REQUEST FOR BIDS
2017 Sewer Televising
City of Portage, Wisconsin

Notice is hereby given that sealed bids will be received at the office of the City Clerk, by the city of Portage at 115 W. Pleasant St. until 2 p.m., Local Time, Wednesday, July 19, 2017 at which time they will be publicly opened and read aloud at the above time and place, for the furnishing of all labor, tools, materials, equipment and incidentals necessary to conduct televised inspection services and accurately assess and record the condition of existing sanitary sewer mains.

**General Construction:** This work is for the internal closed circuit television (CCTV) inspection of sanitary sewer main pipes. CONTRACTOR shall perform cleaning and televising work on approximately 16,200 LF as necessary to thoroughly document the condition of all sanitary sewer mains in the study area. The project also includes an Alternate Bid 1 of approximately 4,900 LF of sanitary sewer cleaning and televising and an Alternate Bid 2 of approximately 4,750 LF of sanitary sewer cleaning and televising.

City of Portage
115 W. Pleasant St.
Portage, WI 53901

The Bidding Documents may be seen at the Portage City Hall.

The Bidding Documents may be viewed and downloaded at no cost at www.portagewi.gov

The Bidder must supply the bid form and all documents listed in Article 7 of the bid form.

Each Bid must be submitted in a sealed envelope, addressed to Marie A. Moe, City Clerk, City of Portage. Each sealed envelope containing a bid must be plainly marked on the outside as “2017 Sewer Televising” and the name and address of the bidder must be marked on the outside of the envelope. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed to the City Clerk, 115 W. Pleasant St, Portage, Wisconsin 53901. All bids shall be submitted on the bidding forms provided in the Bidding Documents.

Neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete or unauthorized sets of Bidding Documents.

No Bid shall be withdrawn for a period of ninety (60) days after the scheduled opening of the bids without the consent of the City of Portage. Also, no bid can be resubmitted by a Bidder that has successfully withdrawn a bid prior to the bid opening.

The letting and award of Work described herein is subject to the provisions of the Wisconsin Statutes. The City of Portage reserves the right to reject any and all bids, to waive or not waive any defects, irregularities or informalities that may be found in the Bids received and to accept any Bid that is in the best interest of the City of Portage.

Inquiries about the project may contact Aaron Jahncke, Director of Public Works/ City Engineer/Assistant, at (608) 742-2176 ext. 325, or aaron.jahncke@portagewi.gov.

Published by the City of Portage: July 6, 2017.
June 30, 2017

RE: REQUEST FOR BIDS, CITY OF PORTAGE SANITARY SEWER TELEVISING PROJECT

Introduction

The City of Portage is requesting bid proposals per Wisconsin Statutes 61.55 from qualified contractors for the televised inspection of sanitary sewer mains and locating the lateral wye of sanitary sewer laterals in several targeted areas of the City. If interested, please return the attached Bid Form by 2:00 p.m. C.D.T., July 19, 2017.

Background

This proposal request is to clean, inspect and accurately televise approximately 16,200 LF of sanitary sewer main. Alternate Bid 1 is to clean, inspect and accurately televise approximately 4,900 LF of sanitary sewer main. Alternate Bid 2 is to clean, inspect and accurately televise approximately 4,750 LF of interceptor sanitary sewer main in the City of Portage. The purpose of the project is to define condition status of the sewer main to better predetermine rehabilitation or replacement needs.

Scope of Services

- The work consists of furnishing all labor, materials, tools, equipment and incidentals necessary to clean the sanitary sewer and then conduct a televised inspection service and accurately assess and record the condition of existing sanitary sewer mains, per attached specification 02762.

- The quantities listed in this bid proposal are an estimate for the purposes of determining competitive prices. The City reserves the right to increase or decrease the scope of the work as outlined in this request and subsequent Standard Form of Agreement. Any non material increase or decrease in work shall not raise a claim for an extra, and all work shall be paid at the unit bid price.

- Prior to bidding, the contractor shall inspect the project sites to become familiar with the existing site conditions such as accessibility, traffic, manhole locations, etc.

Specifications and Bid Form:

Attached as separate documents.

List of Deliverables and Requirements

The Contractor shall not commence work until they have obtained all insurance required under this paragraph, and has filed certificates with and approved by the City of Portage, nor shall the Contractor
allow a Subcontractor to commence work until all similar insurance required has been so obtained and filed.

Workman’s Compensation Insurance – Statutory coverage as required by Chapter 102 of the Statutes of the State of Wisconsin, as revised, and all acts amendatory thereof and supplementary thereto, and for all employees of the Contractor. All Subcontractors and material men shall furnish to the Contractor and the Owner evidence of similar insurance for all their respective employees unless such employees are covered by the protection afforded by the Contractor.

The limits of liability for the insurance shall provide coverage for not less than the following amounts, or greater where required by Law or Regulations. (Paragraph reference is EJCDC Standard General Conditions):

Workers’ Compensation and related coverage’s under paragraphs 5.04.A.1 and 5A.2 of the General Conditions:

<table>
<thead>
<tr>
<th>State:</th>
<th>Statutory</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Applicable Federal (e.g., Longshoreman’s):</td>
<td>Statutory</td>
</tr>
<tr>
<td>b. Employer’s Liability:</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

CONTRACTOR’s General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include 2 years completed operations coverage and product liability coverage, and eliminate the exclusion with respect to property under the care, custody and control of CONTRACTOR:

| a. General Aggregate | $1,000,000 |
| b. Products - Completed Operations Aggregate | $1,000,000 |
| c. Personal and Advertising Injury | $1,000,000 |
| d. Each Occurrence (Bodily Injury and Property Damage) | $1,000,000 |
| e. Property Damage liability insurance will provide Explosion, Collapse, and Under-ground coverage’s where applicable. | $1,000,000 |
| f. Excess or Umbrella Liability | |
| General Aggregate | $2,000,000 |
| Each Occurrence | $2,000,000 |

Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:

| a. Combined Single Limit |
| Each Accident | $1,000,000 |
| b. Property Damage: |
| Each Accident | $1,000,000 |

The Contractual Liability coverage required by Paragraph 5.04.B. of the General Conditions shall provide coverage for not less than the following amounts:

| a. Bodily Injury |
| Each person | $1,000,000 |
| Each Accident | $1,000,000 |
| b. Property Damage: |
| Each Accident | $1,000,000 |
| Annual Aggregate | $1,000,000 |
Property Insurance

CONTRACTOR shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof. CONTRACTOR shall be responsible for any deductible or self insured retention. This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractor’s, ENGINEER, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or loss payee;

2. be written on a Builder’s Risk “all-risk” policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, false work, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by these Supplementary Conditions.

3. include expenses incurred in the repair of replacement of any insured property (including but not limited to fees and charges of ENGINEERS and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

5. allow for partial utilization of the Work by OWNER;

6. Include testing and startup;

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued; and

8. comply with the requirements of Paragraph 5.06.C of the General Conditions.

Bids shall include the following information:

1. Completed and signed bid form.
2. Schedule for completing the work.
3. Copy of this request.

Project Schedule

2. August 10, 2017 – City Council approval to proceed with project.
4. December 15, 2017 - Substantial Completion date.
Submission of Bids

One complete copy of the bid must be received by 2:00 p.m. on Wednesday, July 19, 2017 at:

City of Portage
2017 Televising Proposal
115 W. Pleasant St.
Portage, WI 53901

Questions Concerning this Request

All questions concerning technical or other aspects of this Request for Bid shall be directed to the City Engineer, Aaron J. Jahncke, P.E. at 608-742-2176, ext. 325. Bidders may include separately optional services with costs that may serve the City’s best interest. Errors and/or omissions in these documents shall be communicated to the City to allow for timely notification of clarification to all proposers.

Purchasers Privilege

The City of Portage reserves the right to reject all bids or to accept any bid which will best serve the interest of the City of Portage. Bids shall remain valid for 60 days from the bid receipt date. The approved bidder shall enter into a Standard Form of Agreement with the City.

Sincerely,

Aaron J. Jahncke, P.E.
City Engineer/Dir. Of Public Works

Enclosure: Bid Form
Specifications
Area Map
BID FORM

ARTICLE 1 – RECIPIENT

1.01 This Bid is submitted to:

City of Portage Engineering Department
115 W. Pleasant St.
Portage, WI 53901

Hereinafter called “Owner” and/or “Engineer”

No Later Than: July 19, 2017, 2:00 pm

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the submittal date, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

<table>
<thead>
<tr>
<th>Addendum No.</th>
<th>Addendum Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
D. If applicable, Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in SC-4.02 as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in SC-4.06 as containing reliable "technical data."

E. If applicable, Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder’s safety precautions and programs.

F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents. Work items shown on the plans or described in the specifications that are not in the Bid Schedule shall be considered incidental to the overall costs of construction and no additional payment will be made to the Contractor.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

1. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

ARTICLE 4 – BIDDER’S CERTIFICATION

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. “corrupt practice” means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;

2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization</td>
<td>1</td>
<td>LS</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>2</td>
<td>Clean and Televise, 6” Sanitary Sewer</td>
<td>484</td>
<td>LF</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>3</td>
<td>Clean and Televise, 8” Sanitary Sewer</td>
<td>15,729</td>
<td>LF</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

Total Base Bid: $

ALTERNATE BID 1 -

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clean and Televise, 10” Sanitary Sewer</td>
<td>2,091</td>
<td>LF</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>2</td>
<td>Clean and Televise, 12” Sanitary Sewer</td>
<td>1,646</td>
<td>LF</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>3</td>
<td>Clean and Televise, 27” Sanitary Sewer</td>
<td>1,160</td>
<td>LF</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

Total Alternate Bid 1: $
ALTERNATE BID 2 -

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clean and Televis, 21&quot; Interceptor Sanitary Sewer</td>
<td>1,625</td>
<td>LF</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>2</td>
<td>Clean and Televis, 24&quot; Interceptor Sanitary Sewer</td>
<td>2,333</td>
<td>LF</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>3</td>
<td>Clean and Televis, 27&quot; Interceptor Sanitary Sewer</td>
<td>807</td>
<td>LF</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>Total Alternate Bid 2:</td>
<td></td>
<td></td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete on or before December 15, 2017, and will be completed and ready for final payment on or before December 29, 2017.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The following documents are submitted with and made a condition of this Bid:
   A. List of Proposed Subcontractors;
   B. List of Proposed Suppliers;
   C. Disclosure of Ownership Form;
   D. Evidence of authority to do business in the State of Wisconsin; or a written covenant to obtain such license within the time for acceptance of Bids;

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.
ARTICLE 9 - BID SUBMITTAL

9.01 This Bid is submitted by:

If Bidder is:

An Individual

Name (typed or printed): ____________________________

By: ____________________________
    (Individual’s signature)

Doing business as: ____________________________

A Partnership

Partnership Name: ____________________________

By: ____________________________
    (Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): ____________________________

A Corporation

Corporation Name: ____________________________ (SEAL)

State of Incorporation: ____________________________
Type (General Business, Professional, Service, Limited Liability): _______

By: ____________________________
    (Signature -- attach evidence of authority to sign)

Name (typed or printed): ____________________________

Title: ____________________________
    (CORPORATE SEAL)

Attest ____________________________

Date of Qualification to do business in Wisconsin is ___/___/____.
A Joint Venture

Name of Joint Venture: ________________________________

First Joint Venturer Name: ________________________________ (SEAL)

By: ________________________________

(Signature of first joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): ________________________________

Title: ________________________________

Second Joint Venturer Name: ________________________________ (SEAL)

By: ________________________________

(Signature of second joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): ________________________________

Title: ________________________________

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business Address ________________________________

______________________________

Phone No. ________________________________ Fax No. ________________________________

E-mail ________________________________

SUBMITTED on __________________________, 20_____.
SECTION 02762
TELEVISING SANITARY SEWER MAIN

PART 1 - GENERAL

1.01 SCOPE OF WORK

This work is for the internal closed circuit television (CCTV) inspection of sanitary sewer main pipes. CONTRACTOR shall perform cleaning and televising work on approximately 16,200 LF as necessary to thoroughly document the condition of all sanitary sewer mains in the study area. The sewer main shall be carefully inspected to observe and document physical condition, defect, infiltration/inflow and locations of all service connections. The project also includes Alternate Bid 1 of approximately 4,900 LF of sanitary sewer main to be cleaned and televised and Alternate Bid 2 of approximately 4,750 LF of sanitary sewer main to be cleaned and televised.

1.02 REQUIREMENTS

A. CONTRACTOR shall first clean the sewer; then inspect the sewer main interior using a color closed circuit television camera (CCTV) and document the inspection. Each inspected sewer main shall be referenced as described and have an associated viewable file. Digital photographs (.JPG files), inspection reports (.PDF files) and any handwritten inspection logs or field maps shall accompany the video inspections for each sewer main inspected.

B. CONTRACTOR shall provide inspection video, data and reports in accordance with the requirements specified herein.

C. CONTRACTOR shall provide comments as necessary to fully describe the existing condition of the main on inspection forms.

D. CONTRACTOR shall be responsible for modifications to equipment and/or inspection procedures to achieve report material of acceptable quality.

1.03 QUALITY ASSURANCE

A. Each CCTV field inspection supervisor shall be NASSCO PACP certified. Use of PACSCO PACP certified technicians to review/document defects in the office (post process) is not acceptable.

1.04 SUBMITTALS

A. Before work starts, copy of proposed inspection form format.

B. The following deliverables shall be submitted on DVD or portable hard drive at the completion of inspection:

1. Inspection videos saved in MPEG format or Windows Media video format
2. Electronic version (.pdf) of the pipe inspection reports indexed by blocks or addresses
3. PACP export pipe inspection database (.mdb)
4. Inspection digital photographs in JPEG format
5. Map of sub area depicting area inspected, inspection status, asset identification numbers and mark ups
6. QA/QC report
C. All deliverables in 1.04 B. shall be submitted to the City within 2 weeks of completion of inspections.

1.05 NOTIFICATION

CONTRACTOR shall notify the ENGINEER a minimum of 7 calendar days prior to performing any inspection work. No payment will be made for inspections performed without proper notification.

1.06 UNIT PRICE

A. A lump sum item that includes mobilization and all incidental costs for the following unless a separate bid item exists; producing submittals, traffic control, coordination with home owners, sewer main cleaning, water and diversions if necessary, all materials including dye, DVD or hard drives, restoration, and cleanup of sites.

B. Mainline camera set up and inspection
   1. Includes the complete set up of camera within mainline sanitary sewer and televised inspection from structure to structure or obstruction and return. Includes wye location with the direction facing or address.
   2. Measurement and Payment: Lineal foot from structure to structure or obstruction.

PART 2 -PRODUCTS

2.01 EVALUATION TELEVISION EQUIPMENT

A. Closed Circuit Television Camera: The television camera used for the inspection shall be one specifically designed and constructed for sanitary sewer inspection. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The camera shall be operative in 100 percent humidity/submerged conditions. The CCTV camera equipment will provide a view of the pipe ahead of the equipment and of features to the side of the equipment through turning and rotation of the lens. The camera shall be capable of tilting at right angles along the axis of the pipe while panning the camera lens through a full circle about the circumference of the pipe. The lights on the camera shall also be capable of panning 90-degrees to the axis of the pipe.

The camera must be color and have remote control of the rotational lens. The camera shall be capable of viewing the complete circumference of the pipe. Cameras incorporating mirrors for viewing sides or using exposed rotating heads are not acceptable. The camera lens shall be an auto-iris type with remote controlled manual override.

The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the City. The television camera, electronic systems and monitor shall provide an image that shall be capable of registering a minimum of 400 lines horizontal resolution and be a clear, stable image with no interference; Camera focal distance shall be remotely adjustable through a range of 6 inches to infinity; The monitor and software shall also be able to capture and save screen images of typical sewer
details and all defects. Screen images shall be embedded into the pipe inspection report document submitted with the inspection video.

Monitor resolution shall be as specified above in paragraph 2.01.A.

C. Video Capture System:

The video and audio recordings of the sewer inspections shall be made using digital video equipment. A video enhancer may be used in conjunction with, but not in lieu of, the required equipment. The digital recording equipment shall capture sewer inspection on DVD disks or hard drive. The video files will be named in accordance the convention defined in Section 3.11:

1. The video file names will be referenced in the inspection database and in an inspection report generated in PDF format. The pipeline collection and real time video capture and data acquisition systems shall be provided.

2. The system shall use the most current PACP compliant application software and shall be fully object oriented or approved equal. It shall be capable of printing pipeline inspection reports with captured images of defects or other related significant visual information on a standard color printer.

3. The imaging capture system shall store digitized color picture images and be saved in digital format on a DVD, hard drive or approved equal. Also, this system shall have the capability to provide inspection data reports for each line segment.

4. Camera footage, date & manhole numbers shall be maintained in real time and shall be displayed on the video monitor as well as the video character generators illuminated footage display at the control console.

5. The CCTV equipment/software shall be capable of producing digitized images of defects and wye locations in .jpeg format.

2.02 REPORTING CAPABILITIES

A. The CCTV system shall be capable of printing inspection reports with pipeline schematics and captured images of defects and other related significant visual information. The system shall have the ability to display any combination of the following formats and features simultaneously, with the expressed purpose of future rehabilitation or replacement.

Each pipe examination and report shall include identical visual, audio, and written identification of the following:

1. Basic Information:
   a. Operator name;
   b. Date;
   c. Time;
   d. Weather Conditions;
   e. Street Name and House Number;
   f. Upstream Manhole Number;
   g. Downstream Manhole Number;
   h. Direction of Mainline Travel;
   i. Distance to Lateral wye from downstream Manhole;
   j. Lateral direction and appropriate address;
   k. Start and end distance of all defects including, but not limited to:
a) Collapsed pipe.
b) Deformed pipe
c) Missing pipe (size and radial location)
d) Longitudinal cracks (size and radial location)
e) Circular cracks (size and radial location)
f) Pipe wall deterioration
g) Open joint width
h) Offset joint width and location
i) Deposits
j) Root penetration severity and radial location
k) Joint and crack leaks
l) Deviations in horizontal and vertical alignment
m) Changes in pipe cross section

PART 3 - EXECUTION

3.01 GENERAL

A. Prior to inspection the Contractor shall obtain manhole asset identification numbers from the City to be used during inspections. Inspections performed using identification numbers other than the City assigned numbers will be rejected.

B. Inspection shall not commence until the sewer section to be televised has been completely cleaned.

C. After the sewer main cleaning operation is completed, the line sections shall be visually inspected internally by means of color closed-circuit television. The television inspection shall be performed one line section at a time.

D. Contractor shall perform sewer televising work within 24 hours of said sewer being cleaned. If said sewer is not televised within the required 24-hour time limit, the sewer shall be re-cleaned prior to televising at no additional expense to the City.

E. The CCTV camera shall be positioned as close to the spring line as possible while maintaining the required equipment stability.

F. Wherever possible the inspections shall be performed in the upstream to downstream direction. All sewer segments shall be recorded in a logical order in the same direction they are cleaned and televised.

G. The camera shall be pushed at a uniform, slow rate. In no case will the video camera record while moving at a speed greater than 30 feet per minute. If, during the course of the project, the inspection is rejected due to camera speeds exceeding 30 feet per minute, the inspection shall be redone, at no additional cost.
H. The survey unit shall be slowed, stopped, or backed-up to perform detailed inspections of significant features. The camera shall be stopped at all defects, changes in material, water level, size, side connections/laterals, manholes, junctions, or other unusual areas. When stopped at the defect or feature, the operator shall pan the camera to the area and along the circumference of the pipe. A photo shall be taken at all of these locations.

I. The camera unit shall be paused long enough at areas suspected of leaking to determine if a leak exists currently or if deposits have occurred.

J. The operator shall also record audio of the type of defect or feature, radial clock position, footage, extent or other pertinent data.

K. Audio shall be recorded during each inspection by the operating technician, electronic voice text recognition or approved equal on the inspection video as the sewer is inspected and shall include complete descriptions of the sewer main conditions as they are encountered.

3.02 SEWER BYPASSING AND DEWATERING
A. Contractor shall be responsible for bypassing sewer flow around his work and dewatering of sewer lines. Where sags or submerged sections of the sewer are encountered during TV inspection, the contractor shall first complete inspection of the entire reach to determine the extent of such areas prior to dewatering the sewer. Dewatered sections of the sewer shall then be TV inspected.

B. On all sewer mains which have sags or dips, to an extent that the television camera lens becomes submerged during the television inspection, the contractor shall use a high pressure cleaner to draw the water out of the pipe, or other means, to allow inspection of the pipe and identification of pipe defects, cracks, holes and location of service connections.

3.05 LINEAR MEASUREMENT
The CCTV camera location footage counter shall be zeroed at the beginning of each inspection. The survey unit location entered on the footage counter at the start of the inspection shall allow for the distance from the accepted start of the length of the sewer to the initial point of observation of the camera (pre-set footage). In the case of resuming an inspection at an intermediate point within a sewer reach, the footage counter shall be set to start at the distance from the upstream maintenance hole to that point, as previously recorded by the counter. The CONTRACTOR shall ensure that the footage counter starts to register immediately when the survey unit starts to move.

Prior to commencing inspections, the CONTRACTOR shall demonstrate compliance with the linear measurement tolerance specified below:

A. The equipment shall measure the location of the camera unit in 1-foot increments from the beginning (upstream end) of each continuous section. This footage location must be displayed on the CCTV monitor and recorded on the videotapes.

B. The accuracy of the measured location shall be within $0.5\%$ of the actual length of the sewer reach being surveyed, or 1 foot, whichever is greater.
3.06 PHOTOGRAPHS

During CCTV inspections, screen captures will be taken from the monitor images and saved electronically by the in-sewer inspection crew of typical conditions every 200 feet and at all defects, manholes and laterals. The screen capture shall have the pipe reach (identified by the upstream and downstream manholes), survey direction, footage, and date when photograph was taken. The annotation shall be clearly visible and in contrast to its background, shall have a figure size no greater than 1/4-inch, and shall be type-printed. The annotation shall be positioned on the front of the photograph so as to not interfere with the subject of the photograph. Photograph files shall be named by the video capture system and automatically referenced to the logged defect.

The image of the sewer shall fill the photographic image. Photographs must clearly and accurately show what is displayed on the monitor, which shall be in proper adjustment. Where significant features exist within 6-feet of each other, one photograph shall be made to record these features. Where there is a continuous feature, photographs shall not be taken at intervals of less than 6-feet unless absolutely necessary to show a change in the feature.

The images shall be kept electronically, copied to a hard drive, and submitted with the inspection videos, database and reports.

3.07 DELIVERABLES

The CONTRACTOR will be required to submit the following deliverables at the completion of inspection.

A. Inspection Reports to include:
   1. Inspection session header information (see required fields above)
   2. Defect log report including photo captures from CCTV video
   3. Schematic drawing of pipe showing defects
   4. Format:
      a. Adobe Acrobat PDF files – 1 report PDF per pipe
      b. Main sewer inspection report file name: <upstream MH ID>_ <downstream MH ID>_ <Date (year_mo_day format)> .PDF
         Example: 30060002_30060001_2010_02_16.pdf
      c. Lateral wye location, distance from downstream manhole: <upstream MH ID> _ <footage> _ <clock position> _ <L> _ <Date (year_mo_day format)> .PDF
         Example: 30060002_210_02_L_2010_02_16.pdf

B. Inspection video files on portable hard drive, Typed labels shall be attached to the face of each hard drive. The typed index labels shall include the following information:
   1. Content (CCTV)
   2. Contractor name
   3. Purpose of Survey
   4. Reaches included (from Manhole Number ## to Manhole Number ##)
   5. Date of survey
   6. Contract Number / Delivery Order Number (if applicable)
C. Main sewer video files shall be MPEG or Windows Media File named according to the following standard:

<Upstream MH ID>_ <Downstream MH ID>_ <Inspection>_ <Date (year_month_day)>.wmv

Example: 39540008_39540007_2009_08_05.wmv

In instances where a reverse set up is necessary to perform or complete the inspection the file name shall incorporate a “R” at the end of the file name to indicate “reverse” direction. Using the file example above, if the inspection from the upstream end was halted due to an obstruction and the pipe was televised from the opposite end, the video file from the downstream to upstream direction would be assigned the following file name:

39540008_39540007_2009_08_05_R.wmv

D. Map of sub area depicting area inspected, inspection status, asset identification numbers and mark ups

3.08 ACCEPTANCE

E. Inspection deliverables will be validated to check conformance with the specified requirements for file names, formats, quantity, resolution, data table references, in addition to checks for null fields, asset numbers, duplicate records, connectivity, material, size, and depth. Any data not passing the data validation checks will be returned to CONTRACTOR for resubmittal.

END OF SECTION
2017 Sanitary Sewer Televising Location Map

= 2017 Sanitary Sewer Televising Boundary