The Southern Cayuga Lake Intermunicipal Water Commission

Bolton Point Water System

TOWNS OF DRYDEN, ITHACA, LANSING
VILLAGE OF CAYUGA HEIGHTS
VILLAGE OF LANSING

1402 East Shore Drive
Ithaca, NY 14850

FIELD WORK GUIDE

January 11, 2019

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SOUTHERN CAYUGA LAKE INTERMUNICIPAL WATER COMMISSION (SCLIWC)

1402 East Shore Drive
Ithaca, New York 14850
Phone: (607) 277-0660

Serving the
Bolton Point Municipal Water System

FIELD WORK GUIDE

GENERAL INFORMATION

This information is intended to assist contractors and property owners in meeting state and local codes. This summary is not all-inclusive nor does it replace existing codes. This summary addresses areas where deficiencies are frequently noted or about which questions are frequently asked. It is recommended that you contact our office with any proposed changes or questions that you have. This document does not necessarily reflect recent changes in these codes. The owner of a property is the permit holder and is responsible for meeting the minimum requirements of all applicable codes and regulations.

You must have the following information to obtain a plumbing, water connection, or sewer connection permit:

1) Property address (not lot number)
2) Owner's name
3) Owner's mailing address
4) Owner's daytime phone number
5) Plumber's name
6) Plumber's daytime phone number

You must have plans of the work you intend to perform. Plumbing proposed according to the New York State Building Code shall be shown in isometric form on 8 $^1/_2$ x 11-inch paper(s). A site plan on 8 $^1/_2$ x 11-inch paper must show street, building, driveway and intended route of water and/or sewer laterals, and anticipated lengths of those lines. These plans may be hand-drawn.

Taps and inspections require a minimum of one working day's notice and may require two working days' notice. Taps on Town of Ithaca water and sewer mains must have prior approval from the Town Engineering Department.

No piping of any kind may be covered until it has been inspected and approved.

OFFICE HOURS ARE 8:00 A.M. TO 4:00 P.M., MONDAY THROUGH FRIDAY (except holidays) for issuing permits and scheduling inspections. Please arrive before 3:00 p.m. for permit applications.

GENERAL INFORMATION (continued)

Piping tests should be established before the inspector arrives. Acceptable tests for piping are:

1) All Water Piping: existing main pressure or 50psi for piping systems other than plastic for no less than 15 minutes.

2) Building Drain, Waste, and Vent (DWV) Systems: 5-foot head of water or 5 psi air pressure with a gauge for materials other than plastic for a period of no less than 15 minutes. (provide Bolton Point personnel advance notice of an air test).

3) Sewer Laterals: 10-foot head of water.

The required minimum depths of water and sewer laterals shall be observable at the time of inspections. Future plans to increase inadequate cover will not be considered for approval at the time of inspection.

Any unsatisfactory inspection may result in the water service being discontinued. Only Bolton Point personnel may restore service after a satisfactory re-inspection has been made.

Review Boards that deal with differences in code interpretations and requests for code variances exist at the State level only. The Commission and the municipal building departments can help with these procedures.

References and Related Documents:

International Residential Code (denoted with prefix IRC-)[1]
International Plumbing Code (denoted with IPC-)[2]
*SCLIWC Rules & Regulations (R+R)
*Local Law for Cross Connection Control
*NYS Cross Connection Control Guide
AWWA Standards
NYS Sanitary Code, Part 5 (Drinking Water Supplies)
Village of Cayuga Heights Sewer Ordinance
Town of Ithaca Sewer Ordinance

1. Applies to one-and two-family dwellings and multiple dwellings not exceeding three stories in height.
2. Applies to all other occupancies.

*Copies of these documents are available on request from our Customer Service office. Other reference documents are available for review only.

WATER SERVICE CONNECTIONS AND WATER SERVICE LINES

INSTALLATION

The service line must be laid with bedding and backfill materials no greater than 2 inches in diameter for 6 inches in all directions from the tubing. All points of the service line must be no less than 54 inches below existing grade at the time of inspection. This means the initial trench may have to be deeper to accommodate the minimum of 6 inches of bedding. Trench depth may also need to be increased when there is a vertical separation requirement between water and sewer lines.

The water service line must be a minimum of 5 feet horizontally apart from any sewer line, and a minimum of 3 feet from any other parallel utility. If the water service line needs to cross underneath a sewer line, the water line needs to be sleeved for a minimum of 10' in both directions.

When crossing any metal piping closer than 3 feet, the water line must be covered with a protective sleeve or sheet.

The curb stop and box must be placed as close to the front property line as practical and out of the driveway and ditch line. The water service should take the shortest possible route.

Where copper tubing passes through concrete or masonry structures, it must be covered with a protective sleeve. The sleeve should extend a minimum of 12 inches into surrounding soil. The sleeve diameter must be at least two standard pipe sizes larger than the copper tubing.

An acceptable and accessible meter setting must be provided with allowance to run small gauge wire to the exterior of the building for radio/MXU installation. The first inside valve shall be a meter stop immediately before the meter. Another valve must be provided immediately after the meter or pressure regulator. A household pressure regulator is required. The meter must be approachable by a standing person. Meters shall not be concealed behind wall panels, etc. unless accessible through a hinged, sliding, or easily removable panel. NOTE: Under stair locations are usually not acceptable. Stairs or ladders used to access the meter must be sturdy and safe. Meters must be installed horizontally 2 to 4 feet above the floor. All pit installations shall be free of standing water, accessible from ground level by Commission personnel, frost-proof, and vandal-proof. (See SCLIWC RESIDENTIAL WATER METER PIT GUIDELINES AND REQUIREMENTS, pages 8-9.)

In most cases, type K copper tubing and bronze fittings are required on outside water services. In some instances, non-standard materials, such as polyethylene (PE), may be permitted. These non-standard materials will always be downstream of a meter.

WATER SERVICE CONNECTIONS AND WATER SERVICE LINES (continued)

SCLIWC advises strongly against the use of PE or other non-standard materials and fittings in the water service line because of failures observed in the past. If the owner decides to use PE or other non-standard materials or fittings, extra care must be taken in bedding, compacting, and backfilling to achieve good performance. Non-metallic lines should be provided with tracer wires for locating purposes. All underground fittings must be bronze compression unless otherwise approved.

MATERIALS

1) Piping: Must be soft temper, type "K" copper of a size to be determined by Bolton Point for each installation. Minimum size is 1 inch.

2) Fittings: Compression or iron pipe thread joints are to be installed before the meter and in any underground locations. "Stop and waste" curb valves are prohibited. No solder joints are permitted ahead of the meter or in any part of the service line or service connection.

3) Curb Box: Must be "Buffalo" style, cast iron, 2 $^{1}/_{2}$ inch, size 94-F. It must be equipped with a rod and centering ring for the rod. The rod must be attached to the curb valve with a brass or copper pin only. The top and bottom sections and any extensions must engage each other by a minimum of 2 full threads when top is at grade (see illustration below).

WATER SERVICE CONNECTIONS AND WATER SERVICE LINES (continued)

OUTSIDE WATER INSPECTION CHECKLIST

1) TESTS:

a._____ Existing water pressure.
b._____ All piping must be visible.
c._____ Must be flushed for 2 minutes for each 100 feet of pipe or portion thereof.

2) MATERIALS:

a. _____ Piping must be of type K, soft temper copper (see Permit Application for size).
b. _____ Joints must be compression or iron pipe thread; no solder (R+R III 4.g.).
c. _____ Curb Valve: Stop and waste is **NOT PERMITTED** (RC-P2903.9.5; R+R III 4.a. and 4.h.; PC-608.7).
d. _____ Meter valve must be non-flow restricting.
e. _____ Curb box must be Buffalo style, marked “water”, with rod and centering ring.

3) DEPTH:

a. _____ Depth of top of pipe must be 4 feet, 6 inches from existing ground level to top of pipe, observable at the time of inspection
b. _____ Curb box lid must be at or above grade.

4) PROTECTION:

a. _____ See bedding and masonry diagram on page 22, TYPICAL RESIDENTIAL WATER SERVICE.

5) DEGREE OF COMPLETION:

a. _____ Must be complete from water main to meter valve.

SCLIWC RESIDENTIAL WATER METER PIT GUIDELINES AND REQUIREMENTS

Residential meters should be installed within the building whenever possible. Interior locations usually provide better accessibility, security, and protection against freezing and flooding than do exterior locations. Occasionally, a property owner may want to install the meter in a meter pit outside of the building. The Commission will consider such requests on a case-by-case basis. Common reasons for installing the meter in a an outside pit include lack of a suitable space within the building, desire to use a non-standard piping material between the meter and the building, and the need to meter water serving multiple buildings on one property.

If a property owner installs a meter pit, it is the owner's responsibility to assure that all requirements of such installations are met and that the installation will provide adequate accessibility, security, and protection against freezing and flooding for the meter. The Commission generally performs one or two inspections during this phase of construction of water service lines. The Commission's inspection is not continuous, so it cannot guarantee that the installation will provide trouble-free service. The Commission's primary inspection objective is to assure that the installation will not impose a deleterious effect on the municipal water distribution system. The property owner has primary responsibility for ensuring that the construction or installation of a meter pit provides adequate accessibility, security, and protection from the elements. The Commission will require the property owner (or installer) to correct any deficiencies noted during inspections. The owner can and should point out any suspected deficiencies to the installer and ask that they correct them. In all cases, the property owner owns the meter pit and bears responsibility for required pit maintenance and repairs. The owner pays for meter repair or replacement due to an inadequate pit environment. The owner is responsible for all water registered on the meter, including consumption caused by leakage between the meter and the building.

Factors that must be considered during meter pit construction or installation include:

ACCESSIBILITY

The pit must be easily approachable without the need to stoop, crawl, or climb over obstacles. Plants or other landscaping features must not diminish pit accessibility. The pit opening must be large enough to allow easy removal and maintenance of the meter and associated equipment. The meter must be serviceable and removable without the need to enter the pit.

SCLIWC RESIDENTIAL WATER METER PIT GUIDELINES AND REQUIREMENTS (continued)

SECURITY

The meter pit must have an access port that is removable using pentagonal keys or other specialized tools that are not in the possession of the general public.

FREEZE PROTECTION

The meter pit must be installed in a location where water in the meter and piping will not freeze. Insulation may be used. Insulating materials must be effective even when they are wet or damp. Insulation must be readily removable and re-installable without losing insulating ability or damaging the meter. The pit must be installed at a depth where its lid is flush with grade, and where the pit bottom is a minimum of five feet below grade.

FLOOD PROTECTION

The meter pit must provide an environment where water will not collect. Even standing water that does not cover the meter may produce a damp environment that causes failure of the meter and/or the remote reader. This requirement may be met by using a waterproof enclosure or by installing a gravity drain from an enclosure that is not waterproof. Earth should be graded downward away from the pit lid in all directions such that rain and runoff water will not collect around or course over the pit lid.

OTHER CONSIDERATIONS

Meter pits may not be installed in roadways, road shoulders, or driveways. Pits must be capable of supporting the weight of pedestrians and lawn care equipment.

Pit lids should be made of iron to facilitate finding them with a metal detector if they are accidentally buried. They must also have a knock out/pre-drilled port for radio installation.

If non-metallic water lines are used downstream of the meter pit, a jacketed cable or wire should be laid with the water line so that water lines can later be found using electronic locating equipment.

TOWN OF ITHACA INTERMUNICIPAL SEWER SYSTEM

SEWER LATERAL INSTALLATION SPECIFICATIONS

1) Lateral Pipe Materials: Lateral pipe shall be of one of the following materials:

   a. Tar-coated, service grade, cast iron soil pipe conforming to ASTM specification A-74, “Cast Iron Pipe and Fitting.” All dimensions, weight and markings of the pipe shall conform to the requirements of ANSI, Designation A112.51, except spigot ends shall be “plain end” if gasket joints are used, OR
   b. Polyvinyl chloride (PVC) pipe and fittings conforming to ASTM specification D-3034, “SDR-35 Polyvinyl Chloride (PVC) Sewer Pipe Fittings.” Pipe shall have integral bell ends. Joints shall be of the bell and spigot type with rubber gaskets.

2) Joints: All joints and connections shall be made water-tight as determined by water ex-filtration test, minimum 10 feet head, upstream of property line clean-out. Joints for either cast iron or PVC pipe shall be of the push-on type using neoprene rubber gaskets and gasket lubricant furnished by the pipe manufacturer. Assembly shall be made by inserting the spigot end of the pipe to the full depth of the bell following the manufacturer’s recommended procedures. Bell and spigot ends of pipe shall be kept completely clean and free from debris when assembling joint.

3) Pipe Bedding: See TYPICAL SEWER LATERAL TRENCH SECTION, on page 25, for pipe bedding procedures.

4) Clean-Outs: Clean-outs shall be installed at the end of the existing lateral in the area of the property line and every 75 feet thereafter. Clean-outs shall also be installed at every break in the grade and horizontal alignment of the lateral, and at the outside of the trap as close to the basement wall as possible. Refer to drawing on Page 23, for placement and construction of clean-outs.

5) Sweeps (Long Radius Bends): With prior approval of the Town of Ithaca Engineering Department, sweeps not less than 3 feet in length or greater than 45 degrees in angle may be allowed.

TOWN OF ITHACA INTERMUNICIPAL SEWER SYSTEM (continued)

6) Traps: A trap shall be installed as close to the dwelling as possible, away from any windows. As shown in the drawing, a standpipe or clean-out on the street side and a standpipe with vent cap on the house side of the trap are required. The use of off-set vents requires prior approval of the Town of Ithaca Engineering Department. The purpose of house traps is to prevent sewer gas from entering the drain, waste, and vent system of a property.

   a. Traps are to be made of SDR 35 push-on joint or cast iron in accordance with the Town of Ithaca Engineering Department requirements.
   b. Schedule 40 glued fittings can be used to fabricate house traps and clean outs; then use SDR-35 for all other piping.
   c. If clean out risers are of PVC, use cast iron plugs. If risers are of cast iron, use bronze plugs.

7) Cover: The sewer lateral shall have a minimum of 4 feet, 6 inches of cover over the top of the pipe at all points unless otherwise approved by the Town of Ithaca Engineering Department.

8) Fittings: Fully jacketed (e.g., “clamp-all” style) stainless steel fittings must be used in any underground sewer laterals when connecting to existing piping. Unjacketed fittings (e.g., Fernco) will not be permitted.

9) Taps: “Y” type fittings must be used for taps on sewer mains. “T” type fittings are not permitted. Taps into Town of Ithaca sewer mains must have prior approval from the Town of Ithaca Engineering Department.

TOWN OF ITHACA INTERMUNICIPAL SEWER SYSTEM (continued)

OUTSIDE SEWER INSPECTION CHECKLIST

1) TESTS:

a. _____ Minimum 10 feet of water at all points

2) MATERIALS:

a. _____ PVC pipe or cast iron pipe may be used for residential or commercial properties (see page 11, #1 Lateral Pipe Materials).
b. _____ Push-on joints must be used (see page 11, #2 Joints).
c. _____ Fittings must be fully jacketed (see page 12, #8 Fittings).

3) DESIGN (see pages 23-30):

a. _____ Bedding (see page 26, TYPICAL SEWER LATERAL TRENCH SECTION).
b. _____ Clean-Outs (see pages 23-25)
c. _____ “Y” type fittings must be used for taps on sewer mains. “T” type fittings are not permitted.
d. _____ Traps (see page 12, #6 Traps; page 23).

UNDER SLAB INSPECTION CHECKLIST

1) TESTS:

a. Drain, Waste, and Vent Systems:
   1. _____ Minimum of a 5-foot head of water for plastic material or 5 psi air with a gauge (IRC-P2503.5.1; PC-312.2-3) for piping material other than plastic

b. Distribution Piping:
   1. _____ Existing water pressure or 50 psi air with a gauge, except that air tests shall not be applied to plastic systems (IRC-P2503.7; PC-312.5)

c. Piping:
   1. _____ All piping must be visible (IRC-P2503.2; IPC-312.1.2)

2) MATERIALS:

a. Drain, Waste, and Vent Systems:
   1. _____ Must conform with IRC-P3002.1; IPC702.2.

b. Distribution Piping:
   1. _____ Must conform with IRC-P2904.5; IPC-605.3. Protective sleeve or sheet must be used where piping passes through concrete slabs.

3) DESIGN:

a. Drain, Waste, and Vent Systems:
   1. _____ Sizes must conform with IRC-P3005.4 and IRC-P3113; IPC-710 and IPC-916.

b. Distribution Piping:
   1. _____ Must be sized in accordance with IRC-P2903.7 or IPC-Chapter 6.

c. Vents:
   1. _____ Provisions must be available to vent each trap in accordance with IRC-P 3106-P3112 or IPC-907-913 (individual, common, wet, stack, circuit or loop venting).
   2. _____ Distance from trap to vent connection must be in accordance with IRC-P 3105.1 or PC-909.1.

Continued

UNDER SLAB INSPECTION CHECKLIST (continued)

d. Fittings:

1. _____ No single or double sanitary tees are permitted in horizontal drain plumbing (except as connections for dry vents) (RC-Table P3005.1; PC Table 706.3).

4) DEGREE OF COMPLETION:

1. _____ The degree of completion must be to the exit point.

ROUGH INSPECTION CHECKLIST

1) TESTS :

a. Drain, Waste, and Vent Systems:

1. _____ Must be filled to a point of 5 feet above highest fitting connection in that section, overflow with water or tested with 5 psi air with gauge for materials other than plastic.(IRC-P2503.5.1; IPC-312.2 or 312.3).
2. _____ Must include water closet flanges and glued traps that may be concealed (tubs, showers, etc.)
3. _____ Slip connection traps must be provided with access panel per (IRC-P3003.3.7; IPC405.8).
4. _____ Shower pan test is required (IRC P2503.6 ; IPC 312.9)

b. Distribution Piping:

1. _____ Water supply must be tested with existing water pressure. Air tests shall not be applied to plastic systems including PEX (IRC-P2503.7; IPC312.5).

c. Piping:

1. _____ All piping must be visible (IRC-P2503.2; IPC-312).

2) MATERIALS:

a. Drain, Waste, and Vent Systems:

1. _____ Must conform with IRC-P3002 or IPC-702.1. Permissibility of materials varies with occupancy.

b. Distribution Piping:

1. _____ Must conform with IRC-P2904.5; IPC-605.3.

3) DESIGN:

a. Sizing:

1. _____Drain, waste, and vent systems must conform to IRCP3005.4 and P3113; or IPC710 and 916.
2. _____All vents through the roof must be at least 3 inches in diameter in accordance with IRC-P3103.2 or IPC904.1.
3. _____Water supply lines should be sized in accordance with IRC-P2903.7 or IPC-Chapter 6.

ROUGH INSPECTION CHECKLIST (continued)

b. Vents:

1. _____ Each trap should be individually vented or vented in accordance with IRC-P3106-P3112 or IPC-910-916.:
   a) Individual vent (RC-P3106; IPC-910).
   b) Common vent (RC-P3107; IPC-911).
   c) Wet vent (IRC-P3108; IPC-912).
   d) Waste stack vent (IRC-3109; IPC-913).
   e) Circuit venting (IRC-P3110; IPC-914).
   f) Combination waste and vent system (IRC-P3111) or Combination drain and vent system (IPC-915).
   g) Island fixture venting (IRC-P3112 or IPC-916).

c. Distance:

1. _____ The distance between vent connection and fixture trap must be in accordance with (IRC-P3105.1) or [IPC-909.1].
   a) $1^1/_4$ inch trap = (5 feet) ($3\ ^1/_2$ feet)
   b) $1^1/_2$ inch trap = (6 feet) (5 feet)
   c) 2 inch trap = (8 feet) (6 feet)
   d) 3 inch trap = (12 feet) (10 feet)
   e) 4 inch trap = (16 feet) (12 feet)

d. Fittings:

1. _____ No single or double sanitary tees are permitted in horizontal drain piping (except as connections for dry vents) (RC-Table 3005.1; PC-Table 706.3).

4) DEGREE OF COMPLETION:

1. _____ All stacks must be through the roof. Building drains must be installed to the building exit point.

FINAL INSPECTION CHECKLIST

1) TESTS:

a. Drain, Waste, Vent, and Water Supply:

1._____ Shall Have no leaks (IRC-P2503.5.2 ; IPC-312.2)

2._____ Hot and cold water must be available.

2) MATERIALS:

a. Distribution Piping:

1._____ Fixture supply risers must comply with IRC-P2906.5 or IPC-605.4.

(For EXISTING DWELLINGS connecting to public water, the following items are often found to need corrective action.)

3) FIXTURES AND APPLIANCES:

1. _____ All counter, floor or wall-mounted fixtures must be caulked where they meet counters, floors or walls in accordance with IRC-P2705.1 or IPC-405.5.
2. _____Water heaters must be equipped with adequate temperature and pressure (T&P) relief valves. T&P discharge must be piped full size and terminated in a safe, trouble-free location in accordance with IRC-P2804.6.1 or IPC-504.5

4) BACKFLOW CONTROL:

1. _____Hose bibs shall be equipped with vacuum breakers (IRC-P2904.3.3; IPC-608.15.4.2).
2. _____Boiler systems plumbed directly to the potable water system must be isolated with at least a dual check valve with intermediate vent to atmosphere (Watts 9D or equivalent). Vent must be piped full size and terminated in a safe, trouble-free location (IRC-P2902.5.1; IPC608.16.2).
3. _____Residential auxiliary supplies (e.g., well, cistern) require a physical separation from the public system or an appropriate back flow preventer, and require prior approval. Other occupancies having auxiliary supplies shall be equipped with a backflow preventer in accordance with NYS Sanitary Code Part 5.

FINAL INSPECTION CHECKLIST (CONTINUED)

5) APPURTENANCES:

1. _____Curb box and clean-outs must be to grade, intact and visible.

2. _____Curb valve must be easily accessible and operable.
3. _____ Meter pit covers must be to grade.
4. _____Pressure regulator must be in place (downstream of meter) (see page 22, TYPICAL DOMESTIC WATER SERVICE diagram).
5. _____Meter must be in place and accessible (see page 5, INSTALLATION, and page 22, TYPICAL DOMESTIC WATER SERVICE diagram). Meter Reading.
6. _____If a pressure tank is used, a check valve must be installed between the pressure regulator and the tee to the storage tank.
7. _____Required Backflow preventers must be in place and test documentation provided.

6) DEGREE OF COMPLETION:

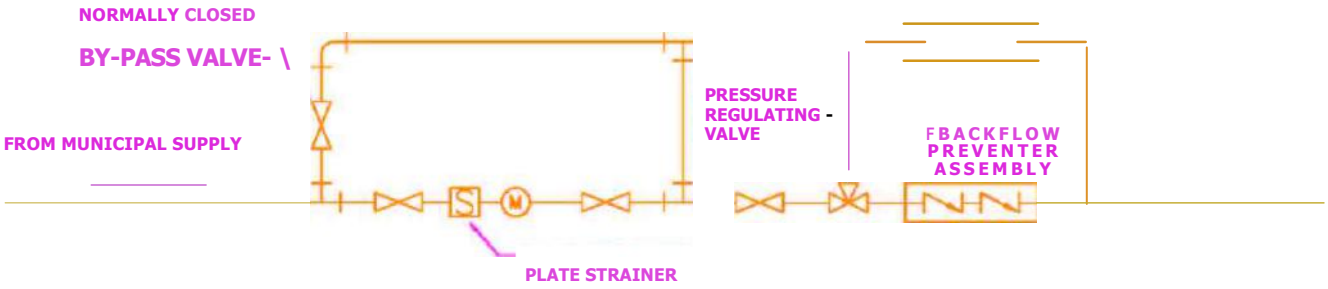
1. _____All plumbing proposed on the permit must be completed.
2. _____All plumbing must be in compliance with the International Residential Code or the International Plumbing Code.

REQUIREMENTS

1.) NO SOLDER JOINTS BEFORE METER OR BY-PASS VALVE.
2.) FOR INSTALLATION REQUIRING BACKFLOW PREVENTION, THE SUPPLY MUST BE PROTECTED UNDER ALL CIRCUMSTANCES OF FLOW.

3.) INSTALLATION OF BACKFLOW PREVENTION DEVICES MUST BE IN ACCORDANCE WITH N.Y.S. HEALTH DEPT. SPECIFICATIONS.

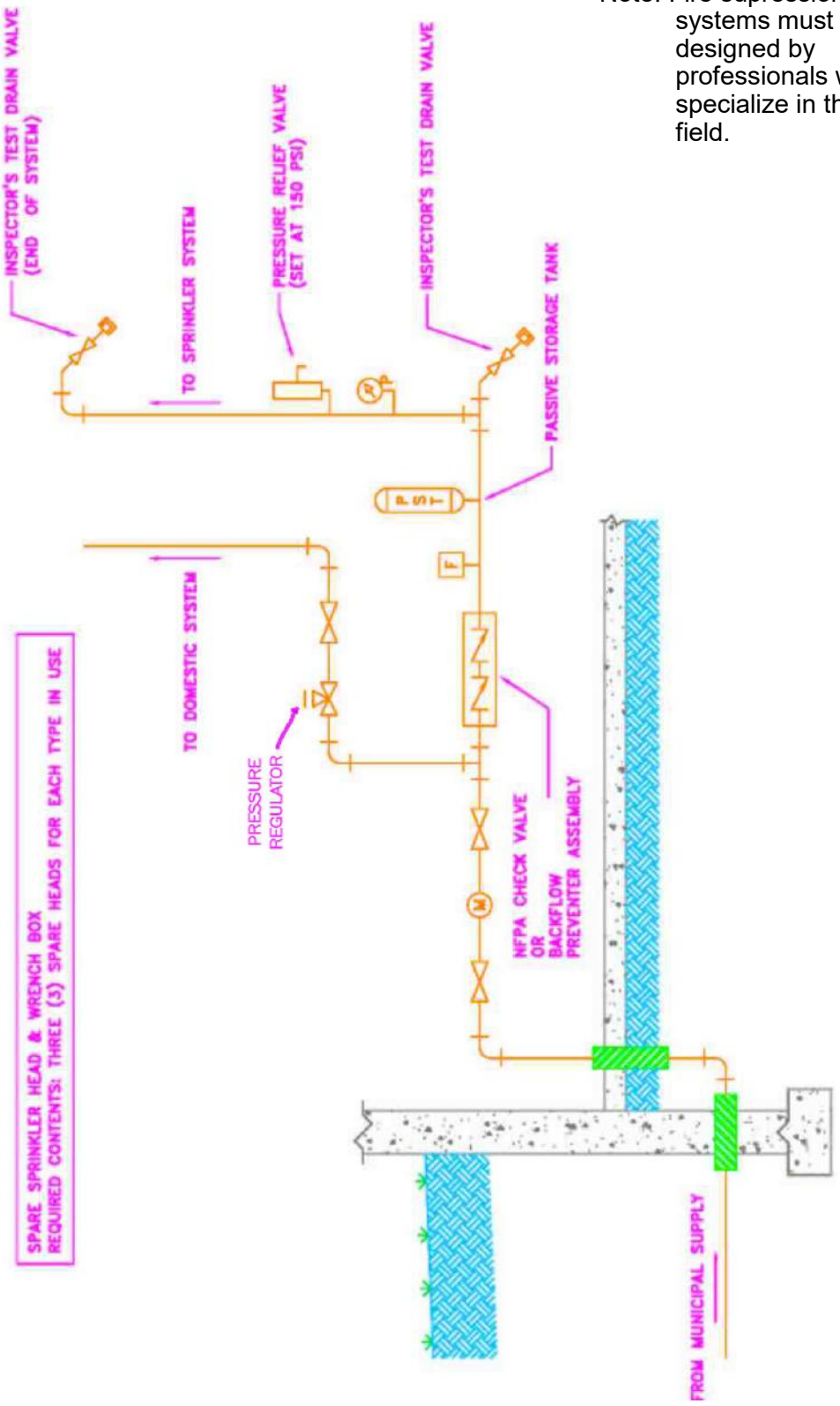
THIS SETTING ASSURES CONTINUED WATER SERVICE DURING REPAIR OF METER ONLY AND NOT DURING REPAIR OF REGULATOR OR BACK FLOW PREVENTOR.



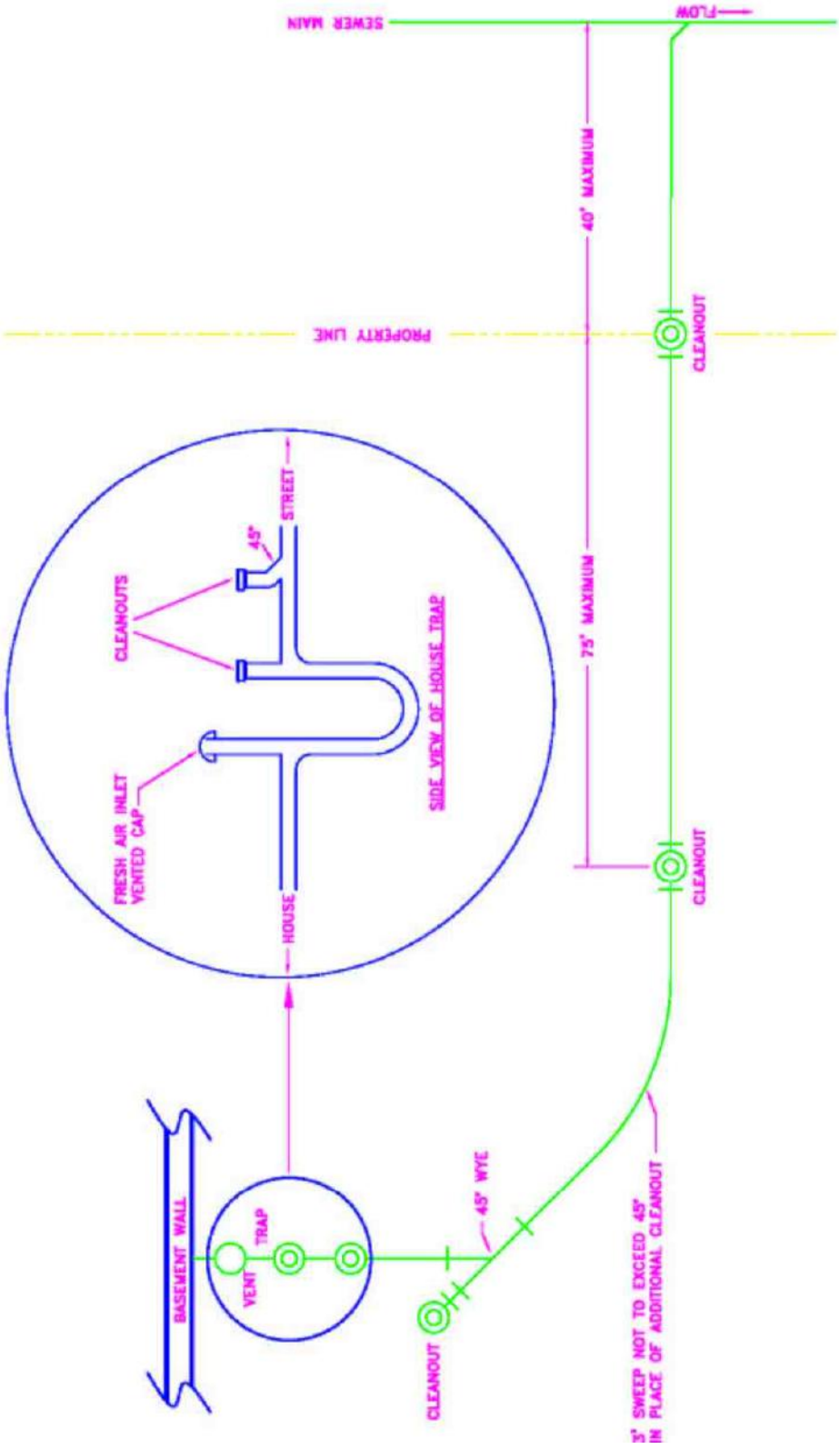
TRENCH SECTION, TYPICAL

METERS
TYPICAL RESIDENTIAL WATER METER AND FIRE SPRINKLER DETAILS

Note: Fire supression systems must be designed by professionals who specialize in the field.

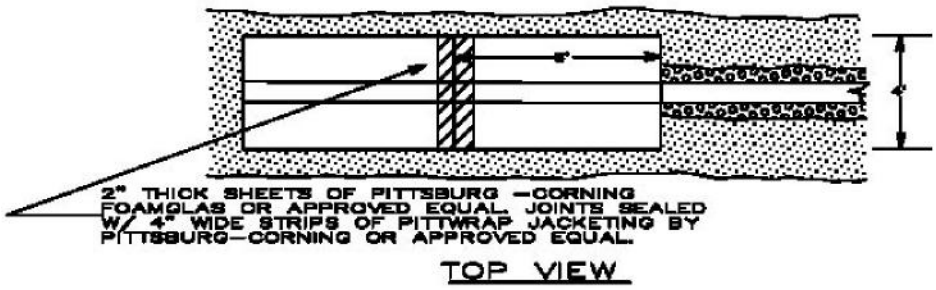


SEWER LATERALS
CLEAN-OUT PLACEMENT AND TRAP INSTALLATION

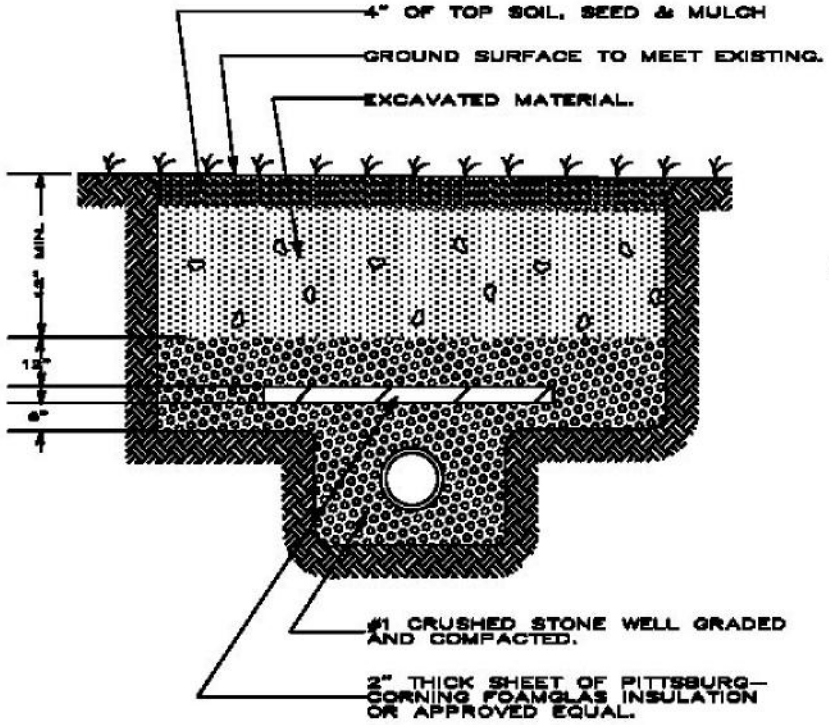


SEWER LATERALS
INSULATION DETAIL FOR WATER OR SEWER PIPE
WITH LESS THAN 54 INCHES OF COVER

NOTE: Any variance from the minimum cover requirements must have prior approval from the municipality having jurisdiction.



TOP VIEW



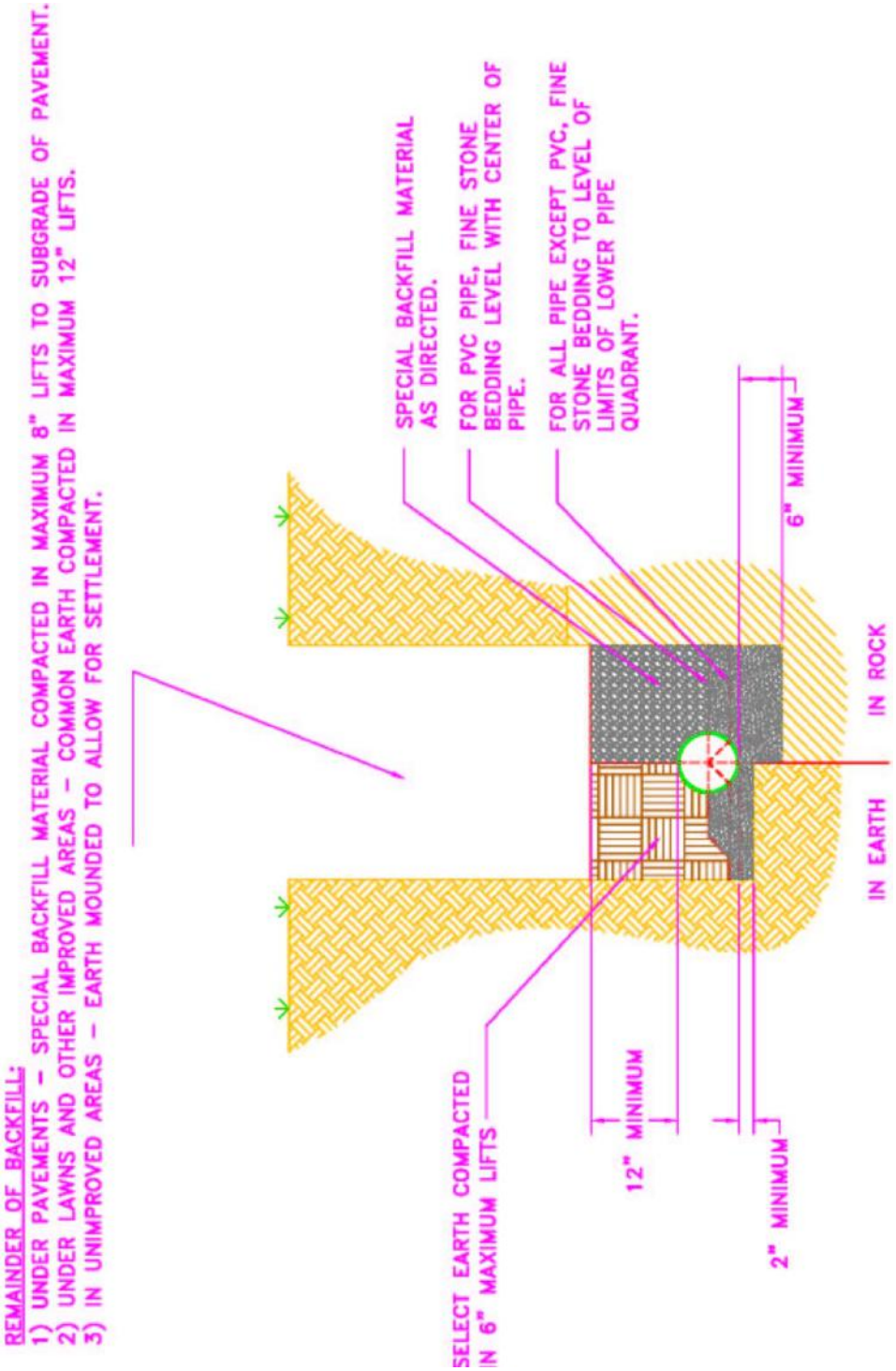
NOTE: THIS INSTALLATION WILL ONLY BE ALLOWED AT THE OPTION OF THE TOWN ENGINEER.

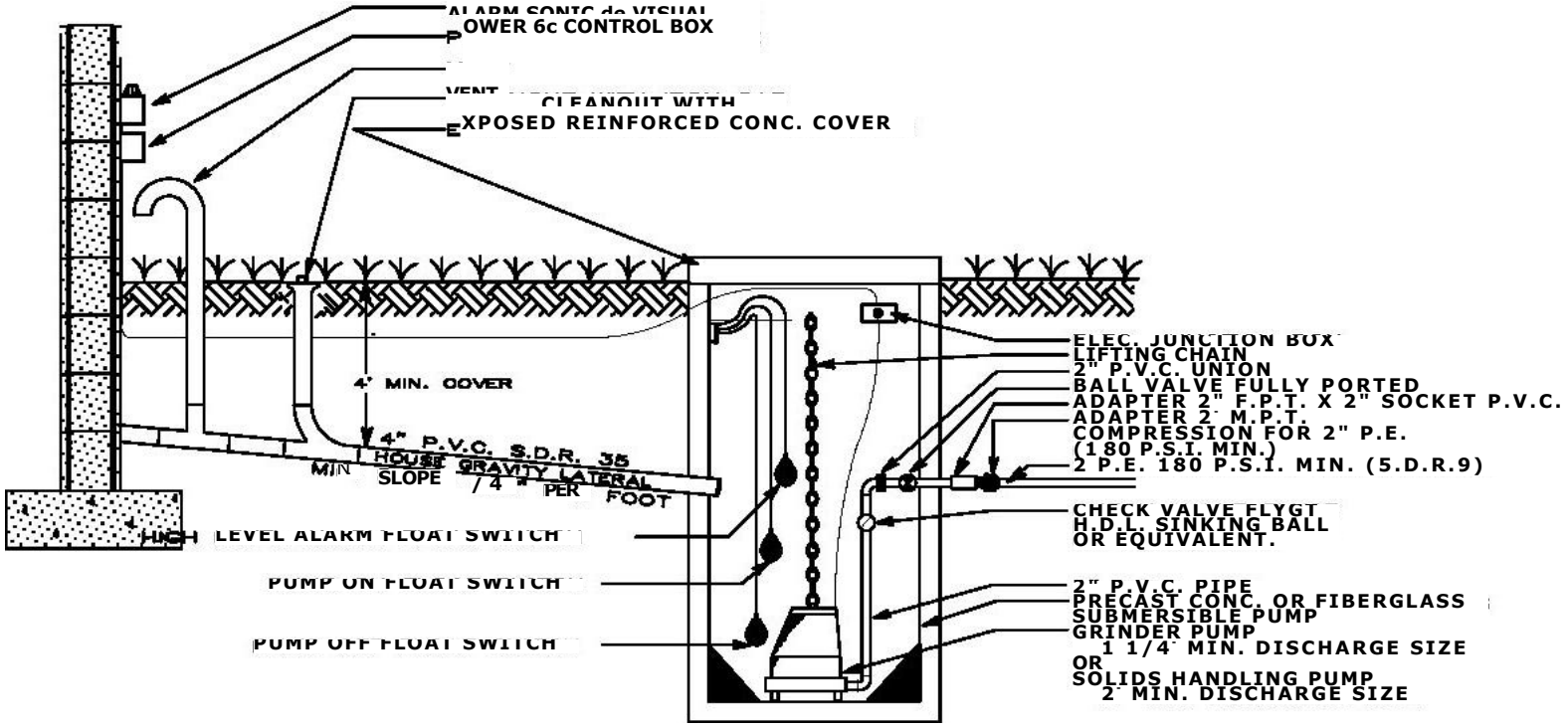
INSULATION DETAIL FOR WATER OR SEWER PIPE WITH LESS THAN 4' OF COVER

(NOT TO SCALE)

GRADE
IRON CAP
4" MINIMUM SDR 35 PVC
45' ELBOW
4½' MINIMUM
PITCH: ¼" PER FOOT MINIMUM
4" MINIMUM LATERAL SDR 35 PVC
FLOW TO SEWER MAIN

SEWER LINES
TYPICAL SEWER LATERAL TRENCH SECTION
FOR PUMP-OUT AND GRAVITY SYSTEMS



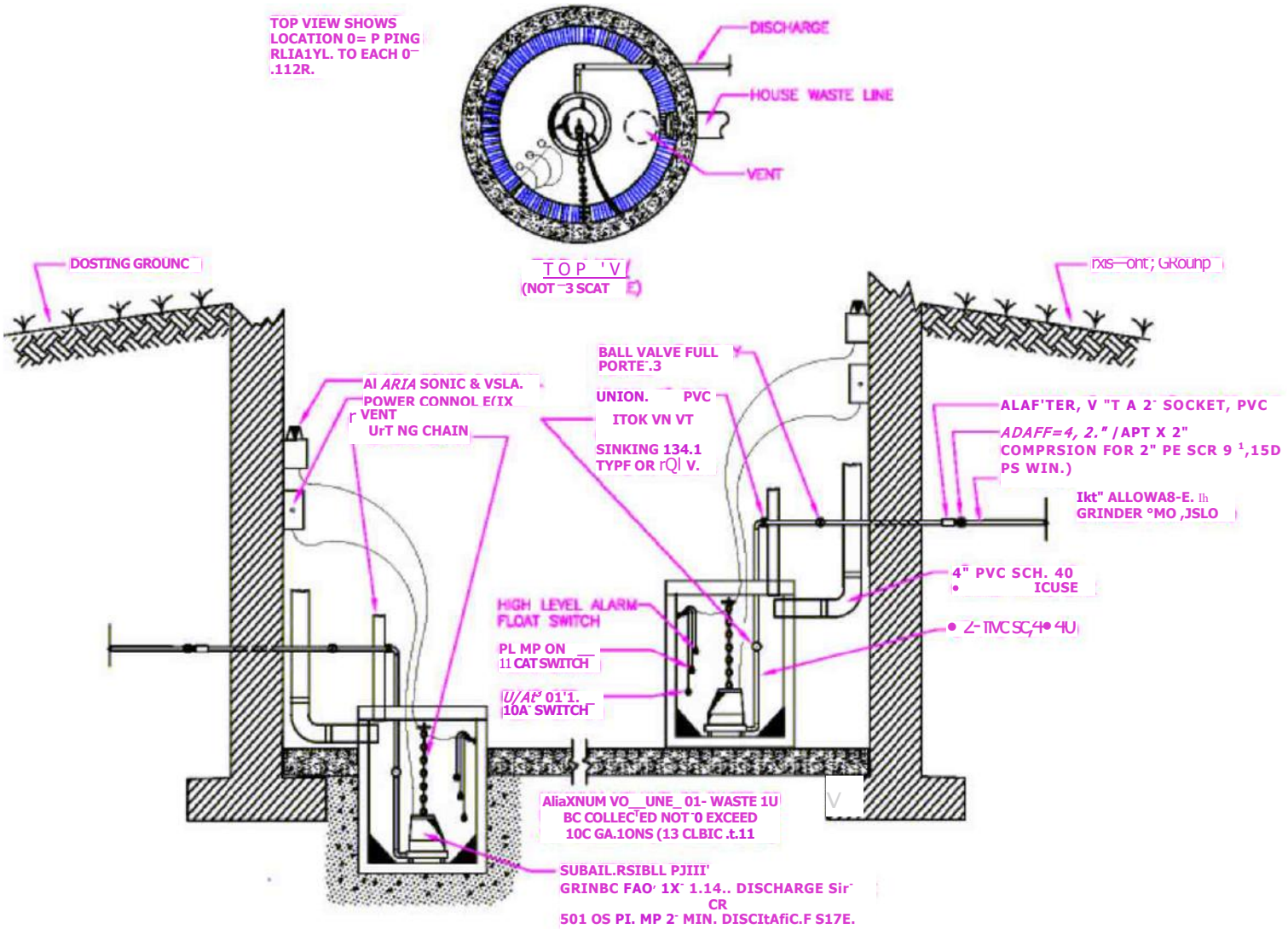


NOTE:
MAXIMUM VOLUME BETWEEN
PUMP ON AND PUMP OFF NOT TO
EXCEED 100 GALLONS (13 CUBIC FEET)

NOTE: IF USING GRINDER PUMP
USE OF 1 1/4" PLUMBING ON
DISCHARGE WILL BE
ALLOWED.

RESIDENTIAL SANITARY SEWER
PUMP OUT SYSTEM
EXTERIOR INSTALLATION

(NOT TO SCALE)

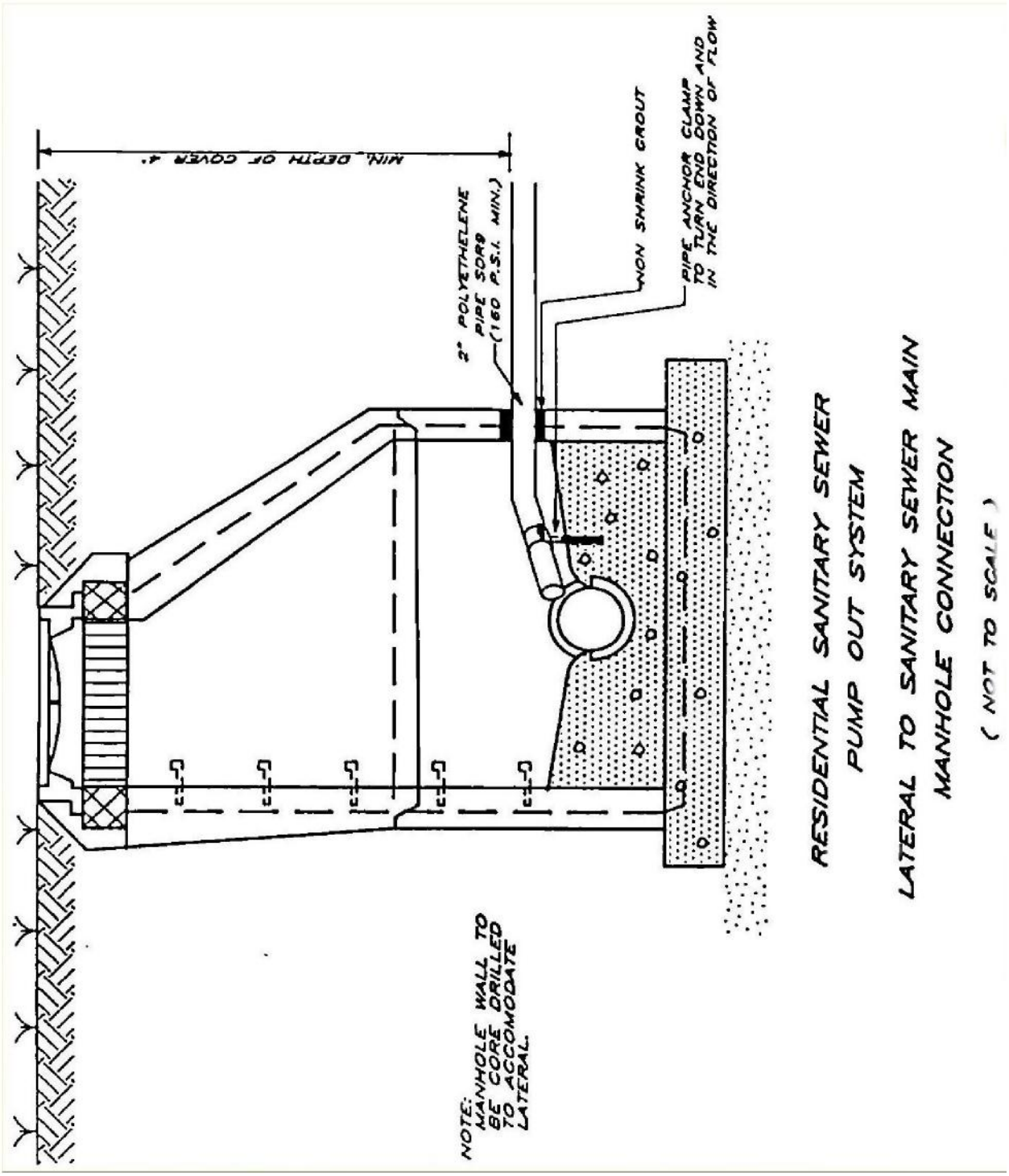


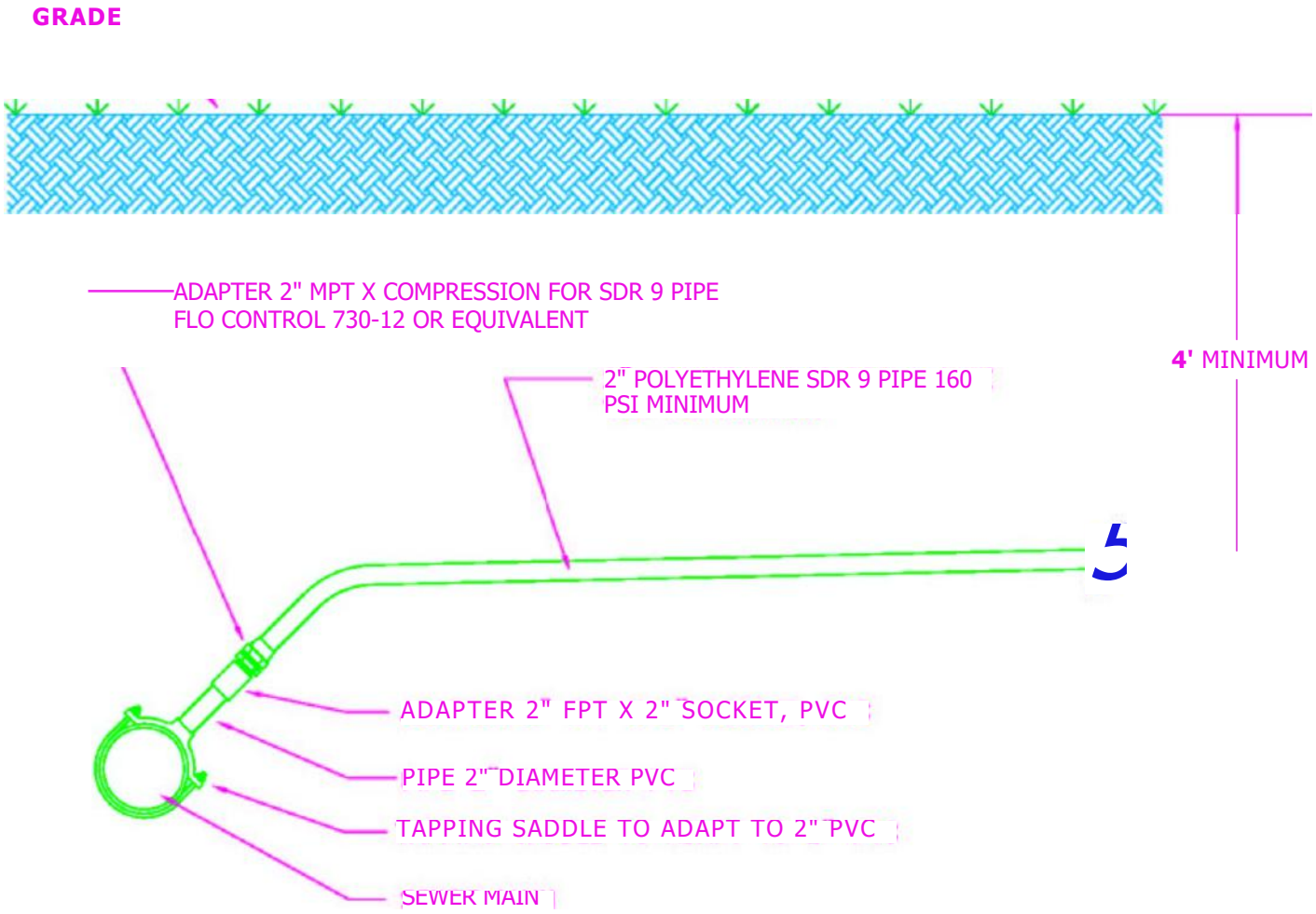
RESIDENTIAL SANITARY SEWER PUMP OUT SYSTEM

INTERIOR INSTAI I ATION

(Nor ro SCAT-ƒ)

RESIDENTIAL SANITARY SEWER PUMP-OUT SYSTEM
LATERAL TO SANITARY SEWER MAIN MANHOLE CONNECTION





RESIDENTIAL UktaTART,UWEREUMP_QUT SYSTEM
TO GRAVITY MAIN CONNECTION
(NOT TO SCALE)