Loxahatchee River District

ITB #25-010-00149

CENTER STREET CORRIDOR LATERAL LINING

Addendum Number 3

(w/Bid Clarifications)

September 25, 2025

This document forms a part of the Contract Documents and modifies the original plans and specifications dated September 02, 2025 as noted below.

Acknowledge receipt of this Addendum in the space provided within the Proposal (Article 2, Page 21, Paragraph 12) and within the Bid Security (Article 3, Page 43, Paragraph 7).

Failure to do so may subject the bidder to disqualification.

This Addendum consists of THREE (3) pages and the following attachments;

- *Bid Form - Base Bid Proposal Article 2 (3-Pages)*
- *Bid Form - Base Bid Contract Article 4 (2-Pages)*
- *Technical Specifications (36 Pages)*

Bidder Questions & Responses:

1. Does the owner have any space for storage on site, or close to the site, for the contractors?
   Response: Contractor can elect to enter into an indemnity agreement with the District to store material and equipment on-site at the District's Wastewater Treatment Facility located at 2500 Jupiter Park Drive during the project time period.

2. Is the intent to have a cleanout on every lateral that is going to be rehabilitated? If so, will the owner consider adding a line item for lateral launch to each service so we can determine whether there is an existing cleanout or if a new one needs to be located? This would also eliminate the need to set up twice in the mainline and having to determine which laterals are active or abandoned.
   Response: No, there is not an intent to have a clean-out on every lateral.

3. The specs call for plate samples/testing. Can the owner clarify how many tests will be required?
   Response: Anticipate samples/testing of 10% of the liners.

4. Will the owner consider doing random air testing on 10% of the liners to ensure the expected quality, without incurring the cost of plate sample testing every liner?
   Response: See response to Question 3. Air testing will not be accepted

5. A project of this size requires multiple crews. Is it possible to get multiple water meters so each crew can have its own?
   Response: This will need to be coordinated by the Contractor with the Town of Jupiter (potable water utility for this area).

6. The specs state that working hours are 7:00 a.m. to 4:00 p.m. Is it possible to "set-up" prior to 7am and is it possible to extend work beyond 4:00 p.m.?
   Response: Any requests to work outside of defined working hours will need to be approved by the agency having jurisdiction over the public R/W (Town of Jupiter or Palm Beach County) and the District.

7. The specs call for videotaping of the project area to be completed in the presence of the engineer. Can this be performed by in-house staff or does this need to be completed by a third party?
   Response: Pre-construction video should be performed by a qualified vendor.

8. Will the owner consider adding a line item for heavy cleaning, root removal, or tuberculation removal of the laterals should it occur?
   Response: Refer to updated Bid Document included with this Addendum No. 3.

9. The specifications refer to gasket seals. Are the gasket seals intended to be compliant with ASTM 3240-17?
   Response: Yes.

10. The specs indicate that the manufacturer's warranty is required for a 10-year period. Typically, manufacturers only provide a warranty for the condition of the liner after it has been manufactured and before it leaves the facility. A 10-year warranty normally comes from the contractor. Will that be acceptable?
    Response: Yes. Refer to updated Bid Document included with this Addendum No. 3.

11. Post Lining Video Documentation: Will post-lining video documentation be acceptable if it is performed from the cleanout down to the mainline connection with a push camera?
    Response: See response to Question #2 included in this Addendum #3. If there is a clean-out, then yes.

12. For Clean-Out Installs: Is there a specific form required, or must an inspector be on site for every cleanout installation to verify the density testing required by the specs?
    Response: Please refer to Technical Specifications Section 4.6 A., d. and response to Question #2 included in this Addendum #3. Any clean-outs installed under this project (either by the Contractor at no cost to the Owner or approved by the Owner) must be inspected and comply with the District's Manual of Minimum Construction Standards and Technical Specifications.

13. Under what circumstances would a double cleanout be needed? If required, would bypass pumping be necessary for that service during work on those locations?
    Response: See response to Question #12 included with this Addendum No. 3 and please refer to the District's Manual of Minimum Construction Standards and Technical Specifications. If service will be interrupted for any clean out installations, then the Contractor will be required to maintain service.

14. What is the substantial & final completion time?
    Response: Refer to bid documents. 180 calendar days to substantial completion from Notice to Proceed. 65 calendar days from substantial completion to final completion.

15. We respectfully request that Global Materials Company be approved as a CIPP liner manufacturer. Global's specs are attached for your review.
    Response: Bidder must comply with the requirements of the bid documents to be considered qualified.

16. What is the Engineer's estimate / budget?
    Response: $4 million.

17. What is the due date for questions?
    Response: Refer to bid documents, Article 1, Item 11.

END OF ADDENDUM NO. 3

BID FORM — BASE BID
CIPP LATERAL LINING – CENTER STREET CORRIDOR

Item	Description	Qty	Unit	Unit Cost	Sub Total
General Conditions					
1	Mobilization & Demobilization	1	LS	$	$
2	Bonds and Insurance	1	LS	$	$
CIPP Lateral Lining					
Lift Station 011 System					
3	LS011 System - Maintenance of Traffic	1	LS	$	$
4	LS011 System - CIPP Lateral Lining, 8” to 10” full circle main connection, 4” or 6” x 4.5 mm lateral piping, minimum 30 LF of lateral (all depths)	30	EA	$	$
5	LS011 System - CIPP Lateral Lining, 4” or 6” x 4.5 mm lateral piping, beyond 30 LF of lateral (all depths)	260	LF	$	$
6	LS011 System - Bypass Pumping	1	LS	$	$
Lift Station 012 System					
7	LS012 System - Maintenance of Traffic	1	LS	$	$
8	LS012 System - CIPP Lateral Lining, 8” to 10” full circle main connection, 4” or 6” x 4.5 mm lateral piping, minimum 30 LF of lateral (all depths)	337	EA	$	$
9	LS012 System - CIPP Lateral Lining, 4” or 6” x 4.5 mm lateral piping, beyond 30 LF of lateral (all depths)	180	LF	$	$
10	LS012 System - Bypass Pumping	1	LS	$	$
Lift Station 014 System					
11	LS014 System - Maintenance of Traffic	1	LS	$	$
12	LS014 System - CIPP Lateral Lining, 8” to 10” full circle main connection, 4” or 6” x 4.5 mm lateral piping, minimum 30 LF of lateral (all depths)	12	EA	$	$
13	LS014 System - CIPP Lateral Lining, 4” or 6” x 4.5 mm lateral piping, beyond 30 LF of lateral (all depths)	160	LF	$	$
14	LS014 System - Bypass Pumping	1	LS	$	$
Lift Station 027 System					
15	LS027 System - Maintenance of Traffic	1	LS	$	$
16	LS027 System - CIPP Lateral Lining, 8” to 10” full circle main connection, 4” or 6” x 4.5 mm lateral piping, minimum 30 LF of lateral (all depths)	464	EA	$	$
17	LS027 System - CIPP Lateral Lining, 4” or 6” x 4.5 mm lateral piping, beyond 30 LF of lateral (all depths)	905	LF	$	$
18	LS027 System - Bypass Pumping	1	LS	$	$

Lift Station 190 System					
19	LS190 System - Maintenance of Traffic	1	LS	$	$
20	LS190 System - CIPP Lateral Lining, 8” to 10” full circle main connection, 4” or 6” x 4.5 mm lateral piping, minimum 30 LF of lateral (all depths)	10	EA	$	$
21	LS190 System - CIPP Lateral Lining, 4” or 6” x 4.5 mm lateral piping, beyond 30 LF of lateral (all depths)	60	LF	$	$
22	LS190 System - Bypass Pumping	1	LS	$	$
				Total Base Bid:	**$**
Alternate Bid Items					
A-1	Furnish & Install 4” Single Clean-Out	1	EA	$	$
A-2	Furnish & Install 6” Double Clean-Out	1	EA	$	$
A-3	Install Sod (St. Augustine)	1	EA	$	$
A-4	Concrete Sidewalk Replacement	1	EA	$	$
A-5	Asphalt Sidewalk Replacement	1	EA	$	$
A-6	Concrete Driveway Replacement	1	EA	$	$
A-7	Paver Brick Driveway Replacement	1	EA	$	$
A-8	Dewatering	1	EA	$	$
A-9	Heavy Cleaning (including root removal and/or tuberculation removal)	10	LF	$	$

TOTAL BASE BID, ITEMS 1-22 (in words) _____

Dollars

_____

Cents

THE CONTRACT AWARD SHALL BE EVALUATED BASED ON THE TOTAL BASE BID PRICE FOR ITEMS 1 THROUGH 22 AS SUBMITTED BY THE LOWEST, QUALIFIED, RESPONSIBLE, RESPONSIVE BIDDER.

_____

(Name of Bidder)

Bidders Name: _____

By: _____

Signature of Authorized Officer, Partner, Member, Manager

Print Name of Person signing: _____

Title: _____

Business Address: _____

_____

Incorporated or formed under the laws of the State of_____

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CIPP LATERAL LINING – CENTER STREET CORRIDOR

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Dollars

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Cents

TECHNICAL

SPECIFICATIONS

TECHNICAL SPECIFICATIONS

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1.0 GENERAL REQUIREMENTS

1.01 SUMMARY OF WORK

A. It is the District's intent and the purpose of these specifications to secure qualified Contractors to furnish all labor and materials necessary to complete cured-in-place lateral lining for the laterals within the Center Street Corridor area. All work shall be in compliance with the solicitation documents, the Loxahatchee River District Manual of Minimum Construction Standards and Technical Specifications (refer to Exhibit A included herein), all applicable local, state and Federal laws and regulations including the Occupational Safety and Health Act Administration (OSHA), including all costs of permits and cost of regulatory compliance.

1.02 WORK COVERED BY CONTRACT DOCCUMENTS

A. The work shall consist of furnishing and installing all tools, equipment, materials, supplies, manufactured articles, transportation and services, including fuel, power, water and essential communications, for the performance of all labor, work, or other operations required for the fulfillment of the Contract. The work shall be complete, and all work, materials, and services not expressly shown or called for in the Contract which may be necessary for the complete and proper construction of the work, and shall be performed, furnished and installed by the Contractor.

B. Except as specifically noted, the Contractor shall provide and pay for:
   1. Pedestrian and vehicular maintenance of traffic plans necessary to obtain or comply with permits from the Town of Jupiter, Palm Beach County, and/or FDOT.
   2. Copies of current valid license(s) issued in accordance with the Florida Statutes and/or appropriate local agencies as required by the Contract documents.
   3. Labor, materials, tools, construction equipment and machinery.
   4. Water and utilities required for construction.
   5. Other facilities and services necessary for proper execution and completion of the work.

C. Contractor shall comply with all codes, ordinances, rules, regulations, orders and other legal requirements of the Loxahatchee River District, Palm Beach County Health Department, Florida Department of Environmental Protection, South Florida Water Management District, Army Corps of Engineers, Palm Beach County, Town of Jupiter and/or FDOT.

D. Until acceptance of the work by the District, all work shall be under the charge and custody of the Contractor who shall take every necessary precaution against injury or damage to the work by the action of the elements or from any other cause whatsoever, arising either from the

execution or from the non-execution of the work. The Contractor shall protect, rebuild, repair, restore and make good, without additional compensation, all injury or damage to any portion of the work occasioned by any cause before its completion and acceptance.

1.03 PROTECTION AND RESTORATION OF SURVEY MONUMENTS

A. The Contractor shall be responsible for protecting and restoring all land and property corners, such as section corners, 1/4 section corners, property corners or block control points, and for maintaining all horizontal and vertical control points. All surveying work shall be the responsibility of the Contractor and shall be performed under the supervision of a Florida Registered Land Surveyor. Survey points that will be destroyed during construction shall be properly referenced and replaced at the Contractor's expense with permanent monuments approved by the Engineer.

1.04 PRESERVATION OF PROPERTY

A. The Contractor shall preserve from damage all property along the line of the work, or which is in the vicinity of or is in any way affected by the work, the removal or destruction of which is not called for by the plans. Wherever such property is damaged due to the activities of the Contractor it shall be immediately restored to its original condition by the Contractor at no cost to the Owner.

B. In case of failure on the part of the Contractor to restore such property, or make good such damage for injury, the Owner may, after 48 hours notice to the Contractor, proceed to repair, rebuild or otherwise restore such property as may be deemed necessary and the cost thereof will be deducted from any monies due or which may become due the Contractor under this contract.

1.05 PRESERVING WATER QUALITY

A. The Contractor shall exercise extreme care to minimize degradation of water quality. All necessary provisions shall be taken to insure compliance with the water quality standards of the State of Florida. Attention is called to Chapter 17-3, Florida Administrative Code, and in particular, the requirements that turbidity shall not exceed background levels, if required. Adequate silt containment procedures and equipment shall be used to control turbidity at all times at no additional expense to the Owner.

B. During all pigging/flushing activities when discharge waters will flow into canals, lakes or ponds appropriate silt barriers and turbidity curtains shall be in place. Additionally, no water with a chlorine residual may be discharged into canals, lakes or ponds.

1.06 REGULATORY PERMITS AND PERMIT CONDITIONS

A. Permits for projects that may be constructed under this contract may be required from the following entities having jurisdiction within the project boundaries. If required, the Contractor shall obtain all permits excluding PBC Right of Way Construction and FDEP. The District shall reimburse Contractor application and permit fees issued by the entities having jurisdiction. The Contractor shall be responsible for compliance with the permits.

1. Town of Jupiter: Engineering/Utilities Permit and Building Permit
2. Palm Beach County: Right of Way Construction Utility Permit and Building Permit

B. Contractor shall be responsible for permitting and compliance detailed in the following:
   1. Section 6.0 Erosion and Sediment Control
   2. Section 4.0 Dewatering

1.07 STORAGE OF MATERIALS

A. The Contractor shall provide suitable facilities for storage and protection of materials. All equipment and materials intended for use in the work shall be suitably stored by the Contractor to prevent damage.
B. Materials found unfit for use shall not be incorporated in the work and shall immediately be removed from the construction or storage site. Delivered materials shall be stored in a manner acceptable to the Engineer before any payment for same will be made.
C. Staging of materials along the right of way or easements shall be limited to materials scheduled to be installed within a one week period for time of staging.

1.08 STAGING AREA

A. All construction trailers, material and equipment storage and construction staging areas required by the Contractor shall occur only within public road right-of-ways or easements unless the Contractor has made alternate arrangements for staging areas outside right-of-ways or easements. Alternate arrangements for staging areas shall be at no additional cost to the Owner. The Contractor shall take note that any improvements to a proposed staging area site will be at the Contractors expense. The staging area site will need to be restored to a like or better condition after the project is completed at the Contractors expense.

1.09 SALVAGED MATERIAL

A. Unless otherwise stated or noted on the drawings, all materials salvaged under this contract shall become the property of the Owner. Salvaged materials may not be reused in the Work except upon written approval of the Engineer. All salvaged materials not reused or desired by the Owner shall be removed from the site of the Work or otherwise disposed of by the Contractor in a manner satisfactory to the Engineer.

1.10 SUBSTITUTIONS:

A. Substitutions will not be permitted on any items specified herein or identified on the drawings where two or more manufacturers have been named unless they are followed by the words "or equal". Substitutions will also not be considered on any specified items whenever they are followed by the words "no substitutions".
B. Submit electronic (.pdf) of request for substitution. Include in request:
   1. Complete Data substantiating compliance of proposed substitution with Contract Documents.
   2. For Products:
      1.10.B.2.1 Product identification, including manufacturer’s name and address.
      1.10.B.2.2 Manufacturer's literature:
         1.10.B.2.2.1 Product description.
         1.10.B.2.2.2 Performance and test data.
         1.10.B.2.2.3 Reference standards.
      1.10.B.2.3 Samples.
      1.10.B.2.4 Name and address of similar projects on which product was used, and date of installation.
   3. For construction methods:

1.10.B.3.1 Detailed description of proposed method.
1.10.B.3.2 Drawings illustrating methods.

4. Itemized comparison of proposed substitution with product or method specified.
5. Data relating to changes in construction schedule.
6. Relation to separate contracts.
7. Accurate cost data on proposed substitution in comparison with product or method specified. This shall include initial capital and O&M cost comparison.
8. Parts commonality. The Engineer will consider parts commonality and demonstrable performance of the specified unit and the proposed substitution as part of the evaluation.

1.11 WATER

A. The Contractor shall provide and maintain, at his own expense, an adequate supply of water for his use for construction and domestic consumption, and to install and maintain necessary connections and piping for same, but only at such locations and in such manner as may be approved by the Engineer. All water connection points to the Owner's system shall be equipped with a reduced pressure principle type backflow preventer and meter. The meter and back flow preventer shall be obtained from the Owner and all associated fees paid by the Contractor. Prior to final acceptance, temporary connections and piping installed by the Contractor shall be removed in a manner satisfactory to the Engineer.

1.12 ELECTRICITY

A. All electrical current required by the Contractor shall be furnished at his own expense. All temporary connections for electricity shall be subject to the approval of the Engineer. All temporary lines shall be furnished, installed, connected and maintained by the Contractor in accordance with all applicable codes and shall be completely removed by the Contractor prior to substantial completion. All power consumed prior to substantial completion shall be paid by the Contractor.

1.13 SANITARY FACILITIES

A. The Contractor shall provide temporary restroom facilities for field crews. Holding tanks will not be allowed unless specifically approved by the Engineer.

1.14 WORKING HOURS

A. All work on this contract shall be conducted during normal working hours (7 A.M. to 4 P.M.) on weekdays. No work will be permitted on weekends and Owner observed holidays, without prior approval from the Owner and Engineer. Requests for approval to work outside normal working hours and weekends must be submitted in writing seven (7) days prior to scheduled construction.

1.15 ASSEMBLIES OR UNITS

A. Where the Contractor is required to furnish and install an assembly or unit, the Contractor shall furnish all component parts as required by the manufacturer of the unit.

1.16 ACCESS TO THE WORK SITE

A. The Contractor may use only the access designated by the Owner for access to the work locations such as easements or public right of ways. The Contractor shall be responsible for maintaining, protecting and restoring the routes to the satisfaction of the Owner and Engineer.

1.17 SECURITY

A. The Contractor shall be fully responsible for the safety and security of the work and site.

1.18 FAMILIARITY WITH LAWS

A. The Contractor is assumed to be in compliance with and familiar with all federal, state and local laws, ordinances, rules, codes and regulations that may in any manner affect the work. Failure to familiarize themselves with applicable laws, etc., shall in no way relieve the Contractor from responsibility.

1.19 SCHEDULE

A. The Contractor shall be required to prepare a project schedule and submit one (1) electronic copy to the Engineer, prior to the start of construction for each specific project.

1.20 PRECONSTRUCTION MEETINGS

A. The Contractor shall be required to attend a preconstruction meeting for each specific project.

1.21 STANDARDS

A. All work performed on this project shall be in accordance with the Loxahatchee River Environmental Control District Manual of Minimum Construction Standards and Technical Specifications and other applicable standards. All conditions, as set forth in all the permits shall be satisfied and adhered to by the Contractor.

1.22 SPECIAL CONSIDERATIONS:

A. Noise: The Contractor is advised that construction will be in close proximity to residential areas. All equipment shall be provided with minimum critical grade silencers and sound attenuating enclosures if required to meet noise pollution regulations.

B. District/County/Town/State Standards: All work on this project shall be in accordance with District/County/Town/State Standards. Where the Standards conflict, District Standards shall control.

C. Project Inspection: The Engineer will be inspecting the work on a non-full time basis. The Contractor shall provide appropriate notice of need for inspections and allow time for scheduling. No work shall be covered up, nor test results accepted unless witnessed by the Engineer or his representative. Inspections by the Engineer shall not be performed in lieu of other inspections required by County, Town, State or Federal requirements.

1.23 VIDEO TAPING

A. The Contractor shall, in the presence of, and to the satisfaction of, the Engineer, video all areas of construction, staging, etc. The video shall be provided to the Engineer in DVD format, prior to any site mobilization. The video is required to be submitted one week prior to mobilization for each specific project.

1.24 DISPOSAL OF UNSUITABLE EXCAVATED MATERIALS AND DEBRIS

A. All unsuitable excavated material and debris not required for backfill (unless otherwise noted), broken pipe, sidewalks, curbs and other concrete items, together with all roots, boards and other debris are to be disposed of by the Contractor at an appropriate legal site.

1.25 DISPOSAL OF EXCESS MATERIAL SUITABLE FOR REUSE

A. All excess material suitable for reuse shall be retained by the District and delivered by the Contractor to the District's WWTF at 2500 Jupiter Park Drive, Jupiter, FL 33458.

1.26 EQUIPMENT

A. All construction equipment necessary and required for the proper construction of this project shall be on the construction site, in first-class working condition, and shall have been approved by the Engineer before construction is permitted to start. The Contractor shall provide such tamping tools and equipment as necessary for the proper compaction of the backfill.

1.27 HOUSEKEEPING

A. The Contractor shall perform clean-up of the construction areas on a daily basis to the satisfaction of the Engineer.

1.28 EXISTING IRRIGATION

A. Existing irrigation will not been shown on the plans. The Contractor is specifically advised that many of the anticipated project areas are irrigated. Repair and or replacement of irrigation systems will be at no additional cost to the Owner.

1.29 SUBSURFACE EXPLORATIONS AND REPORTS

A. When deemed necessary by the Engineer, geotechnical reports for the project areas will be provided for the Contractor's use.

1.30 COORDINATION WITH Owner FOR CONNECTION TO EXISTING FACILITIES

A. Contractor shall notify Owner in writing a minimum of 72 hours in advance (excluding weekends and Owner observed holidays) of scheduled tie-ins. This notification is to allow Owner adequate time to accommodate the Contractor's request. Failure of the Contractor to provide adequate notification will result in the rescheduling of the tie-in.

1.31 RESTORATION

A. The Contractor shall remove all temporary structures and equipment used in his operation when no longer needed for the project and proceed immediately with restoration.

1.32 PUBLIC SAFETY AND CONVENIENCE

A. The Contractor shall at all times so conduct his work as to ensure the least possible obstruction to traffic, or inconvenience to the general public and residences in the vicinity of the work. No road or street shall be closed to the public, except with the permission of the Engineer and other jurisdictional governmental authority, if any. Fire hydrants on or adjacent to the work shall be kept accessible. Provisions shall be made by the Contractor to ensure public access to sidewalks, public telephones, and the proper functioning of all gutters, sewer inlets, drainage ditches, and irrigation ditches. No open excavation shall be left overnight except during road closing. All open excavation within the roadway shall be backfilled and a temporary asphalt patch applied prior to darkness each day. A cold asphalt patch is acceptable.

1.33 SAFETY AND OSHA COMPLIANCE

A. The Contractor shall comply in all respects with all Federal, State and Local safety and health regulations. Copies of the Federal regulations may be obtained from the U.S. Department of Labor, Occupation Safety and Health Administration (OSHA), Washington, DC 20210 or their regional offices.

B. The Contractor shall conform to the State of Florida Trench Safety Act, 1990 House Bill 3181, requirements.

C. The Contractor shall comply in all respects with the applicable Workman's Compensation Law.
D. The Contractor shall be responsible for his own safety program.

1.34 SUBMITTALS

A. Scope of Work: The Contractor shall submit to the District and Engineer for review and approval, such Shop Drawings, Test Reports and Product Data on materials and equipment (hereinafter in this Section called Data), and material samples (hereinafter in this Section called Samples) as are required for the proper control of work, including but not limited to those Shop Drawings, Data and Samples for materials and equipment specified elsewhere in the Specifications and in the Contract Drawings.
B. Within fourteen (14) calendar days after the Effective Date of the Agreement, the Contractor shall submit to the Engineer a complete list of preliminary Data on items for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specified items. Review of this list by the District and Engineer shall in no way expressed or implied relieve the Contractor from submitting complete Shop Drawings and providing materials, equipment, etc., fully in accordance with the Specifications. This procedure is required in order to expedite final review of Shop Drawings.
C. The Contractor is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the Owner and the Engineer. This log should include the following items:
    1. Submittal-Description and Number assigned.
    2. Date to District.
    3. Date returned to Contractor (from Engineer).
    4. Status of Submittal (Approved as Noted, Rejected/Re-submit).
    5. Date of Resubmittal and Return (as applicable).
    6. Projected date of delivery to site.
    7. Specification Section.
    8. Projected date of delivery to Owner.
    9. Specification Section.
D. The Contractor shall furnish the District and Engineer a schedule of Shop Drawings submittals fixing the respective dates for the submission of Shop Drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall indicate those that are critical to the progress schedule.
    1. Date.
    2. Project Title and Number.
    3. Contractor's name and address.
    4. The number of each Shop Drawings, Project Data, and Sample submitted.
    5. Notification of Deviations from Contract Documents.
E. The Contractor shall indicate in bold type at the top of the cover sheet of submittal of shop drawing if there is a deviation from contract drawings, project specifications and referenced specifications or codes.
F. The Contractor shall also list any deviations from contract drawings, project specifications and referenced specifications or codes and identify in "green" ink prominently on the drawings.
G. Submittal Log Number conforming to Specification Log Number.
H. The Contractor shall submit .PDF copy of Shop Drawings to the District plus the number of copies which the Contractor requires returned.
I. The Contractor shall be responsible for and bear all costs of damages which may result from the ordering of any material or from proceeding with any part of work prior to the completion of the

review by the District and Engineer of the necessary Shop Drawings.

J. The Contractor shall be fully responsible for observing the need for and making any changes in the arrangement of piping, connections, wiring, manner of installation, etc., which may be required by the materials/equipment the contractor proposes to supply both as pertains to their own work and any work affected under other parts, headings, or divisions of drawings and specifications.
K. The Contractor shall not use shop drawings as means of proposing alternate items to demonstrate compliance to contract requirements.
L. Each submittal will bear a stamp indicating that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
M. Drawings and schedules shall be checked and coordinated with the work of all trades and sub-contractors involved, before they are submitted for review by the District and Engineer and shall bear the Contractor's stamp of approval as evidence of such checking and coordination. Drawings or schedules submitted without this stamp of approval shall be returned to the Contractor for resubmission. The District and Engineer's review of Shop Drawings, Data and Samples as submitted by the Contractor, will be to determine if the items(s) conform to the information in the Contract Documents and is compatible with the design concept. The District and Engineer's review and exceptions, if any, will not constitute an approval of dimensions, connections, quantities, and details of the material, equipment, device, or item shown.
N. The review of drawings and schedules will be general, and shall not be construed:
    1. As permitting any departure from the Contract requirements.
    2. As relieving the Contractor of responsibility for any errors, including details, dimensions, and materials.
    3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.
    4. If the drawings or schedules as submitted describe variations and show a departure from the Contract requirements which the District and Engineer finds to be in the interest of the Owner and to be so minor as not to involve a change in Contract Price or time for performance, the Engineer may return the reviewed drawings without noting an exception.
    5. "Approved as Noted" - Contractor shall incorporate District and Engineer's comments into the submittal before release to manufacturer. The Contractor shall send a letter to the District and Engineer acknowledging the comments and their incorporation into the Shop Drawing.
    6. "Revise and Resubmit" - Contractor shall resubmit the Shop Drawing to the District and Engineer. The resubmittal shall incorporate the Engineer's comments highlighted on the Shop Drawing.
    7. "Rejected" - Contractor shall resubmit Shop Drawing for review by District and Engineer.
O. Resubmittals will be handled in the same manner as first submittals. On resubmittals the Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions other than the corrections requested by the District and Engineer on previous submissions. The Contractor shall make any corrections required by the District and Engineer.
P. If the Contractor considers any correction indicated on the drawings to constitute a change to the Contract Drawings or Specifications, the Contractor shall give written notice thereof to the Engineer.
Q. When the Shop Drawings have been completed to the satisfaction of the District and Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.
R. No partial submittals will be reviewed. Submittals not deemed complete will be stamped "Rejected" and returned to the Contractor for resubmittal. Unless otherwise specifically permitted

by the Engineer, make all submittals in groups containing all associated items for:

1.35 SHUTDOWNS AND BYPASS

A. The Contractor shall coordinate shutdowns and bypasses with the District for performance of the work. Shutdowns and bypasses shall be performed by the District; however, the Contractor may be required to install connection points to the system or plug mains to facilitate shutdowns or bypasses.
B. Shutdown and bypass schedules shall be agreed upon prior to implementation with every effort being made to minimize the time lengths of each.
C. A shutdown or bypass shall not be scheduled until all materials and equipment are onsite and pre-assemblies complete.
D. The scope of each project may vary significantly as will the duration of the shutdown or bypass; however, in no instance shall a scheduled shutdown exceed 8 hours or a scheduled bypass exceed 14 calendar days. If the actual shutdown or bypass exceeds the maximum allowable times noted above the Contractor shall reimburse the District costs associated with the extended shutdown or bypass. For shutdown, reimbursement shall be $150/hr, for shutdown beyond 8 hours and $420 per 1,000 gallon of wastewater that must but tankered from the shutdown system to ensure continuity of service and no wastewater dischargers. For bypass, reimbursement shall be $350/day for bypass beyond 14 days.

2.0 TRAFFIC REGULATION

2.1 DESCRIPTION

A. The work to be performed under this section shall include furnishing all maintenance of traffic plans, all materials and labor necessary to receive approval and to regulate vehicular/pedestrian traffic in accordance with the requirements set forth herein and those required by FDOT, Palm Beach County, and/or the Town of Jupiter.

2.2 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS

A. The work performed under this contract shall be in strict accordance with the following codes and standards:
   1. Local, county and municipal codes.
   2. Florida Department of Transportation specifications.
   3. State and U.S. Government requirements.

2.3 TRAFFIC AND VEHICULAR ACCESS

A. Emergency Vehicles: The Contractor shall notify, in writing, the Engineer, the police, fire and other emergency departments and agencies when and where work is to be accomplished which will affect their operations. The notification shall be supplied at least two days, but not more than ten days, prior to the start of such work.
B. Major Roads and Streets: No major roads or streets shall be blocked to traffic, without adequate detour facilities, for a period of more than 30 minutes, or as directed by the governing authority. All named roads impacted by this project are considered to be major roads unless otherwise agreed to by the Engineer.
C. Commercial Properties: Access to commercial property shall not be blocked for a period of more than 30 minutes during the time such properties are open for business.

D. Residential Property: Access to residential property shall not be blocked for a period of more than 8 hours with prior notification.
E. Arterial Streets/Parking Areas: The Contractor shall make every attempt to maintain streets and parking areas within the project area accessible to the residents. Notification shall be given to the Engineer and affected residences a minimum of three (3) days prior to the start of work.

2.4 CONSTRUCTION IN OTHER THAN STATE HIGHWAY RIGHT-OF-WAY

A. Construction within other than state highway right-of-way shall be made in full compliance with all requirements of the Florida Department of Transportation and to the satisfaction of the local governing bodies. All necessary barricades, detours, lights and other protective measures shall be provided for the protection of both pedestrian and vehicular traffic.

3.0 PREPATORY CLEANING & ROOT REMOVAL

3.1 SCOPE

A. This Section covers the preparatory cleaning of sanitary laterals as needed prior to the internal survey of the sewer lines by closed-circuit television. It also covers the preparatory cleaning and root removal of sewer lines prior to rehabilitation. The Contractor shall furnish all necessary material, labor, equipment and services required for cleaning the specific sewer lines.

B. Sewer Line Cleaning. The intent of sewer line cleaning is to remove foreign materials from the lines and restore the sewer to a minimum of 95% of the original carrying capacity or as required for proper seating of internal pipe joint sealing packers or performance of other specified work. It is recognized that there are some conditions such as broken pipe and major blockages that prevent cleaning from being accomplished or where additional damage would result if cleaning were attempted or continued. Should such conditions be encountered, the Contractor will not be required to clean those specific sewer sections. If, in the course of normal cleaning operations, damage does result from preexisting and unforeseen conditions such as broken pipe, the Contractor will not be held responsible.

C. The designated sewer sections shall be cleaned using hydraulically propelled, high-velocity jet, or mechanically powered equipment. The equipment shall dislodge, transport and remove all sludge, mud, sand, gravel, rocks, bricks, grease, roots, sticks, and all other debris from the interior of the sewer pipe and manholes. The equipment and methods selected shall be based on the conditions of lines at the time the work commences and shall be satisfactory to the Owner. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning again attempted. If, again, successful cleaning cannot be performed or the equipment fails to traverse the entire manhole section, the cleaning effort shall be stopped and sufficient inspection performed so that the Owner can be notified of the reason for inability to continue.

D. During all cleaning and preparation operations all necessary precautions shall be taken to protect the sewer from damage. During these operations, precautions shall also be taken to ensure that no damage is caused to public or private property adjacent to or served by the sewer or its branches.

E. Satisfactory precautions shall be taken in the use of cleaning equipment. When hydraulically

propelled cleaning tools (which depend upon water pressure to provide their cleaning force) or tools which retard the flow in the sewer line are used, precautions shall be taken to insure that the water pressure created does not damage or cause flooding of public or private property being served by the sewer. When possible, the flow of sewage in the sewer shall be utilized to provide the necessary pressure for hydraulic cleaning devices. The Contractor shall employ operational hydrant meters to be obtained from the Town of Jupiter, and shall obtain water only from the Town's hydrants. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant.

3.2 PRODUCTS (NOT USED)

3.3 EXECUTION

3.31 MATERIAL REMOVAL

A. All sludge, dirt, sand, rocks, grease, roots, and other solid or semisolid material resulting from the cleaning operation shall be removed at the downstream manhole of the section being cleaned. Passing material from manhole section to manhole section, which could cause line stoppages, accumulations of sand in wet wells, or damage pumping equipment, shall not be permitted.

B. Under no circumstances shall sludge or other debris removed during these operations be dumped or spilled into the streets, ditches, storm drains or other sanitary sewers. The Contractor shall remove from the site and properly dispose of all solids or semi-solids recovered during the cleaning operation. The Contractor shall obtain permits and make arrangements as required to properly dispose of solids.

C. The Contractor is advised that he shall not dispose of this material by legal or illegal dumping on private or public property, by sale to others, or any means other than those given above.

D. The general requirements for vehicles hauling such waste materials are as follows: Transport vehicles must be of type(s) approved for this application by the political jurisdictions involved. General requirements are that the vehicles have watertight bodies, that they be properly equipped and fitted with seals and covers to prohibit material spillage or drainage, and that they be cleaned as often as is necessary to prevent deposit of material on roadways. Vehicles must be loaded within legal weight limits and operated safely within all traffic and speed regulations.

E. The routes used by the Contractor for the conveyance of this material on a regular basis shall be subject to approval by the governing authority having jurisdiction over such routes.

F. All solids or semisolids resulting from the cleaning operations shall be removed from the site and disposed of by the Contractor in a legal and sanitary manner as approved by appropriate authorities, at the Contractor's cost. Copies of records of all disposal shall be furnished to the Owner, indicating disposal site, date, amount and a brief description of material disposed. All materials shall be removed from the site no less often than at the end of each workday.

3.32 ROOT REMOVAL

A. Roots shall be removed in the designated sections and manholes where root intrusion is indicated on the work order. Special attention should be exercised during the cleaning operation to assure almost complete removal of roots from the joints. Any roots which could prevent the proper survey or

rehabilitation shall be removed. Procedures may include the use of mechanical equipment such as rodding machines, bucket machines and winches using root cutters and porcupines, and equipment such as high-velocity jet cleaners.

3.33 ACCEPTANCE OF CLEANING OPERATION

A. Acceptance of sewer line cleaning shall be made upon the successful completion of the television survey and shall be to the satisfaction of the Owner. Liner installation shall not be initiated until the Owner has reviewed the post-cleaning television survey tapes and has accepted the cleaning. If television survey shows the cleaning to be unsatisfactory, the Contractor shall be required to reclean and reinspect the sewer line until the cleaning is shown to be satisfactory.

B. In the event that special cleaning involving the mechanical removal of roots, grease, and/or tuberculation has been authorized, acceptance of sewer line cleaning shall be made upon the successful completion of the post-cleaning television survey and shall be to the satisfaction of the Owner. Liner installation shall not be initiated until the Owner has reviewed the post- cleaning television surveys and has accepted the cleaning.

C. In addition, on all those lines which have sags or dips, to an extent that the television camera lens becomes submerged for three (3) or more feet during the television inspection, the Contractor shall pull down the water, or draft the water by means of high-velocity jet cleaners. Water removal shall be performed until the television camera lens will no longer submerged. This requirement may be waived by the Owner if the water in which the camera lens is submerged, is clear enough to allow the identification of pipe defects, cracks, holes and location of service taps.

4.0 SERVICE LATERAL TELEVISION SURVEY

4.1 SCOPE

A. The work consists of furnishing all labor, materials, accessories, equipment, tools, transportation, services and technical competence for performing all operations required to execute the internal closed-circuit television survey to inspect service laterals.

B. The survey shall show all defects and determine amount of infiltration entering the service laterals.

4.2 GENERAL

A. After cleaning as specified in 3.0 Preparatory Cleaning & Root Removal (including special cleaning involving the mechanical removal of roots, grease, and/or tuberculation where authorized), and before and after repair/replacement work, the lateral shall be visually surveyed by means of closed-circuit television in the presence of the Owner. The survey shall be performed one lateral at a time.

B. Pre- and post-construction survey video submitted to the Owner via an electronic file sharing link, accompanied with the corresponding work orders, and pre- and post-TV logs, for sewer laterals surveyed. The video on the file sharing link shall be direct from a live video source into a video file, format MP4, and of good quality for viewing.

C. The television equipment operator shall be certified under the NASSCO (National Association of

Sewer Survey Companies) PACP (Pipe Line Assessment and Certification Program) and LACP (Lateral Assessment Certification Program).

4.3 EQUIPMENT

A. The television camera used for the lateral survey shall be one specifically designed and constructed for such survey. A sonde locating device shall be attached to the camera. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The camera shall be operative in 100% humidity conditions. The camera, television monitor, and other components of the video system shall be capable of producing a minimum 700-line resolution color video picture. The Contractor shall maintain camera in clear focus at all times. Picture quality and definition shall be to the satisfaction of the Owner; and if unsatisfactory, equipment shall be removed and replaced with adequate equipment at no additional cost to the Owner. The lateral camera shall have a pan-and-tilt capability.

B. The camera system shall be able to inspect 3-, 4-, and 6-inch lateral connections up to 70 feet from the sewer mainline. The launcher shall be mounted on a tread tractor that moves through main sewers and positions the inspection camera launcher opposite the lateral line connection.

C. The camera system shall have mini black and white or color, fixed position, "positioning" camera to observe and place the mini color, push, "inspection" camera at the lateral. The inspection camera shall be attached to an 80-foot long push cable with a fiberglass rod core for cable rigidity. The camera head shall point forward while traveling through the sewer mainline.

D. The camera used from a cleanout shall be able to be launched from the cleanout and travel down to the sewer mainline, up to 100 feet. The camera system shall be able to inspect 3-inch, 4-inch, and 6-inch lateral connections.

E. The video camera shall include a title feature capable of showing on the tape the following information:

   a. City and State

   b. Date/Time

   c. Contractor's Name

   d. Pipe Size (Diameter) and Material

   e. Upstream Manhole Number & Distance to Lateral

   f. On-going Footage Counter

F. A sonde shall be provided for locating unmarked sewer laterals. A sonde is a transmitter tied on a line and moved through a sewer or duct. A receiver on the surface follows its movement, documenting the line location. The pipe position is then marked on the ground. The sonde is pushed farther into the pipe, the receiver relocates the sonde and the pipe position is marked again. This process is repeated until the desired section of pipe is traced. It is pulled out on completion of the locate. The sonde will be inserted into the lateral through a sewer cleanout or, in case of no cleanout, through a

roof vent to locate the cleanout as well as unmarked sewer lateral. The sonde may also be attached to the lateral television camera.

4.4 SUBMITTALS

A. The Contractor shall submit shop drawings and other information in accordance with Section 01 – General Conditions. The Contractor's submittals shall include description of the software to be used and a sample of the video titles to be used, along with a sample of the television survey log to be used.

4.5 QUALIFICATIONS

A. The Qualifications of the Contractor shall be submitted prior to contract award. These Qualifications shall include detailed descriptions of the following:

   a. Name, business address and telephone number of the Contractor.

   b. Name(s) of all supervisory personnel to be directly involved with this project.

B. The Contractor shall sign and date the information provided and certify that to the extent of his knowledge, the information is true and accurate, and that the supervisory personnel will be directly involved with and used on this project. Substitutions of personnel and/or methods will not be allowed without written authorization of the Owner.

C. Specialty technicians shall be certified by the equipment manufacturer and/or its authorized representative. Certifications shall be submitted to the Owner.

D. The Contractor shall provide his references of previous project lists going back five years including his customers' names, addresses, and telephone numbers.

E. To be qualified, the Contractor shall have a minimum of five years previous experience in the work required in this section.

PART 2 - PRODUCTS

A. All inspection information and data (including video) written to electronic file transfer link.

PART 3 - EXECUTION

4.6 PRECONSTRUCTION SURVEY

A. Procedure

   a. Prior to any repair work, the entire service lateral (from mainline to property line I cleanout, whichever is farther from the mainline) shall be televised. This is not a separate pay item.

   b. Measurement for location of defects shall be above ground by means of a meter device. Measurement meters shall be accurate to tenths of a foot over the length of the section being surveyed. Accuracy of the distance meter shall be checked by use of a walking meter, roll-a-tape, or other suitable device. Linear footage shall be shown on screen during recording.

c. Movement of the television camera shall be temporarily halted for a minimum of ten seconds at each visible point of flow until the source and flow rate from that paint are determined.

d. The inspection shall be performed from either the main sewer or the cleanout with proper equipment specified. If the Contractor chooses to perform the inspection from the cleanout and the cleanout is either inaccessible or does not exist, he shall install a cleanout to facilitate the inspection at no additional cost to the Owner. The Contractor may provide appropriate documentation to the Owner for review/consideration as to why a clean out is required for inspection and inspection is unable to be completed from the main.

e. Above ground horizontal location of lateral shall be marked every five (5) feet utilizing surveyor's paint on an asphalt or concrete surface and surveyor's flags in grass. Approximate depth of laterals at these locations shall be recorded on the TV logs.

B. Field Documentation

a. Television Survey Logs. Location of the lateral by indicating the upstream manhole number, distance from the upstream manhole, lateral connection to the main line (left, center or right), and address of the customer serviced by the lateral, shall be noted on the television survey log. Printed and electrically stored location records shall be kept by the Contractor and will clearly show the location, in relation to the cleanout or the mainline of each infiltration point observed during survey. Footage shall be shown on the log. In addition, other points of significance such as unusual conditions, roots, broken pipe, presence of scale and corrosion, and other discernible features will be recorded and a copy of such records will be supplied to the Owner. The Contractor shall measure the depth of the upstream and downstream manholes. Measurements shall be from the invert of the pipe to the top of the manhole rim and shall be recorded on the survey log.

b. Photographs. Digital photographs of the television picture of problems shall be taken by the Contractor upon request of the Owner.

c. Video Recordings. The purpose of video (electronic file share link) recording shall be to supply a visual and audio record of problem areas of the lines that may be replayed. Electronic file share link recording playback shall be at the same speed that it was recorded. Slow motion or stop motion playback features shall be supplied by the Contractor. Once recorded, the videos become the property of the Owner. The Contractor shall have all videos and necessary playback equipment readily accessible for review by the Owner during the Project.

d. Audio. All videos shall have audio record. As a preamble, at the beginning of the video, the Contractor shall state the following: "(Contractor's Name) is performing a pre/post TV survey for Job No. [provided by the Owner], Loxahatchee River District". State date, time, operator's name, area, pipe size and material, upstream manhole number and depth. The Contractor shall verbally state the position of the lateral with respect to the upstream manhole and describe defects. At the end of each line, state: "End of line" and total linear footage.

4.7 POST CONSTRUCTION SURVEY

A. Procedure

a. The same procedures shall be used as indicated in Section 4.6 PRECONSTRUCTION SURVEY.

b. In addition, the Contractor shall stop the camera at all point repairs and inspect entire repaired pipe sections.

c. The Contractor shall invert white foreground to black as needed in the line section with light background.

d. In the case of a post-liner survey, the Contractor shall fully televise both ends of the liner so that the fit of the liner to the host pipe can be evaluated.

e. The post-liner television survey shall be done within 2 weeks of liner installation.

B. Documentation

a. The same documentation shall be provided as indicated in Section3.01 PRECONSTRUCTION SURVEY.

4.8 LOCATION OF LATERAL FROM RESIDENCE

A. Procedure

a. Run a sonde through a roof vent to locate cleanout as well as unmarked sewer lateral. A sonde is a transmitter tied on a line and moved through a sewer or duct. A receiver on the surface follows its movements, documenting the line location. The pipe position is then marked on the ground. The sonde is pushed farther into the pipe, the receiver relocates the sonde and the pipe position is marked again. This process is repeated until the desired section of pipe is traced. It is pulled out on completion of the locate.

B. Documentation

a. Above ground horizontal location of lateral shall be marked every five (5) feet utilizing surveyor's paint on an asphalt or concrete surface and surveyor's flags in grass. Approximate depth of laterals at these locations shall be recorded on the TV logs. Location of buried cleanouts, or location for the purposes of installing a new cleanout shall be marked by two measured distances to permanent recoverable objects Contractor shall furnish a schematic of these locations with sufficient detail to be able to relocate from above ground, at a later date.

5.0 CURED-IN-PLACE PIPE LATERAL LINING

5.1 INTENT

This specification covers material requirements, installation practices, and test methods for the reconstruction of a sewer service lateral pipe and the main connection without excavation. The pipe renovation shall be accomplished by the inversion and inflation of a resin impregnated, single- piece lateral and main connection liner. When cured, the liner extends over a predetermined length of the service lateral and the full circumference of the main pipe at the connection (CIPP) outfitted with

gasket seals. The Materials and Installation practices shall, at a minimum, shall conform to the specifications, and be a full circle main line connection with hydrophilic gaskets.

This specification takes precedence over any other similar specification that may be found in other sections of the bid documents.

5.2 GENERAL

The reconstruction shall be accomplished using a resin absorbent textile tube of particular length and a thermo-set resin with physical and chemical properties appropriate for the application. The launching device and launching hose is winched through the mainline and positioned at the appropriate service lateral connection. The mainline bladder is inflated seating the hydrophilic seals and presses the connection liner against the main pipe at the connection while the lateral tube inverts up into the lateral pipe by the action of the inversion bladder. The resin-saturated liner is cured, the hydrophilic gaskets are in place then the inversion bladder and launching device are removed.

5.3 PRODUCT AND INSTALLER ACCEPTABILITY

A. All sewer products are intended to have a minimum 50-year design life, in order to minimize the Owner's long-term risk of failure, only proven products and installers with substantial successful long-term track records will be considered.

B. Products and installers must document the following minimum criteria to be deemed commercially acceptable:

Product	**Unit**	**Florida Minimum Requirement**	**U.S. Minimum Requirement**
Lateral Liner	LF	50,000	500,000
Main / Lateral Connections	EA	4,000	40,000
Stack Single or Double Wye	EA	25	25
Lateral Transitions	EA	100	500
Siamese Lateral Connections	EA	25	25

C. For materials and product to be considered commercially proven, the above referenced minimum units of successful wastewater collection system installations must be documented to the satisfaction of the Owner to assure commercial viability of the proposed liner system. If changes in the product (installation, resin, materials, configuration, assembly, seals) did occur the date and scope of changes must be part of the product history documentation for the Owner to review and tabulated to show the quantity of each specific product type or version. Any modifications to the finished product bid must show the date and reason the change was made.

D. All sewer rehabilitation materials and products submitted for approval must provide third party test results supporting the long-term performance and structural strength of the product and such data shall be satisfactory to the Owner. Tests are to include the main, laterals, and main/lateral connection materials and hydrophilic gasket seals. Test samples shall be prepared so as to simulate installation methods and trauma of the product. No product will be approved without independent third-party testing verification for all components proposed.

E. The Contractor (the licensed company or Subcontractor bidding) must meet the minimum requirements above. This is a company requirement; personal history is valuable, however will not be considered in evaluating the company's ability to meet the minimum requirements of this specification. The Contractor must have installed the same product (in the same constructed configuration) proposed for a minimum of five years.

5.4 MATERIAL

A. *Liner Assembly*- The liner assembly shall be continuous in length and consist of one or more layers of absorbent needle punched felt, circular knit or circular braid that meet the requirements of ASTM F1216 and ASTM D5813 Sections 6 and 8. No intermediate or encapsulated elastomeric layers shall be in the textile that may cause de-lamination in the CIPP. The textile tube and sheet shall be constructed to withstand installation pressures, have sufficient strength to bridge missing pipe segments, and flexibility to fit irregular pipe sections. The resin saturated textile tube and sheet shall meet ASTM F 1216, 7.2 as applicable, and the tube shall have 5% to 10% excess resin distribution (full resin contact with the host pipe) that when compressed and cured will meet or exceed the design thickness.

B. *Mainline Liner Tube*- The main liner tube shall be formed from a flat sheet of resin absorbent material suitable for CIPP. The forming of the tube is accomplished by one end of the textile sheet overlapping the second end and sized accordingly to create a circular lining equal to the inner diameter of the lined main pipe. The interior of the textile sheet shall be laminated with an impermeable, translucent flexible membrane. The textile sheet before insertion shall be permanently marked on the membrane as a "Lateral Identification" correlating to the address of the building the lateral pipe provides service.

C. *Lateral Liner Tube*- The exterior of the lateral liner tube shall be laminated with an impermeable, translucent flexible membrane. Longitudinal seams in the tube shall be stitched and thermally sealed. The lateral tube will be continuous in length. The lateral tube will be capable of conforming to offset joints, bends, bells, disfigured pipe sections and pipe diameter transitions.

D. *Mainline Connection*- The main tube and lateral tube shall form a one-piece assembly by stitching the lateral tube to the mainsheet aperture. The connecting end of the lateral tube shall be shaped to match the aperture and curvature of the main tube. The lateral tube and main tube shall be sealed by use of a flexible UV cured adhesive/sealant. The main/lateral tube assembly shall take the shape of a complete "TEE" or "WYE" (3 branches) with corresponding dimensions such as a curved circle or a curved elliptical opening in the pipefitting. Submittals for the liner assembly must include the manufacturer's assembly methods and test protocol for the main/lateral liner assembly to be certified as airtight prior to resin saturation. Each liner assembly must include this test data and be certified by the manufacturer to be

airtight prior to resin saturation.

E. *Gasket/Hydrophilic Seals*- The mainline connection shall include a seamless molded flange shaped gasket attached to the main liner tube. The gasket must be a minimum of 2.5mm and must retain this minimum thickness under installation pressures. The lateral tube shall include a compression hydrophilic seal attached six-inches from the terminating end of the lateral tube.

F. *Mainline End Seal Test Data*- The hydrophilic gasket seals shall include test data that supports substantial expansion properties so to form a watertight compression end seal at the terminating ends of the CIP-lateral liner. The test protocol shall simulate subterranean conditions and hydraulic loading at surface. Gasket seal submittals must include tests data simulating hydration/ dehydration conditions for a period of 10,000-hours and the test results must successfully demonstrate and document long-term performance without deterioration, loss of material, flexibility, and expansion of the gasket during repeated cycles of hydration and dehydration.

G. *Bladder Assembly*- The liner assembly shall be surrounded by a second impermeable, inflatable, invertible, flexible translucent membrane bladder that will form a liner/bladder assembly. The translucent bladder shall facilitate vacuum impregnation while monitoring the resin saturation process.

5.5 RESIN SYSTEM

A. The resin/liner system shall conform to ASTM D5813 Section 8.2.2.

B. The resin shall be a corrosion resistant polyester, vinylester, epoxy or silicate resin and catalyst system that when properly cured within the composite liner assembly, meets the requirements of ASTM F1216, the physical properties herein, and those which are to be utilized in the design of the CIPP, for this project.

C. The resin shall produce a CIPP, which will comply with the structural and chemical resistance requirements of ASTM F1216.

Table 1 CIPP INITIAL STRUCTURAL PROPERTIES

Property	ASTM Test	Minimum Value	
		PSI	(MPa)
Flexural Strength	D 790	4,500	(31)
Flexural Modulus	D 790	250,000	(1,724)

5.6 DESIGN CONSIDERATIONS

A. The CIPP shall be designed per ASTM F1216, Appendix X1.

B. The CIPP design for the lateral tube and main sheet shall assume no bonding to the original pipe.

C. The resin saturated lateral tube and the main sheet must place the resin in full contact with the host pipe. The cured liner must have any coating on the interior of the lateral piping.

D. The liner must be smooth and have an average roughness coefficient "n" factor of 0.013 or lower.

5.7 REFERENCES

A. ASTM F-2561 - Standard Practice for Rehabilitation of a Sewer Service Lateral and Its Connection to the Main Using a One-Piece Main and Lateral Cured-In-Place Liner.

B. ASTM F1216 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube.

C. ASTM D-790 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

D. ASTM D-792 Standard Test Methods for Density and Specific Gravity of Plastics by displacement.

E. ASTM D-2990 Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics

F. ASTM D5813 Standard Specification for Cured-in Place Thermosetting Resin Sewer Pipe.

5.8 INSTALLATION RECOMMENDATIONS

A. *Access Safety* – Prior to entering access areas such as manholes, an excavation pit, performing inspection or cleaning operations, an evaluation of the atmosphere to determine the presence of toxic or flammable vapors or lack of oxygen shall be undertaken in accordance with local, state, or federal safety regulations.

B. *Cleaning and Inspection* – As per NASSCO Standards.

C. *Cleaning Accessing the Lateral Pipe* – A cleanout is required to be located on the exterior of the building. The cleanout fitting shall be TEE shaped so to allow upstream and downstream access to the lateral pipe. The cleanout shall be located within two (2) feet of where the finished liner is to terminate.

D. *Plugging* – The upstream side of the cleanout shall be plugged during insertion and curing of the liner assembly ensuring no flows enter the pipe and no air, steam or odors will enter the building. When required, the main pipe flows will be by-passed. The pumping system shall be sized for peak flow conditions. The upstream manhole shall be monitored at all times and an emergency deflating system will be incorporated so that the plugs may be removed at any time without requiring confined space entry.

E. *Inspection of Pipelines* – The interior of the pipeline shall be carefully inspected to determine the location of any condition that shall prevent proper installation, such as roots, severe offsets, and collapsed or crushed pipe sections. Experienced personnel trained in locating breaks, obstacles, and service connections by closed circuit television shall perform inspection of pipelines.

F. *Line Obstructions* – The existing lateral pipe shall be clear of obstructions that prevent the proper insertion and expansion of the lining system. Changes in pipe size shall be accommodated, if the lateral tube is sized

according to the pipe diameter and condition. Obstructions may include dropped or offset joints of no more than 20% of inside pipe diameter.

G. *Resin Impregnation* – The liner assembly is encapsulated within the translucent bladder (liner/bladder assembly), the entire liner including the flat sheet shall be saturated with the resin system (wet-out) under controlled vacuum conditions. The volume of resin used shall be sufficient to fill all voids in the textile lining material at nominal thickness and diameter. The volume shall be adjusted by adding 5% to 10% excess resin for the change in resin volume due to polymerization and to allow for any migration of resin into the cracks and joints in the original pipe. No dry or unsaturated area in the mainline sheet or lateral tube shall be acceptable upon visual inspection.

H. *Liner Insertion* – The lateral tube and inversion bladder shall be inserted into the launching hose. The main bladder and flat textile sheet (main liner tube) shall be wrapped around a launching device, formed into a tube and secured by use of rubber bands. A seamless molded flange shaped gasket shall be attached to the main liner tube by use of stainless-steel snaps. The flanged gasket shall be inserted into the lateral pipe at the main/lateral juncture so that the brim of the flanged gasket is firmly seated against the mainline pipe liner. A hydrophilic seal shall be positioned 6- inches from the terminating end of the lateral liner tube. The launching device is inserted into the pipe and pulled to the point of repair. The pull is complete when the lateral tube is exactly aligned with the lateral pipe connection. The lateral tube is completely protected during the pull. The mainline liner is supported on a rigid "launcher that is elevated above the pipe invert through the use of a rotating skid system. The liner assembly shall not be contaminated or diluted by exposure to dirt or debris during the pull.

I. *Bladder* – The main bladder shall be inflated causing the main sheet to unwrap and expand; pressing the main tube firmly into contact with the main pipe and embedding the flange shaped gasket between the main tube and the main pipe at the lateral opening. The lateral tube is inverted through the main tube aperture by the action of the lateral bladder extending into the lateral pipe to a termination point that shall be no less than 2- feet from the exterior cleanout. The bladder assembly shall extend beyond each end of the liner, so the liner remains open-ended and no cutting shall be required.

5.9 CIPP PROCESSING

A. *Curing* – After the liner has been fully deployed into the lateral pipe, pressure is maintained pressing the liner firmly against the inner pipe wall until the liner is cured at ambient temperatures or by a suitable heat source. The heating equipment shall be capable of delivering a mixture of steam and air throughout the liner bladder assembly to a uniform raise the temperature above the temperature required to cure the resin. The curing of the CIPP shall take into account the existing pipe material, the resin system, and ground conditions (temperature, moisture level, and thermal conductivity of the soil). The heat source temperatures shall be monitored and logged during the cure and cool down cycles. The manufacturer's recommended cure schedule shall be submitted and followed.

B. *CIPP Processing* – Curing shall be done without pressure interruption with air or a mixture of air and steam for the proper duration of time per the resin manufacturer's recommendations. The curing process is complete when the temperature of the CIPP reaches 100 degrees Fahrenheit or less.

5.10 FINISH

A. *The finished CIPP* – CIPP Shall be a homogenous CIPP liner assembly located within a lateral service pipe for a specific length, and extending into the main pipe to renew 18- inches of the main pipe at the main/lateral service connection. The CIPP shall be smooth with minimal wrinkling and shall increase flow rate. The CIPP shall be free of dry spots, lifts, and delamination. The CIPP shall include a textile taper at each end providing a smooth transition to the host mainline liner for accommodating video equipment and maintaining proper flow in the mainline.

After the work is completed, the installer will provide the Owner with video footage documenting the repair and the visual markings on the CIPP liner assembly identifying the building address. The finished product shall provide a verifiable non-leaking connection between the mainline liner and the CIP-Lateral liner.

5.10 RECOMMENDED INSPECTION AND TESTING PROCEDURES

A. *Sampling* – As designated in the purchase agreement, the preparation of a CIPP sample is required. The sample shall be prepared by securing a flat plate mold using the textile tube material and resin system as used for the rehabilitated pipe.

B. *Pressure* – The pressure applied on the plate sample will be equal to the highest pressure exerted on the lateral tube during the inversion process.

C. *Length* – The minimum length of the sample must be able to produce at least five specimens for testing in accordance with ASTM D-790-03.

D. *Conditioning* – Condition the test specimens at 73.4 ± 3.6º F (23 ± 2ºC) and 50 ± 5% relative humidity for not less than 40 hours prior to test in accordance with Practice ASTM D 618, for those tests where conditioning is required.

E. *Short-Term Flexural (Bending) Properties* – The initial tangent flexural modulus of elasticity and flexural stress shall be measured for gravity and pressure pipe applications in accordance with Test Method D 790 and shall meet the minimum requirements of Table 1.

F. *Gravity Pipe Leakage Testing* – If required by the Owner in the contract documents or purchase order, gravity pipes should be tested using an air test method where a test plug is placed adjacent to the upstream and downstream ends of the main sheet CIPP and at the upper most end of the lateral tube. This test should take place no less than 72-hours after returning the lateral pipe back into service. This test is limited to pipe lengths with no service connections. The test pressure shall be 4-PSI for a test time of three-minutes; the pressure shall not drop below 3.5 PSI.

5.11 WARRANTY

A. All CIPP liners shall be certified by the manufacturer for specified material properties for the particular repair. The Contractor warrants the liner to be free from defects in raw materials for ten years from the date of acceptance. The Contractor guarantees the work to be free from defects caused by faulty workmanship for a period of five years from the date of acceptance. During the warranty period, any defects which affect the integrity, strength or water tightness of the installed pipe shall be repaired at the Contractor's expense.

6.0 EROSION & SEDIMENT CONTROL

6.1 DESCRIPTION

A. The work to be performed under this section shall include furnishing all maintenance of traffic plans, all materials and labor necessary to receive approval and to regulate vehicular/pedestrian traffic in accordance with the requirements set forth herein and those required by FDOT, Palm Beach County,

Martin County, Village of Tequesta, Jupiter Inlet Colony, Town of Juno Beach and/or the Town of Jupiter.

6.2 REFERENCE STANDARDS

A. FDOT Standard Specifications, Latest Edition.
B. Rule 62-621.300 (4), F.A.C. and the "Generic Permit for Stormwater Discharge from Large and Small Construction Activities", FDEP Document 62-621.300(4) (a).

6.3 SUBMITTALS

A. If required, prior to the pre-construction meeting, the Contractor shall obtain, prepare and submit the FDEP Form 62-621.300 (4) (b), "Notice of Intent (NOI) to use a Generic Permit for Stormwater Discharge from Large and Small Construction Activities". The type of project or activity that qualifies for use of the Generic Permit, the conditions of the permit, and additional requirements to request coverage are specified in the Generic Permit document (FDEP Documents 62-621.300 (4) (a). The appropriate Generic Permit fee, as specified in Rule 62-4.050 (4) (d), F.A.C., shall be submitted with the NOI in order to obtain permit coverage. Submit a copy of the NOI and confirmation of receipt of the NOI and fee from the NPDES Stormwater Notices Center prior to the pre-construction meeting.
B. If required, the Contractor shall develop and submit to the Engineer a detailed "Erosion and Sediment Control Plan" and "Stormwater Pollution Prevention Plan" (SWPPP) for review. Included shall be plan(s) of the site locating all siltation skirts, hay bales, turbidity curtains, and other features required to control erosion, sediment, water and air pollution, on and off the site. The plan shall be sequenced to show changes during the life of the project; shall be coordinated with on-site stockpiling of fill and top soil; and shall be directly coordinated with the construction sequence for stormwater improvements. The SWPPP shall comply with Generic Permit for Stormwater Discharge from Large and Small Construction Activities, FDEP Document 62-621.300(4)(a).
C. The plan(s) shall include catalog cuts of all materials provided in support of the plan. The "Erosion and Sediment Control Plan" and SWPPP shall be submitted at or before the preconstruction conferences.
D. At the conclusion of construction and prior to final acceptance by the Engineer, the Contractor shall complete and submit the FDEP Form 62-621.300(6), "Notice of Termination (NOT) of Generic Permit Coverage" in accordance with the instructions contained therein. Submit a copy of the NOT and confirmation of receipt of the NOT from the NPDES Stormwater Notices Center prior to final acceptance by the Engineer.

6.4 PERMANENT EROSION CONTROL

A. This section is not intended to address the permanent Contractor installed erosion control features such as grassing, sodding, grading, and the installation of drainage structures. It applies only to the temporary efforts required of the Contractor during the full construction process. The Contractor shall incorporate the permanent erosion control features into the project as soon as possible.

PRODUCTS

6.5 SILTATION FENCES

A. The siltation fences shall be geotechnical woven or non-woven fabric conforming to the applicable application requirements of Section 985 of the Florida Department of Transportation "Standard Specifications for Road and Bridge Construction". The type and size of posts and wire mesh reinforcement will be at the option of the Contractor and applicable to the installation conditions.

6.6 EROSION CONTROL MATTING

A. Erosion control matting shall be woven, biodegradable geotechnical fabric. It shall be used to temporarily stabilize channels or steep slopes until vegetation is established. This type selected shall be comparable to the grass cover applied for the particular installation. The material shall be stapled in place at 18 inches on center with a minimum matting lap of 4 inches.

6.7 HAY OR STRAW BALES

A. Hay and straw bales shall be individual bales each entrenched 4" into the soil. The bales shall be clean, fresh hay or straw. Bales shall be replaced when they become clogged with silt, deteriorate, or after a period of 3 weeks, whichever occurs first. The particular application may require that bales be staked into the ground with rebar.

6.8 TURBIDITY CURTAINS

A. Turbidity curtains shall be floating of sufficient depth to reach within 1.0 feet of the bottom of the receiving water. They shall be similar to the types manufactured by the American Boom and Barrier Corp. They shall be yellow or international orange in color. The material shall be 45 mils thick (18 to 22 oz/sq. yd) and fully sewn or vulcanized seamed to provide flexible and buoyant units. The top floatation shall maintain a 3" freeboard above the water surface.

EXECUTION

6.9 GENERAL

A. The Contractor shall install and maintain, for the full period of the construction, all necessary temporary erosion control features. These features shall be coordinated with all applicable construction features to assure the continuous and effective control of erosion and degradation of surface water quality on and adjoining the site. In the event of unforeseen conditions, the Owner's Representative may require the use of control features of methods other than those indicated or proposed by the Contractor.
B. The Contractor shall perform all clearing and grubbing operations such that the area of unprotected erodible earth exposed at any one time is not larger than the minimum area necessary for efficient construction operations, and the duration of exposed, uncompleted construction shall be kept as short as practicable.

6.10 EARTHWORK PROCESS

A. The Owner's Representative may limit the area of unprotected erodible earth exposed by clearing, grubbing, excavation, backfilling, or stockpiling operations and may direct the Contractor to provide immediate temporary erosion or pollution control measures to prevent erosion, degradation or receiving water, or wind blown transfer of materials. As a result, the Contractor's efforts shall be in keeping with his capability to grade, grass, and install the permanent erosion control measures.
B. If unforeseen erosion problems arise as a result of the design, weather conditions, or the Contractor's

operations, the Contractor shall be required to implement acceptable temporary erosion control features during construction when the Owner's Representative so directs.

6.11 TEMPORARY EROSION CONTROL

A. General: Temporary erosion and water pollution control features shall consist of, but not be limited to, temporary grassing, temporary sodding, temporary mulching, sandbagging, slope drains, sediment basins, sediment checks, berms, baled hay or straw, floating turbidity curtain, and silt staked fence. The Contractor may find design details for some of these items in the Water Quality Section of the applicable edition of the Florida Department of Transportation "Department's Roadway and Traffic Design Standards." The Owner's Representative may direct use of temporary erosion control features or methods other than those indicated herein. Any such advice given the Contractor by the Owner's Representative shall not relieve the Contractor from fully preventing erosion.

B. Temporary Grassing: The Contractor may provide temporary sod or seeding and mulching to provide temporary erosion control in areas where applicable or where site conditions warrant. The Contractor shall obtain the approval of the Owner's Representative for the use of all forms of temporary grassing. Where temporary grassing is provided, the final condition of the grass may warrant its removal and degrassing at no additional cost the Owner.

C. Temporary Mulch: This work shall consist of furnishing and applying a 2" to 4" thick blanket of straw or hay mulch into the top 2" of the soil in order to temporarily control erosion. Only undecayed straw or hay, which can readily be cut into the soil, shall be used. Other measures for temporary erosion control such as hydro mulching, chemical adhesive soil stabilizers, etc. may be substituted for mulching with straw of hay if approved by the Owner's Representative. When permanent grassing operations begin, temporary mulch materials shall be plowed under in conjunction with preparation of the ground.

D. Sandbagging: This work shall consist of furnishing and placing sandbags in configurations so as to control erosion and siltation.

E. Slope Drains: This work shall consist of constructing slope drains, utilizing pipe, fiber mats, rubble, cement concrete, asphaltic concrete plastic sheeting, or other acceptable materials, or as may be approved as suitable to adequately perform the intended function.

F. Temporary Sediment Basins: Temporary sediment basins, if necessary, shall be constructed to adequately perform the intended function. Sediment basins shall be cleaned out as necessary to maintain flow function or as directed.

7.0 DEWATERING

GENERAL

7.1 DESCRIPTION

A. The Work to be performed under this section shall include furnishing all equipment and labor necessary to remove storm or subsurface waters from excavation areas in accordance with the requirements set forth and as shown on the drawings.

7.2 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS

A. The dewatering of any excavation area and the disposal of the water shall be in strict accordance

with the latest revision of all local and state government rules and regulations and Section 3.0 Erosion and Sediment Control.

7.3 SUBMITTALS

A. If required, the Contractor shall obtain a Dewatering Permit in compliance with Section 2.5 of the SFWMD Basis of Review for Water Use. A copy of the application and permit shall be provided to the Engineer.

EXECUTION

7.4 DEWATERING

A. The Contractor shall provide adequate equipment for the removal of storm or subsurface waters which may accumulate in the excavation. If subsurface water is encountered, the Contractor shall utilize suitable equipment to adequately dewater the excavation so that it will be dry for work and pipe laying. A wellpoint system or other Engineer approved dewatering method shall be utilized if necessary to maintain the excavation in a dry condition for preparation of the trench bottom and for pipe laying. Dewatering by trench pumping will not be permitted if migration of fine grained natural material from bottom, side walls or bedding material will occur. No facilities shall be constructed under wet conditions. Dewatering shall cease in a manner to allow the subsurface water to slowly return to normal levels. Any voids left after the removal of the dewatering system shall be fully grouted.

B. The Contractor is specifically advised that groundwater elevations within the project areas are known to be variable to a significant degree. The Contractor needs to consider this in preparing their bid and anticipate the need for dewatering accordingly.

7.5 DISPOSAL

A. Water pumped from the trench or other excavation shall be disposed of in storm sewers having adequate capacity, canals or other suitable disposal points. **The Contractor is responsible for obtaining and complying with all permits to de-water the construction area and discharge the de-watered waters offsite if necessary**. The Contractor shall protect waterways, storm sewers or other disposal facilities from turbidity, silt, debris or other material that may impair the quality or function of the facility during the dewatering operation. The Contractor's plan shall include temporary culverts, barricades and other protective measures to prevent damage to property or injury to any person or persons. No flooding of streets, roadways, driveways or private property will be permitted. Engines driving dewatering pumps shall be equipped with critical grade mufflers.

8.0 WASTEWATER FLOW CONTROL

8.1 SCOPE OF WORK

A. The work specified in this Section includes all labor, materials, accessories, equipment and tools for performing all operations required to bypass pump sewage around a manhole or sewer section in

which work is to be performed. The Contractor shall be prepared to bypass pump sewage as a part of his operations.

B. The work specified in this Section also includes all labor, materials, accessories, equipment and tools for performing all operations required to bypass pump sewage around a section of force main in which work is to be performed, or around a manhole into which a force main discharges if work is to be performed in the manhole. The Contractor shall be prepared to bypass pump sewage as a part of his operations.

C. The Contractor shall provide all pumps, piping, and other equipment to accomplish this task; perform all construction; obtain all permits; pay all costs; and perform complete restoration of all existing facilities to equal or better condition to the satisfaction of the Owner.

8.2 GENERAL

A. When sewer line flows at the upstream manhole of the line being repaired are above the maximum allowable requirements for television survey, or do not allow the proper sewer or manhole repair, the flows shall be reduced to the levels indicated by one of the following methods: manual operation of pumping stations by Owner forces, by the Contractor plugging/blocking of the flows, or by the Contractor pumping/bypassing of the flows as acceptable to the Owner.

   a. In some applications, the wastewater flow may be plugged and contained within the capacity of the collection system. This shall only be done when it has been determined the system can accommodate the surcharging without any adverse impact.

   b. For the initial television survey, before and after any repair with the exception of Joint testing and sealing, the sewer line shall be blocked completely. No flow, except infiltration/inflow, will be allowed through the respective sewer line being televised on the pre-repair television survey, and the post-repair television survey.

B. For all other television surveys, including warranty surveys and joint testing and sealing operations, the depth of flow within the sewer shall not exceed that shown below for the respective pipe sizes as measured in the manhole.

   1. Maximum Depth of Flow - Warranty Television Survey

      6" - 10" Pipe..... 20% of pipe diameter

      12" - 24" Pipe..... 25% of pipe diameter

      Above 24" Pipe..... 30% of pipe diameter

   2. Maximum Depth of Flow Joint Testing/Sealing

      6" - 12" Pipe..... 25% of pipe diameter

      15" - 24" Pipe..... 30% of pipe diameter

      Above 24" Pipe..... 35% of pipe diameter

C. When sewer line flows at the upstream manhole of the line being repaired, in the opinion of the Owner, are too excessive to plug while the rehabilitation is being performed, the Contractor shall submit a written plan and pump/bypass the flow as acceptable to the Owner.

D. When flows of sewage through a force main being repaired, or discharging by gravity or force main to a manhole being repaired, are in the opinion of the Owner too excessive to plug or stop while the rehabilitation is being performed, the Contractor shall submit a written plan and pump/bypass the flow as acceptable to the Owner.

E. SUBMITTALS

   a. The Contractor shall submit complete, detailed plans for this aspect of the work to the Owner for review.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

8.3 PLUGGING AND BLOCKING

A. A sewer line plug shall be inserted into the line at a manhole upstream from the section being surveyed or repaired. The plug shall be so designed that all or any portion of the operation flows can be released. During the survey portion of the operation, flows shall be shut off or reduced to within the maximum flow limits specified. During repairs, the flows shall be shut off or pumped / bypassed, as acceptable to the Owner. After the work tasks have been completed, flows shall be restored to normal.

8.4 PUMPING AND BYPASSING

A. When pumping/bypassing is required, as determined by the Owner, the Contractor will supply the necessary pumps, conduits and other equipment to divert the flow of sewage around the manhole section in which work is to be performed. The bypass system shall be of sufficient capacity to handle existing flows plus additional flow that may occur during periods of rain storms. The Contractor will be responsible for furnishing the necessary labor and supervision to set up and operate the pumping and bypassing system. A "setup" consists of the necessary pumps, conduits and other equipment to divert the flow of sewage around a manhole section, from the start to finish of work performed in the manhole section.

B. Pumps and equipment shall be continuously monitored by a maintenance person capable of starting, stopping, refueling and maintaining these pumps during the rehabilitation. Engines shall be equipped in a manner to keep noise to a minimum.

C. In the case of bypassing force main flows, whether such flows normally discharge into a manhole being repaired or pass through a force main being repaired, bypass shall be accomplished by one of two methods.

D. In the absence of surface conditions that prevent temporary bypass piping, the force main shall be accessed by excavation and temporary piping shall be installed to bypass the repair in a manner acceptable to the Owner. In general, for manhole repairs, the Contractor shall excavate to the force main outside the manhole, cut the force main, attach bypass piping, and bypass flow to the next downstream manhole. For force main repairs, the

Contractor shall excavate to the force main on each side of the repair, cut the force main on each side of the repair, attach bypass piping on each side of the repair, and bypass flow around the repair. Upon the conclusion of bypass activities and repair work, the Contractor shall install closure pieces to permanently rejoin and restore the force main to full function.

E. Where surface conditions prevent the use of temporary bypass piping, and where the Owner cannot accomplish the bypass operations in-house, the Owner shall shut down the associated lift station and the Contractor shall pump from the wet well into tanker trucks for transport to a designated location. The number of tanker trucks deemed necessary for this operation shall be agreed to in advance by the Owner.

8.5 FLOW CONTROL PRECAUTIONS

A. Surcharging Sewers. Where the raw sewage flow is blocked or plugged, sufficient precautions must be taken to protect the public health. No septic conditions shall be allowed due to Contractor's operations. The sewer lines shall also be protected from damage. The following occurrences shall not be allowed:

   a. No sewage shall be allowed to back up into any homes or buildings.

   b. No sewage shall overflow any manholes, cleanouts or any other access to the sewers.

B. Users upstream of the repair area shall be able to use all their water and sewer utilities without interruption.

   a. If any of the above unallowable conditions occur or are expected to occur, the Contractor shall bypass pump to alleviate one or all of the conditions. Additionally, the Contractor is required to observe the conditions upstream of the plug and be prepared to immediately start bypass pumping, if needed. It is Contractor's responsibility to pay for all damage claims.

C. Pumps. Any sump pumps, bypass pumps, trash pumps or any other type pump which pulls sewage/water or any type of material out of the manhole or sewer shall discharge this material into another manhole, or appropriate vehicle or container acceptable to the Owner. Under no circumstances shall this material be discharged, stored or deposited on the ground, swale, road or open environment.

   a. Traffic Control. The Contractor shall take appropriate steps to ensure that all pumps, piping and hoses that carry raw sewage are protected from traffic. Traffic control shall be performed in accordance with Section 01570 - Traffic Regulation and Maintenance of Traffic. Sewage Spills. In the event, during any form of "Sewage Flow Control", that raw sewage is spilled, discharged, leaked or otherwise deposited in the open environment, due to the Contractor's work, the Contractor is responsible for any cleanup of solids and disinfection of the area affected. This work will be performed at the Contractor's expense with no additional cost to the Owner. The Contractor is also responsible for notifying the sewer system maintenance personnel and complying with any and all regulatory requirements in regards to the size spill with no additional cost to the Owner.

9.0 OTHER STANDARDS AND SPECIFICATIONS

9.1 GENERAL

A. The Loxahatchee River Environmental Control District Manual of Minimum Construction Standards and Technical Specifications

B. All work shall comply with the Loxahatchee River Environmental Control District Manual of Minimum Construction Standards and Technical Specifications. Electronic versions are available on the District's website at the following address, http://www.loxahatcheeriver.org/design_standards.php .

9.2 Palm Beach County

A. All work within Palm Beach County right-of-way shall comply with Palm Beach County Design Standards. Electronic versions are available on the County's website at the following address, http://www.pbcgov.com/engineering/landdevelopment/designstandardsmanual/

9.3 Town of Jupiter

A. All work within the Town of Jupiter shall comply with the Town of Jupiter Engineering Standard Details. Electronic versions are available on the Town's website at the following address, http://www.jupiter.fl.us/index.aspx?NID=620

9.4 Florida Department of Transportation

A. All work within Florida Department of Transportation right-of-way shall comply with Florida Department of Transportation standards and specifications. Electronic versions are available on the FDOT's website at the following addresses, http://www.dot.state.fl.us/rddesign/DesignStandards/Standards.shtm and http://www.dot.state.fl.us/specificationsoffice/Implemented/SpecBooks/2014/Files/2014eBook.pdf

9.5 Florida Department of Environmental Protection

A. All work shall comply with Florida Department of Environmental Protection, Florida Administrative Code, Chapter 62.

9.6 South Florida Water Management District

A. All work shall comply with South Florida Water Management District Basis of Review for Water Use.

10.0 MEASUREMENT AND PAYMENT

10.1 GENERAL

A. Measurement and payment will be based upon Work completed and accepted in accordance with the Contract Documents. No separate payment will be made for excavation, trenching, backfilling, leakage tests, surveying, density tests or other incidental items of Work not shown in the Agreement.

B. EQUIPMENT AND MATERIALS IN STORAGE: Partial payment for materials and equipment in proper storage at the site of the Work will be made for those items for which the Contractor has submitted the following:

a. Invoice for each item in storage. The invoice shall not exceed the value of the item stored as determined by the amount paid to the manufacturer (Subcontractor fabrication costs excluded).
b. List of items in storage.
c. With the following pay estimate, a release of lien for 90% of each item listed as stored materials for the previous pay estimate shall be provided. Any item for which a 90% release of lien is not supplied shall be considered as having been removed from the site.
d. No payment for any offsite storage of material will be made. Any payment for stored material shall not include labor or profit by the Contractor or any sub-Contractor. The Contractor is specifically advised that this procedure may require full payment for some stored materials or shop work significantly ahead of the time when payment is issued by the Owner.

10.2 MEASUREMENT

A. Payment shall be made at the unit prices as listed in the contract bid form based on measure quantities as described below.

10.3 PAYMENT ITEMS

A. Mobilization & Demobilization – Bid Item No. 1

1. The quantity to be paid for under this pay item shall be on a lump sum basis. The Contractor's lump sum price shall include full compensation for all work related to mobilization and demobilization, and any other related work, except for any work designated to be paid for separately or to be specifically included in the costs of other work under the Contract.
2. Payment shall be made at the Contract lump sum price and shall include, but not be limited to, the preparatory work and operations in mobilizing for beginning work on the project, including those operations necessary for the movement of personnel, equipment, supplies, videos/photos, stormwater prevention plans (implementation of best management practices) clearing and grubbing, site cleanup, project setup, sanitary facilities, labor associated with permit acquisition, construction staging area preparation and closure, project signage, project coordination/management and incidentals to the project site and establishment of temporary provisions, controls, and utilities. This item shall include those permits that are required to be obtained by the Contractor. This item shall also include field surveying/layout and complete record drawings in accordance with the project specifications and the applicable standards.
3. The items specified in this Section consist of the costs of any pre and post construction expenses necessary for the start and completion of the project, excluding the cost of construction materials. The sum of mobilization and demobilization shall not exceed 5% of total bid price.

B. Bonds & Insurance – Bid Item No. 2

1. This pay item shall include the costs of bonds and required insurance for the start of work, including temporary environmental controls, sanitary facilities and permits.

2. Bonds and insurance shall be paid for at the Contract lump sum cost as listed on the Contract Bid Proposal completed and accepted.

C. Maintenance of Traffic – Bid Items No. 3, 7, 11, 15, and 19

1. This pay item shall include the costs for all work related to the maintenance of traffic during the construction of the improvements as shown on the plans, and any other related work, except for any work designated to be paid for separately or to be specifically included in the cost of other work under the Contract. Maintenance of traffic shall be paid for at the Contract lump sum cost as listed on the Contract Bid Proposal completed and accepted. The Contract lump sum price shall include, but not be limited to, all signage, temporary striping, flagmen, barricades, temporary asphalt, temporary stabilized access around the construction equipment, notification to residents, assistance to provide garbage collection, mail/package delivery and daily access (if needed) of other utility support vehicles

D. CIPP Lateral Lining, 8" to 10" full circle main connection, 4" or 6" x 4.5 mm lateral piping, minimum 30 LF of lateral (all depths) – Bid Items No. 4, 8, 12, 16, and 20

1. The unit price includes cleaning, pre-CCTV inspection, CIPP lining, and post-CCTV inspection for each lateral liner installed by lift station gravity system. This unit price shall be paid per each full circle main lateral connection liner, as delineated by the pipe size and depth brackets named in the bid schedule, and shall include up to 30 feet of lateral liner within the public R/W (i.e. District's point of service).

E. CIPP Lateral Lining, 4" or 6" x 4.5 mm lateral piping, beyond 30 LF of lateral (all depths) – Bid Items No. 5, 9, 13, 17, and 21

1. This unit price shall be paid per linear foot of lateral liner installed beyond 30 feet to reach the limits of the public R/W (i.e. District's point of service) by lift station gravity system. Private laterals (LSxxx-GSPxxxx) shall only receive the initial 30 LF lateral liner and no additional footage.

F. Bypass Pumping – Bid Items No. 6, 10, 14, 18, and 22

1. The lump sum price shall provide full compensation for bypass pumping operations required for cleaning, CCTV and lateral lining work and shall include but not be limited to plugging, blocking the flow and all associated hoses / equipment required to bypass a sewer line in the respective lift station gravity systems.

G. Furnish & Install 4" Single Clean-Out – Bid Item No. A-1

1. The unit price for each 4" single clean-out installed shall include furnishing and installing a complete clean-out as per District Standards. All materials, labor, maintenance of traffic (MOT), excavation, fittings, protective box, and density testing required for a complete clean-out installation shall be included in the unit price.
2. This item includes any additional restoration to complete the work not included in Bid Items A-3 through A-7.
3. Dewatering is not included in this Bid Item. Refer to Bid Item No. B-8.

H. Furnish & Install 6" Double Clean-Out – Bid Item No. A-2

1. The unit price for each 6" double clean-out installed shall include furnishing and installing a complete clean-out as per District Standards. All materials, labor, maintenance of traffic (MOT), excavation, fittings, protective box, and density testing required for a complete clean-out installation shall be included in the unit price.
2. This item includes any additional restoration to complete the work not included in Bid

Items A-3 through A-7.

3. Dewatering is not included in this Bid Item. Refer to Bid Item No. A-8.

I. Install Sod (St. Augustine) – Bid Item No. A-3

1. Payment for this item shall be made on a square yard (SY) basis. The Contractor's unit price shall include full compensation for furnishing and installing the St. Augustine sod including site preparation, grading, installation, watering, maintenance, etc. as indicated.
2. Sod that is diseased or in poor condition or is damaged incidental to the construction shall be replaced by the Contractor at no additional cost to the District.

J. Concrete Sidewalk Replacement – Bid Item No. A-4

1. Payment for removing existing sidewalk, furnishing and installing concrete sidewalk as required for installation of proposed clean-outs shall be made at the Contractor's unit price per Square Yard (SY) of concrete sidewalks installed per District, Palm Beach County, Town of Jupiter, and FDOT standards and accepted.
2. The Contract Unit Price shall include full compensation for labor, materials, equipment, maintenance of traffic, and testing required to construct the sidewalk in accordance with District, Palm Beach County, Town of Jupiter, and FDOT standards.
3. District representative on-site must approve of all sidewalk replacement locations prior to Contractor commencing removal and replacement.
4. Concrete sidewalk not in conflict with proposed clean-out improvements that is damaged incidental to the construction shall be replaced by the Contractor at no additional cost to the District.

K. Asphalt Sidewalk Replacement – Bid Item No. A-5

1. Payment for removing existing sidewalk, furnishing and installing asphalt sidewalk as required for installation of proposed clean-outs shall be made at the Contractor's unit price per Square Yard (SY) of asphalt sidewalks installed per District, Palm Beach County, Town of Jupiter, and FDOT standards and accepted.
2. The Contract Unit Price shall include full compensation for labor, materials, equipment, maintenance of traffic, and testing required to construct the sidewalk in accordance with District, Palm Beach County, Town of Jupiter, and FDOT standards.
3. District representative on-site must approve of all sidewalk replacement locations prior to Contractor commencing removal and replacement.
4. Asphalt sidewalk not in conflict with proposed clean-out improvements that is damaged incidental to the construction shall be replaced by the Contractor at no additional cost to the District.

L. Concrete Driveway Replacement – Bid Item No. A-6

1. Payment for removing existing concrete driveway, furnishing and installing concrete driveway as applicable shall be made at the Contractor's unit price per Square Yard (SY) of asphalt sidewalks installed per District, Palm Beach County, Town of Jupiter, and FDOT standards and accepted.
2. The Contract Unit Price shall include full compensation for labor, materials, equipment, maintenance of traffic, and testing required to construct the concrete driveway in accordance with District, Palm Beach County, Town of Jupiter, and FDOT standards.
3. District representative on-site must approve of all driveway replacement locations prior to Contractor commencing removal and replacement.
4. Concrete driveway not in conflict with proposed clean-out improvements that is damaged incidental to the construction shall be replaced by the Contractor at no additional cost to the District.

M. Paver Brick Driveway Replacement – Bid Item No. A-7

1. The quantity of brick paver driveway restoration shall be determined by measurement of the units removed, reinstalled and accepted.
2. Payment for removal and reinstallation of brick paver units shall be made at the contract unit price per Square Yard (SY) of brick paver units reinstalled and accepted. The contract unit price shall include full compensation for all labor, materials, and equipment necessary to restore the existing brick paver driveways in accordance with the plans and specifications. This includes replacement of joints, driveway apron concrete header curb, bedding sand and/or base cement mortar where it is existing.
3. The Contract Unit Price shall include full compensation for labor, materials, equipment, maintenance of traffic, and testing required to restore the paver brick driveway in accordance with District and Palm Beach County or Town of Jupiter standards.
4. District representative on-site must approve of all driveway restoration locations prior to Contractor commencing removal and replacement.
5. Paver brick driveway not in conflict with proposed clean-out improvements that is damaged incidental to the construction shall be replaced by the Contractor at no additional cost to the District.

N. Dewatering – Bid Item No. A-8

1. Payment for Contractor required NPDES Permit application (Notice of Intent and Notice of Termination), reporting by a person holding a certification as an FDEP NPDES Construction Site Inspector, and associated erosion protection measures including turbidity abatement for short-term dewatering procedures will be made at the Contract Unit Price (EA) at each location where dewatering is required for proposed clean-out installation.
2. This item includes all silt fencing, inlet protection, etc. as required.
3. District representative on-site must approve of all applicable dewatering locations prior to Contractor commencing dewatering operations.

O. Heavy Cleaning – Bid Item No. A-9

1. Payment for heavy cleaning including root removal and/or tuberculation removal will be on a per linear foot (LF) basis.
2. This pay item may not be utilized without approval from the District.

10.4 PAYMENT: Payment will be made at the lump sum or unit price for each item shown in the Unit Bid Price Schedule, stored and/or installed and accepted, which price and payment shall constitute full compensation for furnishing all materials and performing all Work in connection therewith and incidental thereto. The following schedule shall be adhered to:

A. Last Day of the Month – Cut-off date, confirm quantities with inspector.
B. 5th of the Month - Pay estimate to the Engineer
C. 10th of the Month - Pay estimate to the Owner.
D. 20th of the Month - Payment by the Owner

When the cut-off date occurs on a holiday or weekend, the date shall be the last work day preceding the end of the month.

10.5 PAY ESTIMATE FORMS: The Engineer will supply a pay estimate form for the Contractor to use for submittal. The Contractor shall make copies to be used for

submittal of the pay estimates. Failure of the Contractor to sign the pay estimate or attach appropriate documentation shall be grounds for returning the pay estimate with no action by the Owner or Engineer.

Quantities: The quantities specified are outlined in the bid response form with their respective units of measure. Quantities are to be paid on a unit price basis for installed / operational / complete systems that meet technical specification requirements. The District reserves the right to increase or decrease the total quantities, as necessary, to meet actual requirements. A purchase order will be issued. All terms, conditions and prices of the bid are applicable. Only awarded items may be purchased. Vendor is to take all necessary steps to insure this requirement. Invoices must reference the purchase order number.

Warranties: The awarded bidder hereby acknowledges and warrants to the District that (1) materials and equipment furnished under the Contract will be new and of good quality unless otherwise required or permitted by the Contract Documents; (2) the Work will be free from defects not inherent in the quality required or permitted; and (3) the Work will conform to the requirements of the Contract Documents.

Correction of the Work: The awarded bidder shall promptly correct Work rejected by the District as failing to conform to the requirements of the Contract Documents. Contractor shall bear the cost of correcting such rejected Work, including the costs of uncovering, replacement, and additional testing. In addition to Contractor's other obligations including warranties under the Contract, Contractor shall, for a period of one (1) year after completion, correct Work not conforming to the requirements of the Contract Documents.