



## THE COUNTY OF GALVESTON

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April 5, 2024

**PROJECT NAME:** Texas City Hurricane Levee Culvert Inspection  
**SOLICITATION NO:** RFP #B241010A  
**RE:** ADDENDUM #1

To All Prospective Proposers:

The following information is being provided to aid in the preparation of your proposal submittal(s):

### Attachments

The following revised attachments should be utilized when preparing submittals for RFP #B241010A, Texas City Levee Culvert Inspection:

- *Revised Vicinity map (map revised to address type)*
- *Revised Bid Proposal (Item #27 added to quantify debris removal)*
- *Specification 02733 – Cleaning & television Inspection*

**Question #1:** *Will there be a unit price per foot or yard with debris removal?*

**Response:** Yes. A unit price item for debris removal and disposal has been added. Please see attached updated bid proposal, Item #27.

**Question #2:** *What is the timeline and targeted completion date for all culverts?*

**Response:** Respondent shall submit a schedule and targeted completion date.

**Question #3:** *If awarded, can the culverts be completed in a sequence of the vendor's discretion? Or will the sequence be dictated by Galveston County? If we quote the culverts near each other to be completed together, this saves time and money on both ends on mobilization of equipment and crews.*

**Response:** Sequence of cleaning the culverts can be determined by contractor.

**Question #4:** *Will all silt/material be required to be recovered?*

**Response:** Silt and debris that inhibits the video documentation of the culvert condition shall be removed and disposed.

Texas City Hurricane Levee Culvert Inspection, RFP #B241010A  
Addendum #1

**Question #5:** *What are the soil sample requirements associated with the recovery of silt/material? How much material/frequency? Or just [the] culverts in the vicinity of the Port of Texas City?*

Response: Soil sampling will only be necessary as required by the facility receiving the debris.

**Question #6:** *Should all material be addressed as hazardous or based on the testing results?*

Response: The County does not have any indication that any material is hazardous. Include any cost of testing in the debris removal and disposal bid item.

**Question #7:** *How Clean is Clean? My assumption is that if I cleaned enough to identify cracks, spalls, leak points, and structural damage; but not 100% material free.*

Response: The culverts shall be clean enough to determine its condition.

**Question #8:** *Videography/photography~ does 100% of the surfaces within the culverts need to be documented? And is there a specification for this? Quality of video, markers for locations, etc.*

Response: A specification for cleaning and television inspection is provided with this addendum.

**Question #9:** *Inspection; It is unclear whether or not the vendor will be responsible for the inspection or just the documentation.*

Response: A specification for cleaning and television inspection is provided with this addendum for clarification.

**Question #10:** *Is there an estimated quantity of debris or materials that is present in the pipes?*

Response: A unit price bid item for debris removal and disposal has been added

**Question #11:** *Could the bid proposal form be revised to include a unit price for debris removal per location?*


Response: A unit price bid item for debris removal and disposal has been added.

If you have any further questions regarding this bid, please address them to the representative listed below,

Rufus G. Crowder, CPPO, CPPB  
722 Moody Ave. (21<sup>st</sup> Street), Fl 5, Purchasing  
Galveston, Tx. 77550

via e-mail at [purchasing.bids@co.galveston.tx.us](mailto:purchasing.bids@co.galveston.tx.us), or contact the Purchasing Department at (409) 770-5371.

Respectfully submitted,



Rufus G. Crowder, CPPO CPPB  
Purchasing Agent  
Galveston County

**BID PROPOSAL**  
GALVESTON COUNTY  
TEXAS CITY HURRICAN FLOOD PROTECTION LEEVE SYSTEM  
DRAINAGE STRUCTURES

ITEM NO.	LOCATION ID	STATION	DESCRIPTION	LENGTH (FT)	APPROX. LOCATION	FACILITY SERVICED	BID PRICE
1	1 D	187+65W	1 - 60" RCP W/FLAP & SLIDE GATE	170'	UNDER GCWA CANAL	NORTH TEXAS CITY LOCAL DRAINAGE	
2	2 D	195+60W	2 - 30" RCP W/SLIDE GATE	125'	ALONG HUMBLE CAMP RD.	HUMBLE CAMP RD. ROADSIDE DITCHES	
3	A OUTLET	112+94W (APPROX)	2 - 60" CMP	110'	THRU GCWA RESERVOIR LEEVE	GCWA RESERVOIR	
4	B OUTLET	93+40W (APPROX)	2 - 60" CMP	110'	THRU GCWA RESERVOIR LEEVE	GCWA RESERVOIR	
5	3D	BAY ST.	3 - 6' X 6' BOX CULVERT W/SLIDE GATE	2,000'	UNDER BAY STREET	TEXAS CITY SECOND AVE. SOUTH DITCH	
6	4 D	2ND AVE. SOUTH	2 - 60" RCP W/ SLIDE GATE	11'	IN EASTMAN PLANT	TEXAS CITY SECOND AVE. SOUTH DITCH	
7	5 D	479+16	4 - 5' X 5' BOX CULVERT W/FLAP & SLIDE GATES	40'	IN EASTMAN PLANT	EASTMAN NORTH DITCH DISCHARE & DRAINAGE	
8	7 D	487+47	1 - 5' X 4' BOX CULVERT W/FLAP & SLIDE GATES	30'	IN EASTMAN PLANT	EASTMAN DISCHARGE & DRAINAGE	
9	8 D	493+20	8" DRAIN W/VALVE (NORMALLY CLOSED)	4'	IN EASTMAN PLANT ABOVE GROUND THRU FLOODWALL	EASTMAN LOCAL TANK CONTAINMENT LEEVE	
10	9 D	496+26	6" DRAIN W/SLIDE GATE	4'	IN EASTMAN PLANT ABOVE GROUND THRU FLOODWALL	EASTMAN LOCAL DRAINAGE	
11	10 D	497+22	6" DRAIN W/SLIDE GATE	4'	IN EASTMAN PLANT ABOVE GROUND THRU FLOODWALL	EASTMAN LOCAL DRAINAGE	
12	11 D	497+84	6" DRAIN W/SLIDE GATE	4'	IN EASTMAN PLANT ABOVE GROUND THRU FLOODWALL	EASTMAN LOCAL DRAINAGE	
13	12 D	501+44	8" DRAIN W/SLIDE GATE	4'	IN EASTMAN PLANT ABOVE GROUND THRU FLOODWALL	EASTMAN LOCAL DRAINAGE	
14	13 D	510+81	1 - 4' X 4' BOX CULVERT W/FLAP & SLIDE GATE	29'	IN EASTMAN PLANT	EASTMAN & TEXAS CITY TERMINAL R.R. DISCHARGE & DRAINAGE	
15	14 D	526+20	1 - 3' X 3' BOX CULVERT W/FLAP & SLIDE GATES	17'	PORT (DOCK AREA)	TEXAS CITY TERMINAL R.R. DISCHARGE & DRAINAGE	
16	15 D	528+56	8" DRAIN W/VALVE (NORMALLY CLOSED)	4'	PORT - ABOVE GROUND THRU FLOODWALL	UNION CARBIDE LOCAL TANK CONTAINMENT LEEVE	
17	16 D	533+04	12" DRAIN W/ SLIDE GATE	4'	PORT - ABOVE GROUND THRU FLOODWALL	LOCAL DRAINAGE	
18	17 D	586+74	3 - 54" CMP W/FLAP & SLIDE GATES	350'	PORT (INDUSTRIAL BARGE CANAL AREA)	TEXAS CITY TERMINAL R.R. & TEXAS CITY REFINING	
19	18 D	633+20	18" DRAIN W/SLIDE GATE	4'	PORT - ABOVE GROUND THRU FLOODWALL	LOCAL DRAINAGE	
20	19 D	637+20	14" DRAIN W/SLIDE GATE	4'	PORT - ABOVE GROUND THRU FLOODWALL	LOCAL DRAINAGE	
21	20 D	640+65	18" DRAIN W/SLIDE GATE	4'	PORT - ABOVE GROUND THRU FLOODWALL	LOCAL DRAINAGE	
22	21 D	644+12	7 - 6' X 6' BOX CULVERT W/FLAP & SLIDE GATES	450'	AT LOOP 197	SOUTH TEXAS CITY DISCHARGE & DRAINAGE	
23	22 D	645+50	3 - 4' X 3' BOX CULVERT W/FLAP & SLIDE GATES	265'	AT LOOP 197	INDUSTRIAL WASTE WATER DISCHARGE & DRAINAGE	
24	TC PUMP STATION	689+40	3 - 72" RCP	60'			
25	23 D	795+65	6 - 6' X 6' BOX CULVERT W/SLIDE GATE	142'	WEST OF I-45	LA MARQUE DRAINAGE	
26	LM PUMP STATION	843+38	4 - 6' 9" X 6' 9" BOX CULVERT	135'			
			Item	Quantity	Unit	Unit Price	
27			Removal and disposal of debris from culvert cleaning including any testing required for disposal	10,000	CY		
<b>TOTAL BID:</b>							

SECTION 02733  
CLEANING AND TELEVISION INSPECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cleaning the culvert lines to remove debris to facilitate television inspection. Cleaning includes the initial washing by high-pressure water jet.
- B. Televising the line to obtain quality DVD's or mp4's and TV inspection reports upon which the County can make decisions regarding repairs.

1.02 UNIT PRICES

- A. Cleaning of culverts. Measurement for cleaning lines (pipes and boxes) with is shown on the bid proposal form.
  - 1. Charges for transient water meter setup and water usage.
  - 2. Collection, removal, transportation, and disposal of sand, debris, and liquid wastes to legal disposal sites.
  - 3. Locating, exposing, and opening the manholes on sewers to be cleaned.
  - 4. Reconstruction of manholes, inlets and junction boxes which are dismantled for access of cleaning equipment, and repair of any damages caused by the dismantling or cleaning equipment.
- B. Survey TV Inspection. Measurement of survey TV inspection for pipe segments selected by the Owner's representative is shown on the bid proposal form.
  - 1. No payment will be made for poor or unacceptable quality DVDs or mp4s. Hazy, unclear pictures will not qualify for payment.
  - 2. No payment will be made for portions of lines (pipes and boxes) not televised. No payment will be made for portion of the culvert through which the camera could not pass. Dewatering (no separate pay) if required to obtain good quality DVDs or other acceptable formats in good quality such as mp4 is subsidiary to the TV inspection.

1.03 DEFINITIONS

- A. Normal Cleaning Equipment. Cleaning devices such as rods, metal pigs, porcupines, root saws, snakes, scooters, sewer balls, kites, and other approved equipment in conjunction with a hand-wincing device and gas or electric rod-propelled devices. Variable pressure water nozzles, (3000 psi) are considered normal cleaning equipment.

- B. Mechanical Cleaning Equipment. Buckets, scrapers, scooters, porcupines, kites, heavy-duty brushes, metal pigs, and other debris-removing equipment and accessories used in conjunction with an approved power winching machine. High to very high-pressure water nozzels (10,000 psi) are considered as mechanical cleaning equipment.
- C. Survey TV Inspection. Survey TV is a video inspection of existing pipes, boxes, leads/laterals, etc., to evaluate lines and determine if conditions exist which will require line rehabilitation.
- D. TV Inspection Report. A form that is filled out by each TV inspection for any DVD that is submitted to the Owner. Form is provided by the Owner's Representative.

#### 1.04 PERFORMANCE REQUIREMENTS

- A. Clean the designated lines (pipes, boxes, leads/laterals), junction boxes, inlets, and manholes using mechanical, hydraulically propelled, or high-velocity sewer cleaning equipment. Select a cleaning process which removes grease, sand, silt, solids, marine growth, rags, and debris from each line (pipes, boxes, leads/laterals) segment and associated manholes, inlets and junction boxes.
- B. The Owner's Representative may determine that no additional line rehabilitation work is required if the cleaning operation shows the line to be free of damage or deterioration.

#### 1.05 SUBMITTALS

- A. Submit DVD and TV inspection reports to the Owner's Representative for review.
  - 1. Provide DVDs of a quality sufficient for the Owner's Representative to evaluate the condition of the lines (pipes, boxes, leads/laterals). If quality is not sufficient, Contractor shall re-televiser the pipe segment and provide a new tape and report at no additional cost to the Owner. Camera distortions, inadequate lighting, dirty lens, or blurred/hazy picture will be cause for rejection of a tape and rejection of the associated line segment.
  - 2. DVDs and mp4s submitted become the property of the Owner.
  - 3. Contractor shall maintain a master copy of all DVDs and mp4s and TV inspection reports submitted, until final acceptance of the work.
  - 4. Transmit each TV Inspection Report to the Owner's Representative with a Transmittal Form. Copies of the TV Inspection Report form and Television Inspection Codes Summary are attached.

#### 1.06 QUALITY ASSURANCE

- A. Qualifications. Use experienced personnel to operate cleaning equipment and devices.

- B. If television inspection shows debris, solids, sand, grease, marine growth or grit remaining in the line, the cleaning is considered unsatisfactory. Repeat cleaning, inspection, and televising of the pipe until cleaning is acceptable by the Owner's Representative.

## PART 2 PRODUCTS

### 2.01 CLEANING EQUIPMENT

- A. Select the cleaning equipment and method for cleaning, based on the condition of the lines (pipes, boxes, leads/laterals) at the time work begins. More than one type of equipment or attachments may be required on a single project or at a single location.
- B. When requested by the Owner's Representative, demonstrate the performance capabilities of the cleaning equipment and method proposed for use on the project. If results obtained by the demonstration are not satisfactory, provide other equipment or devices that will clean the lines (pipes, boxes, leads/laterals).
- C. For cleaning equipment, install a gauge to indicate working pressure on the discharge of high-pressure water pumps. In addition to conventional nozzles, use a nozzle which directs the cleaning force to the bottom of the pipe for sewers 18-inches and larger.
- D. When cleaning equipment is used, install a suitable sand trap, weir, dam, or suction in the downstream manhole or pipe outfall so that solids and debris and marine growth are trapped for removal.

### 2.02 TELEVISION EQUIPMENT

- A. Closed Circuit TV Equipment. Select and use closed-circuit television equipment that will produce a color DVD and mp4.
- B. Pipe Inspection Camera. Produce a DVD and mp4 using a pan-and-tilt, radial viewing, pipe inspection camera that pans  $\nabla$  275 degrees and rotates 360 degrees. Use a camera with an accurate footage counter which displays on the monitor the exact distance of the camera from the centerline of the starting manhole, inlet, and junction box. Use a camera with camera height adjustment so that the camera lens is always centered at one-half the inside diameter, or higher, in the pipe and box being televised. Provide a lighting system that allows the features and condition of the pipe and box to be clearly seen. A reflector in front of the camera may be required to enhance lighting in dark or large diameter pipe and box.
- C. DVD. Provide DVD and mp4, recorded at Standard Play (SP).

## PART 3 EXECUTION

### 3.01 PREPARATION

- A. Cleaning.

1. Take precautions to protect lines (pipes, boxes, leads/laterals), and manholes and junction boxes and inlets from damage that might be inflicted by the improper selection of the cleaning process or improper use of the equipment. When using hydraulically propelled devices, take precautions to ensure that the water pressure created does not cause damage or flooding to public or private property. Do not surcharge the lines (pipes, boxes, leads/laterals) beyond the elevation that could cause overflow of sewage or stormwater into area waterways, homes, or buildings or onto the ground.
  2. Do not use or obstruct a fire hydrant when there is a fire in the area. Remove water meters, fittings and piping from fire hydrants at the end of each working day.
  3. Exercise care to prevent contamination of the potable water system. Use of a backflow preventer of appropriate size is mandatory when drawing water from a public hydrant.
  4. Where possible, use the flow of wastewater or stormwater present in the pipe to provide fluid for hydraulic cleaning devices.
- B. Televising. Contractor shall use the Television Inspection Report form following this section to document results of TV inspections.

### 3.03 CLEANING

- A. Conserve Water. Do not waste water from the public water supply because of poor connections or from hydrants left opened.
- B. Install Collapsible Dam. Use a collapsible dam for hydraulically propelled devices which require a head of water to operate. Provide a dam which is easily collapsible to prevent damage to the lines (pipes, boxes, leads/laterals), public property, or private property.
- C. High Velocity Cleaning. Operate high-velocity cleaning equipment so that the pressurized nozzle moves continuously. Turn off or reduce the flow to the nozzle to prevent damage to the line any time the nozzle becomes stationary.
- D. Mechanical Cleaning. In addition to normal cleaning equipment, perform mechanical cleaning when required using equipment and accessories defined in mechanical cleaning equipment.
- E. Debris Disposal. Remove sludge, dirt, sand, rocks, grease, roots, marine growth and other solid or semi-solid material resulting from the cleaning operation at the downstream manhole, inlet and junction box of the section being cleaned. Passing debris from one line section to any other line section is not allowed. Load debris from the manholes, inlets and junction boxes into an enclosed container for liquid waste hauling. Remove and dispose of solids or semi-solids resulting from cleaning operations at the end of each workday. Do not accumulate debris, liquid waste, or sludge on the site except in totally enclosed containers approved by the Owner's Representative.

- F. Disposal Sites. Dispose of waste at a legally-permitted disposal site using a transporter who has a valid TCEQ Liquid Waste Transporter Permit.

### 3.04 TELEVISIONING

- A. Immediately after cleaning, televise the lines (pipes, boxes, leads/laterals) to document the condition of the line. Notify the Owner's Representative 24 hours in advance of any TV inspection so that the Owner's Representative may observe inspection operations.
- B. TV inspection tapes shall be continuous for pipe segments between manholes. Do not leave gaps in the video taping of a segment between manholes and do not show a single segment on more than one DVD and mp4, unless specifically allowed by the Owner's Representative.

### 3.05 FLOW CONTROL

- A. Perform survey TV inspection on one manhole section at a time. Adequately control the flow in the section being televised. Do not exceed the depth of flow shown below:

Pipe Diameter inches/Box cross sectional area sq. ft.	Depth of Flow
<u>(Inches)</u>	<u>(Percent of Pipe Diameter/box height)</u>
6 to 10/0.5 to 1	10
12 to 24/1 to 4	15
Over 24/over 4	20

1. If during survey TV inspection of a manhole section, the wastewater or stormwater flow depth exceeds the maximum allowable, reduce the flow depth to an acceptable level by performing the survey TV inspection during minimum flow hours, by diversion pumping, or by pulling a camera with swab, high-velocity jet nozzle or another acceptable dewatering device. DVD made while floating the camera is not acceptable unless approved by the Owner's Representative.

### 3.06 PASSAGE OF TV CAMERA

- A. Do not pull or propel the television camera through the line at a speed greater than 30 feet per minute.
- B. If during survey TV inspection of a manhole, junction box and inlet section, the camera is unable to pass an obstruction even though flow is unobstructed, televise the manhole, junction box and inlet section from the other direction (reverse setup) in



order to obtain a complete video of the line. Whenever such a condition arises, notify the Owner's Representative.

### 3.07 TV INSPECTION REPORT

- A. For each TV inspection video provide a completed TV Inspection Report, as attached at the end of this section. The Report is a written/narrated log of pipe defects, sags, service connection locations and conditions, indexed to the footage counter. The TV Inspection Report shall be filled out as instructed below.
- B. Direction of Flow
1. MANHOLE/INLET/JUNCTION BOX NUMBER: The upstream manhole number of the line segment shall be put in this field. This is an alphanumeric field with 9 spaces available (i.e. SB179003).
  2. MANHOLE/INLET/JUNCTION BOX NUMBER: The downstream manhole number of the line segment shall be put in this field. This is an alphanumeric field with 9 spaces available (i.e. SB179002).
- C. Header Section
1. LOCATION ID: This is an alphanumeric location ID listed on the bid proposal.
  2. TV DATE: The date that the DVD was produced shall be placed in this field. This date shall be the same as the date shown on the display screen. This is a numeric field with 8 spaces available (i.e., 5/1/24).
  3. TV CONTRACTOR: The TV Contractor's name shall be placed in this field. This is an alphanumeric field with 5 spaces available.
  4. WEATHER: The existing weather conditions at the time that the TV tape was made shall be placed in this field. This is an alpha-numeric field with 10 spaces available (i.e., Cloudy)
  5. VTR FORMAT: The VTR format shall be placed in this field. This is an alphanumeric field with 4 spaces available (i.e., VHS).
  6. DVD NUMBER: Each TV DVD produced must have a number for identification. This number must be affixed to the cassette label. This number must not be duplicated in the same project. This is an alphanumeric field with 6 spaces available (i.e., IA0101).
  7. VTR INDEX: The numeric location of the line segment on the tape shall be indicated here. This is an alphanumeric field with 6 spaces available for each number (i.e., 1336 to 2185).
  8. SURFACE COVER: The type of surface that covers the line segment shall be placed in this field. Use the designation that reflects what covers the majority of the line segment. The codes for surface cover are shown on the attached

- Television Inspection Codes list. This is an alpha field with only 1 space available (i.e., F).
9. PIPE SIZE: The inside diameter of the liner or pipe based on new pipe size, material and SDR shall be placed in this field. The unit of measure is inch. This is a numeric field with 6 spaces available, which includes 2 spaces for decimals (i.e., 6.58 IN).
  10. PIPE TYPE: The pipe or liner type installed shall be placed in this field. This is an alpha field with 3 spaces available (i.e., PEP, CPP, PVC).
  11. LENGTH: The length of the line segment shall be placed in this field. The length shown on the TV report shall be the same as the length shown on the DVD. Also, the length on the top portion of the TV report shall match that shown on the bottom portion of the TV Report. The unit of measure is feet. This is a numeric field with 4 spaces available, with no decimals (i.e., 305 FT).
  12. UPS DEPTH: The depth, measured from the top ring of the upstream manhole to the invert of the upstream manhole, shall be placed in this field. The unit of measure is in feet and tenths of feet. This is a numeric field with 3 spaces available, which includes one space for a decimal (i.e., 6.9 FT).
  13. DWN DEPTH: The depth, measured from the top ring of the downstream manhole to the invert of the downstream manhole, shall be placed in this field. The unit of measure is in feet and tenths of feet. This is a numeric field with 3 spaces available, which includes one space for a decimal (i.e., 7.4 FT).
  14. JOINT LENGTH: The pipe joint length shall be placed in this field. Show no joint length for CPP, FF and PEP line segments. Put a "0" in the field for these line segments that have no joints. The unit of measure is inch. This is an alpha field with 2 spaces available (i.e., 40 IN).
  15. FLOW DEPTH: The pipe or liner flow depth shall be placed in this field. The unit of measure is inch. This is a numeric field with 3 spaces available, which includes one decimal place (i.e., 2.5 IN).
  16. MASTER DVD NO. : The Contractor's master DVD and mp4 number (if one exists) shall be placed in this space. This item is not in the database, therefore there is no field length or type data for this item.
  17. REVERSE SET UP: When a reverse set up is done on a line segment check "yes" if not check "no". This item is not in the database, therefore there is no field length or type data for this item.
  18. SKETCH: If a sketch of the line segment is included check "yes" if not check "no". This item is not in the database, therefore there is no field length or type data for this item.

19. **PRIOR HISTORY:** If any prior information exists on this line segment check "yes" if not check "no". This item is not in the database, therefore there is no field length or type data for this item.
20. **EVALUATION TV:** If the TV Inspection Report is for line segment evaluation or survey purposes check "yes" if not check "no". This item is not in the database, therefore there is no field length or type data for this item.
21. **LINE DETERIORATION:** The existence of pipe deterioration and how much deterioration exists shall be indicated here. If there is no deterioration check "N" if deterioration is light check "L", if it is medium check "M", if it is heavy check "H". This item is not in the database, therefore there is no field length or type data for this item.
22. **DIRECTION OF FLOW:** The direction of flow in the line segment shall be placed in this field. Typically, the larger number is the upstream manhole and the smaller number is the downstream manhole, inlet and junction box. Do not reverse the manhole, inlets and junction box designation on the TV report if a reverse set up is shown, check the reverse set up box on the report.

D. **CODE INPUT SECTION**

1. **TV INSPECTION CODES:** Codes to be used in this section are shown on the Television Inspection Codes sheet (attached).
2. **FOOT READ U/D:** The up/down designation shall be shown under the section titled "Footage Reading" in the boxes marked "U." and "D." This will make it clear what direction footage is measured from.
3. **CLOCK POSITION:** The clock position, with 12 o'clock straight up, of each defect shall be shown in this field (i.e., 12:00, 3:00). Also, show the clock position of each service connection and state the condition of the connection. Include the distance the connection is protruding into the pipe and box, when appropriate, and the type of connection, such as plumber service.
4. **CRACKS:** Any cracks in the pipe shall be listed in this field using the codes on the Television Inspection Codes sheet. Report the size length and width of any cracks.
5. **JOINTS:** Misaligned and broken joints shall be listed in this field using the codes on the Television Inspection Codes sheet.
6. **LATERALS:** All laterals shall be listed in this field using the codes on the Television Inspection Codes sheet.
7. **ROOTS:** Any root intrusion into the pipe and box shall be listed in this field using the codes on the Television Inspection Codes sheet.
8. **DEBRIS:** Any debris in the pipe and box shall be listed in this field using the codes on the Television Inspection Codes sheet.

9. **INFLOW/INFILTRATION:** Report any inflow and infiltration in this field using the codes listed on the Television Inspection Codes sheet.
10. **ALIGNMENT:** Report the existence of any sags in the field using the codes listed on the Television Inspection Codes sheet. Report the beginning of sags for one-quarter pipe, one-half pipe and underwater as well as where the camera pulls out of the sag.
11. **STRUCTURAL:** Report structural condition of the pipe using the codes listed on the Television Inspection Codes sheet.
12. **PICTURE NO.:** Leave this field blank.
13. **COMMENTS:** Comments shall be placed in this field. Comments must be accompanied by a corresponding footage. Items to report in this field are: collapses in pipe, stabilized material, mineral deposits, changes in pipe material, reverse set up, drop stack, large voids, multiple cracks, when unable to continue video, etc.
14. **CLAMP/SPLICE LOCATION:** The clamp/splice location shall be shown in the Comments field. Clamp/splice location must be accompanied by a footage.
15. **START SURVEY AT M. H. XYZ:** The depth of the line segment shall be shown in the Comments field. (i.e., Start Survey at M. H. 021 - Line Depth 10.2 FT). The depth is to be measured from the top ring of the manhole to the invert of the pipe being televised. The unit of measure is feet and tenths of feet. This depth may be different from the manhole depth.
16. **END OF SURVEY AT M. H. XYZ:** The depth of the line segment shall be shown in the comments field (i.e., End Survey at M. H. 022 - Line Depth 10.8 FT). The depth is to be measured from the top ring of the manhole to the invert of the pipe being televised. The unit of measure is feet and tenths of feet. This depth may be different from the manhole and junction box depth.

### 3.08 FIELD QUALITY CONTROL

- A. Do not allow, under any circumstances, sewage or solids removed in the cleaning process to be released onto streets or into ditches, catch basins, storm drains, sanitary or storm sewer manholes, or cleanouts.
- B. Acceptance of lines (pipes, boxes, leads/laterals) cleaning work is contingent upon the successful completion of the television inspection. If the television inspection shows debris, solids, sand, grease, or grit remaining in the line, the cleaning will be considered unsatisfactory. Repeat cleaning, inspection, and televising of the lines (pipes, boxes, leads/laterals) line until cleaning is satisfactory.

### 3.09 ADJUSTING

- A. Repair manholes, junction boxes and inlets which are dismantled or damaged during the cleaning process and replace any manhole frame and cover which is damaged during the cleaning process.

**TABLE 02733A**  
**TELEVISION INSPECTION CODES**

HEADER INFORMATION		JOINTS		
LOCATION		MJ – MISALIGNED JOINT		BJ – BROKEN JOINT
		CODES	DESCRIPTION	USE IN
A	STREET ROW, HEAVY TRAFFIC			
B	STREET ROW, LIGHT TRAFFIC	A (3)	DRP JT > 90% CLEAR	MJ
C	EASEMENT, POOR ACCESS	B (6)	DRP JT 80 – 90% CLEAR	MJ
D	EASEMENT, GOOD ACCESS	C (9)	DRP JT < 80% CLEAR	MJ
E	PARKING LOT, POOR ACCESS	D (3)	SHF JT > 90% CLEAR	MJ
F	PARKING LOT, GOOD ACCESS	E (6)	SHF JT 80 – 90% CLEAR	MJ
G	ALLEY, POOR ACCESS	F (9)	SHF JT < 80% CLEAR	MJ
H	ALLEY, GOOD ACCESS	G (1)	WD JT 2" – 3"	MJ
I	OPEN AREA, POOR ACCESS	H (2)	WD JT 3" – 4"	MJ
J	OPEN AREA, GOOD ACCESS	I (3)	WD JT > 4"	MJ
	<b>SURFACE COVER</b>	J (2)	BRK JT – LIGHT	BJ
A	ASPHALT STREET	K (4)	BRK JT – MEDIUM	BJ
B	CONCRETE STREET	L (6)	BRK JT – HEAVY	BJ
C	SHELL STREET	N (0)	VISIBLE GASKET	MJ
D	SIDEWALK	O (0)	LEAKING AT JOINT	MJ
E	TREES/SHRUBS		<b>LATERALS (L)</b>	
F	CLOSE TO FENCE	<b>CODES</b>	<b>DESCRIPTION</b>	
G	OPEN AREA	A (1)	PRT SER 0" – 1"	
H	MOVABLE BUILDING	B (2)	PRT SER 1" – 2"	
I	UNMOVABLE BUILDING	C (3)	PRT SER 2" – 3"	
J	OVERHEAD UTILITIES	D (4)	PRT SER 3" +	
K	WATERWAY OR RAILWAY	E (5)	DEFECTIVE – SERVICE CONN.	
L	HIGHWAY OR RUNWAY	F (6)	DEAD/UNUSED SERVICE	
M	PIPE ABOVE GROUND	G (7)	FACTORY SERVICE	
	<b>PIPE TYPE</b>	H (0)	PLUMBER SERVICE	
ABS	ACRYLONITRILE BUTADIENE STYRENE		<b>ROOTS (R)</b>	
BRK	BRICK	<b>CODES</b>	<b>DESCRIPTION</b>	
CIP	CAST IRON PIPE	A (1)	ROOTS – LIGHT	
CMP	CORRUGATED METAL PIPE	B (2)	ROOTS – MEDIUM	

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CON	POURED IN PLACE CONCRETE
CPP	CURED IN PLACE PIPE
DIP	DUCTILE IRON PIPE
FRP	FIBERGLASS REINFORCED PIPE
PLP	PLASTIC LINED CONCRETE PIPE
PEP	POLYETHYLENE PIPE
PVC	POLYVINYLCHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RPM	REINFORCED PLASTIC MORTAR PIPE
URC	UNREINFORCED CONCRETE PIPE
VCP	VITRIFIED CLAY PIPE

WEATHER

DRY - WET

CODE DESCRIPTIONS

CRACKS

RC-RADICAL

LC-LONGITUDINAL

CODES	DESCRIPTION	USE IN
A (1)	<1/2" W, < 1' L	CRK
B (2)	<1/2" W, 1' - 2' L	CRK
C (3)	<1/2" W, > 2' L	CRK
D (4)	>1/2" W, < 1' L	CRK
E (5)	>1/2" W, 1' - 2' L	CRK
F (6)	>1/2" W, > 2' L	CRK
G (7)	HOLE IN PIPE - SMALL	
H (8)	PIPE MISSING - < 60°	
I (9)	PIPE MISSING - > 60°	

C (3)	ROOTS - HEAVY DEBRIS (D)
<b>CODES</b>	<b>DESCRIPTION</b>
A	DEBRIS - LIGHT
B	DEBRIS - MEDIUM
C	DRBRIS - HEAVY
D	GREASE - LIGHT
E	GREASE - MEDIUM
F	GREASE - HEAVY
	INFLOW/INFILTRATION (I)

CODES	DESCRIPTION
A (3)	I/1 - LIGHT (0-1 GPM)
B (6)	I/1 - MEDIUM (1-5 GPM)
C (9)	I/1 - HEAVY (>5 GPM)
D (2)	I/1 - SOME EVIDENCE
E (4)	I/1 - CONSIDERABLE EVIDENCE
F (6)	I/1 - GREAT EVIDENCE
G (0)	I/1 - NO EVIDENCE

ALIGNMENT (A)

CODES	DESCRIPTION
A	BEGIN 1/4 PIPE WATER
B	BEGIN 1/2 PIPE WATER
C	CAMERA UNDERWATER
D	END CAMERA UNDERWATER
E	END 1/2 PIPE WATER
F	END 1/4 PIPE WATER

STRUCTURAL

DS - DETERIORATED; OS - OVALITY; CS - COLLAPSED

CODES	DESCRIPTION	USE IN
A (3)	LINE DET - LIGHT	DS
B (6)	LINE DET - MEDIUM	DS
C (9)	LINE DET - HEAVY	DS
D (3)	OVAL < 5%	OS
E (6)	OVAL > 5% & < 10%	OS
F (9)	OVAL > 10%	OS
G (9)	COLLAPSED	CS
H (0)	PIPE DET - HEAVY	DS

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L (0)	PIPE DET - LIGHT	DS
M (0)	PIPE DET - MEDIUM	DS
N (0)	PIPE DET - NONE	DS
O	LINE DET - NONE	DS
Z (0)	AT MANHOLE NUMBER	CS

NOTE: REPLACE PIPE  
BOXAS  
NEEDED

END OF SECTION