

SECTION 3.40 - PRESSURE BUILDING SEWER SPECIFICATIONS

- A. The Authority in its sole discretion may determine that it is necessary or practical for a property owner to access the Authority's collection sewers by means of a pressure Building Sewer and sewage pump. In such a case a property owner shall enter into a written agreement with the Authority before such a connection is permitted. The agreement shall be in a form approved by the Authority. It shall set forth the terms under which the Authority shall render service through such a connection and shall be filed in the Office of the Recorder of Deeds of Dauphin County. Maintenance of the pressure sewer to the point of connection with the Authority's Service Lateral shall at all times be the responsibility of the property owner. Prior to issuance of a permit, owners may be required to submit to the Authority documentation to enable the Authority to determine whether the proposed installation meets its requirements and whether the sewage pump will serve its intended purpose.
- B. Pressure Building Sewers for single-family residential establishments shall utilize a prefabricated unit which includes a factory-built sewage grinder pump with all associated parts and fittings mounted in a corrosion proof tank and a remote pump control panel mounted at a suitable location inside or outside the home. The unit shall be suitable for use in or near structures and shall be free from noise, odor, or health hazards.
- C. The unit for single-family residential establishments shall have the following characteristics:
1. General - Any grinder pump proposed for use under this section shall:
 - a. have the pumping capacity and be able to meet the head conditions required by the application.
 - b. be capable of reducing all components in normal domestic sewage, including a reasonable amount of "foreign objects", such as paper, wood, plastic, glass, rubber, and the like, to finely divided particles which will pass freely through the pump and the discharge piping.
 - c. be positioned in such a way that solids are fed in an upflow direction.
 2. Pump
 - a. shall be a centrifugal grinder type.
 - b. shall be capable of discharging a minimum of eleven (11) gallons per minute against a normal rated total dynamic head of ninety-two (92) feet.
 - c. Shall utilize a motor with a minimum of two (2) horsepower.
 - d. Pumps not meeting the requirements of 2. a, b, or c may be considered provided the manufacturer or manufacturer's representative [of the proposed unit] submits to the Authority, an executed certification in a form acceptable to the Authority that the proposed pump will serve its intended purpose. The certification may be for an individual property or for an entire project area.
 3. Appurtenances
 - a. Tank - Shall be watertight with a minimum capacity of sixty (60) gallons.

- b. Tank Inlet - Four (4) inches in diameter or as required by the Township of Derry Building Code.
 - c. Discharge Pipe - Shall be a minimum of 1¼ inches in diameter.
 - d. Transition Assembly - A transition assembly shall be located between the pump discharge piping and the check valve on the pressure building sewer to accommodate differential settling. The assembly shall consist of either:
 - 1. Mueller pack joint connections with appropriate adapters/couplings on each end with an HDPE SIDR 7, 1½ inches in diameter insert, three (3) feet in length.
 - 2. A pre-engineered and assembled unit supplied by the grinder pump manufacturer.
 - e. Pump Control Panel - Shall be constructed in accordance with the requirements of the Underwriter's Laboratory or other nationally recognized certification agency and shall be appropriately labeled.
 - f. Alarms - As a minimum, the unit shall be provided with an alarm to indicate a high water condition. Outside panels should have a visual signal, inside panels should have an audible signal.
 - g. Service - The manufacturer of the grinder pump shall have an authorized service representative within a 100-mile radius of Hershey, PA.
- D. Pressure systems for other than single-family residential establishments are subject to the review and approval of the Authority's engineer.
- E. Excavation for the grinder pump unit shall be to a depth such that, after installation of the grinder pump unit, the top of the unit shall be flush with or raised above finished grade. The bottom of the excavation shall be level and all loose material shall be removed by hand shoveling. A 6-inch deep layer of gravel or crushed stone, equal to or finer than AASHTO No. 8 (1B), shall be placed in the excavation prior to placement of the grinder pump unit.
- The grinder pump unit shall be weighted and anchored with a concrete anti floatation collar. The concrete shall have a minimum strength of 2,500 psi and shall be of sufficient weight and mass, based on the unit manufacturer's recommendations to prevent floatation of the grinder pump unit.
- The grinder pump unit shall be leveled on the gravel base and rotated for proper alignment with the gravity Building Sewer, pressure Building Sewer, and electrical service connection. Backfill around the grinder pump unit and for a depth of one (1) foot above the discharge pipe shall be AASHTO No. 8 (1B) stone, as required. Care shall be taken to bring the fill up evenly around the grinder pump unit. Rock, wood, or other debris shall not be used as backfill. After stone backfill has been placed around the unit to a depth of one (1) foot above the discharge pipe, then clean earth fill may be used to complete the backfill operation to the ground surface.
- F. The pressure building sewer shall have a minimum diameter of 1 ¼ inches and shall be either:
- 1. PVC (polyvinyl chloride)

- a. Pipe class SDR 21 PVC (200 psi), with rubber gasket joints. Glued joints are not acceptable.
 - b. Thrust blocks shall be provided for all fittings and at all locations where horizontal and/or vertical deflections are made. They shall be constructed in accordance with a detail drawing by the Authority's engineer.
 - c. Fittings, adapters, valves, and other piping appurtenances shall be in strict accordance with the recommendations of the pipe manufacturer.
2. HDPE (high density polyethylene)
- a. Pipe Class SDR 7 (200 psi), supplied in sufficient lengths to avoid joints.
 - b. Pipe materials shall have a PPI/ASTM standard thermoplastic designation code of PE3408 and a material classification code conforming to grade P34 for ASTM D-3350
 - c. Fittings, adapters, valves, and other piping appurtenances shall be in strict accordance with the recommendations of the pipe manufacturer.
 - d. Field splices, if required, shall be in accordance with ASTM D-3261 (butt heat fusion) or with pipe manufacturers approved electrofusion fittings manufactured in accordance with ASTM F-1055 and rated at a minimum operating pressure equal to the pipe itself.

The pressure building sewer shall be installed at a depth to provide a minimum of four (4) feet of cover. A minimum of four (4) inches of AASHTO No. 8 (1B) coarse aggregate shall be placed underneath the pipe. Stone backfill shall be placed to a minimum of one (1) foot above the top of the pipe in such a manner so as not to disturb the pipe. Earth dams shall be provided in the pressure Building Sewer trench at locations required by the Authority's inspector.

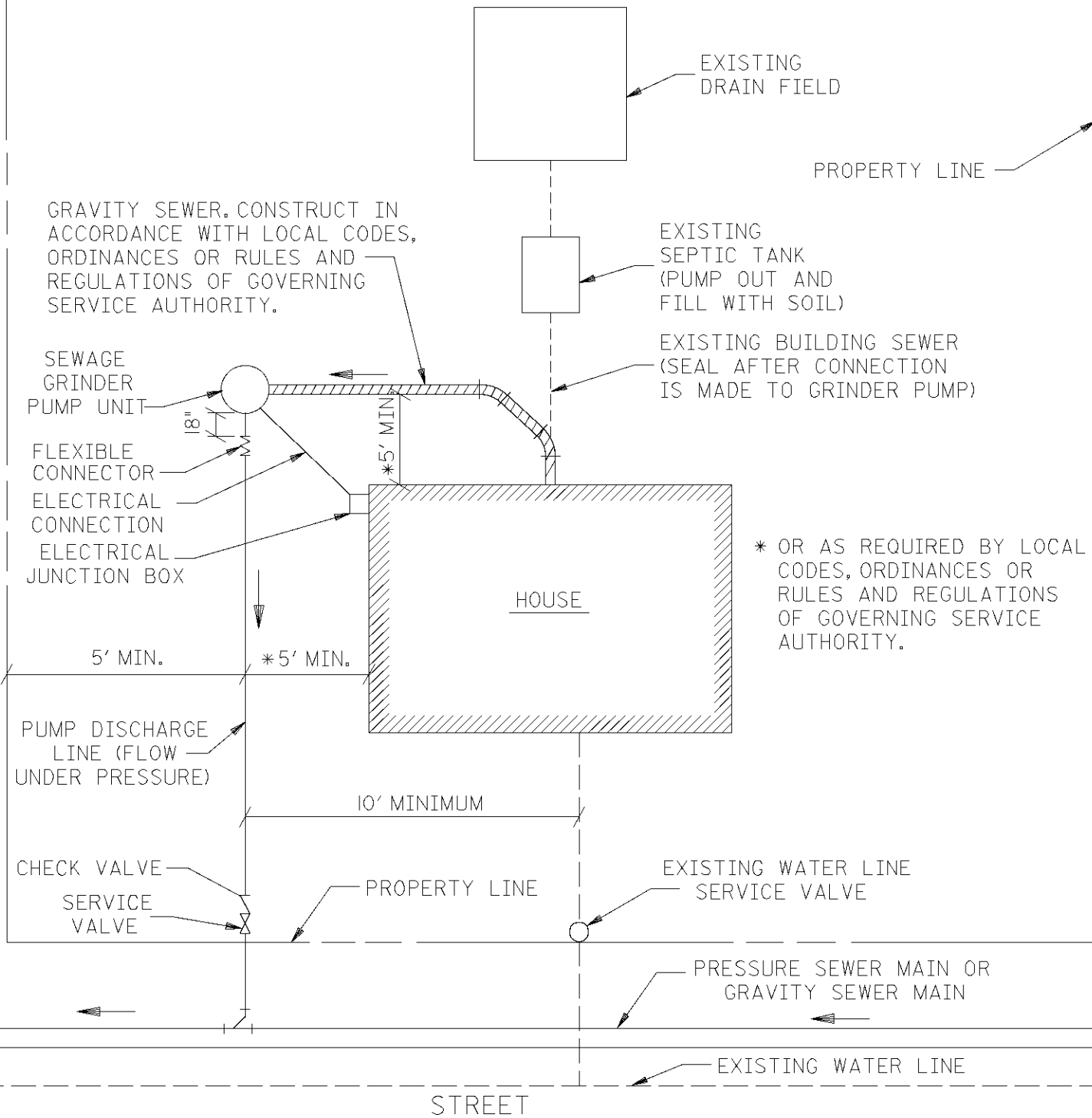
Backfill for the remaining portion of the trench shall be in accordance with the requirements of Section 3.30 for PVC gravity pipe.

In addition, where a pressure Building Sewer and Service Lateral discharge into a force main collection sewer, a curb box and redundant check valve shall be installed unless already provided by the Authority as part of its facilities.

- G. Installation of wiring from the grinder pump unit to the pump control panel and from the pump control panel to the owner's circuit breaker panel or fuse box shall be in accordance with the requirements of all local, state, and national electric codes and the unit manufacturer's recommendations. Underground conduit shall be a minimum of $\frac{3}{4}$ inches in diameter and watertight. A minimum of two (2) feet of cover shall be provided.
- H. For the purposes of early warning and identification of underground wiring and pressure piping during trenching or other excavation, continuous warning tapes shall be provided in all trenches. Tapes shall be buried at a depth of six (6) inches below grade. In pavement, tapes shall be buried six (6) inches below the top of the subgrade. The underground warning tape shall be a magnetic polyethylene tape, three (3) inches in width with one (1) inch minimum lettering.

- I. The gravity portion of the Building Sewer upstream of the grinder pump basin including traps and cleanouts shall be constructed as provided in Sections 3.30.

- J. Every grinder pump unit and pressure Building Sewer shall be inspected and approved by the Authority prior to connection to the Service Lateral. The pressure Building Sewer shall be hydrostatically tested by the installer in accordance with the procedures and requirements established by the Authority's engineer. If the pressure Building Sewer fails the prescribed test requirements, the installer shall be responsible for determining deficiencies in the materials and/or workmanship and for correcting the same to the satisfaction of the Authority. The installation shall then be retested for conformance with the Authority's requirements.



GRAVITY SEWER. CONSTRUCT IN ACCORDANCE WITH LOCAL CODES, ORDINANCES OR RULES AND REGULATIONS OF GOVERNING SERVICE AUTHORITY.

EXISTING SEPTIC TANK (PUMP OUT AND FILL WITH SOIL)

EXISTING BUILDING SEWER (SEAL AFTER CONNECTION IS MADE TO GRINDER PUMP)

* OR AS REQUIRED BY LOCAL CODES, ORDINANCES OR RULES AND REGULATIONS OF GOVERNING SERVICE AUTHORITY.

SEWAGE GRINDER PUMP UNIT

FLEXIBLE CONNECTOR

ELECTRICAL CONNECTION

ELECTRICAL JUNCTION BOX

HOUSE

5' MIN.

* 5' MIN.

PUMP DISCHARGE LINE (FLOW UNDER PRESSURE)

10' MINIMUM

CHECK VALVE
SERVICE VALVE

PROPERTY LINE

EXISTING WATER LINE SERVICE VALVE

PRESSURE SEWER MAIN OR GRAVITY SEWER MAIN

EXISTING WATER LINE

STREET

LEGEND:

- EXISTING WATER LINE
- EXISTING DRAIN LINE
- ////// BUILDING SEWER
- SGP DISCHARGE LINE
- SGP SEWAGE GRINDER PUMP

NOTE:

DISCHARGE LINE CHECK VALVE AND SERVICE VALVE NOT REQUIRED FOR CONNECTION TO GRAVITY SEWER MAIN



Derry Township Municipal Authority
670 Clearwater Road - Hershey, PA 17033

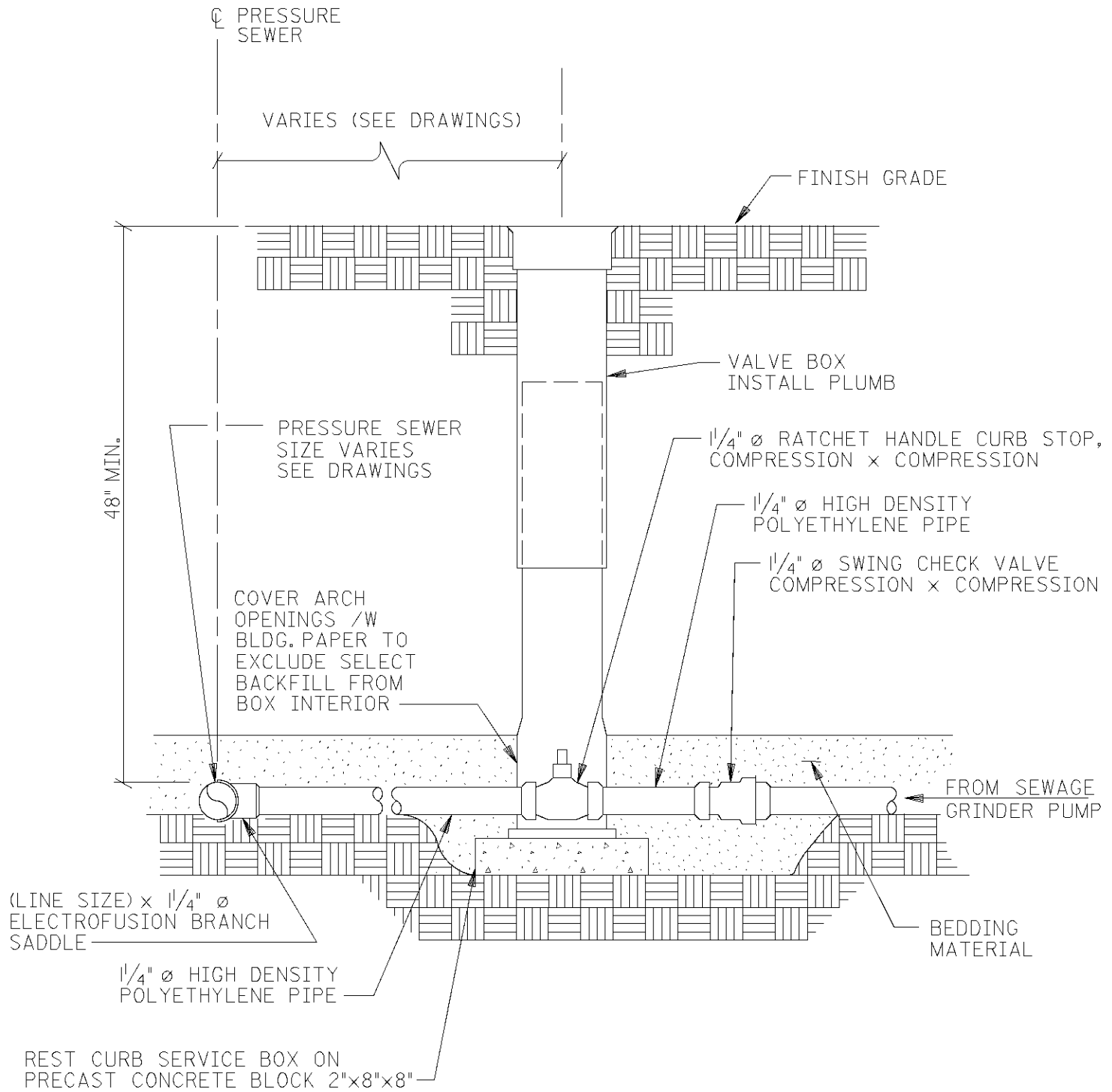
TYPICAL PRESSURE SEWER SERVICE CONNECTION

DRAWING NO.

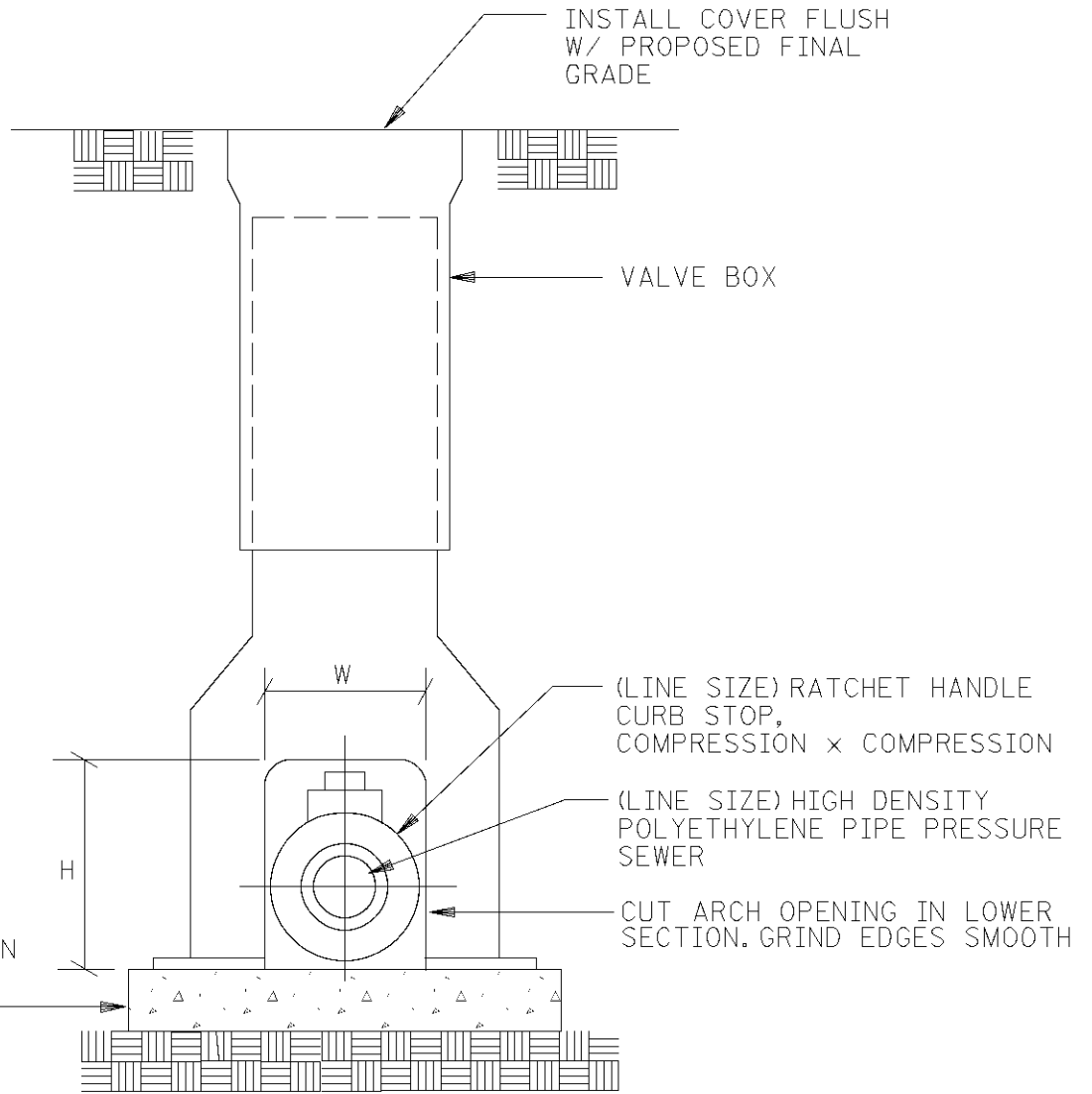
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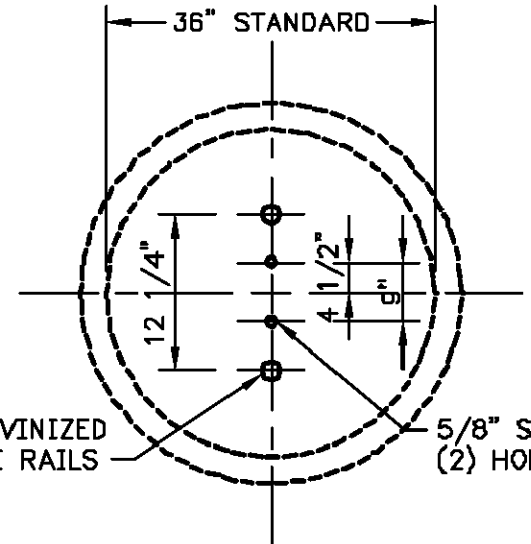
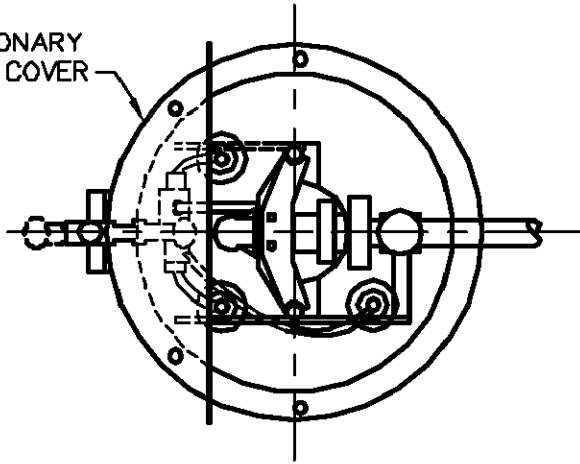
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VALVE SIZE	H	W
1 1/4"	6"	4 1/2"
1 1/2"	6"	4 1/2"
2"	6"	4 1/2"
2 1/2"	6 1/2"	5 1/2"
3"	6 1/2"	6 1/2"



STATIONARY
SUMP COVER



1 1/2" GALVINIZED
PIPE GUIDE RAILS

5/8" STUDS
(2) HOLES

