ADDENDUM NO. 3

For, GRAVITY INJECTION WELLS Phase V

ST 0902 Bid Documents

To All Bidders:

The following change is herby made part of Gravity Injection Wells Phase V, as fully as completely as if the same were set forth therein:

1. The Well Driller shall submit for FDEP Class V Well Permits, within 10 days of the award, the approved permit shall be part of the contract documents.

2. Delete the following Sections and Replace with the attached sections

    - SECTION 01025 MEASUREMENT AND PAYMENT
    - SECTION 02581 DRILLING OF DRAINAGE WELLS
    - SECTION 02575 SURFACE RESTORATION

3. Delete the following drawings and replace with attracted drawings
    - C-3
    - C-5
    - C-6
    - C-7
    - C-8
    - C-9

Direct any request for Information to Richard Evans Perez Engineering; revans@perezeng.com

All Bidders shall acknowledge receipt and acceptance of this Addendum No.3 by acknowledging Addendum in their proposal or by submitting the addendum with the bid package. Bids submitted without the acknowledgement or without this Addendum may be considered non-responsive.

_____ _____

Signature Name of Business

SECTION 02581
DRILLING OF DRAINAGE WELLS

CLASS V STORMWATER DISPOSAL INJECTION WELL CONSTRUCTION TECHNICAL SPECIFICATIONS

PART 1 GENERAL

1. General

1.1 Requirements

A. The WATER WELL CONTRACTOR must be licensed as a Florida Water Well Contractor accordance with F.A.C. 62-531. Water Well contractor must have a properly structured State Of Florida Business. The WATER WELL CONTRACTOR shall submit for the Construction / Clearance Permit Application for Class V well to the FDEP.

B. The WATER WELL CONTRACTOR shall construct each well as shown on the **Civil Construction Drawings and Details**, and perform all appurtenant work in accordance with the **Technical Specifications**. The wells shall be constructed with an open-hole completion. The wells shall be complete and operable, in accordance with Chapter 62-528, F.A.C. The Construction of the well shall be in accordance with Chapter 62-523, F.A.C.

C. Site Sound Proofing: The WATER WELL CONTRACTOR shall furnish sound proofing barriers, provide mufflers on equipment, and undertake other steps necessary during drilling, pumping, testing, and incidental operations, to ensure that noise levels conform to all applicable noise ordinances.

D. Access Control: The WATER WELL CONTRACTOR shall undertake necessary measures to limit access to drilling sites, to minimize public hazards.

E. Sequence of Work: The sequence may be changed by the ENGINEER. Change may include alternations to the order of occurrence, deletions, or additions. The WORK schedule and operations shall continue without interruption until all WORK is completed by the CONTRACTOR.

1. Preparation and Mobilization shall be completed as specified in Mobilization Section, including, but not limited to:
    a. Site and access video
    b. Clear site and establish vertical and horizontal control with reference to NGVD 1929.
    c. Install temporary services, as needed
    d. Mobilize drilling rig and provide temporary piping for water supply and disposal.
    e. Prepare Onsite staging areas and disposal sites as needed
2. Drill Bore Hole including open hole to depth of 120 feet below top of casing elevation specified on the project plans. Overdrill shall be a minimum of 6 inches greater than the outside diameter of the well casing at the casing joint.
3. Provide lithology description and casing seat request to FDEP.
4. Install Casing upon Approval from FDEP.
5. Notify FDEP in Fort Meyers (David Rhodes, P.G.) and Marathon (Steve Johnson) at least 72 hours prior to grouting.
6. Grout Casing.
7. Install temporary cap on well.
8. Process Certification for well completion. Provide AS-built drawings to Engineer
9. Attach storm water / pretreatment structures as required.

10. Clean site / demobilize.

F. Personnel Requirements

a. The WATER WELL CONTRACTOR shall furnish capable personnel, experienced in the work required to construct the Class V injection well(s).

b. The Drill Rig Operator shall work under the direct supervision of the Florida licensed WATER WELL CONTRACTOR, using equipment that is under the direct control of the Florida licensed WATER WELL CONTRACTOR. The Florida Licensed Water Well Contractor is required to be onsite to supervise the well construction operation.

c. The Drill Rig Operator shall maintain the drilling equipment, pumps, and drill pipe. The driller shall be competent in the use and application of drilling fluids and additives.

d. The Drill Rig Operator shall monitor the progress of the drilling operation, and keep the record of the rate and progress of drilling, development and pump testing operations, including well logs and reports. The daily reports shall be submitted with the water well contractor's portion of the well completion report.

e. The Drill Rig Operator shall be capable of recognizing and making ithologic classifications of the formations to be encountered during the drilling. The Drill Rig Operator shall ensure that the necessary amount of overdrill is determined and executed to ensure that the 60 feet of casing and grout below land surface is accomplished along with ensuring the required amount of casing is provided above the land surface according to the Civil Engineering Drawings.

f. The Cementing Supervisor shall have a working knowledge of down hole pumping, an understanding of displacement, volume of cement, pump pressure, bottom hole pressure, casing lift pressure. Cementing Supervisor shall ensure that casing collapse pressure is not exceeded.

1.2 Record Keeping, Well Logs, and Reports

1.2.1 General

a. The WATER WELL CONTRACTOR shall establish horizontal and vertical (top of casing elevation) control by a licensed land surveyor in the State of Florida.

b. The WATER WELL CONTRACTOR shall ensure the depth of the well as shown on the construction plans is established. The depth of the well is measured from either the actual surveyed land surface or the surveyed top of casing in a pretreatment structure if applicable.

c. Measurement of the total well depth (including open hole) shall be accomplished by using a heavy duty tape measure or cord with a weight attached to the end. The tape measure shall be lowered to the bottom of the hole, maintaining a vertical alignment. Tape should be read or cord marked equal to the top of the casing elevation. If cord used, measure the cord length. Contractor can submit alternate method to Engineer and FDEP for approval if desired.

1.2.2. Drilling Log: The WATER WELL CONTRACTOR shall maintain the Drilling Log. The report forms shall include, at a minimum, location of well, county, TSR, street address, property owner name and address, well depth, method of drilling, lengths and numbers of drill rods used, well use, casing type, grout type used, method of installation, depth of installation, bucket assembly information , drilling additives, fluid losses, water and fluid level changes, footage drilled and formations encountered, and cementing operations, pump information, and a record of any situation encountered (well stuck, collapse of hole).

a. The Drilling Log shall detail the cutting and disposal method, listing the quantity of cuttings, storage location onsite, and transport and final disposal site. The Final Disposal site shall be approved by FDEP. A letter shall be sent to FDEP providing the site owner's permission to use the site for cutting disposal.
b. The Drilling Log shall list information relating to maintenance and repair of the drilling rig.
c. The Drilling Log shall be available on site for inspection at all times.

d. The Drill Log in this specification section can be used or a contractor log submitted to the Engineer for approval can be used. The Drilling Log does not eliminate or replace the well completion report required to be submitted to the water management district, and the certification of class five well construction completion to be submitted to FDEP. The Drilling log shall be included in the water well contractor's completion report.

1.2.3 Record Drawing: The final well description shall conform to the permit drawings and specifications, any deviations from the originally permitted design drawings shall be noted and accompanied by written approvals from FDEP. The record drawing shall show the final diameter, wall thickness, depth and length of the casing, borehole diameter, cemented casing, depth and thickness of annular seals, pretreatment structure and piping, quantity of material removed during development operations, and all other pertinent details. The Record Drawings shall be updated by the well contractor if needed with the actual constructed well information and be submitted with the Engineer's Certified Completion Report.

1.2.4 Records Required by Law: The WATER WELL CONTRACTOR shall maintain all records required by governmental agencies having jurisdiction, and shall submit such records to as may be required. Two copies of all records and submitted material shall be furnished to the ENGINEER.

1.2.5 Permits: The WATER WELL CONTRACTOR shall apply for all necessary drilling and testing permits with local and state regulatory agencies. The WATER WELL CONTRACTOR shall be required to provide certain information to the permitting agencies, in order to complete the permitting process. It is the WATER WELL CONTRACTOR's responsibility to obtain any and all other permits associated with the drilling and testing of the well.

1.2.6 Completion Report: A Well Completion Report (Form 62-528.900(4) must be filed with the permit issuing agency along with a signed copy of the well completion report from the water management district within thirty (30) days of well completion. The well completion report and the as-built drawings that the WATER WELL CONTRACTOR has updated should be submitted together. The as-built drawings of the injection well and the associated site stormwater structures are required to be reviewed, and signed and sealed by the engineer of record.

1.2.7 Grout: Samples of grout shall be collected during the cementation of all casings, with the CONTRACTOR collecting dry and mixed samples of the cement being used. Mixed cement samples shall include at least three (3) 2-inch cubes suitable for tests of compressive strength.

A. Grout samples shall be collected a minimum of three (3) times during each cement stage: Prior to pumping, at the middle and at the end of the stage. The specified slurry density shall match the specified slurry density indicated on the delivery certificate, if grout is not mixed on site.

B. Only 2-inch cubes, suitable for tests of compressive strength, will be acceptable as representative cement samples. Samples will be stored by the owner until 6 month past the five year warranty expiration date.

1.2.8 Calibration Data: Calibration records for each measuring instrument used in the construction of the well shall be submitted to the ENGINEER for review prior to the installation or use of the instruments. Calibration of instruments shall have been performed within 45 days prior to use in testing. All calibration records shall be submitted to the ENGINEER prior to use. The calibration records shall contain the following information:

A. Meters: The CONTRACTOR shall supply flowmeters and other meters for use in testing the well. The flowmeter for use in the pumping test shall have major gradations of 100 gpm and minor gradations of 10 gpm. Accuracy shall be ¼ of 1 percent of full scale.

Serial number, model number, gears, test apparatus size, meter reading and flow rate for at least three (3) steps, percent error for each step, and tester's name and title must be included in the submittal.

B. Gauges: The pressure gauges used in pressure tests shall have 0 to 50 psi scales with major gradations of 10 psi and minor gradations of 0.5 psi or smaller. Pressure gauges for use during aquifer tests, if required, shall have scales from 0 to 50 psi with 1 psi gradations. Gauge accuracy shall be ¼ of 1 percent of full scale.

The gauge's serial number, model number, scale range, meter reading and inches of mercury for at least three (3) steps covering the entire range of the gauge, percent error for each step, and tester's name and title must be included in the submittal.

1.3 Quality Insurance

1.3.1 Remedial Work: Remedial work performed prior to final acceptance, as required to meet the regulatory requirements or the **Technical Specifications**, due to defective materials, accident, loss of equipment or equipment malfunction, or any other cause directly attributable to the WATER WELL CONTRACTOR's actions or inaction, shall be performed by the WATER WELL CONTRACTOR at the WATER WELL CONTRACTOR's expense deemed as required.

In the event of a problem, the ENGINEER, and FDEP shall be notified immediately, and the following shall apply:

a. The WATER WELL CONTRACTOR shall propose a method of correcting the problem, to the ENGINEER, and FDEP. The ENGINEER, FDEP and OWNER shall review the proposed method of corrective action. Only after approval from the ENGINEER, and FDEP shall the corrective action plan be implemented.
b. All work on the well must be in accordance with the applicable local, state, and federal regulations.
c. If the well is deemed unacceptable by the ENGINEER, it shall be abandoned and backfilled by the WATER WELL CONTRACTOR, after obtaining a permit, at contractor's expense, for plugging and abandonment of the well from FDEP. The WATER WELL CONTRACTOR shall not be paid for services and work deemed incomplete or unacceptable. Reason for the well deemed unacceptable shall be provided to FDEP.

1.3.2 Repeat Work: All work repeated as a result of the WATER WELL CONTRACTOR's performance shall be furnished at the expense of the WATER WELL CONTRACTOR. No claim for additional compensation shall be made or be allowed, including all materials, labor, and equipment costs. FDEP Approval shall be obtained prior to and repeat work being done.

1.3.4 State Standards: Department of Environmental Protection Rules and Regulations for UIC Wells in Chapter 62-528, Florida Administrative Code (F.A.C.).

1.3.5 Commercial Standards: All work specified herein shall conform to or exceed the requirements of the applicable codes and standards, relating to the referenced portions of the following documents, only to the extent that the requirements therein are not in conflict with the provisions of this section. Where such documents have been adopted as a code or ordinance by the public agency having jurisdiction, such a code or ordinance shall take precedence.

Commercial Standards:

ASTM C 150	Specification for Portland Cement.
ASTM D 1784	Specification for Rigid PVC Compounds and Chlorinated PVC Compounds.
ASTM D-2564	Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems
ASTM D 2837	Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials.
ASTM F 480	Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), Sch 40, and Sch 80.
AWWA A 100	Standard for Water Wells.

1.3.6 Guarantee: The WATER WELL CONTRACTOR guarantees that the workmanship, materials and equipment supplied or used in the execution of work to be free from defects and flaws. The WATER WELL CONTRACTOR further guarantees that the performance test requirements shall be fulfilled. The WATER WELL

CONTRACTOR shall repair, correct, or replace all damaged work covered by failures under the guarantee, at the WATER WELL CONTRACTOR's expense, only AFTER approval from FDEP. The guarantee shall remain in effect for a period of five (5) years from the date of final acceptance by the OWNER.

1.3.7 Abandonment of Well by Contractor: If, at any time the WATER WELL CONTRACTOR voluntarily stops work, and/or fails to complete the bore hole in a satisfactory manner, in accordance with governing regulations, the bore hole will be considered abandoned. The WATER WELL CONTRACTOR shall not be paid for all or part of a bore hole declared as abandoned by the OWNER.

a. The cost of properly plugging and sealing the well or bore hole, in accordance with applicable local, state of federal regulations, shall be paid by the WATER WELL CONTRACTOR
b. All salvageable material furnished by the WATER WELL CONTRACTOR may be removed and remain his property, after approval from FDEP.
c. The WATER WELL CONTRACTOR shall propose his method of abandonment of the well or bore hole, in writing to the ENGINEER. The WATER WELL CONRACTOR shall apply for and obtain an Application for Class V Well Plugging and Abandonment Permit. The ENGINEER, and FDEP shall review the method of abandonment. The FDEP and the ENGINEER'S approval of the plan must be obtained, in writing, prior to the implementation of the abandonment plan. All work on the well must be in accordance with all applicable local, state, and federal regulations.

1.3.8 Abandonment of Well by OWNER: If information indicates that the completion of a well on the site is not warranted, the OWNER reserves the right to terminate all further work at the site. In such an event, the WATER WELL CONTRACTOR will be paid the value of work completed to that time, based on standard unit prices.

a. The WATER WELL CONTRACTOR shall be required to abandon the bore hole, as directed by the ENGINEER, in accordance with regulations formulated by governmental agencies having such jurisdiction, including Chapter 40D-3.531 F.A.C. The WATER WELL CONRACTOR shall apply for and obtain an Application for Class V Well Plugging and Abandonment Permit. Costs associated with the abandonment will be paid by the OWNER.
b. The OWNER reserves the right upon termination of work on the site to have the WATER WELL CONTRACTOR move to another location on the site selected by the OWNER to drill another bore hole. The location must be approved by the ENGINEER and FDEP. In such circumstances; The WATER WELL CONRACTOR shall apply for and obtain an Application for Class V Well Plugging and Abandonment Permit. Costs associated with the abandonment will be paid by the OWNER. FDEP shall be advised prior to relocation of the well. If deemed necessary by FDEP, a permit modification will be done at the OWNER's expense.

1.3.9 Environmental Considerations: All regulated materials, liquids and/or substances shall be stored within secondary containment, in compliance with applicable regulations of the State. It is the responsibility of the WATER WELL CONTRACTOR to obtain the regulated materials list from the appropriate State office and to provide the ENGINEER with an inventory of all regulated materials to be used on the job site. The integrity of the secondary containment area shall be demonstrated by the WATER WELL CONTRACTOR for the ENGINEER, upon request. At any time if existing contamination either is soil or water is found to be above state of federal limits; work shall be stopped and the ENGINEER and FDEP notified of the finding. Work shall only proceed with authorization from the ENGINEER and FDEP.

1.4 STORAGE AND PROTECTION OF MATERIALS

1.4.1 General: All materials shall be delivered in an undamaged condition and stored to provide protection against damage. All defective or damaged materials shall be replaced with new materials.

1.4.2 Defective Materials: Materials that are defective or damaged prior to use are unacceptable and shall be replaced with new materials, at the WATER WELL CONTRACTOR's expense.

1.4.3 Drilling Waste Disposal: Prior to beginning drilling operations, the CONTRACTOR will submit to the ENGINEER verification of his disposal site in writing from the FDEP. The CONTRACTOR shall be responsible for providing and maintaining all necessary trucks, pipe, pumps, and equipment necessary to pump and haul excess drilling fluid, drill cuttings, and produced water to a pre-determined disposal site(s) in accordance with federal, state and local regulations, or subcontract with a firm capable of providing these services when necessary.

1.4.4 Field Relocation: During construction, it is expected that minor relocation of proposed facilities may be necessary. Field revisions will only be made at the direction of the ENGINEER. If existing structures are encountered that prevent construction as shown, the WATER WELL CONTRACTOR shall notify the ENGINEER prior to continuing work. All relocations must be communicated to FDEP prior to relocating the well. Relocations within a 10 foot radius generally will not require written FDEP approval. Relocations outside of the 10 foot radius will require approval, in writing; and some cases may require a permit modification prior to work commencing at the selected site.

1.4.5 Storage Area: The WATER WELL CONTRACTOR shall prepare an area, within the limits of a location approved by the ENGINEER, for the storage of materials required for this work.

1.4.6 Protection: The WATER WELL CONTRACTOR is responsible for protecting his own work from theft, vandalism, and unauthorized entry.

1.5 CONTRACTOR EQUIPMENT

1.5.1 General: The WATER WELL CONTRACTOR's equipment shall be clean, well maintained, and in good operating condition when delivered to the site and during the entire operation.

a. The equipment shall be of adequate size, strength, horsepower, and capacity for the project and shall be of the type successfully utilized for the construction of similar or larger wells.
b. All equipment shall be provided with safety devices, as required by governmental authorities having jurisdiction.

1.5.2 Equipment Use: Reaming and setting of casing shall be done with the same equipment. No resetting of equipment will be allowed after the bore hole is reamed.

1.5.3 Equipment Operation: All equipment shall be carefully maintained during the WATER WELL CONTRACTOR's operations. Any damage to the well or surrounding property and/or facilities, due to the WATER WELL CONTRACTOR's operations shall be repaired or replaced.

1.5.4 Safety Equipment: The WATER WELL CONTRACTOR must provide and utilize safety equipment, as required by all applicable federal and state regulations.

1.6 MOBILIZATION AND SITE RESTORATION

1.6.1 Mobilization: The WATER WELL CONTRACTOR shall mobilize its equipment and personnel to effectively commence its drilling operations, within the specified time limit.

1.6.2 Unused Materials and Equipment: During construction, the WATER WELL CONTRACTOR shall regularly remove all accumulated debris and surplus materials. Unused tools or equipment shall be stored at the WATER WELL CONTRACTOR's yard or base of operations.

1.6.3 Periodic Cleaning: The WATER WELL CONTRACTOR shall perform clean-up work on a regular basis and as requested by the ENGINEER.

a. Basic site restoration shall be accomplished immediately following installation or substantial completion, or as directed by the ENGINEER.
b. If the WATER WELL CONTRACTOR fails to perform periodic clean-up and basic restoration of the site to the ENGINEER's satisfaction, the ENGINEER may, upon five days written notice to the WATER WELL CONTRACTOR, employ such labor and equipment as he deems necessary for this purpose, at the WATER WELL CONTRACTOR's expense.

1.6.4 Protection of Water Quality: The WATER WELL CONTRACTOR shall take all necessary precautions to prevent contaminated water, gasoline, or other hazardous substances from entering the ground, either through the well or through seepage from ground surface. The WATER WELL CONTRACTOR shall maintain precautions during and after construction of the well, and until acceptance of the well by the OWNER. If the WATER WELL CONTRACTOR fails to prevent contaminants from entering the groundwater, remedial action, as required by the governing regulatory agencies shall be performed by the WATER WELL CONTRACTOR, at the sole expense of

the WATER WELL CONTRACTOR. A temporary well cap shall be installed on the well casing, when the well is complete, until the baffle box is connected to the well. The Contractor shall ensure the well cap is maintained on the well.

1.6.5 Work Completion and Final Cleanup: Upon completion of work, the WATER WELL CONTRACTOR shall promptly remove all his equipment and unused materials, from the drill site, approved storage areas and approved disposal sites. He shall dismantle any temporary structures erected for his purposes that are not part of the final product. He shall promptly effect minor repairs. The WATER WELL CONTRACTOR shall thoroughly clean the drill site, and approved storage areas. All excess drilling fluids, debris, and other materials used during construction shall be removed and disposed of, by the WATER WELL CONTRACTOR. Mud sumps and other work excavations shall be filled, compacted, graded, and the site returned to a condition equal to or better than its condition at the start of the work. These requirements must be completed within one month after the completion of drilling and testing.

PART 2 PRODUCTS

Products are listed and described throughout Part 3 Execution. Products shall conform to all requirements of Part 1 General.

PART 3EXECUTION

3.1 GENERAL

Changes from the specifications as permitted by FDEP, shall require FDEP concurrence and written approval via a permit modification if deemed necessary by FDEP. All changes from FDEP permit specifications require notification and concurrence from FDEP.

The work shall be performed by a competent crew with equipment that is adequate to complete all phases of well construction.

The depths and lengths for boreholes and casings shall be as shown on the drawings, unless otherwise determined by the ENGINEER. Payment will be based on actual quantities furnished, installed, or constructed, in accordance with the schedule of values.

All work required to be repeated, resulting from the WATER WELL CONTRACTOR's performance, or lack thereof, including all additional materials, labor and equipment required, shall be furnished at the expense of the WATER WELL CONTRACTOR. No claim for additional compensation shall be made or allowed, except as specifically provided herein.

Well drilling shall begin after approved maintenance of traffic, if applicable.

3.2 DRILLING AND REAMING OPERATIONS

3.2.1. Drilling: The WATER WELL CONTRACTOR shall take all measures necessary to protect the top portions of the test hole from caving or raveling.

3.2.1. Centralizers: Verification of the casing to be centered shall be done. Centralizers shall be used on the pipe to ensure the alignment of the casing and an even distribution of grout around the casing. Centralizers shall be placed every 20 feet.

3.2.2. The first 60 feet, cased part of well, shall be drilled with 6” overdrill. Upon reaching 60 feet or elevation at which the casing will be seated; the open hole shall be drilled. To drill open hole the WATER WELL CONTRACTOR shall center the drill rig in the drilled hole, and drill the open hole at 22 inch diameter.

3.2.3. Rotary Bucket Auger: The drilling fluid shall possess such characteristics as are required to adequately condition the walls of the hole to prevent caving as drilling progresses, and to permit recovery of representative samples of cuttings.

a. Only fresh water from the designated source shall be used in drilling fluids whether employed alone or in combination with drilling additives. Any other drilling additives to be used will require acceptance by the ENGINEER.
b. The WATER WELL CONTRACTOR shall maintain complete control over drilling fluid characteristics during the entire operation of well construction. If proper control of the drilling fluid is not maintained, the WATER WELL CONTRACTOR may be required, at the WATER WELL CONTRACTOR's expense, to retain or employ an experienced, qualified mud engineer on the job during all operations, to supervise and maintain drilling fluid characteristics.
c. The WATER WELL CONTRACTOR shall provide holding tanks for handling the drilling fluid. The WATER WELL CONTRACTOR shall provide adequate protection for the public at all times. Upon completion of the drilling, drilling mud and cuttings from the well shall be removed from the approved staging site and disposed of by the WATER WELL CONTRACTOR. The ground surface shall be restored to its original condition.
d. All additives shall be approved by the ENGINEER, prior to use.
e. If large boulders are encountered that are larger than the bucket, the use of common drilling tools, orange-peel bucket, or stone tongs shall be used to remove the boulder.

3.2.4. Drilling Method: The well shall be drilled using the Rotary Bucket Auger Method. Alternative methods can be submitted with the FDEP Construction permit. Alternative method has to be approved by ENGINEER also.

3.3 CASING

3.3.1Casing Installation: When the reaming operation has been completed, casing will be installed. The casing lengths will be 20 feet sections.

3.3.2 Seating Casing: Casing seat request shall be sent to FDEP (David Rhodes, Ft. Myers Office) along with lithology description. Seat request shall include the requested casing seat elevation. Casing to be set only with FDEP approval.

3.3.3 PVC Casing: The casing shall be un-plasticized PVC compounds having a minimum cell classification of 12454-B, as defined in ASTM D 1784. PVC pipe used for well construction or repair shall at a minimum meet the specifications for Standard Dimension Ratio (SDR) 21. All PVC pipe used for well casing shall be new, factory assembled in 20-foot lengths. Shorter pieces will be allowed at the end of the casing if required to ensure the 60 feet of casing is provided. Amount of casing installed shall account for the overlap of bell ends that are on the casings when joined. The CONTRACTOR shall install additional casing to account for the bell ends so that the designed depth of 60 feet is obtained**. Additional casing shall be readily available if more than 60 feet is required to seat the casing.**

3.3.4 Tension: The casing shall be suspended in tension from the surface. The bottom of the casing shall be at a sufficient distance above the bottom of the reamed hole as to insure that none of the casing will be supported from the bottom of the hole. The casings shall be lowered into the borehole open-ended, and the weight of the casing shall be supported by the drilling rig. The hook load of the drilling rig must exceed the maximum casing weight to be encountered during construction of the well. The method used to join the casings together, shall be able to withstand the tension pressures without separation during the casing installation procedure.

3.3.5 Failure to Complete: If the casing cannot be landed in the correct position or at a depth acceptable to the ENGINEER, the WATER WELL CONTRACTOR shall construct another well immediately adjacent to the original location, and complete this well in accordance with the **Civil Construction Drawings, Details**, and **Technical Specifications**. The abandoned hole shall be permitted and approved before being sealed, in accordance with all State of Florida regulations.

3.3.6 Collapsed Casing: Should the casing collapse for any reason prior to well completion, FDEP shall be notified. Casing can be withdrawn and replaced at the WATER WELL CONTRACTOR's expense only after FDEP approval.

3.4 GROUTING OF CASING

3.4.1 General: After installation of the casing, the annular space between the borehole wall and the casing shall be filled with cement grout from the bottom of the casing to the ground surface. The cement shall be pumped as a slurry of thoroughly mixed components, in stages that are designed to fill the annular space without exceeding the collapse pressure of the casing pipe to which the cement is applied. It is the WATER WELL CONTRACTOR's responsibility to conduct the cementing operations in such a manner that the burst/collapse strengths of the casing (with safety factor) are not exceeded and casing failure does not occur. Cement will be pumped or placed so that the pressure of the slurry and the pressure applied inside the casing pipe do not affect the bond.

A cement basket shall or packer assembly shall be used at the bottom of the casing to provide a seal for the grout on the bottom of the annulus.

Grout shall be placed into the annular space using the pressure grouting technique using a tremie pipe. The grout shall be pumped under pressure from the bottom of the casing. In the event the borehole collapses prior to placement of the grout seal, the WATER WELL CONTRACTOR shall take whatever steps are necessary to re-open the hole and place the seal as specified.

Material used in the casing seal shall be neat cement grout, consisting of Type I or Type III Portland cement, conforming to ASTM C-150. Neat cement grout shall contain between 5.0 and 6.0 gallons of water per 94-pound sack of cement, with a slurry density of 15.0 to 15.5 lbs/gallon. .

Additives may be added to the sealing material to speed the setting time or expand the material. Additives shall not exceed the follow:

- Not more than 2 percent, by weight, calcium chloride.
- Not more than 4 percent, by weight, bentonite.

No other additives will be allowed, unless approved by the Department, in writing, prior to use.

The WATER WELL CONTRACTOR will be responsible for adding or releasing water from the casing to maintain the required pressure.

Minimum setting time between stages is 8 hours, if more than one stage is required. The well shall remain undisturbed for at least 24-hours after cementing of the casing is complete.

3.5 PVC CASING JOINTS

3.5.1 PVC Casing Joints: Where specified, casing joints shall be attached in accordance with the requirements of ASTM F-480. Pipe shall be joined using a pipe cement that meets the requirements of ASTM D-2564. No external pipe-to-pipe restraining devices that clamp onto or otherwise damage the pipe surface as a result of point-loading shall be permitted. The CONTRACTOR is responsible for ensuring the suitability of all connections for the well casing string and associated work.

3.6 DISPOSAL

3.6.1 Water Disposal: The WATER WELL CONTRACTOR shall remove all pumped water and Spoils produced during reverse air drilling, well development, and testing, from the well site to an FDEP approved location. The WATER WELL CONTRACTOR shall design a system that protects the site from erosion. The system shall settle the discharge water so that turbidity is 0 NTU. The WATER WELL CONTRACTOR shall be responsible for meeting local, state and federal requirements for discharge of water produced during drilling, development, and testing.

a. The WATER WELL CONTRACTOR shall conform to all waste discharge requirements, and shall obtain all required permission, if necessary, to discharge waters into a flood control storm drain. All actions necessary to conform to the discharge requirements shall be performed by the WATER WELL CONTRACTOR, as a part of his scope of work and contract.

b. If necessary to avoid erosion, minimize area flooding, promote settling of turbid water, conform to County, City, State or Owner requirements, the WATER WELL CONTRACTOR shall be responsible for providing on-site tanks or a constructed basin of sufficient size and construction to accommodate development and pumped discharge from the well. The tanks or basin shall be constructed with baffles to encourage sediment settlement.
c. Discharge piping shall be equipped with an in-line meter with 6-digit, straight reading totalizer, registering in units of 100 gallons, together with a rate of flow indicator dial, which reads in units of gallons per minute, and is suitable for the expected flow range. Any necessary crossings over discharge piping shall be constructed and maintained by the WATER WELL CONTRACTOR.

3.6.2 A Cuttings, fluids and mud Disposal Plan will need to be submitted and approved by FDEP prior to construction of the wells. A letter from the property owner indicating understanding and acceptance of the materials onto the property will be required.

PART 4PAYMENT

4.1 GENERAL

No final payment will be made until Well Certificates are submitted to applicable permitting agencies and certified as-builts are received. Payment for work specified in this section will be made per computation of quantities as indicated for each item and shall be considered full compensation for furnishing all labor, materials, and equipment to complete the work as specified under this section.

WELL AND PUMP DATA

Location of Well

County	Township Number	Range Number	Section No.	Fraction	
Township	N or S	E or W			¼ ¼ ¼

Street Address and City or Distance and Direction from Road Intersections

Property owner's name and address

Show exact location of well in section grid with an 'x' **Sketch map of well location**

N

S

1 mile

Addition Name

Block Number

Lot Number

Remarks, Elevation, Source of Data, etc.

Well depth | **Datum point from which all measurements are taken**

Method of Drilling

☐ Cable tool ☐ Hollow rod ☐ Driven ☐ Dug
☐ Direct rotary ☐ Air rotary ☐ Bucket auger ☐ _____
☐ Reverse rotary ☐ Jetted ☐ Flight auger

Use

☐ Domestic ☐ Public supply ☐ Industrial ☐ _____
☐ Irrigation ☐ Municipal ☐ Commercial
☐ Test Well ☐ Heating or cooling ☐ Monitoring

Casing Type

☐ Steel ☐ Threaded Height above/below surface _____
☐ Galv. ☐ Welded
☐ PVC ☐ Solvent welded Drive shoe? Yes ___ No ___
☐ SS

			Hole diameter
____ in to ____ ft	Wgt ____ lb/ft	Sch. No. ____	____ in to ____ ft
____ in to ____ ft	Wgt ____ lb/ft	Sch. No. ____	____ in to ____ ft
____ in to ____ ft	Wgt ____ lb/ft	Sch. No. ____	____ in to ____ ft

Borehole data

Formation Log	Color	Hardness	From	To

Intake Portion of Well

Screen type _____ or open hole from ____ ft to ____ ft
Manufacturer _____
Material _____ Dia. _____
Fittings _____ Length _____
Set between ____ ft and ____ ft Slot _____
____ ft and ____ ft Slot _____
____ ft and ____ ft Slot _____
Method of installation _____

Filter Pack

Source _____ Gradation _____
Method of installation _____ Composition _____
Volume used _____ Depth to top of f.p. _____

Grout

Used? ☐ Yes ☐ No Volume used _____
☐ Neat Cement ☐ Bentonite ☐ _____
Method of installation _____
Depth: from _____ ft to _____ ft
from _____ ft to _____ ft

Development

Method _____ Duration _____
Dates _____ Sand content after ___ hrs _____
Chemicals used _____

Static Water Level

____ ft ☐ below ☐ above grade
Date measured _____

Pumping Water Level

____ ft ☐ below ☐ above grade Date _____
After _____ hrs pumping at _____ gpm

Specific Capacity

_____ gpm/ft of drawdown at _____ hours
Date _____

Pump

Date installed _____ Type _____
Manufacturer _____ Model No. _____
H.P. _____ Volts _____ Capacity _____
Depth of pump intake setting _____ No. of stages _____
☐ Oil ☐ Water lubrication Power source _____
Material of drop pipe _____, bowls _____,
shafting _____, impellers _____ Bowl dia. _____
Column pipe dia. _____ Length _____ Modifications _____

Well Head Completion

☐ Pitless adaptor ☐ Basement offset Distance above grade _____

Nearest Sources of Possible Contamination

____ ft Direction _____ Type _____
Well disinfected upon completion? ☐ Yes ☐ No

Geophysical Logs Run

Contractor Name and Address

Name of Driller _____
State License Number _____

Water Quality

Sample taken? ☐ Yes ☐ No
Where analyzed _____

Date well completed _____

SECTION 02575
SURFACE RESTORATION

PART 1 GENERAL

1.1 WORK INCLUDED

A. This section covers the work necessary to install or replace all pavement, curbs, sidewalks, rock surfacing, and other street features damaged either directly or indirectly by the operations incidental to the construction described in other Sections of these Specifications, or required for new installations.

B. Where the materials, construction procedures, degree of compaction of materials, and the method of control and testing, as required in these Specifications differ from the FDOT requirements, the more stringent requirements shall apply.

C. Cold patch asphalt required for temporary restoration or “make safe” measures is included in TRENCH EXCAVATION AND BACKFILL.

D. Provide finished gradation and grassing in accordance with FINISH GRADING AND GRASSING.

E. Submittals are required for all products identified in this section.

F. The term "Standard Specifications" is used; such reference shall mean the most current edition of Florida Department of Transportation Standard Specification for Road and Bridge Construction. The Standard Specifications shall be considered as part of this section of the Specifications; below are Listed references for the contractor’s convenience; the contractor shall be responsible for obtaining and incorporation in the contract all of the Standard Specification’s and the most current revisions that apply to this contract scope of work. The contractor shall document in his daily reports the required Standard Specifications that are used.

G. Any reference of the following “FDOT”, “Agency” “Engineer” in the References; shall be considered to be the Owner (City of Key West) for this contract. Disregard all Basis of Payments in the FDOT specs. Payment shall be as per the Contractors Bid prices

H. Listed Reference(s):

1. 105 QC GENERAL SS1050000
2. 230 LIMEROCK STABILIZED BASE
3. 234 SUPERPAVE ASPHLAT BASE SS2340000
4. 300 PRIME AND TACK COATS FOR BASE COURSES
5. 300 SS3000203
6. 327 MILLING OF EXISTING ASPHALT
7. SUPERPAVE ASPHALT CONCRETE SS3340000
8. 700 HIGHWAY SIGNING
9. 710 PAINTED PAVEMENT MARKINGS
10. 711 THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS

11. 911 LIMEROCK MATERIAL FOR BASE AND STABILIZED BASE
12. 914 MATERIALS FOR SUBGRADE STABIZATION SS9140000
13. 971 TRAFFIC MARKING MATERIALS

PART 2 PRODUCTS

2.1 GENERAL

A. All materials for replacement of existing base course and asphalt surfacing shall conform to the FDOT Specifications except as modified herein.

B. The CONTRACTOR will be responsible for furnishing satisfactory materials that meet the Specifications and shall make such tests during the course of the work as are necessary to assure that the quality of the material used meets the Specifications.

2.2 RELATIVE COMPACTION

A. "Relative compaction" is defined as the ratio, in percent, of the as-compacted field dry density to the laboratory maximum dry density as determined by ASTM D1557. Corrections for oversize material may be applied to either the as-compacted field dry density or the maximum dry density, as determined by the Engineer.

2.3 OPTIMUM MOISTURE CONTENT

A. "Optimum moisture content" shall be determined by the ASTM standard specified to determine the maximum dry density for relative compaction. Field moisture content shall be determined on the basis of the fraction passing the 3/4-inch sieve.

2.4 LIME ROCK BASE COURSE

A. Aggregate quality and gradation shall confirm to Section 911 of the FDOT Standard Specifications for Road and Bridge Construction.

2.5 IMPORTED BASE COURSE ACCEPTANCE

A. Imported base course materials specified in this section are subject to the following requirement:

1. All tests necessary for the Contractor to locate an acceptable source of imported material shall be made by the Contractor. Certification that the material conforms to the Specification requirements along with copies of the test results from a qualified commercial testing laboratory shall be submitted to the Engineer for acceptance at least 10 days before the material is required for use. All material samples shall be furnished by the Contractor at the Contractor's sole expense. Samples shall be representative and be clearly marked to show the source of the material is required for use. All material samples shall be furnished by the Contractor at the Contractor's sole expense. Samples shall be representative and be clearly marked to show the source of the material and the intended use on the project. Sampling of the material source shall be done by the Contractor in accordance with ASTM D75. Notify the Engineer at least 24 hours proper to sampling. The Engineer may, at the Engineer's option, observe the sampling

procedures. Tentative acceptance of the material source shall be based on an inspection of the source by the Engineer and/or the certified test results submitted by the Contractor to the Engineer, at the Engineer's discretion. No imported materials shall be delivered to the site until the proposed source and materials tests have been tentatively accepted in writing by the Engineer. Final acceptance will be based on tests made on samples of material taken from the completed and compacted course. The completed course is defined as a course or layer that is ready for the next layer or the next phase of construction.

2. Gradation tests by the Contractor shall be made on samples taken at the place of production prior to shipment. Samples of the finished project for gradation testing shall be taken from each 1,500 tons of prepared materials or more often as determined by the Engineer, if variation in gradation is occurring, or if the material appears to depart from the Specifications. Test results shall be forwarded to the Engineer within 48 hours after sampling.

3. If tests conducted by the Contractor or the Engineer indicate that the material does not meet Specification requirements, material placement which does not meet Specification requirements, material placement will be terminated until corrective measures are taken. Material which does not conform to the Specification requirements and is placed in the work shall be removed and replaced at the Contractor's sole expense. Sampling and testing performed by the Contractor shall be done at the Contractor's sole expense.

2.6 BITUMINOUS PRIME AND TACK COAT

A. Prime Coat: Material shall be cutback asphalt, Grade RC-70 or RC-250 meeting FDOT Specification 916-2, or other material acceptable to the ENGINEER and meeting FDOT Specifications.

B. Tack Coat: Material shall be emulsified asphalt, Grade RS-2, SS-1, or SS-1H meeting requirements of FDOT Specification 916-4.

2.7 CUTTING EXISTING PAVEMENT

A. Where new pavement abuts existing pavement, the old pavement shall be trimmed by saw cutting to a straight line. Any pavement outside the limits of the work during construction which has been damaged or which is broken and unsound or undermined shall be removed to provide a smooth, sound edge for joining new pavement at no cost to the city.

2.8 ASPHALT CONCRETE

A. The asphalt concrete shall be Type SP 12.5 as per the drawings in conformance with the most current, FDOT Specifications. Modification for Key West application may be used upon acceptance by the ENGINEER.

B. Aggregate: Asphalt concrete shall meet the requirements of FDOT Specifications.

C. Submit test results from a commercial testing laboratory to the ENGINEER to show that the materials meet the quality and graduation requirements.

2.9 CONCRETE

A. Concrete shall be 3000 PSI concrete and tested every 72 cubic yards.

B. Concrete Forms: All forms for curbs and sidewalks shall be 2-inch dimensioned lumber, plywood, or metal forms. Forms on the face of the curb shall have no horizontal form joints within 7 inches of the top of the curb.

C. Curing Compound: Conforming to Section 925 of FDOT Standard Specifications for Road and Bridge Construction.

D. Reinforcing Steel: Conform to ASTM A615, Grade 60.

2.10 FLOWABLE FILL

A. If the CONTRACTOR chooses to use flow-able fill it must have a minimum / maximum bearing strength of 500 psi as specified in Section 02726, MANHOLE AND MISCELLANEOUS CONCRETE CONSTRUCTION. Placement must meet detailed drawing for trench backfill.

2.11 TRAFFIC STRIPING MARKINGS

A. All traffic striping markings (i.e., lane, edge of pavement, directional, etc.) damaged by the CONTRACTOR during construction shall be replaced with new painted items in conformance with Section 971 of the FDOT Specifications.

B. The CONTRACTOR shall place and maintain temporary striping markings throughout the course of the work until the permanent striping marking is placed on the final roadway surface. Temporary striping shall be 20 miles. As Per FDOT Section 711

C. The Contractor shall place final stripping or marking. Final striping shall be 70 miles, thermo – plastic. As Per FDOT Section 711

PART 3 EXECUTION

3.1 CONSTRUCTION PROCEDURE

A. Trench backfill shall be as specified in Section 02221 TRENCH EXCAVATION AND BACKFILL.

B. Replace all bituminous and concrete pavements damaged or removed under this Contract with asphalt concrete regardless of original type.

C. In addition to the requirements set forth herein, the work shall conform to the applicable workmanship requirements of the state highway or municipal specifications.

3.2 REMOVAL OF PAVEMENT, SIDEWALK, CURBS, AND GUTTERS

A. Removal of all pavement, sidewalks, curbs, gutters shall conform to Section 02221 TRENCH EXCAVATION AND BACKFILL and payment for removal shall be included in that section.

3.3 STREET MAINTENANCE

A. Maintain all trenches as specified under Section 02221 TRENCH EXCAVATION AND BACKFILL.

3.4 SUBGRADE

A. Backfill and compaction of trenches shall be as specified in Section 02221 TRENCH EXCAVATION AND BACKFILL. Shape sub-grade to required line, grade, and cross section. Remove all soft or otherwise unsuitable material disclosed by rolling the sub-grade and replace with suitable material from the excavation. Fill holes and depressions, which develop under the roller, to the required grade and cross sections with material from the excavation. The finished sub-grade shall be within a tolerance of plus or minus 0.08 of a foot of the grade and cross section, and shall be smooth and free from irregularities and at the density of 95 percent ASTM D1557.

3.5 CONSTRUCTION OF BASE COURSE

A. Obtain ENGINEER'S acceptance of the sub-grade prior to placing any base course material on the sub-grade. Place BASE COURSE in maximum 6-inch loose lifts and compact to not less than 98 percent relative compaction.

3.6 BASE COURSE REPAIR

A. General:

1. The base course repair work shall consist of constructing a compacted lime rock base course, of the thickness and width in accordance with the details for the respective application, as shown on the Drawings.

2. All base course repair work shall conform to the grades and cross sections of the existing pavement. The finished grade of the lime rock base shall be level with the existing base course. The lime rock for base construction shall be Miami Lime rock, in accordance with Section 911, FDOT Specifications. The base course shall be constructed in accordance with all applicable provisions of Section 200, FDOT Specifications.

3. If at any time the sub-grade material becomes mixed with the base course materials, the Contractor shall, without additional compensation, dig out and remove the mixture, reshape, and re-compact the sub-grade and replace the materials removed with the clean rock which shall be watered and rolled until satisfactorily compacted.

3.7 DEPTH OF LAYERS

A. The base course shall be constructed in lifts of not more than 6 inches in thickness prior to compaction.

3.8 SPREADING MATERIALS

A. The base course material may be spread by any method that will result in an even distribution of the material upon the roadway without perceptible separation in gradation.

B. Should there occur during any stage of the surfacing or stockpiling, a separation of the coarser from the finer materials causing serious lack of uniformity in the grading, the CONTRACTOR shall immediately make changes in the method of handling such as will prevent separation and meet acceptance of the ENGINEER.

C. Equipment such as scrapers and other equipment essentially used for earth excavation will not be permitted.

3.9 ROLLING

A. Compaction of each layer of base shall be performed in accordance with Section 200 of the FDOT Standard Specifications for Roadway and Bridge Construction.

B. Compaction equipment shall be adequate in design to provide compaction and obtain the specified density for each layer. Water shall be applied as needed to obtain the specified densities at the CONTRACTOR'S sole expense.

C. In-place density and moisture content will be determined by any one, or combination of, the following methods: ASTM D2922, 1556, D2216, or other methods selected by the ENGINEER. Cooperate with this testing work by leveling small test areas designated. Backfill of the test areas shall be at the CONTRACTOR'S sole expense. The frequency and location of testing shall be a minimum of one test per intersection, with additional test required in the intersection if the original test fails, at the ENGINEERS direction.

D. Each layer of base course shall be placed and compacted to the specified density before a succeeding layer is placed.

E. The CONTRACTOR shall construct the base course in an orderly manner so that a reasonable length of trench will be ready for testing and a reasonable amount of time will be allowed for the ENGINEER to perform tests and obtain the test results during normal working hours.

F. Prior to testing any completed base course, the CONTRACTOR shall show reasonable proof that the completed section meets the requirements specified.

3.10 CORRECTION OF SURFACE DEFECTS

A. Should irregularities develop in any surface during or after rolling, they shall be remedied by loosening the surface and correcting the defects; after which the entire areas, including the surrounding surface, shall be re-rolled until thoroughly compacted. The finished surface shall be true to the proper grade and crown before proceeding with the surfacing.

3.11 SURFACE TOLERANCES

A. The finished surface of the base course at any point shall be within plus or minus 0.04 foot of the grade required to provide the specified pavement thickness.

3.12 MILLING OF EXISTING ASPHALT PAVEMENT

A. Milling of existing asphalt pavement should be in accordance with Section 327 of the FDOT Specifications.

3.13 BITUMINOUS PRIME AND TACK COAT

A. The provisions of FDOT Specifications shall be in effect for the construction of the prime coat.

B. The bituminous prime coat shall be applied to the lime rock base immediately prior to the placement of asphalt concrete.

C. The rate of application of the bituminous prime coat shall comply with FDOT Specifications.

D. The provisions of FDOT Specifications shall be in effect for the construction of the tack coat.

E. The bituminous tack coat shall be applied to existing asphalt surfaces prior to the placement of new asphalt, between layers of asphalt concrete surface courses, surfaces of concrete footings that will come in contact with the asphalt concrete pavement, and vertical faces of all longitudinal and transverse joints that have become compacted or cooled.

F. The rate of application for the bituminous tack cost shall comply with FDOT Specifications.

3.14 ASPHALT CONCRETE PAVEMENT REPLACEMENT

A. Preparation for Paving:

1. A prime coat shall be applied over the full length of the repsir, and asphalt concrete pavement shall not be placed until the prime coat has cured as per the manufacturer's recommendations.

2. Should any holes, breaks, or irregularities develop in the roadway surface after the prime coat has been applied, they shall be patched with asphalt concrete immediately in advance of placing the asphalt concrete.

3. After the maintenance, patching, or repair work has been completed and immediately prior to placing the asphalt concrete pavement, the surface of the prime coat shall be swept clean of all dirt, dust, or other foreign matter.

B. The proposed pavement construction schedule consists of immediately paving over storm drain, sewer line, and sewer service line trenches as soon as possible after it has been determined that sub-base and base have achieved required compactions. The base course will be brought up to the elevations indicated on the Drawings and asphalt placed to bring grade up to match existing pavement elevations.

3.15 ASPHALT CONCRETE PAVEMENT

A. Workmanship in producing, hauling, placing, compacting, and finishing asphalt concrete shall conform to the applicable portions of the FDOT Specifications.

3.16 CONNECTIONS WITH EXISTING FACILITIES

A. Where the bituminous pavement is to be connected with an existing roadway surface or other facility, the CONTRACTOR will be required to modify the existing roadway profile in such a manner as to produce a smooth riding connection to the existing facility. The CONTRACTOR shall meet existing neat lines where required.

B. Where it is necessary to remove existing asphalt surfaces or oil mat surfaces to provide proper meet lines and riding surfaces, the Contractor shall burn or chip the existing surface so that there will be sufficient depth to provide a minimum of 1 inch of asphalt concrete, and the waste material shall be disposed of to the satisfaction of the ENGINEER. Prior to placing the asphalt concrete, these areas shall be tacked. Meet lines shall be straight and the edges vertical. The edges of meet line cuts shall be painted with liquid asphalt or emulsified asphalt prior to placing asphalt concrete. After placing the asphalt concrete, the meet line shall be sealed by painting with a liquid asphalt or emulsified asphalt and immediately covered with clean, dry sand.

3.17 CONSTRUCTION OF COURSES

A. The asphalt concrete pavement shall be constructed in one or more courses as required in the FDOT Specifications.

B. Rolling shall continue until all roller marks are eliminated and the minimum percent compaction stated in the FDOT Specification has been obtained.

3.18 SURFACE TOLERANCE

A. Tests for conformity with the specified grade shall be made by the CONTRACTOR immediately after initial compression. Any variation shall be immediately corrected by the removal or addition of materials and by continuous rolling.

B. The completed surface of the pavement shall be of uniform texture, smooth, uniform as to grade, and free from defects of all kinds. The completed surface shall not vary more than 1/ 8 inch from the lower edge of a 10-foot straightedge placed on the surface along the centerline or across the trench.

C. After completion of the final rolling, the smoothness and grade of the surface shall again be tested by the CONTRACTOR.

D. When deviations in excess of the above tolerances are found, the pavement surface shall be corrected as stated in Section 330-12.4 of the FDOT Standard Specifications for Road and Bridge Construction.

E. All areas in which the surface of the completed pavement deviates more than twice the allowable tolerances described above shall be removed and replaced to the satisfaction of the ENGINEER.

F. All costs involved in making the corrections of defects described above shall be borne by the CONTRACTOR and no compensation will be made for this work.

3.19 SAMPLES

A. If directed by the ENGINEER, the CONTRACTOR shall without additional charge, provide the ENGINEER with test results of samples of asphalt concrete cut from the completed pavement or the individual courses thereof. Provide a minimum of three test cores located as directed by the ENGINEER. He shall also provide the ENGINEER with test results of samples of the uncompressed asphalt concrete mixtures, and all materials incorporated in the work.

3.20 WEATHER CONDITIONS

A. Asphalt shall not be applied to wet material. Asphalt shall not be applied during rainfall or any imminent storms that might adversely affect the construction. The ENGINEER will determine when surfaces and materials are dry enough to precede with construction.

3.22 PROTECTION OF STRUCTURES

A. Provide whatever protective coverings may be necessary to protect the exposed portions of bridges, culverts, curbs, gutters, posts, guard fences, road signs, and any other structures from splashing oil and asphalt from the paving operations. Remove any oil, asphalt, dirt, or any other undesirable matter that may come upon these structures by reason of the paving operations.

B. Where water valve boxes, manholes, catch basins, or other underground utility appurtenances are within the area to be surfaced, the resurfacing shall be level with the top of the existing finished elevation of these facilities. If they are not in accordance with the proposed finished surface elevations the CONTRACTOR shall notify the proper authority and either raise or lower the appurtenances or make arrangements with that authority and either raise or lower the appurtenances or make arrangement with that authority for having the facilities altered before proceeding with the resurfacing around the obstruction. The CONTRACTOR will be responsible for making certain that appurtenances are brought to proper grade to conform with finished surface elevations and any delays experienced from such obstructions will be considered as incidental to the paving operation. No additional payment will be made. Protect all covers during asphalt application.

3.23 EXCESS MATERIALS

A. Dispose of all excess materials in complete compliance with Federal, State and Local Statues. Make arrangements for the disposal and bear all costs or retain any profit incidental to such disposal.

3.24 CONTRACTOR'S RESPONSIBILITY

A. Settlement of replaced pavement over trenches within the 5 year warranty period shall be considered the result of improper or inadequate compaction of the sub-base or base materials. The CONTRACTOR shall promptly repair all pavement deficiencies noted during the warranty period at the CONTRACTOR’S sole expense.

3.25 SIDEWALKS AND CURBS

A. Replace concrete sidewalks and curbs to the same section width, depth, line, and grade as that removed or damaged. The minimum thickness of sidewalks shall be 4 inches. Driveways will be 6". Cut ends of existing curb to a vertical plane. Prior to replacing the sections, properly backfill, and compact the trench to prevent subsequent settlement.

B. Replace concrete sidewalks and curbs between scored joints and make replacement in a manner that will avoid a patched appearance. Provide a minimum 2-inch thick compacted leveling course of clean, crushed rock or gravel of quality herein before specified. Finish concrete surface similar to the adjacent sidewalks while meeting all current codes. Cut back sidewalks as required to ensure transition from existing to new sidewalks meets ADA code.

C. Concrete shall be a 3000 psi minimum rating.

3.26 ASPHALT DRIVEWAYS AND WALKS

A. Replace asphalt driveways and walks in accordance with the specifications.

PART 4 PAYMENT

4.1 GENERAL

A. Payment for the work under this section shall be based on the appropriate unit prices stated in the Contractor's BID. Payment shall be considered full compensation for furnishing all labor, materials, and equipment to complete the work as specified under this section.

B. Payment for replacing sidewalks will be made at the unit price per square yard stated in the BID.

C. Payment for replacing curbs will be made at the unit price per linear foot stated in the Bid.

****

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 GENERAL

A. The CONTRACTOR shall receive and accept the compensation as provided in the BID and the Contract in full payment for performing all operations necessary to complete the work under the Unit Price and Lump Sum portions of this Contract, and also in full payment for all loss or damages arising from the nature of the work, until the final acceptance by the OWNER.

B. The Unit prices stated and Lump Sums stated in the BID include all costs and expenses for performing and completing the work as ordered and as shown on Contract Drawings, details, technical specifications, and specified herein. Measurement and payment for an item at a Unit Price or Lump Sum shown in the Proposal shall be in accordance with the description of the item in this section.

C. The CONTRACTOR'S attention is called to the fact that the quotations for various items of work are intended to establish a total price for completing the work in its entirety. Should the CONTRACTOR feel that the cost for an item has not been established in the BID, or this section, he shall include the cost for that work in an applicable BID item, so that this bid reflects his total Unit Prices and Aggregate Sums for completing the work in its entirety. It is the intent of this Contract that the CONTRACTOR provide a completed operating system, and any item required to accomplish this shall be included to establish a total cost.

D. The quantities for payment under this Contract shall be determined by actual measurement of completed items, in-place, and ready for service and accepted by the OWNER, in accordance with the applicable method of payment therefore contained herein. The CONTRACTOR shall designate and provide a representative to be present at, to witness, and to assist in the making of field measurement of payment.

1.2 MEASUREMENT–GENERAL

A. Weighing, measuring, and metering devices used to measure quantity of materials for Work shall be suitable for purpose intended and conform to tolerances and specifications as specified in National Institute of Standards and Technology, Handbook 44.

B. Whenever pay quantities of material are determined by weight, the material shall be weighed on scales furnished by CONTRACTOR and certified accurate by the state agency responsible. A weight or load slip shall be obtained from the weigher and delivered to the OWNER'S representative at the point of delivery of the material.

C. If material is shipped by rail, the car weights will be accepted provided that actual weight of material only will be paid for and not minimum car weight used for assessing freight tariff, and provided further that car weights will not be acceptable for material to be passed through mixing plants.

D. Vehicles used to haul material being paid for by weight shall be weighed empty daily and at such additional times as required by ENGINEER. Each vehicle shall bear a plainly legible identification mark.

E. All materials which are specified for measurement by the cubic yard "measured in the vehicle" shall be hauled in vehicles of such type and size that the actual contents may be readily and accurately determined. Unless all vehicles are of uniform capacity, each vehicle must bear a plainly legible identification mark indicating its water level capacity. All vehicles shall be loaded to at least their water level capacity. Loads hauled in vehicles not meeting the above requirements or loads of a quantity less than the capacity of the vehicle, measured after being leveled off as above provided, will be subject to rejection, and no compensation will be allowed for such material.

F. Units of measure shown on the Proposal shall be as follows unless specified otherwise.

Item	**Method of Measurement**
CY	Cubic Yard: Field Measure by ENGINEER within the limits specified or shown
EA	Each: Field Count by ENGINEER
LF	Linear Foot: Field Measure by ENGINEER
LS	Lump Sum: Unit is one; no measurement will be made
SF	Square Foot
SY	Square Yard

1.3 PAYMENT

A. General: Progress payments will be made monthly on the date established at the preconstruction meeting.

B. Payment for all Work shown or specified in the Contract Documents is included in the Contract Price. No measurement or payment will be made for individual items except as itemized herein as unit price items or lump sum.

1.4 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

A. Payment will not be made for following:

1. Loading, hauling, and disposing of rejected material.
2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
3. Rejected loads of material, including material rejected after it has been placed by reason of failure of CONTRACTOR to conform to provisions of Contract Documents.
4. Material not unloaded from transporting vehicle.
5. Defective Work not accepted by OWNER.
6. Material remaining on hand after completion of Work.

1.5 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless Shop Drawings are acceptable to ENGINEER and materials are properly stored at a site as agreed to by the OWNER.

B. Final Payment: Will be made only for products incorporated in Work; remaining products, for which partial payments have been made, shall revert to CONTRACTOR unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

PART 2 DESCRIPTION OF PROPOSAL ITEMS

2.1 **BID SCHEDULE A**

A. Bonds, BID Item No.1:

Paid on request with copy of invoice provided to city.

B. Mobilization / Demobilization, General & Supplementary Conditions Environmental and Erosion Control , MOT, Certified AutoCAD as-Builts, Grant Requirements and FDEP class V well permits- Proposal Item No.2:

1. Payment for these Items will be made on a lump sum basis as stated.
a.) Mobilization 25 percent following providing pre-construction videos of project site, Construction trailer setup and initiation of construction, remaining balance paid based on percentage complete on each following pay application. Including a NEXTEL (and or equal as used by the contractor) phone with Radio to be provided to the City Inspector with the contractors contacts provided.
b.) Demobilization / Contract Close out paid on completion of final punch.
c.) General & Supplementary Conditions including environmental and erosion control; Gravity Well Class V Permitting; paid on Mobilization 25 percent, remaining balance paid based on percentage complete on each following pay application.
d.) MOT; paid on Mobilization 25 percent, remaining balance paid based on percentage complete on each following pay application. Item shall not be paid if MOT signs are not in good repair and lighted at all times.

e.) Certified AutoCAD AS-Builts/ Surveyor; paid on completion of as-builts following acceptance by the engineer and city.

Note: The CONTRACTOR'S lump sum prices shall include full compensation for all BID Items No.1 and 2; including mobilization, demobilization, cleanup, bonds, insurance, permits, including Class V Well permits, Maintenance of Traffic, all conditions listed in General & Supplementary Conditions, producing certified AutoCAD As-Builts, and health and safety provisions. It shall include a Nextel Phone with the Contractors contact pre-programmed and or other compatible system that is in use by the contractor and acceptable to the city. It shall include all notes for construction noted on the drawings not otherwise provided for in unit bid prices. It shall include all temporary facilities required by the CONTRACTOR for the duration of construction including the movement of all equipment and materials to and from the site and acceptable cleanup of the project area upon completion of the work. It shall include the complete cost of pre-construction videos of project site.

C. Trench Excavation, Backfill and Storm Pipe – BID Item No.3:

1. Payment for PVC and ADS storm sewer pipe will be based upon the unit prices per linear foot as stated in the Proposal. Payment for pipe will be based on the actual number of feet installed.

2. The unit price per linear foot shall constitute full payment for the pipe, in-place, including but not limited to, removal and proper disposal of old pipe, cleaning, and inspection, backfill material for pipe bedding and pipe zone, backfill material to fill the difference of the existing and new pipe invert elevations, and all other work specified. Cost shall include ADS Modified Tee & Cover Detail #5 Sheet C-17, including the ring and cover and concrete collar

3. Payment for work specified in this section will be made at the unit prices per linear foot stated in the BID and shall be included under the following items.

4. Payment for trench excavation and backfill will be on a linear foot basis for the depth of the trench from the original ground surface to the invert elevation of the pipe. The payment per linear foot will be the amount stated in the BID. The depth of trench will be measured from the ground surface at the centerline of the trench to the invert of the pipe. The depth of trench will be measured at intervals of 25 feet along the centerline of the trench, and the depth of each measuring point will be the depth used for computing the depth of trench for a distance of 25 feet ahead of the point of measurement. The depth figures indicated in the Proposal are inclusive to the nearest 0.1 foot; that is, a trench depth measured as 11.9 feet will be paid for at the unit price for excavation 10 to 12 feet deep. A trench depth measured as 12.0 feet will be paid for at the unit price for excavation 12 to 14 feet deep. The length of trench will be measured horizontally from center-to-center of structures. Payment for trench excavation and backfill shall cover all materials, including lime rock backfill, sheeting left in-place, and all work specified herein, or not specifically paid for in

other sections, except foundation and pipe zone geotextile fabric stabilization, which will be paid for as a separate item. Payment will include the cost for required compaction testing.

5. No separate payment will be made for preparation of right-of-way, disposal of waste material, removal of obstructions, pavement, curb and sidewalk removal, replacement of damaged storm sewer pipe and structures, water distribution service, shoring, sheeting and bracing of trenches, control and removal of ground water, location of excavated materials, brick removal, or temporary trench pavement, removal and disposal of existing pipe, bypass pumping, traffic control, but will be considered incidental and all costs thereof shall be included in the unit prices stated in the Proposal.

6. No payment for TRENCH EXCAVATION AND BACKFILL will be made unless all required backfill requirements are met.

7. Payment for complying with the State of Florida Trench Safety Act (TSA) for work items associated with the installation of the pipe will be paid for at the unit price times the lineal feet of pipe installed.

8. Payment for providing all labor, materials, and equipment for installing square footage of special shoring required for this project regardless of type, will be paid for from the lump sum amount established by the CONTRACTOR for this purpose. Such an amount represents the amount the CONTRACTOR feels is necessary to provide special shoring that complies with the Trench Safety Act. Any portion of this fund remaining after all payments have been made will remain with the CONTRACTOR. Conversely, no requests for additional reimbursement will be approved. Payment made under this item will be a monthly percentage corresponding to the percentage of work completed and paid for under this item. It is the contractors responsibly to comply with the laws and regulations pertaining to the Florida Trench Safety Act. Any cost for any engineering, material, labor, and administrative cost shall be considered included in the proposal cost for this line item.

9. Contractor shall perform Lamping of all the installed stormwater pipes prior to establishing flow to the associated gravity injection well. No Final payment for the pipe installation shall be made until lamping is complete. The contractor shall supply all the equipment necessary for the lamping (i.e. lamps, ladders).

10. Payment shall included in this line item for the final acceptance and final structure to structure inspection by the ENGINEER of the storm sewers system, completely flush or clean all parts of the system. Remove all accumulated construction debris, rocks, gravel, and other foreign material from the storm sewers system at or near the closest downstream manhole. If necessary, use mechanical rodding equipment to remove accumulated mud, silt, and all other deposits from the storm sewer system at no additional cost to the OWNER.

D. Pavement BID Item No. 4:

1. Asphalt restoration payment and pavement replacement over trenches will be based on the unit price as stated in the BID. Field measurements of areas will be made by the CONTRACTOR, City Inspector and reviewed with the ENGINEER. Payment shall include all labor and materials for milling (dust control), new base preparation and material, testing, placement, traffic control, adjusting utility control boxes, and inlet tops.

2. Asphalt shall be as noted in the drawings and installed as per the standard specifications and drawings.

E. Temp Pavement 20 MILS Striping– BID Item No. 5:

1. Asphalt temporary striping shall be based on the unit price as stated in the Proposal. Field measurements of areas will be made by the CONTRACTOR and reviewed with the City Inspector. Payment shall include all labor and materials for placement of, painting traffic stripes and markings. Contractor shall use FDOT Sections 710; 711; 713 for the application of Striping. Asphalt temporary striping shall be installed within 24 hours of paving. Asphalt temporary striping shall be maintained by the contractor until the installation of the Asphalt final striping.

F. Final Pavement 70 MILS Thermoplastic Striping-BID Item No. 6:

1. Asphalt final striping shall be based on the unit price as stated in the BID. Field measurements of areas will be made by the CONTRACTOR and reviewed with the City Inspector. Payment shall include all labor and materials for placement of the thermo-plastic at 70 MILS; painting traffic stripes and markings. Contractor shall use FDOT Section 710; 711; 713 for the application of Final Striping.

G. Concrete – BID Item No. 7:

1. Payment for work necessary to construct sidewalks, curbs and gutters, and concrete boxes replacement will be included in the Unit Price per each stated in the BID. Payments shall include excavation, backfill, removal and disposal of existing related concrete-asphalt items, and all labor and materials to complete the work. Cost shall include new base as per the details and specification requirements.

I. Catch Basins and Inlets – BID Item No. 8:

1. Payment for work necessary to construct and install inlet boxes will be included in the Unit Price per each stated in the BID for inlet boxes in the respective depth increments. Payments shall include excavation and backfill and all labor and materials to complete the work including the required number of connections of the new storm pipe to the inlet. Cost shall include modification of the box as required

meeting the existing and or new road elevation. See detail in attachments. Contractor shall ensure modifications do not void any manufacture warranties.

2. Inlet boxes depths will be measured from top of inlet frame and grate to the bottom of the structure. Depth will be to the nearest foot. Payment will include compensation for a complete inlet, including concrete apron, base, frame, grate, extensions, channels, removal and disposal of existing inlet boxes, connections to new incoming pipes, flowable fill, Flexible Bollards, and for over excavating and placing the compacted 6-inch layer of base rock under concrete base. All grates shall be H20 Traffic rated. Cost shall include modifying the gate top to match new or existing road elevations as per the detail. Contractor shall provide written certification that the method used does not void any warranties.

J. Removal and Disposal of Existing Inlets/Manholes/Grout Shallow Wells – BID Item No. 09:

1. Payment will include compensation for removal and disposal of existing shallow wells, manhole and/or inlets, cutting and capping incoming pipes, backfill, temporary pavement, and traffic control. This pay item is specific to shallow wells, inlets and manholes which are to be removed and not replaced. The cost for removing existing structures being replaced with new structures shall be included in the cost of the new structures.

K. Stormwater - Sewer Manholes (with liner) - BID Item No. 10:

1. Payment for work necessary to construct manholes will be included in the unit price each stated in the BID for manholes. Payment shall include excavation and backfill and all labor and materials to complete the work including the required number of connections of the new storm-sewer pipe to the manhole and removal of existing manhole.

2. Payment will include compensation for a complete manhole including base, frame and cover, ring extensions, benches, channels, removal and disposal of existing manhole, connections to new storm sewer, and incoming pipes, temporary pavement, and for over excavating and placing the compacted 6-inch layer of base rock under concrete-base.

L. Adjustments and Connections - BID Item No. 11:

1. Payment for sewer FM / water main relocations shall be at the unit price for each installation for the size piping being relocated as stated in the BID. Payment will be made only when indicated on the Drawings, a predig shows a relocation is necessary, or when the ENGINEER directs the CONTRACTOR to complete the relocation. Payment shall include all excavation and backfill, cutting and removing existing pipe, providing up to 75 feet of new pipe, six 45-degree fittings, up to two solid sleeve couplings, restrained joints, disinfection, and temporary pavement restoration, complete. Payment will only be made for the relocation of water mains 4 inches in

diameter and larger. Water mains relocations smaller than 4 inches in diameter shall be considered incidental to the installation of the new pipes and structures and relocated at the sole cost of the CONTRACTOR

2. Payment for connection to existing storm system connection as stated in the BID and in accordance with the detailed drawings C-17 #5. Payment will constitute full compensation for all wok and materials required to make each connection include ADS "T" and ring and cover and all related material, complete.

M. Triple Chamber Baffle Box with Injection Well – Proposal Item No. 12:

1. Payment for work necessary to construct and install triple chamber baffle boxes will be included in the Unit Price per each stated in the Proposal for each box in the respective depth increments. Payments shall include excavation and backfill and all labor and materials to complete the work including the required number of connections of the new storm pipe to the structure, and equipment required to install structure. All internal metal components shall be stainless steel 316.

2. Baffle box depths will be measured from top of manhole frame and grate to the bottom of the bottom slab. Depth will be to the nearest foot. Payment will include compensation for a complete baffle box, including base, frames, grates, extensions, connections to new incoming pipes, skimmers, screens, hydrocarbon boom, turbulence deflectors, well screen, hatches, manhole covers, in-lets as indicated, flowable fill, and for over excavating and placing the compacted 6-inch layer of base rock under the concrete base.

3. This item includes payment for all labor and materials to install the drainage wells and conduct step draw down tests. The unit price includes drilling, dewatering, grouting, and all related site work. The price include sufficient casing for 60 LF of casing from the bottom of the structure into the well.

4. Epoxy Coated Rebar is not required to be used in the pre-cast structures. The rebar must be oxidation free. A submittal from the pre-cast company that the rebar is oxidation free is required.

N. Finish Grading; Pea Stone and Grassing – BID Item No. 13:

1. Payment for the work in this section will be based on the unit price per linear foot as stated in the Proposal. Payment for Pea Stone shall be made for the restoration of Pea Stone parking areas disturbed by the construction. City Inspector shall provide this the area of replacement to the contractor. Pea Stone shall be replaced at a 3" minimum depth. Payment for finish grading and grassing (sod) will be made where trench excavation occurs in grassed areas and as required for new sidewalks. Payment shall include grading, all materials, equipment and labor. Incidental finish grading; pea stone and grassing required to restore areas damaged by the CONTRACTOR'S

activities outside of trench areas are not included in this item and are to be repaired at the CONTRACTOR'S sole expense.

O. Pipe Zone Geotextile Fabric - BID Item No. 14:

1. Payment for geotextile material will be made at the unit price per square yard as stated in the Proposal. Measurement for payment will be made by the ENGINEER and in accordance with the maximum dimensions shown on the Drawings or actual, whichever is less. The amount of geotextile material was determined by the estimated depth of the pipe zone in the trench, plus width of trench and overlap on top of trench, and estimated for the bottom of all structures. Payment shall include all materials, equipment and labor.

P. Foundation Stabilization - BID Item No. 15:

1. Payment for foundation stabilization will be based on the unit price per cubic yard stated in the BID. Measurement for payment shall be limited to the maximum trench width shown on Drawings or actual width, whichever is less, and the depth as measured by the ENGINEER. Payment for this item shall constitute full compensation for all materials, labor, equipment, and incidentals necessary to furnish materials at trench side and for placing and compacting it in the trench and for the extra depth of trench excavation required below the pipe base grade to provide for a stable base for the pipe. This item is to provide for unstable base encountered in the progress of the work and shall be used only under the direction of the ENGINEER and the depth as measured by the ENGINEER

Q. Cut and Cap Grout Existing Storm Pipe - BID Item No. 16:

1. Payment will include compensation for cutting and capping and grout of existing storm pipe, backfill, temporary pavement, and traffic control. This pay item is specific to storm pipes which are not being replaced or removed. The cost for removing existing storm pipe being replaced with new pipe shall be included in the cost of the new pipe.

S. Brick Pavers with ADAAG Detectable Warning System – BID Item No. 17:

1. Payment will include compensation for cutting and replacement of the existing brick pavers, back fill and surface restoration of the disturbed area. The cost for removing existing brick pavers being replaced with new ones shall be included in the cost of the new brick pavers.

T. Pre-Dig for Utility Locations - BID Item No. 18:

1. Payment will include compensation for contractor to pre-dig only at the intersections as shown on the drawings or as approved by the Engineer in writing to locate and verify the utilities that are in the direct area for proposed work. The line item is to

include mobilization, maintenance of traffic, excavation, and surface restoration of the disturbed area.

U. Hydrostatic Testing of Stormwater Pipes and Structures - BID Item No. 19:

1. Payment will include compensation for contractor to conduct hydrostatic testing of the stormwater pipes and structures. The hydrostatic test is to be conducted on all new stormwater pipes and structures installed. The test will start at the baffle box and the first length of pipe; then the second inlet and the associated length of pipe, and then the third inlet and length of pipe until the entire new stormwater pipe and structures have been tested.

2. Procedure-

A. All pipe and stormwater structures shall by hydrostatically tested.
B. Isolate section of piping and structures that the test is going to be completed on by plugging structure inlets and outlets as necessary.
D. The testing medium is clean water. The test section should be filled with water to THE TOP OF THE MANHOLE RING AND COVER.
E. Leakage into or out of each structure or pipe section shall not exceed 0.1 gallon per hour per foot of head above the invert.
F. Repair structures, pipes, and pipe joints that do not meet the leakage test, or do not meet specified requirements for visual inspection.

Prior to final acceptance and final structure to structure inspection by the ENGINEER of the storm sewers system, completely flush or clean all parts of the system. Remove all accumulated construction debris, rocks, gravel, and other foreign material from the storm sewers system at or near the closest downstream manhole. If necessary, use mechanical rodding equipment to remove accumulated mud, silt, and all other deposits from the storm sewer system at no additional cost to the OWNER.

W. Sign Removal and Reinstallation - BID Item No. 20:
Includes all labor, materials, equipment; Contractor shall provide and maintain temporary signs required during construction (Temporary Stop Signs i.e.).

X. Transplant Existing Tree (0-10” DIA.) - BID Item No. 21:
Includes all labor, materials, equipment and maintenance; as per section 02900.

Y. Plant New Tree (0-10” DIA) - BID Item No. 22:
Includes all labor, materials, equipment and maintenance; as per section 02900.

Z. Transplant Existing Tree (over 10” DIA) - BID Item No. 23:
Includes all labor, materials, equipment and maintenance; as per section 02900.

AA Plant New Tree (over 10” DIA) - BID Item No. 24:

Includes all labor, materials, equipment and maintenance; as per section 02900.

BB. Tree Removal (0- 10” DIA) - BID Item No. 25:
Includes all labor, materials, equipment and deposal; as per section 02900.

CC. Tree Removal (over 10” DIA) - BID Item No. 26:
Includes all labor, materials, equipment and deposal; as per section 02900.

2.2 Allowance

A. Should an allowance be set aside, this allowance shall be used only at the discretion of and as ordered by the OWNER for such items: unforeseen conditions, unforeseeable conflicts between existing elements of work and the proposed work, unit price items exceed estimated quantities, and any associated work requested by the OWNER including all labor, materials, and services for modifications or extra work to complete the project that was not anticipated in this Contract. Allowance shall be available for Schedule A and B.

B. Any portion of this allowance that remains after all authorized payments have been made will be withheld from contract payments and will remain with the OWNER.

Prices shall include all notes for construction noted on the drawings and technical specifications not otherwise noted above. It shall include all temporary facilities required by the CONTRACTOR for the duration of construction including the movement of all equipment to and from the site and acceptable cleanup of the project area upon completion of the work. It shall include the complete cost of pre-construction videos of project site.

ADDITIVE ALTERNATES:

New Sub-grade as required; payment for new Sub-grade will be based on the unit price per cubic yard stated in the BID. This item is to provide for unstable base encountered in the progress of the work and shall be used only under the direction of the Owner and the depth as measured by the Owner

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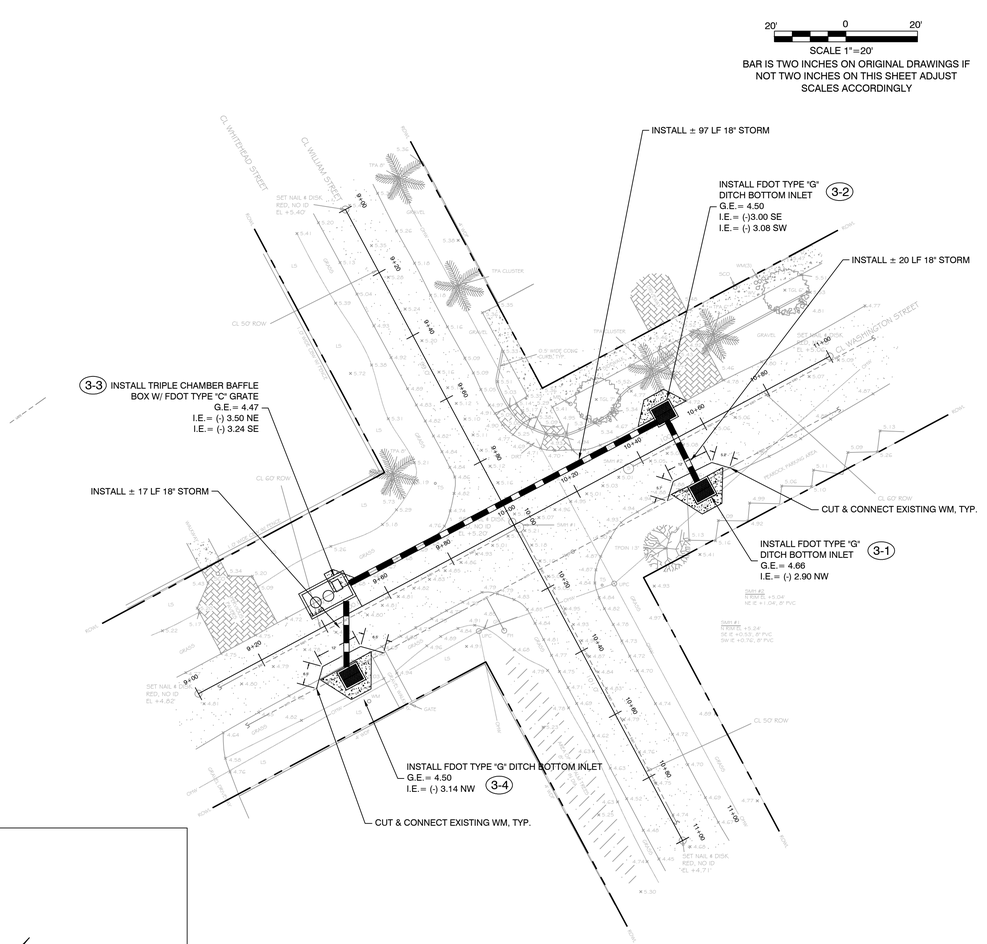
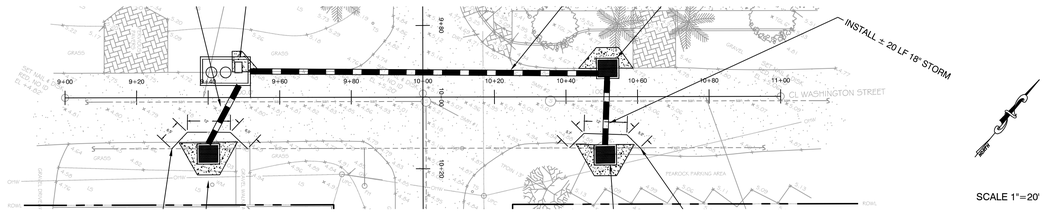


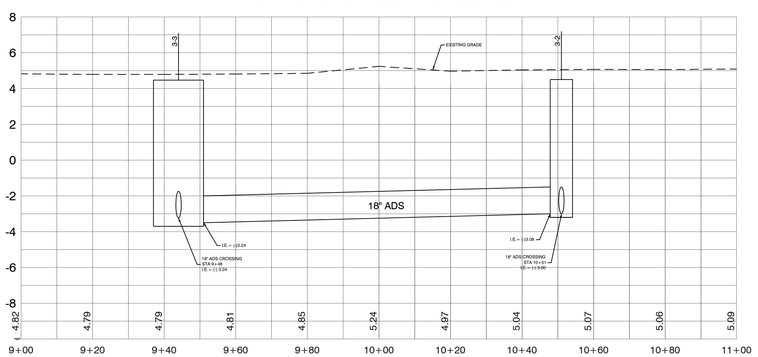
WASHINGTON STREET PLAN VIEW



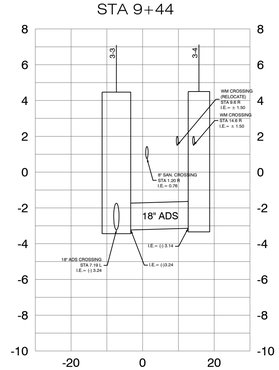
SCALE 1"=20'

Upstream Structure #	Upstream Structure Type	Top Elev (FT.)	Upstream Invert (FT.)	Downstream Structure #	Downstream Structure Type	Top Elev (FT.)	Downstream Invert (FT.)	Pipe Size (in.)	Pipe Type	Length (FT.)	Slope
3-1	FDOT Type "G" Ditch Bottom Inlet	4.66	-2.90	3-2	FDOT Type "G" Bottom Inlet	4.50	-3.00	18	ADS	20	0.50%
3-2	FDOT Type "G" Ditch Bottom Inlet	4.50	-3.08	3-3	Triple Chamber Baffle Box	4.47	-3.50	18	ADS	97	0.43%
3-4	FDOT Type "G" Ditch Bottom Inlet	4.50	-3.14	3-3	Triple Chamber Baffle Box	4.47	-3.24	18	ADS	17	0.59%

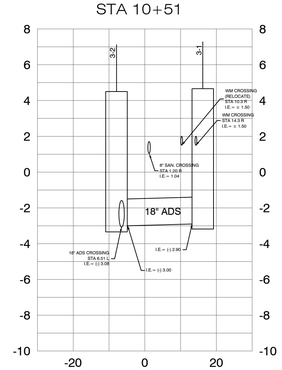
WASHINGTON STREET PROFILE VIEW



WASHINGTON STREET CROSS SECTION STA 9+44



WASHINGTON STREET CROSS SECTION STA 10+51



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1" =4'

NOTE:
1. THE CONTRACTOR SHALL VERFIY ALL STORM SEWER INVERT ELEVATIONS, PRIOR TO ORDERING CATCH BASINS AND BAFFLE BOXES.
2. CONTRACTOR TO SUPPORT POWER POLE(S) ,AS REQUIRED, DURING CONSTRUCTION.
3. FOR WATER MAIN RELOCATION, PLEASE REFER TO F.A.C. RULE 62-555.314 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

LEGEND

- PROPERTY / RIGHT-OF-WAY LINE
- TRIPLE CHAMBER BAFFLE BOX
- STORMWATER INLET
- STORMWATER PIPE
- STORMWATER MANHOLE (S)
- STRUCTURE ID (X-X)
- CONCRETE APRON
- EXISTING GRADE (-5.5')
- EXISTING WATER MAIN (WM)
- EXISTING SAN. SEWER (SAN)
- EXISTING TELEPHONE/CABLE (T)
- LANDSCAPE AREA (SOD)
- ADA DETECTABLE WARNING

NOTE: SYMBOLS IN LEGEND ARE NOT TO SCALE

CIVIL ENGINEERING • REGULATORY PERMITTING • CONSTRUCTION MANAGEMENT

KEY WEST OFFICE
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TEL: (813) 5791616 FAX: (813) 2884710

PEREZ ENGINEERING & DEVELOPMENT, INC
CERTIFICATE OF AUTHORIZATION No. 8579

ALLEN E. PEREZ, P.E.
Florida P.E. NO. 51468
November 12, 2009

REVISIONS:
1. BID PLANS REVISED (PHASE I) 11/10/09
2. BID PLANS REVISED (PHASE 2) 11/13/09
3.
4.
5.
6.

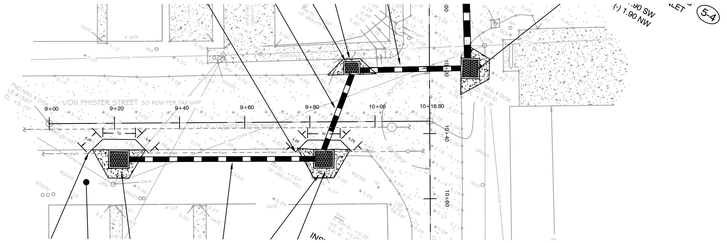
ORIGINAL: DECEMBER 2008

GRAVITY INJECTION WELLS, PHASE V
BID PLANS
WASHINGTON ST. & WILLIAM ST.
PLAN & PROFILE

CITY OF KEY WEST
627 PALM AVENUE
KEY WEST, FLORIDA
(305)292-8161

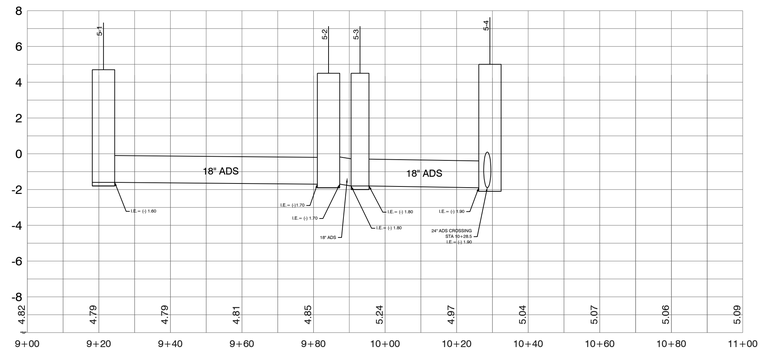
JOB NO. 091023
DRAWN RTM
DESIGNED AEP
CHECKED AEP
QC
SHEET C-3

VON PHISTER STREET PLAN VIEW

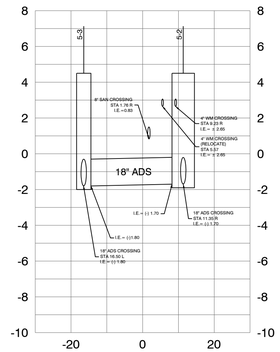


SCALE 1"=20'

VON PHISTER STREET PROFILE VIEW

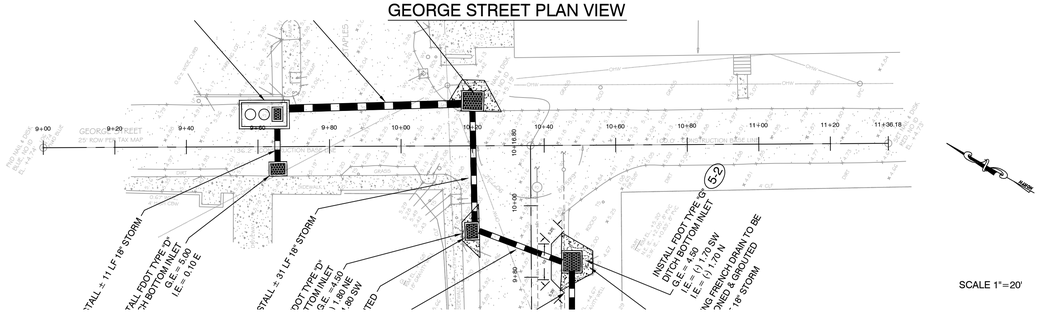


VON PHISTER STREET CROSS SECTION STA 9+88



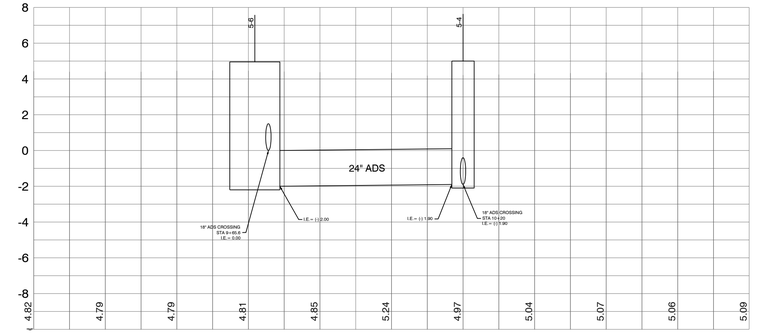
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1" =4'

GEORGE STREET PLAN VIEW

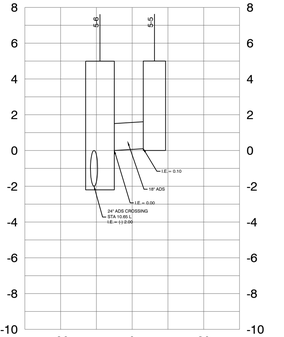


SCALE 1"=20'

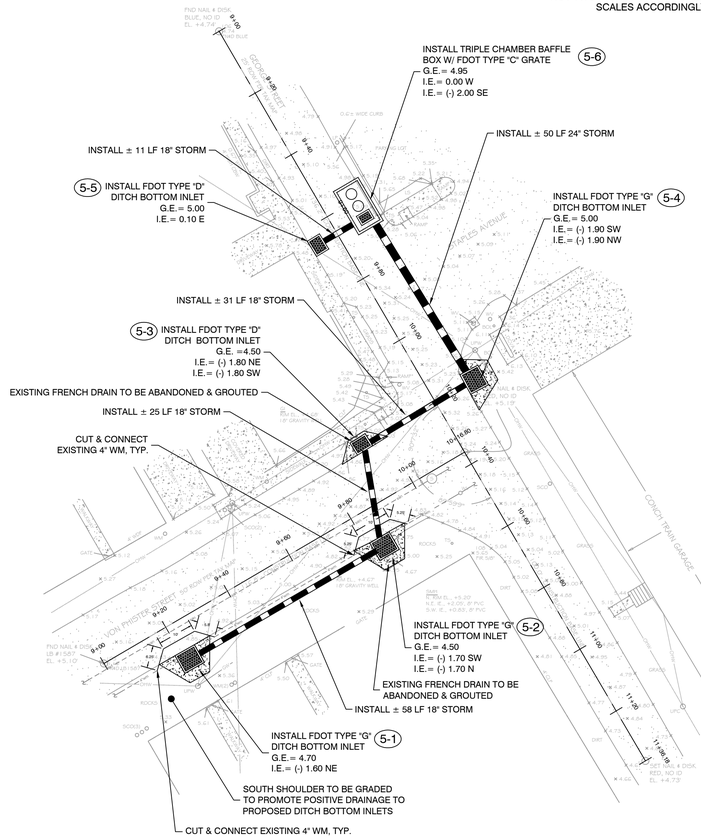
GEORGE STREET PROFILE VIEW



GEORGE STREET CROSS SECTION STA 9+65.6



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1" =4'



20' 0 20'
SCALE 1"=20'
BAR IS TWO INCHES ON ORIGINAL DRAWINGS IF NOT TWO INCHES ON THIS SHEET ADJUST SCALES ACCORDINGLY

Upstream Structure #	Upstream Structure Type	Top Elev (FT.)	Upstream Invert (FT.)	Downstream Structure #	Downstream Structure Type	Top Elev (FT.)	Downstream Invert (FT.)	Pipe Size (in.)	Pipe Type	Length (FT.)	Slope
5-1	FDOT Type "G" Ditch Bottom Inlet	4.70	-1.60	5-2	FDOT Type "G" Ditch Bottom Inlet	4.50	-1.70	18	ADS	58	0.17%
5-2	FDOT Type "G" Ditch Bottom Inlet	4.50	-1.70	5-3	FDOT Type "D" Ditch Bottom Inlet	4.50	-1.80	18	ADS	25	0.40%
5-3	FDOT Type "D" Ditch Bottom Inlet	4.50	-1.80	5-4	FDOT Type "G" Ditch Bottom Inlet	5.00	-1.90	18	ADS	31	0.32%
5-4	FDOT Type "G" Ditch Bottom Inlet	5.00	-1.90	5-6	Triple Chamber Baffle Box	4.95	-2.00	24	ADS	50	0.20%
5-5	FDOT Type "D" Ditch Bottom Inlet	5.00	0.10	5-6	Triple Chamber Baffle Box	4.95	0.00	18	ADS	11	0.91%

NOTE:
1. THE CONTRACTOR SHALL VERFIY ALL STORM SEWER INVERT ELEVATIONS, PRIOR TO ORDERING CATCH BASINS AND BAFFLE BOXES.
2. CONTRACTOR TO SUPPORT POWER POLE(S) ,AS REQUIRED, DURING CONSTRUCTION.
3. FOR WATER MAIN RELOCATION, PLEASE REFER TO F.A.C. RULE 62-555.314 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS

LEGEND
- PROPERTY / RIGHT-OF-WAY LINE
- TRIPLE CHAMBER BAFFLE BOX
- STORMWATER INLET
- STORMWATER PIPE
- STORMWATER MANHOLE
- STRUCTURE ID
- CONCRETE APRON
- EXISTING GRADE
- EXISTING WATER MAIN
- EXISTING SAN. SEWER
- EXISTING TELEPHONE/CABLE
- LANDSCAPE AREA (SOD)
- ADA DETECTABLE WARNING

NOTE: SYMBOLS IN LEGEND ARE NOT TO SCALE

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3507 EAST FOWLER AVE, SUITE 140
TAMPA, FLORIDA 33607
TEL: (813) 579-1616 FAX: (813) 288-0710
PEREZ ENGINEERING & DEVELOPMENT, INC
CERTIFICATE OF AUTHORIZATION No. 8579
ALLEN E. PEREZ, P.E.
Florida P.E. NO. 51468
November 13, 2009

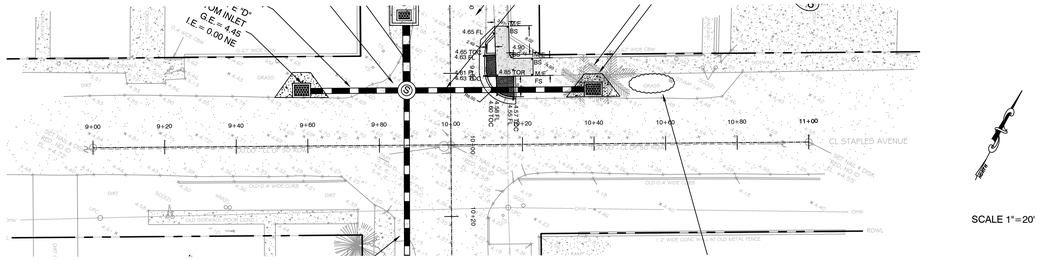
REVISIONS:
1 BID PLANS REVISED (PHASE I) 11/10/09
2 BID PLANS REVISED (PHASE 2) 11/13/09
3
4
5
6
ORIGINAL: DECEMBER 2008

GRAVITY INJECTION WELLS, PHASE V
BID PLANS
Von Phister St., George St., & Staples Ave.
PLAN & PROFILE

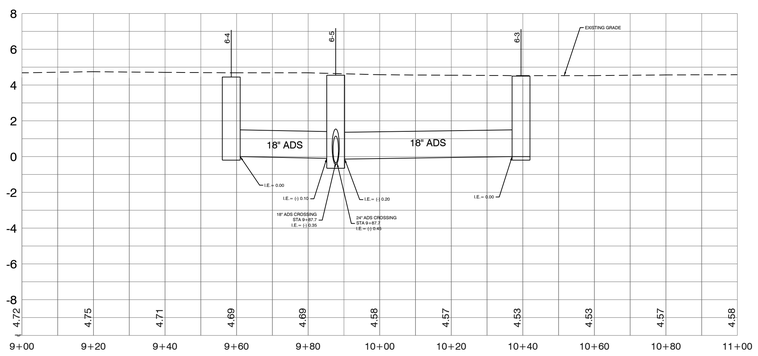
CITY OF KEY WEST
627 PALM AVENUE
KEY WEST, FLORIDA
(305)292-8161

JOB NO. 091023
DRAWN RTM
DESIGNED AEP
CHECKED AEP
QC
SHEET C-5

STAPLES AVENUE PLAN VIEW

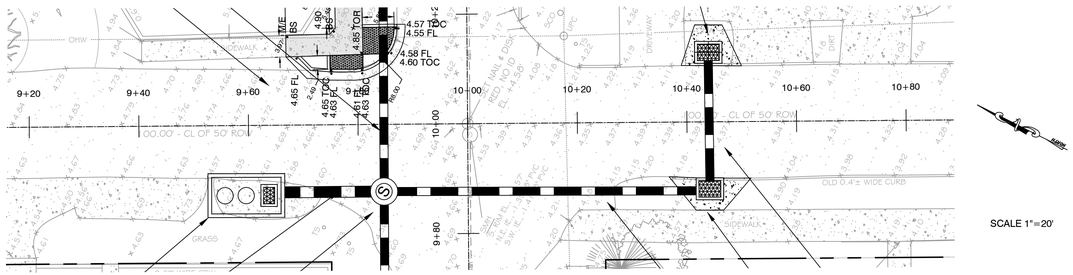


STAPLES AVENUE PROFILE VIEW

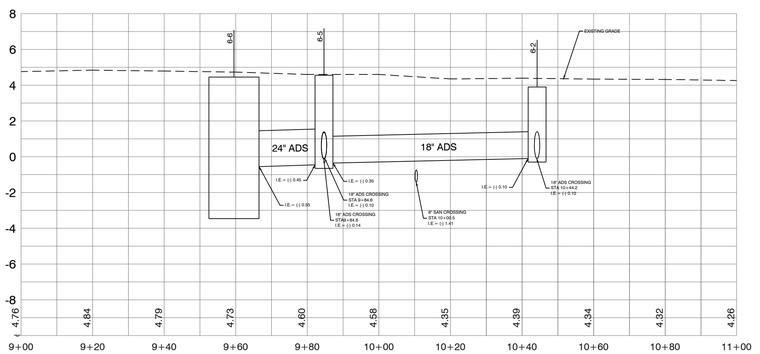


HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1" =4'

SECOND STREET PLAN VIEW

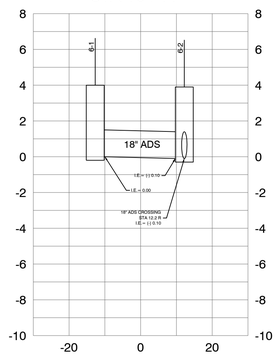


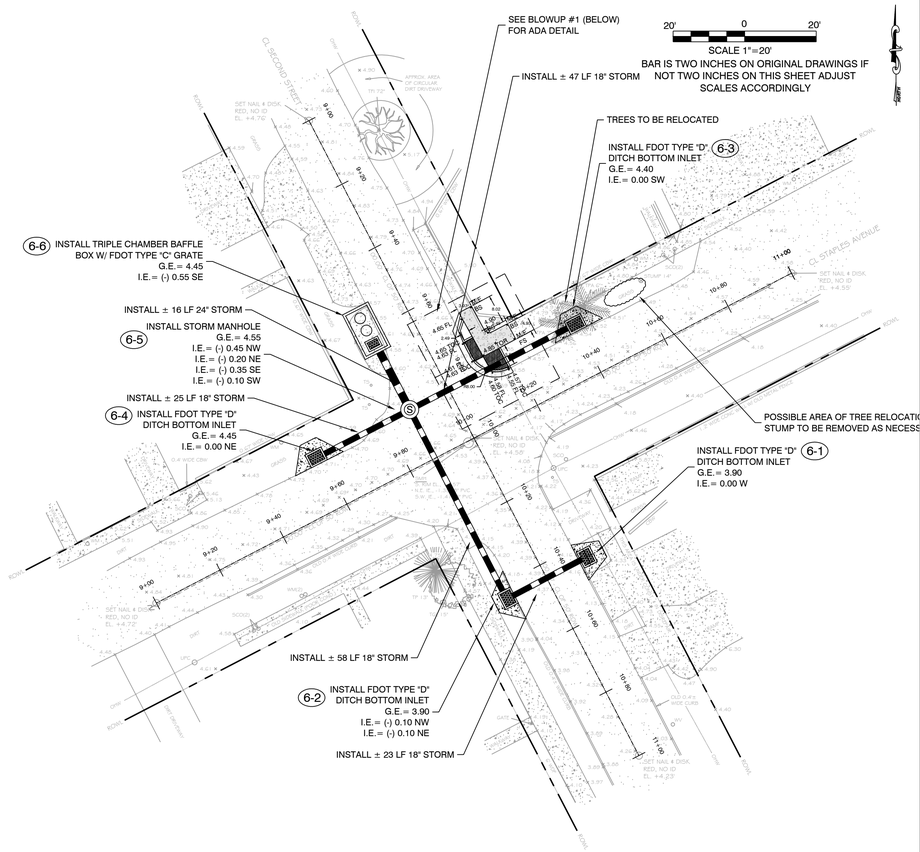
SECOND STREET PROFILE VIEW



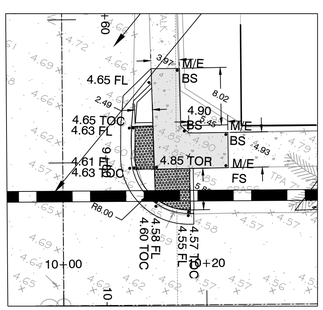
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1" =4'

SECOND STREET CROSS SECTION STA 10+44





Upstream Structure #	Upstream Structure Type	Top Elev (FT.)	Upstream Invert (FT.)	Downstream Structure #	Downstream Structure Type	Top Elev (FT.)	Downstream Invert (FT.)	Pipe Size (in.)	Pipe Type	Length (FT.)	Slope
6-1	FDOT Type "D" Ditch Bottom Inlet	3.90	0.00	6-2	FDOT Type "D" Ditch Bottom Inlet	3.90	-0.10	18	ADS	23	0.43%
6-2	FDOT Type "D" Ditch Bottom Inlet	3.90	-0.10	6-5	Stormwater Manhole	4.55	-0.35	18	ADS	58	0.43%
6-3	FDOT Type "D" Ditch Bottom Inlet	4.40	0.00	6-5	Stormwater Manhole	4.55	-0.20	18	ADS	47	0.43%
6-4	FDOT Type "D" Ditch Bottom Inlet	4.45	0.00	6-5	Stormwater Manhole	4.55	-0.10	18	ADS	25	0.40%
6-5	Stormwater Manhole	4.55	-0.45	6-6	Triple Chamber Baffle Box	4.45	-0.55	24	ADS	16	0.63%



1 Blow Up #1 (ADA Detail)
SCALE: 1"=10'

NOTE:
1. THE CONTRACTOR SHALL VERFIY ALL STORM SEWER INVERT ELEVATIONS, PRIOR TO ORDERING CATCH BASINS AND BAFFLE BOXES.
2. CONTRACTOR TO SUPPORT POWER POLE(S) ,AS REQUIRED, DURING CONSTRUCTION.
3. FOR WATER MAIN RELOCATION, PLEASE REFER TO F.A.C. RULE 62-555.314 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

LEGEND
- PROPERTY / RIGHT-OF-WAY LINE
- TRIPLE CHAMBER BAFFLE BOX
- STORMWATER INLET
- STORMWATER PIPE
- STORMWATER MANHOLE
- STRUCTURE ID
- CONCRETE SIDEWALK
- CONCRETE APRON
- EXISTING GRADE
- EXISTING WATER MAIN
- EXISTING SAN. SEWER
- EXISTING TELEPHONE/CABLE
- LANDSCAPE AREA (SOD)
- ADA DETECTABLE WARNING

NOTE: SYMBOLS IN LEGEND ARE NOT TO SCALE

CIVIL ENGINEERING • REGULATORY PERMITTING • CONSTRUCTION MANAGEMENT

KEY WEST OFFICE
1010 EAST KENNEDY DRIVE, SUITE 400
KEY WEST, FLORIDA 33040
TEL: (305) 293-9440 FAX: (305) 296-0243

TAMPA OFFICE
CONCOURSE CENTER
3507 E. FRONTAGE RD., SUITE 140
TAMPA, FLORIDA 33607
TEL: (813) 579-1616 FAX: (813) 288-0710

PEREZ ENGINEERING & DEVELOPMENT, INC
CERTIFICATE OF AUTHORIZATION No. 8579

ALLEN E. PEREZ, P.E.
Florida P.E. NO. 51468
November 12, 2009

REVISIONS:
1. BID PLANS REVISED (PHASE I) 11/10/09
2. BID PLANS REVISED (PHASE 2) 11/13/09
3.
4.
5.
6.

ORIGINAL: DECEMBER 2008

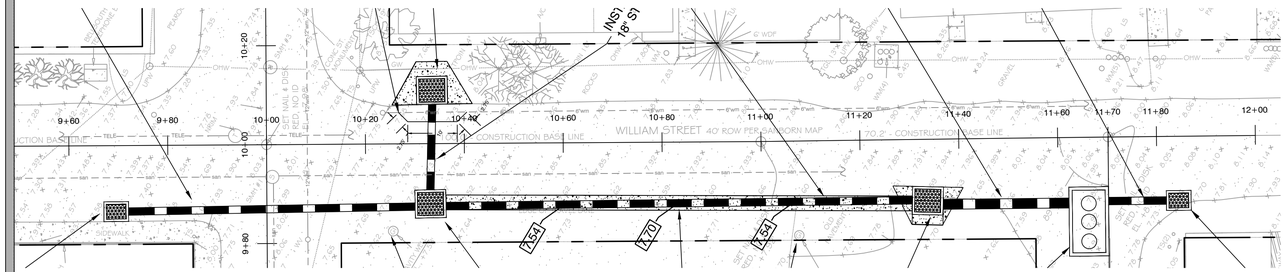
GRAVITY INJECTION WELLS, PHASE V
BID PLANS
SECOND ST. & STAPLES AVE.
PLAN & PROFILE

CITY OF KEY WEST
627 PALM AVENUE
KEY WEST, FLORIDA
(305)292-8161

JOB NO. 091023
DRAWN RTM
DESIGNED AEP
CHECKED AEP
QC
SHEET C-6

Upstream Structure #	Upstream Structure Type	Top Elev (FT.)	Upstream Invert (FT.)	Downstream Structure #	Downstream Structure Type	Top Elev (FT.)	Downstream Invert (FT.)	Pipe Size (in.)	Pipe Type	Length (FT.)	Slope
7-1	FDOT Type "D" Ditch Bottom Inlet	7.50	0.00	7-3	FDOT Type "G" Ditch Bottom Inlet	7.40	-0.10	18	ADS	58	0.17%
7-2	FDOT Type "G" Ditch Bottom Inlet	7.40	0.00	7-3	FDOT Type "G" Ditch Bottom Inlet	7.40	-0.10	18	ADS	18	0.56%
7-3	FDOT Type "G" Ditch Bottom Inlet	7.40	-0.20	7-4	FDOT Type "G" Ditch Bottom Inlet	7.40	-0.50	18	ADS	94	0.32%
7-4	FDOT Type "G" Ditch Bottom Inlet	7.40	-0.60	7-5	Triple Chamber Baffle Box	7.65	-0.70	24	ADS	26	0.38%
7-6	FDOT Type "D" Ditch Bottom Inlet	7.60	1.00	7-5	Triple Chamber Baffle Box	7.65	0.90	18	ADS	12	0.83%

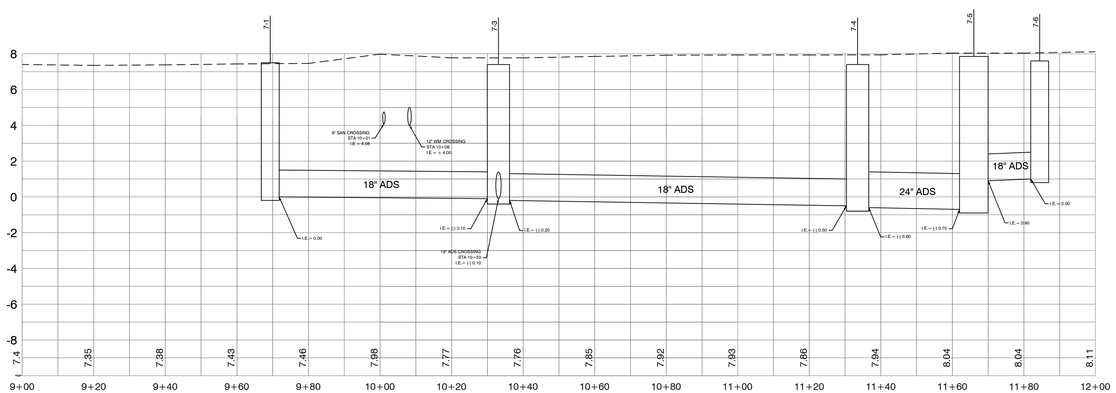
WILLIAM STREET PLAN VIEW



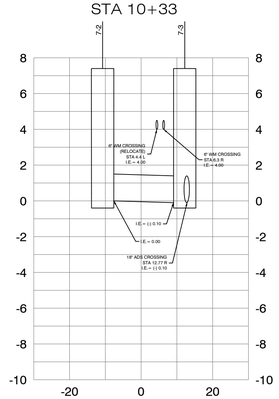
SCALE 1"=20'

REVISION 09-10-09: ADD APPROX. ROW LINES BASED ON SANBORN MAPS, TAX MAPS & OCCUPATION - JM

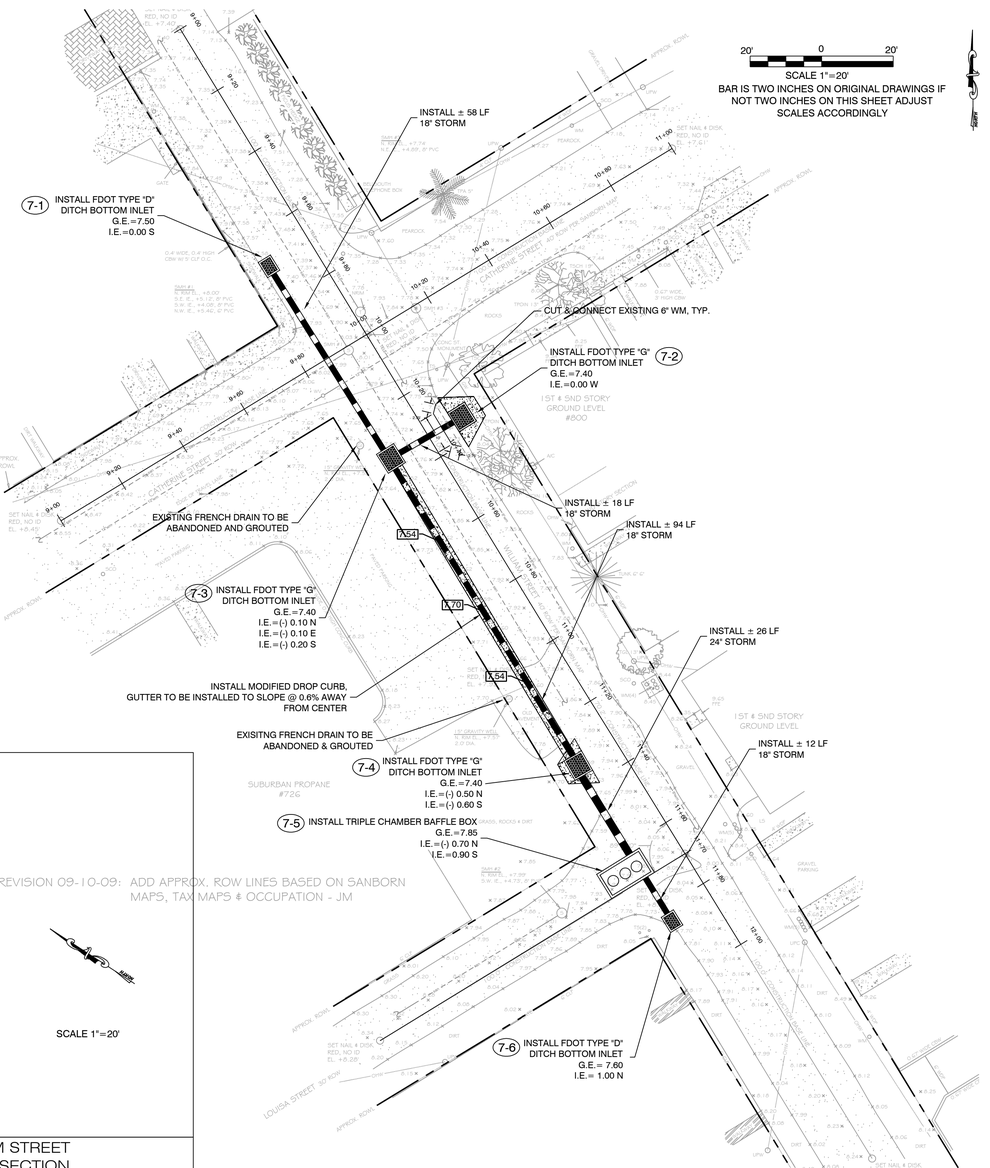
WILLIAM STREET PROFILE VIEW



WILLIAM STREET CROSS SECTION STA 10+33



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1" =4'



SCALE 1"=20'
BAR IS TWO INCHES ON ORIGINAL DRAWINGS IF NOT TWO INCHES ON THIS SHEET ADJUST SCALES ACCORDINGLY

NOTE:
1. THE CONTRACTOR SHALL VERFIY ALL STORM SEWER INVERT ELEVATIONS, PRIOR TO ORDERING CATCH BASINS AND BAFFLE BOXES.
2. CONTRACTOR TO SUPPORT POWER POLE(S) ,AS REQUIRED, DURING CONSTRUCTION.
3. FOR WATER MAIN RELOCATION, PLEASE REFER TO F.A.C. RULE 62-555.314 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

LEGEND
- PROPERTY / RIGHT-OF-WAY LINE
- TRIPLE CHAMBER BAFFLE BOX
- STORMWATER INLET
- STORMWATER PIPE
- STORMWATER MANHOLE (S)
- STRUCTURE ID (XX)
- CONCRETE APRON
- EXISTING GRADE (5.51)
- PROPOSED GRADE (5.51)
- EXISTING WATER MAIN
- EXISTING SAN. SEWER
- EXISTING TELEPHONE/CABLE
- LANDSCAPE AREA (SOD)
- ADA DETECTABLE WARNING

NOTE: SYMBOLS IN LEGEND ARE NOT TO SCALE

CIVIL ENGINEERING • REGULATORY PERMITTING • CONSTRUCTION MANAGEMENT
PEREZ ENGINEERING & DEVELOPMENT, INC
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KEY WEST, FLORIDA 33040
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TAMPA OFFICE
CONCOURSE CENTER
3507 E. FRONTAGE ROAD, SUITE 140
TAMPA, FLORIDA 33607
TEL: (813) 579-1616 FAX: (813) 288-0710
ALLEN E. PEREZ, P.E.
Florida P.E. NO. 51468
November 12, 2009

REVISIONS:
1. 50% PLANS REVIEWED (PHASE I) 11/10/09
2. 90% PLANS REVIEWED (PHASE I) 11/13/09
3.
4.
5.
6.

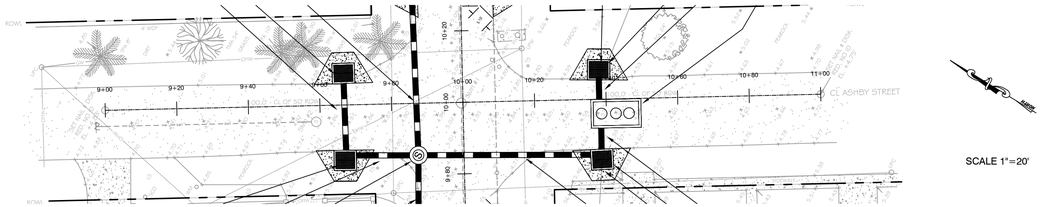
ORIGINAL: DECEMBER 2008

GRAVITY INJECTION WELLS, PHASE V
BID PLANS
CATHERINE ST., WILLIAM ST., & LOUISA ST..
PLAN & PROFILE

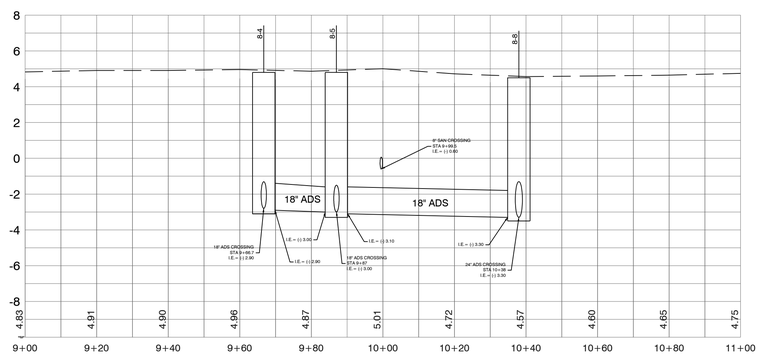
CITY OF KEY WEST
627 PALM AVENUE
KEY WEST, FLORIDA
(305)292-8161

JOB NO. 091023
DRAWN RTM
DESIGNED AEP
CHECKED AEP
QC
SHEET C-7

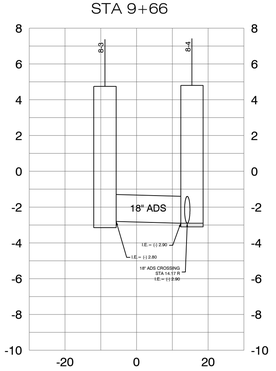
ASHBY STREET PLAN VIEW



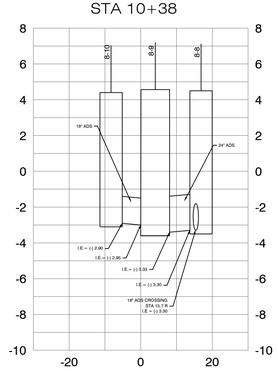
ASHBY STREET PROFILE VIEW



ASHBY STREET CROSS SECTION STA 9+66

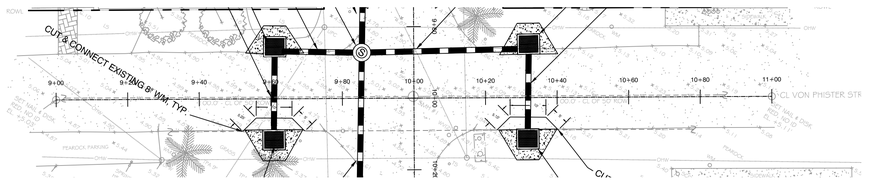


ASHBY STREET CROSS SECTION STA 10+38

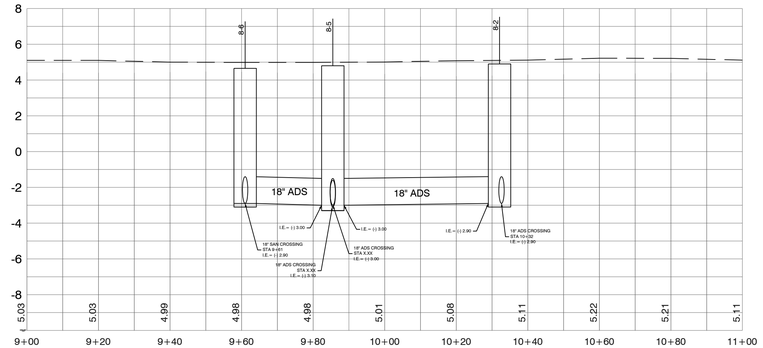


HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1" =4'

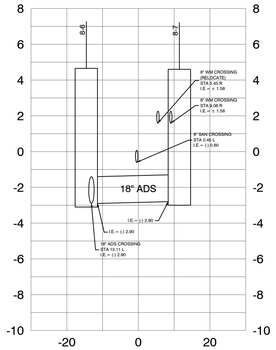
VON PHISTER STREET PLAN VIEW



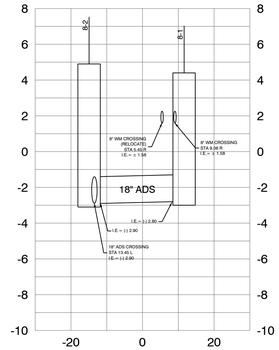
VON PHISTER STREET PROFILE VIEW



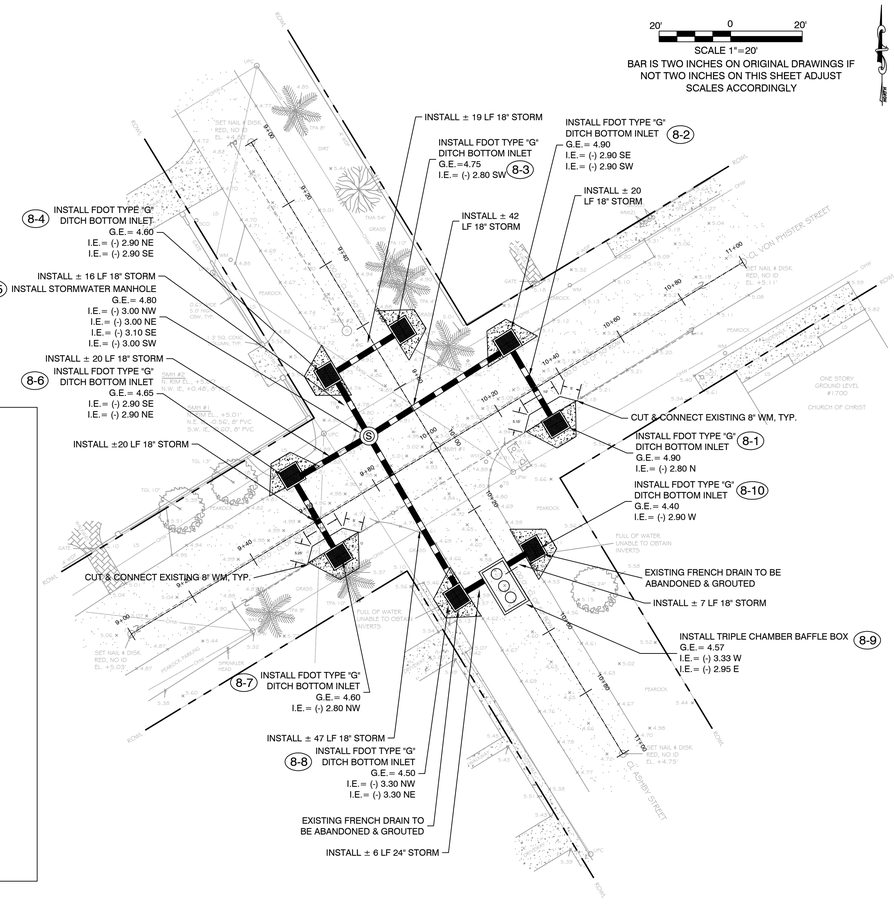
VON PHISTER STREET CROSS SECTION STA 9+61



VON PHISTER STREET CROSS SECTION STA 10+32



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1" =4'



Upstream Structure #	Upstream Structure Type	Top Elev (FT.)	Upstream Invert (FT.)	Downstream Structure #	Downstream Structure Type	Top Elev (FT.)	Downstream Invert (FT.)	Pipe Size (in.)	Pipe Type	Length (FT.)	Slope
8-1	FDOT Type "G" Ditch Bottom Inlet	4.90	-2.80	8-2	FDOT Type "G" Ditch Bottom Inlet	4.90	-2.90	18	ADS	20	0.50%
8-2	FDOT Type "G" Ditch Bottom Inlet	4.90	-2.90	8-5	Stormwater Manhole	4.80	-3.00	18	ADS	42	0.24%
8-3	FDOT Type "G" Ditch Bottom Inlet	4.75	-2.80	8-4	FDOT Type "G" Ditch Bottom Inlet	4.60	-2.90	18	ADS	19	0.53%
8-4	FDOT Type "G" Ditch Bottom Inlet	4.60	-2.90	8-5	Stormwater Manhole	4.80	-3.00	18	ADS	16	0.63%
8-7	FDOT Type "G" Ditch Bottom Inlet	4.60	-2.80	8-6	FDOT Type "G" Ditch Bottom Inlet	4.65	-2.90	18	ADS	20	0.50%
8-6	FDOT Type "G" Ditch Bottom Inlet	4.65	-2.90	8-5	Stormwater Manhole	4.80	-3.00	18	ADS	20	0.50%
8-5	Stormwater Manhole	4.80	-3.10	8-8	FDOT Type "G" Ditch Bottom Inlet	4.50	-3.30	18	ADS	47	0.43%
8-8	FDOT Type "G" Ditch Bottom Inlet	4.50	-3.30	8-9	Triple Chamber Baffle Box	4.57	-3.33	24	ADS	6	0.42%
8-10	FDOT Type "G" Ditch Bottom Inlet	4.40	-2.90	8-9	Triple Chamber Baffle Box	4.57	-2.95	18	ADS	7	0.71%

NOTE:
1. THE CONTRACTOR SHALL VERFIY ALL STORM SEWER INVERT ELEVATIONS, PRIOR TO ORDERING CATCH BASINS AND BAFFLE BOXES.
2. CONTRACTOR TO SUPPORT POWER POLE(S) ,AS REQUIRED, DURING CONSTRUCTION.
3. FOR WATER MAIN RELOCATION, PLEASE REFER TO F.A.C. RULE 62-555.314 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

LEGEND

- PROPERTY / RIGHT-OF-WAY LINE
- TRIPLE CHAMBER BAFFLE BOX
- STORMWATER INLET
- STORMWATER PIPE
- (S) STORMWATER MANHOLE
- XX STRUCTURE ID
- CONCRETE APRON
- 5.71 EXISTING GRADE
- EXISTING WATER MAIN
- EXISTING SAN. SEWER
- EXISTING TELEPHONE/CABLE
- LANDSCAPE AREA (SOD)
- ADA DETECTABLE WARNING

NOTE: SYMBOLS IN LEGEND ARE NOT TO SCALE

CIVIL ENGINEERING • REGULATORY PERMITTING • CONSTRUCTION MANAGEMENT

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TAMPA OFFICE
CONCOURSE CENTER
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TAMPA, FLORIDA 33607
TEL: (813) 579-1616 FAX: (813) 288-0710

PEREZ ENGINEERING & DEVELOPMENT, INC
CERTIFICATE OF AUTHORIZATION No. 8579

ALLEN E. PEREZ, P.E.
Florida P.E. NO. 51468
November 12, 2009

REVISIONS:
1. BID PLANS REVISED (PHASE I) 11/10/09
2. BID PLANS REVISED (PHASE 2) 11/13/09
3.
4.
5.
6.

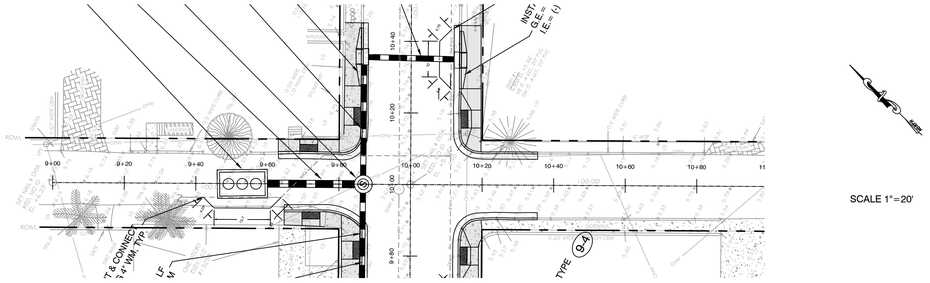
ORIGINAL: DECEMBER 2008

GRAVITY INJECTION WELLS, PHASE V
BID PLANS
ASHBY ST. & VON PHISTER ST.
PLAN & PROFILE

CITY OF KEY WEST
627 PALM AVENUE
KEY WEST, FLORIDA
(305)292-8161

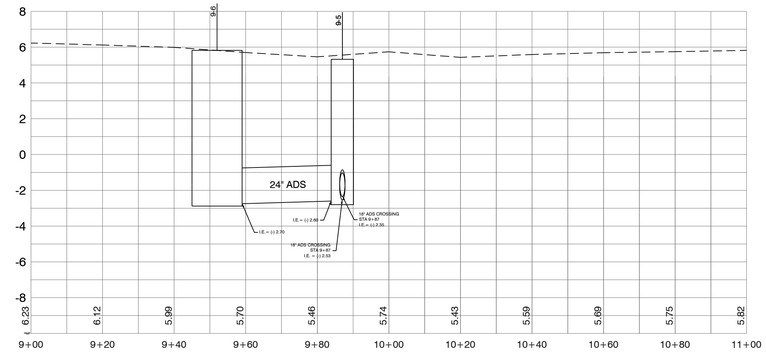
JOB NO. 091023
DRAWN RTM
DESIGNED AEP
CHECKED AEP
QC
SHEET C-8

FLORIDA STREET PLAN VIEW



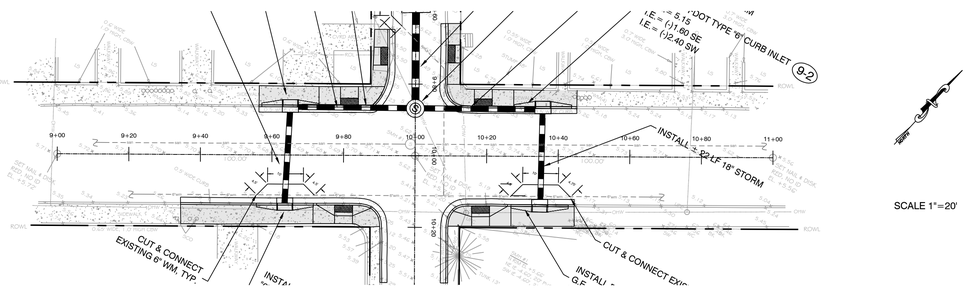
SCALE 1"=20'

FLORIDA STREET PROFILE VIEW



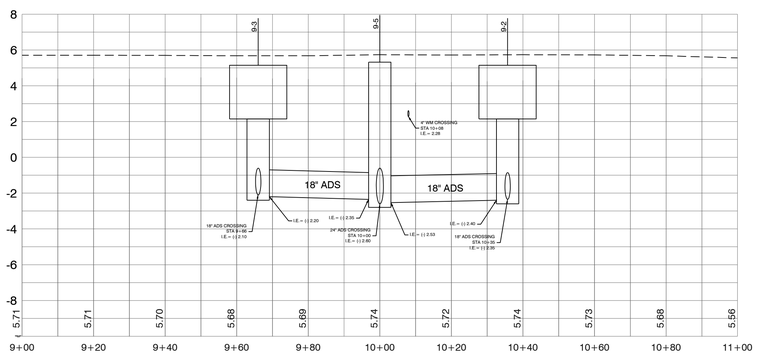
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1" =4'

NEWTON STREET PLAN VIEW

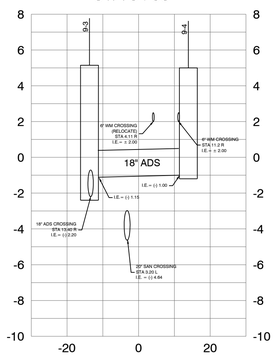


SCALE 1"=20'

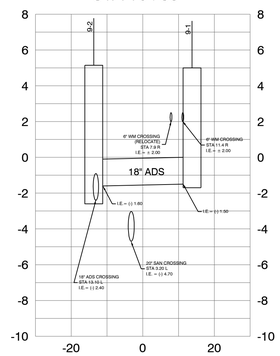
NEWTON STREET PROFILE VIEW



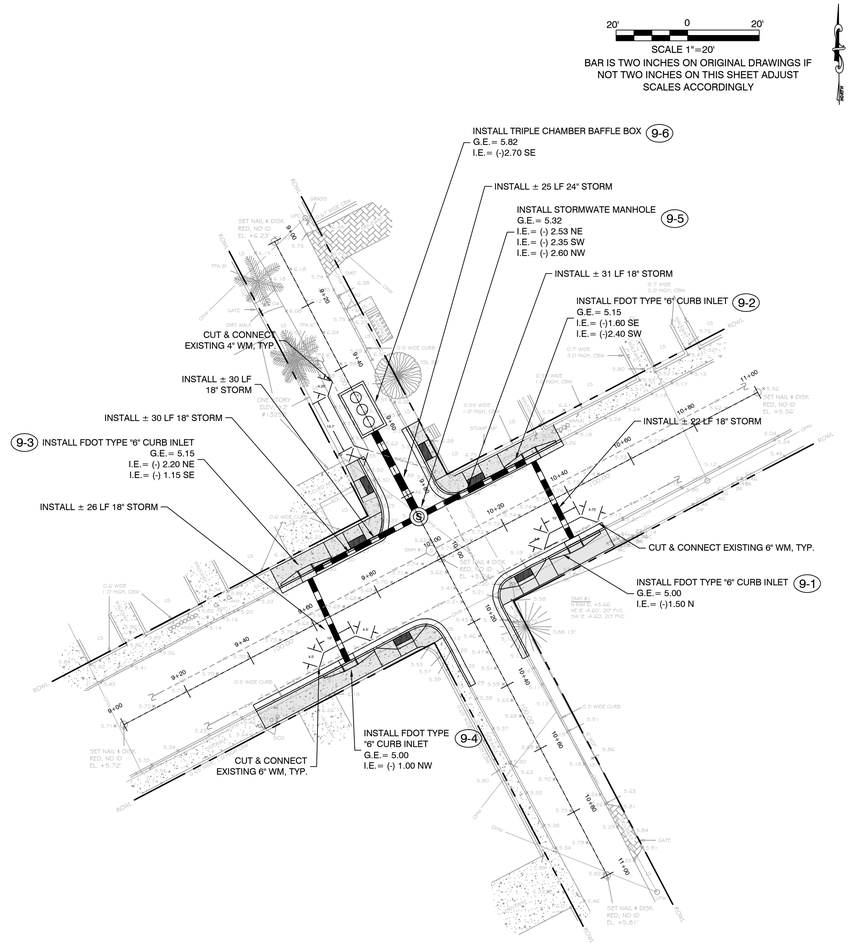
NEWTON STREET CROSS SECTION STA 9+65



NEWTON STREET CROSS SECTION STA 10+35



HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1" =4'



Upstream Structure #	Upstream Structure Type	Top Elev (FT.)	Upstream Invert (FT.)	Downstream Structure #	Downstream Structure Type	Top Elev (FT.)	Downstream Invert (FT.)	Pipe Size (in.)	Pipe Type	Length (FT.)	Slope
9-1	FDOT Type "6" Curb Inlet	5.00	-1.50	9-2	FDOT Type "6" Curb Inlet	5.15	-1.60	18	ADS	22	0.45%
9-2	FDOT Type "6" Curb Inlet	5.15	-2.40	9-5	Stormwater Manhole	5.32	-2.53	18	ADS	30	0.43%
9-4	FDOT Type "6" Curb Inlet	5.00	-1.00	9-3	FDOT Type "6" Curb Inlet	5.15	-1.15	18	ADS	26	0.58%
9-3	FDOT Type "6" Curb Inlet	5.15	-2.20	9-5	Stormwater Manhole	5.32	-2.35	18	ADS	30	0.50%
9-5	Stormwater Manhole	5.32	-2.60	9-6	Triple Chamber Baffle Box	5.75	-2.70	24	ADS	25	0.40%

NOTE:
1. THE CONTRACTOR SHALL VERFIY ALL STORM SEWER INVERT ELEVATIONS, PRIOR TO ORDERING CATCH BASINS AND BAFFLE BOXES.
2. CONTRACTOR TO SUPPORT POWER POLE(S) ,AS REQUIRED, DURING CONSTRUCTION.
3. FOR WATER MAIN RELOCATION, PLEASE REFER TO F.A.C. RULE 62-555.314 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

LEGEND

- PROPERTY / RIGHT-OF-WAY LINE
- TRIPLE CHAMBER BAFFLE BOX
- STORMWATER INLET
- STORMWATER PIPE
- STORMWATER MANHOLE (S)
- STRUCTURE ID (XX)
- CONCRETE SIDEWALK (NEW)
- EXISTING GRADE (5.71)
- EXISTING WATER MAIN (WTR)
- EXISTING SAN. SEWER (SS)
- EXISTING TELEPHONE/CABLE (T)
- LANDSCAPE AREA (SOD)
- ADA DETECTABLE WARNING

NOTE: SYMBOLS IN LEGEND ARE NOT TO SCALE

CIVIL ENGINEERING • REGULATORY PERMITTING • CONSTRUCTION MANAGEMENT

PEREZ ENGINEERING & DEVELOPMENT, INC
CERTIFICATE OF AUTHORIZATION No. 8579

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ALLEN E. PEREZ, P.E.
Florida P.E. NO. 51468
November 12, 2009

REVISIONS:
1. 100% PLANS REVIEWED (PHASE I) 11/10/09
2. BID PLANS REVIEWED (PHASE I) 11/13/09
3.
4.
5.
6.

ORIGINAL: DECEMBER 2008

GRAVITY INJECTION WELLS, PHASE V
BID PLANS
NEWTON ST. & FLORIDA ST.
PLAN & PROFILE

CITY OF KEY WEST
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KEY WEST, FLORIDA
(305)292-8161

JOB NO. 091023
DRAWN RTM
DESIGNED AEP
CHECKED AEP
QC
SHEET C-9