



## CITY OF SIDNEY Utilities Department

### **Guidance and Standards for Private Sanitary Sewer Inspections – FOR CONTRACTORS Revised March 20, 2018**

#### PURPOSE AND SCOPE

This document provides information and sets forth standards for “Private Sanitary Sewer Inflow & Infiltration Inspections” including CCTV inspections. The purpose and scope of this document is to provide guidance pertaining to the information required for a thorough and accurate inspection as well as the performance and quality of the CCTV recording of private sanitary sewers (building drains and building sewers).

The City of Sidney Ordinances Chapter 913 and 914 authorize and require the inspections of private sanitary sewers to find, and cause to be removed, sources of inflow and infiltration (I&I). These ordinances can be referenced for definitions and additional requirements.

This document does not set forth the standards pertaining to private sanitary sewer testing, repair, or replacement. Refer to the City’s Engineering Standards for further information. Due to a wide variation of past building practices this document may not adequately provide guidance for every situation encountered. Inspectors are encouraged to contact the City of Sidney’s Sanitary Sewer Department (I&I Division) for clarification or assistance.

#### GENERAL INFORMATION

1. All documentation shall be complete and include the correct name, address, phone number and email address if possible. Contractors/plumbers shall sign and date the inspection form.
2. Suitable access to the building drain and sewer is required for an acceptable CCTV inspection. This can include a clean out located either inside or outside of the building. Access through a toilet or vent is not an acceptable access point. Recording shall begin prior to entering each access point. The inspection shall start at the upstream portion of the building drain whenever possible and may continue the entire length to the termination of the building sewer (City main or City cleanout). However, each clean out observed in the CCTV inspection shall be included in the CCTV inspection report. It is preferred that the recording stops at each access point, is retrieved, and then resumed from the outside of the next access point. Each access point from the starting access point A to access point B must have camera retrieved. Each segment of the line shall be defined and labeled clearly on the report diagram.
3. The inspector shall identify and document on the City’s **“Private Sanitary Sewer Inflow & Infiltration Inspection”** reporting form dated **January 21, 2017** all access points, connections to the building drain and connections to the building sewer. The location of clean water discharges shall also be documented on the form. Clean water discharges include, but are not limited to roof drains, down spouts, area drains, yard drains, footer/foundation drains and sump pumps. Contractors/plumbers are responsible to identify each connection. If not identified, it shall result in a failure.
4. The inspector shall also note on the City’s inspection form of any potential sources of gray or black water not connected to the sanitary sewer.
5. A CCTV inspection shall be performed of any horizontal portion of the building drain that is not visible and the entire building sewer to its termination at either the City’s main sewer or the City’s clean out if provided. The detailed sketch shall include all identified connections to the building drain and building sewer.
6. The CCTV inspector or operator shall attempt to identify all illicit connections observed in the CCTV inspection such as roof drains, area drains, French drains, basement drains and footing/foundations drains

by physically inspecting the property and dye testing as necessary. The findings shall be noted on the inspection report. All location sondes must be turned off when creating the inspection video due to interference and distortion of the video.

Sufficient details shall be provided on the video and in the comments section of the report to identify that activity and source being evaluated.

7. The CCTV recording shall be provided to the City in color and in a digital format on a USB drive, CD-ROM or Data-DVD in either MPEG II or MPEG IV format that is compatible with the City's video management software.
8. The CCTV camera, power source, lights, and any other component used shall be designed and manufactured for the inspection of sewers and piping having a minimum diameter of 3".
9. Lighting and camera quality shall be suitable to provide a clear, in focus picture of the entire inside periphery of the sewer pipe for all conditions encountered during the work.
10. All recordings shall be in the correct orientation (auto level), in focus, properly illuminated with good contrast, adequate color and tint without distortion or outside interference. Location devices cause interference, therefore locating shall be performed separately from the video. NASCCO PACP & LACP standards will be applied by the City in the evaluation of the quality of the CCTV recording.
11. The camera lens must be kept clean and clear; any fogging due to oil, grease, or other water content or debris that obscures the lens shall be cleaned off before proceeding with the recording operation. The camera is to be operative in 100% humidity. Videos pushing debris to the main are not acceptable and are to be televised again after the debris is removed.
12. The CCTV inspection shall show the whole periphery of the pipe. CCTV inspection personnel shall coordinate the work of the CCTV inspection with the property owner or resident to minimize or temporarily stop sewer discharge while performing the inspection in order to show the whole periphery of the sewer. This requirement does not prevent the use of water or dye while attempting to identify connections.
13. A data view display feature capable of temporarily showing on video the following information at the start of each recorded section shall be provided:
  - a. Physical address of the property which the building drain and building sewer serves
  - b. Date & time of the inspection
  - c. Continuous footage counter accurate within 3%
  - d. Identification of access and starting point of each section of the video inspection such as location of clean out in the plumbing system. Vent lines are not acceptable access points except as to identify potential clean water connections such as roof drains
  - e. Microphone recordings are not an acceptable form of identification
14. The preferred direction of the video inspection is forward from upstream to downstream.
15. Line location with a locating device and video inspection of the entire buried length of the building drain and building sewer is required. Inability or failure to do so because of obstructions in the line, collapsed pipe, joint offsets, or lack of acceptable access points will result in the rejection of the CCTV inspection report. A cleanout that permits the complete video inspection of the building drain and building sewer shall be used as an access point. A vent pipe or any portion of the building plumbing is not considered as an acceptable access point. If there are no acceptable access points, installation of new cleanout meeting the requirements of the adopted plumbing code and the City of Sidney will be required in order to perform a video inspection of the sewer. The location of the cleanout shall be in accordance with City construction standards. Access to any portion of the City's sewer or City's Inspection Tee is strictly prohibited without written approval by the Utilities Director or his/her designee.
16. The address of the inspected property shall be permanently and legibly printed on the DVDs or USB when submitted with the inspection form(s). DVD labels may be handwritten or labeled with commercially available DVD labels providing they meet the previous requirements. All digital formats must be correctly labeled per address within memory of storage device.
17. It is highly recommended by the City, but not required, that someone familiar with and trained to use a CCTV camera, performs and certifies the video inspection to ensure the quality of the video is acceptable. Every connection is required to be located and identified.

# CCTV INSPECTION STANDARDS FOR PRIVATE SANITARY SEWERS

## PART 1 – FIELD DATA COLLECTING PRACTICES

All CCTV inspection and recording practices for private property sanitary sewers will be evaluated against these Standards.

1. All recordings shall be in color with the ability to achieve proper balance of tint and brightness. The loss of color or severe redness due to equipment malfunction may be cause for rejection of the CCTV Inspection.
2. All recordings shall be in the correct orientation (auto level), properly focused and illuminated with good contrast, adequate color and tint, without distortion, or outside interference. While moving forward or in the reverse run, the picture shall be of adequate light to clearly ascertain the existence of pipe cracks or fractures and their severity in addition to the obvious features such as joints and additional connections to the lateral.
3. The complete periphery of the sewer shall be visible. Sags or bellies that prevent inspection of that portion of the sewer shall be cause for failure.
4. The camera operation may be cable pulled or self-propelled and may record moving forward or on a reverse pull depending on the pipeline conditions. The preferred direction is forward from upstream to downstream.
5. The camera lens shall be kept clean and clear without fogging due to oil, grease, or other water content or debris that obscures the lens. The lens shall be cleaned before proceeding with the recording operation.
6. The camera shall be moved through the sewer at a uniform rate not exceeding 30 feet per minute. The camera shall be stopped for a minimum of 5 seconds at broken or cracked pipe sections, root intrusion, misaligned joints, connections to the sewer or other pipe defects. The camera shall be stopped for 30 seconds at any flowing connections and, if necessary, pulled back and re-televised to ensure a clear recording of the connection. Camera units having adjustable supports set so the camera axis is generally at the centerline of the pipe is preferred.
7. The operator shall clearly identify the location of all wye or tee connections, taps, breaks, roots, or other defects as outlined in Part 2 of these Standards.
8. The total buried length of the building drain and building sewer shall be inspected. If the entire length of the building drain/sewer cannot be inspected because of obstructions, the CCTV Inspection shall be recorded as a failed inspection. However, the obstruction may be removed and the sewer repaired in accordance with the City's standards and the line re-inspected.
9. The pipe diameter shall be obtained by physical measurement at the cleanout. The pipe material shall be identified on the inspection report.
10. Reverse set ups are to be limited. Potential reverses shall be identified and reported to the City for review. It is intended that the number of reverses are minimized to those absolutely necessary to complete the inspection.

## PART 2 – CCTV INSPECTION AND REPORTING FORM

The City's **Private Sanitary Sewer Inflow and Infiltration Inspection Report** form is to be utilized in reporting and submitting any CCTV inspection to the City for review. The inspection report form can have any number of pages, depending on the number of defects found, provided each is identified with the address of the inspected property and the signature and date of the inspector.

A diagram or a detailed drawing showing the general layout of the building drain, building sewer, street, approximate location of the cleanout(s) and building face is to be provided. The diagram may be drawn on a separate sheet of paper and attached to the report. The use of graph paper or straight edge is strongly recommended. Pipe diameter, pipe material, televised footage, CCTV view direction, usage of reverse setups and comments shall be provided. A sample Private Sanitary Sewer Inflow & Infiltration Inspection Report form and the sewer defect classification nomenclature table are attached to these standards.

## PART 3 – CCTV RECORDING AND INSPECTION REPORT REVIEW

1. All CCTV recordings will be reviewed for acceptability of quality based on the minimum standards established. The Private Sanitary Sewer Inflow & Inspection Report will be checked against the visible features shown on the CCTV recording.
2. A Private Sanitary Sewer Inflow & Inspection Report shall be completed in conformance with these standards and appropriate sewer defect nomenclature which best represents the sewer defects found shall be used.
3. Loss of vertical hold which has an impact on the ability to read and interpret the video shall constitute a cause of rejection of the recording.
4. In those cases where it is impossible to stop inflow and/or infiltration into the sewer during the CCTV inspection and recording because of pipe defects, illicit drainage connections or because the building to which the lateral serves is a facility which must continually use sewer service without interruption or is difficult to control the use of sewer service such as hospitals, care facilities, doctor and dental offices, or a large office, commercial, or industrial complexes, the CCTV inspection is to be performed during off peak usage of the sewer service. Heavy water flows which obscure the viewing of the inside of the private sewer will be cause for rejection of the recording. Surcharging and flooding of the camera lens will not be an excusable condition if it has been artificially created by an upstream surcharge. The existence of flow condition where the camera towing bridle is underwater and the sewer line segment is clearly not in a sag condition may result in a determination that the recording conditions are unacceptable.
5. All sewer line segments must be televised on the same disk unless the recording time exceeds the capacity of the recording medium. Each section of video shall be properly identified as to location and purpose. If multiple video files are provided, they shall be identified on the inspection form with the corresponding file name (i.e. Video 1 building drain and building sewer inspection; Video 2 downstream recording of dye testing of downspouts; Video 3 recording of outside clean out; Video 4 inspection of vent pipe for location of potential roof drain connection.)
6. Continuous footage readings for identifying the location of defects must be accurate to within 3 percent tolerance. Defect identifications are to be called out and recorded to the nearest full foot. Any inaccuracy in the continuous footage meter or identified defects or features which cause doubt as to the accuracy of the locations or total length shall render the line segment recording as unacceptable. If the operator has acknowledged that the forward run is unacceptable and has decided to re-televisé on the reverse pass, the operator must ensure that the footage markings are correct and that a stop at each feature for 5 seconds is provided to produce a complete recording inspection in the reverse pass.
7. Any other unidentified defect such as equipment interference or malfunction causing blurred or obscured images that detracts from the ability to completely and with reliable accuracy read the recording shall constitute a basis for rejection.
8. A mainline camera with pan and tilt features is required for any sanitary sewer pipe over 6”.

## TYPICAL PIPE ATTRIBUTES AND DEFECTS TO BE REPORTED

- Cracked Pipe (longitudinal, radial, spiral, multiple)
- Broken Pipe, Hole in Pipe, Deformed Pipe, Collapsed Pipe
- Separation in Pipe Joint
- Roots (% blocked)
- Pipe Obstruction (cause for failed inspection)
- Infiltration (observable, evidence of, seeps into line, runs into line)
- Inflow (connections of sump pumps, downspouts, etc.)
- Debris or Sediment in the Pipe (flow undisturbed or disturbed, unable to continue)
- Grease (flow undisturbed or disturbed, unable to continue)
- Scaling (flow undisturbed or disturbed, unable to continue)
- Side Connections (attempt to identify)
- Cleanouts (existing or missing and location)

## **CITY OF SIDNEY CONTACT INFORMATION**

### **Sanitary Sewer Department I&I Information Technician:**

D.J. Davis  
Office: 937-498-8787  
Email: [djdavis@sidneyoh.com](mailto:djdavis@sidneyoh.com)

### **Sanitary Sewer Department I&I Division Foreman:**

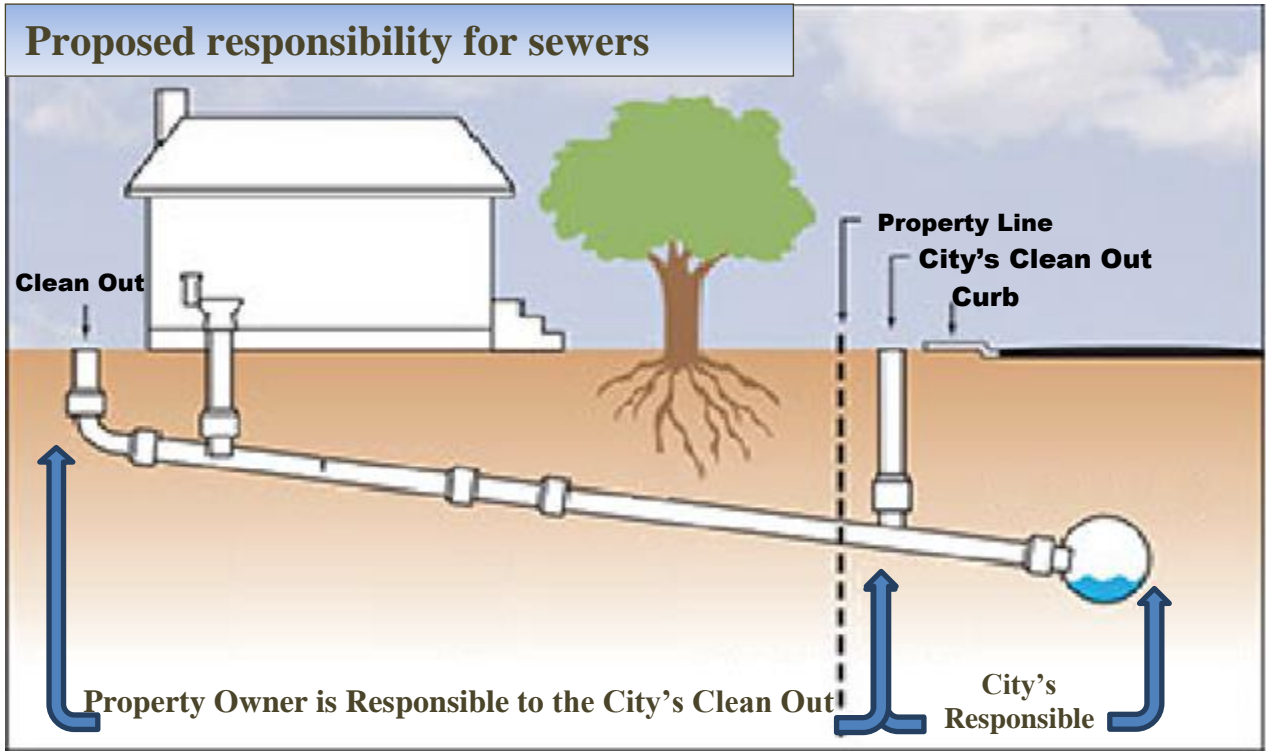
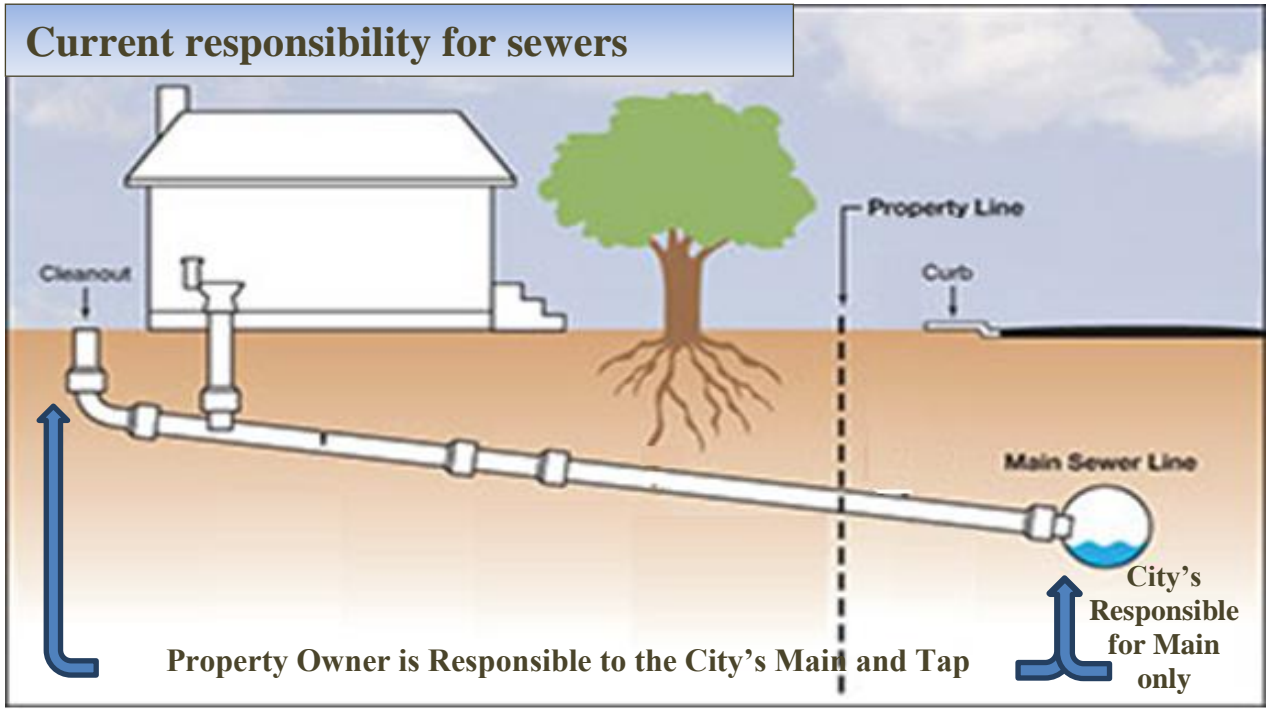
Kent Fogt  
Office: 937-498-8786  
Email: [kfogg@sidneyoh.com](mailto:kfogg@sidneyoh.com)

### **Underground Utilities Superintendent:**

Stephen Rhodes  
Phone: 937-498-8157  
Email: [srhodes@sidneyoh.com](mailto:srhodes@sidneyoh.com)

Additional forms can be obtained from the City's web site at [www.sidneyoh.com](http://www.sidneyoh.com), by contacting Cindy Naseman at 937-498-8117 or [cnaseman@sidneyoh.com](mailto:cnaseman@sidneyoh.com), or at the City Service Center at 415 S. Vandemark Rd (located behind Fire Station #2).

# Private Sewer Transfer Program for Sewers Installed Prior to 01/01/2013



Notes: To transfer a portion of a private sewer in the right of way to the City, the property owner must meet the following criteria:

- 1) The clean out type and its location in the right of way, must be approved by the City unless it is provided as part of a City sewer project and the Utilities Director has waived this requirement.
- 2) All fees must be paid by the property owner unless it is part of a City sewer project and the Utilities Director has waived this requirement.
- 3) The "AGREEMENT FOR TRANSFER OF A BUILDING SEWER IN THE RIGHT OF WAY" must be executed by the property owner and recorded with the City.

Note: Sewers connected after 01/01/2013 shall meet the updated standards.

**INTENTIONALLY BLANK**





Private sewer crosses neighboring private property  Y  N Any other private sewer connections  Y  N

Pipe Material: \_\_\_\_\_ Pipe Size: \_\_\_\_\_ Total Length: \_\_\_\_\_

Clean Out Available for Building Drain  Y  N Clean Out Available for Building Sewer  Y  N

Backwater Valve on Property  Y  N Basement  Y  N Crawl Space  Y  N Slab  Y  N

**An additional sewer sketch is required on 8½ x 11 paper. This should reflect general video notes and discharge locations of clean water sources.**

I certify, under penalty of law, that I have personally examined and am familiar with the information in this report and all attachment. Based on my inquiry of those persons immediately responsible for obtaining the information contained in this report, I believe that the information is true, accurate and complete. I am also aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature of person who performed and submitted inspection \_\_\_\_\_ Date \_\_\_\_\_

**Notes:**

- 1) CCTV video shall begin recording prior to entering the access point for the building drain and building sewer.
- 2) CCTV inspections shall be in focus and of sufficient quality, color and contrast for the technician to accurately assess the condition of the pipe.
- 3) No flow, other than that which is needed to identify connections, should be present during the CCTV inspection.
- 4) All connections are to be identified on the video. Any unidentified connections will be deemed potential clean water connections.
- 5) Supporting documentation and photos may be provided so long as they state the property they reference, the date of the inspection and a signature of the person performing the inspection.
- 6) Access to the building drain must be through a clean out with no additional horizontal pipe upstream unless that portion is also inspected and clearly identified on the CCTV video.
- 7) If the discharge point of a clean water source cannot be located, it is acceptable to continuously record video in the private sanitary sewer at its furthest point downstream while dye testing that source. If the dye is not visible in the private sanitary sewer, it may be determined that it is not connected. Sufficient detail shall be provided in the "Comments" section of the Inspection Report and the video to identify that activity and source evaluated.
- 8) Incomplete and/or inaccurate reports will be rejected and shall be considered as not having been performed unless an acceptable report is received within 5 business days after the City has notified the owner.
- 9) Multi-Family units include duplex and triplex residential structures. All others are considered commercial properties.
- 10) Sewer defects include, but is not limited to, offset joints, separated joints, roots, cracks, collapses, or any other defect that may allow clean water to enter the building drain/sewer or prevent a CCTV inspection in accordance with the City's standards.

**FOR CITY OF SIDNEY USE**

Video Submitted by \_\_\_\_\_ Date \_\_\_\_\_ Received by \_\_\_\_\_ Date \_\_\_\_\_

Reviewed by \_\_\_\_\_ Date \_\_\_\_\_ Signature \_\_\_\_\_

Lateral approved?  Y  N If no, required improvements: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_