



Department of Public Services
1015 South Lincoln Avenue • Three Rivers, Michigan 49093
269.273.1845 • www.threeriversmi.org
Fax: 269.273.1042

Project Completion Date: June 30, 2018 – This includes receipt of deliverable items. Contractor shall note on the bid if they are not able to meet this deadline and indicate an alternative deadline.

Bidding Notes

Contractor is responsible for providing written notice to each resident/business a minimum of 48 hours prior to beginning any televising or cleaning activities. Said written notice shall be provided to all buildings connected to the sanitary sewer that will be cleaned/televised. If the Contractor would like assistance from the City with regards to identifying the connected buildings, then a minimum of 72 hours (3 business days) notice shall be provided to the City. The contractor is responsible for delivering the notices. A sample letter is included with the bid notice for your use if you so desire.

Televising shall be completed based on the attached specifications.

Traffic maintenance and signage is the responsibility of the contractor and is to be included in the bid price.

Materials removed from the sanitary sewer can be disposed of at the City's wastewater treatment plant (WWTP), but arrangements shall be made prior to submitting the bid.

Certificate of liability insurance including workers compensation coverage, and completed W-9 will be required prior to awarding this project.

The City has a "Local Preference Policy" with regard to bidding. A copy of the policy is available upon request.

Deliverables

Notebook containing printed copies of the following:

- Summary sheet of manholes. Each summary sheet should contain only one street.
- Tabular and graphic reports of each section of sanitary sewer.

DVD(s) or thumb drive(s) containing the following:

- Pre-cleaning and post-cleaning footage of the pipe sections.
- Digital copies of the printed items in .pdf format.

Submittal of Bids

Proposals should be submitted to the City of Three Rivers, City Clerk; 333 W Michigan Avenue; Three Rivers, MI 49093 by **2:00 pm on Thursday May 3, 2018**. It is anticipated that the contract for sanitary sewer televising and cleaning will be presented to the City Commission on **Tuesday May 15, 2018**.

Bid Form

The undersigned having familiarized (himself/themselves) with the local conditions affecting the cost of the work and the Contract Documents, and hereby proposes to perform all work and to provide and furnish all labor, materials, necessary tools, equipment, utility and transportation services necessary to perform and complete in a workmanlike manner all work required for **sewer televising and cleaning** in accordance with the specifications as prepared by the Department of Public Services, City of Three Rivers, Michigan, for, including Addenda No. ____ issued thereto, the following unit prices:

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

SIGNATURE _____ TITLE _____

TELEPHONE _____ DATE _____

EMAIL _____

Sanitary Sewer Cleaning, Root Cutting, and Televising

Item No.	Item Description	Quantity	Unit	Unit Price	Total Price
Sanitary Base Bid					
1	Fourth St - Pleasant to Broadway	692	LF		
2	E Michigan Ave - Jefferson Ave to River Dr	2431	LF		
3	W Michigan Ave - Erie St to Spring St	2345	LF		
4	S Grant St - Michigan Ave to South St	467	LF		
5	Heavy cleaning - in addition to initial cleaning	2500	LF		
Total Base Bid					
Sanitary Bid Alt					
A	Broadway Road - Roberts Road to US 131	5890	LF		
B	S Main St (Madison to Broadway)	1178	LF		
Total Alt Bid					

Project Specifications

SEWER CLEANING & TV INSPECTION OF SEWER PIPELINE AND MANHOLES

PART 1 - GENERAL

1.01 SUMMARY:

- A. This section includes cleaning of existing sewers and removal of debris, and internal television (TV) inspection of sewers.
 - a. Clean existing sewer pipelines.
 - b. Inspect sewer interior using color closed-circuit television (CCTV) camera, and document inspection on DVD or USB thumb drive with audio location and date information, title information, and continuous tape counter. Provide hard copy of inspection logs. All inspections and reports shall be performed in accordance with Pipeline Assessment and Certification (PACP) Standards
 - c. Additional TV inspections may be required at other stages of operation, to meet requirements specified in Field Quality Control article.
- B. This section includes cleaning of existing manholes and removal of debris, and internal television (TV) inspection of manholes.
 - a. Clean existing sewer manholes.
 - b. Inspect manhole interior using color closed-circuit television (CCTV) camera, and document inspection on DVD or USB thumb drive with audio location and date information, title information. Provide hard copy of inspection logs. All inspections and reports shall be performed in accordance with Manhole Assessment and Certification (MACP) Standards
 - c. Additional TV inspections may be required at other stages of operation, to meet requirements specified in Field Quality Control article.

1.02 SUBMITTALS:

- A. Quality Assurance: Submit one example of previous sewer inspection, lateral inspection and manhole inspection work that shows operational and structural defects in sewers, laterals and manholes complete with audio commentary and inspection log(s). The sample should be in the same digital format that the final product will be delivered in. If the submittal will be provided in DVD format, finalize the DVD to prevent re-recording.
 - a. Video and inspection logs will be reviewed to determine if quality of CCTV image is acceptable, and if defects were properly identified and documented according to the City's requirements.
 - b. Modify equipment and/or inspection procedures to achieve report material of acceptable quality.
 - c. Do not commence Work prior to approval of report material quality by City. Upon acceptance, report material shall serve as standard for remaining work.

- B. Inspection Logs: Unless otherwise indicated, submit inspection logs that include the following as a minimum:
- a. Project title
 - b. Name of City
 - c. Time of day
 - d. Street Name
 - e. Manhole to manhole pipe section
 - f. Pipe segment length
 - g. Pipe material
 - h. Line size
 - i. Compass direction of viewing
 - j. Direction of cameras travel
 - k. Pipe depth
 - l. Operator name
 - m. Tape counter reading at beginning and end of each manhole to manhole pipe segment
 - n. Must comply with PACP, LACP and MACP Standards.

Electronic Database of Televising Records

Submit:

- 1. Standard PACP Exchange Database in electronic format produced from PipeLogix or equivalent software.
- 2. (1) Complete set of televising records including photographs and videos on a USB plug & play compatible portable external hard drive.
- 3. Provide PipeLogix database in a read-only format using software or approved equivalent. Also provide the read only version of PipeLogix or equivalent approved software. Videos and photos must also be in a readable format with standard viewing software, if a specific program is needed, submit for pre-approval.

- B. Maintain copy of all inspection documentation (DVDs, digital databases, and logs) for *a period of 3 years from the date of completion.*

1.04 SAFETY:

- A. Prior to award of the contract, the Contractor shall provide a safety plan. The plan shall have, at a minimum:
- a. Confined Space Entry
 - b. Personal Protective Equipment
 - c. Traffic Control
 - d. Road Way Safety

1.05 SCHEDULED WORK HOURS:

- A. Scheduled work hours are from 8:00 AM to 7:00 PM, Monday through Friday. The Contractor shall work during these hours and days only, unless prior approval is provided by the City.

1.06 CONTRACTOR'S RESPONSIBILITIES INCIDENTAL TO THE PROJECT:

- A. The Contractor shall secure all required permits from MDOT when working in the MDOT Right of Way.
- B. Removal and replacement of landscape borders, fences (including posts)
- C. Care and Protection of all Trees and tree branches
- D. Restoration of all out lawn areas disturbed
- E. Required cleanups if a backup is caused or suspected by the Contractor's operations resulting in sewage in buildings or residential homes

- F. The Contractor's Staff will notify all affected residents in writing with a door hanger a minimum of 48 hrs prior to cleaning and taping mainline sewers and laterals.

PART 2 - PRODUCTS

2.01 MATERIAL AND EQUIPMENT:

- A. DVD: 120 minute minimum, high-quality color, type DVD-R, DVD-RW, or DVD+R.
 - a. Audio portion of composite DVD shall be sufficiently free from electrical interference and background noise to provide complete intelligibility or oral report.
 - b. Store in upright position with temperature range of 45 to 80 degrees F (7 to 27 degrees C) in an appropriate CD or DVD case to prevent scratches.
 - c. Identify each disk with tape labels showing Owner's name, Contractor's name and each manhole to manhole pipe segment of sewer line represented on DVD or provide and index or table of contents if more than one segment is on the disk.
- B. Television Inspection Camera(s): Equipped with rotating head, capable of 90-degree rotation from horizontal and 360-degree rotation about its centerline.
 - a. Minimum Camera Resolution: 3000 line of vertical resolution in the side view and a minimum of 500 lines in the perspective view.
 - b. Camera Lens: Minimum of 185 degree viewing angle, with automatic or remove focus and iris control.
 - c. Front Mounted pan and tilt/zoom camera (40:1 Optical/Digital Zoom)
 - d. Cameras shall be intrinsically safe and operative in 100 percent humidity conditions.
 - e. Lighting Intensity: Remote-controlled and adjusted to minimize reflective glare.
 - f. Lighting and Camera Quality: Provide clear, in-focus picture of entire inside periphery of sewer.
- C. Footage Counter: Measures distance traveled by camera in sewer and lateral, accurate to plus or minus 1 feet in 1,000 feet
- D. Video Titling: Each segment shown on the videos should have its own Chapter titles with the beginning and end point of the pipe segment.
- C. High Velocity Cleaning Equipment
 - a. High velocity cleaning equipment is to be capable of producing a flow rate of 65 gal/minute at 2000 psi of pressure, complete with the following:
 - i. Selection of nozzles capable of effectively scouring and removing grease from the sewer pipe wall and transporting debris in all sizes of the sewers to be cleaned.
 - ii. Water tank.
 - iii. Auxiliary engines.
 - iv. Pumps.
 - v. Hydraulically driven hose reel with a wash down gun for cleaning manholes.
 - vi. Approved backflow prevention devise and approved water meter for filling water tank from a hydrant.

F. Debris Removal Equipment

- a. Vacuum unit(s) used for removing sewer debris to be complete with the following:
 - i. Positive displacement pumps or fans producing a minimum 25 cubic feet per second of air movement.
 - ii. Storage tank.
 - iii. Minimum 6 inch diameter suction hoses attached to a hydraulic boom.
- b. Configure the storage tank to allow the liquid portion of the debris to be returned to the sewer.

G. Communication Equipment

- a. Equip cleaning crews with cellular telephones and a suitable communication system linking all crewmembers.

PART 3 - EXECUTION

3.01 SEWER FLOW REQUIREMENTS:

- A. Do not exceed depth of flow shown in Table 1 for respective pipe sizes as measured in manhole when performing TV inspection.
- B. When depth of flow at upstream manhole of sewer line section being worked is above maximum allowable for TV inspection, reduce flow to level shown in Table 1, by plugging or blocking of flow, or by pumping and bypassing of flow as required.

TABLE 1
Maximum Depth of Flow for TV Inspection

Nominal Pipe Diameter	Maximum Depth of Flow
6" – 10"	20% of pipe diameter
12" – 24"	25% of pipe diameter

3.02 SEQUENCE OF WORK:

Perform Work in the following sequence:

- A. Televis sewer lines and manholes prior to cleaning.
- B. Clean sewer lines and manholes in accordance with requirements of this Section.
- C. Televis sewer lines and manholes after cleaning.

3.03 SEWER CLEANING:

- A. Notify the Owner of the location where sewer, manhole or catch basin cleaning will be done one full day before starting the cleaning work at that location. Deliver notices to residents and businesses effected by the cleaning.
- B. Clean sewers and manholes completely of debris including sludge, dirt, sand, gravel, rocks, bricks, grease and other solid and semi-solid materials removed from the sewer by the equipment identified in Article 3.01 of this specification.

- C. Remove grease deposits on pipe walls to within 0.5 inch of the inside surface of the pipe wall or as directed by the Owner.
- D. Removal of roots shall be performed where necessary to clear pipe section in order to perform the TV inspection and provide camera clearance.
- E. Take necessary precautions to ensure that no flooding of public or private property occurs during sewer and manhole cleaning. Reduce pressure of cleaning equipment if needed.
- F. Start the cleaning operation with the upstream sewers in the system and proceed downstream with the direction of flow.
- G. Scour manhole walls and benching clean before cleaning the sewers downstream of manholes.
- H. Clean all contributing upstream sewers before proceeding with cleaning downstream sewers.
- I. Advise the Owner immediately when pipe material or backfill material is observed during the cleaning of a sewer. The Owner will direct one of the following operations be performed.
 - a. Complete or attempt to complete cleaning of the sewer.
 - b. Suspend cleaning operations and inspect the sewer.
 - c. Simultaneously clean and inspect the sewer.

3.04 EMERGENCY SEWER REPAIRS:

- A. The Owner will arrange for an emergency repair of the sewer at blockage locations as soon as possible if the sewer condition prevents cleaning of the upstream sewer sections or poses an immediate operational or safety concern such as a complete collapse.
- B. Carry out cleaning of other sewers not affected by the emergency repair and complete cleaning of the sewer where the blockage was removed when notified by the Owner the emergency repair has been completed.
- C. Clean and remove backfill and debris that may have entered the sewer during emergency repairs.

3.05 REMOVAL OF EQUIPMENT THAT BECOMES LODGED IN A SEWER:

- A. Advise the Owner immediately if equipment becomes lodged in a sewer. Attempt to remove equipment that is lodged using whatever means are necessary for at least 4 hours. Advise the Owner if the equipment cannot be freed after 4 hours and mark the position on the surface over the sewer where the equipment is lodged.
- B. The Contractor will arrange to have an excavation made to the top of the sewer where the equipment is lodged within 48 hours of notification the equipment cannot be freed.
- C. Be present during the excavation and once the top of the sewer is exposed and the excavation is secured remove the top of the sewer pipe and retrieve the equipment lodged in the sewer.
- D. The Contractor will arrange to have the sewer repaired after removal of the equipment that was lodged.

- E. Clean and remove backfill and debris that may have entered the sewer during removal of the equipment and subsequent repair of the sewer.
- F. The cost of all this work will be the Contractors responsibility and incidental to the project

3.06 DEBRIS REMOVAL:

- A. Continuously remove debris from the downstream manhole during sewer cleaning. Do not allow debris to be passed into the downstream sewer unless approved by the Owner.
- B. The Owner's WWTP can accept solids and debris removed from the sewers during the cleaning process. Decant or dewater debris removed from sewers and catch basins and legally dispose of solid and semi-solid debris to the City's facility as directed by the Owner's staff. Return decanted or dewatered liquid to the sewer of origin as soon as possible.
- C. Store debris in totally sealed containers at all times and remove from the Site at the end of each day.
- D. Keep a log containing the following information for each debris disposal unit.
 - a. Contract Name and Project No.
 - b. Vehicle ID – License Number
 - c. Date of Disposal
 - d. Time of Disposal
 - e. Origin of Debris – Sewer ID Number(s)
 - f. Net Weight. of Load
- E. Provide log books to the City.

3.07 MANHOLE CLEANING AND ASSESSMENT:

- A. Manhole basins completely of debris including sludge, dirt, sand, gravel, rocks, bricks, and other solid and semi-solid materials. Dispose of debris as indicated in Article 3.05 of this specification.
- B. Continually track manhole cleaning progress and observed condition such as missing risers, damaged frame or cover or broken barrel.
- C. Record discrepancies with existing manhole information such as additional or missing manholes or different locations than shown on the drawing provided.
- D. Provide the completed manhole record drawing to the City at the completion of the Work per NASSCO MACP *Level 2 Assessment*.
- E. If manholes are buried under the pavement surface the Contractor will be responsible to locate and expose the manhole cover.

3.08 FLOW CONTROL:

- A. Undertake flow control measures such as off peak work, plugging, use of sewer cleaning equipment to lower downstream flow levels or plugging and bypass pumping if sewer flows are hampering effective sewer cleaning or televising.

- B. Provide the Owner with at least 48 hours notice and proposed method of flow control before undertaking flow control measures.
- C. Use sewer plugs to stop or reduce sewer flow that tether to and are removable from the ground surface.
- D. Monitor flow levels upstream of a plugged sewer at all times to ensure flooding of public or private property does not occur.
- E. Demonstrate that off peak work, plugging, sewer cleaning equipment, or a combination of methods cannot effectively reduce the flow levels to the specified maximum before requesting the use of bypass pumping.
- F. Provide the City with information on capacity of pumping equipment for review before setting up by-pass pumping.
- G. Remove plugs placed in sewers and re-establish normal flow when directed to do by the Owner.
- H. Provide additional by-pass pumping equipment when requested to do so by the City.
- I. Provide approved traffic ramps for by-pass pumping discharge hoses where crossing roadways and traffic lanes and locate where approved by the City.
- J. This work shall be incidental to the project.

3.09 WATER SUPPLY FOR SEWER CLEANING:

- A. Hydrant use for water supply for sewer cleaning is available at 1015 S Lincoln Ave (Department of Public Services).
- B. Only 1 hose/nozzle connection will be permitted per hydrant.

3.10 INSPECTION REQUIREMENTS:

- A. Access: The City shall have access to observe video monitor and other operations at all times.
- B. Video Commentary: Record the following information on audio track of inspection video: narrative of location, direction of view, manhole numbers, pipe diameter and material, date, time of inspection, and location of laterals and other key features.
 - a. Inspection video shall visually display this information at beginning and end of each manhole-to-manhole pipe segment.
 - b. Video between manholes shall visually display length in feet from starting point of given segment.
- C. Sewer Identification: Video and inspection documentation shall include sewer line and manhole identifiers shown on Drawings provided by the City.
- D. Image Perspective: Camera image shall be down center axis of pipe when camera is in motion.
 - a. Provide 360-degree sweep of pipe interior at points of interest, to more fully document existing condition of sewer.

- b. Points of interest may include, but are not limited to the following: defects, cracks, voids, joints connections, encrustations, mineral deposits, debris, sediment, and any location determined not to be clean or part of an improper line installation, and defects in liner that include, but are not limited to bumps, folds, tears, and dimples.
 - c. Cabling system employed to transport camera and transmit its signal shall not obstruct camera's view.
- E. Sewer Reach Length: Physically measure and record length of each sewer reach from centerline of its terminal manholes.
- F. Inspection Rate: Camera shall be pulled through sewer in either direction, but both inspections are to be in the same direction. Maximum rate of travel shall be 30 feet (9 m) per minute when recording.

3.11 FIELD QUALITY CONTROL:

- A. The City will review video and logs to ensure compliance with requirements listed in this specification.
- B. If sewer line, in sole opinion of the City, is not adequately clean, it shall be recleaned and CCTV-inspected by Contractor at no additional cost.
- C. All Inspection logs and reports will comply with PACP, LACP and MACP Standards.

3.12 ACCEPTANCE OF WORK:

- A. Submit required video inspections of sewer, lateral and manhole cleaning, solid debris cutting and intruding sewer service removal to the City for review and determination if work performed is acceptable. The City will review the inspection videos within 20 days of submission.
- B. The City will visually inspect manholes to determine if cleaning is acceptable.
- C. Perform remedial work for sewer, lateral and manhole cleaning, cutting of solid debris and removal of intruding sewer services and a re-inspection for the locations where the work was determined by the City as not being acceptable.

END OF SECTION

Project Maps