



# Memorandum

APRIL 19, 2022

CONTRACT NO. 1756

SHALLOW CUT INTERCEPTOR INSPECTION

ADDENDUM NO. 3

All bidders bidding Contract No. 1756 shall read and take note of this Addendum No. 3. The Contract Documents for **Contract No. 1756 – SHALLOW CUT INTERCEPTOR INSPECTION** are hereby revised and/or clarified as stated below.

**Acknowledgement of Contract No. 1756; Addendum No. 3**

The Acknowledgement attached to Addendum No. 3 is to be signed and returned immediately via email to **Kathleen Uniatowski** at [contract.clerks@alcosan.org](mailto:contract.clerks@alcosan.org) and acknowledged with Bidder's Proposal.

Michael Lichte, P.E.

Director – Regional Conveyance

**APRIL 19, 2022**

**CONTRACT NO. 1756**

**SHALLOW CUT INTERCEPTOR INSPECTION**

**ADDENDUM NO. 3**

**FIRM NAME:** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_

**TITLE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**APRIL 19, 2022**

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**ADDENDUM NO. 3**

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**ADDENDUM NO. 3**

**A. Contract Documents**

1. Replace Article 1, Contract 1756, Bid Form in its entirety. See Attached.
2. Replace Article 2, Information for Bidders, Section 2.4 DESCRIPTION OF BID ITEMS, Pages 2-2 through 2-13 in its entirety. See Attached.
3. Article 2, Information for Bidders, Page 2-23, **Paragraph 2.27, QUALIFICATIONS AND EXPERIENCE OF BIDDERS**. Replace the first paragraph and subparagraphs A and B with the following:

“Each Bidder must be regularly engaged in and have at least five (5) years of experience in **CCTV and sonar inspection** of interceptor systems. The Contractor shall supply a complete record of experience for the following:

- A. Foreman Qualifications – Foreman of the crew shall have at least five (5) years of experience.
- B. The Company performing the work must certify that it has not less than ten (10) years of experience in interceptor **CCTV and sonar inspection** experience. The Contractor shall submit a detailed record of experience to the Director within ten (10) days of the bid opening date.”

**B. Contract Specifications**

1. Replace Contract Specification Section, 01010 Summary of Work in its entirety. See Attached.
2. Replace Contract Specification Section, 01050 Construction Sequencing in its entirety. See Attached.
3. Replace Contract Specification Section, 02080 Bypass Pumping in its entirety. See Attached.
4. Replace Contract Specification Section, 02650 Pipeline Cleaning in its entirety. See Attached.

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5. Replace Contract Specification Section, 02651 Television and Sonar Inspection in its entirety. See Attached.
6. Contract **Specification section 03300, Cast in Place Concrete**. Remove this section in its entirety.
7. Contract **Specification section 03370, Concrete Curing**. Remove this section in its entirety.
8. Contract **Specification section 03620, Non-Shrink Grout**. Remove this section in its entirety.
9. Contract **Specification section 05051, Anchors, Inserts and Epoxy Dowels**. Remove this section in its entirety.

**C. Contract Drawings**

1. *(No Items)*

**D. Questions**

1. **We are not sure if we should plan to pre clean all the pipes prior to CCTV/Sonar and if so, should that be part of the tonnage price? The cleaning references prior to final internal inspection by closed circuit television or sonar.**
  - A. Pre-cleaning will not be necessary for any work along the Chartiers or Allegheny Interceptors. Cleaning is included as a contingent bid item in the event a blockage or significant debris is encountered and can be removed to enable CCTV or split screen inspection to be completed.
2. **Under the Additional cleaning it references C-9 or C-10? C-9 is not an item? Also, not sure when the additional cleaning (as directed) would be applied?**
  - A. No cleaning will be required for Items 8 or 9.
3. **There is also reference about emergency and on-call work?**
  - A. Emergency and on-call work are not required as part of this contract.

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- 4. There is a reference to areas identified for cleaning under the contract but there is also reference to cleaning, as directed. Is 95% required?**

A. Those references have been removed, see updated Tech Specs.

- 5. We are just trying to clarify when / if to provide cleaning if this is more of an inspection contract.**

A. The intent of this contract is to inspect shallow cut interceptor sewers where flows routinely exceed 50% and to conduct a split screen set up with CCTV on the crown and sonar from water level to the invert. It is not the intent of this contract to conduct bypass pumping, light or heavy cleaning and debris removal. That work will be done using a subsequent contract. The exception being areas where debris exceeds 50% or there is material or large debris blocking flow. In that case, ALCOSAN may request bypass pumping and heavy cleaning using the contingent unit prices in the Contract.

For bidding purposes, the contractor should assume that less than 10% of the length called out in Items 3 through 7 are subject to Bypass Pumping and Heavy Cleaning. Should this bypass pumping and cleaning work exceed 10% of the length of items 3 through 7, ALCOSAN will accept either revised pricing from the contractor or the work will be performed using Time and Materials.

- 6. Items 8A to 8D reference multi-sensor in conjunction with Sonar. What other sensors?**

A. These outfalls are assumed to be submerged. Sonar setup is assumed.

- 7. There is reference to lining?**

A. Lining shall not be completed as part of this contract.

- 8. There is a reference for the bypassing that we were not real clear on. Are there other areas? “The CONTRACTOR, at anytime, may be required to bypass pump using pricing in Bid Item C-19, as directed for work not identified in bid items No. 1-10e.”**

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A. This reference has been removed. See updated Tech Specs.

- 9. There is a reference in the bid description for items 5A-5D and 7 about cleaning as well we are not clear on? No payment will made for subsequent CCTV inspections required due to incomplete cleaning work?**

A. This reference should be considered removed.

**\* \* \* \* END OF ADDENDUM NO. 3 \* \* \* \***

**APRIL 19, 2022**

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**ADDENDUM NO. 3**

**ATTACHMENT A – ARTICLE 1, BID FORM**



**BID FORM**

This Bid is submitted to the Allegheny County Sanitary Authority, herein called the Owner or the Authority, acting through its Chairman, which advertised for sealed bids for **CONTRACT NO. 1756, SHALLOW CUT INTERCEPTOR INSPECTION** by:

Bidder's Name and Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Attn.: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Facsimile Number: \_\_\_\_\_

Email: \_\_\_\_\_

The undersigned as Bidder, hereinafter referred to as the Contractor or Bidder, declares that the only parties interested in this Bid as Principals are named herein; that this Bid is made without collusion with any other person, firm or corporation; that no officer or agent of the Authority is directly or indirectly interested in this Bid; that it has carefully examined the annexed form on the Contract Agreement and all accompanying Contract Documents and it proposes and agrees that, if its Bid is accepted, it shall contract with the Authority in the language of the Contract Agreement to supply the necessary materials and equipment and to perform the necessary work for **CONTRACT NO. 1756, SHALLOW CUT INTERCEPTOR INSPECTION** within Four Hundred and Fifty (450) calendar days after receiving from the Authority the Notice of Award of the Contract, and the Notice to Proceed, and that they shall complete the work required by the Contract Documents including the Reference Drawings, and Specifications, in its entirety in the manner and under the conditions required at the prices listed as follows:

NOTE: Prices shall be either in ink or typewritten in both figures and words. In case of a discrepancy between the price written in words and the price written in figures, the price written in words will govern.

Unit Price Work:

Bidder proposes to accept as full payment for the Unit Price Work proposed herein the amounts computed under the provisions of the Bidding Documents and based on the following unit price amounts, it being expressly understood that the unit prices are independent of the exact quantities involved. Bidder agrees that the unit prices represent a true measure of the labor, materials, and services required to furnish and install the item, including all allowances for overhead and profit for each type and unit of Work called for in these Bidding Documents.

Bidders are advised that the Authority reserves the right to have all, a portion, or none of the unit price work completed during **CONTRACT NO. 1756, SHALLOW CUT INTERCEPTOR INSPECTION**

**CONTRACT NO. 1756  
SHALLOW CUT INTERCEPTOR INSPECTION**

**IN ACCORDANCE WITH THE CONTRACT DOCUMENTS  
BID ITEMS**

<b>Item</b>	<b>Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Bid \$\$</b>	<b>Total \$\$</b>
1	Mobilization /Demobilization, Bonds and Insurance (Not to Exceed 5% of Total Bid Price)	1	LS		
<b>2A – 2G: SPLIT SCREEN INTERNAL INSPECTION OF SHALLOW-CUT CHARTIERS CREEK INTERCEPTOR, 27,558 LF</b>					
2A	TASK 1: Split Screen Inspection of 45” Diameter Pipe, C-24-02 to C-23-02	5120	LF		
2B	TASK 2: Split Screen Inspection of 45” Diameter Pipe, C-23-02 to C-20-02	3754	LF		
2C	TASK 3: Split Screen Inspection of 36” to 45” Diameter Pipe, C-20-02 to C-13A-02	5849	LF		
2D	TASK 4: Split Screen Inspection of 54” Diameter Pipe, C-13A-02 to C-13A-RG	2486	LF		
2E	TASK 5: Split Screen Inspection of 45” Diameter Pipe, C-13-20 to C-13-12	1957	LF		
2F	TASK 6: Split Screen Inspection of 45” Diameter Pipe, C-13-10 to C-08-08	4264	LF		
2G	TASK 7: Split Screen Inspection of 45” Diameter Pipe, C-08-08 to O-07	4130	LF		
<b>3A – 3B: SONAR INTERNAL INSPECTION OF CHARTIERS CREEK INTERCEPTOR SIPHON PIPES, 450 LF</b>					
3A	TASK 1: Siphon Pipe Sonar Inspection of 36” Diameter Pipe, C-13A-RG to C-13-20	148	LF		
3B	TASK 2: Siphon Pipe Sonar Inspection of 36” Diameter Pipe, C-13-12 to C-13-10	302	LF		

Item	Description	Quantity	Unit	Bid \$\$	Total \$\$
<b>4A – 4D: CCTV INTERNAL INSPECTION OF CHARTIERS CREEK INTERCEPTOR CONNECTOR PIPES, 1,792 LF</b>					
4A	TASK 1: CCTV Inspection of 14” Diameter Pipe, C-08-04 to C-08-PS	400	LF		
4B	TASK 2: CCTV Inspection of 8” Diameter Pipe, C-08-04 to C-07-RG	464	LF		
4C	TASK 3: CCTV Inspection of 8” Diameter Pipe, C-05A-02 to C-05-02	748	LF		
4D	TASK 4: CCTV Inspection of 8” Diameter Pipe, C-03A to C-03-RG	182	LF		
<b>5A – 5B: SPLIT SCREEN INTERNAL INSPECTION OF UPPER ALLEGHENY INTERCEPTOR, 13,721 LF</b>					
5A	TASK 1: Split Screen Inspection of 30” Diameter Pipe, A-78-02 to A-72-02	6894	LF		
5B	TASK 2: Split Screen Inspection of 36” Diameter Pipe, A-67 to A-62	6827	LF		
<b>6: CCTV INTERNAL INSPECTION OF UPPER ALLEGHENY INTERCEPTOR, 2,933 LF</b>					
6	TASK 1: CCTV Inspection of 12” to 14” Diameter Pipe, A-72-02 to A-69-PS	2933	LF		
<b>7A – 7D: SONAR INTERNAL INSPECTION OF OHIO COLLECTION SEWER AND OVERFLOW PIPE</b>					
7A	TASK 1: Sonar Inspection of O-14	1	LS		
7B	TASK 2: Sonar Inspection of O-27	1	LS		
7C	TASK 3: Sonar Inspection of O-40	1	LS		
7D	TASK 4: Sonar Inspection of O-41	1	LS		
<b>8A – 8B: SONAR AND INTERNAL INSPECTION OF LOWER ALLEGHENY COLLECTION SEWER AND OVERFLOW PIPE</b>					
8A	TASK 1: Internal Inspection of A-48	1	LS		

<b>Item</b>	<b>Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Bid \$\$</b>	<b>Total \$\$</b>
8B	TASK 2: CCTV/Sonar Inspection of A-58	1	LS		
<b>CONTINGENT ITEMS</b>					
C-9	Solid Waste Cutter for Roots, Protruding Taps, and/or Heavy Attached Debris	20	HR		
C-10	Heavy Cleaning at a minimum to include Hydrovac/Jetter Truck – 12 Yard Debris Capacity, 1500 Gallon Water Tanks, 2500 psi Water Pressure High-Velocity Jetter at 120 gpm, 1500 Feet of 1-1/4" I.D. Jetter Hose, Vacuum Capability of 6000 cfm at 15" Hg	100	HR		
C-11	Light Cleaning	100	HR		
C-12	Bucket Machine with Scrapers, Buckets, and Swabs	20	HR		
C-13	Traffic Control, Flag Person	40	HR		
C-14	Traffic Control, Off-Duty Police Officer	20	HR		
C-15	Traffic Control, Flashing Arrow Board Device	20	HR		
C-16	Bypass-Pumping with a 12" Pump and Hoses	40	HR		
C-17	Additional Fused Pipe, Valves and Fittings	200	LF		
C-18	Laborer with Compressor, Utility Truck and Miscellaneous Tools	40	HR		
C-19	Miscellaneous Work for a Full-Time Crew	40	HR		
C-20	Debris Removal and Disposal, All Pipes and Sizes	15	TN		

**TOTAL BASE BID (Total Items 1 through 8, plus Contingent Items C-9 through C-20)**

(words)	<b>dollars and</b>
(words)	<b>cents</b>
	\$ _____ (figures)

The Authority is exempt from the payment of Commonwealth of Pennsylvania Selective Sales and Use Tax. The Bidder should disregard such tax in calculating its Bid.

It is understood that the Authority reserves the right to waive any informality in or reject any or all Bids and to withhold the awarding of the Contract for Sixty (60) calendar days after the date set for the opening of the Bids.

If this Bid is accepted by the Authority, and the undersigned shall fail to enter into a formal Contract as aforesaid, within ten (10) calendar days (not including Sunday or a legal holiday) from the date of receipt of notice from the Authority to the undersigned, at the address given herewith, that the Contract is ready for signature, then the Authority may procure the required **CONTRACT NO. 1756, SHALLOW CUT INTERCEPTOR INSPECTION** from others.

The undersigned Bidder agrees that the Contract, if awarded to the Bidder, shall be entered into, under and pursuant to the laws of the Commonwealth of Pennsylvania and shall in all respects be construed in accordance with the laws of said Commonwealth.

Should the Bidder change the wording of the language employed in the Contract Documents including the Bid so as to alter, modify or change the Contract Documents in any degree or manner the Authority may at its discretion reject the Bid or accept it with the changes. The same applies to any letter, printed form or other document inserted in the Contract Documents accompanying the Bid. The successful Bidder shall be legally bound to comply strictly with the provisions of the Authority's Contract Documents exactly as accepted by the Authority.

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**ATTACHMENT B - ARTICLE 2, SECTION 2.4 DESCRIPTION OF BID ITEMS**

## 2.4 DESCRIPTION OF BID ITEMS

The following is a general description of the tasks to be completed under this Contract.

All perspective bidders are advised that access to the various sites is for information only, and the bidder should make any investigation necessary to satisfy himself/herself of the existing conditions. Furthermore, the successful bidder will be responsible for providing the means necessary to access the sites to accommodate his operations at no additional cost to the Owner.

Work needs may necessitate the need for more than one CCTV inspection rig or sonar inspection rig. The Contractor should have the resources necessary to accommodate the projected workload.

The actual amount of work completed for each pay item may be more or less than the quantity estimated in the Bid Form. Payment will be made according to the quantity of work completed at the respective unit price provided in the Bid For unless otherwise described below.

Items identified with a “C” prefix (e.g. C-7, C-8, etc.) are contingent items to be used as needed, and the Owner makes no guarantee as to the fulfillment of these contingent items quantities. These items shall be performed without any per use minimum quantities.

### **ITEM NO. 1 – MOBILIZATION / DEMOBILIZATION, BONDS AND INSURANCE (NOT TO EXCEED 5% OF TOTAL BID PRICE)**

The amount for “MOBILIZATION / DEMOBILIZATION, BONDS AND INSURANCE” shall be bid on a LUMP SUM (LS) basis not to exceed 5% of the sum of the total base bid price for Item No. 1 – 8 and contingent Item No. C-9 – C-20. Mobilization / Demobilization shall consist of costs associated with providing initial services required to mobilize for, commence work and demobilize on this project, as described in the Contract Documents. Associated costs include, but are not limited to, obtaining all required insurance, bonds and permits; preparatory work and operations necessary for the movement of personnel, equipment, supplies, labor and other incidentals to the work; preparation of construction schedules; sample reports; submittals; health and safety plan; and all other work which must be performed, or cost incurred prior beginning work.

The Contractor may request payment for up to 25% of the Mobilization/Demobilization cost in the first invoice; 60% over the remaining invoices based on the percentage of work completed, excluding the final invoice; and 15% on the final invoice. The total payment amount for this Bid Item will only be made for 5% of the total work completed.

**ITEMS NO. 2A-2G & 5A-5B – SPLIT SCREEN INTERNAL INSPECTION OF SHALLOW-CUT INTERCEPTOR, ALL DIAMETERS**

The unit price for “SPLIT SCREEN INTERNAL INSPECTION OF SHALLOW-CUT INTERCEPTOR, ALL DIAMETERS” shall include all necessary labor, equipment, materials and incidental services necessary to perform all work for **split screen CCTV/sonar** inspection of the shallow interceptor sewers including river crossings.

This item shall include all labor, materials, equipment, and all other incidental work necessary to initially mobilize to and demobilize from each work location. CONTRACTOR is not entitled to extra compensation for remobilization to work locations begun and abandoned due to existing or discovered site conditions which would cause delay of work.

Inspections shall be performed in accordance with the Specifications. Observations will conform to standards of the most current NASSCO’s Pipeline Assessment and Certification Program (PACP). Operators must be fully trained and certified in all aspects of sewer inspection and capable of making accurate observations and coding / recording all conditions. All observations shall be exported to a format coinciding with the Owner-supplied geodatabase. A report for inspections shall be provided in accordance with the Specifications.

The interceptor inspections are contained in Bid Items 2A through 2G and 5A through 5B. Access to the interceptor varies by location and should be fully investigated by the Bidder.

The system shall be capable of inspecting extended lengths (2,500+ feet) of sewer due to the limited number of access points.

The sewer lengths listed are estimated lengths. The CONTRACTOR will be paid for lengths actually inspected and meeting the inspection requirements.

Measurement for payment of this item shall be based on the horizontal in-place measurement of the sewer lines inspected and characterized as described in the above and throughout the Specifications. The inspections will be performed with equipment to fully capture simultaneous CCTV and sonar inspection observations in one video recording. The sonar scan imagery should include the complete diameter of a submerged pipe. Portions of the project limits that are not fully submerged shall be inspected with CCTV equipment, in conjunction with the sonar inspection. Additional payment shall not be made for costs associated with supplemental inspections to complete incomplete segments due to unacceptable products.

Payment shall be based on the unit price PER LINEAR FOOT (LF).



**ITEMS NO. 3A-3B – SONAR INTERNAL INSPECTION OF INTERCEPTOR SIPHON PIPES**

The unit price for “SONAR INTERNAL INSPECTION OF INTERCEPTOR SIPHON PIPES” shall include all necessary labor, equipment, materials and incidental services necessary to perform all work for sonar inspection of shallow interceptor sewers siphon pipes including river crossings.

This item shall include all labor, materials, equipment, and all other incidental work necessary to initially mobilize to and demobilize from each work location. CONTRACTOR is not entitled to extra compensation for remobilization to work locations begun and abandoned due to existing or discovered site conditions which would cause delay of work.

Inspections shall be performed in accordance with the Specifications. Observations will conform to standards of the most current NASSCO’s Pipeline Assessment and Certification Program (PACP). Operators must be fully trained and certified in all aspects of sewer inspection and capable of making accurate observations and coding / recording all conditions. All observations shall be exported to a format coinciding with the Owner-supplied geodatabase. A report for inspections shall be provided in accordance with the Specifications.

The interceptor inspections are contained in Bid Items 3A through 3B. Access to the interceptor varies by location and should be fully investigated by the Bidder.

The system shall be capable of inspecting extended lengths (2,500+ feet) of sewer due to the limited number of access points.

The sewer lengths listed are estimated lengths. The CONTRACTOR will be paid for lengths actually inspected and meeting the inspection requirements.

Measurement for payment of this item shall be based on the horizontal in-place measurement of the sewer lines profiled and characterized as described in the above and throughout the Specifications. The sonar scan imagery should include the complete diameter of a submerged pipe. Portions of the project limits that are not fully submerged may be inspected with CCTV equipment in conjunction with the sonar inspection in a multi-sensor. Pre-approval by the Owner or Construction Manager is required before supplementing sonar with multi-sensor inspection in partially submerged conditions. Additional payment shall not be made for costs associated with supplemental inspections to complete incomplete segments due to unacceptable products.

Payment shall be based on the unit price PER LINEAR FOOT (LF).

**ITEMS NO. 4A-4D & 6 – CCTV INTERNAL INSPECTION OF INTERCEPTOR CONNECTOR PIPES, ALL DIAMETERS**

The unit price for “CCTV INTERNAL INSPECTION OF INTERCEPTOR CONNECTOR PIPES, ALL DIAMETERS” items shall include all superintendence, labor, materials, equipment, traffic control, and services described in the specifications or otherwise required to entirely complete all contract work associated with this bid item. The inspection of pipes will be completed one segment at a time, beginning and ending at the center of each manhole. The inspection shall be a complete PACP condition assessment and meet the specifications in Section 02651 – TELEVISION & SONAR INSPECTION OF SEWERS. The individual items within this group shall apply specifically to items 4A through 4D and 6 per the Bid Form. Submerged portions of interceptor siphon pipes will not be included in this item.

Payment quantities for this bid item shall be determined based on the horizontal in-place measurement of the sewer lines traversed and televised. Locating buried underground manholes shall be considered incidental to this work.

The sewer lengths listed for Items No. 4A through 4D and 6 are estimated lengths. The CONTRACTOR will be paid for lengths actually televised and meeting the inspection requirements.

Payment shall be PER LINEAR FOOT (LF).

**ITEMS NO. 7A-7D – SONAR INTERNAL INSPECTION OF OHIO COLLECTION SEWER AND OVERFLOW PIPE**

The unit price for “SONAR INTERNAL INSPECTION OF OHIO COLLECTION SEWER AND OVERFLOW PIPE” shall include all necessary labor, equipment, materials and incidental services necessary to perform all work for sonar inspection of the collection sewers and overflow pipes.

This item shall include all labor, materials, equipment, and all other incidental work necessary to initially mobilize to and demobilize from each work location. CONTRACTOR is not entitled to extra compensation for remobilization to work locations begun and abandoned due to existing or discovered site conditions which would cause delay of work.

Inspections shall be performed in accordance with the Specifications. Observations will conform to standards of the most current NASSCO’s Pipeline Assessment and Certification Program (PACP). Operators must be fully trained and certified in all aspects of sewer inspection and capable of making accurate observations and coding / recording all conditions. All observations shall be exported to a format coinciding with the Owner-supplied geodatabase. A report for inspections shall be provided in accordance with the Specifications.

GPS inspection shall be conducted for all manhole rims, inverts, and castings associated with the overflow pipes and regulators at O-14, O-27, O-40, and O-41.

The interceptor inspections are contained in Bid Items 7A through 7D. Access to the interceptor varies by location and should be fully investigated by the Bidder.

The system shall be capable of inspecting extended lengths (2,500+ feet) of sewer due to the limited number of access points.

The sonar scan imagery should include the complete diameter of a submerged pipe. Portions of the project limits that are not fully submerged may be inspected with CCTV equipment in conjunction with the sonar inspection. Additional payment shall not be made for costs associated with supplemental inspections to complete incomplete segments due to unacceptable products.

Payment shall be based on the unit price PER LUMP SUM (LS).

**ITEMS NO. 8A-8B – SONAR AND INTERNAL INSPECTION OF LOWER ALLEGHENY COLLECTION SEWER AND OVERFLOW PIPE**

The unit price for “SPLIT SCREEN INTERNAL INSPECTION OF LOWER ALLEGHENY COLLECTION SEWER AND OVERFLOW PIPE” shall include all necessary labor, equipment, materials and incidental services necessary to perform all work for split screen CCTV/sonar inspection of the collection sewers and overflow pipes.

This item shall include all labor, materials, equipment, and all other incidental work necessary to initially mobilize to and demobilize from each work location. CONTRACTOR is not entitled to extra compensation for remobilization to work locations begun and abandoned due to existing or discovered site conditions which would cause delay of work.

Inspections shall be performed in accordance with the Specifications. Observations will conform to standards of the most current NASSCO’s Pipeline Assessment and Certification Program (PACP). Operators must be fully trained and certified in all aspects of sewer inspection and capable of making accurate observations and coding / recording all conditions. All observations shall be exported to a format coinciding with the Owner-supplied geodatabase. A report for inspections shall be provided in accordance with the Specifications.

Dye testing shall be conducted, as directed, to confirm sewer connectivity at A-48. GPS inspection shall be conducted for all manhole rims, inverts, and castings associated with the overflow pipes and regulators at A-48 and A-58, and internal dimensions shall be verified.

The interceptor inspections are contained in Bid Items 8A through 8B. Access to the interceptor varies by location and should be fully investigated by the Bidder.

The system shall be capable of inspecting extended lengths (2,500+ feet) of sewer due to the limited number of access points.

The inspections will be performed with equipment to fully capture simultaneous CCTV and sonar inspection observations in one video recording. The sonar scan imagery should include the complete diameter of a submerged pipe. Portions of the project limits that are not fully submerged shall be inspected with CCTV equipment, in conjunction with the sonar inspection. Additional payment shall not be made for costs associated with supplemental inspections to complete incomplete segments due to unacceptable products.

Payment shall be based on the unit price PER LUMP SUM (LS).

**ITEM NO. C-9 – SOLID WASTE CUTTER FOR ROOTS, PROTRUDING TAPS, AND/OR HEAVY ATTACHED DEBRIS**

The unit price for “SOLID WASTE CUTTER FOR ROOTS, PROTRUDING TAPS, AND/OR HEAVY ATTACHED DEBRIS” shall include all superintendence, labor, materials, and equipment to perform the work onsite, as directed. Any other incidental costs associated with this bid item shall be included in the unit price bid. No payment will be made for travel time or standby time onsite. Work performed shall be performed as referenced in the specifications. Work under this item shall be performed as directed, and is subject to approval of the Owner or Owners’ representative in the field.

Payment shall be PER HOUR (HR) of actual operation on job site.

**Note:** If this pay item is utilized at the Owner’s direction after a segment has been televised as an accepted deliverable, the CONTRACTOR shall be paid for the re-televised segment at the appropriate linear foot rate.

**ITEM NO. C-10 – HEAVY CLEANING AT A MINIMUM TO INCLUDE HYDROVAC/JETTER TRUCK – 12 YARD DEBRIS CAPACITY, 1500 GALLON WATER TANKS, 2500 PSI WATER PRESSURE HIGH-VELOCITY JETTER AT 120 GPM, 1500 FEET OF 1-1/4” I.D. JETTER HOSE, VACUUM CAPABILITY OF 6000 CFM AT 15” HG**

The unit price for “HYDROVAC/JETTER TRUCK – 12 YARD DEBRIS CAPACITY, 1500 GALLON WATER TANKS, 2500 PSI WATER PRESSURE HIGH VELOCITY JETTER AT 120 GPM, 1500 FEET OF 1-1/4” I.D. JETTER HOSE, VACUUM CAPABILITY OF 6000 CFM AT 15” HG” shall include all superintendence, labor, materials, equipment to perform the work onsite, as directed. The minimum crew shall consist of a trained operator and a laborer. Any other incidental costs associated with this bid item shall be included in the unit price bid. No payment will be made for travel time. The hydrovac/jetter truck shall be a combination cleaning truck and shall meet the requirements specified in technical specifications section 02650 – 2.2 EQUIPMENT: 12 CY debris tank capacity, 1,800-Gallon water tank capacity, high velocity sewer jetter capable of pumping 120 GPM at 2,000 PSI;

1,500 feet of dual fused 1 ¼-in diameter jetter hose; vacuum capable of 6,000 CFM at 15” Hg.

Work performed shall be performed as referenced in the specifications. Work under this item is subject to approval of the OWNER or OWNER’s representative in the field. The use of this item may be requested for sites other than those specified above in the base contract work and in varying quantities.

Item No. 2 will be used for compensation for debris collected under this item.

Payment shall be PER HOUR (HR) of actual operation on job site.

**Note:** If this pay item is utilized at Owner’s direction after a segment has been televised as an accepted deliverable, the CONTRACTOR shall be paid for the re-televised segment at the appropriate linear foot rate.

### **ITEM NO. C-11 – LIGHT CLEANING**

Payment for “LIGHT CLEANING” shall be made PER HOUR, and shall include all labor, equipment, materials, and other incidental work necessary to perform the work. All contingent preparatory cleaning must be approved by ALCOSAN. Light cleaning shall be considered up to three passes. If after three passes debris remains in the sewer it shall be considered to require heavy cleaning.

The quantity of work completed shall be for each hour the truck is in operation completing Contingent Item work. This Bid Item is for light cleaning work including jetter/vactor truck(s) being utilized for preparatory cleaning work. No payment will be made for travel time.

The basis for the work is for provision of a hydrovac or/jetter producing at least 80 gallons of water per minutes at 1,800 psi.

All superintendence, labor, materials, equipment, clearing, grubbing and site restoration, filing and acquisition of permits, permit fees, and services described in the specifications or otherwise required to entirely complete all contract work associated with this item shall be considered incidental to this item.

### **ITEM NO. C-12 – BUCKET MACHINES WITH SCRAPERS, BUCKETS, AND SWABS**

The unit price for “BUCKET MACHINES WITH SCRAPERS, BUCKETS, AND SWABS” shall include all superintendence, labor, materials, and equipment to perform the work onsite, as directed. Any other incidental costs associated with this bid item shall be included in the unit price bid. No payment will be made for travel time or standby time onsite. Work performed shall be performed as referenced in the specifications. Work under this item is subject to approval of the OWNER or OWNER’s representative in the field.

The following shall be available as part of this item: Scrapers 18” to 48”, Buckets 8” to 30”, Swabs 4” to 30”; sufficient power to operate attachments on 1500 feet of cable. This item shall include a pair of bucket machines to operate as a system for the unit price bid.

Payment shall be PER HOUR (HR) of actual operation on job site.

**Note:** If this pay item is utilized at Owner’s direction after a segment has been televised as an accepted deliverable, the CONTRACTOR shall be paid for the re-televised segment at the appropriate linear foot rate.

**ITEM NO. C-13 – TRAFFIC CONTROL, FLAG PERSON**

The unit price for “TRAFFIC CONTROL, FLAG PERSON” shall include all labor, equipment, materials, filing and acquisition of permits, permit fees, and other incidental work necessary to perform the work in accordance with PENNDOT publications 408 and 213, with the Contractor’s approved Traffic Control Plan, and as required by local laws and regulations.

Measurement for payment shall be based on the actual number of man-hours that traffic control is provided by a uniformed flag person during sewer cleaning and / or inspection. Contractor will not be compensated for travel and set-up / break-down time of the traffic control measures.

Flag persons shall be personnel dedicated to the effort of controlling traffic around the work site and will not be employees involved in the cleaning or inspection of sewers or other work not specifically associated with traffic control.

Use of flag persons to direct and control traffic will be used to supplement incidental traffic control measures in areas that require more complex traffic control measures and as required by PENNDOT and local municipal and county laws and regulations.

“Incidental Traffic Control” includes traffic controls that require simple traffic control measures such as traffic cones, barrels, channelizers, and minor signage to guide traffic around Contractor vehicles and personnel. Cost for these traffic control measures associated with this item shall be considered incidental to this item.

Payment shall be PER MAN HOUR (HR) of work onsite.

**ITEM NO. C-14 – TRAFFIC CONTROL, OFF-DUTY POLICE OFFICER**

The unit price for “TRAFFIC CONTROL, OFF-DUTY POLICE OFFICER” shall all labor, equipment, materials, filing and acquisition of permits, permit fees, and other incidental work necessary to perform the work in accordance with PENNDOT publications 408 and 213, with the Contractor’s approved Traffic Control Plan, and as required by local laws and regulations.

Measurement for payment shall be based on: 1) the actual number of man-hours that traffic control is provided by a local off-duty police officers during sewer cleaning and / or inspection when the occurrence is greater than four hours, or 2) a value of four hours when the hours of service per occurrence is four hours or less. Contractor will not be compensated for travel and set-up / break-down time of the traffic control measures.

Use of local off-duty police officers to direct and control traffic will be used to supplement incidental traffic control measures in areas that require more complex traffic control measures and as required by PENNDOT and local municipal or county laws and regulations.

“Incidental Traffic Control” includes traffic controls that require simple traffic control measures such as traffic cones, barrels, channelizers, and minor signage to guide traffic around Contractor vehicles and personnel. Cost for these traffic control measures associated with this item shall be considered incidental to this item.

Payment shall be PER MAN HOUR (HR) of work onsite.

**ITEM NO. C-15 – TRAFFIC CONTROL, FLASHING ARROW BOARD DEVICE**

The unit price for “TRAFFIC CONTROL, FLASHING ARROW BOARD DEVICE” shall include all labor, equipment, materials, filing and acquisition of permits, permit fees, and other incidental work necessary to perform the work in accordance with PENNDOT publications 408 and 213, with the Contractor’s approved Traffic Control Plan, and as required by local laws and regulations.

Measurement for payment shall be based on the actual number of operating hours that the traffic control device is provided to complete the work. Contractor will not be compensated for travel and set-up / break-down time of the traffic control measures.

An arrow board will be used to supplement incidental traffic control measures in areas that require more complex traffic control measures and as required by PENNDOT and local municipal or county laws and regulations.

“Incidental Traffic Control” includes traffic controls that require simple traffic control measures such as traffic cones, barrels, channelizers, and minor signage to guide traffic around Contractor vehicles and personnel. Cost for these traffic control measures associated with this item shall be considered incidental to this item.

Payment shall be PER HOUR (HR) of actual operation onsite.

**ITEM NO. C-16 –BYPASS-PUMPING WITH A 12” PUMP AND HOSES**

The unit price for “BYPASS-PUMPING WITH A 12” PUMP AND HOSES” shall include all superintendence, labor, materials, and equipment to supply and operate “BYPASS-PUMPING”, as directed. This item shall include a 12” pump and one backup pump of equal size per pump supplied for this item, with separate necessary appurtenances to operate independently. Additionally, up to 500 feet of suction/discharge hose shall be supplied for each pump, including necessary fittings, valves, etc. Any other incidental costs associated with this bid item shall be included in the unit price bid. No payment will be made for travel time.

The CONTRACTOR shall be responsible for any and all pumping required for continuous bypass-pumping, as directed, at selected work locations, no matter what the source of the water. Sources include but are not limited to: accumulated precipitation, encountered ground water, sewage back-up. Work under this item shall include furnishing and connecting all piping, pump(s), and appurtenances for the purpose of bypass-pumping. Testing of the bypass-pumping system for leakage is required prior to use at any new setup and considered incidental to this item. Work under this item also includes any temporary means of access to allow traffic throughput, including but not limited to, burying pipeline, providing ramps, etc. in addition, the labor, equipment, and materials necessary to facilitate this access. This item also includes maintaining pumps and lines continuously, while in service. Also, removing lines when complete and restoring street or sidewalks. All permits, associated with mobilization, setup, operation and demobilization are included in this item. Clearing, Grubbing and Site Restoration shall be considered incidental to this item.

Work under this item is subject to approval of the OWNER or OWNER’s representative in the field.

Payment shall be PER HOUR (HR) of actual operation on job site.

**ITEM NO. C-17 – ADDITIONAL FUSED PIPE, VALVES AND FITTINGS**

The unit price for “ADDITIONAL FUSED PIPE, VALVES AND FITTINGS” shall include all superintendence, labor, materials, and equipment to provide and construct additional fused pipe, valves, and fittings at locations approved by the OWNER or OWNER’s representative in the field. All work under this item shall be in accordance with the contract specifications.

Payment shall be PER LINEAR FOOT (LF) of fused piping provided and installed.

**ITEM NO. C-18 – LABORER WITH COMPRESSOR, UTILITY TRUCK AND MISCELLANEOUS TOOLS**

The unit price for “LABORER WITH COMPRESSOR, UTILITY TRUCK AND MISCELLANEOUS TOOLS” shall include all superintendence, required equipment, operator and labor for this bid item, as directed. No payment will be made for travel



time or standby time onsite. Any other incidental costs associated with this bid item shall be included in the unit price bid. Work under this item is subject to approval of the OWNER or OWNER's representative in the field.

Payment shall be PER HOUR (HR) on job site.

**ITEM NO. C-19 – MISCELLANEOUS WORK FOR A FULL-TIME CREW**

The unit price "MISCELLANEOUS WORK FOR A FULL-TIME CREW" shall include time spent onsite for a full crew(s); labor and equipment cost for work and/or time spent onsite which is not defined by any other contract unit prices. A full crew is defined to consist of (2) laborers, (2) operators, camera truck (with pipe locator), Hydrovac/Jetter truck, and foreman. This item shall cover all expenses involved in having a crew of workers and equipment at a site performing work, not specifically part of the pipe televising process, as directed.

Should the actual crew be comprised of less workers than the "full" crew as defined above, then payment for this item shall be adjusted and prorated based on the actual number of workers in the crew times their respective rate classifications.

If this item is used for time spent waiting by a crew as a result of actions by the AUTHORITY at the discretion of the OWNER, the item shall cover all expenses involved in having a crew of workers and equipment at a site prepared to conduct work but unable to work due to circumstances outside of their control.

Delays which are usual and a customary part of sewer cleaning and televising WILL NOT BE PAID FOR UNDER THIS ITEM and are considered incidental to the work of televising. No payment shall be made for delays due to Acts of God.

Payment shall be PER CREW HOUR (HR) on job site.

**ITEM NO. C-20 – DEBRIS REMOVAL AND DISPOSAL, ALL PIPES AND SIZES, As Directed.**

The unit price for "DEBRIS REMOVAL AND DISPOSAL, ALL PIPES AND SIZES" shall include all necessary labor, equipment, and materials required to clean sewer lines, capturing and collecting debris for disposal at an approved disposal site. Each load disposed shall be accompanied by an executed manifest and weigh slip. This item is applicable to all cleaning efforts as specified in this Contract and shall be performed in accordance with SECTION 02650 – SANITARY PIPELINE CLEANING.

Measurement for payment of this item shall be based on the weight of debris at the disposal site scale, subject to a paint filter test and certified weigh slips from an approved disposal site. An estimate of 15 tons has been set aside for the quantity of debris removal. The tonnage of debris removed may be more and will be paid at the unit price rate; the amount of debris removed, however, may be less than the 15-ton

amount set aside. No further compensation will be paid for debris that does not satisfy the quantity.

This item includes all labor, materials, equipment, and all other incidental work necessary to mobilize to the sites, conduct step-cleaning as heavy or light cleaning, remove the debris from the pipes, haul debris to disposal site, and then demobilize. Any roll off boxes, storage sites, hauling services, disposal fees, other labor, equipment and/or materials shall be considered incidental. The Contractor shall be responsible for keeping debris separated from debris not part of this work, particularly if the debris is stored somewhere other than the worksite. Work under this item shall be performed as directed, and is subject to approval of the Owner or Owners's representative in the field.

This item is as-directed and will be used only if debris exceeds 50% of the diameter of the pipe. Payment shall be based on the unit price PER TON (TON).

**APRIL 19, 2022**

**CONTRACT NO. 1756**

**SHALLOW CUT INTERCEPTOR INSPECTION**

**ADDENDUM NO. 3**

**ATTACHMENT C – CONTRACT SPECIFICATION SECTION,  
01010 SUMMARY OF WORK**

**SECTION 01010  
SUMMARY OF WORK**

**PART 1 GENERAL**

1.1 GENERAL

A. The work included in this project is the inspection of the Allegheny County Sanitary Authority (ALCOSAN) Chartiers Creek Interceptor sewer located in the municipalities of McKees Rocks, Kennedy Township, Robinson Township, Crafton, Thornburg, Rosslyn Farms, and Pittsburgh, the inspection of the ALCOSAN Upper Allegheny Interceptor sewer located in the municipalities of Millvale, Sharpsburg, O'Hara, Aspinwall, and Pittsburgh, and the inspection of the Ohio River Collection Sewer and the Lower Allegheny Collection Sewer located in Pittsburgh. The Contractor shall prioritize the Ohio Collection Sewer and Lower Allegheny work. The Upper Allegheny and Chartiers Creek Interceptor work shall follow. This Contract 1756 will be constructed by a single Prime Contractor to meet the requirements of the Contract Documents. The following organizations may be present at the Job Site and have responsibilities described generally in Article 3, General Contract Conditions:

1. Construction Manager (CM) (to be determined)
2. Consulting Engineer (FDC) (to be determined)
3. Contractor(s)
4. Supplier(s)
5. Owner (ALCOSAN)

B. The Owner may be identified as the responsible entity for certain actions in the sections of Divisions 1 through 16. The Owner may elect to delegate certain of these respective duties and responsibilities to the aforementioned organizations.

C. All contact between the Contractor and the remaining aforementioned parties shall be through the Construction Manager.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The following is a general description of the work to be done under this Contract, unless noted otherwise, and is in no way meant to limit or restrict the Work required under this Contract. See Article 2 for a description of the bid items.

B. Scope of Work

The following scope of work applies to this Contract.

1. The following is a general description of the work to be done under this Contract, unless noted otherwise, and is in no way meant to limit or restrict the Work required under this Contract. Refer to the Reference Drawings and the remainder of the Specifications for additional detail on the scope of the Work. See Article 2.4 for a narrative of the Work to be done.
2. The following scope of work applies to this Contract.
  - a. Obtain necessary permits from applicable regulatory agencies and permissions from property owners.
  - b. Mobilize to the site and facilitate access for the Work.
  - c. Determine locations of manholes and sewers.
  - d. Internal CCTV/Sonar inspection
    - i. Sonar, CCTV, or combination Sonar/CCTV inspection as specified or reserved for use as conditions necessitate, as directed.
  - e. Delivery of inspection files, media and other required documents
  - f. Site restoration, as required
3. Contractor shall perform all other work related to the items listed above to provide a complete and restored project site.

### 1.3 DESCRIPTION OF RESPONSIBILITIES

#### A. CONTRACTOR: As described in these Contract Documents and as follows:

1. Project Manager/Site Superintendent: On site at all times when Work in individual Contract is proceeding. The Owner reserves the right to approve the Contractor's proposed Project Manager and Site Superintendent. **If at any time during the execution of the Contract the Owner determines that the Contractor's Project Manager and/or Site Superintendent are not executing the work in conformance with the Contract Documents, the Owner may request in writing that they be replaced.** Contractor's Project Manager / Site Superintendent shall not be replaced without written notice to Construction Manager except under extraordinary circumstances. The Superintendent will be the Contractor's representative at the site and shall have authority to act on behalf of the Contractor. All communications to the Superintendent shall be as binding as if given to the Contractor. If at any time during the Project the Superintendent leaves the Project site while Work is in progress, the Construction Manager shall be notified and provided with the name of the Contractor's representative having responsible charge.
2. Quality Control Representative: Responsible for Contractor's quality

control program while Work is in progress. Notify the Construction Manager of any change in quality control assignment.

3. Safety and Protection:

- a. Initiate, maintain, and supervise all safety precautions and programs in connection with the Work. Take all necessary precautions for the safety of, and provide the necessary protection to prevent damage, injury, or loss to:
  - 1) All persons on the work site or who may be affected by the Work;
  - 2) All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
  - 3) Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- b. Comply with all applicable Laws and Regulations of any public body having jurisdiction for safety of persons or property or to protect them from damage, injury, or loss.
- c. Before any work at the site is started, the Contractor shall prepare a written Project-specific Safety Plan (including precautions and programs) and submit to the Construction Manager for review and record as received. The Contractor shall correct any deficiencies identified by the Construction Manager prior to the start of the Work. Review of the Contractor's Safety Plan and the Contractor's field work activities by the Construction Manager does not relieve the Contractor for any omissions or errors in the Contractor's Safety Plan. Per Article 3.67 of the General Contract Conditions, the Owner may direct work determined to be unsafe to stop until the unsafe conditions have been corrected. The Construction Manager may act as the Owner's Representative in directing unsafe work to be corrected.
- d. Contractor shall revise the Contractor's Safety Plan at appropriate times to reflect changes in construction conditions, the Work, Contractor's means, methods, techniques, and sequences and procedures of construction. All revised Contractor Safety Plans will be submitted to the Construction Manager for record.
- e. Safety Representative: The Contractor shall designate a qualified and experienced safety representative at the site whose duties and

responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs. The Safety representative shall be trained in First Aid and CPR. These qualifications shall be submitted to the Construction Manager prior to beginning work on site.

- f. Confined Space Supervisor: The Contractor shall designate a qualified and experienced confined space supervisor to ensure compliance with the requirements identified in the Contractor's Safety Plan and Article 3.67 of the General Contract Conditions. One copy of the daily Confined Space Record will be submitted to the Construction Manager by the work day following the work day where a confined space entry is required.
- g. Emergencies: In emergencies affecting the safety or protection of persons or the work or property at the site or adjacent thereto, each Contractor, without special instruction or authorization from Owner or Construction Manager, is obligated to act to prevent threatened damage, injury or loss. Contractor shall give the Construction Manager prompt written notice if the Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If the Construction Manager determines that a change in the Contract Documents is required because of the action taken by the Contractor in response to such an emergency, the Construction Manager will proceed in accordance with Article 3, General Contract Conditions.

**B. Owner (ALCOSAN):**

- 1. Enter into legal contract with Contractor for completion of the Work.
- 2. Approve contract amendments, progress payments, and make final acceptance of the Work.
- 3. Participate in coordination of site construction activity.
- 4. Participate in training, testing and startup activity.

**C. Construction Manager (CM):**

- 1. Assist the Contractor's coordination of on-site construction activities with private property owners, adjacent property owners to public property, and assist the Contractor in obtaining applicable permits.
- 2. Construction Contract Administration.
- 3. Construction inspection services.
- 4. Coordinate training, testing and startup activity.

**PART 2**

**PRODUCTS (Not Used)**

**PART 3**

**EXECUTION (Not Used)**

END OF SECTION



**APRIL 19, 2022**

**CONTRACT NO. 1756**

**SHALLOW CUT INTERCEPTOR INSPECTION**

**ADDENDUM NO. 3**

**ATTACHMENT D – CONTRACT SPECIFICATION SECTION,  
01050 CONSTRUCTION SEQUENCING**

**SECTION 01050**  
**CONSTRUCTION SEQUENCING**

**PART 1      GENERAL**

**1.1      PURPOSE**

- A.      This section identifies construction sequencing requirements and constraints to provide coordination and to permit continuous and effective operations throughout the construction period.
  
- B.      The construction sequences presented in this section outlines the intent of the Owner with respect to the general progress of work. The sequences and construction activities noted are not intended to be comprehensive or all inclusive. Many other construction activities and work components, although not specifically noted, are integral parts of the work included in the Contract Documents and must be both scheduled and completed.
  - 1.      The overall intent is for the cleaning and inspection work to progress from the upstream limit of the work area to the downstream limit in a continuous order.
  
- C.      Construct work in stages to allow for the Owner's continuous occupancy and for uninterrupted operation and maintenance during construction. Unless specifically indicated otherwise, new systems or subsystems as appropriate shall be substantially complete before existing systems are taken out of service and made available to the Contractor. Coordinate construction schedule and operations with the Owner through the Construction Manager.
  
- D.      Be responsible for flow bypass facilities and temporary connections required to maintain the Owner's operations. Sequences other than those specified will be considered by the Construction Manager provided they afford equivalent continuity of operations.
  
- E.      Operations requiring actions by the Owner, such as but not limited to redirection of flow, shall be included in the Contractor's detailed progress schedule. Such scheduled operations will be considered upon 14 calendar days' advance written request to the Owner. Describe the reason, anticipated length of time, and areas affected by the outage in the written request.
  
- F.      In addition to identifying and providing written notice for operations requiring actions by the Owner, Contractor shall include a "reasonable" time period in schedule (minimum of 14 calendar days unless noted otherwise) for the Owner to

prepare and respond to work request prior to construction activities.

- G. Perform Work continuously and expeditiously during critical connections and changeovers, and as required to prevent interruption of the Owner's operations.
- H. Construction sequences presented in this section outline the intent of the Owner with respect to the general progress of work. Sequences and construction activities noted are not intended to be comprehensive or all inclusive. Many other construction activities and work components, although not specifically noted, are integral parts of the work included in the Contract Documents and must be both scheduled and completed. These include but are not limited to the following:
  - 1. Permits (if applicable)
  - 2. Site Access Plan
  - 3. CCTV or Sonar or Split Screen Inspection
  - 4. Bypass Pumping Plan Including Setup (if applicable, as directed)
  - 5. Odor and Noise Control Submittals (if applicable, as directed)
  - 6. Cleaning, Hydro Jetting, and Debris Removal (if applicable, as directed)
  - 7. Data Submittal
  - 8. Site Restoration
  - 9. Closeout

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION**

3.1 GENERAL

- 1. Include the milestones and sequences of work specified herein as a part of the progress schedule required under Section 01310, CONTRACTOR'S PROJECT SCHEDULE.

3.2 COORDINATION:

- 1. Construction work performed under this contract shall interfere to the least extent possible with the normal operation of the ALCOSAN and Municipal Collection Systems. The collection systems shall be maintained in continuous operation at all times during the course of the work performed under this Contract.
- 2. All operations of valves and gates required to perform the work shall be done by ALCOSAN personnel. The Construction Manager, Shift Superintendent, and ALCOSAN Operations personnel will coordinate

this work, and no valve, gate or other equipment shall be operated without their knowledge. The Shift Superintendent shall be informed at least 24 hours in advance of the need to operate valves or gates or other actions which could affect the operation of the collection system.

3. Insofar as possible, equipment and facilities shall be tested and in operating condition before final tie-ins are made to connect new equipment and facilities to existing equipment and facilities.

### 3.3 OPERATION AND SHUTDOWN OF EXISTING FACILITIES:

1. Conduct Work outside regular working hours only after prior written consent of Construction Manager. Construction Manager may approve work outside normal working hours to maintain Project Schedule or avoid undesirable conditions. However, under no circumstances shall the Contractor cease Work at the end of a normal working day if such actions may cause a cessation of any facility operating process. In such cases, remain onsite until necessary Work is complete.
2. All connections to ALCOSAN's existing utility services must be carefully coordinated in advance through the Construction Manager.
3. Do not proceed with Work affecting a facility's operation without obtaining Owner's advance approval of the need for and duration of such Work.
4. Provide 14 calendar days advance request for approval to Owner of need to shut down a process or facility. For shutdowns requiring regulatory agency permission, Owner will determine amount of time required to secure such permission and Contractor will provide appropriate notice.

END OF SECTION

**APRIL 19, 2022**

**CONTRACT NO. 1756**

**SHALLOW CUT INTERCEPTOR INSPECTION**

**ADDENDUM NO. 3**

**ATTACHMENT E – CONTRACT SPECIFICATION SECTION,  
02080 BYPASS PUMPING**

**SECTION 02080  
BYPASS PUMPING**

**PART 1 GENERAL**

1.1. RELATED DOCUMENTS

- A. The Bid and General Provisions of the Contract Documents, General Specifications and requirements of all Division 1 Sections of the Specifications apply to all work of this section.

1.2. DESCRIPTION OF WORK

- A. The intent of this contract is to inspect shallow cut interceptor sewers where flows routinely exceed 50% and to conduct a split screen set up with CCTV on the crown and sonar from water level to the invert. It is not the intent of this contract to conduct bypass pumping, light or heavy cleaning and debris removal. That work will be done using a subsequent contract. The exception being areas where debris exceeds 50% or there is material or large debris blocking flow. In that case, ALCOSAN may request bypass pumping and heavy cleaning using the contingent unit prices in the Contract.
- B. For bidding purposes, the contractor should assume that less than 10% of the length called out in Items 3 through 7 are subject to Bypass Pumping and Heavy Cleaning. Should this bypass pumping and cleaning work exceed 10% of the length of items 3 through 7, ALCOSAN will accept either revised pricing from the contractor or the work will be performed using Time and Materials.
- C. The Contractor shall provide all plant, supervision, labor and materials necessary to implement temporary pumping systems to divert existing sanitary and/or storm flow around a specific work area where necessary to facilitate the Contractor's construction operations. These sanitary and/or storm flows must be conveyed to the ALCOSAN interceptor.
- D. The design, installation and operation of the temporary bypass pumping systems and the related costs are assigned to the specific Contract Item number. These costs shall include but not be limited to all equipment, materials, and labor to install, operate, dismantle the bypass system, and to restore all the disturbed facilities and surfaces, in accordance with the applicable sections of the specification, to a condition equal to or better than that which existed prior to being disturbed.
- E. The Contractor shall demonstrate experience in the setup and operation of temporary bypass pumping systems. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction.

- F. Normal sewage flows for each connector or interceptor pipe segment may include contributions from infiltration or inflow that may exist at the time of the work. The Contractor shall design the bypass system for sanitary and/or storm flows to have sufficient capacity to pump the peak dry weather flow capacity of the pipe.
- G. The Contractor shall comply with the regulations of all regulatory agencies having jurisdiction including but not limited to OSHA, US Army Corps of Engineers, PADEP, and the Allegheny County Soil Conservation District regulations. No discharge of sewage, as a result of the Contractor's operations, shall be allowed. **The Contractor will be responsible to pay any and all fines associated with sewage discharges and/or any violations of the ALCOSAN Consent Decree as a result of the Contractor's activities.**

## PART 2 PRODUCTS

### 2.1 SUBMITTALS:

- A. Bypass Pumping Qualifications: The Contractor shall submit bypass pumping qualification documentation which shall demonstrate:
  - 1. Ten (10) years experience as a business engaged in construction activities that required bypass pumping of public sanitary sewer systems.
  - 2. At least five (5) projects of with bypass pumping systems of sanitary systems performed by the Contractor within the last five (5) years.
  - 3. For each project submitted to meet the experience requirements, indicate the following:
    - a. Name and location of project
    - b. Project Contact (Owner name, address, and telephone number)
    - c. Bypass pumping system pumps and piping system used
    - d. Amount of contract
    - e. Date of completion
  - 4. Résumé of project supervisor demonstrating a minimum of five (5) years experience in supervising public sanitary sewer bypass operations.
- B. When directed, the Contractor shall prepare a detailed Bypass Pumping Plan for any structures where sanitary and/or storm flows will be bypassed to facilitate inspection.
- C. The Contractor's Bypass Pumping Plan shall include the following:
  - 1. Detailed plans and descriptions of the bypass pumping system to include the method of protecting the stream access, bypass pumping location, and discharge locations. Facilities must be protected from damage by erosion or contamination due to the discharge flows.

2. The plan must specify the methods (including the complete sequence of the operation with a sketch showing all equipment components) to be used for the bypass pumping system.
3. The Bypass Pumping Plan must also:
  - a. Outline all provisions and precautions to be taken by the Contractor regarding the handling of existing wastewater flows.
  - b. Identify the sanitary segment involved in the construction operations, and upstream/downstream structures to be utilized in pumping the existing sanitary and/or storm flows. The Contractor is responsible for evaluating the piping route (to include any property owner coordination, permitting and protection measures), and accessibility and system connectivity of each structure to be utilized during the bypass pumping operations.
4. This plan must be specific and complete, including such items as:
  - a. Detailed schedules of the sequenced activities to include mobilization, site protection requirements (erosion & sedimentation, MPT, etc.), system installation, start-up, testing & inspection, and maintenance of bypass pumping pumps, hoses and generating equipment.
  - b. Dimensioned sketch of the site layout (showing arrangement, spacing and proximity of all systems) including:
    - i. Locations of existing structures to be used,
    - ii. Staging areas for pumps & other equipment, bypass pumping hoses and routing,
    - iii. Identification of public and private property, existing structures, and any pedestrian or vehicle crossings within the pumping area.
  - c. Condition documentation of public and private property, existing structures, verification of property owner coordination and permission, and any pedestrian or vehicle crossings within the pumping area.
  - d. Copies of applicable permits.
  - e. Equipment to be used including pumps, hoses, power supply, and standby pumps/power supply.
  - f. Capacities of equipment and materials to include:
    - i. Number, size, material, location, elevation of pump intake and method of installation of suction piping to include pipe depth,
    - ii. Number, size, material, location, elevation and method of installation of discharge piping,
    - iii. Bypass pump sizes, capacity, number of each size on site and power requirements, and main piping type & size
    - iv. Sewer plugging method and types of plugs.



- v. Pumps and bypass lines of adequate capacity to handle the sewage flows at the applicable pipe segment shall be provided and operated by the Contractor.
- vi. Professional Engineer sealed calculations demonstrating adequacy of the proposed bypass pumping system based on the planned system layout, anticipated flows and equipment data including static lift, friction losses, flow velocity (pump curve showing pump operating range and operating point), pump size and capacity, and intake/discharge locations and elevations,
- vii. Methods to address lateral connections within the segment to be bypassed, and temporary control measures of these lateral sewage flows.
- viii. Power generator and standby generator size and location,
- ix. Any temporary bypass piping supports and anchoring required,
- x. Set points, showing operating ranges at the suction end.
- xi. Method of noise control for each pump and/or generator, and
- xii. All other incidental items necessary and/or required to insure proper protection of the facilities.

- 5. Compliance with the requirements specified in the contract documents and any other regulatory permit requirements.

D. Equipment.

- 1. Pumps: All pumps used shall be fully automatic self-priming units that do not require the use of foot-valves or vacuum pumps in the priming system. The pumps may be electric or diesel powered. All pumps used must be constructed to allow dry running for long periods of time to accommodate the cyclical nature of effluent flows and be capable of passing 3 inch solids. The Contractor shall provide the necessary stop/start controls for each pump. The Contractor shall include one stand-by pump of each size to be maintained on site. Back-up pumps shall be on-line, isolated from the primary system by valves.
- 2. Discharge Piping. In order to prevent the accidental spillage of flows all discharge systems shall be temporarily constructed of rigid pipe with positive, restrained joints. Under no circumstances will aluminum "irrigation" type piping or glued PVC pipe be allowed. Discharge hose will only be allowed in short sections and by specific permission from the Owner or Owners Representative.

**PART 3 EXECUTION**

3.1. GENERAL

A. Bypass Pump System Design Requirements:

1. Bypass pumping systems shall have sufficient capacity to pump the maximum full flow capacity of the downstream receiving pipe at the distance and head set forth by the bypass pump configuration. The Contractor shall provide all pipeline plugs, pumps of adequate size to handle peak flow, and temporary discharge piping to ensure that the total flow of the main can be safely diverted around the section to be inspected and cleaned. Bypass pumping system will be required to be operated 24 hours per day.
2. The Contractor shall have adequate standby equipment available and ready for immediate operation and use in the event of an emergency or breakdown. One back-up pump shall be at the sewer line flow bypassing location, ready for use in the event of primary pump failure.
3. Bypass pumping system shall be capable of bypassing the flow around the work area and of releasing any amount of flow up to full available flow into the work area as necessary for satisfactory performances of work.
4. The Contractor shall make all arrangements for bypass pumping during the time when the main is shut down for any reason. System must overcome any existing force main pressure on discharge.

B. Bypass Pump System Performance Requirements:

1. It is essential to the operation of the existing sewerage system that there is no interruption in the flow of sewage throughout the duration of the Project. The Contractor shall provide, maintain and operate all temporary facilities such as dams, plugs, pumping equipment (both primary and back-up units as required), conduits, all necessary power, and all other labor and equipment necessary to intercept sewage flows before they reach the point where it interferes with work operations, carry it past ongoing work and return it to the existing sewer downstream of work operations.
2. The design, installation and operation of the temporary pumping system shall be the Contractor's responsibility. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction.
3. The Contractor shall provide all necessary means to safely convey storm and sanitary flows past the work area. The Contractor will not be permitted to stop or impede the main flow under any circumstances.
4. The Contractor shall maintain sewer flow around the work area in a manner that will not cause surcharging of sewers, damage to sewers and that will protect public and private property from damage and flooding.
5. The Contractor shall protect water resources, wetlands and other natural resources.

3.2. FIELD QUALITY CONTROL AND MAINTENANCE

- A. Test: Contractor shall perform leakage and pressure tests of the bypass pumping discharge piping using clean water prior to actual operation. The Owner and Owners representative will be given 48-hour notice prior to testing.
- B. Pressure testing of HDPE pipe shall be conducted in accordance with ASTM F 2164, Field Leak Testing of Polyethylene Pressure Piping Systems Using Hydrostatic Pressure. The HDPE pipe shall be filled with water, raised to test pressure and allowed to stabilize. The test pressure shall be 1.5 times the operating pressure at the lowest point in the system. In accordance with section 9.8, the pipe shall pass if the final pressure is with 5% of the test pressure for 1 hour.
- C. Inspection: Contractor shall inspect bypass pumping system every 30 minutes to ensure that the system is working correctly.
- D. Maintenance Service: Contractor shall insure that the temporary pumping system is properly maintained and a responsible operator shall be on hand at all times when pumps are operating.
  - 1. Spare parts for pumps and piping shall be kept on site as required.
  - 2. Adequate hoisting equipment for each pump and accessories shall be maintained on the site.

### 3.3. PREPARATION PRECAUTIONS

- A. It is the Contractor's responsibility to locate and verify connectivity of existing manholes that the Contractor plans to use for bypass pumping of sewage. The Contractor is responsible for removal and re-installation (upon bypass pumping completion) of manhole lids and manhole sections that were removed to facilitate pumping equipment and hoses.
- B. Contractor is responsible for locating any existing utilities in the area the Contractor selects to locate the bypass pipelines. The Contractor shall locate his bypass pipelines to minimize any disturbance to existing utilities and shall obtain approval of the pipeline locations from the Owner and Construction Manager All costs associated with relocating utilities and obtaining all approvals shall be paid by the Contractor and be included in the unit price bid for the various items of work.
- C. During all bypass pumping operations, the Contractor shall not be permitted to stop or impede the existing sanitary sewer flows under any circumstances. The Contractor shall protect the existing sanitary sewer and all local sewer lines from damage inflicted by any equipment. The Contractor shall be responsible for all physical damage to any local sewer lines caused by human or mechanical failure.

### 3.4. INSTALLATION AND REMOVAL

- A. In no case will bypass pumping be permitted at times other than during hours of investigation and rehabilitation of structures.
- B. After receiving approval of the Bypass Pumping Plan by the Construction Manager and having met all other coordination, permitting and bypass system requirements, the Contractor shall remove manhole sections or make connections to the existing sewer and construct temporary bypass pumping structures only at the access location as may be required to provide adequate suction conduit.
- C. Plugging or blocking of sewage flows shall incorporate a primary and secondary plugging device. When plugging or blocking is no longer needed for performance and acceptance of work, it is to be removed in a manner that permits the sewage flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.
- D. When working inside confined spaces, the Contractor shall exercise caution and comply with OSHA requirements for working in the presence of sewer gases, combustible or oxygen-deficient atmospheres, and confined spaces.
- E. The Contractor shall be responsible for obtaining any approvals for placement of the temporary pipeline within public ways from the appropriate governing agencies. All equipment, piping and appurtenances shall be on-site and ready for installation prior to commencing any installation work.
- F. The installation of the bypass pipelines is prohibited in all wetland areas. The pipeline must be located off streets and sidewalks and on shoulders of the roads. When the bypass pipeline crosses local streets and private driveways, the contractor must place the bypass pipelines in trenches and cover with temporary pavement.
- G. Bypass pumping shall continue until the particular item of work which is being performed in the section of the ALCOSAN sewer system has been completed.
- H. Upon completion of the bypass pumping operations, and after the receipt of written permission from the Owner, the Contractor shall remove all the piping, restore all property to preconstruction condition and restore all pavement. The Contractor is responsible for obtaining all approvals for placement of the temporary pipeline within public ways from the respective municipalities and PENNDOT, if applicable.

3.5. BYPASS PUMPING SYSTEMS

- A. The Contractor shall provide equipment and systems consistent with the approved Bypass Pumping Plan. Mobilized equipment must include stand-by pumps of the same size as the primary pumps to maintain the bypass pumping operation in the

event that a pump fails. Spare parts for pumps and piping shall be kept on site along with adequate hoisting equipment for pumps.

- B. Bypass pumping will be conducted by fused HDPE pipe or Owner-approved equal. Glued PVC pipe will not be allowed. Flexible discharge hoses will only be allowed in short sections. Leakage and pressure testing of the bypass pumping discharge piping shall utilize clean water prior to actual operation. The Engineer will be given 24 hours notice prior to testing.
- C. Bypass pumping must be operated and monitored continuously by the Contractor while in operation.

### 3.6. PROTECTION OF PROPERTY

- A. Bypass pumping shall consist of flow diversion as necessary to prevent back-ups creating damage or nuisance to public and private property, and at the area where investigation and rehabilitation of structures is in progress.
- B. The Contractor is responsible for monitoring weather conditions continuously during the bypass pumping operations. If the combined storm and sanitary sewer flows exceed the pumping system's capabilities at any time during the bypass pumping operations, to include increased flows due to storm or snow melt runoff, the Contractor must be prepared to remove plugging devices and restore the normal sewer system to operation. Appropriate time extensions will be considered by the Owner under such circumstances. Any Contractor costs that are a result of high flows or unsuitable weather conditions will not be reimbursed by the Owner, to include de-mobilization and re-mobilization.
- C. Raw sewage spillage caused by equipment malfunction shall be cleaned and disinfected by the Contractor using disinfectants approved by the Construction Manager. Under no circumstances shall the Contractor allow the discharge of raw sewage onto private or public property, into the existing storm drain system, onto the ground, into streams, water courses, ditches, streets, or in any other location other than a sanitary sewer.
- D. The Contractor shall be liable for all damages which result from sewage flows not properly maintained during the progress of the work, including all damages to private property which occur as a direct or indirect result of inadequate control of the sewage flow while the bypass operation is ongoing.
- E. Final inspection and acceptance in regard to cleanup, site restoration and pollution control measure areas shall be made in the presence of the Owner and/or other authorities having jurisdiction. The Contractor shall notify the Owner in writing of the readiness of the work for final inspection.

END OF SECTION

**APRIL 19, 2022**

**CONTRACT NO. 1756**

**SHALLOW CUT INTERCEPTOR INSPECTION**

**ADDENDUM NO. 3**

**ATTACHMENT F – CONTRACT SPECIFICATION SECTION,  
02650 PIPELINE CLEANING**

**SECTION 02650  
PIPELINE CLEANING**

**PART 1      GENERAL**

1.1      RELATED DOCUMENTS

- A.      The Bid and General Provisions of the Contract Documents, General Specifications and requirements of all Division 1 Sections of the Specifications apply to all work of this section.
  
- B.      The existing contract drawings, which are included “**For Reference Only**” in Appendix A, are issued to indicate the relative location, size, surroundings, and orientation of the interceptors and manholes and are for reference only. The material contained on the drawings is furnished for the information and convenience of the Bidders and is not guaranteed.
  
- C.      The Contractor shall comply with the regulations of all regulatory agencies having jurisdiction including but not limited to OSHA regulations, US Army Corps of Engineers and PADEP regulations, and the Allegheny County Soil Conservation District regulations. No discharge of sewage, as a result of the Contractor’s operations, shall be allowed. **The Contractor will be responsible to pay any and all fines associated with sewage discharges and/or any violations of the ALCOSAN Consent Decree as a result of the Contractor’s activities.**
  
- D.      The Contractor is responsible for obtaining all necessary permits and the corresponding fees needed for the Work and the transporting of any equipment or material over private property and public streets. It is further the Contractor’s responsibility to obtain the necessary permits and/or permission from the various municipalities, Commonwealth of Pennsylvania, and/or owners of private properties. The cost of construction or improvement of any access route to the project site(s) shall be the responsibility of the Contractor.

1.2      SCOPE

- A.      Contract 1756 is an annual contract which has a number of specific areas identified for inspection using sonar, CCTV, and split screen sonar. Other methods shall be approved by the OWNER.
  
- B.      Unless otherwise approved, all solids capture and decanting shall be performed on-site using a **closed container system** where solids are settled and retained with the liquid discharged to the ALCOSAN interceptor system. Any spillage from the

container system is not allowed. Any off-site decanting methods or storage locations shall be submitted for approval by the OWNER.

- C. As identified in the Contract Scope, the Contractor shall furnish all labor, tools, equipment, materials and incidentals required and performing high velocity jetting, rodding, brushing, bucketing and flushing of designated sewer lines and manholes prior to final internal inspection by closed circuit television or sonar.
- D. Additional Cleaning (as directed) shall be paid using the appropriate contingent item identified in the contract. Additional cleaning is defined as the removal of settled and attached debris within a sewer lines using high velocity jetting, as directed. The use of hydraulic cutting equipment and bucket machine equipment will be paid under the appropriate bid item and only as approved by the OWNER.
1. One pass shall be considered as the use of the step-cleaning method to work through the entire length of the pipe in increments that remove debris in a segmented and controlled manner throughout the full length of the pipe to be cleaned or lined. Cleaning shall include the use of a Combination Hydrovac/ Jetter truck to remove the debris as it is pulled from the cleaning manhole. Debris shall be paid on a per ton basis, for material complying with the Paint Filter Test Method 9095 (to be conducted by the authorized facility receiving debris).
  2. Cleaning shall consist of a minimum of three passes of debris removal.
  3. After three passes of debris removal, the Contractor shall evaluate if the sewer line is adequately cleaned to justify televising or sonar inspection as completed work, or if additional cleaning passes should occur.
  4. If the Contractor determines the line is adequately cleaned after three or four passes of debris removal, televising or sonar inspection prior to completion of the five maximum passes shall be at the Contractor's risk. If the Construction Manager determines that additional cleaning should occur, the Contractor is responsible for additional passes (up to the maximum five passes) and shall complete final televising (within the unit prices bid for both pipes to be cleaned and for pipes to receive lining, as applicable) or sonar inspection (without additional compensation).
  5. In the event the Contractor concludes based on the post-cleaning televising of the line that more than five passes with hydraulic cleaning equipment will be necessary to achieve acceptable results, the Contractor shall consult the Construction Manager for a determination. The Construction Manager may authorize additional cleaning to be paid at an hourly rate per the contingent bid items.
- E. **If directed, for areas where debris exceeds 50% diameter, and below the 10% allowance, the Contractor shall accept payment for cleaning based exclusively on the tonnage of material removed Item 2 and Item C-11, and not the linear feet of sewer jetted or time spent performing the work. Be advised that many**



**factors, including the contractor's capture efficiency, impact the final tonnage quantity.**

- F. The Contractor shall not discharge into the ALCOSAN interceptor system any water containing silt, mud or any other concentrated settleable material.

### 1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. SECTION 02651: TELEVISION & SONAR INSPECTION OF SEWERS

## PART 2 SUBMITTALS

### 2.1 EXPERIENCE

- A. The Contractor shall submit documentation for Owner approval to demonstrate the following experience as a business engaged in the cleaning of sewer lines:
  - 1. A minimum of ten (10) years experience in the field of sewer cleaning and pipeline inspection by means of closed circuit television.
  - 2. Demonstration that within the past five (5) consecutive years prior to the bid, as a prime contractor, the Contractor has successfully performed in a timely manner at least five (5) projects similar in scope and type to the required work.
  - 3. For each project submitted to meet the experience requirements, indicate the following:
    - Name and location of project
    - Name, address, and telephone number of Authority or Authority's representative
    - Brief description of work
    - Amount of contract
    - Date of Completion – state if project was completed on time
- B. The Contractor shall submit documentation to demonstrate the following experience of the staff proposed for this project for Owner approval:
  - 1. Inspection shall be conducted by NASSCO PACP Certified Operator; the Contractor shall provide operator certification documentation.
  - 2. Documentation of supervisors and operators training certifications, listing of completed projects, and a minimum of five (5) years experience in the field of sewer cleaning and internal video inspection of sewers.

### 2.2 EQUIPMENT

- A. Provide documentation of Contractor equipment and back-up equipment for Owner approval as listed in this section, 2.2 EQUIPMENT.
- B. At a minimum, the Contractor shall provide documentation of availability of the following equipment (or equivalent) for this project with the bid documents:
1. High-flow Combination Hydrovac/Jetter: 120 gpm @ 2,500 psi; Minimum hose reel spool capability of 1500 feet of dual fused 1 ¼" inside diameter jetter hose; 1,500-gallon water tank capacity; Articulating boom; 50' of 6" to 10" vacuum pipe; 6000 cfm @ 15-in Hg; Vacuuming capability of not less than 40 feet vertical.
  2. Mobile TV Studios: Color; computer aided; capable of both conventional self-propelled and pull-through cameras; low lux pan and tilt cameras.
  3. Jetting nozzles and floor skids designed specifically for the size ranges specified in Bid Items 2. Demonstrate availability of appropriate heads for the various work requirements.
  4. Cutting heads: demonstrate the availability of appropriate heads for the various solid waste cutting work requirements (roots, mud, grease, scaling) to include spare cutting heads.
  5. Bucket Machines: 4 cylinder; four speed; 25-ton drag; 1500' of ½" wire cable; slip disk clutch; all necessary buckets, scrapers, pipe and pulley makeups for up to 100' depths.
  6. Water tight debris boxes with decant system designed for a minimum of 25 CY of debris.
  7. CCTV camera equipped with a locating sonde (designed for locating deep utilities and sewers, 25 feet or greater.
  8. Generators and Air compressors.
  9. Approved backflow preventer for drawing water from a hydrant.
- C. Hydraulic Sewer Cleaning Equipment
1. The equipment used shall be of a movable dam type and be constructed so that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the sewer. The movable dam shall be the same diameter as the pipe being cleaned and shall provide a flexible scraper around the outer periphery to ensure total removal of grease.
  2. If sewer cleaning balls or other such equipment which cannot be collapsed instantly are used, special precautions against flooding of the sewers and public or private property shall be taken.
- D. High Velocity Jetter (Hydro-cleaning) Equipment
1. All high velocity jetter sewer cleaning equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more velocity nozzles. The nozzles shall be capable of producing a high

velocity scouring action from 15 to 45 degrees in all size lines to be cleaned. Equipment shall also include a high velocity gun for washing and scouring manhole walls and floor. The gun shall be capable of producing flows from a fine spray to a long distance solid stream. The equipment shall carry its own water tank, auxiliary engines, pumps and hydraulically driven hose reel. All controls shall be located so the equipment can be operated above ground.

2. Cleaning equipment must be capable of cleaning lengths up to 2,500 feet shall be provided. Equipment must be able to clean this length with vehicular access to one structure only. Cleaning shall be of the entire reach between structures. If cleaning of an entire section cannot be successfully performed from a structure, the equipment shall be set up on the other structure and cleaning again attempted without additional compensation.

E. Mechanical Cleaning Equipment

1. If authorized by the Owner, bucket machines shall be in pairs and with sufficient power to perform the work in an efficient manner. Machines shall be belt operated or have an overload device. Machines with direct drive which could cause damage to the pipe shall not be acceptable.

## **PART 3 EXECUTION**

### **3.1 PREPARATION**

- A. It shall be the responsibility of the Contractor to locate the proposed manholes by use of a CCTV camera with a locator or by survey. No additional payment will be due for the Contractors inability to locate the existing interceptor.
  1. Determination of the cleaning technique proposed by the Contractor must meet the contract requirements and requires approval of the Owner and the Construction Manager.
  2. Clean line sections, if directed, by the Owner and the Construction Manager, i.e., jetting. Properly dispose of all material (debris, etc.) removed from the sections at an approved disposal site to include applicable disposal fees, and provide a copy of the manifest to the Construction Manager. Payment for debris removal hauled to the approved dump site, that passes the paint filter test, will be made on a per ton basis. The Owner will not accept any material removed from the line sections at its wastewater treatment plant.
  3. Once any phase of the contract is started, work shall continue in a timely manner, until all sections are cleaned and televised. Complete internal inspection immediately after the pipe section has been cleaned.

- B. Where access to the various interceptor sections must be cleared of heavy vegetation, the Contractor shall perform the clearing of pathways to facilitate mobilization of cleaning and internal inspection equipment. Any vegetation or other debris cleared by the Contractor shall be removed and disposed of properly by the Contractor, and the site restored by the Contractor as an incidental cost of the work.
- C. The Contractor shall schedule, maintain, and coordinate all activities and shall cooperate with the Owner's personnel such that a minimum of interruption to the services results. The Contractor shall not operate existing system valves, sluice gates, controls, or other appurtenances at any time, but when the same is needed to facilitate and accommodate activities, he shall request such operation from the Owner. The Contractor shall provide the Owner with reasonable advance notice for such assistance.
- D. The Contractor is hereby made aware that the sewer lines to be cleaned and inspected is an interceptor sewer or connector pipe and no flow shall be discharged to the river, streams, banks, or any other storm outlet during cleaning or inspection operations. Additionally, no sewage shall be permitted to surcharge to the point that it overflows to any of the above or back into private buildings through lateral connections. Any damage or fines resulting from such occurrences are the sole responsibility of the Contractor.**
- E. The Contractor shall notify the Construction Manager 72 hours prior to mobilizing for internal inspection or cleaning activities.
- F. During all cleaning operations, precautions shall be taken to protect the interceptor from damage. Any damage to the sewer caused by the use of cleaning equipment, regardless of the cleaning method, shall be repaired by the Contractor at no additional cost to the Owner and to the satisfaction of the Engineer.

### 3.2 PERFORMANCE

- A. All cleaning shall commence with the most upstream sections of the sewer lines to be cleaned and end with the most downstream sections of the sewer line to be cleaned regardless of the method chosen to clean the sections. Cleaning shall include the trapping and removal of all sediments and residual wastes from successive manholes as the cleaning progresses at no additional cost to the Owner.
  - 1. Suitable weirs or dams shall be constructed as necessary in the downstream manholes in such a manner that the solids are trapped. No silts, sand, gravel, debris, etc., shall be allowed to pass these dams.

2. Under no circumstances shall sewage or solids removed from the interceptor be dumped onto streets, catch basins, storm drains, or receiving waters.
  3. All materials removed shall be properly disposed at a landfill licensed to receive the applicable wastes, shall pass the paint filter test, and documented by paint filter test results and Owner-provided manifests (copies to be provided by the Contractor to the Construction Manager).
- B. Each designated sewer manhole section shall be cleaned using the Owner-approved method. The equipment selected for cleaning shall be capable of removing dirt, grease, rocks, sand and other deleterious materials and obstructions from the sewer lines and manholes.
1. 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.
  2. **Blockages or Overflows, if any, shall be reported to the Construction Manager immediately.**
- C. During all sewer cleaning operations, satisfactory precautions shall be taken to protect the sewer lines from damage that might be inflicted by the improper use of cleaning equipment. Whenever hydraulically propelled cleaning tools which depend upon water pressure to provide their cleaning force or any tools which retard the flow of water in the sewer line are used, precautions shall be taken to ensure that the water pressure created does not cause any damage or flooding to public or private property being served by the manhole section involved.
1. When additional quantities of water from fire hydrants are necessary to avoid delay in normal working procedures, prior coordination will be required with the owner of the hydrant. The cost of the hydrant permit, water meter rental, water consumption and any other related costs shall be paid by the Contractor and considered incidental to the work. Water shall be conserved and not used unnecessarily.
  2. During winter months, when hydrants are not being operated, Contractor shall make provisions for water supply.
  3. No fire hydrant shall be obstructed so as to prevent its use in case of a fire in the area served by the hydrant, nor shall a hydrant be used for the purpose described unless a vacuum break is provided.
- D. Roots shall be removed in the designated sections where root intrusion is a problem. Special precautions should be exercised during the cleaning operation to assure virtually complete removal of visible roots from the joint area. Procedures may include the use of mechanical devices such as rodding machines, expanding root cutters, and porcupines; hydraulic procedures such as high velocity jet cleaners; or chemical root treatment.

- E. During heavy cleaning by bucket machines, bucket machines shall be pulled upstream from the lower manhole to the upper manhole and debris shall be contained and collected in the lower manhole. Bucket machines shall be in pairs with sufficient power to perform the work in an efficient manner. Machines shall be belt operated or have an overload device. Machines with direct drive that could cause damage to the pipe shall not be allowed.
- F. To aid in the removal of roots, pipeline and manhole sections which have root intrusion may be treated with an approved label herbicide by the Contractor. The application of the herbicide to the roots shall be done in strict accordance with the manufacturer's recommendations and product specifications in such a manner to preclude any damage to the surrounding vegetation.
1. Vegetation damaged for whatever reason shall be replaced with identical vegetation.
  2. All safety precautions recommended by the manufacturer shall be strictly adhered to concerning handling and application of the herbicide.
  3. The herbicide technical data and the Contractor's plan for use must be submitted for Owner approval, and will be considered an alternative of the convenience of the Contractor.
  4. No additional payment will be provided to the Contractor for the herbicide application.
- G. All sludge, dirt, sand, rocks, grease and other solid or semi-solid residue, debris, and material resulting from cleaning operations shall be removed at the downstream manhole of the section of sewer being cleaned. Passing material from manhole section to manhole section which could cause line stoppages, accumulations of sand in wet wells, or damage to pumping equipment shall not be permitted.
- H. The Contractor shall be responsible for daily transporting the removed material from the work site and the proper disposal of the removed material at an approved disposal site. The material will not be accepted by ALCOSAN for disposal.
1. All debris, residue and other materials resulting from cleaning operations shall be removed from the site no less often than at the end of each workday and shall be disposed of in an approved manner. Under no circumstances will the accumulation of debris, residue, etc., be left at the work site overnight, unless prior written authorization is given for storage in totally enclosed containers.
  2. Any estimates of material in the pipe line sections are for reference only. Such estimates are not to be utilized for bid quantities.
  3. Landfill reports must be submitted, and payment will only be approved by ton for debris removal which passes the paint filter test.
- I. The Contractor is responsible for monitoring weather conditions continuously during

the cleaning operations. If the combined storm and sanitary sewer flows exceed the pumping system's capabilities or disrupt the cleaning operation at any time Work, to include increased flows due to storm or snow melt runoff, the Contractor must be prepared to remove plugging devices and restore the normal sewer system to operation. Appropriate time extensions will be considered by the Owner under such circumstances. Any Contractor costs that are a result of high flows or unsuitable weather conditions will not be reimbursed by the Owner, to include demobilization and re-mobilization.

J. Immediately upon completion of work, it shall be the Contractor's responsibility that the entire area shall be cleaned of all debris and all debris disposed of properly. Documentation of the inspection results shall be as follows:

1. Television/sonar inspection database records and image files. Data records shall be compiled by the Contractor and will clearly show the location in relation to an adjacent manhole of all service connections, pipe defects, and other points of significance such as infiltration sources, roots, and other discernible features.
2. Portable Hard Drive Recordings. The Contractor shall supply portable hard drives with files that correspond with Manhole and Diversion Structure ID provided by ALCOSAN GIS maps. The purpose of the digital movies shall be to supply a visual and data record of observations such as connections, manholes, and the NASSCO PACP Pipeline defects that may be replayed and reported.
3. All files on the drive shall be in color and shall be at the same speed that it was recorded. All video recordings shall have a continuous on-screen display indicating sewer section identification and distance from entering manhole. Footage counter must reset to zero for each manhole to manhole section. ALL VIDEO FILES SHALL BE PROVIDED IN PACP FORMAT AS MANHOLE TO MANHOLE.

All videos shall have on screen display identifying laterals and pipe defects which shall be coordinated with the written logs. Files shall be in MP or windows compatible format with copies supplied to the Construction Manager. Each data drive shall be permanently labeled with the following information:

Project Name and Contract Number  
 Manhole & Pipe Sections  
 Tape Number  
 Date Televised  
 Contractor's Name  
 Indication of Initial or Final TV Inspection

4. Labeled photographs of any and all observed pipe defects and legible records of debris removed by weight.
5. Inspection Logs- Written logs shall be kept and provided by the Contractor showing the location, in relation to adjacent manholes of: each infiltration point, laterals, services, joints, voids, unusual conditions, roots, deposits, scale, corrosion, changes in pipe (material size shape, slope), and other discernible features. The logs will be put into a final report. Three copies of the final report shall be submitted to the Construction Manager.

END OF SECTION



**APRIL 19, 2022**

**CONTRACT NO. 1756**

**SHALLOW CUT INTERCEPTOR INSPECTION**

**ADDENDUM NO. 3**

**ATTACHMENT G – CONTRACT SPECIFICATION SECTION,  
02651 TELEVISION AND SONAR INSPECTION**

**SECTION 02651  
TELEVISION AND SONAR INSPECTION OF SEWERS**

**PART 1 GENERAL**

1.1. RELATED DOCUMENTS

- A. The Bid and General Provisions of the Contract Documents, General Specifications and requirements of all Division 1 Sections of the Specifications apply to all work of this section.

1.2. DESCRIPTION OF WORK

- A. The intent of this contract is to inspect shallow cut interceptor sewers where flows routinely exceed 50% and to conduct a split screen set up with CCTV on the crown and sonar from water level to the invert. It is not the intent of this contract to conduct bypass pumping, light or heavy cleaning and debris removal. That work will be done using a subsequent contract. The exception being areas where debris exceeds 50% or there is material or large debris blocking flow. In that case, ALCOSAN may request bypass pumping and heavy cleaning using the contingent unit prices in the Contract.
- B. For bidding purposes, the contractor should assume that less than 10% of the length called out in Items 3 through 7 are subject to Bypass Pumping and Heavy Cleaning. Should this bypass pumping and cleaning work exceed 10% of the length of items 3 through 7, ALCOSAN will accept either revised pricing from the contractor or the work will be performed using Time and Materials.
- C. Furnish all necessary labor, materials, equipment, services and incidentals required and visually inspect by means of closed-circuit television or sonar equipment, including, but not limited to, all recording and playback equipment, materials and supplies such as DVDs and hard drives. The inspections shall be done from manhole.
- D. All inspections shall be witnessed by the Construction Manager.
- E. Video recordings shall be made of the television inspections and copies of both the recordings and printed inspection logs shall be supplied to the Construction Manager. All hard drives and digital data records shall reference and correspond to the ALCOSAN GIS maps for each pipeline segment to be cleaned in Appendix A, or to the contract drawings for each pipeline segment to be lined.

### 1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. SECTION 02080: BYPASS PUMPING
- B. SECTION 02650: PIPELINE CLEANING

### 1.4 DEFINITIONS

- A. CCTV Inspection: Operation necessary to complete a high-definition, true-color audio-visual inspection for verification of existing internal sewer pipe conditions.
- B. MPEG: MPEG, Moving Picture Expert Group, is the acronym given to a family of international standards used for coding audio-visual information in a digitally compressed format.
- C. DVD: Digital Video Disk, for the purposes of this specification, DVDs shall be written or “burned” in accordance with the ISO-9660 Level 2 Specifications.
- D. NASSCO: National Association of Sewer Service Companies developed the Pipeline Assessment Certification Program (PACP) standard, for which closed circuit television inspections of sewer pipelines in the Contract are to comply according to the latest version of the reference manual.

### 1.5 SUBMITTALS

- A. Submit in accordance with the Contract Documents
- B. Contractor to submit the following prior to pre-construction meeting
  - 1. Submit a written description of procedures to be used to the Construction Manager, including product literature for all digital CCTV or sonar equipment including, but not limited to cabling, camera, monitor, footage counter, digital video titling device, and recorder demonstrating their capability and resolution.
  - 2. Submit an Emergency Plan that outlines proposed methods for recovering in-line inspection equipment that has become lodged, lost, or uncontrollable within the sewer. This plan should also include provisions for providing replacement MH covers and steel plating to protect exposed or damaged MH or open excavations.
  - 3. Submit a sample written/printed copy of CCTV or sonar inspection logs to the Construction Manager. Logs shall record defects according to NASSCO’s Pipeline Assessment and Certification Program (PACP).
- C. The Contractor shall submit Sample Inspection Reports for review during pre-construction meeting to ensure quality and conformity requirements of this contract.

1. Submit a sample report of each CCTV or sonar inspection, including digital MPEG DVD-R video recordings, and electronic NASSCO PACP exported database files, of an actual sewer inspection performed by each device.
  2. Submit a report suggesting the CCTV camera or sonar make, model and serial number on each video. Demonstrate the resolution of each camera using the recording resolution specified.
  3. Submit documentation of NASSCO PACP certification for all operators, database, and software intended to be used.
  4. Submit a sample report of a multi-sensor (CCTV and sonar combination) inspection report which will contain all reported inspections as detailed, in addition to CCTV inspections report.
- D. Use the report submission accepted by the Construction Manager as a benchmark for review and approval of subsequent inspection report submissions.
- E. No inspection work is to be performed until the sample inspection report has been accepted by the Construction Manager.
- F. Data submittals are to satisfy the following requirements:
1. Submittals shall include a cover letter in both hard copy and electronic format that describes the contents of each submittal including the number and type of inspections provided (CCTV, sonar, structure inspections, structure GPS, etc.). The cover letter should also document any other relevant information included that is pertinent to the inspections such as maps, diagrams, and/or descriptions of conditions encountered that prevent a complete inspection of a given pipe segment.
  2. Submittals shall include a completed CCTV Contractor Data Submittal and QA Review Report.
  3. Submit inspection database files and related information on a weekly basis and within 10 working days of the inspection. Submittals shall include only new inspections or previously rejected inspections that have been corrected. Data that has previously been accepted or rejected without correction shall not be resubmitted with each new data submittal. The Contractor shall submit any GPS and/or structure confirmation data prior to, or in conjunction with, CCTV inspection records collected for the pipes to be inspected. Information shall be provided on a single portable hard drive. Multiple hard drives containing MH or CCTV data should not be made.
  4. Failure to comply with any of these requirements may result in the rejection of the entire submittal. If rejected, the submittal shall be corrected by the Contractor and resubmitted to the Construction Manager at no additional cost. The Construction Manager and ALCOSAN reserve the right to withhold payment for work completed in the event of data submittal rejection.

- G. The Contractor will include a Project Status Report with each Pay Requisition submitted. A Project Status Report template is included at the end of this Section for reference. The Construction Manager will provide the Contractor with an electronic version of the Report template prior to the start of work.

## 1.6 QUALITY ASSURANCE

- A. Comply with the requirements of Contract Documents
- B. Comply with all codes, laws, ordinances, and regulations of governmental authorities having jurisdiction over this part of the work.
- C. The inspections shall be performed one pipe segment at a time.
- D. Inspection shall be performed in accordance with most current NASSCO's Pipeline Assessment and Certification Program (PACP).
- E. Ensure each operator is fully trained and certified in all aspects of sewer inspection and capable of making accurate observations and coding / recording all conditions that may be encountered in the sewers.
- F. Coding accuracy will be a function of the number of defects or construction features not recorded or omitted as well as of the correctness of the coding and classifications recorded. Coding accuracy is to satisfy the following requirements:
  - 1. Header accuracy: 95%.
  - 2. Detail / defect coding accuracy: 85%.

Inspections failing to meet these criteria will be rejected, re-inspected if required, recoded, and resubmitted at no additional cost.

- G. Contractor shall implement a formal coding accuracy verification system before starting the Work.
  - 1. Verify coding accuracy on a random basis on a minimum of 10% of the inspection reports. Submit coding accuracy checks with the corresponding video recording. The Contractor shall complete the CCTV Contractor Data Submittal and QA Review Report, attached separately, and include it with each respective data submission.
  - 2. Perform a minimum of two accuracy verifications for each operator for each week in which work is performed and submit the results to the Construction Manager for review.
  - 3. Recode inspections not satisfying the accuracy requirements and verify the accuracy of the inspection immediately preceding and immediately following the non-compliant inspection. Repeat the process until the proceeding and subsequent inspections meet the accuracy requirements.

- H. The Contractor shall provide the Construction Manager with a complete list of Subcontractors whom the Contractor proposes to engage at least two (2) business days prior to the commencement of Work.
- I. Operators failing to meet the accuracy requirements on two occasions will not be permitted to perform inspections on the remainder of the contract until Contractor can demonstrate to the Construction Manager that they can code in accordance with the requirements of the Contract Documents.
- J. The Contractor shall maintain an up to date Progress Log that tracks the progress of the work and status of inspections. The Construction Manager should be provided with this information upon request. The log should document the following information at a minimum
  - 1. Segment ID
  - 2. Date of inspection
  - 3. Date of data submission
  - 4. Status of data acceptance / rejection
  - 5. Date of data acceptance / rejection
  - 6. Date of segment re-inspection (as required)
  - 7. Date of data resubmittal (as required)
  - 8. Date of resubmitted data acceptance (as required)

#### 1.7 EXPERIENCE

- A. The Contractor shall submit documentation for Construction Manager approval to demonstrate the following experience as a business engaged in the CCTV or sonar inspection of sewer lines as per contract documents.
  - 1. The Contractor shall be in good standing under local contracting requirements or otherwise properly registered, licensed or permitted by law to carry on business within the State of Pennsylvania, County of Allegheny throughout the term of the Contract, and shall provide the Construction Manager with evidence thereof as per contract documents.
  - 2. At any time during the term of the Contract, the Construction Manager may, at its sole discretion and acting reasonably, request updated evidence of good standing. A Contractor, who fails to provide satisfactory evidence, will not be permitted to continue to perform any Work.
- B. The Contractor and/or any proposed Subcontractor, for the portion of the Work proposed to be contracted to them, shall:
  - 1. Have a minimum of ten (10) years of experience in the field of sewer pipeline inspection by means of CCTV or sonar and have the required capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract Documents.

2. Have successfully carried out work similar in nature, scope and value to the Work and demonstrate that within the past five (5) consecutive years prior to the bid, as a prime Contractor, the Contractor has successfully performed in a timely manner at least five projects similar in scope and type to the required work that totals 10,000 feet of previous CCTV or sonar inspection on sewers of 8” to 96” in diameter for condition assessment purposes. Inspection of new infrastructure for acceptance purposes shall not be deemed as representative experience. For each project submitted to meet the experience requirements, indicate the following:
    - a. Name and location of project.
    - b. Name, address, and telephone number of Owner or Construction Manager.
    - c. Brief description of work to include length and diameter of pipelines inspected.
    - d. Amount of contract.
    - e. Date of Completion – state if project was completed on time.
  3. Be fully capable of performing the Work required in strict accordance with the terms and provisions of the Contract Documents.
- C. The Contractor shall submit, for Construction Manager approval, documentation to demonstrate the following experience of the staff proposed for this project:
1. Operator certification documentation of each CCTV or sonar operator’s NASSCO Pipeline Assessment and Certification Program (PACP) certificate. The PACP certificate for all Operators performing work on this project shall be current on the day of the Contractor’s submission and shall remain current throughout the performance of this work.
  2. Documentation of supervisors’ and operators’ training certifications, listing of completed projects, and a minimum of five years of experience in the internal CCTV inspection of sewers.

## 2 PRODUCTS

### 2.1. GENERAL

- A. The Construction Manager reserves the right to stop the work when, in the Construction Manager’s judgment, the Contractor’s work or activities are threatening the health and safety of the public; including Contractor, Construction Manager, ALCOSAN, municipal staff or visitors to the work site; or endangering the environment. Work shall not proceed until a satisfactory resolution has been achieved, as determined in the sole and unfettered opinion of the Construction Manager.

### 2.2. EQUIPMENT

- A. The Contractor shall submit a list describing all equipment to be used for review and approval of the Construction Manager.
- B. CCTV: A complete closed circuit color television system, including a camera, lighting, electronic footage counter, television monitor, mobile television studio, and digital / DVD video recorder/player used for the televising operations shall be specifically designed and constructed for sanitary or combined sewer inspections. Video inspection is to consist of the following:
1. The inspection equipment shall be capable of inspecting a minimum 2,000 linear feet of sewer line without access to a manhole in between.
  2. The inspection equipment shall be capable of clearly televising the interior of 8-inch diameter and larger sewer sizes.
  3. The camera should be specifically designed and constructed for such sewer inspections and shall have above ground control for forward and backward movement in the sewer.
  4. CCTV camera equipped with a locating sonde, designed for locating deep utilities and sewers, 25 feet or greater or buried structures and junctions that cannot be located or accessed from ground surface.
  5. Video camera shall be capable of panning 360 degrees and tilting 270 degrees with optimum picture quality provided by focus and iris adjustment. Focal range to be adjustable from 3-inches to infinity.
  6. The camera, television monitor and other components of the video system shall be capable of producing a minimum 720(x) by 480(y) pixel, 740 line resolution video pictures at 30 frames per second.
  7. Lighting for the camera shall be waterproof and suitable to allow a clear picture of the entire periphery of the pipe. The camera shall be operative and provide a clear picture in 100 percent humidity conditions. Lighting shall be adjustable to allow an even distribution of light around the sewer perimeter without loss of contrast, flare out of picture, or shadowing. Lighting shall illuminate the sewer or manhole ahead of the camera to be able to determine general condition, features and upcoming defects.
    - a. An unclear picture due to the lack of lighting or the presence of fog, steam, or excessive humidity will be considered unsatisfactory. The Contractor is responsible for identifying and implementing corrective actions to obtain suitable video quality, such as using fans or ventilation systems to dissipate the fog or by the heating of incoming air to mitigate fog.
    - b. The Contractor is responsible for presenting issues regarding questionable video quality immediately to the attention of the Construction Manager.
    - c. Light heads shall be changed upon the request of the Construction Manager.
  8. Picture quality and definition shall be to the satisfaction of the Construction Manager and if unsatisfactory, equipment shall be removed and no payment shall be made.



9. Video overlay equipment capable of superimposing a minimum of 15 lines with up to 30 characters per line of alphanumeric information onto the video recording.
  10. Sewers of 36 inches or greater shall be inspected using an in-line inspection platform, which shall:
    - a. Be capable of inspecting a minimum 2,000 linear feet of sewer line without access to a manhole in between.
    - b. Have independently controlled drive tracks that enable the platform to maneuver around bends and climb over debris up to 12-inches in height.
    - c. Be operable under partially or fully submerged flow conditions.
    - d. Be operable in sewers of various cross-sections, and constructed of standard pipe materials including, but not limited to, brick, clay, concrete, PVC, HDPE, and steel.
    - e. Be tethered to facilitate extraction of the platform from the sewer, without causing damage to the sewer infrastructure, in the event the equipment fails or otherwise becomes uncontrollable within the sewer.
    - f. Be equipped with sufficient high intensity lighting to illuminate the sewer for visual inspection.
    - g. Have capability for simultaneous data collection from multiple inspection sensors/technologies including, but not limited to, CCTV video inspection and sonar scanning.
  11. Minimum requirements of in-line inspection sensors / technologies: CCTV video inspection equipment shall conform to the requirements of the Contract Documents, and as modified herein:
    - a. Equipment shall be capable of continuously capturing digital video from first generation recordings with no frame loss, regardless of the progression of the inspection.
    - b. Equipment shall be used to acquire continuous digital video images of the sewer for the entire length being inspected.
    - c. Incorporate a suitable distance-reading device to measure the location of the equipment in the pipe, to an accuracy of  $\pm 0.5\%$  of the length of the inspection.
- C. SONAR: Sonar scanning inspection equipment shall conform to the requirements of the Contract Documents, and as modified herein:
1. The Contractor's equipment must be capable of operating under full-pipe flow conditions, with the pipe in continuous service, and with the pipe velocities associated with continuous service.
  2. Sonar software shall be configurable to allow for changes in pipe shape and size without requiring removal of the sonar from the pipe system
  3. The Scanning Unit shall provide real-time continuous scanning for the entire duration of the inspection. The equipment shall be capable of providing real-time continuous images of the conditions encountered in the sewer line. The images must

be continuously displayed on a color monitor and must be stored on a DVD disk or portable hard drive. The stored images must be able to be post analyzed for cursers to be overlaid and measurements to be taken. The stationing along the inspected Sewer Line shall appear on all video images. The stationing origin (Sta.0+00) shall be identified in the written report for each inspected section. Manholes and structures must correspond to the reference drawings.

4. The system shall be capable of inspecting full lengths of up to 2,000 feet due to the typically limited number of access sites along pipes of this type.
  5. Sonar scanning equipment shall accurately measure the depth to sediment or pipe surface below the fluid level at regular intervals throughout the inspection.
  6. Sonar equipment must be programmable multi-frequency profiling sonar specifically adapted to using sound waves to locate and map subaqueous sewer irregularities by creating continuous sonar images recorded in "real time" mode.
  7. The sonar shall be digital, multi-frequency profiling sonar that supports a range of frequencies from 600 kHz to 2.0 MHz to minimize noise. The sonar shall be tunable across the full frequency range in 5 kHz steps.
  8. The range resolution measurement error shall be no greater than 0.08-inch from distances of 3 to 12 feet, and no greater than 0.4-inch from distances of beyond 16.5 feet.
  9. The minimum detectable range for the sonar unit shall be 6-inches.
  10. Error tolerances for sediment volume quantification shall be a minimum 92% accuracy for pipelines between 36-inch and 54-inch diameter inclusive, and a minimum of 95% accuracy for pipelines of greater than 54-inch diameter.
  11. The equipment must allow the accurate quantification of solids accumulation, sectional area loss, joint separation, and other structural flaws that may exist. The equipment must allow the accurate location of all encountered problems and defects along the interceptor system, and where sediment and gravel has accumulated. Sediment/debris calculations shall be accurate to minimum 95% for pipes over 54-inch diameter.
- D. CCTV/SONAR: Equipment used to perform an inspection with simultaneous CCTV and Sonar inspection shall capture both recordings in a split-screen arrangement where both image feeds are fully visible. The technical specifications for each equipment type described in the preceding sections shall apply here as well.
- E. An electronic footage counter shall accurately measure the exact distance of the CCTV or sonar inspection equipment from the centerline of the starting manhole. This measurement shall be displayed on the monitor and recorded on the video at all times. The importance of accurate distance measurements is emphasized.
- F. In areas where a self-propelled track-mounted platform is not possible to use during the inspections, the inspections shall be performed using a float system. The Contractor shall notify the Construction Manager prior to the use of the float platform.

## **PART 3 EXECUTION**

### **3.1. PROCEDURE**

- A. The entire length of sewer shall be televised by the use of a closed circuit color television or sonar system, as applicable, to provide a visual and audio digital data record of the conditions of the interior of the sewer line that can be replayed, analyzed, mapped, and reported.
- B. Perform inspections in accordance with most current NASSCO PACP guidelines and the following:
  - 1. With the direction of flow unless a reverse set up is required.
  - 2. From the center of the start manhole to the center of the finish manhole. Inspections will terminate at a manhole regardless of whether or not the manhole is mapped or located during the structure inspection / GPS work. Mapped blind junctions with another sewer segment, exclusive of lateral connections, will terminate an inspection. A new inspection will start at the mapped blind junction and will continue to the next manhole, structure or mapped blind junction. The contractor will not terminate an inspection at an unmapped junction. The unmapped junction will be noted in the observations and the inspection will continue to, and terminate at the next manhole or mapped junction.
  - 3. Provide a complete television inspection of both the upstream and downstream manholes beginning at the top of each manhole and panning down to the invert of each manhole, inspecting the entire manhole. NASSCO MACP compliant inspection of manholes is not included in this project.
  - 4. Begin inspections generally with the upstream sewer in the system and proceed downstream in a consecutive manner.
  - 5. Schedule the inspection of downstream sewers after the contributing upstream sewers have been cleaned.
  - 6. Ensure the face of the start manhole is clearly visible at the start of the sewer inspection.
  - 7. Position the center of the camera lens in the center of circular and egg shaped sewers and manhole risers, or as directed by the Construction Manager.
  - 8. The camera must be properly oriented to observe conditions in an upright condition, and will pan across all NASSCO Grade 4 or 5 defects and any connections, including residential and commercial taps, that are observed. All NASSCO Grade 4 or 5 defects shall include a pan and tilt photo of the defect as well as a photo of the defect taken down the long axis of the pipe. The Contractor is responsible to ensure the Operator checks and measures the ovality of the pipe at these points of NASSCO Grade 4 or 5 defects.

9. The travel speed of the television inspection camera through the sewer shall be uniform and shall not exceed the maximum speed of *30 feet per minute* under any conditions.
  10. For cable calibration of the television inspection platform, record the distance from the center of the manhole to the cable calibration location at the start of the inspection and adjust the distance reading so that zero is at the pipe and manhole interface. This distance is known as the cable calibration distance. The cable calibration location is the intersection point between the camera's widest horizontal viewing angle and the pipe's side periphery (03 or 09 o'clock) when the camera is level and looking forward.
  11. Indicate on the monitor screen an accurate automatic distance measurement that begins to move immediately as the camera moves. Ensure measurement is accurate from the cable calibration point to the center of the finish manhole.
  12. Manual winches, power winches, powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions shall be used to move the camera through the sewer line.
- C. Reverse Set-Up Inspection: If inspection of an entire section cannot be successfully performed from one manhole, perform a reverse setup from the opposite manhole of the segment to obtain a complete television inspection.
- D. Termination or abandonment of a survey will not be acceptable if the contractor runs out of CCTV camera tether. The Contractor is responsible to properly plan the work such that manhole to manhole segment inspections are complete unless there is a NASSCO structural, O&M or construction defect that prevents the Contractor from completing the inspection. The exception to this will be in the instance where a segment inspection cannot be completed because the distance between access points is greater than the specified length of CCTV inspection cable. This may be caused by a manhole that is not constructed as shown on the mapping, is buried or otherwise reasonably inaccessible, or due to the actual distance between access points.
- E. Obstructions:
1. If, during the inspection operation, the television camera will not pass through the entire sewer line section, the equipment shall be removed and repositioned in a manner so that the inspection can be performed from the opposite manhole.
  2. If, again, the camera fails to pass through the entire pipe section, the Contractor shall attempt to make a determination as to the reason for this failure. The Contractor shall notify the Construction Manager of the failure and immediately (within one work day) submit a DVD or portable hard

drive of digital data record and the hardcopy inspection report to the Construction Manager with the Contractor's determination for the failure.

3. Within two working days from receipt of the digital video data and the related inspection report, the Construction Manager will advise the Contractor if:
  - a. The section(s) is to be cleaned immediately so that the initial televising can proceed.
4. The Contractor shall not receive any additional compensation for work delays, re-mobilization or the re-scheduling of the work due to obstructions that prevent televising from being completed.
5. If the Construction Manager determines that the failure is due to a structural consideration (i.e., crushed or collapsed pipe, protruding break-in connection), the inspection shall be considered complete. No additional inspection or cleaning work will be required in this case, and reimbursement to the Contractor for this line segment shall only consist of the bid item unit price.
6. If the Construction Manager and Owner determine that cleaning of the line section is not required, the section shall be considered complete and no additional inspection or cleaning work will be required. Reimbursement to the Contractor for this line segment shall only consist of the cleaning bid item unit price.

F. Removal of Equipment That Becomes Stuck in a Sewer

1. Per Contractor's emergency plan, advise the Construction Manager immediately if equipment becomes lodged, lost, or uncontrollable within the sewer. Contractor shall initially attempt to remove such equipment, using whatever legal and safe means are necessary, for at least 4 hours. Following this initial attempt, advise the Construction Manager if the equipment cannot be freed and mark the position on the surface over the sewer where the equipment is lodged or lost. Accuracy of the measurement shall be attained by use of a surveyor wheel, walking meter, roll tape, or other suitable and calibrated device.
2. The Construction Manager will communicate to ALCOSAN that the equipment cannot be freed and the need to arrange to have an excavation made to the top of the sewer where the equipment is lodged or lost. The Contractor will be responsible for coordinating recovery efforts with the owner of the sewer and the Construction Manager.
3. The Contractor will arrange to have an excavation made to the top of the sewer where the equipment is lodged or lost within 12 hours of the time the equipment became lodged or lost.
4. Construction Manager shall be present during the excavation, and once the top of the sewer is exposed and the excavation is secured, Contractor shall

remove the top of the sewer pipe and retrieve the equipment lodged or lost in the sewer.

5. The Contractor will arrange to have the sewer repaired and site restored after removal of the equipment that was stuck.
6. Contractor will pay all costs, including bypass pumping, associated with excavating down to the top of the sewer pipe, repairing the sewer after inspection equipment has been removed, backfilling the excavation and restoring the surface. Backfilling, sewer repair, and surface restoration work will be completed in a manner that complies with the construction standards of the Municipality, Authority, or Agency that owns the sewer and / or the surface features disturbed during the work and will be completed at the Contractor's expense. Repair, backfill, and surface restoration will be completed in the same day.
7. The Contractor shall not receive any additional compensation for equipment recovery / replacement costs, other incidental costs, work delays, re-mobilization or the re-scheduling of the work should the equipment become stuck.
8. Contractor shall repeat inspection and cleaning of the sewer in accordance with the Contract Documents to remove backfill and debris that may have entered the sewer during removal of the equipment and subsequent repair of the sewer.
9. No payment or extra time will be given for equipment downtime and attempted or completed equipment retrieval.

G. Observed Failures During Inspections

1. Notification of emergency conditions: Inspection crews shall immediately notify Construction Manager and on-site representative of any defects or site conditions posing imminent danger to the public, such as missing lids, covers with existing fractures, covers broken during the work, severely deteriorated structures, sink holes, etc.; structural defects that could lead to collapse of the pipe including collapsed pipe, broken pipe, deformed pipe, holes with exposed soil or voids, etc.; and any observed O&M defects such as root masses, debris, grease accumulation, etc. blocking 50% of the pipe that could cause pipe blockages, flooding or potential overflow conditions. The Construction Manager should be notified of missing MH access covers even if an internal cover access cover is present.
2. The Contractor shall take at least two photographs of the defect or site condition and provide it to the Construction Manager or on-site representative. As necessary, the contractor and on-site representative will coordinate to provide related information to the Construction Manager. The Construction Manager will be responsible for notifying the municipality of the defect or site condition. The Contractor will accompany the Construction Manager or on-site representative to the local municipality as required to discuss the defect and possible remedies to address and fix the defect.

3. Contractor shall, on a daily basis, notify the Construction Manager of all NASSCO Grade 4 or 5 defects and provide a digital pan and tilt photo (CCTV inspection) or image (sonar) of the defect as well as a digital photo or image of the defect taken down the long axis of the pipe. The Contractor shall ensure the Operator checks and measures the ovality of the pipe at the locations of NASSCO Grade 4 or 5 defects. Stop the camera and position it to provide a steady two (2) second perpendicular view of connections, junctions, major branches and major defects including deformed sewers, displaced bricks, holes, large displaced joints, missing bricks, missing mortar, obstructions, and large open joints.
4. The camera must be properly oriented to observe conditions in an upright condition, and will pan across all NASSCO Grade 4 or 5 defects and any connections, including residential and commercial taps, that are observed. Once NASSCO Grade 4 or 5 defects and/or connections have been reviewed, the camera must pan to its neutral head-on position prior to continuing the segment inspection. Under no circumstances should the inspection platform continue while the camera is in the panned position, otherwise the inspection may be rejected by the Construction Manager.
5. Capture digital photograph (CCTV inspection) or digital images (sonar) as required by the Contract Documents, and notify the Construction Manager immediately when a flow disparity, clear water infiltration, hole or missing bricks, collapse, void or deformation >10% is observed during the sewer or manhole inspection. Provide the captured images to the Construction Manager at the end of each work day.
6. The Construction Manager will communicate, to the owner of the sewer, that NASSCO Grade 4 or 5 defects have been discovered and there exists a need for the performance of emergency sewer or manhole repairs as soon as possible if the inspection cannot be completed or the sewer or manhole condition poses an immediate operational or safety concern.
7. The owner of the sewer will arrange for protection of the site and the performance of emergency sewer or manhole repairs of pre-existing defects, if required, as soon as possible if the inspection cannot be completed or the sewer or manhole condition poses an immediate operational or safety concern.
8. The Contractor will be responsible to protect the site and perform emergency repairs for any defects or damage caused by the Contractor to municipal infrastructure during the execution of the work. The Contractor should terminate work at that specific site so that protection of the site and emergency repairs can be completed immediately. No additional payment or schedule extensions shall be made for the completion of repairs of defects or damage to municipal infrastructure caused by Contractor.
9. Carry out inspection of other sewers not affected by the observed failure. Complete inspection of the sewer when notified by the Construction Manager that it is permissible to do so.

10. Repeat inspection and cleaning of the sewer in accordance with the Contract Documents if required to remove backfill and debris that may have entered the sewer during emergency repairs.
- I. Pre-cleaning and progress internal CCTV inspections are not required and considered incidental to the pipe cleaning bid item unit costs.
  - J. Work should not be completed during wet-weather events and will not be initiated until at least 24-hours after a wet weather event occurs.
  - K. Whenever non-remote powered and controlled winches are used to pull the television camera through the line, telephones, radios, or other suitable means of communication shall be set up between the two manholes of the sewer line being inspected to ensure that good communications exist between members of the crew.
  - L. Measurement for location of defects shall be above ground by means of a meter device. Marking on cable, or the like, which would require interpolation for depth of manhole, shall not be allowed. Measurement meters shall be accurate to two tenths of a foot over the length of the sewer line section being inspected. Accuracy of the measurement meters shall be checked daily by use of a walking meter, roll tape, or other suitable device.
  - H. The Contractor shall use a CCTV camera mounted locating sonde to identify the location of buried, unmapped, or unlocated manholes with surface access or mapped pipe junctions without surface access. Unmapped pipe junctions will not be located using the locating sonde  
  
The contractor will mark the pavement and / or ground surface with paint, or otherwise record the location of the signal so that the manhole or junction can be inspected and / or GPS located.
  - M. Sonar Inspection: This is appropriate when the pipes will remain in continuous, uninterrupted service at all times during the inspections and will be completely full of wastewater. Some interceptors – including siphon pipes – cannot be dewatered to make visual inspections. . Sonar equipment may be used in conjunction with an internal CCTV inspection for partially full pipes, at the direction of the OWNER. The Contractor’s equipment must be capable of operating under full-pipe conditions, with the interceptor in continuous service, and with the pipe velocities associated with continuous service. These interceptors will not be dewatered, nor will the operation of the interceptors be disrupted to facilitate the inspections. All ancillary equipment, labor, and appurtenances required for execution of the Work shall be provided.
    1. The Scanning Unit shall provide real-time continuous scanning for the entire duration of the inspection. The system shall be capable of lengths



over 2,500 linear feet to provide the extended range required because of the limited number of access sites along the interceptor system.

2. The sonar shall be digital, multi-frequency profiling sonar that supports a range of frequencies from 600 kHz to 1.0 MHz for example. The sonar shall be tunable across the full frequency range in 5 kHz steps.
3. Sonar Software shall be configurable to allow for changes in pipe shape and size without requiring removal of the sonar from the pipe system.
4. The equipment shall be capable of providing real-time continuous images of the conditions encountered in the interceptors. The images must be continuously displayed on a color monitor and must be stored on a DVD disk or portable hard drive. The stored images must be able to be post analyzed for cursors to be overlaid and measurements to be taken. The stationing along the inspected interceptor pipe shall appear on all video images. The stationing origin (Sta.0+00) shall be identified in the written report for each inspected section. Manholes and structures must correspond to the ALCOSAN reference drawings.
5. The equipment must allow the accurate quantification of solids accumulation, sectional area loss, joint separation, and other structural flaws that may exist. The equipment must allow the accurate location of all encountered problems and defects along the interceptor system, and where sediment and gravel has accumulated. The equipment must allow for the accurate measurement of debris levels or obstruction dimensions from the inside diameter of the pipe.

### 3.2. RECORDING OF FIELD OBSERVATIONS

- A. All digital data records shall reference and correspond to the mapping and naming conventions provided by the Construction Manager for each pipeline segment to be cleaned and inspected. Recordings shall be made of the inspections and copies of both the recordings, digital NASSCO PACP exported database, and printed inspection logs shall be supplied to the Construction Manager.
- B. CCTV and CCTV/Sonar Inspections
  1. Software: The Contractor shall use WinCan VX or similar PACP Certified NASSCO V 7.0 software and shall submit complete literature for other proposed pipeline televising inspection software for review and approval of the Construction Manager prior to its use.
  2. Reports: Prepare a television inspection report covering the television inspection work and the information acquired.
  3. Report sewer defects in accordance with the National Association of Sewer Service Companies (NASSCO) program known as Pipeline Assessment and Certification Program (PACP). The Construction Manager reserves the

right to refuse any inspection report that does not comply with the reporting requirements.

a. Contractor should identify ground water infiltration into service laterals in the comments section for each lateral identified. The infiltration should be identified in the comments as “LGWI, Lateral Groundwater Infiltration.”

4. CCTV video header information will be recorded for each pipe segment video and will be displayed for a minimum of 30 seconds at the start of all inspections. Inspection of the sewer shall not proceed while the information screen is displayed. The data must be presented in a format with white text on a black background. The following information will be provided in the video header.

a. Contract Number: 1756

b. Date: Date inspection was completed. Format: MM-DD-YYYY.

c. Time: Time survey was initiated. Format: 24-hr military, HH:MM:SS.

d. Surveyed By: Name of PACP certified inspection operator conducting the inspection.

e. Survey Number: NASSCO certificate number of the operator conducting the inspection.

f. Company: Name of company completing the inspection.

g. Start MH ID: ID number of the MH where the inspection is initiated.

h. Finish MH ID: ID number of the MH where the inspection is ended.

i. Street: Street in which a majority of the sewer being inspected is located. Enter “ROW, (Street Name)” if sewer is not in the road but is in close proximity to a readily identifiable street. Enter “ROW” if sewer is not in close proximity to a readily identifiable street.

j. Start Location: Physical address, intersection or nearest landmark that can be used to readily identify the location of the start MH.

k. Survey Direction: Direction of inspection in relation to flow in the sewer; Upstream or Downstream

l. Material: Material composition of sewer being inspected. Format: NASSCO PACP code.

- m. Height: Nominal sewer dimensions. Pipe diameter if circular, height if non-circular.
  - n. Width: Nominal sewer dimensions. Maximum width if non-circular.
5. Inspection form header and detail sections shall comply with NASSCO PACP guidelines. The following additional information will be included in the inspection form header.
- a. Time: Time survey was initiated. Format: 24-hr military, HH:MM:SS.
  - b. Length Surveyed: Actual length of sewer inspected.
  - c. Media Label: The name of the video file for the sewer inspection.
  - d. Empty Header: Reason why the inspection could not be performed.
6. Inspection forms shall be completed and submitted for all pipe sections requiring inspection, including those for which an actual inspection cannot be initiated. Inspections that are not initiated will be confirmed with the Construction Manager. Reasons for non-initiation of an inspection include sewers that the contractor cannot gain access or when the Contractor is directed not to conduct an inspection.
- a. An “empty header” or “0-ft MSA” inspection should be completed for segments that cannot be inspected for reasons such high flow, depths or velocities, inaccessibility to the sewer due to inaccessible or unlocated access structures, heavy debris, Construction Manager or ALCOSAN direction, etc. A CCTV inspection report header will be created according to the project specifications. The contractor will abandon the survey at a distance of 0-ft inspected and provide a general comment that describes the reason that the inspection cannot be conducted.
  - b. An “empty header” should also be created for reversal inspections that cannot be completed. Contractor should record at least one photo documenting conditions preventing the inspection of the pipe segment.
7. Recordings: The purpose of digital recording shall be to supply a visual and audio record of full, manhole to manhole, sewer segments that will identify all defects. The recordings may be replayed, analyzed, mapped, and reported by the Construction Manager using the WinCan software.
- a. Playback shall be at the same speed that it was recorded. Slow motion or stop motion playback features shall not be permitted under this contract.

- b. Digital Format Video Recordings will be captured and issued in digital format in color from the live video source on digital video discs, DVD-R format to the following minimum requirements and later transferred to adequately sized portable hard-drives for submission. Adjust requirements as required to achieve the specified lines of resolution.
  - c. XSVD MPEG-2 format.
  - d. Data/Bit Rate: MPEG-2 @ 3.0 M-bits/sec.
8. Obtain digital video inspections from first generation recordings using video capture equipment capable of capture with no frame loss.
9. Submit one complete single digital file for each inspection. Produce the final file in one of the following ways:
- a. Capture the original recording continuously using a computer system and video capture card regardless of the progress of the inspection. Edit the original raw digital file before submission to remove the pauses where inspection progress is not continuous. or
  - b. Capture the original recording intermittently using a computer system and video capture card. Edit the original raw digital file before submission to form one continuous file. or
  - c. Capture original recording with specialized video recording equipment capable of pausing and resuming live recording to produce a single file for submission.
  - d. Edit digital videos using non-linear video editing software. Do not recompress edited digital files.
  - e. Each digital file shall be a single structure to structure sewer segment inspection. Multiple segment inspections will not be submitted in a single file. Video files containing more than one segment inspection will be rejected and reinspected at no additional cost.
10. Provide file names containing up to a maximum of 64 characters for each digital video and photographs files as follows:
- a. Video:  
AssetID\_StartingMH\_US/DS\_MMDDYYYY\_HHMM.VideoExtension
  - b. Photo:  
AssetID\_MMDDYYYY\_HHMM\_ObservationPosition\_DefectCode.PhotoExtension
  - c. Database:  
Contract\_Operator\_Package\_MMDDYYYY.DatabaseExtension

Where:

AssetID: ALCOSAN's name for the pipe or manhole, as provided to the Contractor in the GIS shapefiles.

StartingMH: ID number of the MH where the inspection is initiated.

US/DS: Direction of inspection in relation to flow in the sewer; Upstream (US) or Downstream (DS)

MMDDYYYY: Date inspection was completed. 2-digit month; 2-digit day; 4-digit year. For example, June 20, 2015 is 06202015.

HHMM: Military format time survey was initiated. 2-digit hour; 2-digit minute. For example: 2:53 PM is 1453.

VideoExtension: Type of video file (.mpg; .mp4, etc.)

ObservationPosition: Clock position of the defect being described.

DefectCode: NASSCO PACP code applied to the defect being described.

PhotoExtension: Type of photograph or image file (.jpg; .bmp, etc.)

Contract: Contract number of the inspection project. 1756

Operator: NASSCO certificate number of the operator conducting the inspection.

Package: Relates to the unique package of pipes created by ALCOSAN, to which the database applies.

DatabaseExtension: Type of database file (.mdb etc.).

11. Within 10 working days of the inspection, submit digital files of the original video inspections, the corresponding database, and required supplemental information to the Construction Manager on a portable hard drive. The data submittal will not be considered officially submitted until the information listed in this specification is provided to the Construction Manager and determined to be administratively complete.
12. Ensure that the entire inspection, including reverse inspections, of a particular sewer is contained on the same portable hard drive. Record reverse set-up inspections of a sewer immediately after the original inspection where possible. Provide explanation to Construction Manager where a reversal is not immediately possible.
13. The Contractor shall be required to have all recordings and necessary playback equipment readily accessible for review by the Construction Manager during the project.

14. The Contractor shall furnish all of the original recordings to the Construction Manager and ALCOSAN.
15. The Contractor shall keep a copy of the recordings for 120 days after the completion of the project, at which time the recordings may be erased at the Contractor's option.

### 3.3 ACCEPTANCE OF INSPECTIONS

- A. All final deliverables shall be submitted to the Construction Manager no later than 60 days from completion of sewer inspection activities.
- B. The Construction Manager and / or ALCOSAN will review inspection reports and video recordings to ensure compliance with the specifications within fifteen working days of submission. The Construction Manager may adjust the frequency of reviews based on the results of previous reviews.
- C. The Contractor shall submit a formal Inspection Report, in Digital, NASSCO PACP exported database formats, that summarizes all inspection activities and includes all inspection data in their raw format (unmodified NASSCO PACP exported database), logs, electronics reports, etc. noting defects and observations encountered during the inspection.
- D. The Sonar Inspection Report shall include the following information:
  1. Sonar Scanning inspection:
    - a. Graphical summaries of sediment thickness and cumulative sediment volumes in the trough of the pipe below the water line versus pipe location, and pipe capacity depicting actual versus original theoretical storage capacity.
    - b. Statistical average, minimum, and maximum values of sediment accumulation along the sewer, where appropriate, as determined by calculating the portion of the pipe obstructed by sediment and presented as a percentage of the pipe area.
    - c. Video file of sonar data in AVI file format.
    - d. An accompanying NASSCO PACP exported database separate from any CCTV database. The sonar database shall include all appropriate header information and any other discernable observations. In addition, "sonar" should be entered in the remarks field. Alternative database formats may be considered and approved by the Construction Manager.
- E. Re-perform preparatory cleaning and sewer inspections, at no additional cost to the Owner, where the Construction Manager or ALCOSAN has determined the requirements of the specification have not been satisfied.

- F. Correct non-compliant inspection submissions and resubmit the corrected inspections, or provide a Corrective Action Plan to address rejected or non-compliant data, at no additional cost, to the Construction Manager within ten working days of receiving comments regarding the acceptance or compliance of the submitted data, or as coordinated with the Construction Manager.
- G. Repeat the process, at no additional cost until the inspection submissions are accepted by the Construction Manager and ALCOSAN. The Contractor will not be paid for preparatory cleaning or inspection submissions that are not accepted by the Construction Manager or ALCOSAN.

END OF SECTION