be in accordance with Section 430.

431-7 Basis of Payment.

Price and payment for pipe liner will be full compensation for furnishing and installing the pipe liner in accordance with the requirements of this Section, including all materials, labor and incidentals required for sealing cracks and joints in the existing pipe, and sealing and grouting the annular space between the liner and interior of the host pipe.

Price and payment for pipe liner will also be full compensation for all equipment, materials and labor required for inspections, and for furnishing videos of the inspections to the Engineer.

Price and payment for flowable fill will be in accordance with Section 121.

Price and payment for desilting pipe will be in accordance with Section 430.

Payment will be made under:

- | | |
|------------------|-----------------------------|
| Item No. 431- 1- | Pipe Liner - per foot. |
| Item No. 431- 2- | Pipe Inspection - per foot. |

SECTION 948
MISCELLANEOUS TYPES OF PIPE

948-1 Polyvinyl-Chloride (PVC) Pipe, or Acrylonitrile-Butadiene-Styrene (ABS) Plastics Pipe.

948-1.1 For Bridge Drains: PVC pipe shall conform to the requirements of ASTM D1785, for Type I, Grade I, Schedule 80 PVC pipe with a minimum polymer cell classification of 12454 per ASTM D1784 and a minimum of 1.5% by weight of titanium dioxide for UV protection.

948-1.2 Pressure Pipe: Pressure pipe for direct burial under pavement shall conform to the requirements of ASTM D1785, for Type I, Grade I, Schedule 40, for sizes up to and including 2-1/2 inches, and Schedule 80 for sizes up to 4 inches. Pressure pipe 4 inches in diameter and larger shall conform to the requirements of AWWA C900-75, DR18, and ASTM D1785, Type I, Grade I or other types as may be specifically called for in the Plans or Special Provisions.

948-1.3 Pipe Marking: All PVC pipe shall be marked as required by Article 8 of ASTM D1785, and acceptance of the pipe may be based on this data.

948-1.4 Nonpressure Pipe: PVC pipe and ABS pipe intended for direct-burial or concrete encasement, shall meet the following requirements:

(a) PVC Pipe: ASTM D3034, SDR-35, or ASTM F949, profile wall without perforations.

(b) ABS Pipe: ASTM D2680.

The manufacturer of the PVC or ABS pipe shall furnish to the Engineer six copies of mill analysis covering chemical and physical test results.

948-1.5 Underdrain: PVC pipe for use as underdrain shall conform to the requirements of ASTM F758 or ASTM F949. Also, PVC underdrain manufactured from PVC pipe meeting ASTM D3034, perforated in accordance with the perforation requirements given in AASHTO M36 or AASHTO M196 will be permitted.

948-1.6 Edgedrain: PVC pipe for use as edgedrain shall conform to the requirements of ASTM F758, ASTM F949 or ASTM D3034 pipe shall be perforated in accordance with the perforation requirements given in AASHTO M36 or AASHTO M196. Additional perforations will be required as indicated in the Design Standards, Index No. 286 for pipes designated under ASTM F758 and ASTM D3034. PVC pipe intended for direct burial in asphalt shall meet the following requirements:

(a) ASTM D3034, SDR-35, or ASTM F949

(b) NEMA TC-2 (pipe material and compounds) and NEMA TC-3 (pipe fittings) for PVC (90°C electrical conduit pipe) NEMA ECP-40 and NEMA ECP-80. Underwriter Laboratory Specifications referenced under NEMA specifications for electrical conductivity are not required.

(c) Pipe shall withstand asphalt placement temperatures specified without permanent deformation.

(d) Perforations shall be in accordance with AASHTO M36 or AASHTO M196.

948-1.7 PVC Pipe (12 Inches to 48 Inches): PVC pipe for side drain, cross drain, storm drain and other specified applications shall conform to AASHTO M278 for smooth wall PVC pipe or ASTM F949 for PVC ribbed pipe. Resin shall contain a minimum of 1.5% by weight of

titanium dioxide for UV protection. Mitered end sections are not to be constructed of PVC. Use only concrete or metal mitered end sections as indicated in the Design Standards.

All pipe produced and shipped to the job site shall meet the requirements of 105-3.2.

948-2 Corrugated Polyethylene Tubing and Pipe.

948-2.1 General: For underdrain, corrugated polyethylene tubing and fittings shall meet the requirements of AASHTO M252. For edgedrain, corrugated polyethylene tubing and fittings shall meet the requirements of AASHTO M252, except as modified in 948-2.2. For storm drain side drain, french drain and cross drain corrugated polyethylene pipe shall meet the requirements of AASHTO Mp-294 and 948-2.3.2.

The tubing or pipe shall not be left exposed to sunlight for periods exceeding the manufacturer’s recommendation.

948-2.2 Edgedrain (4 Inches to 10 inches): The requirements for edgedrain as specified in AASHTO Mp-252 are modified as follows:

(a) Coiling of tubing 6 inches in diameter or greater is not permitted. Tubing shall have a minimum pipe stiffness of 46 psi at 5% deflection.

948-2.3 Corrugated High Density Polyethylene Pipe (HDPE) (12 Inches to 60 inches):

948-2.3.1 General: Class I (50 year) corrugated polyethylene pipe used for side drain, storm and cross drain or french drain shall meet the requirements of AASHTO M294. Class II corrugated pipe shall meet the requirements of AASHTO M294 and the additional requirements as specified herein. Corrugations may only be annular. Ensure that pipe resin conforms to ASTM D3350 minimum cell classification 435400C except that cell class 435400E may be used if the combination of color and UV stabilizer provides the same or better UV protection than that of resin cell class 435400C. Mitered end sections are not to be constructed of polyethylene. Use only concrete or metal mitered end sections as indicated in the Design Standards.

All pipe produced and shipped to the job site shall meet the requirements of 105-3.2.

948-2.3.2 Additional Requirements for Class II (100 Year), Type S Polyethylene Pipe Meet the following requirements:

Table 1			
Stress Crack Resistance of Pipes			
Pipe Location	Test Method	Test Conditions	Requirement
Pipe Liner	FM 5-572, Procedure A	10% Igepal solution at 122°F and 600 psi applied stress, 5 replicates	Average failure time of the pipe liner shall be ≥ 18.0 hours, no single value shall be less than 13.0 hours.
Pipe Corrugation ⁽¹⁾ , (molded plaque)	ASTM F2136	10% Igepal solution at 122°F and 600 psi applied stress, 5 replicates	Average failure time shall be ≥ 24.0 hours, no single value shall be less than 17.0 hours.

Table 1			
Junction	FM 5-572, Procedure B and FM 5-573	Full Test ⁽²⁾⁽³⁾ Test at 3 temperature/stress combinations: 176°F at 650 psi 176°F at 450 psi 158°F at 650 psi; 5 replicates at each test condition	Determine failure time at 500 psi at 73.4°F ≥ 100 years (95% lower confidence) using 15 failure time values ⁽⁴⁾ The tests for each condition can be terminated at duration equal to or greater than the following criteria: 110.0 hr at 176°F 650 psi 430.0 hr at 176°F 450 psi 500.0 hr at 158°F 650 psi
		Single Test ⁽⁵⁾ : Test temperature 176°F and applied stress of 650 psi.; 5 replicates	The average failure time must be equal to or greater than 110.0 hr
Longitudinal Profiles ⁽⁶⁾	FM 5-572, Procedure C, and FM 5-573	Full Test ⁽²⁾⁽³⁾ : Test at 3 temperature/stress combinations: 176°F at 650 psi 176°F at 450 psi 158°F at 650 psi; 5 replicates at each test condition	Determine failure time at 500psi at 73.4°F ≥ 100 years (95% lower confidence) using 15 failure time values ⁽⁴⁾ . The tests for each condition can be terminated at duration equal to or greater than the following criteria: 110.0 hr at 176°F 650 psi 430.0 hr at 176°F 450 psi 500.0 hr at 158°F 650 psi
		Single Test ⁽⁵⁾ : Test temperature 176°F and applied stress of 650 psi.; 5 replicates	The average failure time must be equal to or greater than 110.0 hr
Oxidation Resistance of Pipes			
Pipe Location	Test Method	Test Conditions	Requirement
Liner and/or Crown ⁽⁷⁾	OIT Test (ASTM D3895)	2 replicates (to determine initial OIT value) on the as manufactured (not incubated) pipe.	25.0 minutes, minimum
Liner and/or Crown ⁽⁷⁾	Incubation test FM 5-574 and OIT test (ASTM D3895)	Three samples for incubation of 265 days at 176°F ⁽⁸⁾ and applied stress of 250 psi. One OIT test per each sample	Average of 3.0 minutes ⁽⁹⁾ (no values shall be less than 2.0 minutes)
Liner and/or Crown ⁽⁷⁾	MI test (ASTM D1238 at 190°C/2.16Kg)	2 replicates on the as manufactured (not incubated) pipe.	< 0.4 g/10 minutes

Table 1			
Liner and/or Crown ⁽⁷⁾	Incubation test FM 5-574 and MI test (ASTM D1238 at 190°C/2.16Kg)	2 replicates on the three aged sampled after incubation of 265 days at 176°F ⁽⁸⁾ and applied stress of 250 psi	MI Retained Value ⁽⁹⁾⁽¹⁰⁾ shall be greater than 80% and less than 120%.
<p>Note: FM = Florida Method of Test.</p> <p>(1) Required only when the resin used in the corrugation is different than that of the liner.</p> <p>(2) A higher test temperature (194°F) may be used if supporting test data acceptable to the State Materials Engineer is submitted and approved in writing.</p> <p>(3) Full test shall be performed on alternative pipe diameter of pipe based on wall profile design, raw material cell classification, and manufacturing process. Full test must be performed on maximum and minimum pipe diameters within a manufacturing process.</p> <p>(4) Computer program to predict the 100 year SCR with 95% lower confidence can be obtained from FDOT.</p> <p>(5) Single test for the junction and longitudinal profile may be used on alternating pipe sizes within a manufacturing process. Single point tests may not be used on maximum and minimum pipe sizes within a manufacturing process except by approval of the Engineer. Single point tests may be used for quality assurance testing purposes.</p> <p>(6) Longitudinal profiles include vent holes and molded lines.</p> <p>(7) OIT and MI tests on the crown are required when resin used in the corrugation is different than that of the liner.</p> <p>(8) The incubation temperature and duration can also be 196 days at 185°F.</p> <p>(9) The tests for incubated and "as-manufactured" pipe samples shall be performed by the same lab, same operator, the same testing device, and in the same day.</p> <p>(10) The MI retained value is determined using the average MI value of incubated sample divided by the average MI value of as-manufactured pipe sample.</p>			

Manufacturer may use ground Class II, but not Class I, pipe for reworked plastic.

948-2.3.3 Certification: Furnish to the Engineer certification from the manufacturer for each pipe diameter manufacturers LOT to be incorporated into the project that the pipe meets the requirements of these Specifications.

Manufacturers seeking evaluation of a product in accordance with Departmental procedures must submit test reports conducted by a laboratory qualified by the Geosynthetic Accreditation Institute-Laboratory Accreditation Program (GAI-LAP) or qualified by ISO 17025 accreditation agency using personnel with actual experience running the test methods for Class II HDPE pipe. Submit the test reports to the State Materials Office.

948-2.3.4 Verification Samples: Furnish verification samples as directed by the Engineer.

948-3 Fiberglass Reinforced Polymer Pipe.

948-3.1 For Bridge Drains: Fiberglass pipe shall conform to the requirements of ASTM D2996 or ASTM D2310, for Type I, Grade 2, Class E, using polyvinyl ester as the only resin. The minimum designation shall be RTRP-11EA. The resin shall contain UV stabilizers or a two-part 100% solids polyurethane coating.

948-4 Ductile Iron Pipe.

948-4.1 For Bridge Drains: Ductile iron pipe shall conform to the requirements of AWWA C151.

948-5 Hot Dip Galvanized Steel Pipe.

948-5.1 For Bridge Drains: Hot dip galvanized steel pipe shall conform to the requirements of ASTM A53.

948-6 Flexible Transition Couplings and Pipe.

948-6.1 For Bridge Drains: Flexible transition couplers and pipe shall conform to the requirements of ASTM C1173.

948-7 Profile Wall Polypropylene (PP) Pipe.

PP pipe (12 inches to 60 inches) for side drain, cross drain, storm drain, and other specified applications shall meet the requirements of AASHTO MP21-11. Mitered end sections are not to be constructed of polypropylene. Use only concrete or metal mitered end sections as indicated in the Design Standards.

All pipe produced and shipped to the job site shall meet the requirements of 105-3.2. The manufacturer shall demonstrate that resin oxidation resistance will last using accelerated aging by use of incubation tests in accordance with FM 5-574. Tests shall demonstrate that stabilization package is present and that no degradation has occurred.

948-8 Filter Fabric Sock for Use with Underdrain.

For Type I underdrain specified in the Design Standards, Index No. 286, filter sock shall be an approved strong rough porous, polyester or other approved knitted fabric which completely covers and is secured to the perforated plastic tubing underdrain in such a way as to prevent infiltration of trench backfill material.

The knitted fabric sock shall be a continuous one piece material that fits over the tubing like a sleeve. It shall be knitted of continuous 150 denier yarn and shall be free from any chemical treatment or coating that might significantly reduce porosity and permeability.

The knitted fabric sock shall comply with the following physical properties:

Weight, applied (oz/sq. yd.)	3.5 min	ASTM D3887
Grab tensile strength (lbs.)	50 min.*	ASTM D5034
Equivalent opening size (EOS No.)	25 min.**	Corps of Engineers CW-02215-77
Burst strength (psi)	100 min.**	ASTM D3887
* Tested wet.		
** Manufacturer's certification to meet test requirement.		

The knitted fabric sock shall be applied to the tubing in the shop so as to maintain a uniform applied weight. The tubing with knitted fabric sock shall be delivered to the job site in such manner as to facilitate handling and incorporation into the work without damage. The knitted fabric sock shall be stored in UV resistant bags until just prior to installation. Torn or punctured knitted fabric sock shall not be used.

948-9 Pipe Liner.

948-9.1 Cured-In-Place Pipe Liner: Cured-in-place pipe liner shall be continuous, resin impregnated, flexible tubing that meets the requirements of ASTM D5813 and ASTM F1216.

948-9.2 Deformed Pipe Liner: Deformed pipe liner shall be manufactured in an out of round state, usually collapsed circumferentially and folded on the long axis. After installation in a host pipe, the liner is rounded by means of heat and pressure to fit the host pipe. Deformed pipe liner, when installed, shall extend from one structure to the next in one continuous length with no intermediate joints.

(1) Polyethylene: Deformed polyethylene pipe liner shall meet the requirements of ASTM F714 with a minimum cell classification of 335420c.

(2) PVC: Deformed PVC pipe liner shall meet the requirements of ASTM F1504.

948-9.3 Discrete Pipe Liner: Discrete pipe liner shall be round, flexible or semi-rigid liner, manufactured in lengths that may be joined in a manhole or access pit before insertion in a host pipe.

(1) High Density Polyethylene Solid Wall: Discrete high density polyethylene pipe liner shall meet the requirements of ASTM F714 or AASHTO M326 and shall have a minimum of cell classification of 345464c.

(2) High Density Polyethylene Profile Wall: Discrete high density polyethylene pipe liner shall meet the requirements of AASHTO M294 and shall have a minimum cell classification of 435400c.

(3) PVC: Discrete PVC pipe liner shall meet the requirements of ASTM F794, ASTM F949, or AASHTO M304 and shall have a minimum cell classification of 12454.

(4) Fiberglass: Discrete fiberglass pipe liner shall meet the requirements of ASTM D3262.

948-9.4 Spiral Wound Pipe Liner: Spiral wound pipe liner shall consist of coils of profile strips that are wound into a host pipe helically, after which a cementitious grout is injected into the annular space between the liner and the host pipe, forming a rigid composite structure.

(1) PVC: PVC spiral wound pipe liner shall meet the requirements of ASTM F1697 or ASTM F1735 and shall have a minimum cell classification of 12454.

948-9.4.1 Machine Spiral Wound Pipe Liner: Machine spiral wound pipe liner shall consist of a continuous one piece profile strip wound directly into the deteriorated pipelines. The liner can be installed in close fit to the host pipe, or alternatively installed at a fixed diameter. Where the liner is installed at a fixed diameter, the annular space between the spiral wound liner pipe and the existing pipe is grouted.

(1) PVC: PVC machine spiral wound pipe liner shall meet the requirements of ASTM F1697 and shall have a minimum cell classification of 12454.

948-9.5 Paneled Pipe Liner: Paneled pipe liner consists of custom-cut flat or curved panels that are formed to the inside circumference of a host pipe.

(1) PVC: PVC paneled pipe liner shall meet the requirements of ASTM F1735 and shall have a minimum cell classification of 12454.

948-9.6 Point Pipe Liner: Point pipe liner may consist of any materials covered by this specification when used to repair and rehabilitate an isolated portion of an existing storm drain pipe. Materials which are restricted (as primary components) to point repair are; steel, which shall meet the requirements of AASHTO M167M, ASTM A167, or ASTM A240; aluminum, which shall meet the requirements of AASHTO M196, and rubber; which shall meet the requirements of ASTM C923.

948-9.7 Coated Pipe Liner: Coated pipe liner consists of liquid, slurry, foam or gel that is spread or sprayed over the interior surface of an existing pipe to rehabilitate it. Materials that may be used for coating are hydrophilic urethane gel, epoxy resin, polyester resin, gunite, shotcrete, low density cellular concrete, and cementitious grout.



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Project Name:

Flood Drain Improvements/Drainage Assessment

CCTV Inspection 30" RCP

Storm Drain Pipes

26th Ave West (between 5th & 9th Street West) Bradenton Fl.

May 2013

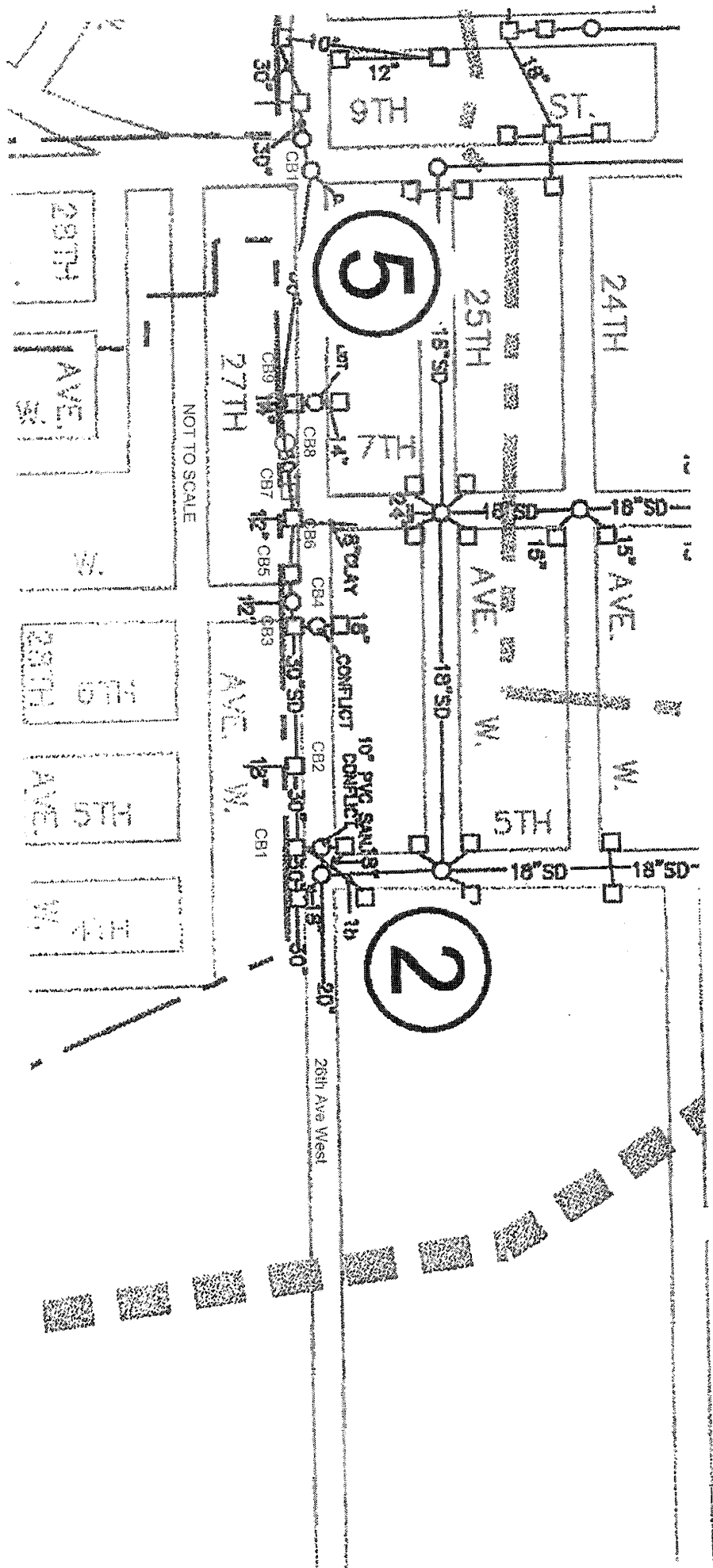
Owner: Manatee County Government
Prime Consultant: Stantec Consulting Services Inc
Clean & CCTV Contractor: Williams Testing LLC



Pipeline Inspection & Rehabilitation

Date: June 3,2013
CCTV Contractor: Williams Testing LLC
Project: Flood Drain Improvements
Owner: Manatee County Government
Prime Consultant: Stantec Consulting Services Inc
Project Location: 26th Avenue West - between 5th St West & 9th Street West

Up Stream CB	Down Stream CB	Linear Feet	Size
1	2	327.20	30"
2	3	110.20	30"
3	4	20.70	30"
4	5	45.80	30"
5	6	122.40	30"
6	7	220.10	30"
7	8	74.50	30"
8	9	151.70	30"
9	10	187.60	30"
	Total LF:	1260.20	



5

2

NOT TO SCALE

26th Ave West

24TH

25TH

27TH

28TH

AVE.

H.S.

H.S.

H.S.

15" AVE.

18" SD

18" SD

18" SD

15" CLAY

CONFLICT

10" PVC SAND

18" SD

18" SD

18" SD

18" SD

18" SD

18" SD

CB9

CB8

CB7

CB6

CB5

CB4

CB3

CB2

CB1

CB10

CB9

CB8

15"

14"

12"

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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 1	Downstream MH CB 2	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 8:45 AM
Purpose Infiltration/Inflow Investigation			Camera Direction With Flow
Comments C/O Stantec			

CB 1	Ftg. Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		3	0	
12.4	GO	General Observation	10 to 2			external pipe through wall
28.2	GO	General Observation	4 to 7			concrete on bottom of pipe
38.0	R	Roots	12 to 3		3	light
192.9	SD	Surface Damage	7 to 5		2	aggregate visible
327.2	ACB	Access point CB		3.5	0	
CB 2						

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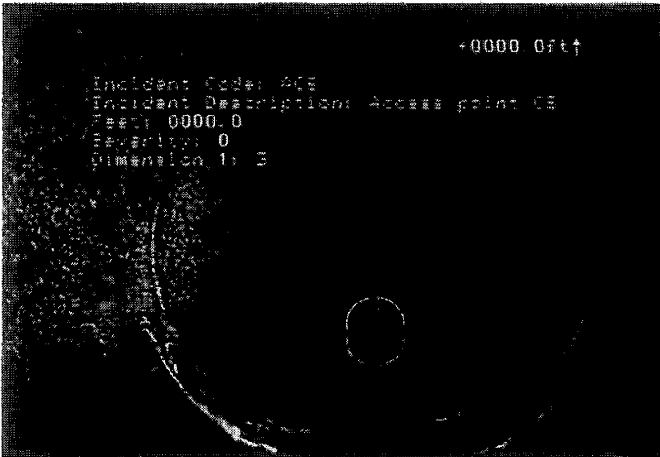


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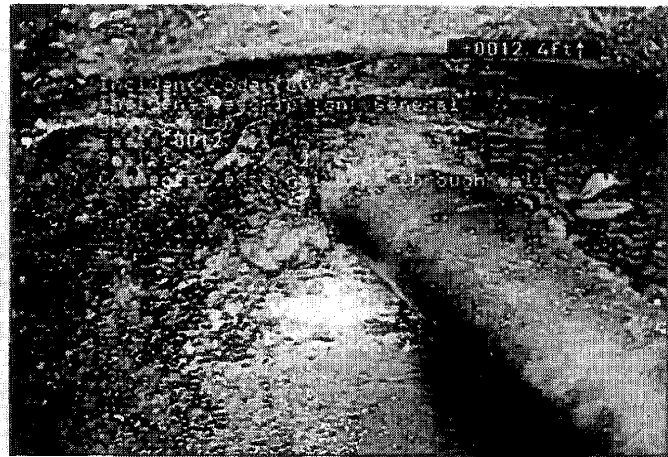
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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 1	Downstream MH CB 2	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 8:45 AM
		Purpose Infiltration/Inflow Investigation	

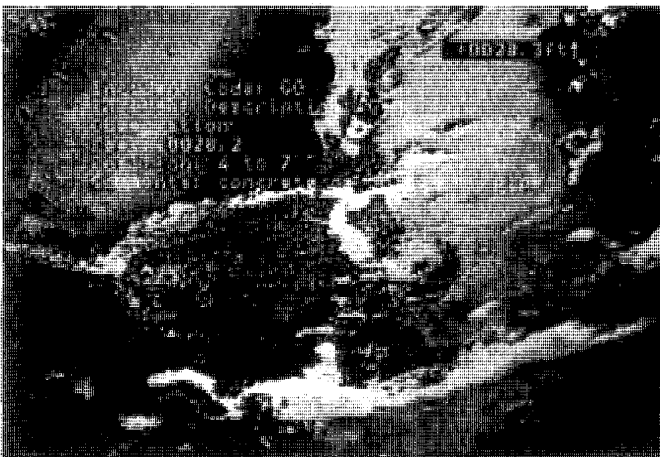
Comments C/O Stantec	Camera Direction With Flow
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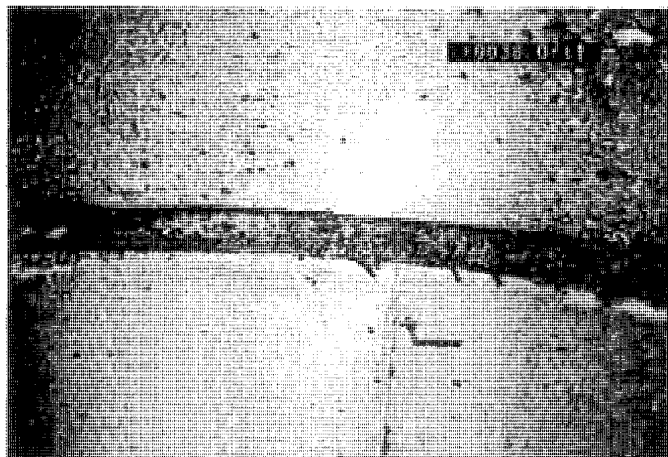
ACB - Access point CB @ 0.0 ft.



GO - General Observation @ 12.4 ft.
external pipe through wall



GO - General Observation @ 28.2 ft.
concrete on bottom of pipe



R - Roots @ 38.0 ft. light

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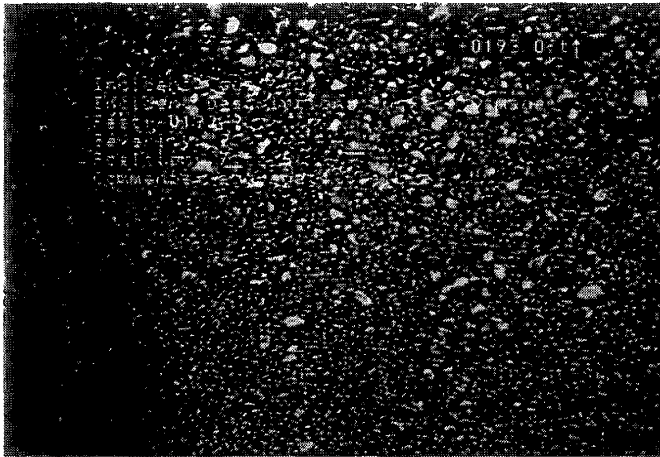


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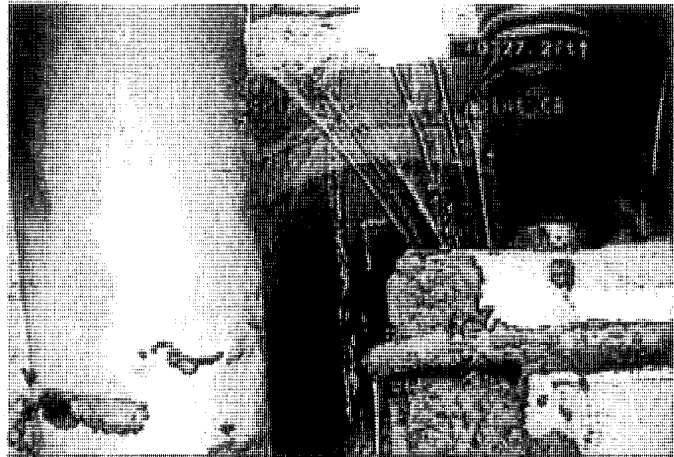
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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton	
Upstream MH CB 1	Downstream MH CB 2	Operator Jr. U-310-10398	Truck 16	
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 8:45 AM	Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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SD - Surface Damage @ 192.9 ft.
aggregate visible



ACB - Access point CB @ 327.2 ft.

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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 1	Downstream MH CB 2	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 8:45 AM
			Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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Ftg.	Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		3	0	
12.4	GO	General Observation	10 to 2			external pipe through wall
28.2	GO	General Observation	4 to 7			concrete on bottom of pipe
38.0	R	Roots	12 to 3		3	light
192.9	SD	Surface Damage	7 to 5		2	aggregate visible
327.2	ACB	Access point CB		3.5	0	

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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 2	Downstream MH CB 3	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 10:22 AM
Comments C/O Stantec			Purpose Infiltration/Inflow Investigation
Camera Direction With Flow			

Position	Dimension	Severity	Comment
*0.0	3.5	0	
*14.6	5 to 7		concrete on bottom of pipe
*60.3	7	3	light
*88.3	2	3	medium
*105.1	2	3	medium
*110.2	4	0	

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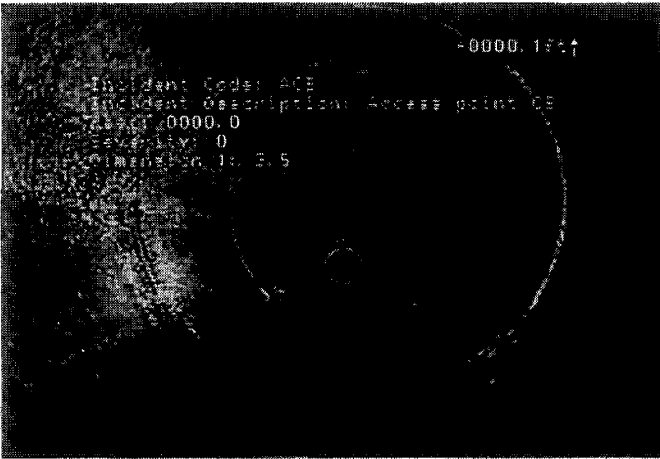


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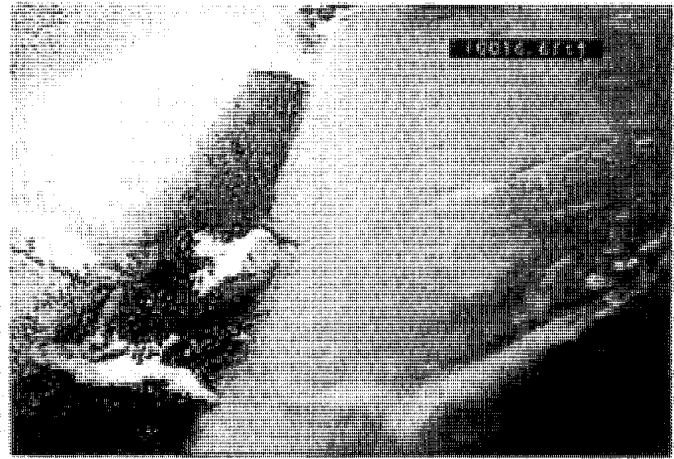
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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 2	Downstream MH CB 3	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 10:22 AM
			Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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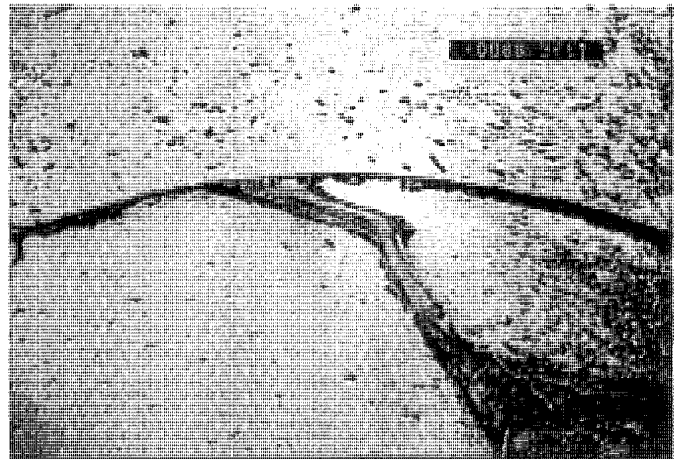
ACB - Access point CB @ 0.0 ft.



GO - General Observation @ 14.6 ft. concrete on bottom of pipe



R - Roots @ 60.3 ft. light



R - Roots @ 88.3 ft. medium

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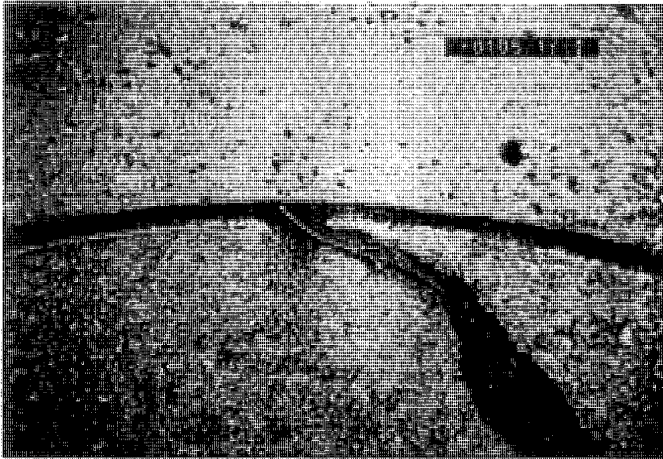


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Upstream MH CB 2	Downstream MH CB 3	Operator Jr. U-310-10398	Truck 16	
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 10:22 AM	Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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R - Roots @ 105.1 ft. medium



ACB - Access point CB @ 110.2 ft.

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Upstream MH CB 2	Downstream MH CB 3	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 10:22 AM
Comments C/O Stantec			Purpose Infiltration/Inflow Investigation
			Camera Direction With Flow

Ftg.	Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		3.5	0	
14.6	GO	General Observation	5 to 7			concrete on bottom of pipe
60.3	R	Roots	7		3	light
88.3	R	Roots	2		3	medium
105.1	R	Roots	2		3	medium
110.2	ACB	Access point CB		4	0	

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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
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Upstream MH CB 3	Downstream MH CB 4	Operator Jr. U-310-10398	Truck 16
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 11:54 AM	Purpose Infiltration/Inflow Investigation
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Comments C/O Stantec	Camera Direction With Flow
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Fig.	Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		4	0	
20.7	ACB	Access point CB		4.5	0	

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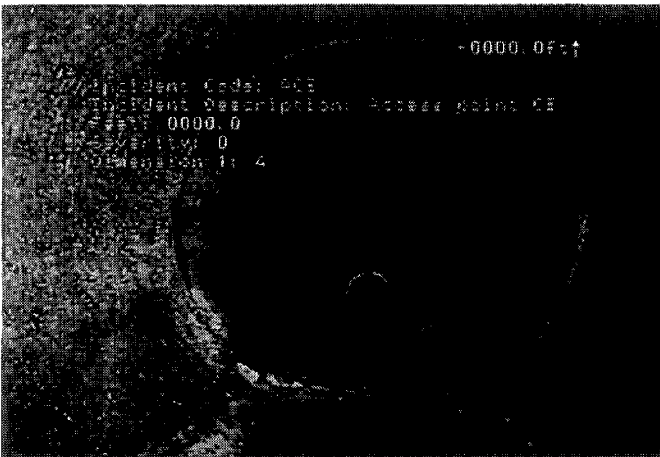


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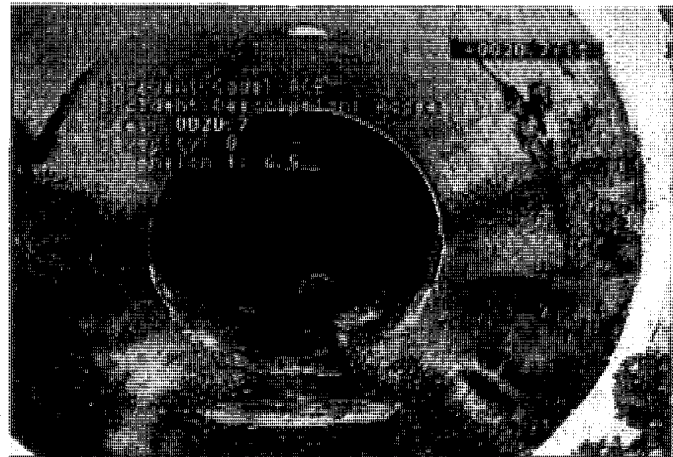
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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 3	Downstream MH CB 4	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 11:54 AM
		Purpose Infiltration/Inflow Investigation	

Comments C/O Stantec	Camera Direction With Flow
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ACB - Access point CB @ 0.0 ft.



ACB - Access point CB @ 20.7 ft.

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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
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Upstream MH CB 3	Downstream MH CB 4	Operator Jr. U-310-10398	Truck 16
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 11:54 AM	Purpose Infiltration/Inflow Investigation
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Comments C/O Stantec	Camera Direction With Flow
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Ftg.	Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		4	0	
20.7	ACB	Access point CB		4.5	0	

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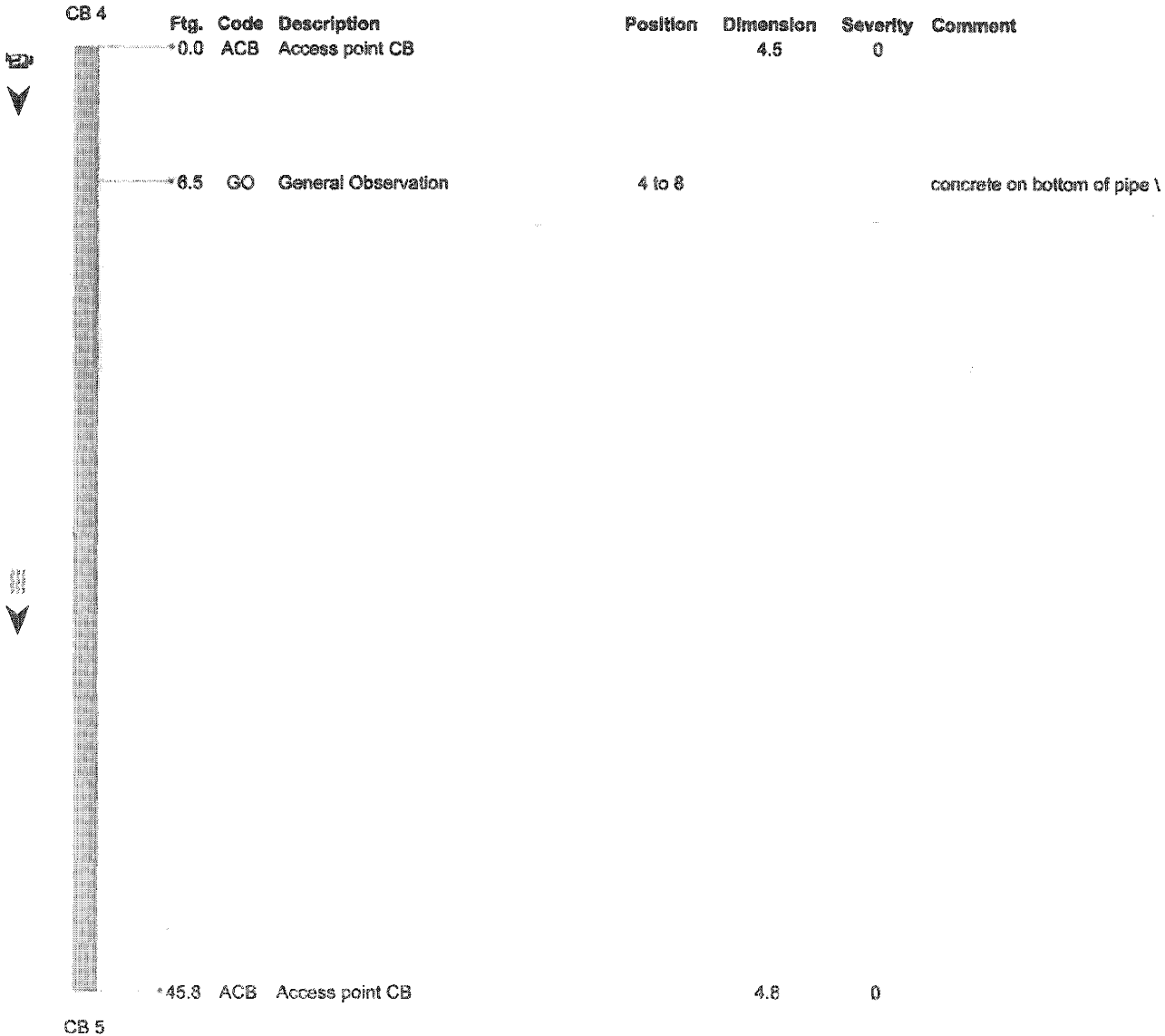


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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 4	Downstream MH CB 5	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 12:03 PM
			Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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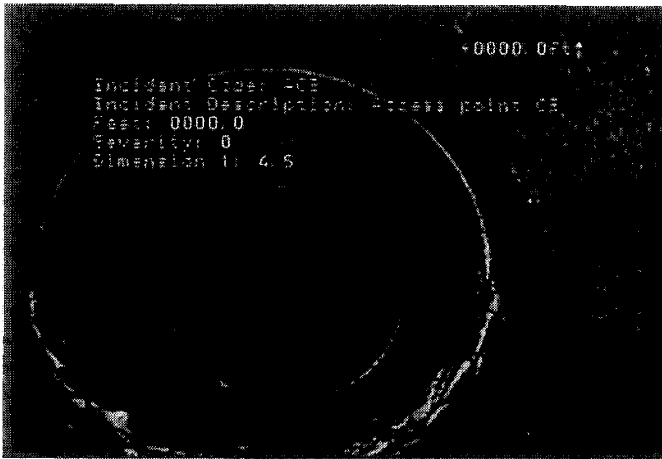


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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 4	Downstream MH CB 5	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 12:03 PM
		Purpose Infiltration/Inflow Investigation	

Comments C/O Stantec	Camera Direction With Flow
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ACB - Access point CB @ 0.0 ft.



GO - General Observation @ 6.5 ft.
 concrete on bottom of pipe \



ACB - Access point CB @ 45.8 ft.

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Upstream MH CB 4	Downstream MH CB 5	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 12:03 PM
Comments C/O Stantec			Purpose Infiltration/Inflow Investigation
			Camera Direction With Flow

Fig.	Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		4.5	0	
6.5	GO	General Observation	4 to 8			concrete on bottom of pipe \
45.8	ACB	Access point CB		4.8	0	

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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 5	Downstream MH CB 6	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 12:30 PM
			Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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Position	Dimension	Severity	Comment
*0.0	4.8	0	
*7.5	4 to 8		concrete on bottom of pipe
*113.8		3	Medium roots
*122.4		0	

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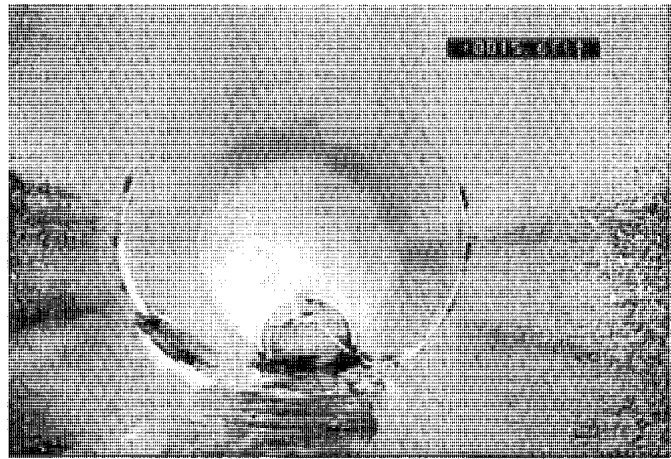
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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 5	Downstream MH CB 6	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 12:30 PM
		Purpose Infiltration/Inflow Investigation	

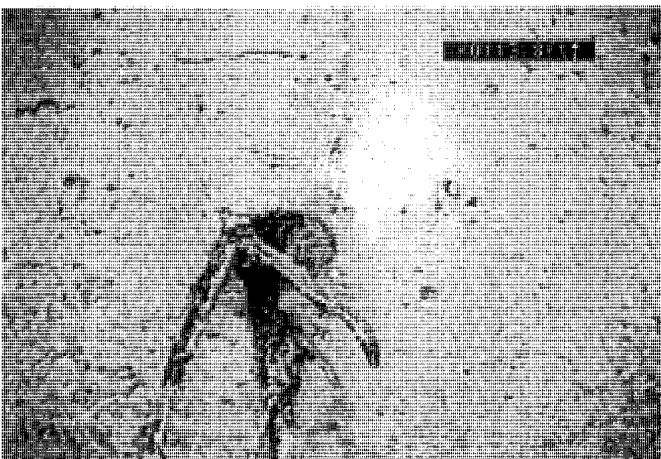
Comments C/O Stantec	Camera Direction With Flow
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ACB - Access point CB @ 0.0 ft.



GO - General Observation @ 7.5 ft.
concrete on bottom of pipe



R - Roots @ 113.8 ft. Medium roots



ACB - Access point CB @ 122.4 ft.

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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 5	Downstream MH CB 6	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 12:30 PM
			Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
--------------------------------	--------------------------------------

Fig.	Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		4.8	0	
7.5	GO	General Observation	4 to 8			concrete on bottom of pipe
113.8	R	Roots	12		3	Medium roots
122.4	ACB	Access point CB			0	



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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 6	Downstream MH CB 7	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM
			Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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CB 6	Ftg.	Code	Description	Position	Dimension	Severity	Comment
	*0.0	ACB	Access point CB		4.8	0	
	*34.2	R	Roots	9 to 2		3	light
	*34.3	C	Crack	12		2	
	*39.6	I	Infiltration	1		3	water
	*48.9	R	Roots	10		3	light
	*53.2	CL	Crack Longitudinal	11 to 1		0	
	*56.2	R	Roots	5		3	light
	*71.8	C	Crack	10		2	
	*78.3	R	Roots	8		3	light
	*84.5	SD	Surface Damage	10 to 10		2	aggregate visible
	*106.1	R	Roots	7 to 12		3	light
	*116.0	R	Roots	11 to 2		3	light, water inf
	*119.6	R	Roots	8 to 11		3	light
	*122.6	R	Roots	8 to 10		3	medium
	*129.7	R	Roots	8 to 12		3	medium
	*131.3	R	Roots	8 to 9		3	medium
	*137.5	R	Roots	8 to 12		3	light
	*140.9	C	Crack	12		2	
	*140.9	R	Roots	8 to 4		3	light
	*142.4	H	Hole	11 to 1		4	void visible
	*143.2	C	Crack	10		2	
	*145.0	R	Roots	7 to 5		3	light
	*148.2	R	Roots	3 to 5		3	light
	*151.5	R	Roots	7 to 9		3	light
	*160.5	R	Roots	1 to 2		3	light, water inf
	*162.9	R	Roots	7 to 8		3	light
	*168.4	R	Roots	7		3	light
	*171.4	B	Pipe broken	10 to 12		0	
	*177.6	TL	TAP Leaking	12	4	0	hammer tap
	*177.6	R	Roots	4 to 12		3	medium
	*181.3	R	Roots	6 to 12		3	light
	*181.3	CL	Crack Longitudinal	1		0	
	*184.1	R	Roots	7 to 8		3	light
	*187.4	R	Roots	8		3	light
	*191.1	R	Roots	7 to 8		3	light
	*193.0	R	Roots	8		3	light
	*195.9	R	Roots	7		3	light
	*199.4	R	Roots	8		3	light
	*202.3	R	Roots	8		3	light
	*205.9	R	Roots	7 to 1		3	medium
	*210.1	R	Roots	4 to 8		3	light
	*213.8	R	Roots	8		3	light
CB 7	*220.1	ACB	Access point CB		5	0	

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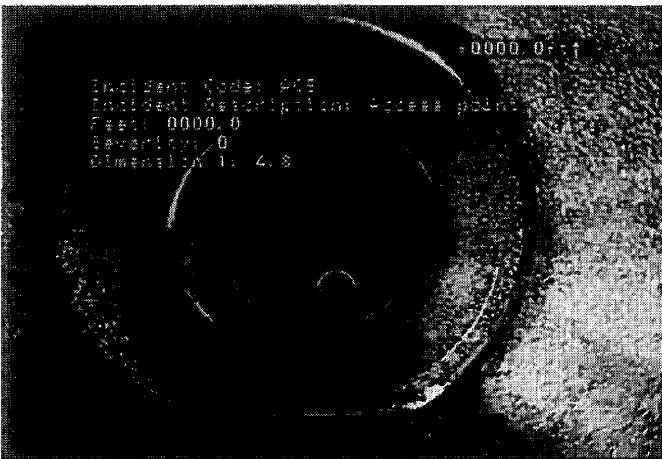


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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 6	Downstream MH CB 7	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM
		Purpose Infiltration/Inflow Investigation	

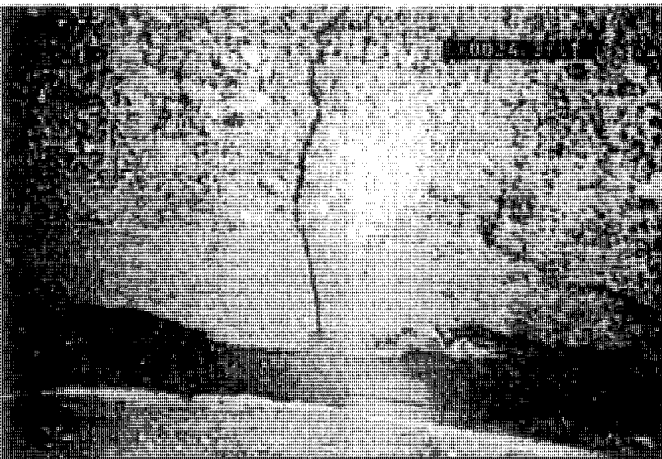
Comments C/O Stantec	Camera Direction With Flow
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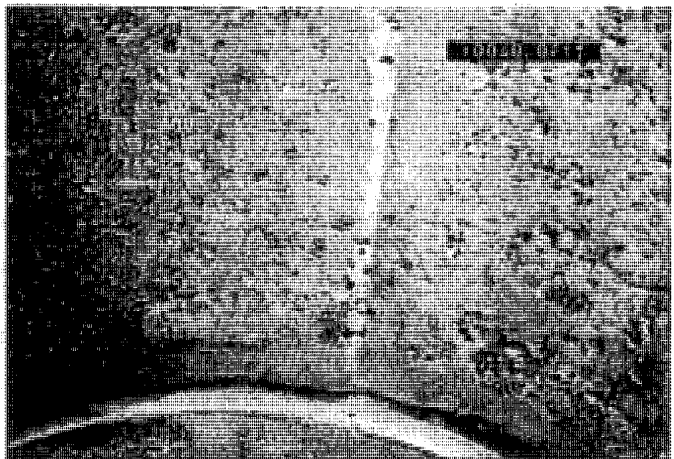
ACB - Access point CB @ 0.0 ft.



R - Roots @ 34.2 ft. light



C - Crack @ 34.3 ft.



I - Infiltration @ 39.6 ft. water

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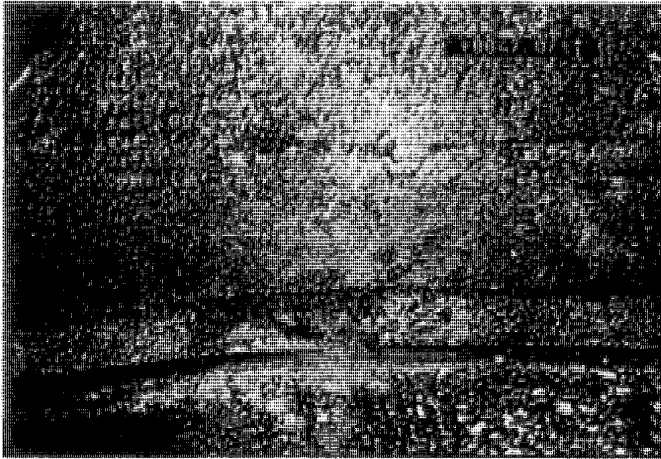


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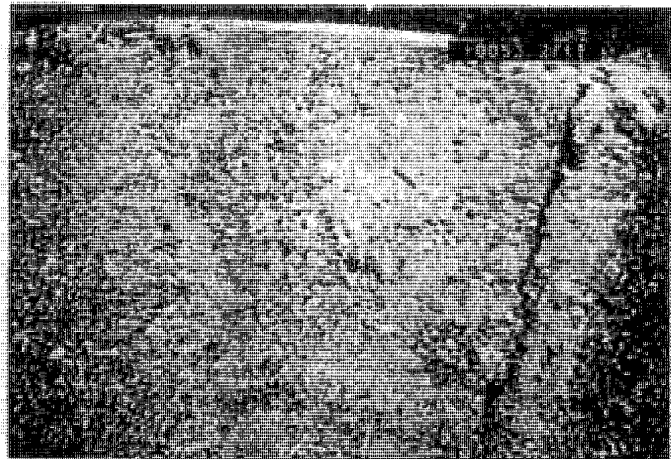
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Upstream MH CB 6	Downstream MH CB 7	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM
			Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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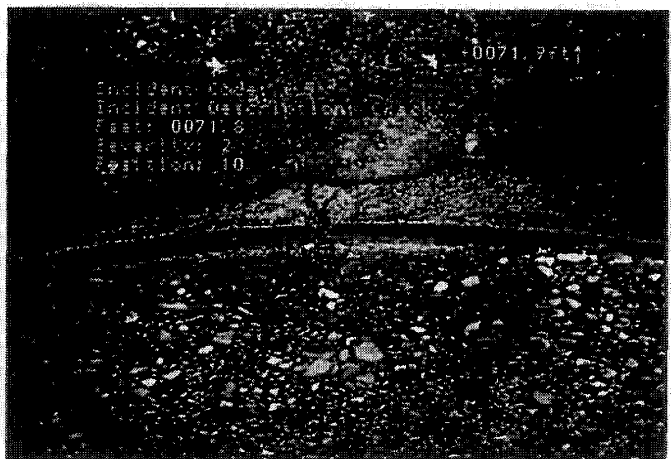
R - Roots @ 46.9 ft. light



CL - Crack Longitudinal @ 53.2 ft.



R - Roots @ 56.2 ft. light



C - Crack @ 71.8 ft.

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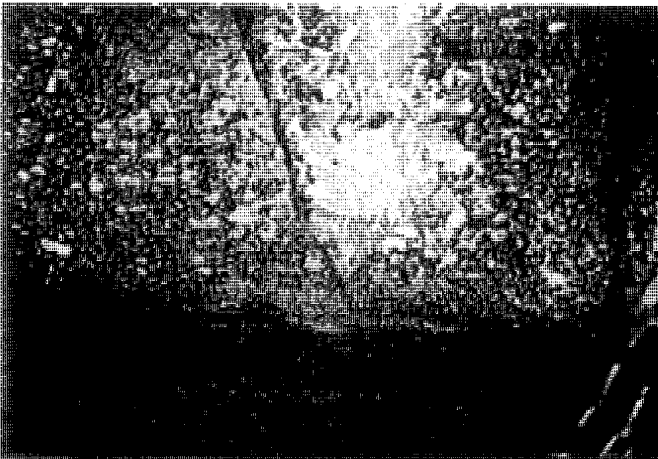


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Upstream MH CB 6	Downstream MH CB 7	Operator Jr. U-310-10398	Truck 16	
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM	Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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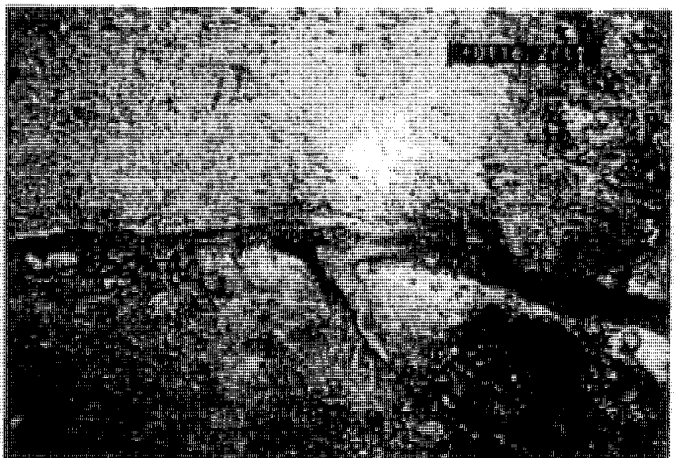
R - Roots @ 78.3 ft. light



SD - Surface Damage @ 84.5 ft. aggregate visible



R - Roots @ 106.1 ft. light



R - Roots @ 116.0 ft. light, water infl

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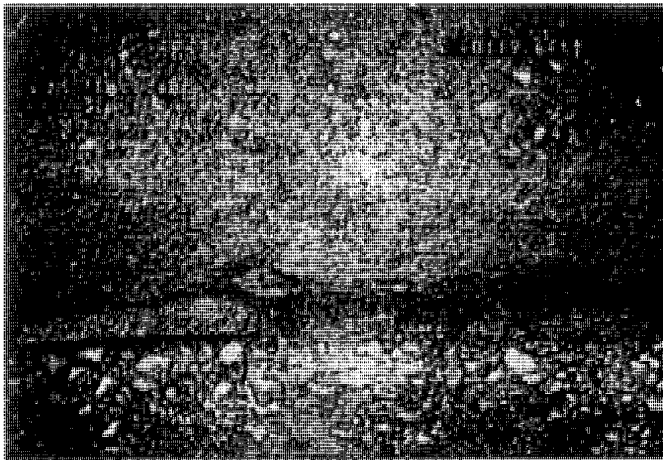


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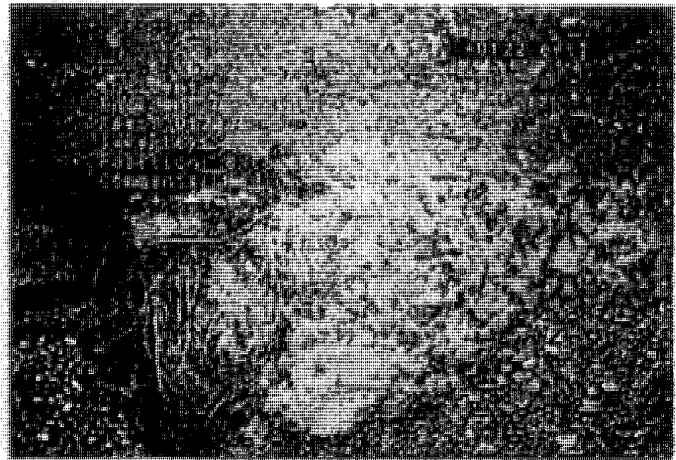
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM
Purpose Infiltration/Inflow Investigation			

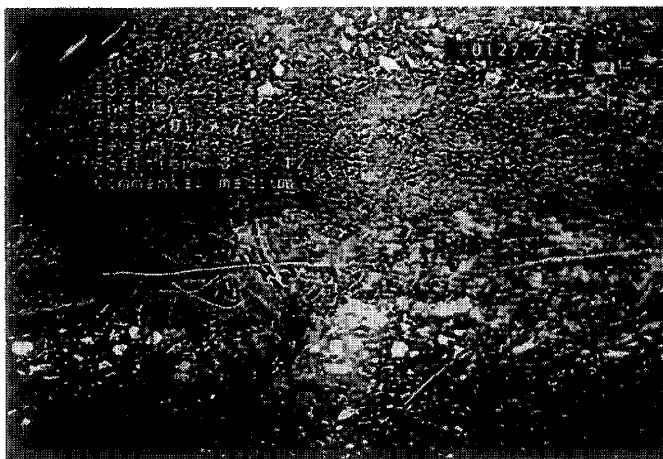
Comments C/O Stantec	Camera Direction With Flow
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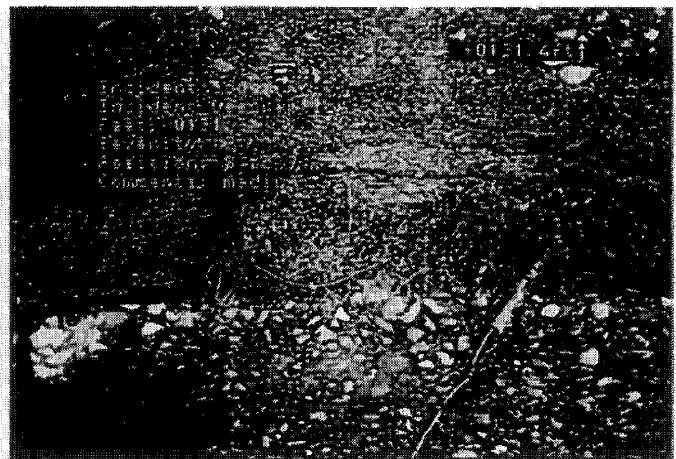
R - Roots @ 119.6 ft. light



R - Roots @ 122.6 ft. medium



R - Roots @ 129.7 ft. medium



R - Roots @ 131.3 ft. medium

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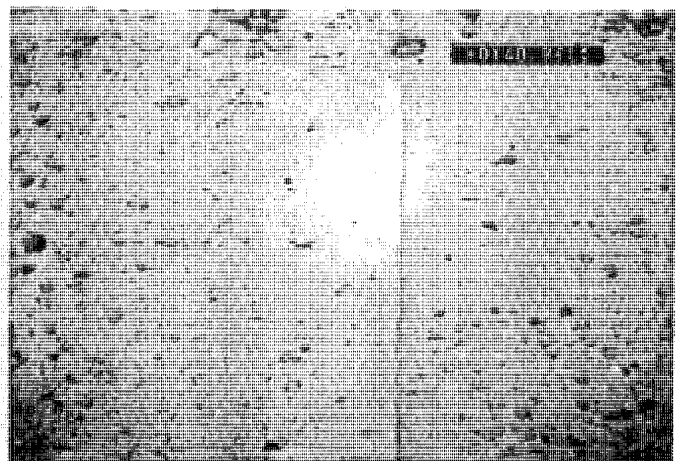
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM	Purpose Infiltration/Inflow Investigation

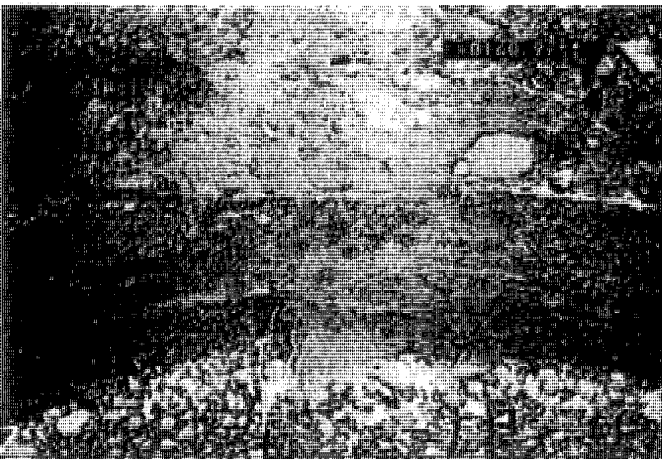
Comments C/O Stantec	Camera Direction With Flow
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R - Roots @ 137.5 ft. light



C - Crack @ 140.9 ft.



R - Roots @ 140.9 ft. light



H - Hole @ 142.4 ft. void visible

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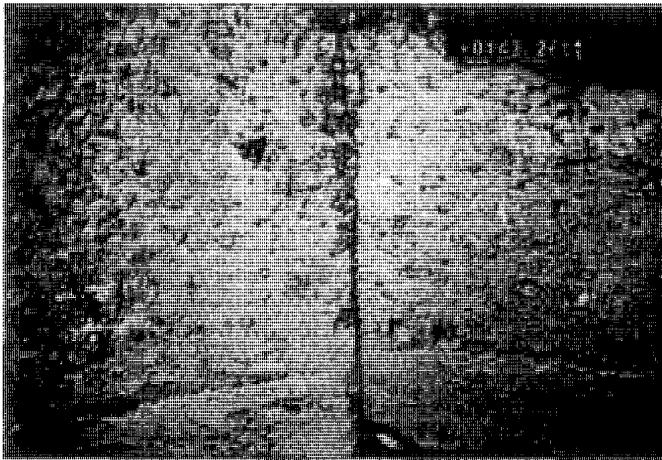


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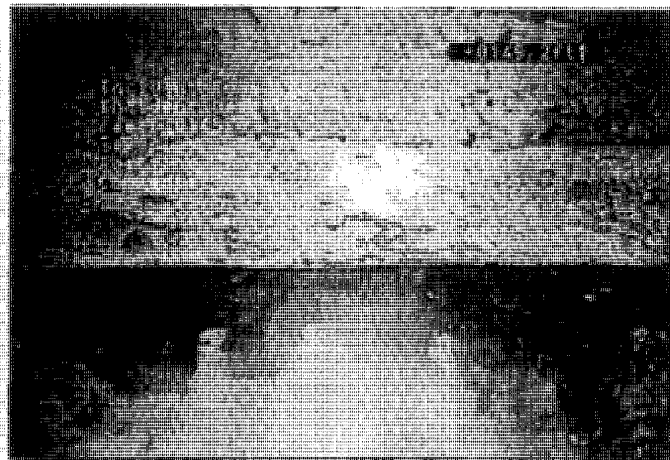
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			Purpose Infiltration/Inflow Investigation

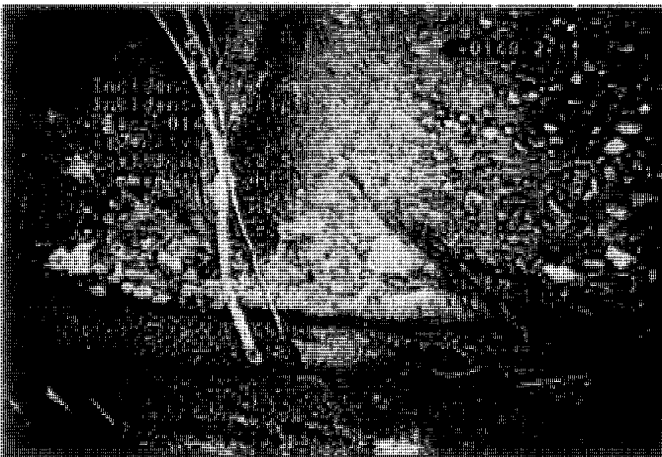
Comments C/O Stantec	Camera Direction With Flow
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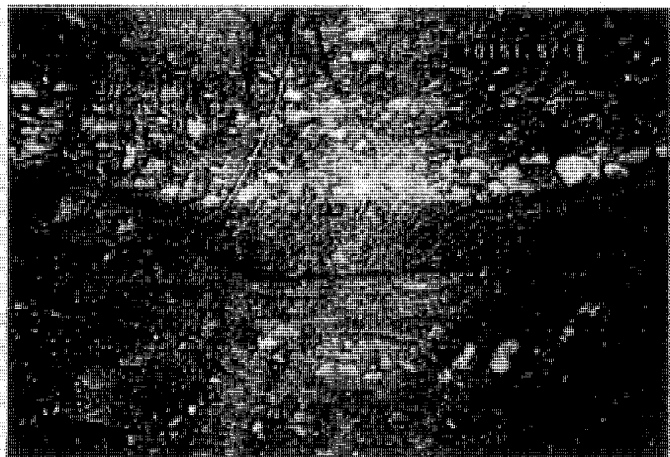
C - Crack @ 143.2 ft.



R - Roots @ 145.0 ft. light



R - Roots @ 148.2 ft. light



R - Roots @ 151.5 ft. light

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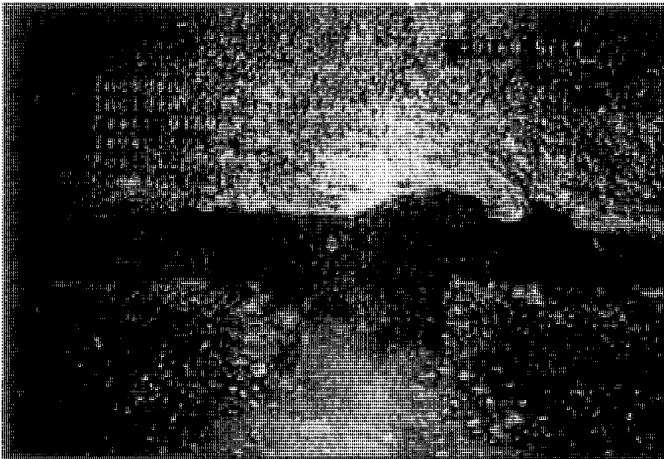


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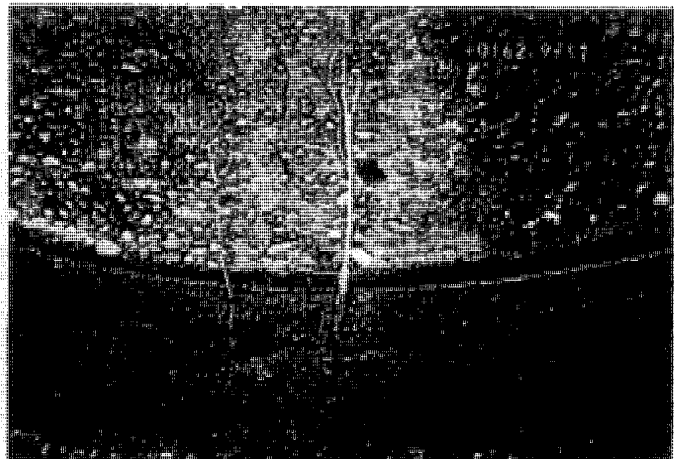
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM
		Purpose Infiltration/Inflow Investigation	

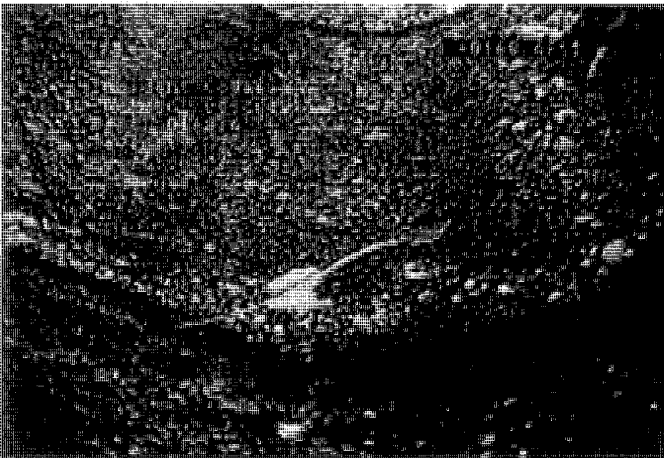
Comments C/O Stantec	Camera Direction With Flow
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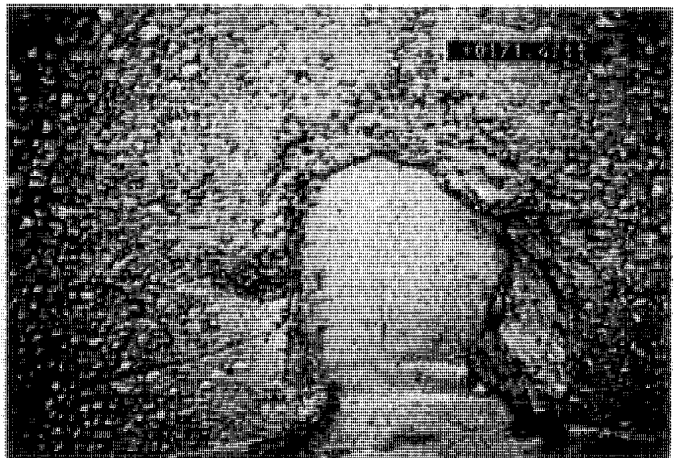
R - Roots @ 160.5 ft. light, water infl



R - Roots @ 162.9 ft. light



R - Roots @ 168.4 ft. light



B - Pipe broken @ 171.4 ft.

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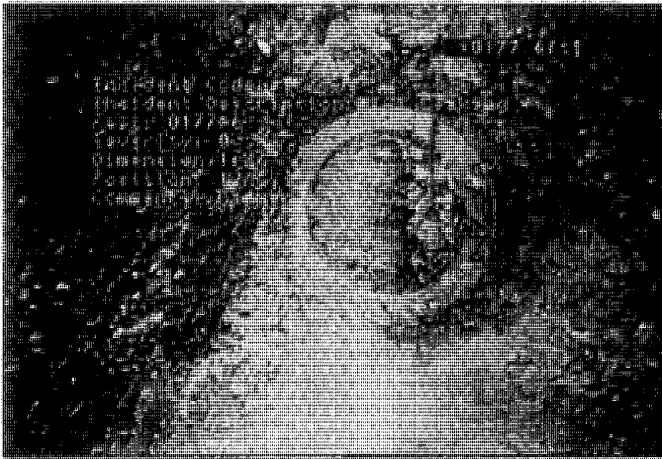


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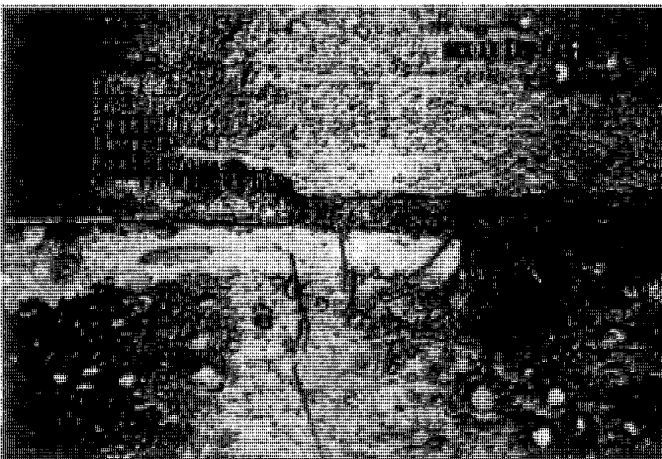
Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 6	Downstream MH CB 7	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM
			Purpose Infiltration/inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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TL - TAP Leaking @ 177.6 ft. hammer tap

R - Roots @ 177.6 ft. medium



R - Roots @ 181.3 ft. light

CL - Crack Longitudinal @ 181.3 ft.

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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM
		Purpose Infiltration/Inflow Investigation	

Comments C/O Stantec	Camera Direction With Flow
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R - Roots @ 184.1 ft. light



R - Roots @ 187.4 ft. light



R - Roots @ 191.1 ft. light



R - Roots @ 193.0 ft. light

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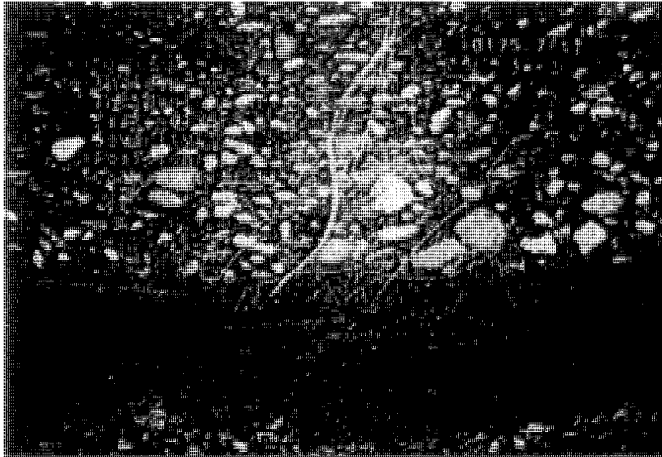


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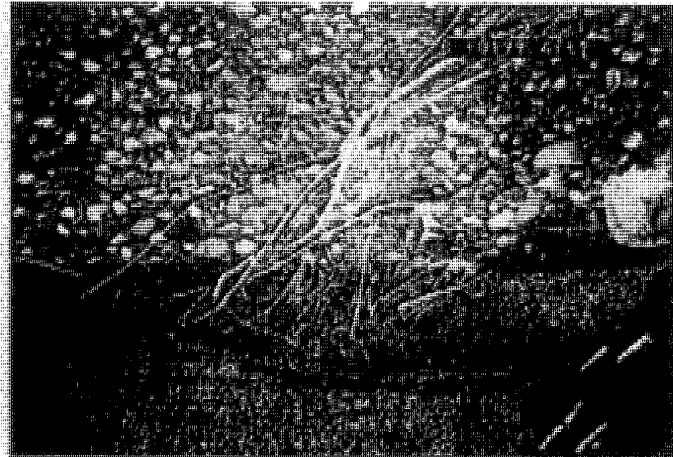
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Upstream MH CB 6	Downstream MH CB 7	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM
			Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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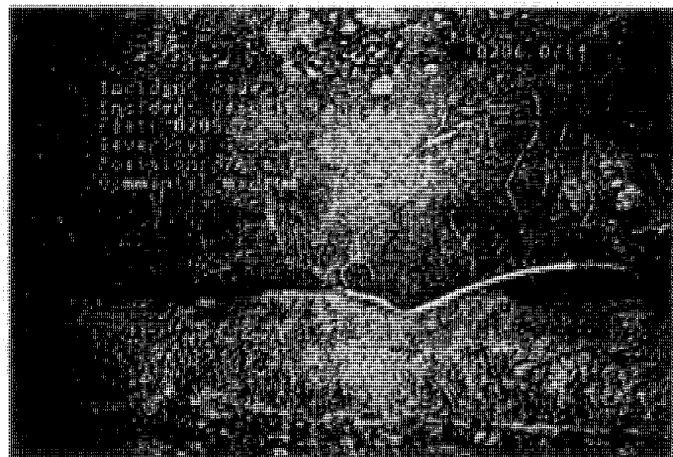
R - Roots @ 195.9 ft. light



R - Roots @ 199.4 ft. light



R - Roots @ 202.3 ft. light



R - Roots @ 205.9 ft. medium

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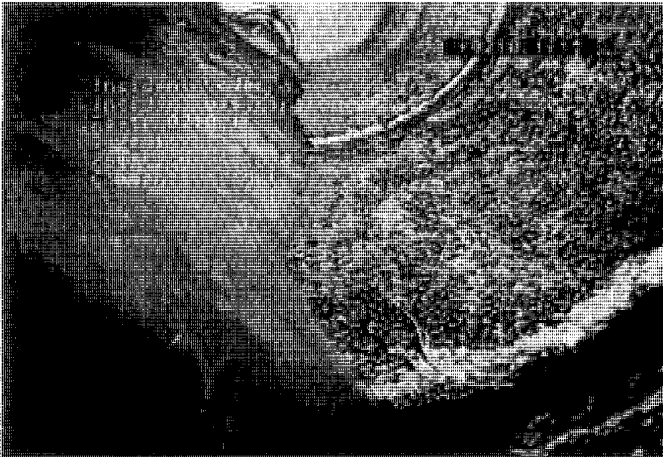
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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
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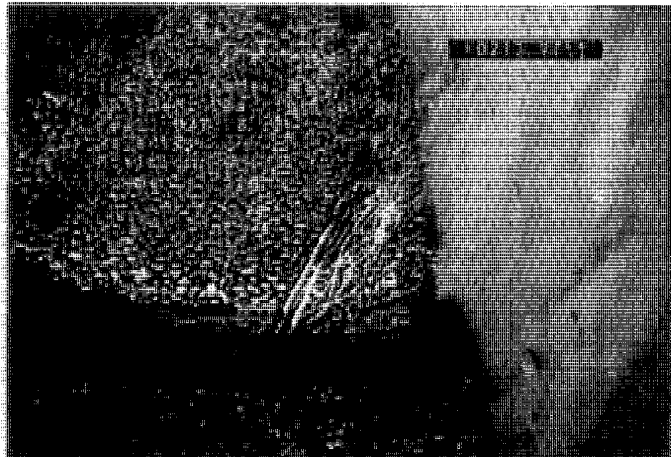
Upstream MH CB 6	Downstream MH CB 7	Operator Jr. U-310-10398	Truck 16
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM	Purpose Infiltration/Inflow Investigation
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Comments C/O Stantec	Camera Direction With Flow
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R - Roots @ 210.1 ft. light



R - Roots @ 213.8 ft. light



ACB - Access point CB @ 220.1 ft.

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Upstream MH CB 6	Downstream MH CB 7	Operator Jr. U-310-10398	Truck 16
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 1:20 PM	Purpose Infiltration/Inflow Investigation
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Comments C/O Stantec	Camera Direction With Flow
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Fig	Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		4.8	0	
34.2	R	Roots	9 to 2		3	light
34.3	C	Crack	12		2	
39.8	I	Infiltration	1		3	water
46.9	R	Roots	10		3	light
53.2	CL	Crack Longitudinal	11 to 1		0	
56.2	R	Roots	5		3	light
71.8	C	Crack	10		2	
78.3	R	Roots	8		3	light
84.5	SD	Surface Damage	10 to 10		2	agggrate visible
106.1	R	Roots	7 to 12		3	light
116.0	R	Roots	11 to 2		3	light, water inf
119.6	R	Roots	8 to 11		3	light
122.8	R	Roots	8 to 10		3	medium
129.7	R	Roots	8 to 12		3	medium
131.3	R	Roots	8 to 9		3	medium
137.5	R	Roots	8 to 12		3	light
140.9	C	Crack	12		2	
140.9	R	Roots	8 to 4		3	light
142.4	H	Hole	11 to 1		4	void visible
143.2	C	Crack	10		2	
145.0	R	Roots	7 to 5		3	light
148.2	R	Roots	3 to 5		3	light
151.5	R	Roots	7 to 9		3	light
160.5	R	Roots	1 to 2		3	light, water inf
162.9	R	Roots	7 to 8		3	light
166.4	R	Roots	7		3	light
171.4	B	Pipe broken	10 to 12		0	
177.6	TL	TAP Leaking	12	4	0	hammer tap
177.6	R	Roots	4 to 12		3	medium
181.3	R	Roots	6 to 12		3	light
181.3	CL	Crack Longitudinal	1		0	
184.1	R	Roots	7 to 8		3	light
187.4	R	Roots	8		3	light
191.1	R	Roots	7 to 8		3	light
193.0	R	Roots	8		3	light
195.9	R	Roots	7		3	light
199.4	R	Roots	8		3	light
202.3	R	Roots	8		3	light
205.9	R	Roots	7 to 1		3	medium
210.1	R	Roots	4 to 8		3	light
213.8	R	Roots	8		3	light
220.1	ACB	Access point CB		5	0	

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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
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Upstream MH CB 7	Downstream MH CB 8	Operator Jr. U-310-10398	Truck 16
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 5:58 PM	Purpose Infiltration/Inflow Investigation
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Comments C/O Stantec	Camera Direction With Flow
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CB 7	Ftg.	Code	Description	Position	Dimension	Severity	Comment
	*0.0	ACB	Access point CB		5	0	
	*3.7	R	Roots	8		3	light
	*6.6	R	Roots	11 to 3		3	heavy water infl
	*7.8	R	Roots	8 to 11		3	root ball
	*10.0	R	Roots	1 to 3		3	root ball
	*12.3	H	Hole	12 to 2		4	
	*14.2	R	Roots	9 to 3		3	root ball
	*17.5	H	Hole	12 to 3		4	
	*18.6	R	Roots	3 to 5		3	light
	*21.0	R	Roots	11 to 3		3	root ball
	*24.3	C	Crack	12		2	
	*26.1	R	Roots	10 to 4		3	root ball
	*28.5	R	Roots	8 to 4		3	heavy
	*31.7	R	Roots	4 to 5		3	light
	*34.8	R	Roots	3 to 5		3	light
	*34.9	R	Roots	7 to 5		3	medium
	*36.9	R	Roots	8		3	light
	*38.1	R	Roots	10 to 4		3	root ball
	*43.8	R	Roots	9 to 4		3	medium water infl
	*48.7	R	Roots	7		3	light
	*51.9	R	Roots	1 to 4		3	light
	*58.8	R	Roots	8 to 4		3	heavy
	*61.6	R	Roots	9 to 4		3	root ball
	*64.1	R	Roots	9 to 3		3	light
	*66.8	R	Roots	1 to 4		3	light
	*74.5	ACB	Access point CB		5.4	0	
CB 8							

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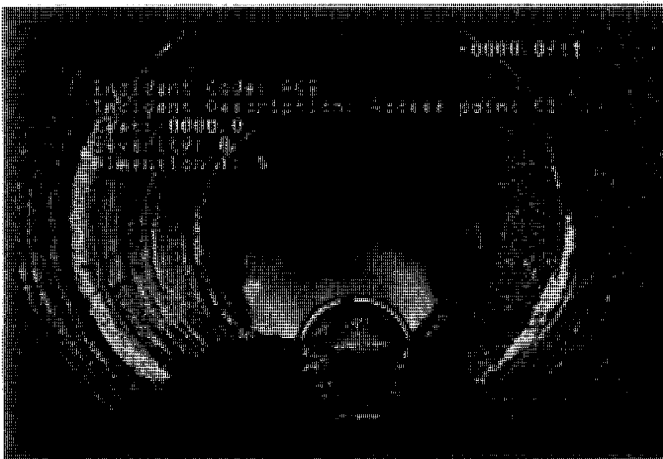


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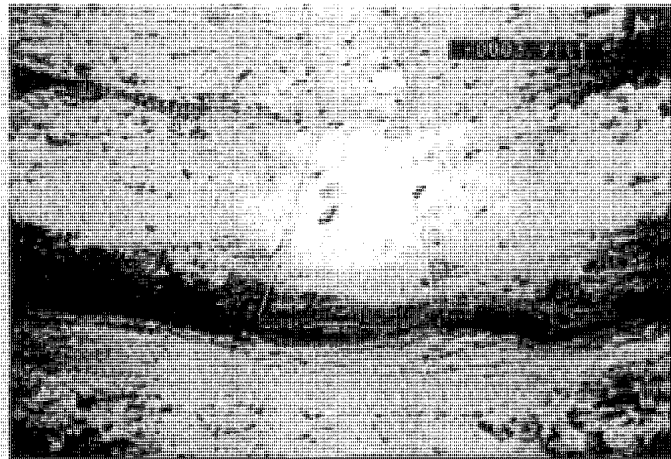
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Upstream MH CB 7	Downstream MH CB 8	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 5:58 PM
			Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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ACB - Access point CB @ 0.0 ft.



R - Roots @ 3.7 ft. light



R - Roots @ 6.6 ft. heavy water infil



R - Roots @ 7.8 ft. root ball

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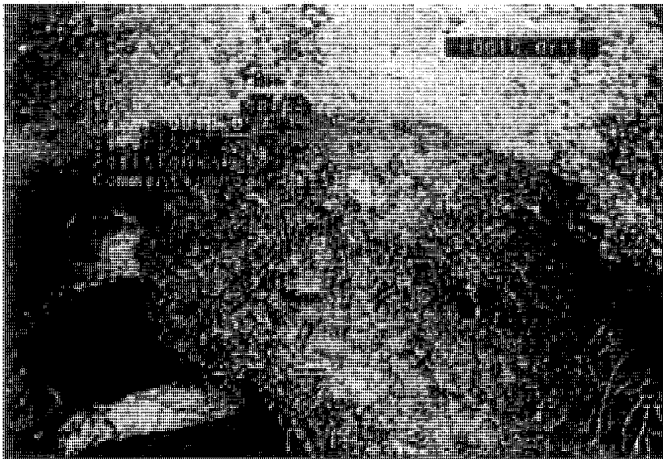


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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 7	Downstream MH CB 8	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 5:58 PM
Purpose Infiltration/Inflow Investigation			

Comments C/O Stantec	Camera Direction With Flow
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R - Roots @ 10.0 ft. root ball



H - Hole @ 12.3 ft.



R - Roots @ 14.2 ft. root ball



H - Hole @ 17.5 ft.

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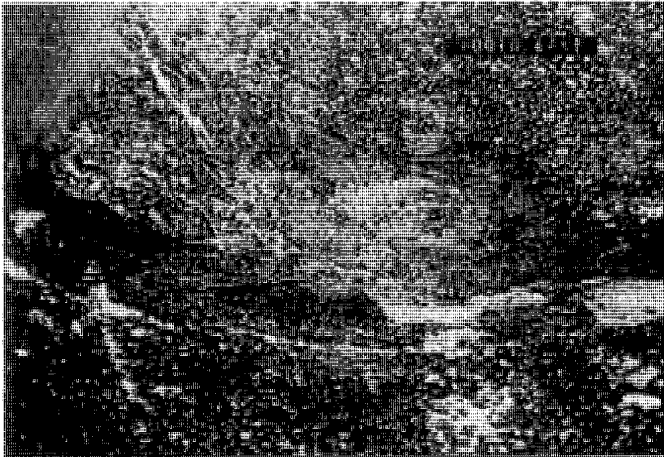


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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 7	Downstream MH CB 8	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 5:58 PM
		Purpose Infiltration/Inflow Investigation	

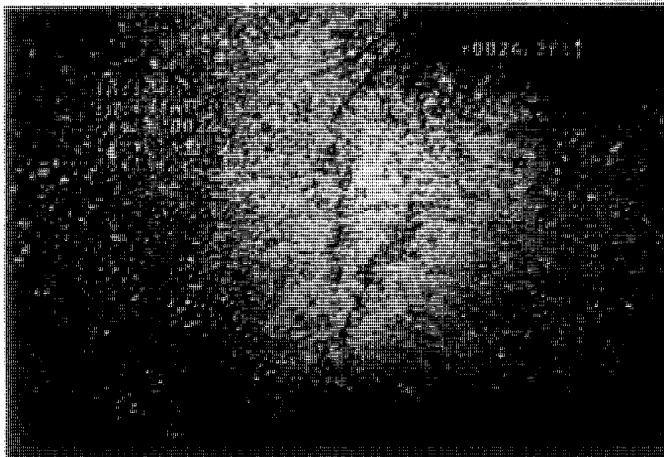
Comments C/O Stantec	Camera Direction With Flow
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R - Roots @ 18.6 ft. light



R - Roots @ 21.0 ft. root ball



C - Crack @ 24.3 ft.



R - Roots @ 26.1 ft. root ball

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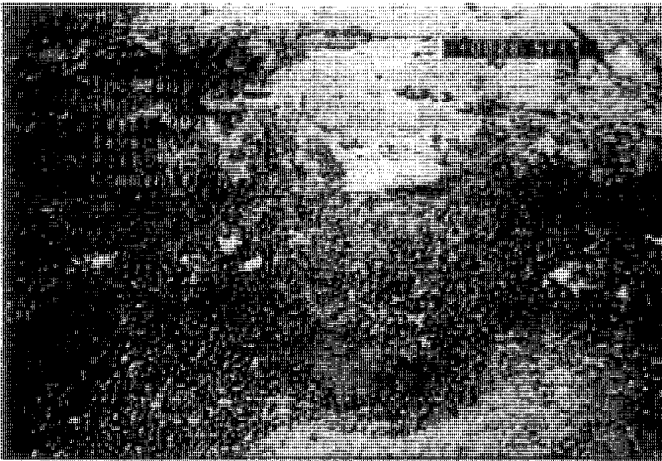


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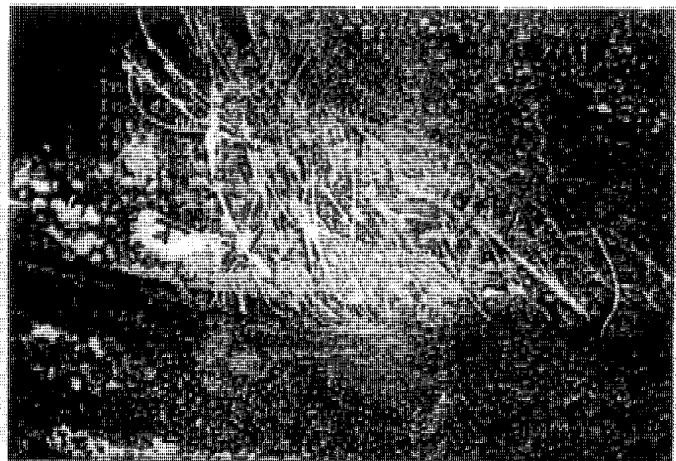
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Upstream MH CB 7	Downstream MH CB 8	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 5:58 PM
		Purpose Infiltration/Inflow Investigation	

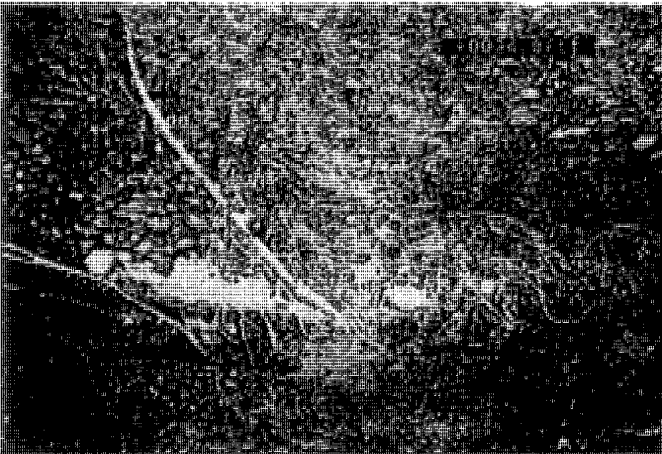
Comments C/O Stantec	Camera Direction With Flow
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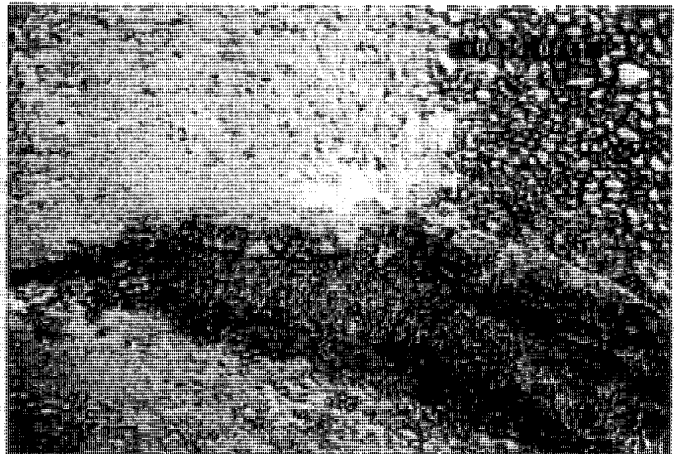
R - Roots @ 28.5 ft. heavy



R - Roots @ 31.7 ft. light



R - Roots @ 34.8 ft. light



R - Roots @ 34.9 ft. medium

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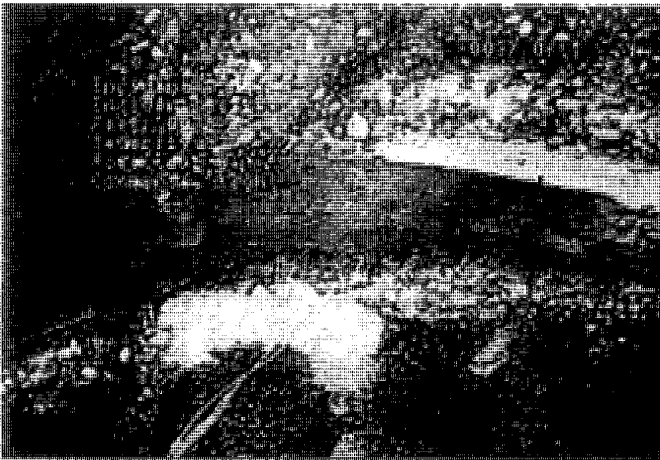


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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 7	Downstream MH CB 8	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 5:58 PM
			Purpose Infiltration/Inflow Investigation

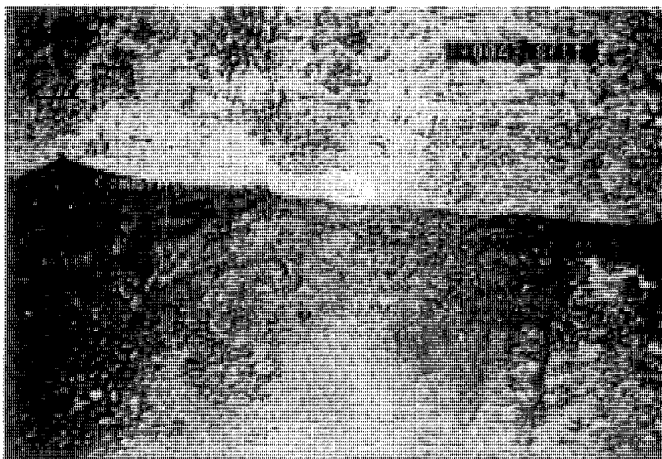
Comments C/O Stantec	Camera Direction With Flow
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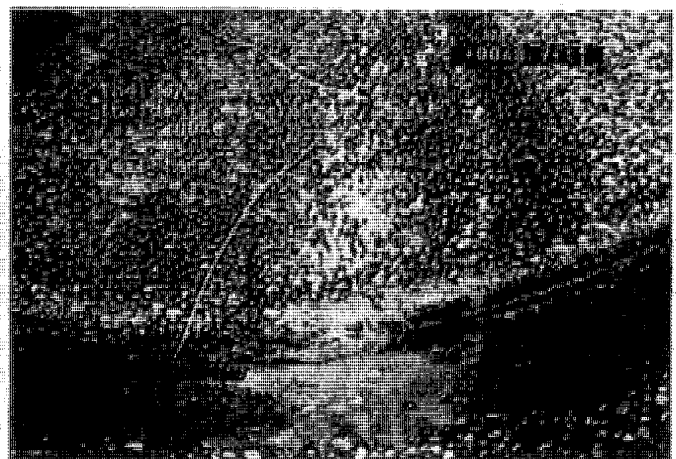
R - Roots @ 36.9 ft. light



R - Roots @ 38.1 ft. root ball



R - Roots @ 43.8 ft. medium water infl



R - Roots @ 48.7 ft. light

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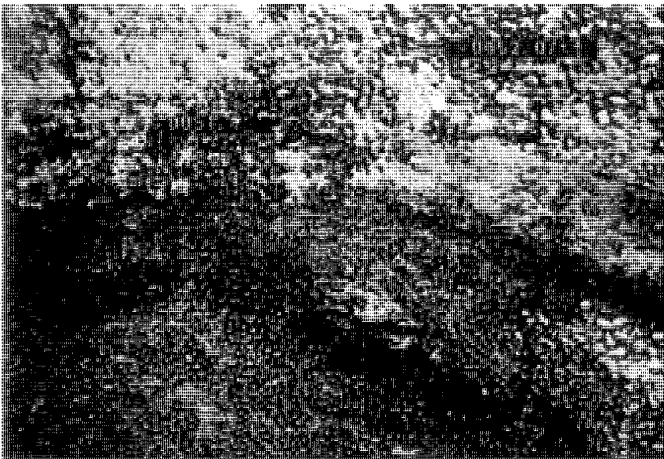


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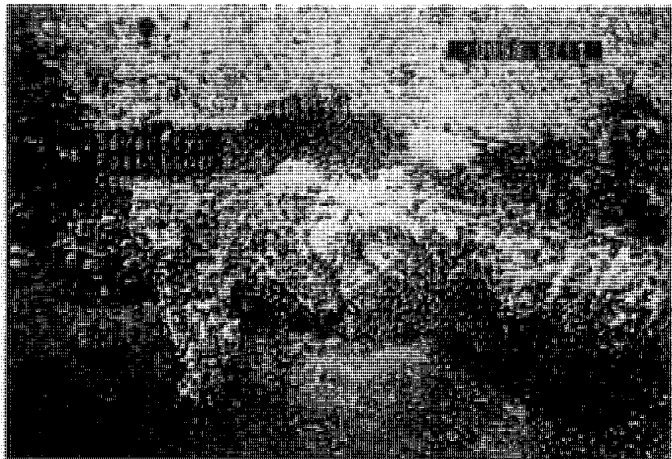
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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton	
Upstream MH CB 7	Downstream MH CB 8	Operator Jr. U-310-10398	Truck 16	
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 5:58 PM	Purpose Infiltration/Inflow Investigation

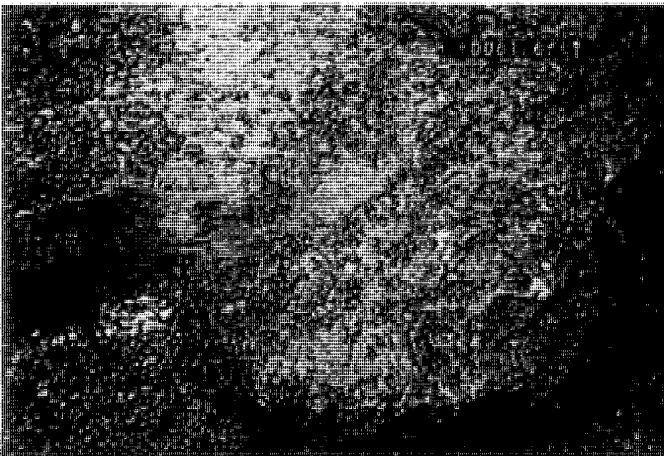
Comments C/O Stantec	Camera Direction With Flow
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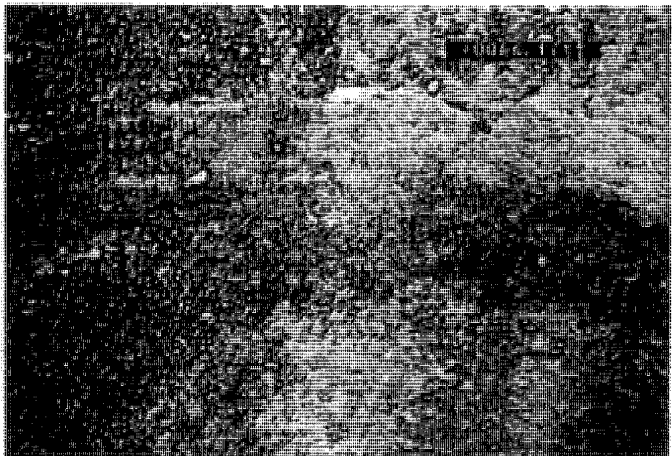
R - Roots @ 51.9 ft. light



R - Roots @ 58.8 ft. heavy



R - Roots @ 61.6 ft. root ballk



R - Roots @ 64.1 ft. light

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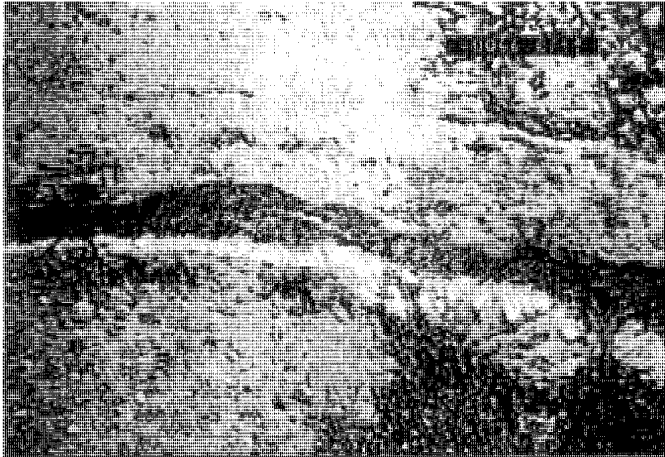


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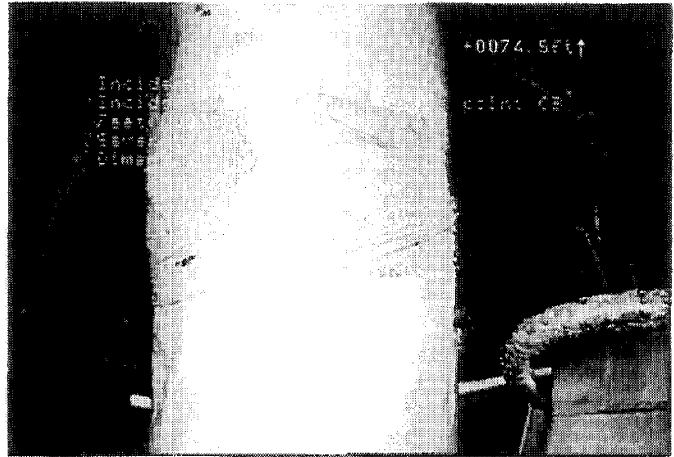
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Upstream MH CB 7	Downstream MH CB 8	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 5:58 PM
			Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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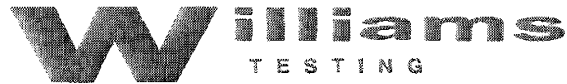


R - Roots @ 66.8 ft. light



ACB - Access point CB @ 74.5 ft.

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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
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Upstream MH CB 7	Downstream MH CB 8	Operator Jr. U-310-10398	Truck 16
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-23-2013	Time 5:58 PM	Purpose Infiltration/Inflow Investigation
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Comments C/O Stantec	Camera Direction With Flow
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Fig.	Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		5	0	
3.7	R	Roots	8		3	light
6.6	R	Roots	11 to 3		3	heavy water infl
7.8	R	Roots	8 to 11		3	root ball
10.0	R	Roots	1 to 3		3	root ball
12.3	H	Hole	12 to 2		4	
14.2	R	Roots	9 to 3		3	root ball
17.5	H	Hole	12 to 3		4	
18.6	R	Roots	3 to 5		3	light
21.0	R	Roots	11 to 3		3	root ball
24.3	C	Crack	12		2	
26.1	R	Roots	10 to 4		3	root ball
28.5	R	Roots	8 to 4		3	heavy
31.7	R	Roots	4 to 5		3	light
34.8	R	Roots	3 to 5		3	light
34.9	R	Roots	7 to 5		3	medium
36.9	R	Roots	8		3	light
38.1	R	Roots	10 to 4		3	root ball
43.8	R	Roots	9 to 4		3	medium water infl
48.7	R	Roots	7		3	light
51.9	R	Roots	1 to 4		3	light
58.8	R	Roots	8 to 4		3	heavy
61.6	R	Roots	9 to 4		3	root ball
64.1	R	Roots	9 to 3		3	light
66.8	R	Roots	1 to 4		3	light
74.5	ACB	Access point CB		5.4	0	

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Upstream MH CB 8	Downstream MH CB 9	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-24-2013	Time 9:56 AM
			Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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CB 8	Fig.	Code	Description	Position	Dimension	Severity	Comment
	0.0	ACB	Access point CB		5.5	0	
	13.5	R	Roots	8 to 12		3	light
	18.1	R	Roots	10 to 12		3	light
	27.2	R	Roots	8 to 12		3	light
	30.2	R	Roots	8 to 3		3	medium
	33.7	R	Roots	8 to 11		3	light
	36.8	R	Roots	11		3	light
	39.6	R	Roots	10 to 12		3	light
	42.6	J	Joint leaking	11		0	water
	42.6	SD	Surface Damage	10 to 12		2	
	45.5	R	Roots	9 to 12		3	light
	51.7	R	Roots	12		3	light
	54.6	R	Roots	12		3	light
	69.4	R	Roots	8 to 1		3	light
	83.2	CL	Crack Longitudinal	12		0	
	129.6	R	Roots	8		3	
	141.9	H	Hole	11 to 12		4	
	151.7	ACB	Access point CB		4	0	
CB 9							

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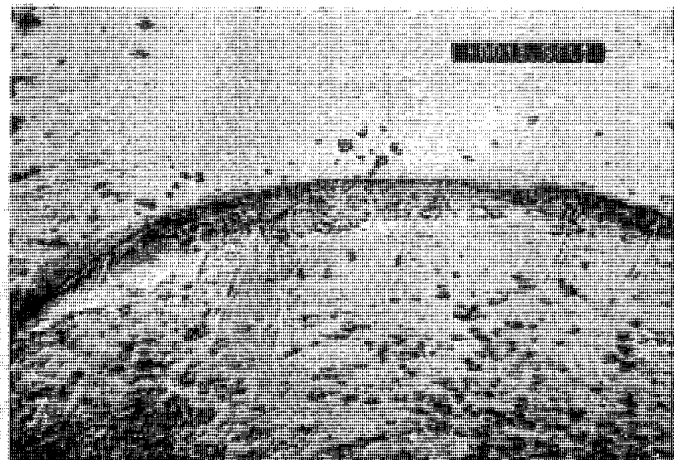
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Upstream MH CB 8	Downstream MH CB 9	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-24-2013	Time 9:56 AM
		Purpose Infiltration/Inflow Investigation	

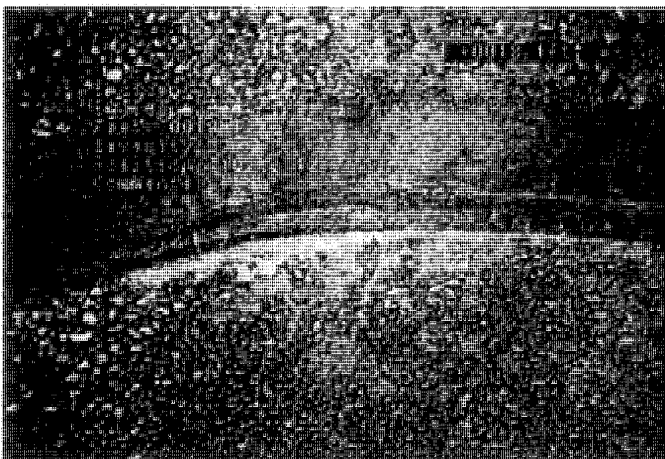
Comments C/O Stantec	Camera Direction With Flow
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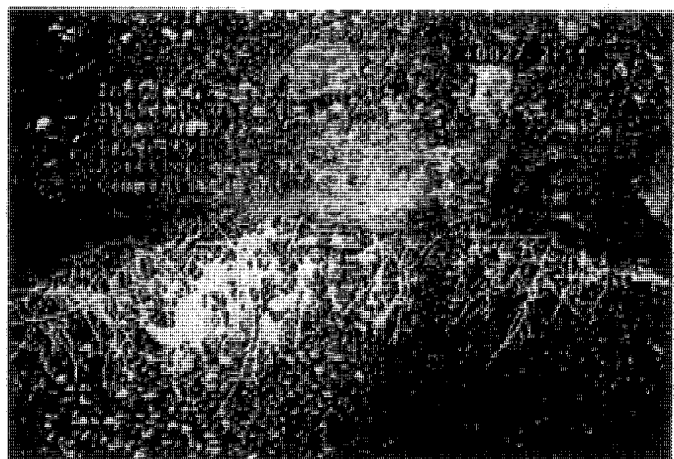
ACB - Access point CB @ 0.0 ft.



R - Roots @ 13.5 ft. light



R - Roots @ 18.1 ft. light



R - Roots @ 27.2 ft. light

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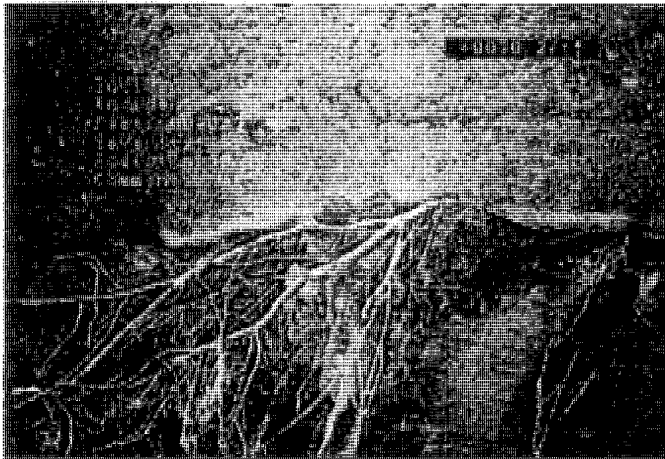


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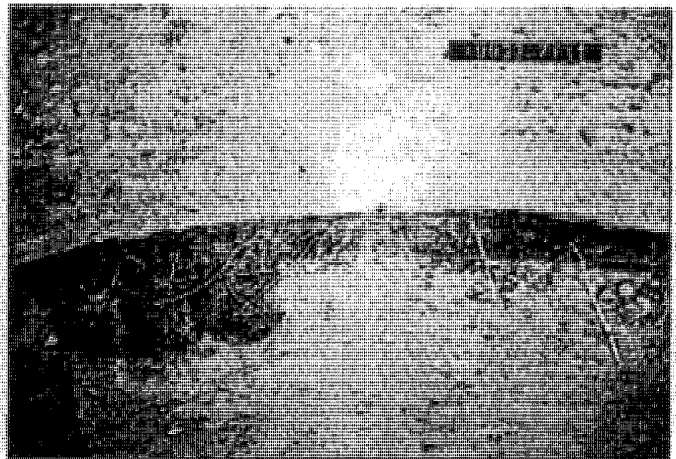
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Upstream MH CB 8	Downstream MH CB 9	Operator Jr. U-310-10398	Truck 18
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-24-2013	Time 9:56 AM
			Purpose Infiltration/Inflow Investigation

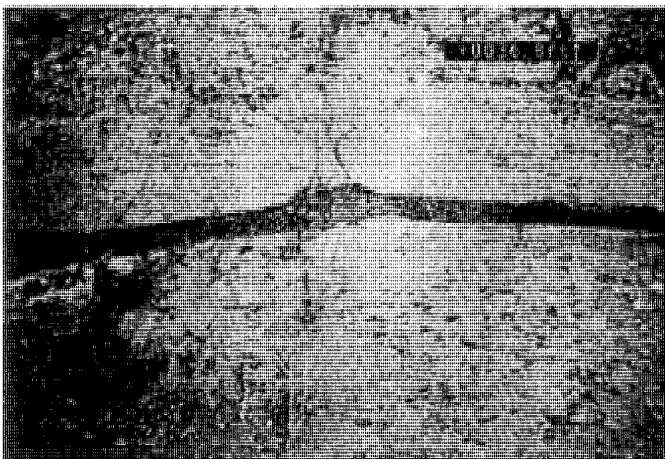
Comments C/O Stantec	Camera Direction With Flow
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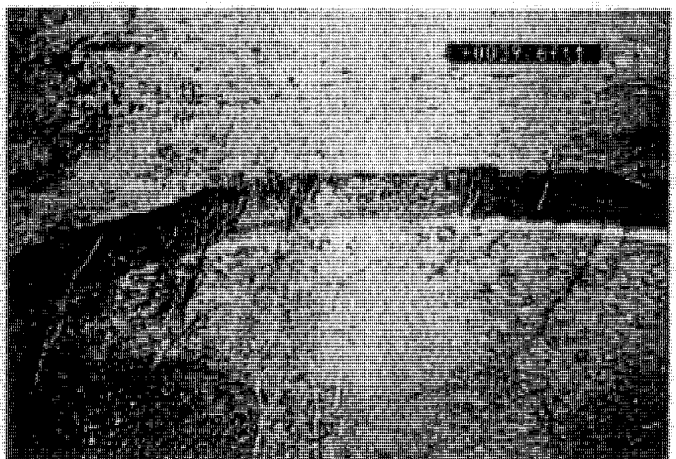
R - Roots @ 30.2 ft. medium



R - Roots @ 33.7 ft. light



R - Roots @ 36.8 ft. light



R - Roots @ 39.6 ft. light

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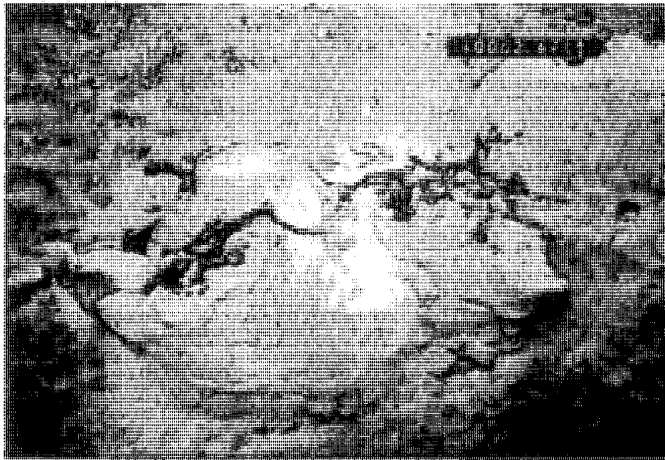


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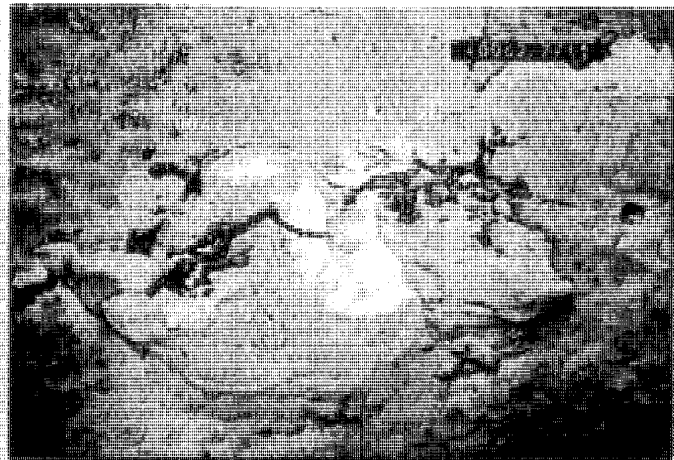
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Upstream MH CB 8	Downstream MH CB 9	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-24-2013	Time 9:56 AM
			Purpose Infiltration/Inflow Investigation

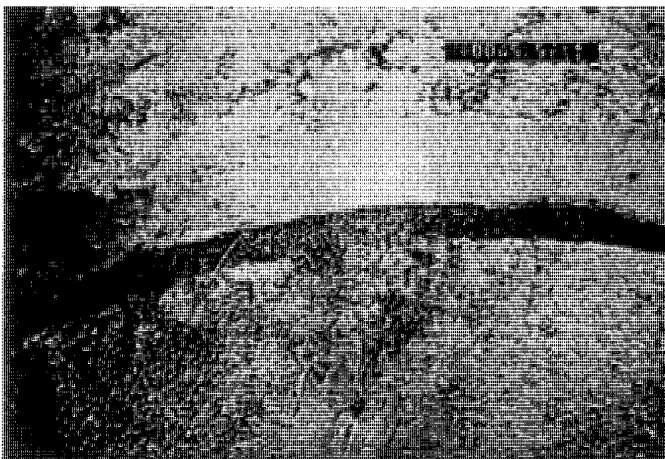
Comments C/O Stantec	Camera Direction With Flow
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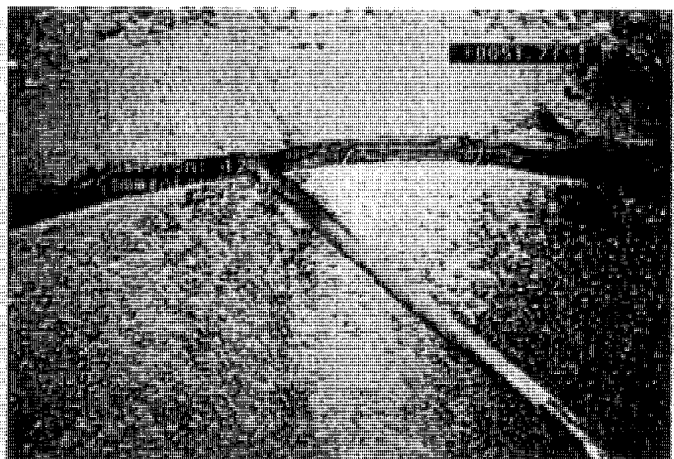
Jl - Joint leaking @ 42.6 ft. water



SD - Surface Damage @ 42.6 ft.



R - Roots @ 45.5 ft. light



R - Roots @ 51.7 ft. light

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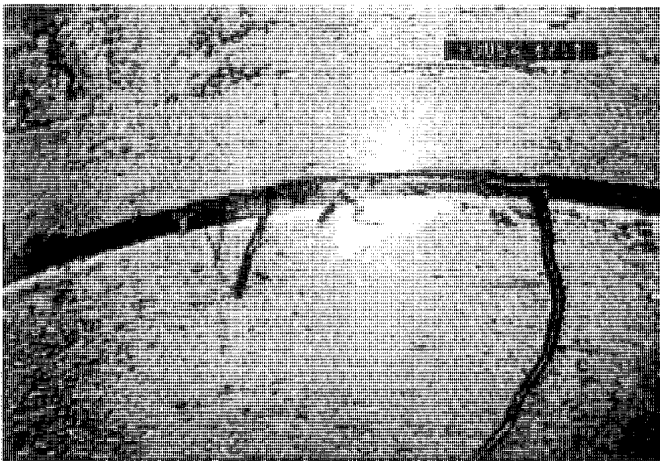


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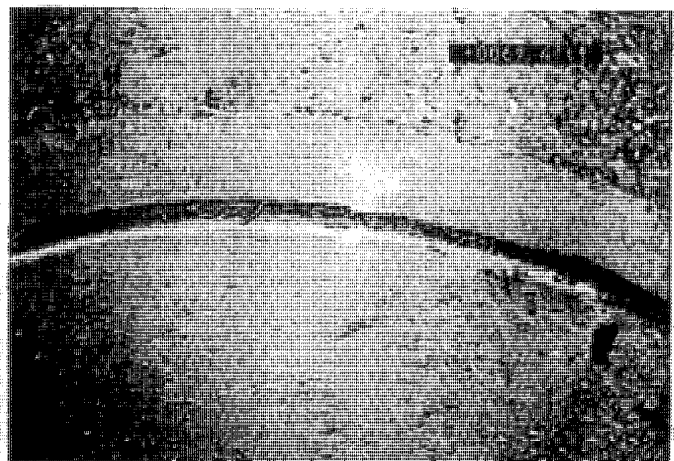
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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton	
Upstream MH CB 8	Downstream MH CB 9	Operator Jr. U-310-10398	Truck 16	
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-24-2013	Time 9:56 AM	Purpose Infiltration/Inflow Investigation

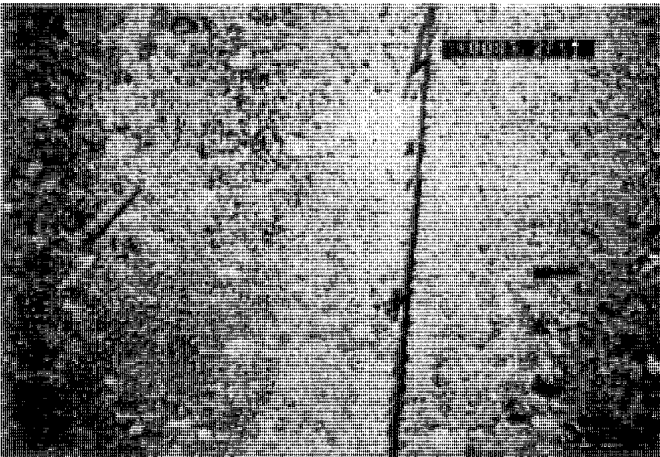
Comments C/O Stantec	Camera Direction With Flow
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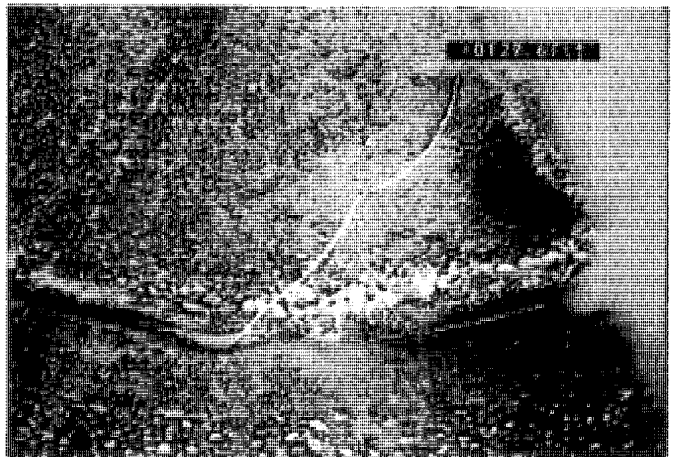
R - Roots @ 54.6 ft. light



R - Roots @ 69.4 ft. light



CL - Crack Longitudinal @ 83.2 ft.



R - Roots @ 129.6 ft.

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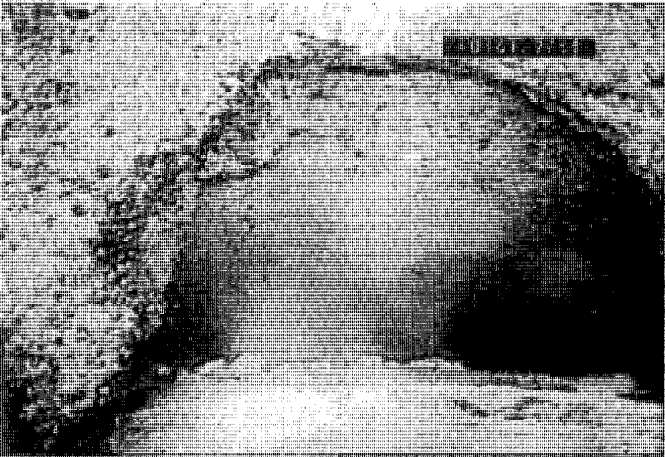


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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 8	Downstream MH CB 9	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-24-2013	Time 9:56 AM
		Purpose Infiltration/Inflow Investigation	

Comments C/O Stantec	Camera Direction With Flow
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H - Hole @ 141.9 ft.



ACB - Access point CB @ 151.7 ft.

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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
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Upstream MH CB 8	Downstream MH CB 9	Operator Jr. U-310-10398	Truck 16
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-24-2013	Time 9:56 AM	Purpose Infiltration/Inflow Investigation
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Comments C/O Stantec	Camera Direction With Flow
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Fig.	Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		5.5	0	
13.5	R	Roots	8 to 12		3	light
18.1	R	Roots	10 to 12		3	light
27.2	R	Roots	8 to 12		3	light
30.2	R	Roots	8 to 3		3	medium
33.7	R	Roots	8 to 11		3	light
36.8	R	Roots	11		3	light
39.6	R	Roots	10 to 12		3	light
42.6	J	Joint leaking	11		0	water
42.6	SD	Surface Damage	10 to 12		2	
45.5	R	Roots	9 to 12		3	light
51.7	R	Roots	12		3	light
54.6	R	Roots	12		3	light
69.4	R	Roots	8 to 1		3	light
83.2	CL	Crack Longitudinal	12		0	
129.6	R	Roots	8		3	
141.9	H	Hole	11 to 12		4	
151.7	ACB	Access point CB		4	0	



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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 9	Downstream MH CB 10	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-31-2013	Time 4:06 PM
Purpose Infiltration/Inflow Investigation			Camera Direction With Flow
Comments C/O Stantec			

Ftg.	Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		6	0	
9.4	R	Roots	11 to 5		3	light in joint
11.9	R	Roots	11 to 5		3	light..in joint
15.5	R	Roots	4		3	light in joint
15.5	SD	Surface Damage	4 to 8		2	aggregate visible
18.6	R	Roots	1		3	light in joint
21.5	R	Roots	12 to 12		3	medium in joint
23.7	H	Hole	5 to 8		4	void visible (& wrench)
24.7	R	Roots	12 to 4		3	light in joint
27.3	C	Crack	8 to 8		2	surface crack... agregate showing
27.3	R	Roots	1		3	light... in joint
30.0	C	Crack	12		2	surface crack
30.0	R	Roots	10 to 2		3	light...in joint
32.5	C	Crack	12 to 1		2	
32.5	R	Roots	10 to 2		3	medium
32.5	I	Infiltration	11 to 1		3	water
36.5	R	Roots	1 to 4		3	light...in joint
36.5	I	Infiltration	12		3	@ joint
39.0	R	Roots	8 to 12		3	root ball...from joint
41.9	C	Crack	12		2	
41.9	R	Roots	11 to 12		3	light ..from joint
45.1	R	Roots	9 to 11		3	light...in joint
51.6	CL	Crack Longitudinal	5		0	surface spalding & crack
63.3	R	Roots	9 to 11		3	light from joint
63.3	CL	Crack Longitudinal	12		0	
66.6	B	Pipe broken	11 to 12		0	joint broken
66.6	R	Roots	10 to 11		3	light from joint
68.7	CL	Crack Longitudinal	11		0	
68.9	R	Roots	10 to 12		3	light in joint
72.5	R	Roots	10 to 3		3	heavy, root mass hanging from joint
72.5	I	Infiltration	12 to 3		3	water
75.4	R	Roots	1 to 3		3	light in joint
78.5	R	Roots	9 to 3		3	medium from joint
81.7	R	Roots	9 to 2		3	heavy, root mass hanging from joint... more than 60% of pipe covered by root mass.
83.5	CL	Crack Longitudinal	12		0	surface crack into joint
83.5	R	Roots	8 to 10		3	root ball hanging from joint
83.5	I	Infiltration	10		3	water, scale build up
87.8	R	Roots	8 to 4		3	heavy, root mass hanging from joint... more than 60% of pipe covered by root mass
87.8	I	Infiltration	8 to 3		3	water
132.8	R	Roots	8 to 4		3	medium in joint
132.8	I	Infiltration	8 to 11		3	water
135.8	R	Roots	8 to 2		3	medium in joint
135.8	I	Infiltration	9 to 12		3	water



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Upstream MH CB 9	Downstream MH CB 10	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-31-2013	Time 4:06 PM
Comments C/O Stantec			Purpose Infiltration/Inflow Investigation
			Camera Direction With Flow

Fig.	Code	Description	Position	Dimension	Severity	Comment
CB 9						
*139.0	R	Roots	9 to 4		3	medium in joint
*142.2	R	Roots	8 to 2		3	medium in joint
*145.3	R	Roots	8 to 12		3	medium from joint
*145.3	I	Infiltration	9 to 11		3	water
*148.2	R	Roots	8 to 12		3	medium from joint
*148.2	I	Infiltration	11		3	water
*150.7	R	Roots	9 to 11		3	medium in joint
*154.5	R	Roots	8 to 11		3	medium in joint
*154.5	I	Infiltration	11		3	water
*157.2	R	Roots	9 to 11		3	medium in joint
*157.2	I	Infiltration	9		3	water
*160.3	R	Roots	10 to 2		3	light in joint
*160.3	I	Infiltration	1		3	water
*163.9	R	Roots	9 to 3		3	medium in joint
*168.9	SD	Surface Damage	6 to 6		2	aggregate visible for 2 pipe lengths
*171.0	H	Hole	10 to 12		4	void & dirt above pipe
*172.3	R	Roots	10 to 12		3	light in void
*172.3	I	Infiltration	10 to 12		3	water
*175.4	R	Roots	7 to 11		3	light in joint
*181.9	JS	Joint Separated	1 to 11		3	
*181.9	PR	Point Repair	12 to 12	30	3	material change to corrugated HDPE into box
CB 10						

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			Camera Direction With Flow

CB 9	Ftg. Code	Description	Position	Dimension	Severity	Comment
187.6	ACB	Access point CB		7	0	PVC pipe in Conflict box.... camera will not go past PVC
CB 10						

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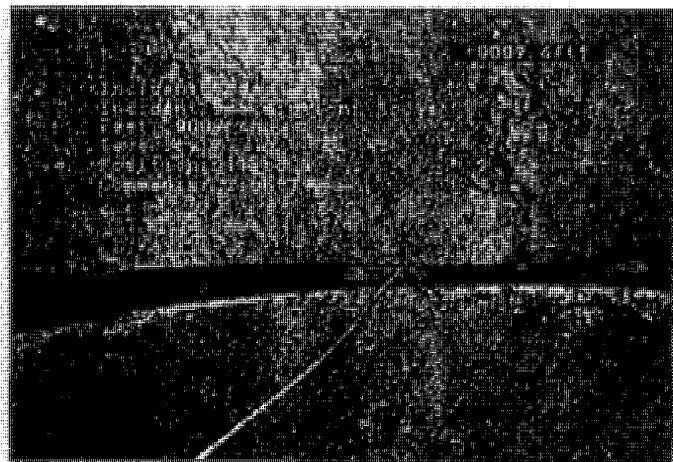
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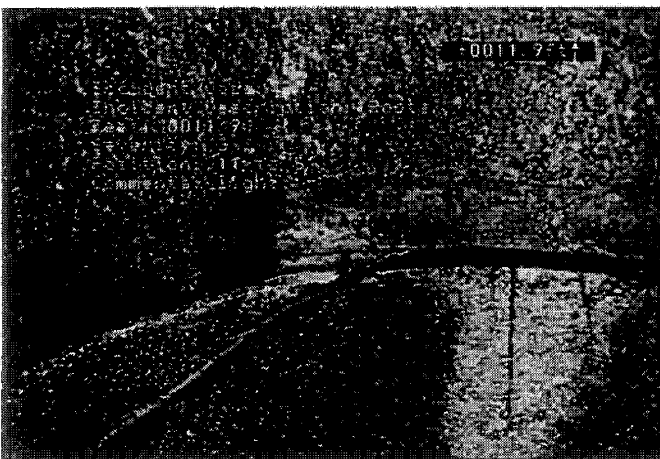
Comments C/O Stantec	Camera Direction With Flow
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ACB - Access point CB @ 0.0 ft.



R - Roots @ 9.4 ft. light in joint



R - Roots @ 11.9 ft. light in joint



R - Roots @ 15.5 ft. light in joint

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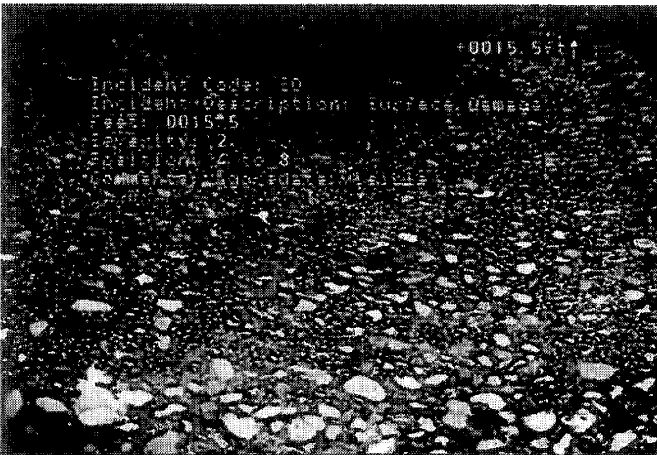


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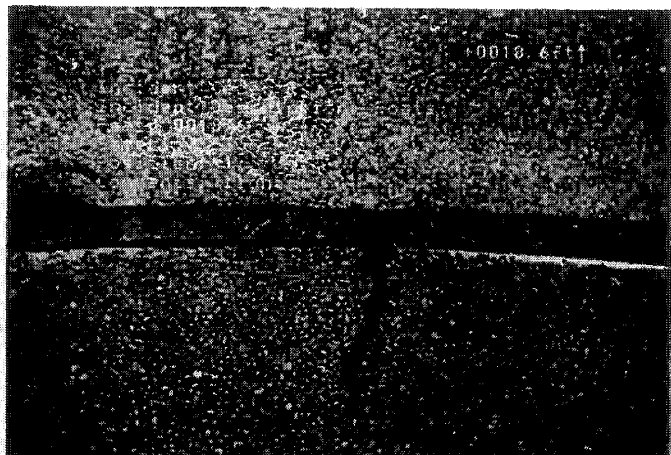
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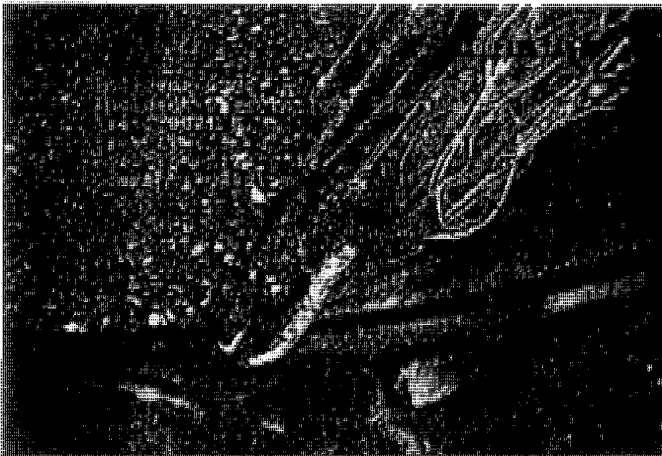
Comments C/O Stantec	Camera Direction With Flow
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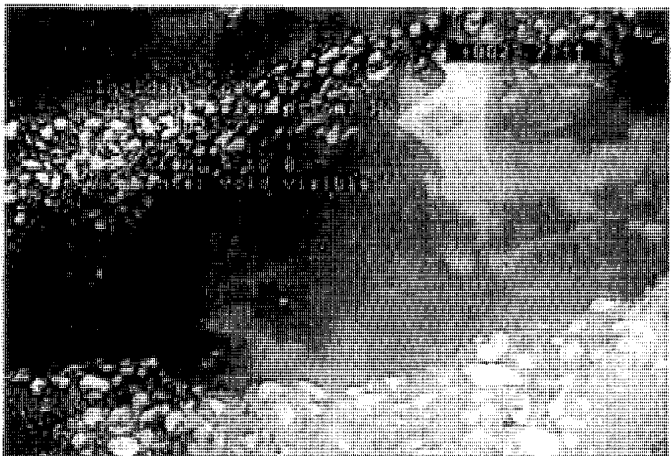
SD - Surface Damage @ 15.5 ft. aggregate visible



R - Roots @ 18.6 ft. light in joint



R - Roots @ 21.5 ft. medium in joint



H - Hole @ 23.7 ft. void visible (& wrench)

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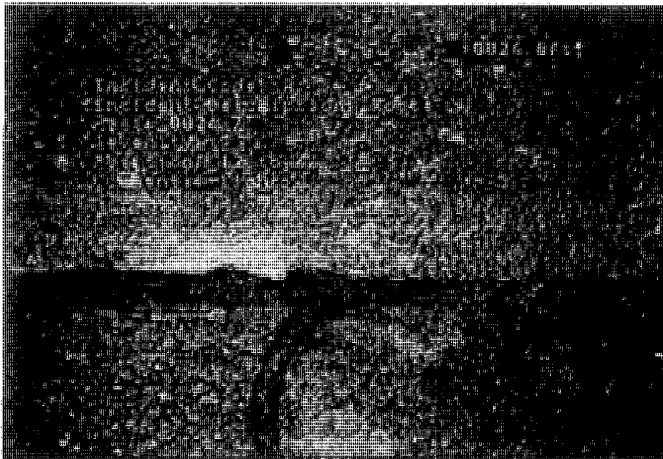


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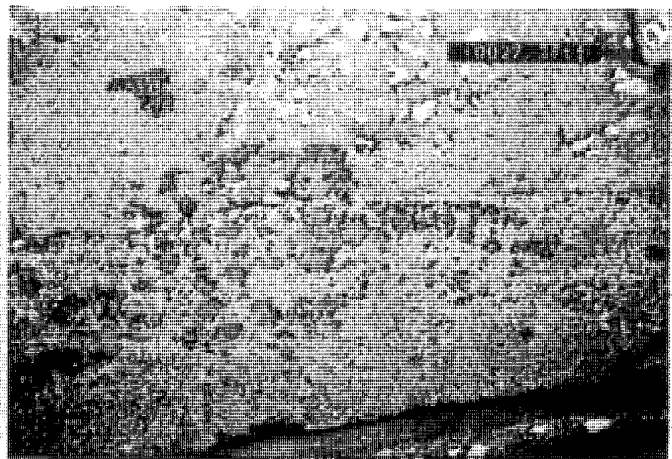
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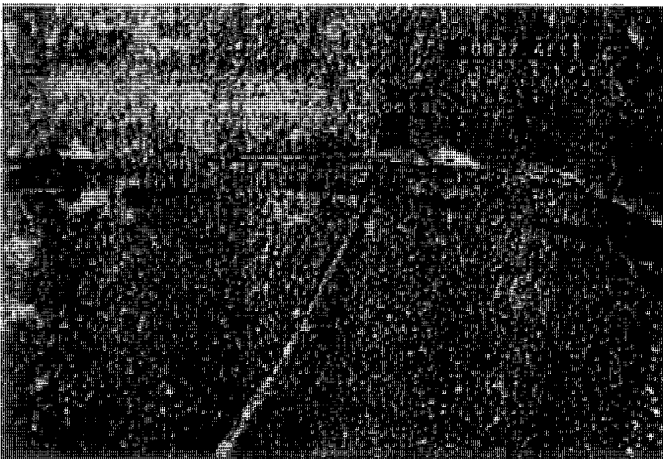
Comments C/O Stantec	Camera Direction With Flow
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R - Roots @ 24.7 ft. light in joint



C - Crack @ 27.3 ft. surface crack...
 aggregate showing



R - Roots @ 27.3 ft. light... in joint



C - Crack @ 30.0 ft. surface crack

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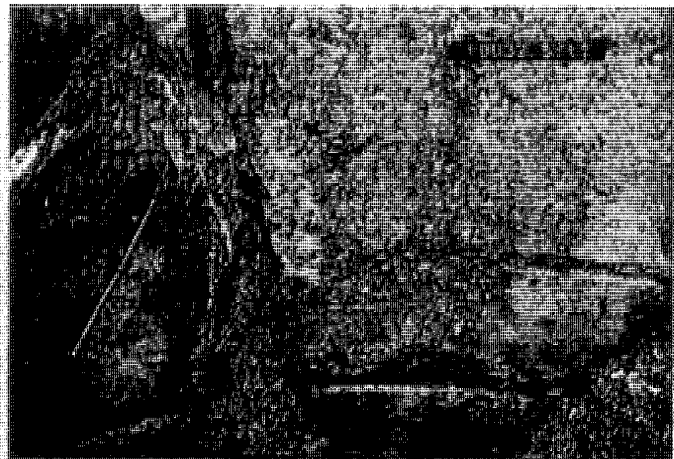
Upstream MH CB 9	Downstream MH CB 10	Operator Jr. U-310-10398	Truck 16
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-31-2013	Time 4:06 PM	Purpose Infiltration/Inflow Investigation
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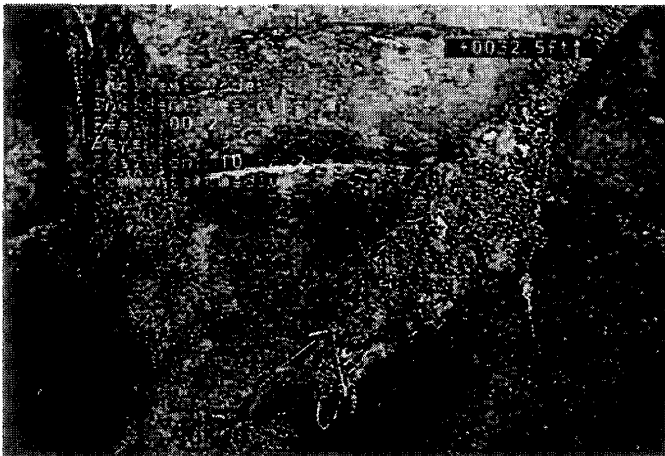
Comments C/O Stantec	Camera Direction With Flow
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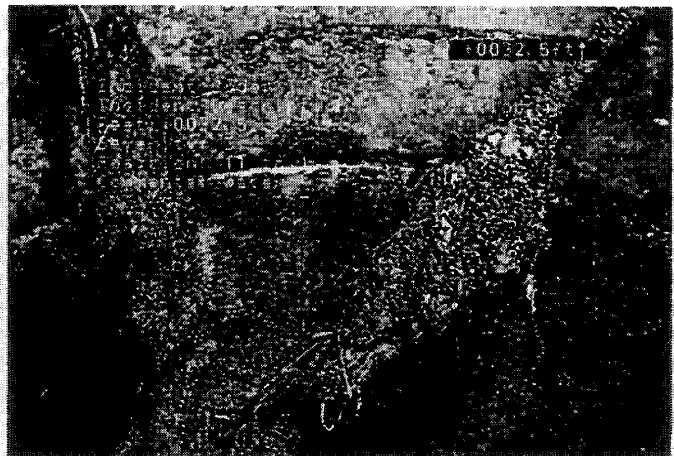
R - Roots @ 30.0 ft. light...in joint



C - Crack @ 32.5 ft.



R - Roots @ 32.5 ft. medium



I - Infiltration @ 32.5 ft. water

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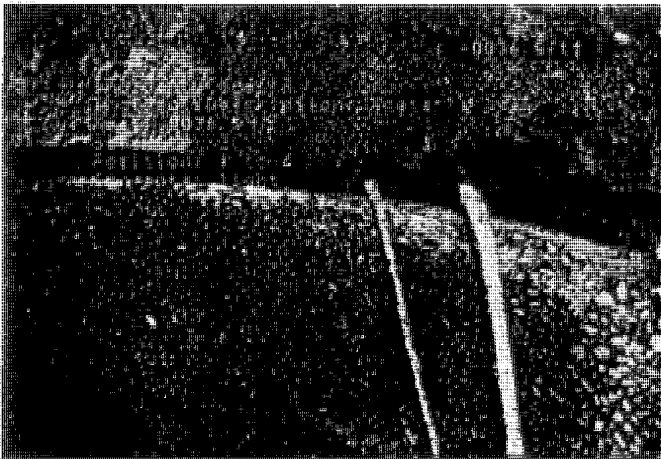


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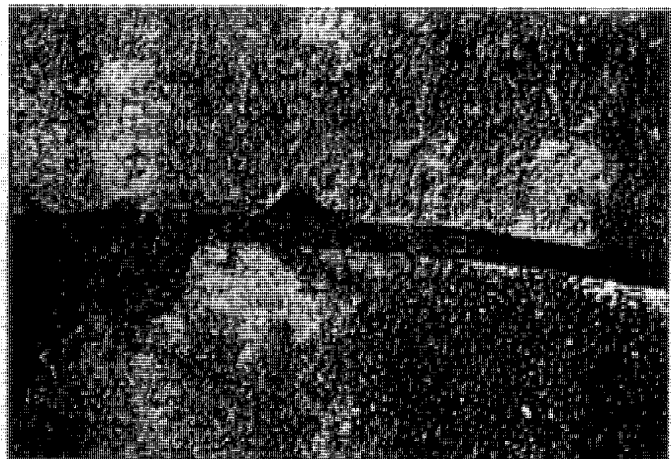
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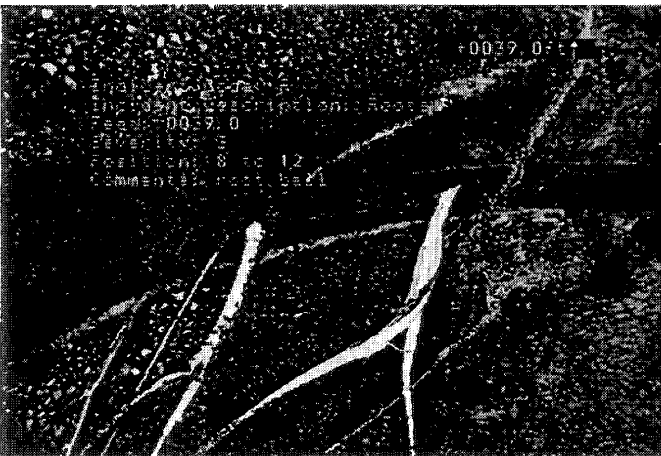
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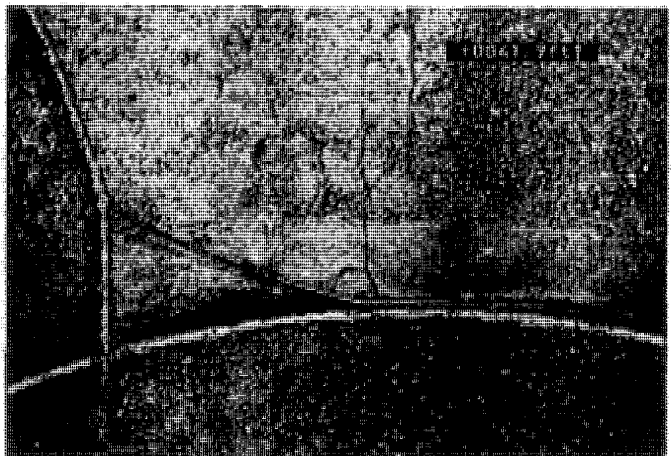
R - Roots @ 36.5 ft. light...in joint



I - Infiltration @ 36.5 ft. @ joint



R - Roots @ 39.0 ft. root ball...from joint



C - Crack @ 41.9 ft.

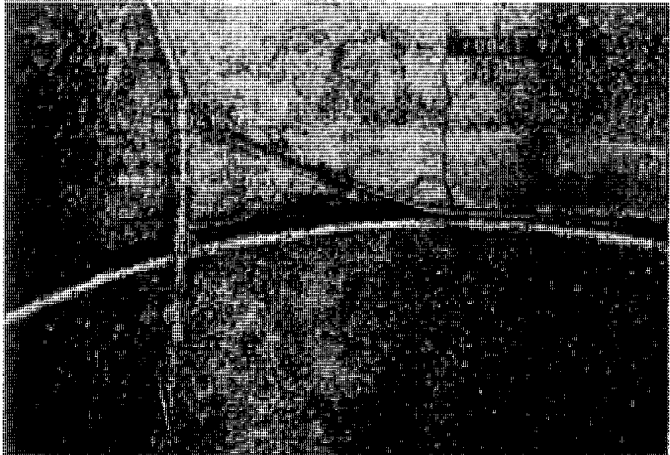
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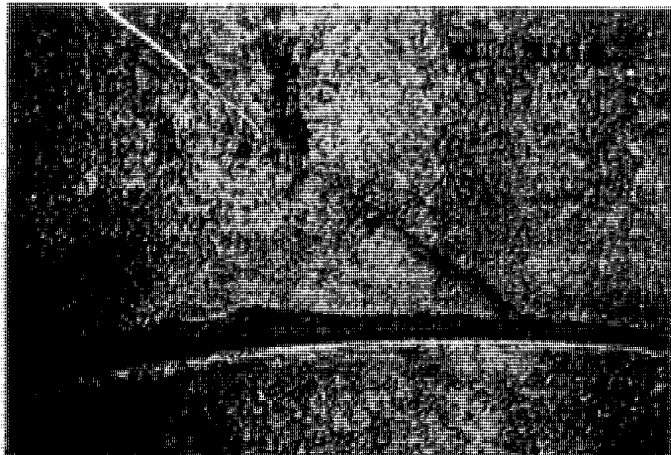
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R - Roots @ 41.9 ft. light ..from joint



R - Roots @ 45.1 ft. light...in joint



CL - Crack Longitudinal @ 51.6 ft. surface spalding & crack



R - Roots @ 63.3 ft. light from joint

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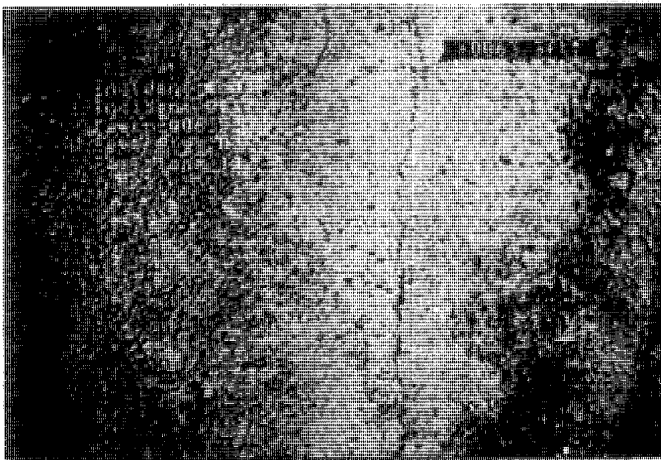


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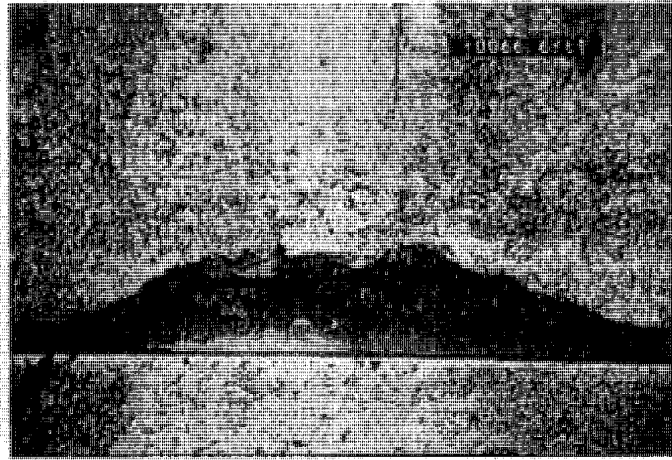
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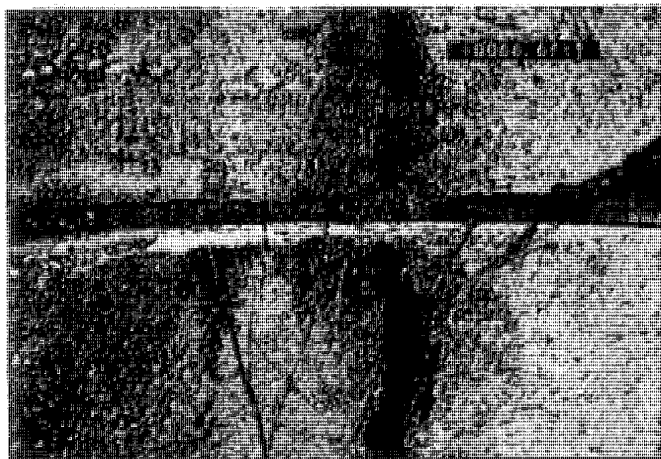
Comments C/O Stantec	Camera Direction With Flow
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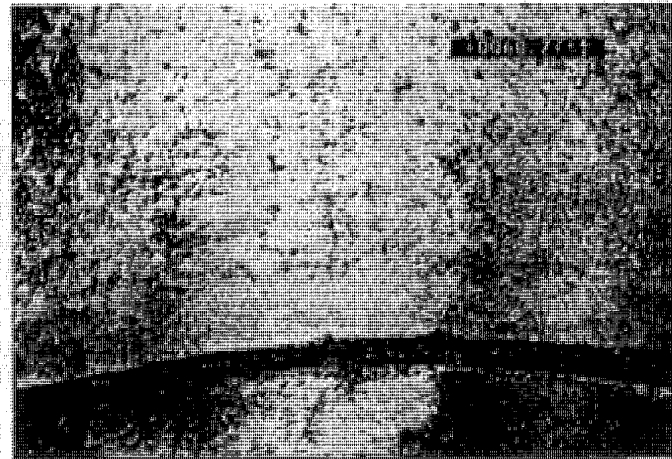
CL - Crack Longitudinal @ 63.3 ft.



B - Pipe broken @ 66.6 ft. joint broken



R - Roots @ 66.6 ft. light from joint



CL - Crack Longitudinal @ 68.7 ft.

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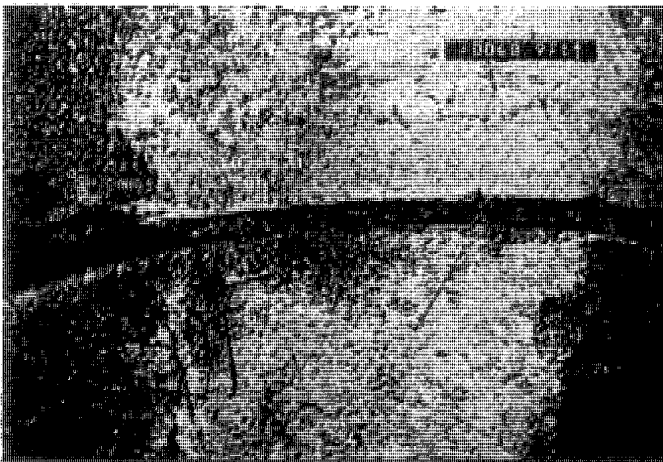


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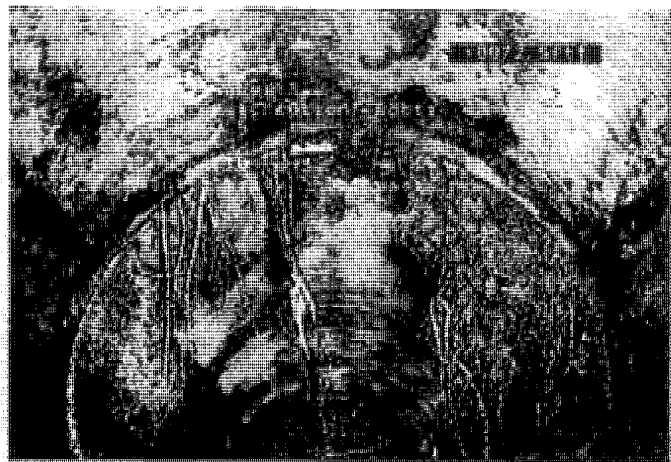
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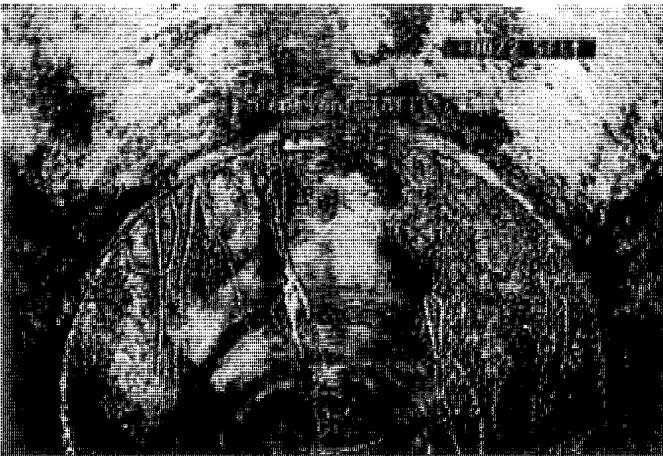
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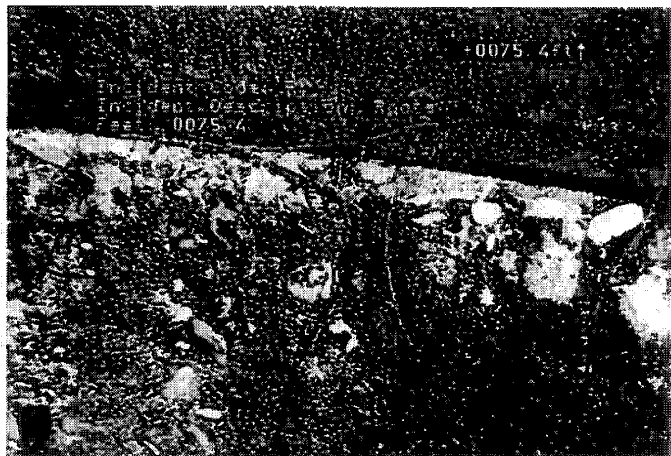
R - Roots @ 68.9 ft. light in joint



R - Roots @ 72.5 ft. heavy, root mass hanging from joint



I - Infiltration @ 72.5 ft. water



R - Roots @ 75.4 ft. light in joint

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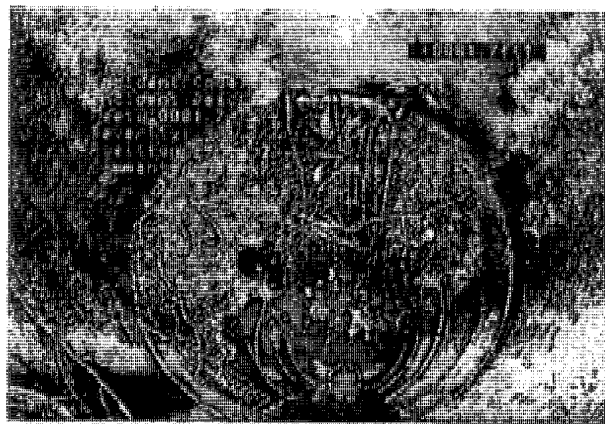
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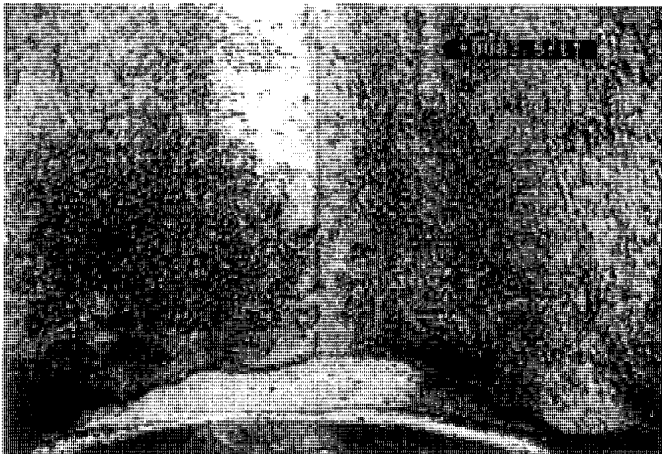
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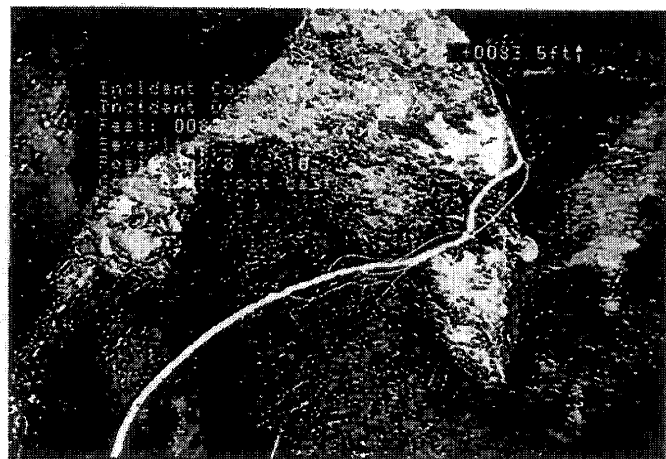
R - Roots @ 78.5 ft. medium from joint



R - Roots @ 81.7 ft. heavy, root mass hanging from joint... more than 60% of pipe covered by root mass.



CL - Crack Longitudinal @ 83.5 ft. surface crack into joint



R - Roots @ 83.5 ft. root ball hanging from joint

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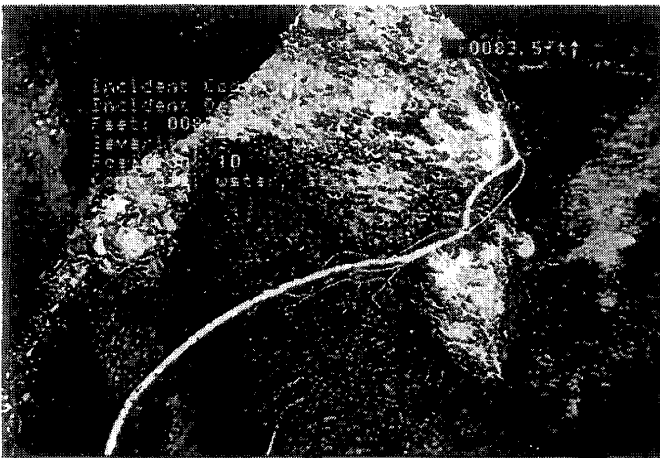


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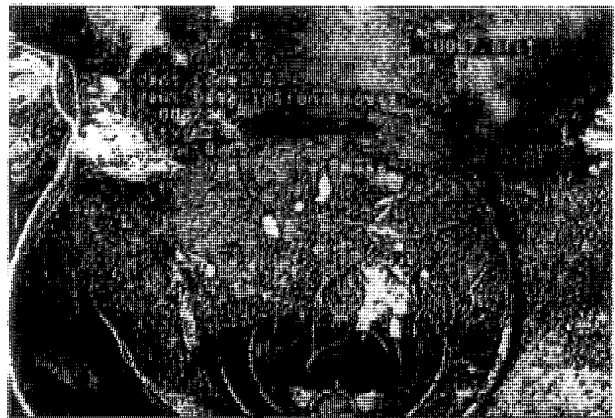
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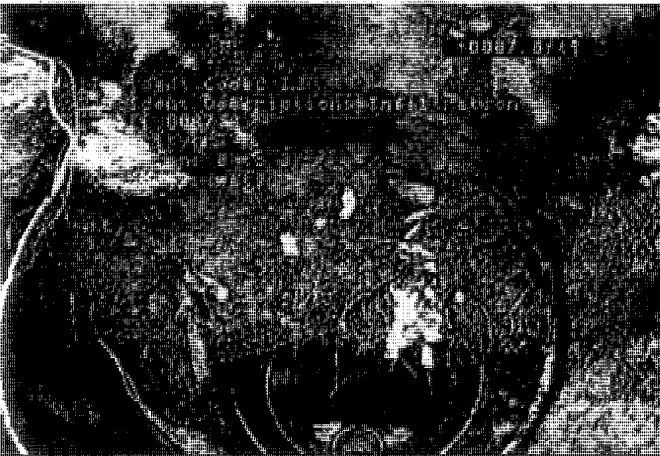
Comments C/O Stantec	Camera Direction With Flow
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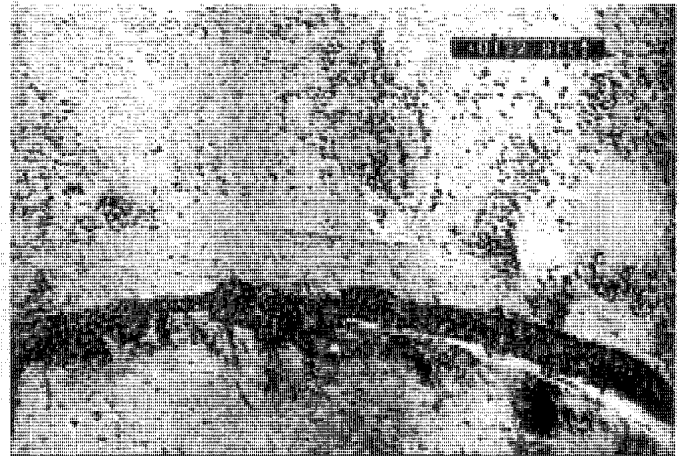
I - Infiltration @ 83.5 ft. water, scale build up



R - Roots @ 87.8 ft. heavy, root mass hanging from joint... more than 60% of pipe covered by root mass



I - Infiltration @ 87.8 ft. water



R - Roots @ 132.8 ft. medium in joint

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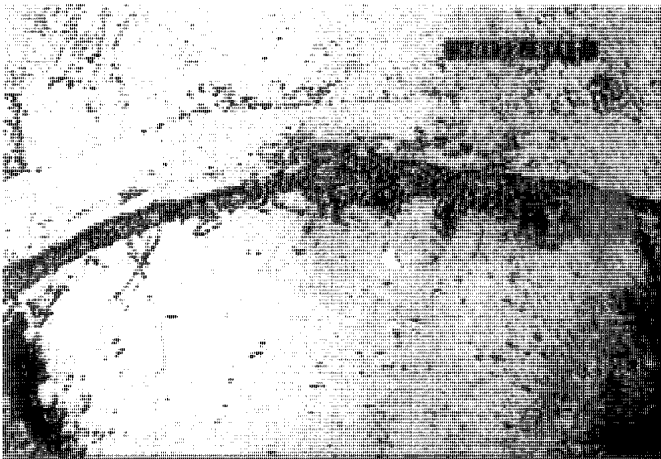


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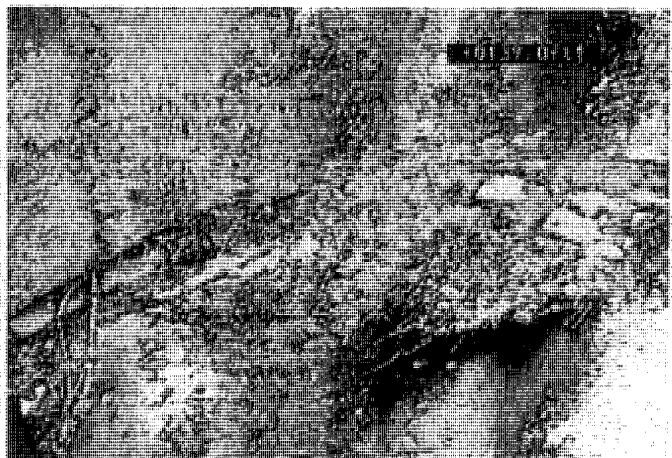
I - Infiltration @ 132.8 ft. water



R - Roots @ 135.8 ft. medium in joint



I - Infiltration @ 135.8 ft. water



R - Roots @ 139.0 ft. medium in joint

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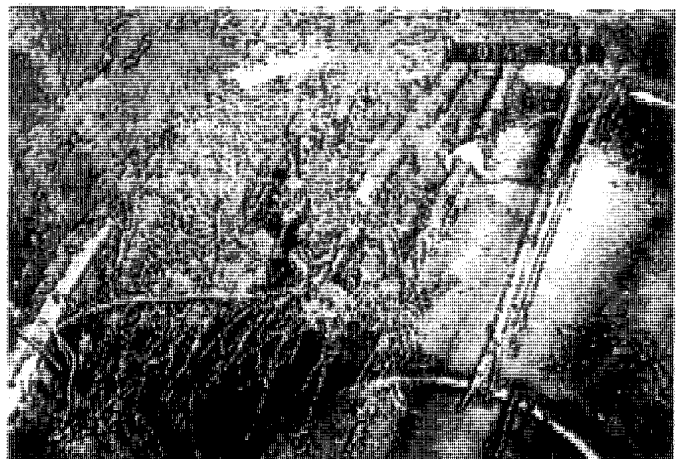
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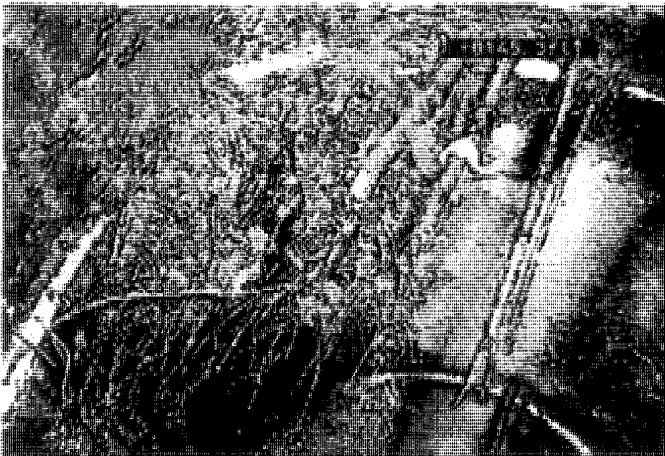
Comments C/O Stantec	Camera Direction With Flow
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R - Roots @ 142.2 ft. medium in joint



R - Roots @ 145.3 ft. medium from joint



I - Infiltration @ 145.3 ft. water



R - Roots @ 148.2 ft. medium from joint

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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 9	Downstream MH CB 10	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-31-2013	Time 4:06 PM
Purpose Infiltration/inflow Investigation			

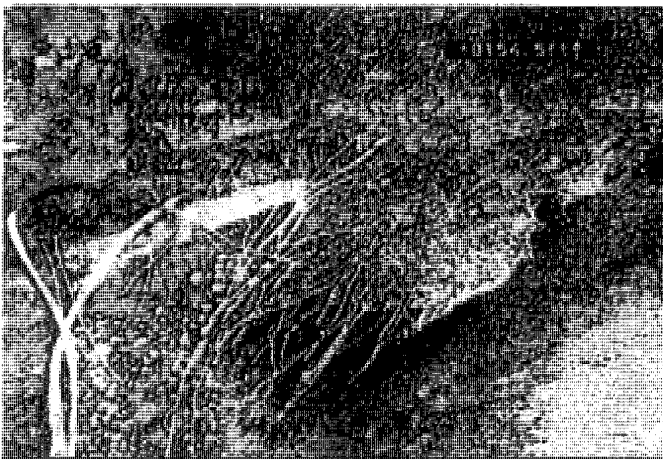
Comments C/O Stantec	Camera Direction With Flow
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I - Infiltration @ 148.2 ft. water



R - Roots @ 150.7 ft. medium in joint



R - Roots @ 154.5 ft. medium in joint



I - Infiltration @ 154.5 ft. water

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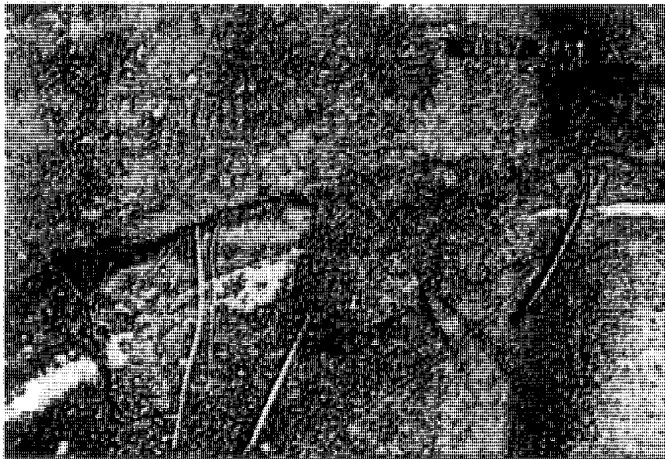


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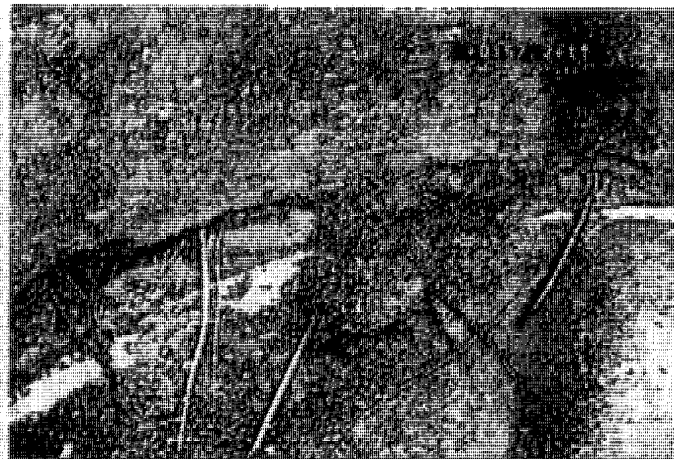
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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton	
Upstream MH CB 9	Downstream MH CB 10	Operator Jr. U-310-10398	Truck 16	
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-31-2013	Time 4:06 PM	Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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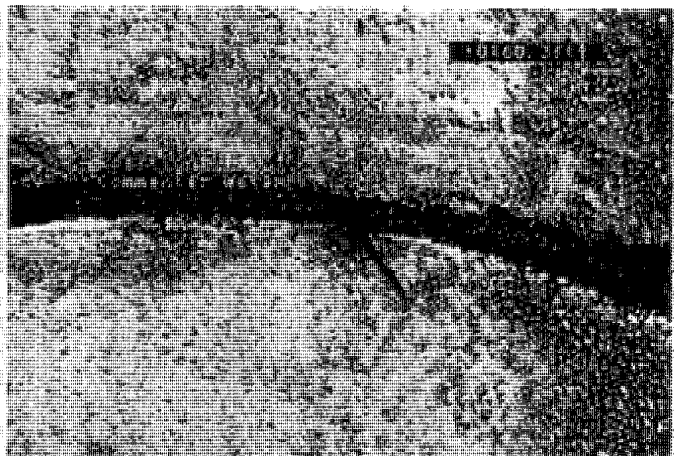
R - Roots @ 157.2 ft. medium in joint



I - Infiltration @ 157.2 ft. water



R - Roots @ 160.3 ft. light in joint



I - Infiltration @ 160.3 ft. water

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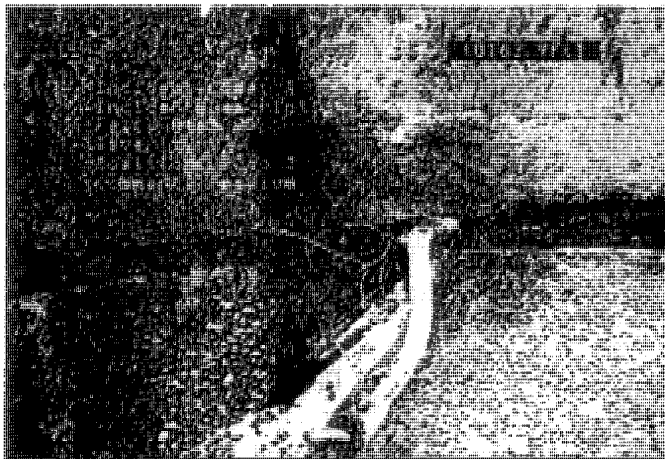
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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
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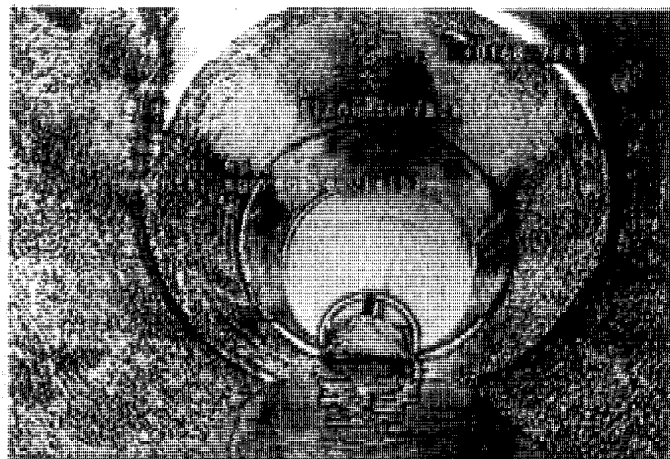
Upstream MH CB 9	Downstream MH CB 10	Operator Jr. U-310-10398	Truck 16
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Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-31-2013	Time 4:06 PM	Purpose Infiltration/Inflow Investigation
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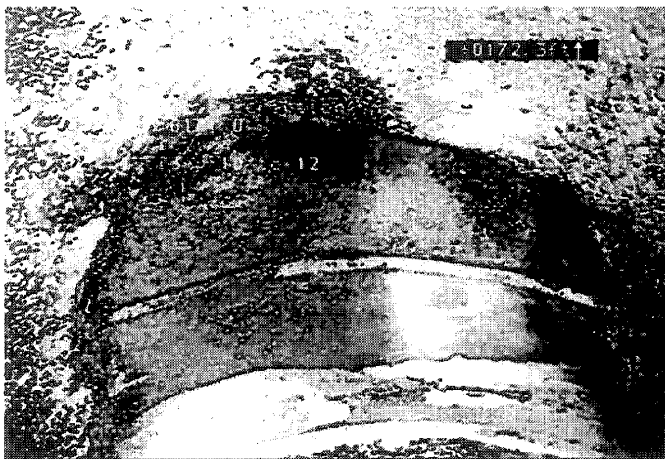
Comments C/O Stantec	Camera Direction With Flow
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R - Roots @ 163.9 ft. medium in joint



SD - Surface Damage @ 168.9 ft. aggregate visible for 2 pipe lengths



H - Hole @ 171.0 ft. void & dirt above pipe



R - Roots @ 172.3 ft. light in void

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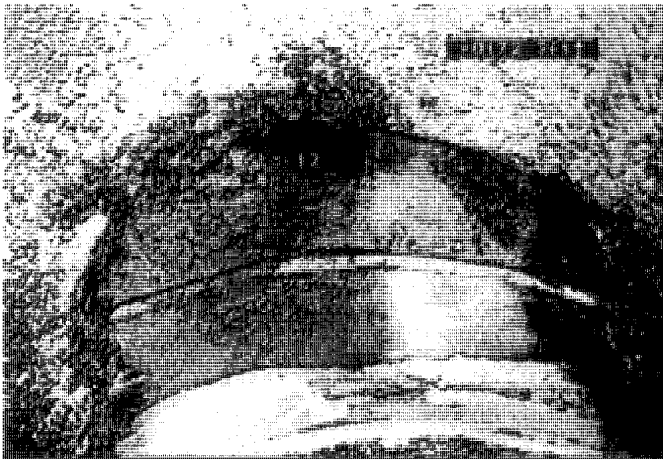


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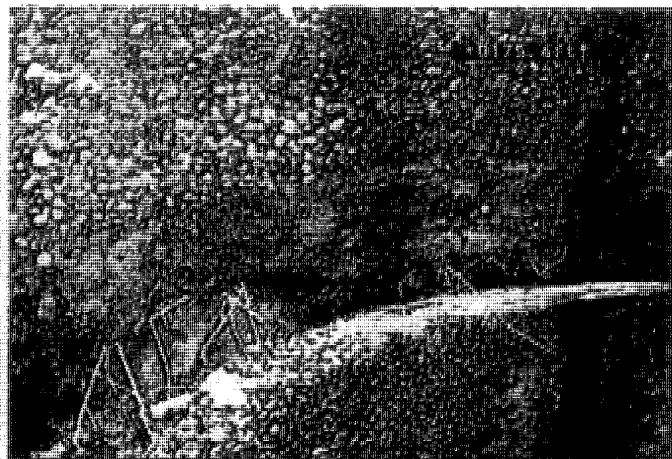
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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton
Upstream MH CB 9	Downstream MH CB 10	Operator Jr. U-310-10398	Truck 16
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-31-2013	Time 4:06 PM
		Purpose Infiltration/Inflow Investigation	

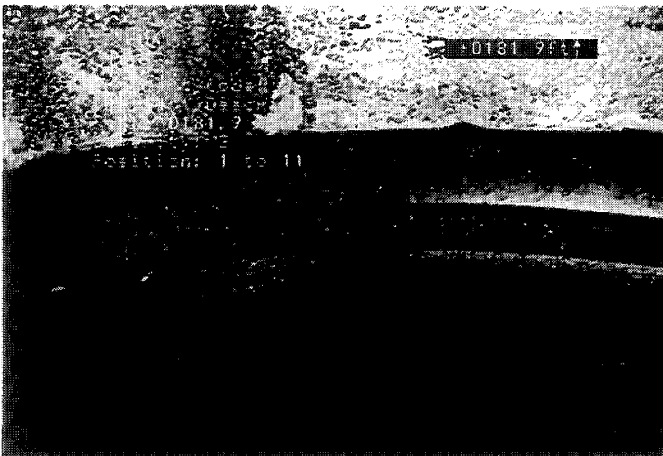
Comments C/O Stantec	Camera Direction With Flow
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I - Infiltration @ 172.3 ft. water



R - Roots @ 175.4 ft. light in joint



JS - Joint Separated @ 181.9 ft.



PR - Point Repair @ 181.9 ft. material change to corrugated HDPE into box

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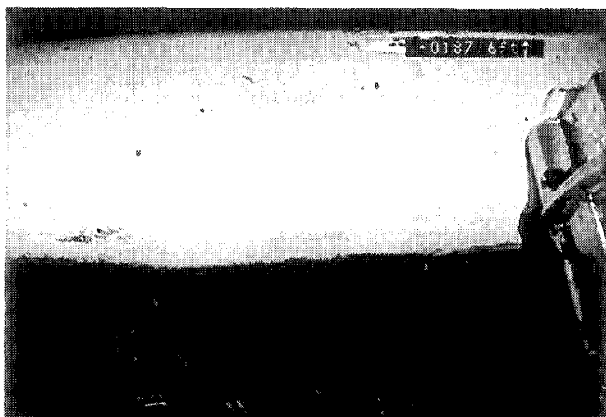


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Customer Manatee County Government	Project Name Drainage Assessment	Street 26th Ave West/5th & 9th st. West	City Bradenton	
Upstream MH CB 9	Downstream MH CB 10	Operator Jr. U-310-10398	Truck 16	
Pipe Size 30	Pipe Material Reinforced Concrete Pipe	Date 5-31-2013	Time 4:06 PM	Purpose Infiltration/Inflow Investigation

Comments C/O Stantec	Camera Direction With Flow
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ACB - Access point CB @ 187.6 ft. PVC pipe in Conflict box.... camera will not go past PVC

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Customer	Project Name	Street	City
Manatee County Government	Drainage Assessment	26th Ave West/5th & 9th st. West	Bradenton

Upstream MH	Downstream MH	Operator	Truck
CB 9	CB 10	Jr. U-310-10398	16

Pipe Size	Pipe Material	Date	Time	Purpose
30	Reinforced Concrete Pipe	5-31-2013	4:06 PM	Infiltration/Inflow Investigation

Comments	Camera Direction
C/O Stantec	With Flow

Fig.	Code	Description	Position	Dimension	Severity	Comment
0.0	ACB	Access point CB		6	0	
9.4	R	Roots	11 to 5		3	light in joint
11.9	R	Roots	11 to 5		3	light..in joint
15.5	R	Roots	4		3	light in joint
15.5	SD	Surface Damage	4 to 8		2	aggregate visible
18.6	R	Roots	1		3	light in joint
21.5	R	Roots	12 to 12		3	medium in joint
23.7	H	Hole	5 to 8		4	void vieible (& wrench)
24.7	R	Roots	12 to 4		3	light in joint
27.3	C	Crack	8 to 8		2	surface crack... agregate showing
27.3	R	Roots	1		3	light... in joint
30.0	C	Crack	12		2	surface crack
30.0	R	Roots	10 to 2		3	light...in joint
32.5	C	Crack	12 to 1		2	
32.5	R	Roots	10 to 2		3	medium
32.5	I	Infiltration	11 to 1		3	water
36.5	R	Roots	1 to 4		3	light...in joint
36.5	I	Infiltration	12		3	@ joint
39.0	R	Roots	8 to 12		3	root ball...from joint
41.9	C	Crack	12		2	
41.9	R	Roots	11 to 12		3	light ..from joint
45.1	R	Roots	9 to 11		3	light...in joint
51.6	CL	Crack Longitudinal	5		0	surface spalding & crack
63.3	R	Roots	9 to 11		3	light from joint
63.3	CL	Crack Longitudinal	12		0	
66.6	B	Pipe broken	11 to 12		0	joint broken
66.6	R	Roots	10 to 11		3	light from joint
68.7	CL	Crack Longitudinal	11		0	
68.9	R	Roots	10 to 12		3	light in joint
72.5	R	Roots	10 to 3		3	heavy, root mass hanging from joint
72.5	I	Infiltration	12 to 3		3	water
75.4	R	Roots	1 to 3		3	light in joint
78.5	R	Roots	9 to 3		3	medium from joint
81.7	R	Roots	9 to 2		3	heavy, root mass hanging from joint... more than 60% of pipe covered by root mass.
83.5	CL	Crack Longitudinal	12		0	surface crack into joint
83.5	R	Roots	8 to 10		3	root ball hanging from joint
83.5	I	Infiltration	10		3	water, scale build up
67.8	R	Roots	8 to 4		3	heavy, root mass hanging from joint... more than 60% of pipe covered by root mass
87.8	I	Infiltration	8 to 3		3	water
132.8	R	Roots	8 to 4		3	medium in joint
132.8	I	Infiltration	8 to 11		3	water
135.8	R	Roots	8 to 2		3	medium in joint
135.8	I	Infiltration	9 to 12		3	water
139.0	R	Roots	9 to 4		3	medium in joint

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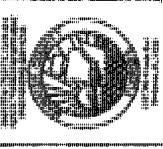
Customer	Project Name	Street	City
Manatee County Government	Drainage Assessment	26th Ave West/5th & 9th st. West	Bradenton

Upstream MH	Downstream MH	Operator	Truck
CB 9	CB 10	Jr. U-310-10398	16

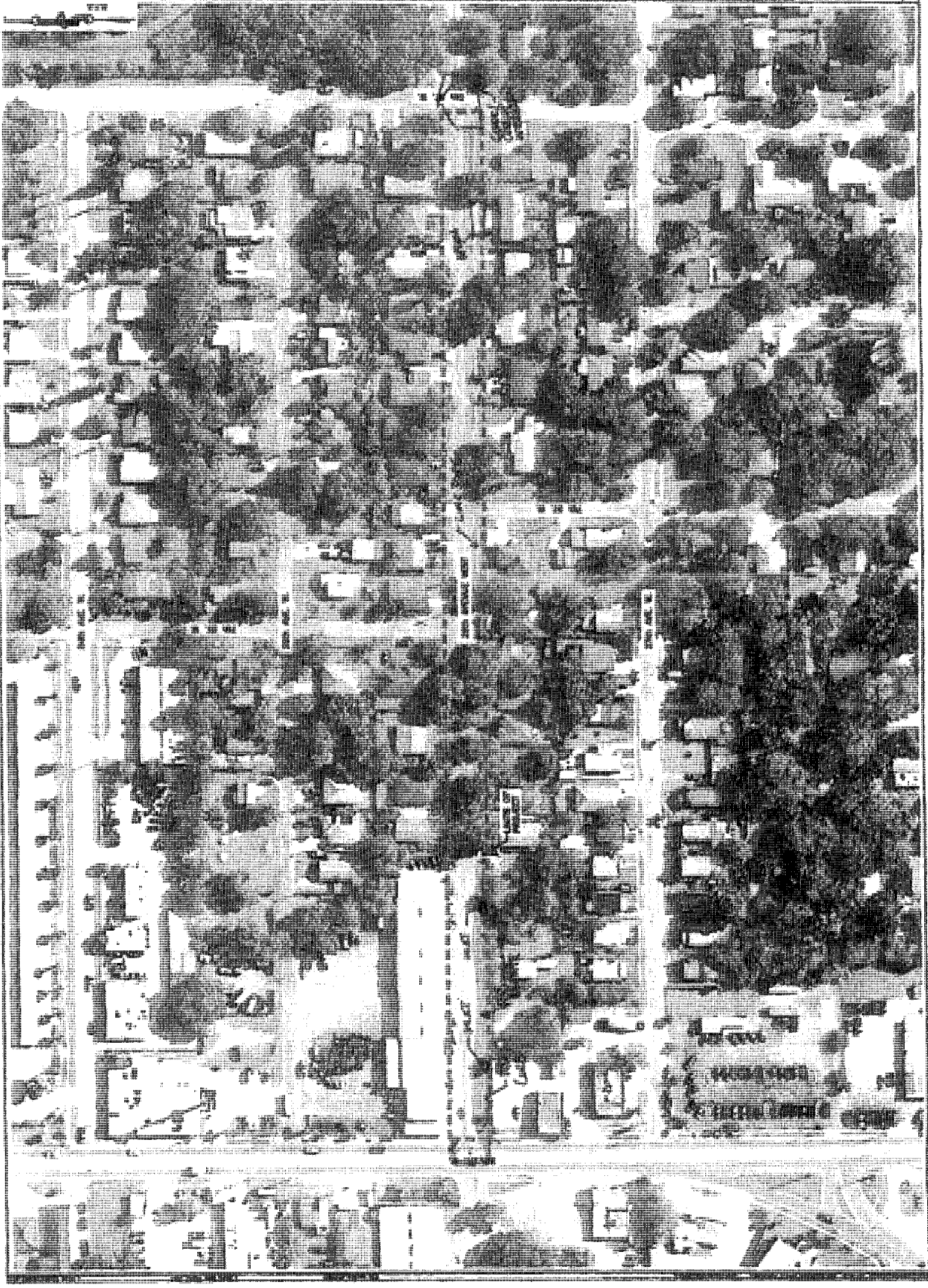
Pipe Size	Pipe Material	Date	Time	Purpose
30	Reinforced Concrete Pipe	5-31-2013	4:06 PM	Infiltration/Inflow Investigation

Comments	Camera Direction
C/O Stantec	With Flow

Ftg.	Code	Description	Position	Dimension	Severity	Comment
142.2	R	Roots	8 to 2		3	medium in joint
145.3	R	Roots	8 to 12		3	medium from joint
145.3	I	Infiltration	9 to 11		3	water
148.2	R	Roots	8 to 12		3	medium from joint
148.2	I	Infiltration	11		3	water
150.7	R	Roots	9 to 11		3	medium in joint
154.5	R	Roots	8 to 11		3	medium in joint
154.5	I	Infiltration	11		3	water
157.2	R	Roots	9 to 11		3	medium in joint
157.2	I	Infiltration	9		3	water
160.3	R	Roots	10 to 2		3	light in joint
160.3	I	Infiltration	1		3	water
163.9	R	Roots	9 to 3		3	medium in joint
168.9	SD	Surface Damage	6 to 6		2	aggregate visible for 2 pipe lengths
171.0	H	Hole	10 to 12		4	void & dirt above pipe
172.3	R	Roots	10 to 12		3	light in void
172.3	I	Infiltration	10 to 12		3	water
175.4	R	Roots	7 to 11		3	light in joint
181.9	JS	Joint Separated	1 to 11		3	
181.9	PR	Point Repair	12 to 12	30	3	material change to corrugated HDPE into box
187.6	ACB	Access point CB		7	0	PVC pipe in Conflict box.... camera will not go past PVC



LIMITS OF PROJECT
 28th AVENUE WEST
 9th STREET WEST TO 5th STREET WEST





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Southwest Florida Water Management District

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TDD only: 1-800-231-6103 (FL only)

On the Internet at WaterMatters.org

Bartow Service Office
170 Century Boulevard
Bartow, Florida 33830-7700
(863) 534-1448 or
1-800-492-7862 (FL only)

Sarasota Service Office
6750 Fruitville Road
Sarasota, Florida 34240-9711
(941) 377-3722 or
1-800-320-3503 (FL only)

Tampa Service Office
7601 Highway 301 North
Tampa, Florida 33637-6759
(813) 985-7481 or
1-800-836-0797 (FL only)

August 27, 2013

Manatee County
Attn: Sia Mollanazar
Post Office Box 1000
Bradenton, FL 34206

Subject: Project Evaluation - Project Exempt

Project Name:	Flood Drain Improvements - 26th Avenue West (9th St. W. to 5th St. W.)
File Number:	685434
County:	MANATEE
Sec/Twp/Rge:	S2/T35S/R17E

Reference: Rule 40D-4.051, Florida Administrative Code (F.A.C.)

Dear Mr. Mollanazar:

The District has reviewed the information you submitted for the project referenced above and has determined that an Environmental Resource Permit (ERP) **will not be required** for the proposed installation of a Cured-In-Place Pipe (CIPP) liner through an existing 30-inch stormwater pipe and the removal and replacement of three stormwater structures. [Rule 40D-4.051(8) and 40D-4.051(9)(a), F.A.C.]

The information received by the District will be kept on file to support the District's determination regarding your project. This information is available for viewing or downloading through the District's Application and Permit Search Tools located at www.WaterMatters.org/permits.

The District's determination that your project does not require an ERP is only applicable pursuant to the statutes and rules in effect at the time the information was submitted and may not be valid in the event subsequent changes occur in the applicable rules and statutes. Additionally, this notification does not mean that the District has determined that your project is permanently exempt from permitting requirements. Any subsequent change you make in the project's operation may necessitate further evaluation or permitting by the District. Therefore, you are advised to contact the District before beginning the project and before beginning any activity which is not specifically described in your submittal. Your timely pursuit of this activity is encouraged to avoid any potential rule changes that could affect your request.

This letter constitutes notice of Intended Agency Action of the project referenced above. The District's action in this matter only becomes closed to future legal challenges from members of the public if such persons have been properly notified of the District's action and no person objects to the District's action within the prescribed period of time following the notification. The District does not publish notices of agency action. If you wish to limit the time within which a person who does not receive actual written notice from the District may request an administrative hearing regarding this action, you are strongly encouraged to publish, at your own expense, a notice of agency action in the legal advertisement section of a newspaper of general circulation in the county or counties where the activity will occur. Publishing

notice of agency action will close the window for filing a petition for hearing. Legal requirements and instructions for publishing notice of agency action, as well as a noticing form that can be used is available from the District's website at www.WaterMatters.org/permits/noticing. If you publish notice of agency action, a copy of the affidavit of publishing provided by the newspaper should be sent to the Regulation Division at the District Service Office that services this permit or other agency action, for retention in the File of Record for this agency action.

If you have questions regarding this matter, please contact Jaime Swindasz in the Tampa Service Office, extension 2324. Please reference the Project Name and Inquiry/Permit Number in future communications concerning this project.

Sincerely,

Michelle K. Hopkins, P.E.
Bureau Chief
Environmental Resource Permit Bureau
Regulation Division

Enclosures: Notice of Rights
cc: File of Record
Daniel J. Bond, P.E.
Stantec Consulting Services, Incorporated

Notice of Rights

Administrative Hearing

1. You or any person whose substantial interests are or may be affected by the District's intended or proposed action may request an administrative hearing on that action by filing a written petition in accordance with Sections 120.569 and 120.57, Florida Statutes (F.S.), Uniform Rules of Procedure Chapter 28-106, Florida Administrative Code (F.A.C.) and District Rule 40D-1.1010, F.A.C. Unless otherwise provided by law, a petition for administrative hearing must be filed with (received by) the District within 21 days of receipt of written notice of agency action. "Written notice" means either actual written notice, or newspaper publication of notice, that the District has taken or intends to take agency action. "Receipt of written notice" is deemed to be the fifth day after the date on which actual notice is deposited in the United States mail, if notice is mailed to you, or the date that actual notice is issued, if sent to you by electronic mail or delivered to you, or the date that notice is published in a newspaper, for those persons to whom the District does not provide actual notice.
2. Pursuant to Subsection 373.427(2)(c), F.S., for notices of intended or proposed agency action on a consolidated application for an environmental resource permit and use of sovereignty submerged lands concurrently reviewed by the District, a petition for administrative hearing must be filed with (received by) the District within 14 days of receipt of written notice.
3. Pursuant to Rule 62-532.430, F.A.C., for notices of intent to deny a well construction permit, a petition for administrative hearing must be filed with (received by) the District within 30 days of receipt of written notice of intent to deny.
4. Any person who receives written notice of an agency decision and who fails to file a written request for a hearing within 21 days of receipt or other period as required by law waives the right to request a hearing on such matters.
5. Mediation pursuant to Section 120.573, F.S., to settle an administrative dispute regarding District intended or proposed action is not available prior to the filing of a petition for hearing.
6. A request or petition for administrative hearing must comply with the requirements set forth in Chapter 28-106, F.A.C. A petition for a hearing must: (1) explain how the substantial interests of each person requesting the hearing will be affected by the District's intended action or proposed action, (2) state all material facts disputed by the person requesting the hearing or state that there are no material facts in dispute, and (3) otherwise comply with Rules 28-106.201 and 28-106.301, F.A.C. Chapter 28-106, F.A.C., can be viewed at www.flrules.org or at the District's website at www.WaterMatters.org/permits/rules.
7. A petition for administrative hearing is deemed filed upon receipt of the complete petition by the District Agency Clerk at the District's Tampa Service Office during normal business hours, which are 8:00 a.m. to 5:00 p.m., Monday through Friday, excluding District holidays. Filings with the District Agency Clerk may be made by mail, hand-delivery or facsimile transfer (fax). The District does not accept petitions for administrative hearing by electronic mail. Mailed filings must be addressed to, and hand-delivered filings must be delivered to, the Agency Clerk, Southwest Florida Water Management District, 7601 US Hwy 301, Tampa, FL 33637-6759. Faxed filings must be transmitted to the District Agency Clerk at (813) 987-6746. Any petition not received during normal business hours shall be filed as of 8:00 a.m. on the next business day. The District's acceptance of faxed petitions for filing is subject to certain conditions set forth in the District's Statement of Agency Organization and Operation, available for viewing at www.WaterMatters.org/about.

Judicial Review

1. Pursuant to Sections 120.60(3) and 120.68, F.S., a party who is adversely affected by District action may seek judicial review of the District's action. Judicial review shall be sought in the Fifth District Court of Appeal or in the appellate district where a party resides or as otherwise provided by law.
2. All proceedings shall be instituted by filing an original notice of appeal with the District Agency Clerk within 30 days after the rendition of the order being appealed, and a copy of the notice of appeal, accompanied by any filing fees prescribed by law, with the clerk of the court, in accordance with Rules 9.110 and 9.190 of the Florida Rules of Appellate Procedure (Fla. R. App. P.). Pursuant to Fla. R. App. P. 9.020(h), an order is rendered when a signed written order is filed with the clerk of the lower tribunal.

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 "COUNTY" and **insert Contractor name**, hereinafter referred to as the "CONTRACTOR," duly authorized to transact business in the State of Florida, with offices located at **insert Contractor address**.

ARTICLE 1. WORK

CONTRACTOR shall furnish all labor, materials, supplies, and other items required to complete the Work for **IFB#13-2959-OV, Flood Drain Improvements, 26th Avenue West (9th Street West to 5th Street West)** in strict accordance with Contract documents and any duly authorized subsequent addenda thereto, all of which are made a part hereof.

ARTICLE 2. COMPENSATION

As compensation to the CONTRACTOR, the COUNTY shall pay and the CONTRACTOR will accept as full consideration for the performance of all Work required by **IFB#13-2959-OV, Flood Drain Improvements, 26th Avenue West (9th Street West to 5th Street West)**, subject to additions and deductions as provided therein, the sum of **\$insert Award amount including discretionary dollars** for Bid "**insert A or B**" based on a completion time of **insert days** calendar days.

ARTICLE 3. LIQUIDATED DAMAGES

Time is of the essence in this Agreement. As of the date of this Agreement, the damages that will be suffered by the County in the event of the Contractor's failure to timely complete the Work are impossible to determine. In lieu thereof, it is agreed that if the Contractor fails to achieve final completion of the Work within **insert days** calendar days of issuance of the Notice to Proceed (accounting, however, for any extensions of

time granted pursuant to approved change orders), the Contractor shall pay to the County, as liquidated damages (and not as a penalty), the sum of \$388.00 per calendar day for each day beyond insert days days until the Contractor achieves final completion. The County shall have the option of withholding said liquidated damages from any pay application(s) thereafter submitted by the Contractor. Alternatively, the Contractor shall immediately pay said sums to the County upon the County's demand for same.

ARTICLE 4. ENGINEER

The County of Manatee, Public Works Department, is responsible as the COUNTY and as "ENGINEER," designed this project and is responsible for technical/engineering reviews and decisions. The ENGINEER is a member of the COUNTY'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: Mr. Kent Bontrager, Project Engineer li, Public Works Department and to the Engineer of Record, Mr. Daniel J. Bond, P.E., Senior Project Manager, Stantec Consulting Services Inc. All invoicing will be addressed to the attention of: Mr. Kent Bontrager (address noted below) with invoice copies sent to Mr. Daniel J. Bond, P.E., Senior Project Manager.

Manatee County Public Works Dept.
IFB #13-2959-OV
Attn: Mr. Kent Bontrager, Project Engineer li
1022 26th Avenue East
Bradenton, FL 34208
Phone: (941) 708-7450, Ext. 7331

Stantec Consulting Services Inc.
Mr. Daniel J. Bond., P.E.
Senior Project Manager
6900 Professional Pkwy East
Sarasota, FL 34240-8414
Phone: (941) 907-6900

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

ARTICLE 5. CONTRACTOR'S REPRESENTATIONS

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

- 5.1 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.
- 5.2 CONTRACTOR has studied carefully all drawings of the physical conditions upon which CONTRACTOR is entitled to rely.
- 5.3 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.
- 5.4 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.

- 5.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Bid.
- 5.6 CONTRACTOR has given COUNTY 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.
- 5.7 CONTRACTOR shall schedule and perform the Work subject to COUNTY'S approval and shall hold COUNTY harmless from all liabilities incurred due to CONTRACTOR'S failure to coordinate with the COUNTY.

ARTICLE 6. CONTRACT DOCUMENTS

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

- 6.1 This Agreement and Bid document **IFB #13-2959-OV**
- 6.2 Public Construction Bond Form and Insurance Certificate(s)
- 6.3 Drawings/Plans (not attached)
- 6.4 Addendum number insert Addendum # to insert Addendum # inclusive
- 6.5 CONTRACTOR'S Bid Form
- 6.6 Reports
- 6.7 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.

6.8 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 6.

ARTICLE 7. MISCELLANEOUS

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

7.2 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.

7.3 COUNTY 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.

AGREEMENT
IFB #13-2959-OV

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed by their authorized representatives.

CONTRACTOR

By: _____

Print Name & Title of Signer

Date: _____

COUNTY OF MANATEE, FLORIDA

By: _____
Melissa M. Wendel, CPPO
Purchasing Official

Date: _____

**MANATEE COUNTY GOVERNMENT
PUBLIC CONSTRUCTION BOND**

Bond No. _____
(Enter bond number)

BY THIS BOND, We _____, located at _____, as
(Name of Contractor) (Address)

Principal and _____, a corporation, whose address is
(Name of Surety)

are bound to Manatee County, a political subdivision of the State of Florida, herein called County, in the sum of \$ _____, for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

WHEREAS, the Contractor has entered into Contract No. _____ with the County for the project titled insert title of project, with conditions and provisions as are further described in the aforementioned Contract, which Contract is by reference made a part hereof for the purposes of explaining this bond.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs Contract No. _____, between Principal and County for construction of insert title of project, the Contract being made a part of this bond by reference, at
(Title of Project)

the times and in the manner prescribed in the Contract; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the Work provided for in the Contract; and

3. Pays County all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that County sustains because of a default by Principal under the Contract; and

4. Performs the guarantee of all Work and materials furnished under the Contract for the time specified in the Contract, then this bond is void; otherwise it remains in full force.

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

Any changes in or under the Contract documents and compliance or noncompliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this bond.

DATED ON _____.

CONTRACTOR AS PRINCIPAL

SURETY

Company Name

Company Name

Signature

Signature

Print Name & Title

Print Name & Title

(Corporate Seal)

(Corporate Seal)

AGENT or BROKER

Company Name

Address

Telephone

Licensed Florida Insurance Agent? Yes No

License #: _____

State of: _____

County of: _____

City of: _____

SECTION 00700
GENERAL CONDITIONS

ARTICLE 1. 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.

Application for Payment - The form accepted by the 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 in accordance with Manatee County Code of Laws.

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, technical specifications, 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 the 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, special provisions 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 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.

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.

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.

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 Official in accordance with Manatee County Code of Laws, Chapter 2-26, Manatee County Purchasing Ordinance.

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.

Schedule of Values – Unit prices shall be established for this Contract by the submission of a schedule of values. The Contractor shall submit a schedule of values within ten (10) days of Notice to Proceed date. The schedule shall include quantities and prices of items equaling the Total Bid Price and will subdivide the Work into components in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work. Upon request of the County, the Contractor shall support the values with data which will substantiate their correctness.

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.

Special Provisions: As required to define work or procedures not covered in the standard specifications, and as necessary to supplement or modify items in the standard specifications.

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, responsible and responsive Bidder to whom an Award is made.

Supplier - A manufacturer, fabricator, supplier, distributor, material man 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.

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.

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 Owner 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 Manatee County.

Should a conflict exist within the Contract documents, the precedence in ascending order of authority are 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 Administrative Contract Adjustment (ACA)

3.3.4 A Work Directive Change

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 Discretionary Work – Field Directive

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 seventy-two (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.
- 4.9.4 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 Contract 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 twenty (20) days) after the Work has been accepted by the Owner. 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 twenty-one (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 15% 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 (3) 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 and indirect 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 (3) 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 Official for a decision; within the earlier of sixty (60) days after the last date on which the Contractor provided any goods or services required by the Contract or after the date on which the Contractor knew or should have known such a claim existed. The Manatee County Code of Laws, Section 2-26-63, Contract Claims, details the requirements and process for such a claim.

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 If successful Contractor employs apprentices, he shall be governed and comply with the provisions of F.S. § 446.011.

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

General Decision Number: FL130165 09/27/2013 FL165

ATTACHMENT 'A'

Superseded General Decision Number: FL20120165

State: Florida

Construction Type: Heavy

County: Manatee County in Florida.

HEAVY CONSTRUCTION PROJECTS (Including Sewer and Water Lines)

Modification Number	Publication Date
0	01/04/2013
1	03/08/2013
2	03/29/2013
3	09/27/2013

ELEC0915-003 12/01/2012

	Rates	Fringes
ELECTRICIAN.....	\$ 25.13	34%+\$0.25

* ENGI0925-008 06/01/2013

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Crawler Cranes; Truck Cranes; Pile Driver Cranes; Rough Terrain Cranes; and Any Crane not otherwise described below...	\$ 29.61	11.50
Hydraulic Cranes Rated 100 Tons or Above but Less Than 250 Tons; and Lattice Boom Cranes Less Than 150 Tons if not described below.	\$ 30.61	11.50
Lattice Boom Cranes Rated at 150 Tons or Above; Friction Cranes of Any Size; Mobile Tower Cranes or Luffing Boom Cranes of Any Size; Electric Tower Cranes; Hydraulic Cranes Rated at 250 Tons or Above; and Any Crane Equipped with 300 Foot or More of Any Boom Combination.....	\$ 31.61	11.50
Oiler.....	\$ 22.91	11.50

* IRON0397-006 05/01/2013

	Rates	Fringes
IRONWORKER, STRUCTURAL.....	\$ 27.67	12.82

LABO0517-002 05/01/2008

	Rates	Fringes
LABORER: Grade Checker.....	\$ 17.20	5.47

PAIN0088-008 09/01/2011		

	Rates	Fringes
PAINTER: Brush, Roller and Spray.....	\$ 19.50	7.93

SUFL2009-161 06/24/2009		

	Rates	Fringes
CARPENTER.....	\$ 14.95	2.92
CEMENT MASON/CONCRETE FINISHER...	\$ 14.77	3.50
LABORER: Common or General.....	\$ 10.90	0.38
LABORER: Landscape.....	\$ 7.25	0.00
LABORER: Pipelayer.....	\$ 13.75	2.06
LABORER: Power Tool Operator (Hand Held Drills/Saws, Jackhammer and Power Saws Only).....	\$ 10.63	2.20
OPERATOR: Asphalt Paver.....	\$ 11.59	0.00
OPERATOR: Backhoe Loader Combo.....	\$ 16.10	2.44
OPERATOR: Backhoe/Excavator.....	\$ 15.00	0.52
OPERATOR: Bulldozer.....	\$ 17.00	0.00
OPERATOR: Grader/Blade.....	\$ 16.00	2.84
OPERATOR: Loader.....	\$ 14.75	0.00
OPERATOR: Mechanic.....	\$ 14.32	0.00
OPERATOR: Roller.....	\$ 10.76	0.00
OPERATOR: Scraper.....	\$ 11.00	1.74
OPERATOR: Trackhoe.....	\$ 20.92	5.50
OPERATOR: Tractor.....	\$ 10.54	0.00
TRUCK DRIVER, Includes Dump Truck.....	\$ 11.00	0.00
TRUCK DRIVER: Lowboy Truck.....	\$ 12.73	0.00
TRUCK DRIVER: Off the Road		

Truck.....\$ 12.21 1.97

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the

wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

Date _____

I, _____ (Name of Signatory Party) _____ (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by _____ (Contractor or Subcontractor) _____ on the _____ (Building or Work) _____; that during the payroll period commencing on the _____ day of _____ and ending the _____ day of _____,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said _____ (Contractor or Subcontractor) _____ from the full

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete, that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That: (a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS - in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

- Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE
THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.	

Record of Employee Interview

U.S. Department of Housing and Urban Development Office of Labor Relations

OMB Approval No. 2501-0009
(exp. 10/31/2010)

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB control number. The information is collected to ensure compliance with the Federal labor standards by recording interviews with construction workers. The information collected will assist HUD in the conduct of compliance monitoring; the information will be used to test the veracity of certified payroll reports submitted by the employer. **Sensitive Information.** The information collected on this form is considered sensitive and is protected by the Privacy Act. The Privacy Act requires that these records be maintained with appropriate administrative, technical, and physical safeguards to ensure their security and confidentiality. In addition, these records should be protected against any anticipated threats or hazards to their security or integrity that could result in substantial harm, embarrassment, inconvenience, or unfairness to any individual on whom the information is maintained. **The information collected herein is voluntary, and any information provided shall be kept confidential.**

1a. Project Name			2a. Employee Name		
1b. Project Number			2b. Employee Phone Number (including area code)		
1c. Contractor or Subcontractor (Employer)			2c. Employee Home Address & Zip Code		
			2d. Verification of identification? Yes <input type="checkbox"/> No <input type="checkbox"/>		
3a. How long on this job?	3b. Last date on this job before today?	3c. No. of hours last day on this job?	4a. Hourly rate of pay?	4b. Fringe Benefits?	4c. Pay stub?
				Vacation Yes <input type="checkbox"/> No <input type="checkbox"/> Medical Yes <input type="checkbox"/> No <input type="checkbox"/> Pension Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

5. Your job classification(s) (list all) --- continue on a separate sheet if necessary

6. Your duties

7. Tools or equipment used

8. Are you an apprentice or trainee?	Y <input type="checkbox"/>	N <input type="checkbox"/>	10. Are you paid at least time and 1/2 for all hours worked in excess of 40 in a week?	Y <input type="checkbox"/>	N <input type="checkbox"/>
9. Are you paid for all hours worked?	Y <input type="checkbox"/>	N <input type="checkbox"/>	11. Have you ever been threatened or coerced into giving up any part of your pay?	Y <input type="checkbox"/>	N <input type="checkbox"/>

12a. Employee Signature	12b. Date
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13. Duties observed by the interviewer (Please be specific.)

14. Remarks

15a. Interviewer name (please print)	15b. Signature of Interviewer	15c. Date of interview
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Payroll Examination

16. Remarks

17a. Signature of Payroll Examiner	17b. Date
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Section 3 Summary Report

Economic Opportunities for
Low – and Very Low-Income Persons

U.S. Department of Housing
and Urban Development
Office of Fair Housing
And Equal Opportunity

OMB Approval No: 2529-0043
(exp. 11/30/2010)

HUD Field Office:

Section back of page for Public Reporting Burden statement

1. Recipient Name & Address: (street, city, state, zip)	2. Federal Identification: (grant no.)	3. Total Amount of Award:
	4. Contact Person	5. Phone: (include area code)
	6. Length of Grant:	7. Reporting Period:
8. Date Report Submitted:	9. Program Code: (Use separate sheet for each program code)	10. Program Name:

Part I: Employment and Training (Columns B, C and F are mandatory fields. Include New Hires in E & F)**

A Job Category	B Number of New Hires	C Number of New Hires that are Sec. 3 Residents	D % of Aggregate Number of Staff Hours of New Hires that are Sec. 3 Residents	E % of Total Staff Hours for Section 3 Employees and Trainees	F Number of Section 3 Trainees
Professionals					
Technicians					
Office/Clerical					
Construction by Trade (List Trade					
Trade					
Trade					
Trade					
Trade					
Other (List					
Total					

- * Program Codes
- 3 = Public/Indian Housing
- 4 = Homeless Assistance
- 8 = CDBG State Administered
- 1 = Flexible Subsidy
- A = Development,
- 5 = HOME
- 9 = Other CD Programs
- 2 = Section 202/811
- B = Operation
- 6 = HOME State Administered
- 7 = CDBG Entitlement
- C = Modernization
- 10 = Other Housing Programs

Part II: Contracts Awarded

1. Construction Contracts:

A. Total dollar amount of all contracts awarded on the project	\$
B. Total dollar amount of contracts awarded to Section 3 businesses	\$
C. Percentage of the total dollar amount that was awarded to Section 3 businesses	%
D. Total number of Section 3 businesses receiving contracts	

2. Non-Construction Contracts:

A. Total dollar amount all non-construction contracts awarded on the project/activity	\$
B. Total dollar amount of non-construction contracts awarded to Section 3 businesses	\$
C. Percentage of the total dollar amount that was awarded to Section 3 businesses	%
D. Total number of Section 3 businesses receiving non-construction contracts	

Part III: Summary

Indicate the efforts made to direct the employment and other economic opportunities generated by HUD financial assistance for housing and community development programs, to the greatest extent feasible, toward low- and very low-income persons, particularly those who are recipients of government assistance for housing. (Check all that apply.)

- Attempted to recruit low-income residents through: local advertising media, signs prominently displayed at the project site, contracts with the community organizations and public or private agencies operating within the metropolitan area (or nonmetropolitan county) in which the Section 3 covered program or project is located, or similar methods.
- Participated in a HUD program or other program which promotes the training or employment of Section 3 residents.
- Participated in a HUD program or other program which promotes the award of contracts to business concerns which meet the definition of Section 3 business concerns.
- Coordinated with Youthbuild Programs administered in the metropolitan area in which the Section 3 covered project is located.
- Other; describe below.

Public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB number.

Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u, mandates that the Department ensures that employment and other economic opportunities generated by its housing and community development assistance programs are directed toward low- and very-low income persons, particularly those who are recipients of government assistance housing. The regulations are found at 24 CFR Part 135. The information will be used by the Department to monitor program recipients' compliance with Section 3, to assess the results of the Department's efforts to meet the statutory objectives of Section 3, to prepare reports to Congress, and by recipients as self-monitoring tool. The data is entered into a database and will be analyzed and distributed. The collection of information involves recipients receiving Federal financial assistance for housing and community development programs covered by Section 3. The information will be collected annually to assist HUD in meeting its reporting requirements under Section 808(e)(6) of the Fair Housing Act and Section 916 of the HCDA of 1992. An assurance of confidentiality is not applicable to this form. The Privacy Act of 1974 and OMB Circular A-108 are not applicable. The reporting requirements do not contain sensitive questions. Data is cumulative; personal identifying information is not included.

Form HUD-60002, Section 3 Summary Report, Economic Opportunities for Low- and Very Low-Income Persons.

Instructions: This form is to be used to report annual accomplishments regarding employment and other economic opportunities provided to low- and very low-income persons under Section 3 of the Housing and Urban Development Act of 1968. The Section 3 regulations apply to any *public and Indian housing programs* that receive: (1) development assistance pursuant to Section 5 of the U.S. Housing Act of 1937; (2) operating assistance pursuant to Section 9 of the U.S. Housing Act of 1937; or (3) modernization grants pursuant to Section 14 of the U.S. Housing Act of 1937 and to recipients of housing and community development assistance in excess of \$200,000 expended for: (1) housing rehabilitation (including reduction and abatement of lead-based paint hazards); (2) housing construction; or (3) other public construction projects; and to contracts and subcontracts in excess of \$100,000 awarded in connection with the Section-3-covered activity.

Form HUD-60002 has three parts, which are to be completed for all programs covered by Section 3. Part I relates to *employment and training*. The recipient has the option to determine numerical employment/training goals either on the basis of the number of hours worked by new hires (columns B, D, E and F). Part II of the form relates to *contracting*, and Part III summarizes recipients' efforts to comply with Section 3.

Recipients or contractors subject to Section 3 requirements must maintain appropriate documentation to establish that HUD financial assistance for housing and community development programs were directed toward low- and very low-income persons.* A recipient of Section 3 covered assistance shall submit one copy of this report to HUD Headquarters, Office of Fair Housing and Equal Opportunity. Where the program providing assistance requires an annual performance report, this Section 3 report is to be submitted at the same time the program performance report is submitted. Where an annual performance report is not required, this Section 3 report is to be submitted by January 10 and, if the project ends before December 31, within 10 days of project completion. *Only Prime Recipients are required to report to HUD. The report must include accomplishments of all recipients and their Section 3 covered contractors and subcontractors.*

- HUD Field Office: Enter the Field Office name .
1. Recipient: Enter the name and address of the recipient submitting this report.
 2. Federal Identification: Enter the number that appears on the award form (with dashes). The award may be a grant, cooperative agreement or contract.
 3. Dollar Amount of Award: Enter the dollar amount, rounded to the nearest dollar, received by the recipient.
 - 4 & 5. Contact Person/Phone: Enter the name and telephone number of the person with knowledge of the award and the recipient's implementation of Section 3.
 6. Reporting Period: Indicate the time period (months and year) this report covers.
 7. Date Report Submitted: Enter the appropriate date.

8. Program Code: Enter the appropriate program code as listed at the bottom of the page.
9. Program Name: Enter the name of HUD Program corresponding with the "Program Code" in number 8.

Part I: Employment and Training Opportunities

Column A: Contains various job categories. Professionals are defined as people who have special knowledge of an occupation (i.e. supervisors, architects, surveyors, planners, and computer programmers). For construction positions, list each trade and provide data in columns B through F for each trade where persons were employed. The category of "Other" includes occupations such as service workers.

Column B: (Mandatory Field) Enter the number of new hires for each category of workers identified in Column A in connection with this award. New hire refers to a person who is not on the contractor's or recipient's payroll for employment at the time of selection for the Section 3 covered award or at the time of receipt of Section 3 covered assistance.

Column C: (Mandatory Field) Enter the number of Section 3 new hires for each category of workers identified in Column A in connection with this award. Section 3 new hire refers to a Section 3 resident who is not on the contractor's or recipient's payroll for employment at the time of selection for the Section 3 covered award or at the time of receipt of Section 3 covered assistance.

Column D: Enter the percentage of all the staff hours of new hires (Section 3 residents) in connection with this award.

Column E: Enter the percentage of the total staff hours worked for Section 3 employees and trainees (including new hires) connected with this award. Include staff hours for part-time and full-time positions.

Column F: (Mandatory Field) Enter the number of Section 3 residents that were trained in connection with this award.

Part II: Contract Opportunities

Block 1: Construction Contracts

Item A: Enter the total dollar amount of all contracts awarded on the project/program.

Item B: Enter the total dollar amount of contracts connected with this project/program that were awarded to Section 3 businesses.

Item C: Enter the percentage of the total dollar amount of contracts connected with this project/program awarded to Section 3 businesses.

Item D: Enter the number of Section 3 businesses receiving awards.

Block 2: Non-Construction Contracts

Item A: Enter the total dollar amount of all contracts awarded on the project/program.

Item B: Enter the total dollar amount of contracts connected with this project awarded to Section 3 businesses.

Item C: Enter the percentage of the total dollar amount of contracts connected with this project/program awarded to Section 3 businesses.

Item D: Enter the number of Section 3 businesses receiving awards.

Part III: Summary of Efforts – Self-explanatory

Submit one (1) copy of this report to the HUD Headquarters Office of Fair Housing and Equal Opportunity, at the same time the performance report is submitted to the program office. The Section 3 report is submitted by January 10. Include only contracts executed during the period specified in item 8. PHAs/IHAs are to report all contracts/subcontracts.

* The terms "low-income persons" and very low-income persons" have the same meanings given the terms in section 3 (b) (2) of the United States Housing Act of 1937. *Low-income persons* mean families (including single persons) whose incomes do not exceed 80 percent of the median income for the area, as determined by the Secretary, with adjustments for smaller and larger families, except that

The Secretary may establish income ceilings higher or lower than 80 percent of the median for the area on the basis of the Secretary's findings such that variations are necessary because of prevailing levels of construction costs or unusually high- or low-income families. *Very low-income persons* mean low-income families (including single persons) whose incomes do not exceed 50 percent of the median family income area, as determined by the Secretary with adjustments or smaller and larger families, except that the Secretary may establish income ceilings higher or lower than 50 percent of the median for the area on the basis of the Secretary's findings that such variations are necessary because of unusually high or low family incomes.

Manatee County Community Development Block Grant Contractor and Subcontractor Report

Date: _____

Project Name: _____

Contractor/Subcontractor: _____
(circle one)

Street: _____

City: _____ State: _____ Zip: _____

Phone: _____ FAX: _____

Email: _____

Contractor /Subcontractor IRS Identification Number: _____

Contractor/Subcontractor DUNS Number: _____

Contractor/Subcontractor Race/Ethnicity: (Circle One)

1 – White American; 2 – Black American; 3- Native American

4 – Hispanic American; 5- Asian/Pacific American; 6 – Hasidic Jew

Women Owned Business?: Yes No (Circle One, Attach Certification)

Section 3 Contractor?: Yes No (Circle One)

Contracts/Subcontracts Awarded for this Project:

	Type Contract	
	Construction	Non-Construction
Total dollar amount of all contracts/subcontracts awarded		
Total dollar amount awarded to Section 3 businesses		
Percentage of the total dollar amount that was awarded to Section 3 businesses		
Total number of Section 3 businesses receiving contracts		

ATTACHMENT "C"

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to Title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make a payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, State, and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include, but are not limited to, subcontracts, subgrants, and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State, and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, State, and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

(b) Enter the full name(s) of the individual(s) performing services, and include full address if different from 10(a). Enter the Last Name, First Name, and Middle Initial (MI).
11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure)

1. Type of Federal Action: a. contract b. Grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	2. Status of Federal Action: a. bid/offer/application b. initial award c. post-award	3. Report Type: a. initial filing b. material change For Material Change Only: year _____ quarter _____ date of last report _____
4. Name and Address of Reporting Entity: Prime _____ Subawardee Tier _____ (if known) Congressional District, if known: _____		5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime: Congressional District, if known: _____
6. Federal Department/Agency:	7. Federal Program Name/Description: CFDA Number, if applicable: _____	
8. Federal Action Number, if known:	9. Award Amount, if known: \$ _____	
10. a. Name and Address of Lobbying Registrant (if individual, last name, first name, MI):	b. Individual Performing Services (including address if different from 10a) (last name, first name, MI)	
11 Information requested through this form is authorized by title 31 U.S.C., section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____	
Federal Use Only		Authorized for Local Reproduction Standard Form - LLL

LOBBYING CERTIFICATION FORM

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

- No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employe of any agency, a member of Congress, an officer or employe of Congress, or an employe of a member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
- If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employe of any agency, a member of Congress, an officer or employe of Congress, or an employe of a member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.
- The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed under Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for such failure.

SIGNATURE: _____

TITLE: _____

DATE: _____

MAILING LABEL

Cut along the outside border and affix this label to your sealed Bid envelope to identify it as a "Sealed Bid". Be sure to include the name of the company submitting the Bid and the Bid due date and time where requested.

MAILING LABEL TO AFFIX TO OUTSIDE OF SEALED BID PACKAGE:

SEALED BID - DO NOT OPEN

CONTRACTOR: _____

SEALED BID NO: IFB #13-2959-OV

**BID TITLE: Flood Drain Improvements, 26th Avenue West
(9th Street West to 5th Street West)insert IFB title**

DUE DATE/TIME: _____ @ _____

CONSTRUCTION PLANS FOR FLOOD DRAIN IMPROVEMENTS 26th AVENUE WEST (9th ST. WEST TO 5th ST. WEST)

PART OF SECTION 2, TOWNSHIP 35 SOUTH, RANGE 17 EAST
MANATEE COUNTY, FLORIDA

A PROJECT BY
MANATEE COUNTY BOARD OF COUNTY COMMISSIONERS
P.O. BOX 1000
BRADENTON, FLORIDA 34206-1000
PHONE: (941) 748-4501

LEGEND

EXISTING TOPO LEGEND

- 00.00BC = BACK OF CURB
- 00.00DW = DRIVEWAY
- 00.00EP = EDGE OF PAVEMENT
- 00.00FC = FENCE
- 00.00FL = FLOW LINE
- 00.00GAS = GAS FLAG
- 00.00RIM = RIM OF MANHOLE
- 00.00SW = EDGE OF WALK/CONCRETE
- 00.0 = GROUND ELEVATION

NOTE: 00.0(0) denotes an elevation in feet.

EXISTING TREE LEGEND

- = BANYON
- = OAK
- = PALM
- = UNKNOWN

NOTE: size of trunk diameter is determined at 4.5' above ground surface and is shown adjoining the symbol in inches.

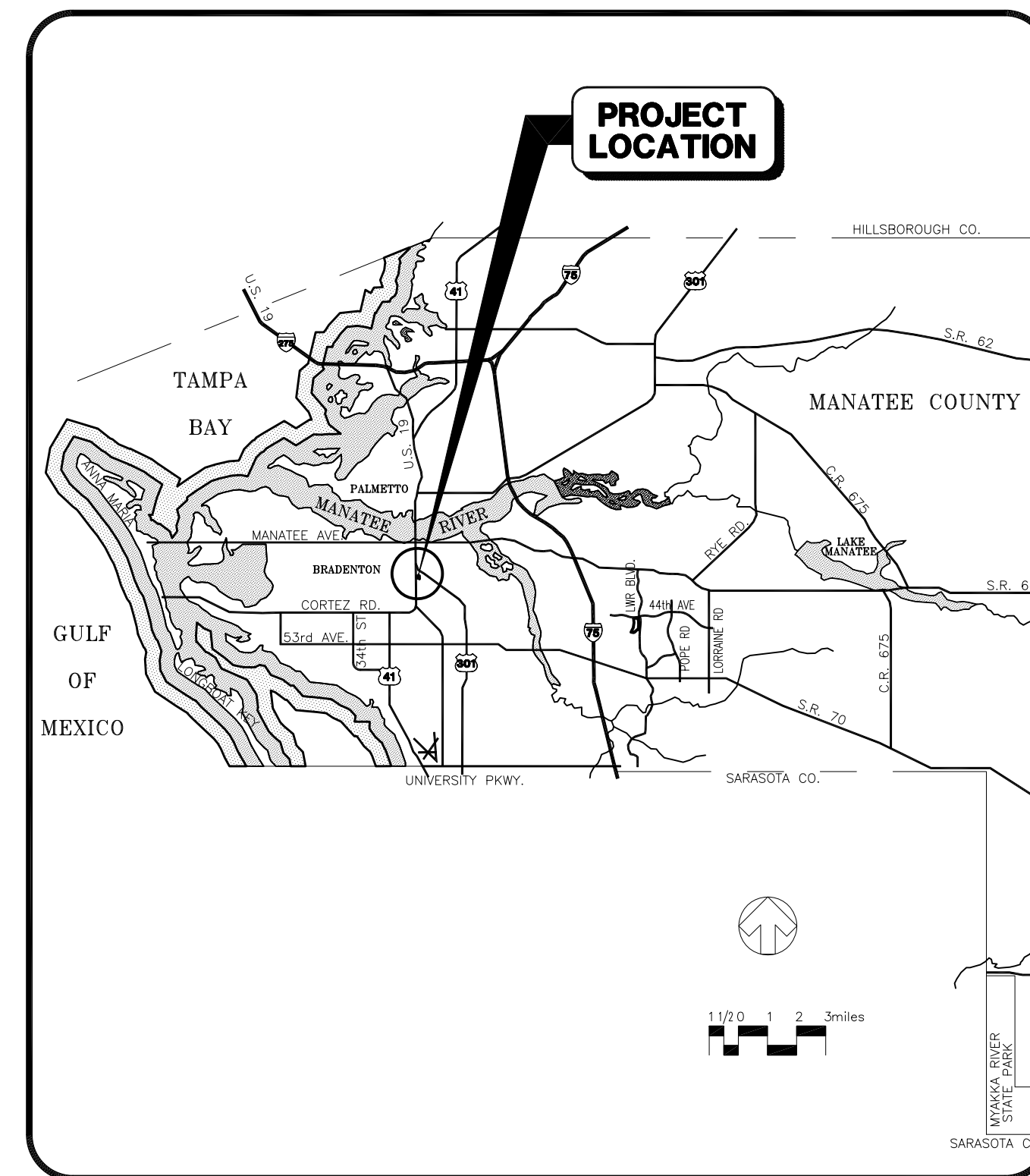
EXISTING LINETYPE LEGEND

- x---x---x---x--- = FENCE
- GAS---GAS---GAS---GAS--- = GAS MAIN
- OE---OE---OE---OE--- = OVERHEAD ELECTRIC
- TEL---TEL---TEL---TEL--- = BURIED TELEPHONE
- SAN---SAN---SAN---SAN--- = SANITARY SEWER
- ST---ST---ST---ST--- = STORM SEWER
- WM---WM---WM---WM--- = WATER MAIN

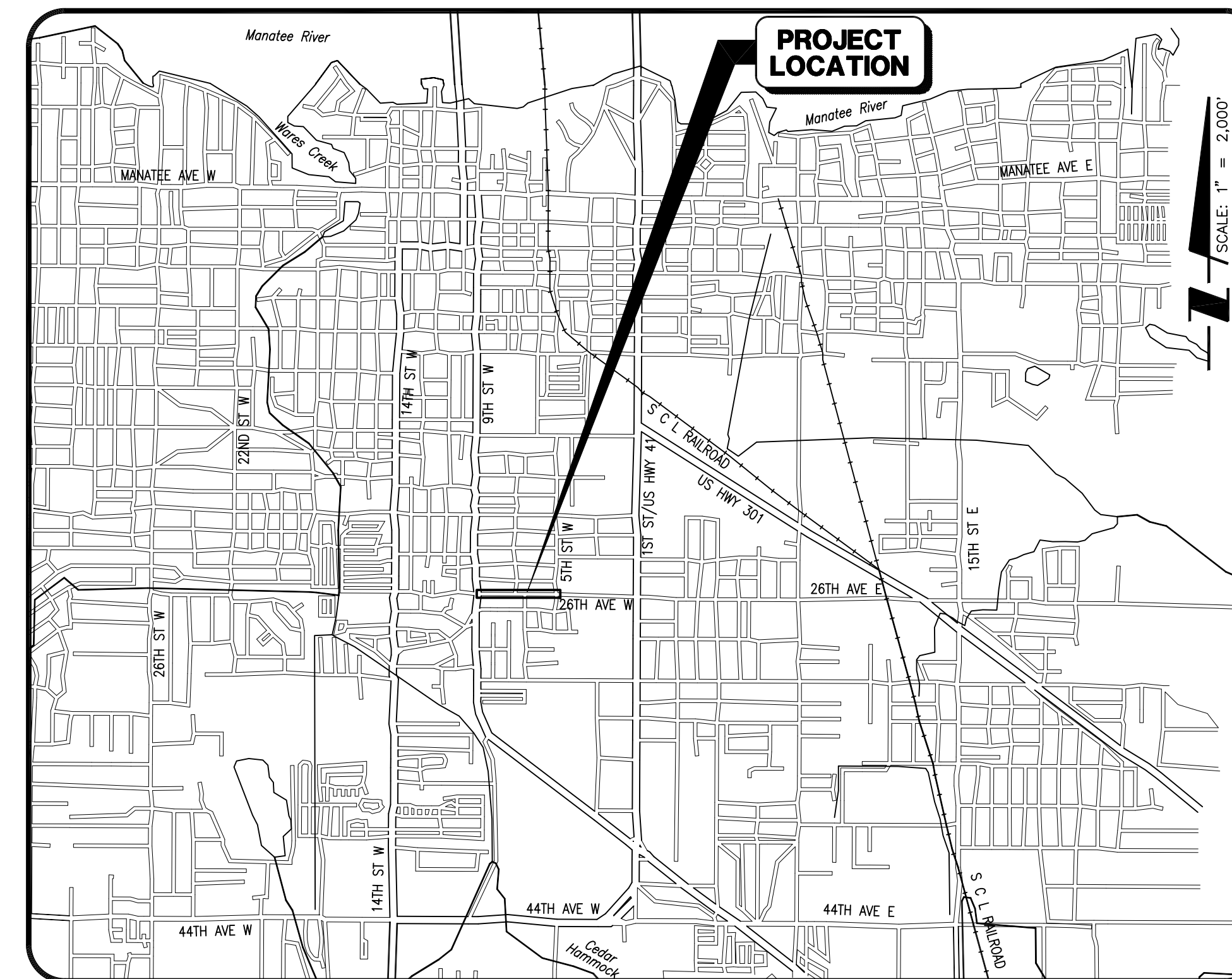
EXISTING SYMBOL LEGEND

- = BENCH MARK
- = BACKFLOW PREVENTER
- = CLEAN OUT
- = DRAINAGE MANHOLE
- = ELECTRICAL HAND HOLE
- = FIRE HYDRANT
- = MAIL BOX
- = WATER METER
- = SANITARY MANHOLE
- = SIGN
- = STORM INLET
- = VALVE BOX

NOTE: ALL EXISTING AND PROPOSED ELEVATIONS ON THE PLANS REFERENCE THE NGVD 29 VERTICAL ELEVATION DATUM.



LOCATION MAP



SITE MAP

INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	AERIAL LOCATION MAP
3	FLOOD DRAIN IMPROVEMENTS PLAN - WEST
4	FLOOD DRAIN IMPROVEMENTS PLAN - EAST
5	CONSTRUCTION DETAILS & NOTES

NO.	DATE	DESCRIPTION	BY
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13	08/22/13	REVISED SHEETS 3 AND 4	DJB/89366

STATUS : REVISIONS

ENGINEER TECHNICIAN ANATOLIY OLIMPIYUK	PROJECT MANAGER J. MICHAEL BELL, P.E. FLORIDA LICENSE NO. 40874	PROJECT ENGINEER DANIEL J. BOND, P.E. FLORIDA LICENSE NO. 57969
---	---	---

PROJECT NUMBER
215611476 201

DATE
AUGUST 2013

INDEX NUMBER
D-215611476-01C-001



6900 Professional Parkway East, Sarasota, FL 34240-8414
Phone 941-907-6900 • Fax 941-907-6910
Certificate of Authorization #27013 • www.stantec.com



SCALE: 1" = 100'
 FLIGHT DATE: 07/11

REV. NO.	REVISION	DATE	DRAWN BY / EMP. NO.	CHECKED BY / EMP. NO.	WM APPROVED BY:

ACTIVITY	INITIALS/EMP. NO.	DATE
DESIGNED BY:		
DRAWN BY:	ATO/89520	08/13
CHECKED BY:		
CONTRACT ADMIN. BY:		
WM APPROVED BY:		

Stantec
 6900 Professional Parkway East, Sarasota, FL 34240-8414
 Phone: 941-907-4900 • Fax: 941-907-4910
 Certificate of Authorization #27013 • www.stantec.com

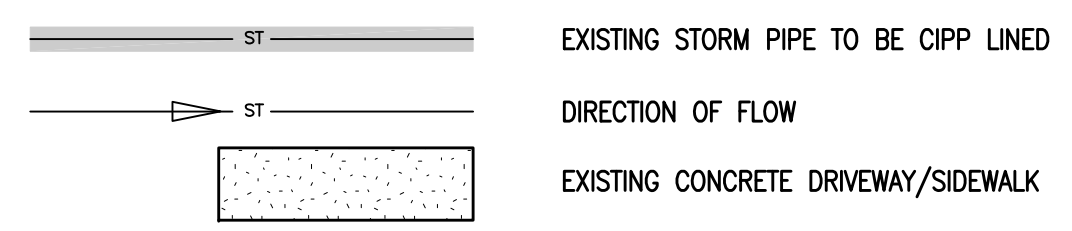
CLIENT: MANATEE COUNTY BOARD OF COUNTY COMMISSIONERS
 PROJECT: FLOOD DRAIN IMPROVEMENTS 26th AVENUE WEST

DATE: AUGUST 2013
 HORIZONTAL SCALE: 1" = 100'
 VERTICAL SCALE: N/A
 SEC: 2 TRK: 355 RGE: 17E

TITLE: AERIAL LOCATION MAP
 PROJECT NUMBER: 215611476 201
 SHEET NUMBER: 2 OF 5

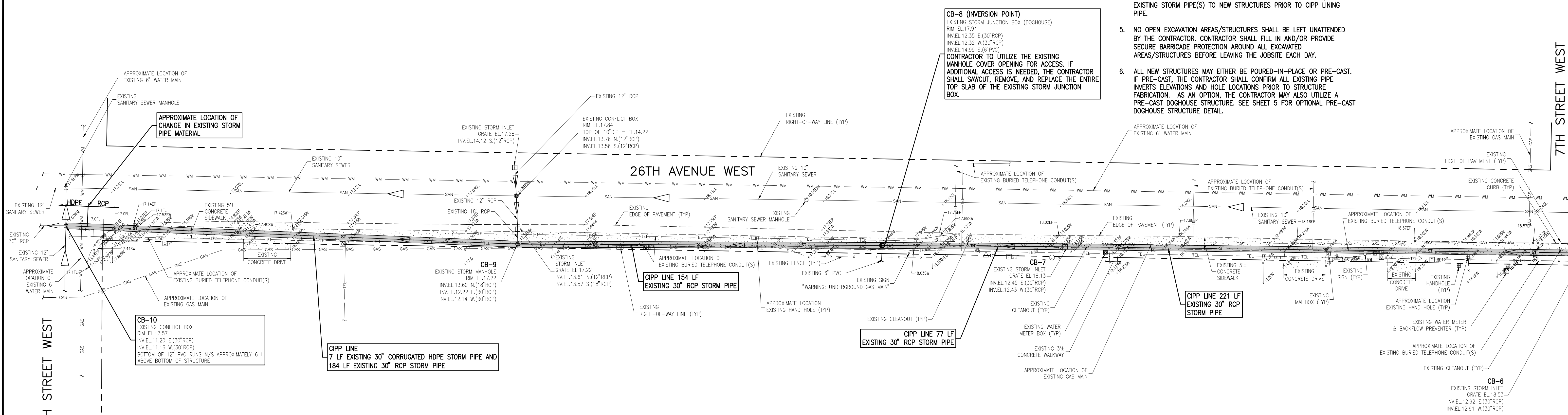
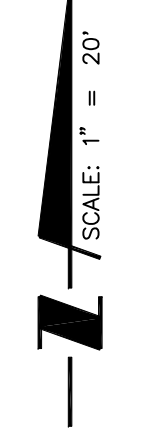
DANIEL J. BOND, P.E.
 FLORIDA LICENSE NO. 57869
 INDEX NUMBER: D-215611476-01C-002
 SHEET NUMBER: 2 OF 5

LEGEND



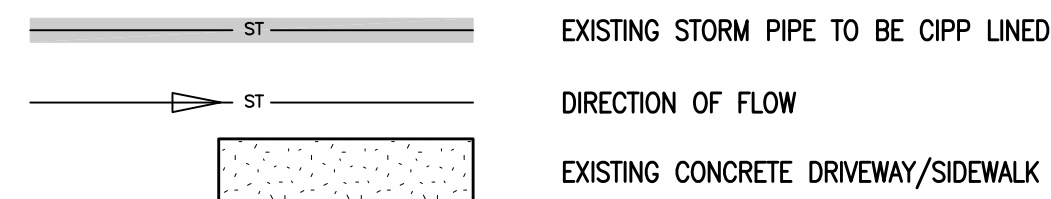
NOTES:

1. CIPP LINER SHALL BE INSTALLED UTILIZING THE INVERSION INSTALLATION METHOD. THE CIPP LINER SHALL BE TYPE III AND HAVE A MINIMUM FINISH THICKNESS OF 15mm. UNLESS OTHERWISE NOTED ALL MATERIALS, INSTALLATION, TESTING, AND INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH ASTM F1216 AND ASTM D5813 STANDARDS (LATEST EDITIONS)
2. CONTRACTOR SHALL MAINTAIN THE STORM DRAINAGE PIPES AND INLETS SUCH THAT AN EQUIVALENT SYSTEM IS IN PLACE AT THE END OF EACH WORKING DAY.
3. THE CONTRACTOR IS RESPONSIBLE FOR SETTING CONSTRUCTION LIMITS WITHIN THE EXISTING RIGHT-OF-WAY. ALL RESTORATION MUST MEET OR EXCEED EXISTING CONDITIONS EXCEPT WHERE SPECIFICALLY NOTED TO HAVE CHANGED CONDITIONS.
4. THE CONTRACTOR SHALL INSTALL NEW STRUCTURES AND ADJUST/CONNECT EXISTING STORM PIPE(S) TO NEW STRUCTURES PRIOR TO CIPP LINING PIPE.
5. NO OPEN EXCAVATION AREAS/STRUCTURES SHALL BE LEFT UNATTENDED BY THE CONTRACTOR. CONTRACTOR SHALL FILL IN AND/OR PROVIDE SECURE BARRICADE PROTECTION AROUND ALL EXCAVATED AREAS/STRUCTURES BEFORE LEAVING THE JOBSITE EACH DAY.
6. ALL NEW STRUCTURES MAY EITHER BE POURED-IN-PLACE OR PRE-CAST. IF PRE-CAST, THE CONTRACTOR SHALL CONFIRM ALL EXISTING PIPE INVERTS ELEVATIONS AND HOLE LOCATIONS PRIOR TO STRUCTURE FABRICATION. AS AN OPTION, THE CONTRACTOR MAY ALSO UTILIZE A PRE-CAST DOGHOUSE STRUCTURE. SEE SHEET 5 FOR OPTIONAL PRE-CAST DOGHOUSE STRUCTURE DETAIL.



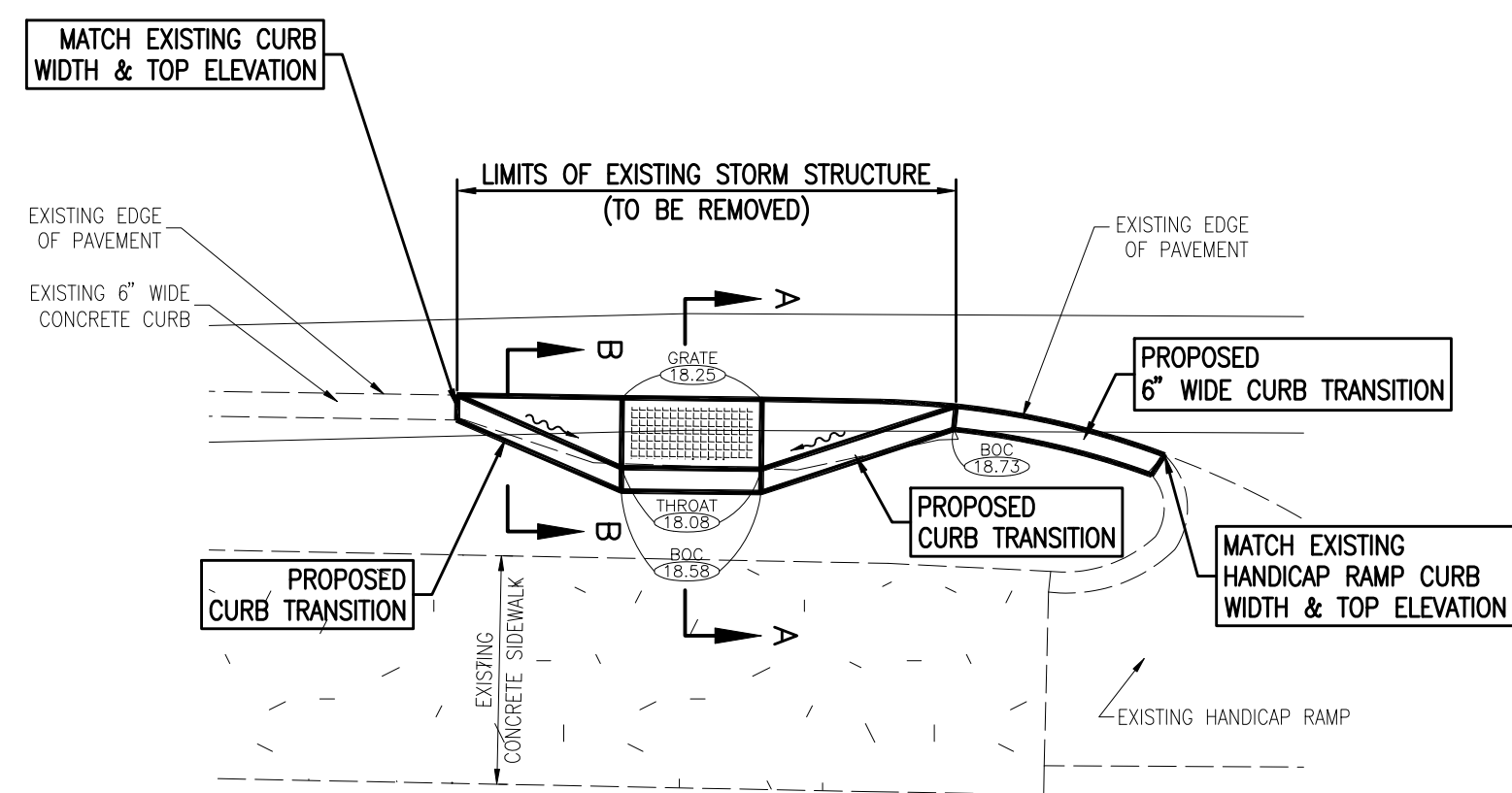
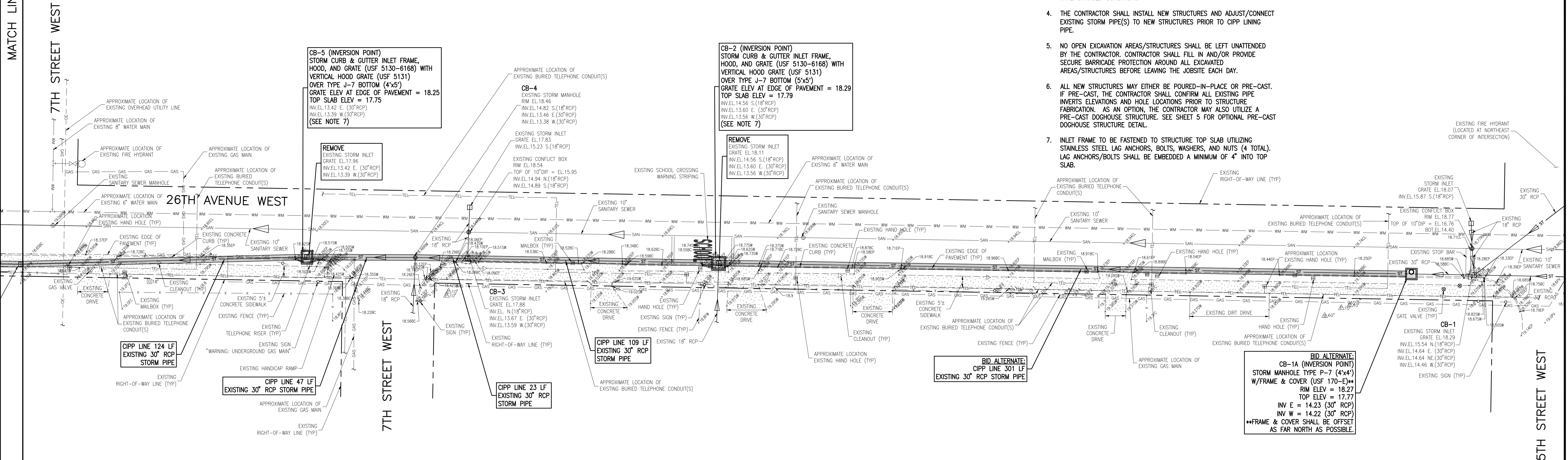
<p>ACTIVITY</p> <p>DESIGNED BY:</p> <p>DRAWN BY:</p> <p>CHECKED BY:</p> <p>CONTRACT ADMIN. BY:</p> <p>WM APPROVED BY:</p>		<p>INITIALS/EMP. NO.</p> <p>ATO/89520</p>		<p>DATE</p> <p>08/13</p>		<p>CLIENT:</p> <p>MANATEE COUNTY BOARD OF COUNTY COMMISSIONERS</p>		<p>DATE:</p> <p>AUGUST 2013</p> <p>HORIZONTAL SCALE:</p> <p>1"=20'</p> <p>VERTICAL SCALE:</p> <p>N/A</p> <p>SEC: 2 TWP: 35S RGE: 17E</p>		<p>TITLE:</p> <p>FLOOD DRAIN IMPROVEMENTS PLAN-WEST</p>		<p>PROJECT:</p> <p>FLOOD DRAIN IMPROVEMENTS 26th AVENUE WEST</p>		<p>CROSS REFERENCE FILE NO.:</p> <p>215611476 201</p>		<p>PROJECT NUMBER:</p> <p>215611476 201</p>		<p>SHEET NUMBER:</p> <p>3 OF 5</p>					
<p>REVISION</p> <p>A REVISE GAS LINE LOCATIONS PER TECO MARK-UPS; UPDATE CB-8 CALL-OUT & NOTE 1; REV LINER TO 15MM</p>		<p>DATE</p> <p>08/22/13</p>		<p>DRAWN BY / EMP. NO.</p> <p>DJB/89366</p>		<p>STANTEC</p> <p>6900 Professional Parkway East, Sarasota, FL 34240-8414</p> <p>Phone: 941-907-4900 • Fax: 941-907-6910</p> <p>Certificate of Authorization #27013 • www.stantec.com</p>		<p>MANATEE COUNTY BOARD OF COUNTY COMMISSIONERS</p> <p>FLOOD DRAIN IMPROVEMENTS PLAN-WEST</p>		<p>DANIEL J. BOND, P.E.</p> <p>FLORIDA LICENSE NO. 57969</p> <p>INDEX NUMBER:</p> <p>D-215611476-01C-003</p>		<p>DATE:</p> <p>AUGUST 2013</p> <p>HORIZONTAL SCALE:</p> <p>1"=20'</p> <p>VERTICAL SCALE:</p> <p>N/A</p> <p>SEC: 2 TWP: 35S RGE: 17E</p>		<p>TITLE:</p> <p>FLOOD DRAIN IMPROVEMENTS PLAN-WEST</p>		<p>PROJECT:</p> <p>FLOOD DRAIN IMPROVEMENTS 26th AVENUE WEST</p>		<p>CROSS REFERENCE FILE NO.:</p> <p>215611476 201</p>		<p>PROJECT NUMBER:</p> <p>215611476 201</p>		<p>SHEET NUMBER:</p> <p>3 OF 5</p>	

LEGEND



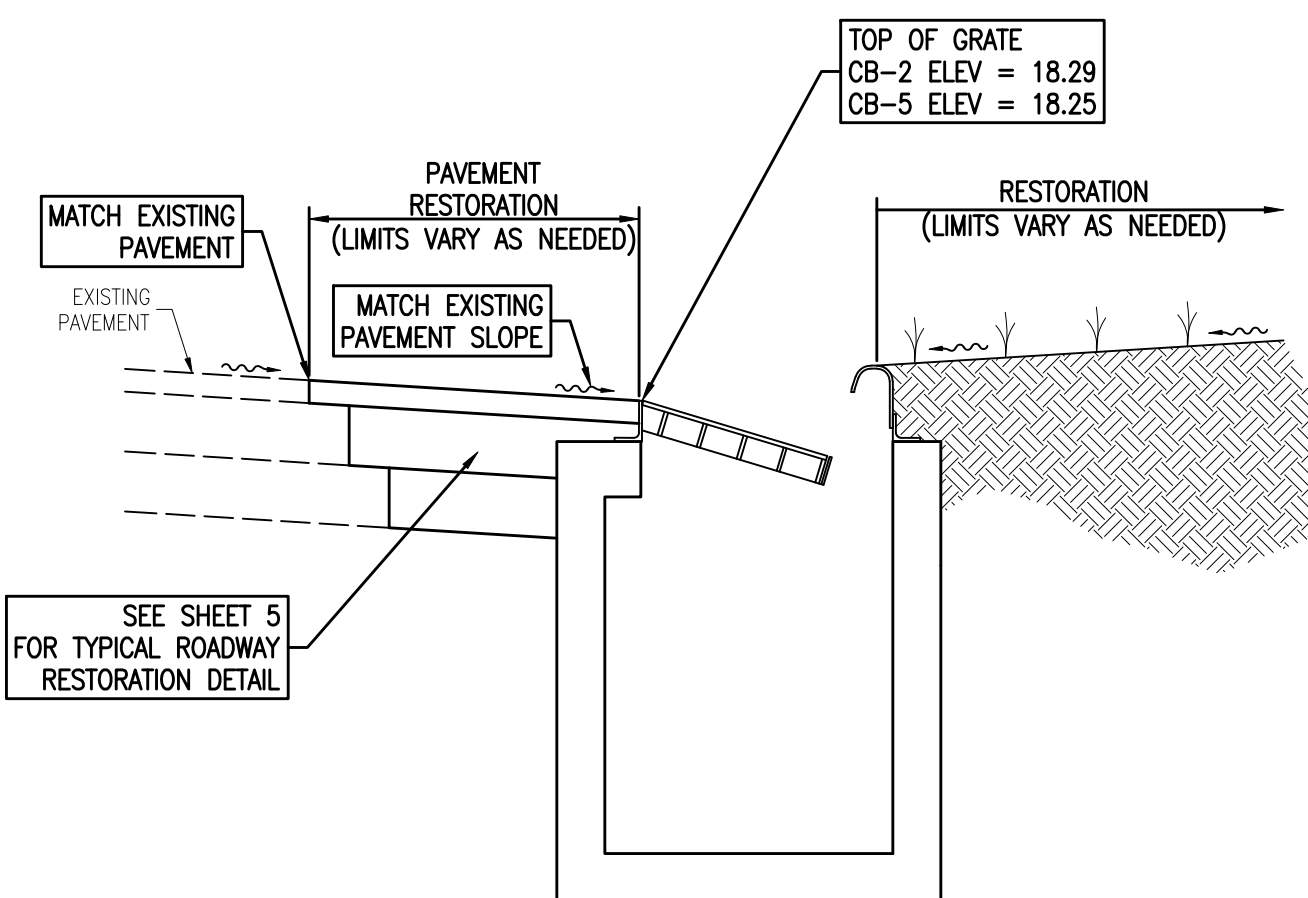
NOTES:

1. CIPP LINER SHALL BE INSTALLED UTILIZING THE INVERSION INSTALLATION METHOD. THE CIPP LINER SHALL BE TYPE III AND HAVE A MINIMUM FINISH THICKNESS OF 15mm. UNLESS OTHERWISE NOTED ALL MATERIALS, INSTALLATION, TESTING, AND INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH ASTM F1216 AND ASTM D5813 STANDARDS (LATEST EDITIONS)
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7. INLET FRAME TO BE FASTENED TO STRUCTURE TOP SLAB UTILIZING STAINLESS STEEL LAG ANCHORS, BOLTS, WASHERS, AND NUTS (4 TOTAL). LAG ANCHORS/BOLTS SHALL BE EMBEDDED A MINIMUM OF 4" INTO TOP SLAB.



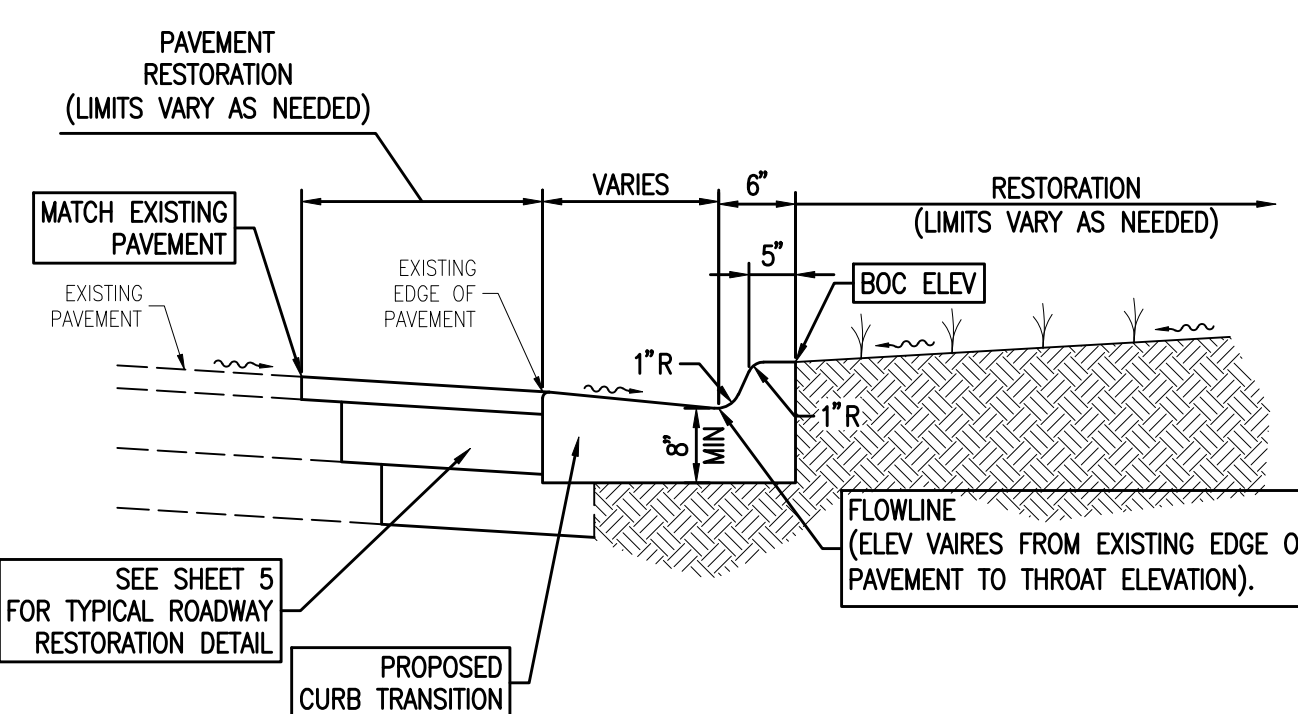
STRUCTURE CB-5 DETAIL

SCALE: 1"=4'



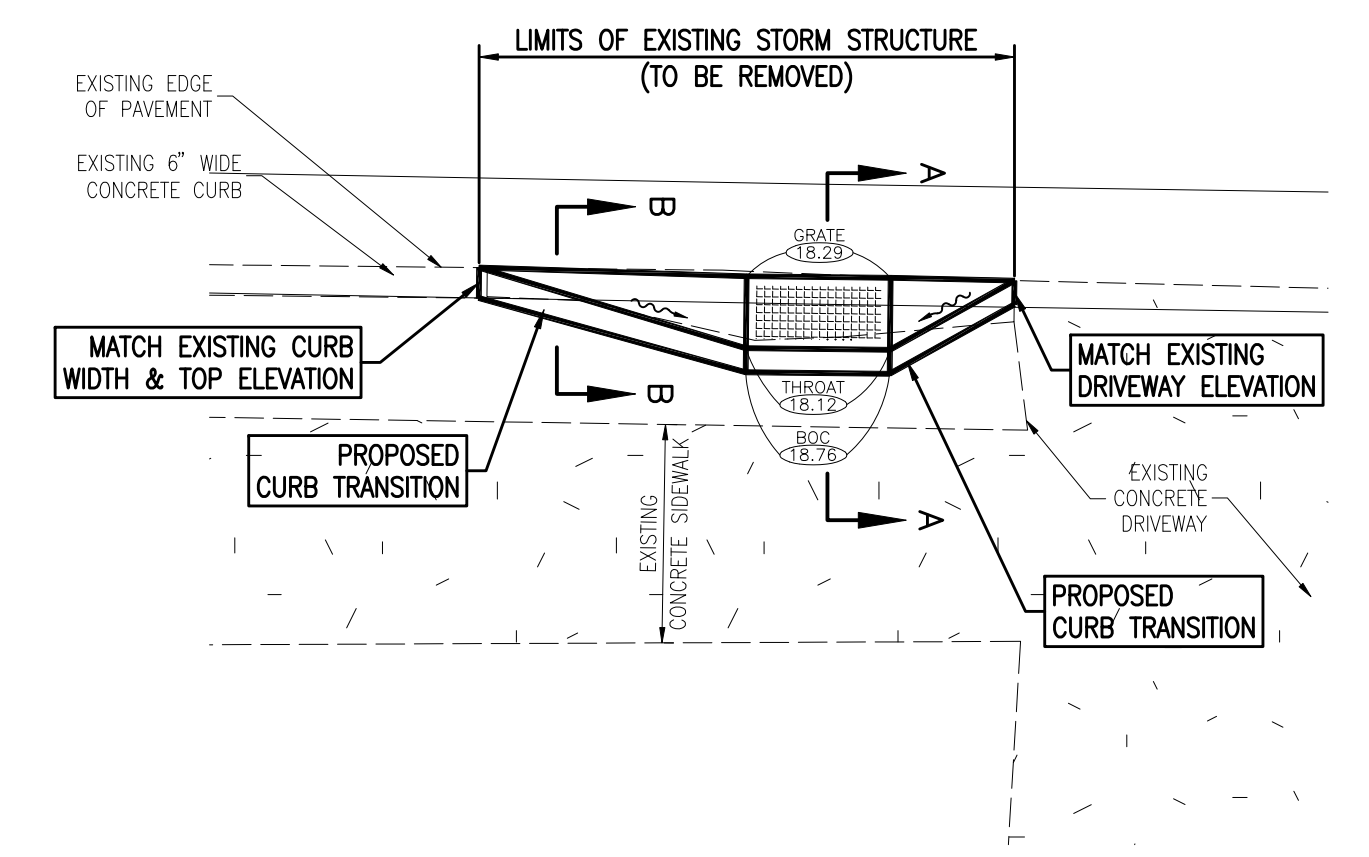
SECTION A-A

SCALE: N.T.S.



SECTION B-B

SCALE: N.T.S.



STRUCTURE CB-2 DETAIL

SCALE: 1"=4'

REV. NO.	REVISION	DATE	DRAWN BY / EMP. NO.	CHECKED BY / EMP. NO.	WM APPROVED BY:	ACTIVITY	INITIALS/EMP. NO.	DATE
A	REVISE GAS LINE LOCATIONS PER TECO; SPEC VERT GRATES FOR CB-2/CB-5; REVISE NOTE 1	08/22/13	DJB/89366			DESIGNED BY:		
						DRAWN BY:	ATO/89520	08/13
						CHECKED BY:		
						CONTRACT ADMIN. BY:		



CLIENT: MANATEE COUNTY BOARD OF COUNTY COMMISSIONERS

PROJECT: FLOOD DRAIN IMPROVEMENTS 26th AVENUE WEST

DATE: AUGUST 2013

HORIZONTAL SCALE: AS SHOWN

VERTICAL SCALE: AS SHOWN

SHEET NUMBER: 4 OF 5

TITLE: FLOOD DRAIN IMPROVEMENTS PLAN-EAST

PROJECT NUMBER: 215611476 201

SHEET NUMBER: 4 OF 5

DANIEL J. BOND, P.E.
FLORIDA LICENSE NO. 57969

INDEX NUMBER: D-215611476-01C-004

CROSS REFERENCE FILE NO.: 215611476-01C-004

GENERAL SITE CONSTRUCTION NOTES:

- THERE SHALL BE NO CHANGE OR DEVIATION FROM THESE PLANS WITHOUT PRIOR APPROVAL BY THE ENGINEER.
- IN ALL AREAS TO BE RESTORED WITH SO2, THE EXISTING GROUND MATERIAL SHALL BE EXCAVATED AS NEEDED TO PROVIDE A 3" MINIMUM LAYER OF CLEAN TOP SOIL UNDERNEATH ALL NEWLY INSTALLED SO2. FOR RESTORATION AREAS, THE TOP OF THE NEW SO2 SHALL MATCH EXISTING GROUND ELEVATIONS.
- SOODING INCLUDES MAINTAINING SLOPES AND SO2 UNTIL COMPLETION AND ACCEPTANCE OF TOTAL PROJECT OR GROWTH IS ESTABLISHED, WHICHEVER COMES LAST. UNTIL THEN, ALL EROSION, SILTATION, AND MAINTENANCE OF GRADES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL EXISTING TREES ARE DESIGNATED BY THE OWNER TO BE SAVED AND PROTECTED BY THE CONTRACTOR UNLESS OTHERWISE NOTED ON THE PLANS TO BE REMOVED. IT IS ASSUMED THESE TREES ARE HEALTHY AND ARE EXPECTED TO REMAIN. THEREFORE, IF ANY TREES ARE DAMAGED BY CONSTRUCTION OPERATIONS OR BY OTHER MEANS (EXCLUDING LIGHTNING, WINDSTORM AND OTHER ACTS OF GOD) PERISHES WITHIN THE CONSTRUCTION PERIOD, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND DISPOSE OF THOSE TREES AND REPLACE THE DAMAGED TREE WITH A NEW TREE OF SIMILAR SIZE AND SPECIES. NO ADDITIONAL COMPENSATION SHALL BE MADE BY THE OWNER FOR THE LABOR, MATERIAL, OR MACHINERY REQUIRED TO REMOVE AND REPLACE SAID TREE(S).
- WHERE EXCAVATIONS ARE IN CLOSE PROXIMITY OF TREES, THE CONTRACTOR SHALL USE EXTREME CARE IN NOT DAMAGING THE ROOT SYSTEM. NO EQUIPMENT, SUPPLIES, OR VEHICLES SHALL BE STORED OR PARKED WITHIN THE DRIP LINE OF TREES TO REMAIN AND BE PRESERVED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM ALL OF HIS EMPLOYEES AND SUBCONTRACTORS OF THIS REQUIREMENT AND TO ENFORCE SAME.
- ANY TREE ROOTS INADVERTENTLY DAMAGED IN THE DEMOLITION, REMOVAL, AND RE-GRADING PROCESS SHALL BE CLEANLY SEVERED USING SHARP PRUNING SAW OR LOPPERS TO PRESENT A CLEAN SMOOTH FACE. NO FRAVED OR SPLIT ROOTS SHALL BE LEFT WITHOUT CORRECTION.
- TREE ROOTS EXPOSED DURING CONSTRUCTION SHALL HAVE A SUITABLE BROAD SPECTRUM FUNGICIDE APPLIED SUCH AS "SUBDUCE MAXX" (Mefenoxam) OR APPROVED EQUAL. THIS APPLICATION SHALL BE APPLIED AT LABELED RATES AND ACCORDING TO LABELED DIRECTIONS PRIOR TO THE INTRODUCTION OF ANY BACKFILL.
- NOTIFY "SUNSHINE STATE ONE CALL (1-800-432-4770)", AND ANY OTHER UTILITIES (GAS COMPANIES, ETC.) PRIOR TO CONSTRUCTION OPERATION AND PRIOR TO ANY CONNECTION TO EXISTING UTILITIES. IT IS THE CONTRACTORS RESPONSIBILITY TO PROTECT EXISTING UTILITIES FROM DAMAGE.
- ALL STORM DRAIN STRUCTURES SHALL BE CONSTRUCTED TO ALIGNMENT AND LOCATIONS SHOWN ON PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- CONTRACTOR SHALL SPRINKLE OR OTHERWISE APPLY WATER TO AFFECTED CONSTRUCTION AREAS TO CONTROL BOTH SIGNIFICANT WIND EROSION, AND FUGITIVE DUST.
- THE CONTRACTOR SHALL ENSURE THAT ADJACENT PROPERTIES ARE NOT IMPACTED BY WIND EROSION OR EMISSIONS OF UNCONTAINED PARTICULATE MATTER IN ACCORDANCE WITH RULE 62-296.320(4)(c) 1., FLORIDA ADMINISTRATIVE CODE, FROM THE CONSTRUCTION SITE BY TAKING ADEQUATE MEASURES TO STABILIZE AFFECTED AREAS.
- CONTRACTOR SHALL ADJUST EXISTING CLEANOUTS, VALVE PADS, HAND HOLES, ETC. AS NEEDED TO CONSTRUCT THE PROPOSED IMPROVEMENTS. CONTRACTOR SHALL COORDINATE WITH THE APPLICABLE UTILITY AND MANATEE COUNTY THE REMOVAL/RELOCATION/ADJUSTMENT OF ANY EXISTING UTILITIES, LANDSCAPING, LANDSCAPE IRRIGATION, LIGHTING, SIGNS, ETC. THAT MAY CONFLICT WITH THE PROPOSED CONSTRUCTION.
- ALL EXISTING VEGETATION (OTHER THAN SO2) SHALL REMAIN UNLESS OTHERWISE NOTED ON THE PLANS. CONTRACTOR SHALL NOTIFY COUNTY AND ENGINEER SHOULD ANY EXISTING VEGETATION CONFLICT WITH THE PROPOSED IMPROVEMENTS.
- ALL EXCESS DEBRIS AND MATERIALS ASSOCIATED WITH THE PROPOSED WORK SHALL BE REMOVED AND DISPOSED OF OFF-SITE BY THE CONTRACTOR. THE COST OF THE REMOVAL AND DISPOSAL OF ANY EXCESS DEBRIS AND MATERIALS SHALL BE INCLUDED IN ALL THE VARIOUS PAY ITEMS OR WORK ITEMS DESCRIBED IN THE BID FORM AND NO SEPARATE PAYMENT WILL BE MADE UNLESS A SEPARATE PAY ITEM IS ESTABLISHED IN THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS THAT MEET OR EXCEED THE REQUIREMENTS OF THE MANATEE COUNTY HIGHWAY, TRAFFIC & STORMWATER STANDARDS (LATEST EDITION).
- PAVEMENT MARKINGS AND TRAFFIC CONTROL SIGNS AND DEVICES THAT ARE DAMAGED/REMOVED DURING CONSTRUCTION SHALL BE REPLACED PROMPTLY BY THE CONTRACTOR. ANY TEMPORARY STRIPING MAY BE PAINTED UNTIL SUCH TIME THE PERMANENT STRIPING IS INSTALLED. ALL FINAL STRIPING SHALL BE THERMOPLASTIC (50 MILS MINIMUM THICKNESS) AND SHALL MEET THE MINIMUM RETROREFLECTIVITY REQUIREMENTS OF THE LATEST EDITION OF THE FOOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ANY SIGNS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW SIGNS MEETING THE MINIMUM REQUIREMENTS OF THE LATEST EDITION OF THE MUTCD AND THE CITY OF BRADENTON.
- ALL SIDEWALKS AND SIDEWALK CURB RAMP NEEDING TO BE RESTORED SHALL BE CONSTRUCTED IN ACCORDANCE WITH FOOT INDEX #304 AND #310, THE AMERICAN WITH DISABILITIES ACT (ADA), AND THE FLORIDA ACCESSIBILITY CODE AT CURBS, GUTTERS, SIDEWALKS, INTERSECTIONS, ETC.
- CONTRACTOR SHALL MAINTAIN THE STORM DRAINAGE PIPES AND INLETS SUCH THAT AN EQUIVALENT SYSTEM IS IN PLACE AT THE END OF EACH WORKING DAY SO AS TO MAINTAIN AT LEAST THE FLOW CAPACITY OF THE EXISTING SYSTEM.
- ALL WELL POINT HOLES THAT WILL BE UNDER PARKING, DRIVING OR ROADWAY SURFACES SHALL BE BACKFILLED WITH CONCRETE IMMEDIATELY AFTER PULLING THE WELL POINTS. ALL OTHER WELL POINT HOLES SHALL BE BACKFILLED WITH FOOT NO. 89 STONE IMMEDIATELY AFTER PULLING THE WELL POINTS UNLESS SPECIFIED OR DIRECTED TO DO OTHERWISE. IN NO CASE SHALL THE DRAINING SYSTEM BLOCK ACCESS TO EXISTING DRIVEWAYS OR BE LOCATED OUTSIDE THE LIMITS OF THE EXISTING RIGHT-OF-WAY. DEWATERING PUMPS SHALL BE SHIELDED TO MINIMIZE NOISE DISTURBANCE TO RESIDENTS AND BUSINESSES.

TRAFFIC REGULATIONS AND MAINTENANCE OF TRAFFIC

- ALL WORK IN STREETS AND HIGHWAYS SHALL BE SUBJECT TO THE REGULATIONS AND REQUIREMENTS OF THE APPROPRIATE AGENCIES. WORK THAT MAY AFFECT TRAFFIC ON ANY CITY OR COUNTY STREET, ROADWAY, BIKE PATH OR SIDEWALK WILL REQUIRE THE PREPARATION AND SUBMITTAL OF A SIGNED AND SEALED MAINTENANCE OF TRAFFIC (MOT) PLAN. THE MOT PLAN MUST BE SUBMITTED ONE (1) WEEK PRIOR TO THE START OF THE PROJECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE IN FULL COMPLIANCE WITH THAT POLICY WHEN THE ROADWAY IS TO BE CLOSED OR TRAFFIC DETOURED. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL DURING CONSTRUCTION IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, MILLENNIUM EDITION AND THE FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS, LATEST EDITION, TRAFFIC CONTROL THROUGH WORK ZONES, SERIES 600 INDICES.
- NOT MORE THAN ONE BLOCK OF EXCAVATION SHALL BE OPEN AT ANY ONE TIME AND THIS DISTANCE MAY BE REDUCED IF IT CAUSES EXCESSIVE INTERFERENCE WITH TRAFFIC.

EXCAVATED OR OTHER MATERIAL STORED ADJACENT TO OR PARTIALLY UPON A ROADWAY PAVEMENT SHALL BE ADEQUATELY MARKED FOR TRAFFIC AND PEDESTRIAN SAFETY AT ALL TIMES. NECESSARY ACCESS TO ADJACENT PROPERTY SHALL BE PROVIDED AT ALL TIMES.

EXCAVATION SHALL BE CONDUCTED IN A MANNER TO CAUSE THE LEAST POSSIBLE INTERRUPTION TO TRAFFIC. WHERE TRAFFIC MUST CROSS EXCAVATIONS, THE CONTRACTOR SHALL PROVIDE SUITABLE BRIDGES AT STREET INTERSECTIONS AND DRIVEWAYS.

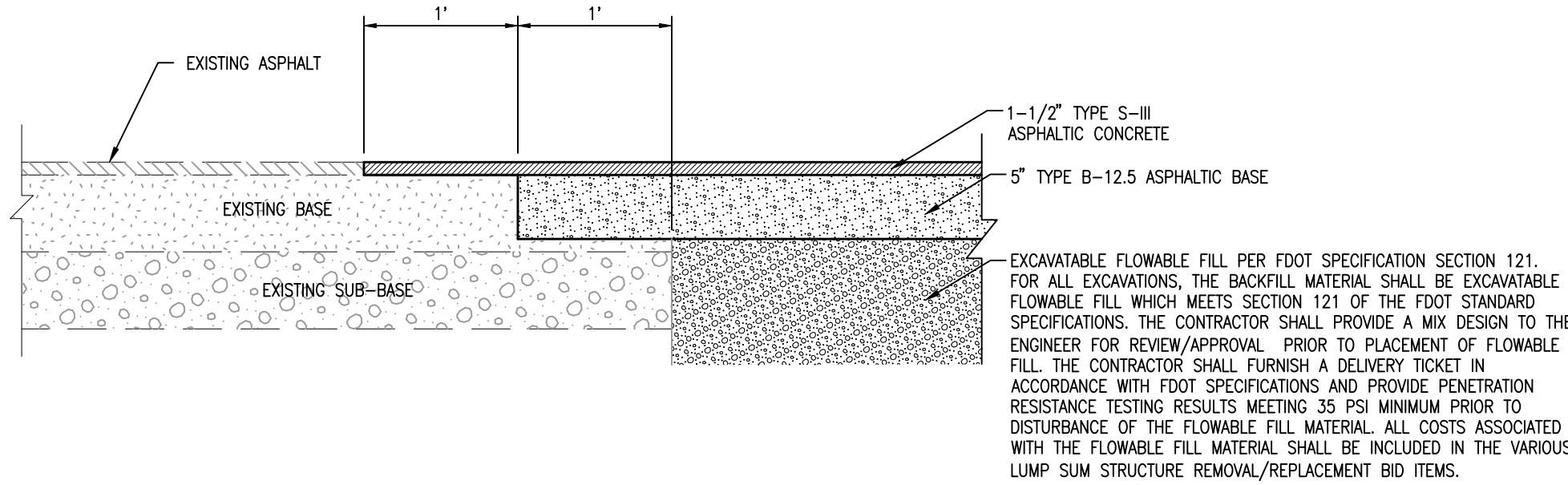
- ALL TRAFFIC CONTROL SIGNS AND DEVICES, BARRICADES, FLASHERS AND SIMILAR DEVICES SHALL BE FURNISHED AND MAINTAINED IN WORKING CONDITION AT ALL TIMES BY THE CONTRACTOR. THE CONTRACTOR SHALL PROTECT THE WORK THROUGHOUT ITS LENGTH BY THE ERECTION OF SUITABLE BARRICADES AND HANDRAILS, WHERE REQUIRED. THE CONTRACTOR SHALL FURTHER INDICATE THIS WORK AT NIGHT BY THE MAINTENANCE OF SUITABLE LIGHTS OR FLARES. WHEREVER IT IS NECESSARY TO CROSS A PUBLIC WALK, THEY SHALL PROVIDE A SUITABLE SAFE WALKWAY WITH HAND RAILINGS. THE CONTRACTOR SHALL ALSO COMPLY WITH ALL LAWS OR ORDINANCES COVERING THE PROTECTION OF SUCH WORK AND THE SAFETY MEASURES TO BE EMPLOYED THEREIN. THE CONTRACTOR SHALL CARRY OUT THEIR WORK SO AS NOT TO DENY ACCESS TO PRIVATE PROPERTY. ALL UTILITY ACCESS MANHOLES, VALVES, FIRE HYDRANTS AND LETTER BOXES SHALL BE KEPT ACCESSIBLE AT ALL TIMES.
- PAVEMENT MARKINGS DAMAGED DURING THE PROJECT SHALL BE REMOVED AND REPLACED PROMPTLY BY THE CONTRACTOR.

GENERAL DRAINAGE STRUCTURE NOTES:

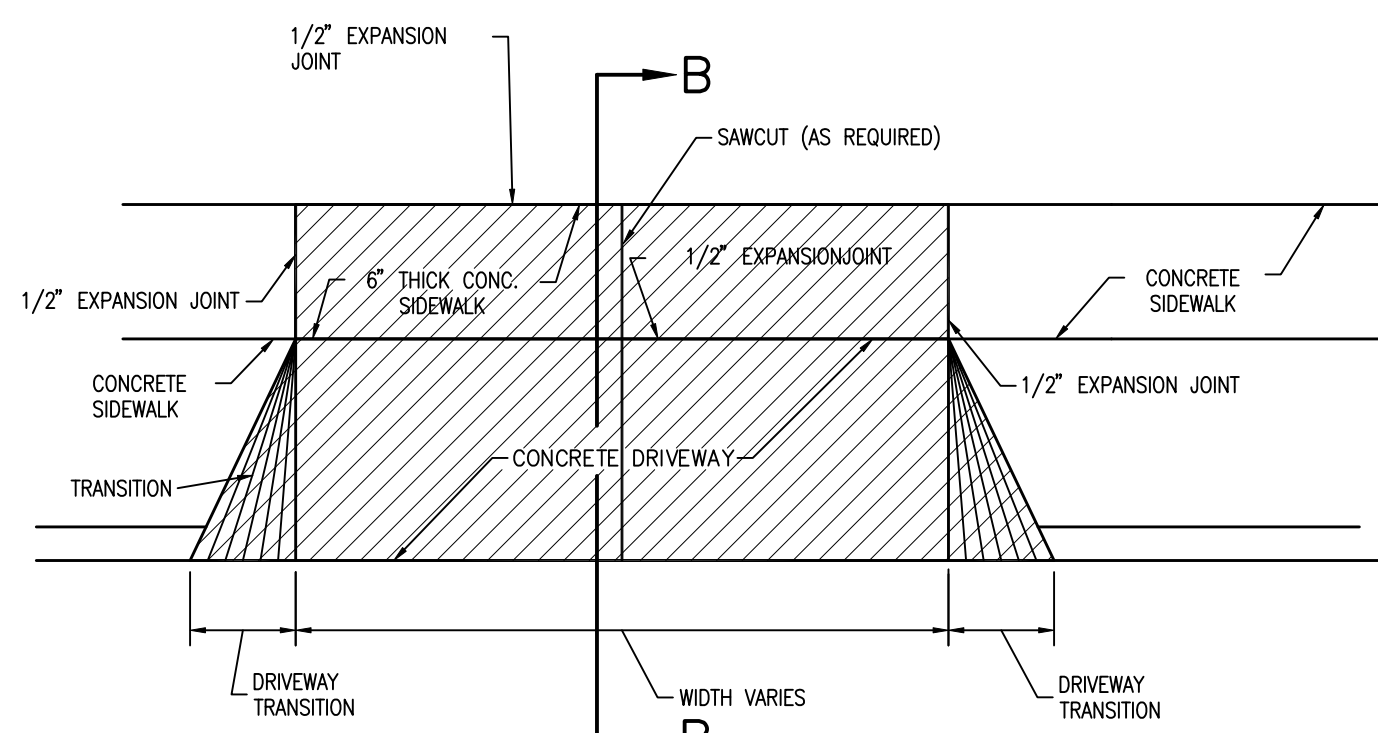
- UNLESS OTHERWISE NOTED, ALL DRAINAGE STRUCTURES SHALL BE DESIGNED TO MEET FOOT DESIGN STANDARDS/SPECIFICATIONS.
- ALL STEEL FRAMES AND GRATES SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
- THE PRE-CASTER SHALL PROVIDE A LETTER WITH EACH SHOP DRAWING SUBMITTAL STATING THAT THE PRE-CAST STRUCTURES MEET OR EXCEED FOOT DESIGN STANDARDS/ SPECIFICATIONS.
- FILTER FABRIC WRAP SHALL BE PLACED ON THE GROUTED PIPE TO STRUCTURE JOINT PER FOOT INDEX 201.
- ALL DRAINAGE STRUCTURES SHALL HAVE CONCRETE POURED INVERTS PER FOOT INDEX 201.

CURB RESTORATION NOTES:

- CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 P.S.I. IN 28 DAYS UNLESS OTHERWISE NOTED.
- UNLESS OTHERWISE NOTED ON THE PLANS, ALL CURB AND GUTTER DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO THE SAME DIMENSIONS AS THAT REMOVED. PRIOR TO PLACING CONCRETE, THE SUBGRADE SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DENSITY DETERMINED BY THE "MODIFIED PROCTOR DENSITY" (ASTM D-1557).
- AN EXPANSION JOINT WILL BE PLACED AT THE END OF ALL RETURNS AT INTERVALS NOT TO EXCEED 50' AND ADJACENT TO ANY CONCRETE PAVEMENT. CONTRACTION JOINTS AT A MAXIMUM SPACING OF 10' SHALL BE SAW CUT AT DEPTH PER FOOT INDEX NO. 300.
- EXPANSION JOINTS SHALL BE CONSTRUCTED WITH 1/2" BITUMINOUS IMPREGNATED EXPANSION JOINT MATERIAL.

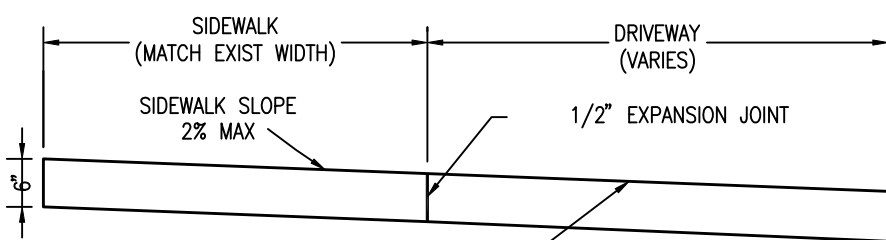


TYPICAL ROADWAY RESTORATION DETAIL
N.T.S.



PLAN VIEW

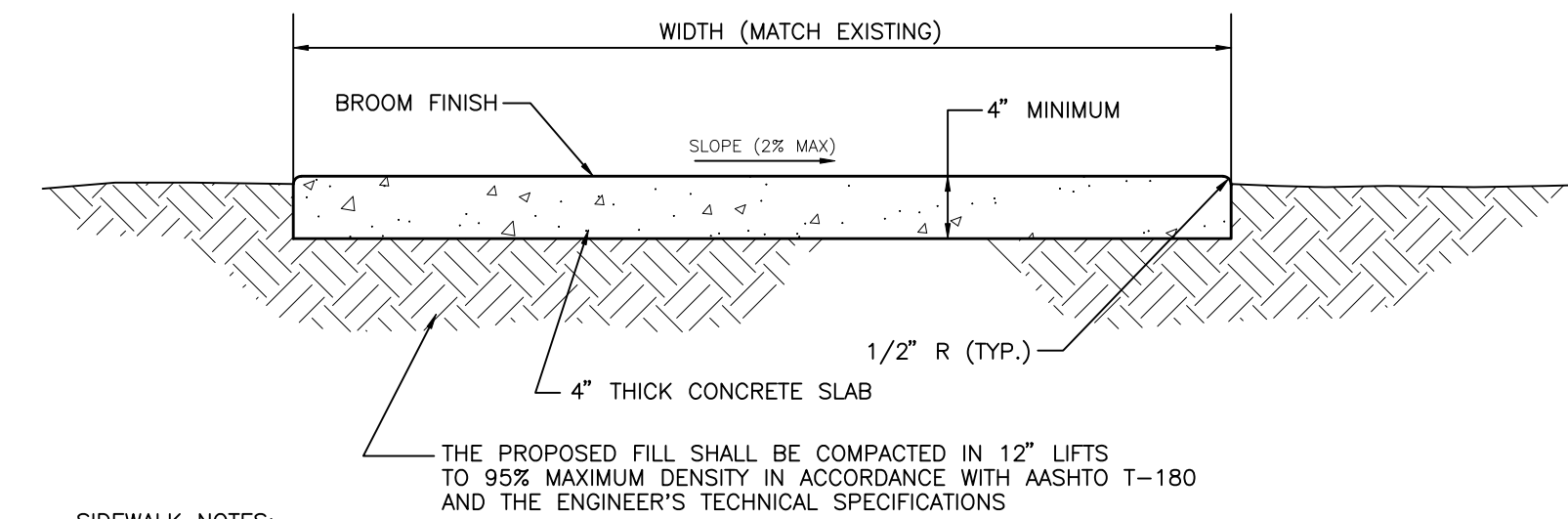
PROFILE



SECTION B-B

- NOTES:**
- CONCRETE SHALL BE 6" THICK AND HAVE A COMPRESSIVE STRENGTH OF 3,000 P.S.I. IN 28 DAYS UNLESS OTHERWISE NOTED.
 - CONTRACTION JOINTS AT A MAXIMUM SPACING OF 10' SHALL BE SAW CUT AT DEPTH PER FOOT INDEX NO. 300.
 - THE SURFACE OF THE SUBGRADE SHOULD BE SMOOTH, AND ANY DISTURBANCES OR WHEEL RUTTING CORRECTED PRIOR TO PLACEMENT OF CONCRETE.
 - THE SUBGRADE SOILS SHOULD BE MOISTENED PRIOR TO PLACEMENT OF CONCRETE.
 - CONCRETE PAVEMENT THICKNESS SHOULD BE UNIFORM THROUGHOUT.
 - AN EXPANSION JOINT SHALL BE PLACED ADJACENT TO ANY CURBS, SIDEWALKS, OR EXISTING CONCRETE DRIVEWAY.
 - EXPANSION JOINTS SHALL BE CONSTRUCTED WITH 1/2" BITUMINOUS IMPREGNATED EXPANSION JOINT MATERIAL.
 - DRIVEWAY RESTORATION SHALL CONSIST OF A SAW CUT EDGE TO THE NEAREST UNDISTURBED PORTION OF THE RESIDENTIAL SIDE OF THE OPEN CUT AND REMOVAL FROM THE SAW CUT EDGE TO THE EDGE OF ROADWAY/BACK OF CURB. RESIDENTS MUST BE NOTIFIED BY THE CONTRACTOR AT LEAST 72 HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY THAT MAY AFFECT THEIR DRIVEWAY. IMMEDIATELY AFTER PIPE HAS BEEN INSTALLED, THE DRIVEWAY MUST BE OPERATIONAL/PASSABLE UTILIZING STONE (OR EQUIVALENT), SO THAT INGRESS/EGRESS IS MAINTAINED TO THE HOMEOWNER. THE TEMPORARY STONE DRIVEWAY SHALL BE MAINTAINED AS REQUIRED OR AS DIRECTED BY COUNTY. THE CONTRACTOR HAS SEVEN (7) CALENDAR DAYS FROM THE TIME OF INITIAL DRIVEWAY DISTURBANCE TO THE TIME OF FINAL CONCRETE DRIVEWAY INSTALLATION.

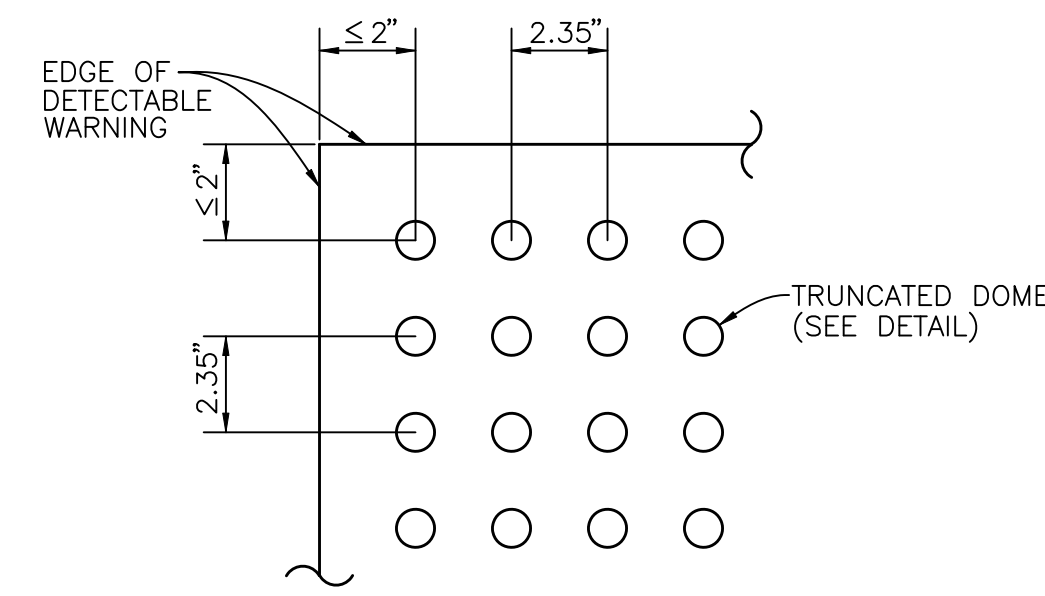
RESIDENTIAL DRIVEWAY RESTORATION DETAIL WITH SIDEWALK
N.T.S.



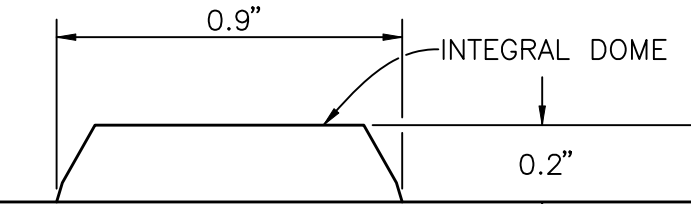
SIDEWALK NOTES:

- CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 P.S.I. IN 28 DAYS UNLESS OTHERWISE NOTED.
- CONTRACTION JOINTS SHALL BE SAW CUT TO AN 1" DEPTH AND APPROXIMATELY 3/16" WIDE AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
- AN EXPANSION JOINT WILL BE PLACED AT THE END OF ALL RETURNS, AT FIXED OBJECTS (DRIVEWAYS, CURBS ETC.) AND INTERVALS NOT TO EXCEED 50'. EXPANSION JOINTS SHALL BE CONSTRUCTED WITH 1/2" PREFORMED JOINT FILLER.
- ALL SIDEWALKS AND SIDEWALK CROSSINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA).

TYPICAL SIDEWALK RESTORATION DETAIL
N.T.S.



PLAN VIEW



TRUNCATED DOME

CURB RAMP DETECTABLE WARNING DETAIL

NOTES:

DETECTABLE WARNINGS ON WALKING SURFACES

THE DETECTABLE WARNING SHALL EXTEND THE FULL WIDTH AND DEPTH OF THE CURB RAMP SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.

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

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

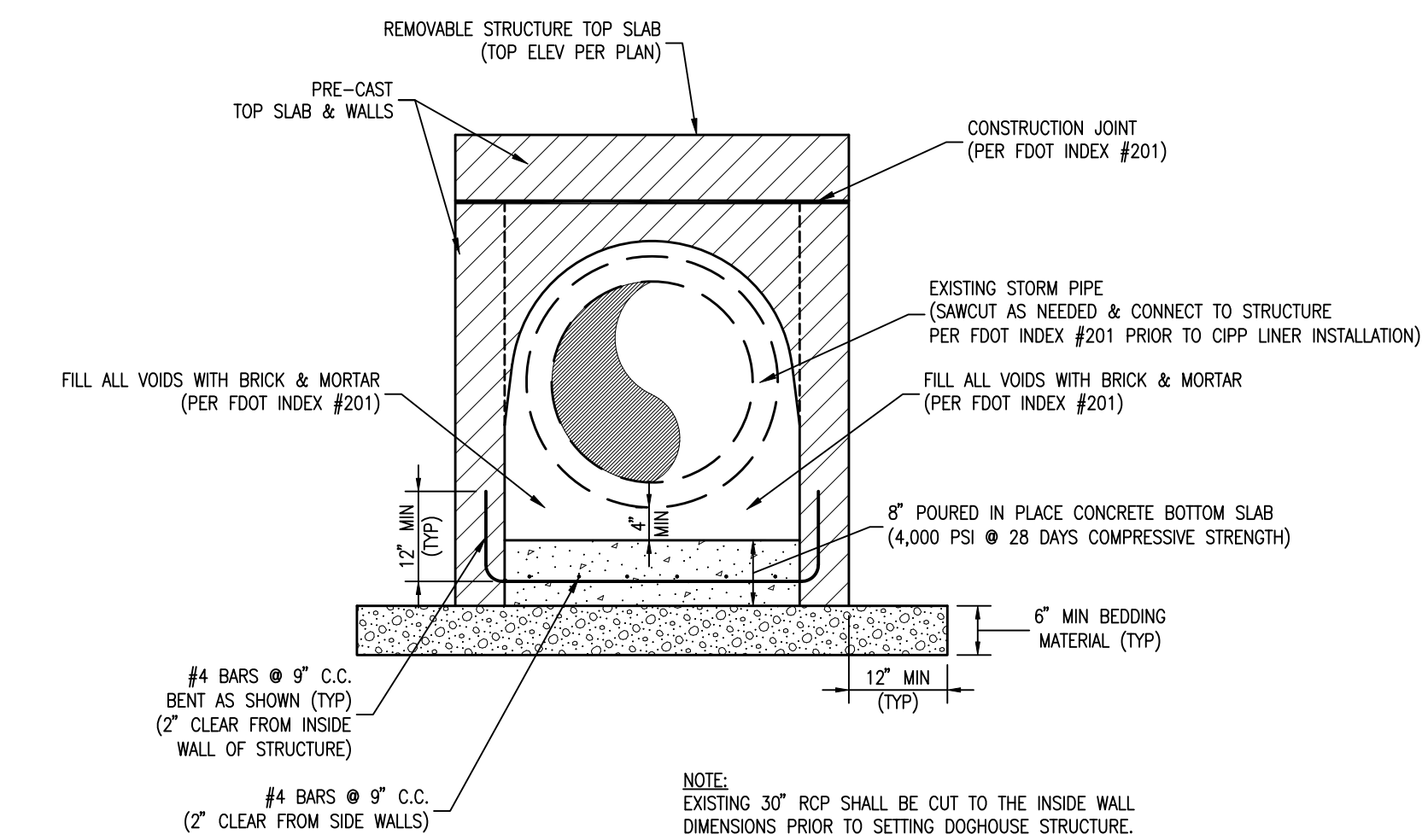
THE MATERIAL USED TO PROVIDE CONTRAST SHOULD CONTRAST BY AT LEAST 70%. CONTRAST IN PERCENT IS DETERMINED BY:

$$\text{CONTRAST} = [(B1 - B2) / B1] \times 100$$

WHERE B1 = LIGHT REFLECTANCE VALUE (LRV) OF THE LIGHTER AREA AND B2 = LIGHT REFLECTANCE VALUE (LRV) OF THE DARKER AREA.

NOTE THAT IN ANY APPLICATION BOTH WHITE AND BLACK ARE NEVER ABSOLUTE; THUS, B1 NEVER EQUALS 100 AND B2 IS ALWAYS GREATER THAN 0.

CURB RAMP DETECTABLE WARNINGS
N.T.S.



OPTIONAL PRE-CAST DOGHOUSE STRUCTURE DETAIL
N.T.S.

<p>ACTIVITY</p> <p>DESIGNED BY:</p> <p>DRAWN BY:</p> <p>CHECKED BY:</p> <p>CONTRACT ADMIN. BY:</p> <p>WM APPROVED BY:</p>		<p>INITIALS/EMP. NO.</p> <p>ATO/89520</p>		<p>DATE</p> <p>08/13</p>	
<p>CLIENT: MANATEE COUNTY BOARD OF COUNTY COMMISSIONERS</p> <p>PROJECT: FLOOD DRAIN IMPROVEMENTS 26th AVENUE WEST</p>					
<p>DATE: AUGUST 2013</p> <p>HORIZONTAL SCALE: AS SHOWN</p> <p>VERTICAL SCALE: AS SHOWN</p> <p>CROSS REFERENCE FILE NO.: 2 355 17E</p>					
<p>TITLE: CONSTRUCTION DETAILS & NOTES</p> <p>PROJECT NUMBER: 215611476 201</p> <p>SHEET NUMBER: 5 OF 5</p>					



6900 Professional Parkway East, Sarasota, FL 34240-8414
Phone 941-907-6900 • Fax 941-907-4910
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