

SANITARY SEWER MAIN AND MANHOLE TESTS

Municipality: _____ Pipe Material: _____
 Job No.: _____ Inspector: _____
 Date: _____ Weather: _____
 Job Name/Location: _____

Upstream	Downstream	Diam.	Length	Depth	Mandrel
MH#	MH#	(In)	(FT)	(FT)	P/F

MANHOLE VACUUM TEST

Manhole Number	#
	Seconds
Standard Test Time	
Actual Test Time	
Vacuum Drop	In.Hg.

Manhole Cover MWRA: _____ Met: _____ Other: _____ Diameter: _____
 Manhole Cover Condition Loose: _____ Tight: _____ Sealed: _____ Bolted: _____
 Frame and Cover Status Raise: _____ Lower: _____ OK: _____ Broken: _____
 Manhole Type Apron: _____ Through: _____ Stop Plank: _____
 Manhole Interior Constr. Brick: _____ Concrete: _____ Other: _____
 Manhole Interior Rungs Excellent: _____ Fair: _____ Poor: _____ None: _____
 Manhole Diameter _____ Ft.
 Manhole Depth _____ Ft.

General Location Street _____ Gutter _____ Parkway _____ Sidewalk _____
 Driveway _____ Front Yard _____ Side/Rr Yard _____
 Open Field _____ Ditch _____ Other _____

Type of Manhole Standard _____ Inside Drop _____ Outside Drop _____
 Steps Yes _____ No _____ Safe _____ Unsafe _____

AIR PRESSURE TESTS

The section of sewer to be tested shall have been trench back filled and cleared. The sewer pipe shall be pressurized to 5 PSIG above the average back pressure of groundwater over the sewer pipe and the air pressure allowed to stabilize for at least two minutes.

After the stabilization period, the line shall be pressurized to 3.5 PSIG and the time, in minutes, measured for a pressure drop to 2.5 PSIG. If groundwater is present, the air pressure within shall be increased to 3.5 PSIG above the level of the groundwater at the highest elevation of the sewer and the drop of one pound of air pressure measured in minutes (2.31 ft. of water= 1 PSIG).

Air leakage test results shall not be less than the time per Inch of pipe diameter per length of sewer pipe as specified in the table entitled "Air Test Table" as shown in Standard Specifications for Water and Sewer Main Construction in Illinois, and as shown within the standard details.

TELEVISION

The Contractor shall produce a video using a pan-and-tilt, radial viewing, pipe inspection camera that pans 275 degrees and rotates 360 degrees. The television camera used for the inspection shall be specifically designed and constructed for such inspection. The camera shall be operative in 100% humid conditions. The Contractor shall 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. The Contractor shall 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 being televised. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. A reflector in front of the camera may be required to enhance lighting in dark or large diameter pipe. The video camera shall be capable of showing on the tape the City name, Project name, Contractor name, date, line size and material, line identification (plan manhole number's at both ends) and ongoing footage counter. The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the Owner; and if unsatisfactory, equipment shall be removed and replaced with adequate equipment. A thumb drive shall be supplied for all television surveys. All thumb drive taping shall be performed at SP (Standard Play, 2hrs/video). All video tapes shall be submitted to the Owner and will become the property of the Owner. Thumb drives shall be labeled with above referenced information. The camera shall be moved through the line in either direction at a moderate rate, stopping when necessary to permit proper documentation of the sewer's condition. In no case will the television camera be pulled at a speed greater than 15 ft per minute. Manual winches, power winches, TV cable, and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions shall be used to move the camera through the sewer line. During the internal inspection, the television camera shall be temporarily stopped at each defect along the line. The nature and location of the defect shall be recorded by the Contractor. The camera shall also be stopped at all service connections and identified by address or lot number. The camera operator shall slowly pan and tilt at beginning and ending manhole connections, each service connection, joints, visible defects and at pipe material transitions. TV inspection video's shall be continuous for pipe segments between manholes. Do not leave gaps in the video of a segment between manholes and do not show a

single segment on more than one video, unless specifically approved by the Owner. The purpose of video recording shall be to supply a visual and audio record of problem areas of the lines that may be replayed. Video recordings shall include an audio track recorded by the inspection technician during the actual inspection work describing the parameters of the line being inspected (i.e. location, depth, diameter, pipe material), as well as describing connections, defects and unusual conditions observed during the inspection.

Manhole Testing

Vacuum testing of each manhole shall be carried out immediately after assembly, after all connections are made, and prior to backfilling. All lift holes shall be plugged with an approved non-shrink grout. No grout will be placed in the horizontal joints before testing. All pipes entering the manhole shall be plugged, taking care to securely brace the plugs from being drawn into the manhole. The test head shall be placed at the inside of the top of the frame and the seal inflated in accordance with the manufacturer's recommendation. If using a "plate" style manhole tester, position the plate on the frame. A vacuum of 10 Inches of mercury shall be drawn, and the vacuum pump shut off. With the valves closed, that time shall be measured for the vacuum to drop to 9 inches. The manhole shall pass if the time is greater than 60 seconds for a 48" diameter manhole, 75 seconds for a 60" manhole and 90 seconds for a 72" manhole. If the manhole fails the test, complete necessary repairs and repeat test procedures until a satisfactory test is obtained.