# Engineering Department

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Effective November 1, 2004

**SEWER TAPPING**
**STANDARDS AND SPECIFICATIONS**

In order to facilitate administration and provide more efficient operations for the City of Findlay, the following statements are issued pertaining to our policy for sewer connections and inspection services:



## SECTION 1: SEWER TAPPERS LICENSE

As per the requirements of the Findlay Code of Ordinances, Section 929.18, **each person installing the sewer and making the tap and/or lateral reconnect** shall be licensed and bonded with the City of Findlay to perform this type of work, even though they may work for a firm, company, or corporation that is presently licensed and bonded. **This person shall remain on the job until the tap has been approved by an Inspector from the Findlay Engineering Department.**

In order to obtain a license, a person must exhibit skill and experience in the performance of sewer tapping. A probationary license may be obtained from the Findlay Engineering Department by presenting a license and permit bond in the sum of $5,000 from an insurance company along with payment of a $50 license fee. After satisfactory completion of three separate sewer connections performed under the direct supervision of an Inspector from the Findlay Engineering Department, the person will be upgraded to regular status and receive a license for the remaining year at no additional cost.

All licenses and bonds expire on December 31 of each year. A renewal license will be issued annually to those in good standing, including probationary licenses for a renewal fee of $50. A renewal certificate for the bond must be presented showing that the bond is in effect for the year the license is issued. If the license or bond is not renewed within 1 year after expiration, a person must recertify by performing one sewer connection under the observation of a Findlay Engineering Department Inspector before issuance of a new license.

**FAILURE TO COMPLY WITH THE PROVISIONS OF THIS POLICY MAY RESULT IN TEMPORARY OR PERMANENT LICENSE REVOCATION.**

## SECTION 2: CONNECTIONS TO SEWERS

Throughout the Sewer Tapping Standards and Specifications, the term 'building sewer' (sanitary or storm) shall refer to the portion of sewer between the public sewer and a point 5 feet from where it enters the building.

Anytime an existing building sewer is to be utilized as service for a new building, a permit must be obtained. Fees due shall be determined and paid at the time of application. Before a decision is made whether or not to use an existing building sewer, it shall be determined whether the existing sewer is in good structural condition. If the sewer is ruled unsatisfactory by the City of Findlay, the sewer shall be replaced at owner's expense.

Any connections to a public sewer, reconnection to an existing lateral, extension of the private sewer, or repair to an existing building sewer will require a permit from the City of Findlay and payment of the respective fees. The connection to a public sewer shall be made at a wye or lateral connection to the main sewer, except where these are not already provided, in which case a wye, sweeping tee, or "saddle tap" shall be properly installed. Proper installation procedures for new wyes, tees, or "saddle taps" shall be determined by the City Inspector. Only a manufactured reducer will be allowed where a service line smaller than a wye is to be installed. "Donut rings" will not be permitted.

When installation of a wye, tee, or "saddle tap" is necessary, no tapping work shall begin until an Inspector is present. "Saddle taps" shall include an approved fabricated saddle fitting connected to the main line sewer. If it is impossible to use a fabricated saddle for a storm sewer application, the bell end of a length of vitrified clay or PVC pipe should be evenly cut close to the neck of the bell. The piece can then be placed into the opening of the main line sewer and mortared in place per the ODOT Specification No. 602. The length of pipe cut at the bell shall be no longer than necessary to meet the inside face of the main line sewer. Under no circumstances will this tapping method be acceptable for use on sanitary sewers or storm sewers constructed of smooth-wall polyethylene pipe. Connections to smooth-wall polyethylene pipe shall require use of a properly installed "Inserta-tee" fitting.

If the existing wye or main line sewer pipe is found to be damaged or deteriorated, an Inspector shall be notified, who in turn will determine the procedures for repairing or replacing the wye or main line.

If replacement of the City main is necessary, the pipe downstream shall be removed to the extent necessary to attain a suitable joint. All the pipe material used to repair the sewer line shall be cut leaving a straight even edge. At the upstream end of the repair, both pipes shall have an even cut and be placed as close as possible. At this joint, a manufactured flexible rubber coupling shall be placed around the joint and held in place with tight stainless steel clamps at both ends of the repair coupling.

All connections requiring penetration of an existing manhole or catch basin shall require core drilling of the correct size to accept the incoming sewer pipe.

## SECTION 3: SEWER PIPE TYPE

The following type of material is permitted for use in constructing building sanitary sewers:

a. Vitrified Clay Pipe; ASTM C 700 or ASTM D 1784 with ASTM C 425 compression type joint. Extra strength type required under pavement and drives.

b. PVC Plastic Pipe; ASTM D 3034, SDR-35 with integral bell joints in accordance with ASTM D 3212 and ASTM F 477. Uniform minimum "Pipe Stiffness" at five (5) percent deflection shall be 46.

Applicable ASTM standards are as follows:

| | |
|---|---|
| D 2321 | Underground Installation of Flexible Thermoplastic Sewer Pipe |
| D 3034 | Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings |
| D 3212 | Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals |
| F 477 | Elastomeric Seals (Gaskets) for Joining Plastic Pipe |
| F 679 | Poly (Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings |

PVC fittings used with PVC sewer pipe must be manufactured from extruded PVC pipe and fabricated. Injection molded manufactured fittings will not be allowed.

The following type of material is permitted as a minimum for use in constructing building storm sewers:

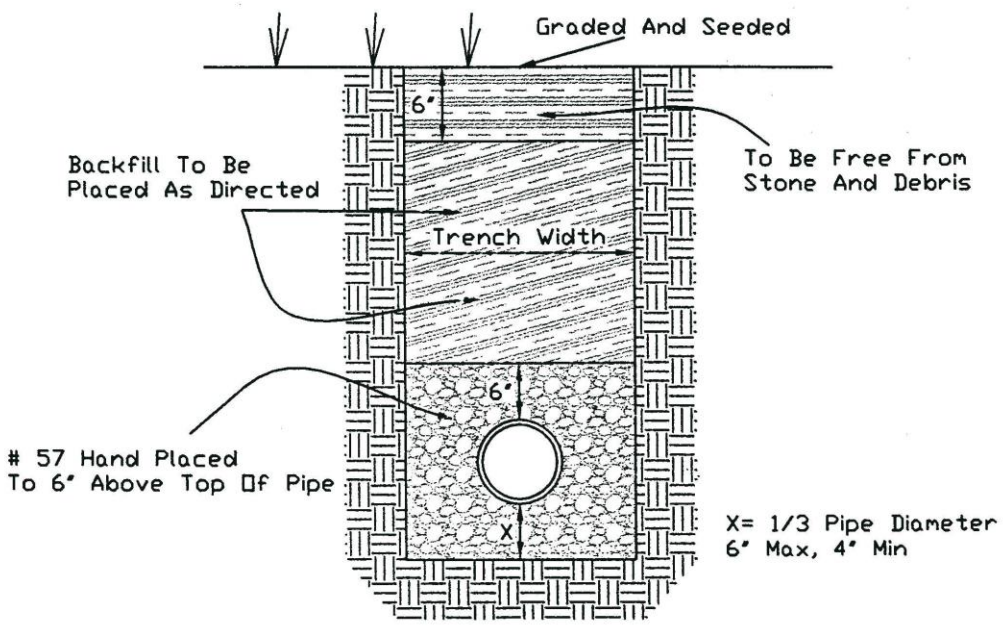
a. Vitrified Clay Pipe; ASTM C 700 or ASTM D 1784, Extra Strength required under pavement.

b. Concrete Sewer Pipe; ASTM C 76 or ASTM C 14 Class 3 required under pavement. ASTM C 14, Bell and Spigot or Tongue and Groove.

c. PVC Plastic Pipe up to 12" in diameter; ASTM D 3034, SDR-35 with integral bell joints in accordance with ASTM D 3212 and ASTM F 477. Uniform minimum "Pipe Stiffness" at five (5) percent deflection shall be 46. Allowable under pavements if cover over top of pipe exceeds three (3) feet.

## SECTION 4: BEDDING AND BACKFILL REQUIREMENTS

The embedment of all building sewer lines is required per the standard drawing shown below. The material used shall be graded stone of size designation No. 57. Bedding material shall be placed below the bottom of the pipe to a depth of at least 4 inches and shall be placed around the pipe to a minimum depth of 6 inches over the pipe.




**BEDDING DETAIL**

## SECTION 5: SEWER TAP INSPECTIONS

Persons requiring the services of a sewer inspection shall notify the City Engineer's Office no later than 5:00 p.m. on the last working day preceding the day the inspection is needed. City Inspectors will not normally be removed from other work to make a sewer tap inspection without prior notification. The following policy will apply to sewer inspections:

a. The installation of the building sewer shall be performed by the licensed sewer tapper, who shall be fully responsible for its proper construction and will be at the site for the inspection.

b. When the building drain is existing through the foundation, it shall be connected to a tee or wye, said tee or wye being used as the clean-out.

c. When the building drain does not exist through the foundation, a tee or wye shall be placed within 5 feet of the proposed building drain location. Pressure testing shall be done through the tee or wye. Before this connection is backfilled the plumbing inspector is to approve the building drain connection to insure that no storm water is permitted into the sanitary sewer.

d. Where the building sanitary or storm sewer is 100 feet or less in length and no wye is provided in the public sewer, or where a wye is provided but found to be broken or damaged, it will be necessary for the contractor to notify the Engineering Department and for an Inspector to be present for the repair, tapping and the laying of the first joint of pipe. Upon completion of the sewer, the contractor shall notify the Engineering Department. The trench shall not be backfilled until it has been inspected and approved by the Engineering Department.

e. For a building sanitary sewer in excess of 100 feet in length, an Inspector shall be present during all phases of construction. The cost of such inspection services shall be borne by the builder or contractor. A $200.00 per day cash bond shall be posted to cover the costs of such services before work may begin. The actual costs to the City of providing the City Inspector, as determined by the City Auditor, will be deducted from the cash bond. Any money remaining will be returned to said builder or contractor when the work is approved. If the cash bond is insufficient to cover the Inspector's cost, the shortage will be billed to the party who posted the inspection bond.

f. In all building sanitary sewers, a clean-out shall be provided within 5 feet of the building for the purposes of cleaning, inspection and testing. The clean-out shall be constructed as required by the Findlay Engineering Department. A clean-out may double as a test tee.

g. Pipe meeting the requirements of the materials specified herein will be required for all building sewers.

h. No person shall cause to discharge any storm water, such as roof runoff or subsurface drainage, into a building sanitary sewer.

i. No person shall cause to discharge any polluted water into a building storm sewer.

## SECTION 6: TESTING BUILDING SANITARY SEWERS

Building sanitary sewers shall be tested after installation and prior to final acceptance to ascertain pipe quality and joint tightness. Two types of tests may be used:

1. The first type of test is a water test. A plug is inserted in the building sewer at the point of connection with the public sewer. The building sewer is then filled with water to produce a 10-foot head of water at the highest point. The water shall be kept in the system for at least 30 minutes prior to the inspection. When the actual test begins, the head of water shall stay at the 10-foot head level for 15 minutes without any addition of water. If the building sewer is tested in sections, each section shall be subjected to a 10-foot head of water as described above.

2. The second type of test is an air test. The building sewer shall be plugged at both ends and tightly secured. Air shall be forced into the sewer system until there is a uniform gauge pressure of 5 pounds per square inch. This pressure shall be held without introduction of additional air for a period of at least 15 minutes. The gauge used in this test must be readable to 1.0 pound increments. It is important that safety is observed during this test and that the various plugs be installed and braced to prevent blow outs.

## SECTION 7: STREET OPENING BOND

A cash bond will be required to be deposited with the City prior to opening any public street pavement to assure proper replacement of the pavement. The amount of the cash bond will be determined at the rate of $30.00 per lineal foot of street opening with a minimum amount of $500.00 per opening.

## SECTION 8: PAVEMENT REPLACEMENT

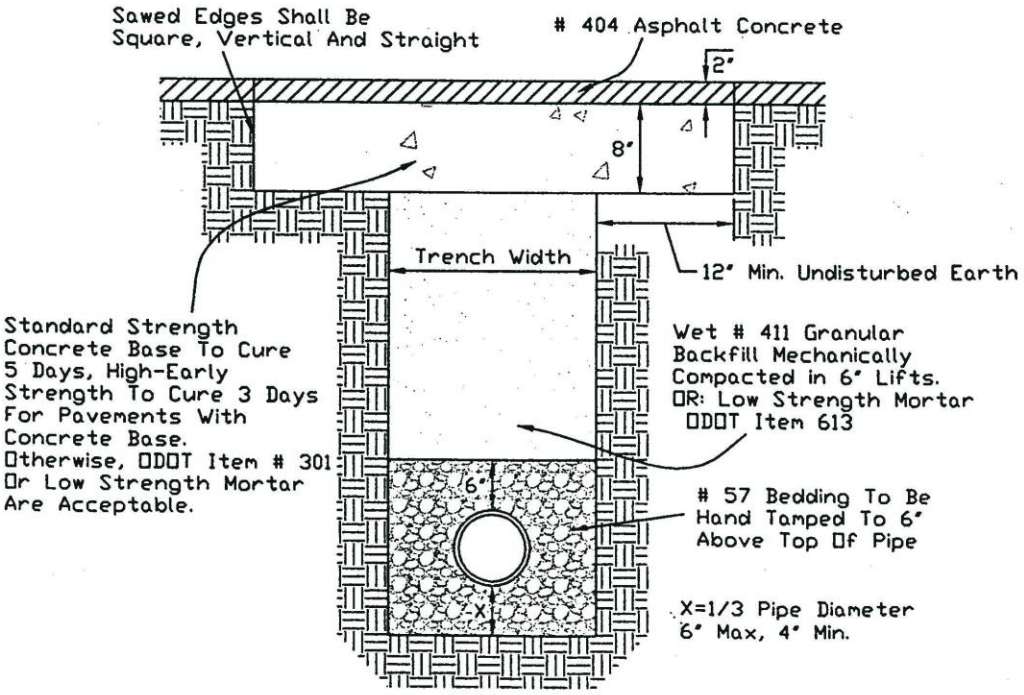
When it is necessary to open a public street or alley for the purpose of installing a utility, the licensed tapper will be responsible to backfill the trench across the pavement with granular backfill (ODOT #411) and uniformly compact the material the full depth of the trench, using mechanical compacting equipment in 6-inch lifts. Low Strength Mortar (ODOT #613) may also be used in place of #411 granular backfill.

Additionally, any street or alley having an existing concrete and/or asphalt surface will require a minimum of 8-inch concrete base to be placed as shown in the standard drawing below. Both backfill and concrete base placement shall be performed under the supervision of the City Inspector.

Where the existing street or alley is a tar and chip type, the concrete base may be eliminated.

Asphalt concrete or ODOT #613 Low Strength Mortar may be used when approved by the City Engineer to replace the concrete requirement. Asphalt concrete shall be a minimum of 8 inches of ODOT #301 placed in a minimum of three equal thickness courses and compacted per ODOT standards.

It may be necessary under certain circumstances to temporarily replace the pavement by using bituminous cold mix. This will apply during the winter season and when it is not possible to permanently replace the pavement within a reasonable period of time. The cash bond will be held, however, until the pavement has been replaced in the permanent manner described.




**PAVEMENT REPLACEMENT DETAIL**

## SECTION 9: MANHOLE REQUIREMENTS

All new manholes placed on private or public sanitary sewers are required to have:

a. An external seal covering the entire manhole chimney area, from the top 3 to 4 inches of the precast dome section up and over the base of the iron casting.
b. External joint seals mechanically fastened to each precast manhole joint.
c. A manufactured flexible connection between each pipe and the manhole. This applies to all laterals, as well as main line sewers connected to the manhole. Connections to existing precast concrete manholes will also require the flexible connection.
d. A vacuum test from the lowest invert up to and including the cast iron frame and conforming to ASTM C 1244 and the table below.

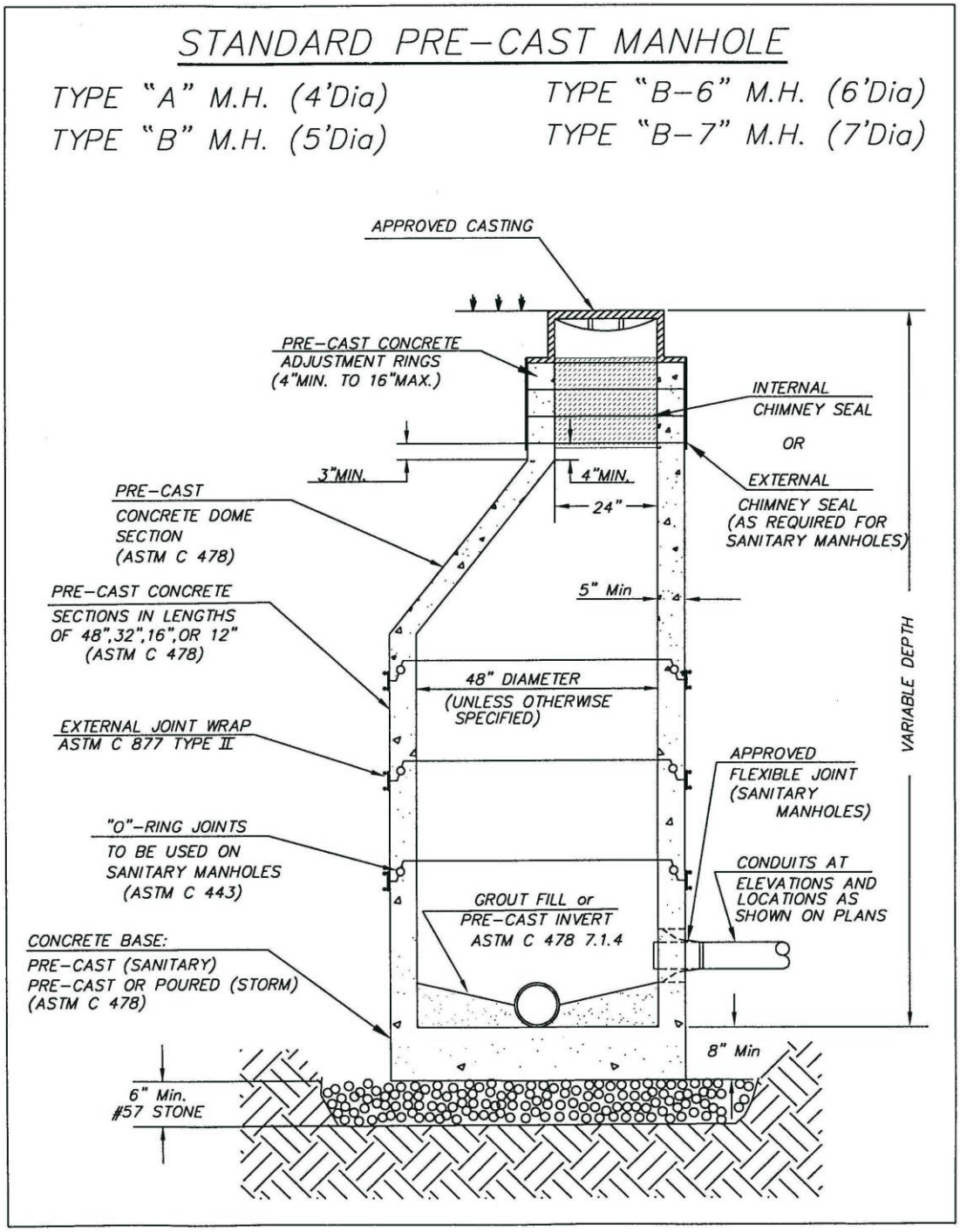
| ASTM C 1244 Minimum Test Times for 4' Diameter Manholes | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Depth (ft)** | ≤8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 |
| **Time (sec)** | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 59 | 64 | 69 | 74 |

See the Standard Precast Manhole drawing on the following page for construction details. Details regarding approved chimney seal, joint seal, and flexible connection products are available from the Engineering Department or City Inspector.

## SECTION 10: PERMITS

All sewer permits issued shall remain the property of the City of Findlay and are valid for twelve (12) months from the date of issuance. A six (6) month extension may be granted if formal request is received within twelve (12) months of the date of permit issuance. Upon completion and acceptance of the sewer connection, the permit shall be returned to the Findlay Engineering Department for the necessary records to be completed. If the permit is not on the job site at the time of inspection, the inspector shall suspend all work until the permit is presented.

If the permit is lost for any reason, or a copy is requested, a $5.00 charge will be levied to reissue the permit.


STANDARD PRE-CAST MANHOLE
TYPE "A" M.H. (4'Dia)
TYPE "B" M.H. (5'Dia)
TYPE "B-6" M.H. (6'Dia)
TYPE "B-7" M.H. (7'Dia)
APPROVED CASTING
PRE-CAST CONCRETE ADJUSTMENT RINGS (4"MIN. TO 16"MAX.)
INTERNAL CHIMNEY SEAL
OR
EXTERNAL CHIMNEY SEAL (AS REQUIRED FOR SANITARY MANHOLES)
3"MIN.
4"MIN.
24"
PRE-CAST CONCRETE DOME SECTION (ASTM C 478)
5" Min
PRE-CAST CONCRETE SECTIONS IN LENGTHS OF 48",32",16",OR 12" (ASTM C 478)
48" DIAMETER (UNLESS OTHERWISE SPECIFIED)
VARIABLE DEPTH
EXTERNAL JOINT WRAP ASTM C 877 TYPE II
APPROVED FLEXIBLE JOINT (SANITARY MANHOLES)
"O"-RING JOINTS TO BE USED ON SANITARY MANHOLES (ASTM C 443)
CONDUITS AT ELEVATIONS AND LOCATIONS AS SHOWN ON PLANS
GROUT FILL or PRE-CAST INVERT ASTM C 478 7.1.4
CONCRETE BASE: PRE-CAST (SANITARY) PRE-CAST OR POURED (STORM) (ASTM C 478)
8" Min
6" Min. #57 STONE