TECHNICAL QUESTIONS AND ANSWERS

DISTRICT SEVEN STORM DRAIN VIDEO INSPECTION SERVICES

QUESTION: What are the specs for "Structural" & "Functional" integrity?

ANSWER: Structural Integrity components – Unacceptable settlement causing separation of components; cracking, spalling, joint failure, collapsed pipe and voids created in soil supporting medium due to leaks.

Functional Integrity – Is the system functioning as designed? Has design capacity been reduced? Example: A collapsed pipe will impede conveyance, hence this would be considered non-functional.

QUESTION: What constitutes "run data"?

ANSWER: Run Data shall be provided as an ESRI Geographic Information Systems (GIS) shapefile, which shall be referenced to the State Plane West coordinate system and North American Datum of 1983 (NAD83 Datum). This can also be created as a Keyhole Markup language Zipped (KMZ) file using Google Earth. Please refer to schematic on Page A-12 for additional detail.

QUESTION: Do we have to video structures as well? Manhole/structure assessment and report - requirements?

ANSWER: If it is evident that manholes or inlets are damaged, the contractor shall provide photographic documentation and assessment of the damage, so that appropriate repairs can be initiated.

QUESTION: Where not specified, can you please provide the units so that we know what each respective "EA" relates to? (What are the units? (Vertical Ft., Lineal Foot, Infiltration Location Sealing)

ANSWER: Line Items 3 and 4 will be changed from ‘EA’, to ‘LF’.

QUESTION: Line 1 - What is the scope of a "field review?" How is it to be reported?

ANSWER: Field review is limited to visual inspection and providing relevant notes on roadway plans. It may also include photographic documentation of the project area. It may involve lifting of manhole covers for visual inspection and photography. A field review is preliminary in nature and is used to set the stage for detailed reviews, detailed inspections and detailed tests at a later date. The field reviews can be reported in memorandum format with all the supporting documentation.
QUESTION: Line 3 - What is "normal" dewatering equipment for this item? What Pump type and size for this item? Line item includes 1 plug, how many hours of pumping is included?

ANSWER: Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, sumps and siphons.

Payment will be based on the pipe size and per linear foot.

QUESTION: Line 4 - What is "normal" dewatering equipment for this item? What Pump type and size for this item? Line item includes 1 plug, how many hours of pumping is included?

ANSWER: Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, sumps and siphons.

Payment will be based on the pipe size and per linear foot.

QUESTION: Line 5 - (Manhole Repair) - What does manhole repair consist of? What system and/or specs for the repair are required? Cement? Epoxy? Fiberglass?

ANSWER: The intent of this item is to provide a structurally sound and watertight manhole or inlet in place of a deteriorated manhole or inlet. The required work effort consists of spraying, pumping, or troweling of a cementitious liner that is capable of eliminating infiltration, repairing voids, and restoring structural integrity. The cementitious liner will be applied to the walls and inverts of the manhole or inlet at a minimum of ½" inch thickness. An approved liner shall be used to accomplish the repair. All foreign material will be removed from the manhole or inlet wall and invert prior to application of the cementitious liner using a high pressure water spray (minimum 1,200 psi). Active leaks shall be stopped using a rapid setting cementitious grout according to the manufacturer’s instructions. Larger cracks will require an approved and appropriate material to be inserted per manufacturers’ instructions. For bidding purposes assume the manhole or inlet are approximate dimensions of a Type C inlet with a six foot depth, Florida Department of Transportation (FDOT) Standard Specifications. If the actual inlet dimensions are significantly different, the additional work will be considered out of scope.
Drilling and Injection: Injection holes shall be drilled through the manhole walls. Grout shall be injected through the holes under pressure with a suitable probe. Injection pressure shall not cause damage to the manhole structure or surrounding surface features. Grout shall be injected through the lowest holes first. The procedure shall be repeated until the manhole/inlet is externally sealed with grout. Grouting from the ground surface shall not be allowed. Grout travel shall be verified by observation of grout to defects or adjacent injection holes. Provide additional injection holes, if necessary, to ensure grout travel. Injection holes shall be cleaned with a drill and patched with a waterproof quick setting mortar for brick and concrete manholes.

Price and Payment for this work item includes desilting and temporary dewatering of manhole or inlet.

All repairs must follow FDOT Standard Specifications and guidelines, as prescribed in ‘Sections 431 and 948 FDOT Standard Specifications for Road and Bridge Construction – 2015’

**QUESTION:** Line 6 & 7 - (Manholes & Inlets Cleaning & Sealing) - What is the scope of this line item? Does it include.....

- Pressure washing?
- Grouting?
- Hydraulic Cement?
- Chimney repair/sealing?
- Collar repair/sealing?
- Bench repair/sealing?
- Polymer coating?

* A price of EA that could involve or exclude any combination of these could have dramatically different associated costs.

**ANSWER:** The intent of this item is to provide a structurally sound and watertight manhole or inlet in place of a deteriorated manhole or inlet. The required work effort consists of spraying, pumping, or troweling of a cementitious liner that is capable of eliminating infiltration, repairing voids, and restoring structural integrity. The cementitious liner will be applied to the walls and inverts of the manhole or inlet at a minimum of ½” inch thickness. An approved liner shall be used to accomplish the repair. All foreign material will be removed from the manhole or inlet wall and invert prior to application of the cementitious liner using a high pressure water spray (minimum 1,200 psi). Active leaks shall be stopped using a rapid setting cementitious grout according to the manufacturer’s instructions. Larger cracks will require an approved and appropriate material to be inserted per manufacturers’ instructions. For bidding purposes assume the manhole or inlet are
approximate dimensions of a Type C inlet with a six foot depth, FDOT Standard Specifications. If the actual inlet dimensions are significantly different, the additional work will be considered out of scope.

Drilling and Injection: Injection holes shall be drilled through the manhole walls. Grout shall be injected through the holes under pressure with a suitable probe. Injection pressure shall not cause damage to the manhole structure or surrounding surface features. Grout shall be injected through the lowest holes first. The procedure shall be repeated until the manhole/inlet is externally sealed with grout. Grouting from the ground surface shall not be allowed. Grout travel shall be verified by observation of grout to defects or adjacent injection holes. Provide additional injection holes, if necessary, to ensure grout travel. Injection holes shall be cleaned with a drill and patched with a waterproof quick setting mortar for brick and concrete manholes.

Price and Payment for this work item includes desilting and temporary dewatering of manhole or inlet.

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**QUESTION:** Lines 8-12

Does desilting include removing foreign obstructions? What is the maximum % of debris in pipe that is considered to be normal under this contract? Will amounts higher than a certain % be handled differently? (Big cost/labor difference between 5% debris and 45% full).

**ANSWER:** Please refer to specification 430-94.1

Description.

Remove and dispose of silt, debris, vegetation, soil, rock, or any type of blockage inside a pipe or box culvert to provide maximum drainage capacity.

Please refer to specification 430-94.2

General Requirements.

Clean the pipe or box culvert by removing all of the silt and debris so that the drainage capacity is one hundred percent of the original design capacity of the pipe or box culvert. Perform desilting operations in a manner not to damage the pipe, box culvert or surrounding area.

Meet the requirements of Federal, State and local environmental standards and laws when performing all activities.
Meet the requirements of Section 104 Prevention, Control and Abatement of Erosion and Water Pollution of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction and revisions thereto (current at the time of contract letting).

When water is present, de-water the pipe or box culvert to facilitate cleaning and inspection. Access to the pipe or box culvert may require temporary removal of fence, signs, guardrail, grates or manhole covers. Replace according to Department standards at the completion of the desilting operation or each day, as appropriate for safety.

Align infall and outfall ditches 50 feet from the pipe or box culvert to meet the existing line and grade. If the Right-of-Way line is less than 50 feet from the pipe or box culvert, align infall and outfall ditches to the Right-of-Way line. Grade and sod any disturbed areas caused by the desilting operation.

Identify and report to the Engineer necessary repairs to the pipes or box culverts exposed during the desilting operation.

Dispose of all silt and debris removed in the desilting operations in areas meeting Federal, State and local rules and regulations.

Repair or replace damage to turf, pavement, signs or structures, etc. due to negligence to the satisfaction of the Engineer at no additional cost to the Department. Complete repairs prior to submission of the invoice for work accomplished.

430-94.3 Inspection.

Maintain de-watering after completion of the desilting operations to allow for inspection. Re-clean structures determined to be unacceptable by the Engineer within the time specified at no additional cost to the Department.

430-94.4 Method of Measurement.

430-94.4.1 General: The cost of temporary removal and subsequent replacement of fence, signs, guardrail, grates or manhole covers will be included in the contract unit price for the related item.

Infall and outfall ditch alignment, grading and sodding will be included in the contract unit price of the related item.

430-94.4.2 Desilting Pipe: The quantities for payment will be the length in feet of pipe desilted and accepted.

430-94.4.3 Desilting Box Culverts: The quantities for payment will be the volume in cubic yard of material removed from the box culvert.
Basis of Payment.

Price and payment will be full compensation for furnishing all equipment, tools, labor, disposal of silt and debris, de-watering, erosion and water pollution control, clean up and all incidentals necessary for the satisfactory performance of the work.

Payment will be made under the items specified in the Bid Price Proposal.

**QUESTION:** Lines 13-20

Does sealing mean by any means necessary? Grouting/Bands?

**ANSWER:** These repairs will be paid per repair.

**Description:** Rehabilitation of defective pipe joints or cracks by the application of chemical grouting materials.

**Materials:** A polyurethane grout is required. Other grout components such as catalysts, accelerators or other additives will be added to the grout to make it function properly.

**Equipment:** Supply all equipment including suitably sized packers, pumps, and ancillary equipment as required to perform the work. The basic equipment list is: CCTV equipment, chemical sealant containers, pumps, regulators, valves, hoses, etc. and joint sealing packers for various sizes of pipes.

**Construction Methods:** Carefully clean the designated joint section using high velocity pipe cleaning equipment. Joint sealing shall be accomplished by forcing chemical sealing materials into or through faulty joints by a system of pumps, hoses and sealing packers. The sealed joint shall be left reasonably flush with the existing pipe surface. Excess material shall be removed.

**Acceptance Testing:** Sealed joint shall be inspected by video to verify thorough sealing. A copy of the DVD will be provided to the FDOT. Any joints failing the visual inspection will be resealed at no additional expense to the Department.

**Method of Measurement:** The quantity to be paid for will be the number and diameter of joints cleaned and sealed and accepted.

**Basis of Payment:** The item will be paid at the contract unit price per each joint sealed by diameter and shall include the cost of all labor, equipment and materials necessary to clean and seal the joint. The price and payment for this work item includes temporary dewatering of pipeline, if necessary. Pre and Post-video inspection are included in the price of the sealing. Pipe desilting is included in the price of the sealing. Joint sealing will be in
conformance with items ‘431 and 948 FDOT Standard Specifications for Road and Bridge Construction- 2015’

QUESTION: Lines 27-31

Can this be completed with manual pressure grouting?

ANSWER: These repairs will be paid per repair.

Description: Rehabilitation of defective pipe joints or cracks by the application of chemical grouting materials.

Materials: A polyurethane grout is required. Other grout components such as catalysts, accelerators or other additives will be added to the grout to make it function properly.

Equipment: Supply all equipment including suitably sized packers, pumps, and ancillary equipment as required to perform the work. The basic equipment list is: CCTV equipment, chemical sealant containers, pumps, regulators, valves, hoses, etc. and joint sealing packers for various sizes of pipes.

Construction Methods: Carefully clean the designated joint section using high velocity pipe cleaning equipment. Joint sealing shall be accomplished by forcing chemical sealing materials into or through faulty joints by a system of pumps, hoses and sealing packers. The sealed joint shall be left reasonably flush with the existing pipe surface. Excess material shall be removed.

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QUESTION: In regard to section B - 3; if FDOT changes the requirements for video inspection after the award of this contract, will the requirements in this
contract (that the awarded contractor is expected to follow) also be changed
to meet the updated FDOT inspection requirements as posted by FDOT on
the FDOT website in the future?

**ANSWER:** FDOT’s requirements will stay the same for the duration of this contract. The contract may be amended but the unit rate(s) will remain the same.

**QUESTION:** In regard to section B - 3 - d; what technology specifically (accelerometer based dead reckoning, sonde-based utility locating, etc.?) do you require be used to determine and report on pipe line and/or grade deviations? Please answer individually for each line and grade. What level of precision and accuracy are you seeking for this line item?

**ANSWER:** A combination color CCTV pipeline survey system with a cable distance counter, laser profiling system, non-contact video micrometer and measurement software shall be used to perform a measurement survey of new or existing lines as directed by the Florida Department of Transportation. The equipment and software used must be tested and approved by a recognized independent testing group and includes a certified accuracy of 0.5% or better and a repeatability of 0.12% or better. References for the equipment calibration are ASTM E 691 and ASTM E 177.

Equipment meeting or exceeding the calibration criteria and with the ability to perform specification requirements as defined in Section 430-4.8 and 430-4.8.1 of the Specifications will be acceptable for use on FDOT projects.

**Construction Methods:** Carefully clean the designated joint section using high velocity pipe cleaning equipment. Joint sealing shall be accomplished by forcing chemical sealing materials into or through faulty joints by a system of pumps, hoses and sealing packers. The sealed joint shall be left reasonably flush with the existing pipe surface. Excess material shall be removed.

**QUESTION:** Line item 3 and 4

Can you give a LF for the Plug and Dewater? It makes a big difference on the length of the a Or /and can you give a larger breakdown on pricing for Plug and Dewater by plug size. There is a very large differential in pricing the bigger the pipe size to plug. Is this price per the number of plugs that need to be used or for an entire pipe?

Example of sizing I have worked with. 15-18" then over 18" to 24". Over 24- 36." over 36" to 40" over 40" to 60" over 60-72"

**ANSWER:** Payment will be based on the plug size and per linear foot for pipe sizes 0-24", 25-36", 37-48", 49-60, 61" and greater.
Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, sumps and siphons.

**QUESTION:** Line item 5

What product are you specifying for the manhole repair? Can you ask for a price by the linear foot instead of per manhole? A manhole can be anywhere from 2 feet to 25+ feet. There is also a big difference between fixing a crack and recoating a whole manhole.

**ANSWER:** The intent of this item is to provide a structurally sound and watertight manhole or inlet in place of a deteriorated manhole or inlet. The required work effort consists of spraying, pumping, or troweling of a cementitious liner that is capable of eliminating infiltration, repairing voids, and restoring structural integrity. The cementitious liner will be applied to the walls and inverts of the manhole or inlet at a minimum of ½” inch thickness. An approved liner shall be used to accomplish the repair. All foreign material will be removed from the manhole or inlet wall and invert prior to application of the cementitious liner using a high pressure water spray (minimum 1,200 psi). Active leaks shall be stopped using a rapid setting cementitious grout according to the manufacturer's instructions. Larger cracks will require an approved and appropriate material to be inserted per manufacturers' instructions. For bidding purposes assume the manhole or inlet are approximate dimensions of a Type C inlet with a six foot depth, FDOT Standard Specifications. If the actual inlet dimensions are significantly different, the additional work will be considered out of scope.

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Price and Payment for this work item includes desilting and temporary dewatering of manhole or inlet.
All repairs must follow FDOT Standard Specifications and guidelines, as prescribed in ‘Sections 431 and 948 FDOT Standard Specifications for Road and Bridge Construction – 2015’

**QUESTION:** Line item 13-20

Cleaning and Sealing existing pipe needs to also be by the linear foot. It takes a lot more to clean and seal a 250 ft. pipe vs a 20 ft. pipe.

**ANSWER:** These items refer to cleaning and sealing individual joints for pipes of different diameters – so length of pipe will not be an issue.

**QUESTION:** Line 23-26.

Pipe liner optional material. What are the specifications for the optional material?

**ANSWER:** The materials shall meet requirements of ‘Section 431 and Section 948 as prescribed in FDOT Standard Specifications for Road and Bridge Construction – 2015.’

**QUESTION:** Line 27-31

Are these prices per repair or per pipe?

**ANSWER:** These repairs will be paid per repair.

Description: Rehabilitation of defective pipe joints or cracks by the application of chemical grouting materials.

Materials: A polyurethane grout is required. Other grout components such as catalysts, accelerators or other additives will be added to the grout to make it function properly.

Equipment: Supply all equipment including suitably sized packers, pumps, and ancillary equipment as required to perform the work. The basic equipment list is: CCTV equipment, chemical sealant containers, pumps, regulators, valves, hoses, etc. and joint sealing packers for various sizes of pipes.

Construction Methods: Carefully clean the designated joint section using high velocity pipe cleaning equipment. Joint sealing shall be accomplished by forcing chemical sealing materials into or through faulty joints by a system of pumps, hoses and sealing packers. The sealed joint shall be left reasonably flush with the existing pipe surface. Excess material shall be removed.

Acceptance Testing: Sealed joint shall be inspected by video to verify thorough sealing. A copy of the DVD will be provided to the FDOT. Any
joints failing the visual inspection will be resealed at no additional expense to the Department.

Method of Measurement: The quantity to be paid for will be the number and diameter of joints cleaned and sealed and accepted.

Basis of Payment: The item will be paid at the contract unit price per each joint sealed by diameter and shall include the cost of all labor, equipment and materials necessary to clean and seal the joint. The price and payment for this work item includes temporary dewatering of pipeline, if necessary. Pre and Post-video inspection are included in the price of the sealing. Pipe desilting is included in the price of the sealing.