

Village of Matteson Department of Public Works

Engineering Notes:

[Village Standards](#) [Street Lighting](#)

[Standard Specifications for Water & Sewer Main Construction in Illinois](#)

[Approved Materials for Sanitary Sewer & Storm Sewer Installations](#)

[Approved Materials for Water Main Installations](#)

[Village Approved Hydrant – EJIW Watermaster 5BR250](#)

[Trench Details](#) [Hydrant Detail](#) [Duratron Sac-Nut Modules](#)

[Harrington Integral Hydrant Storz™](#)

[Utility Permit Processing](#)

Governance

The Municipal Code of Ordinances for the Village of Matteson along with the latest editions of the “Standard Specifications for Road and Bridge Construction” prepared by the Illinois Department of Transportation (IDOT), the “Standard Specifications for Water and Sewer Main Construction in Illinois” prepared by the Illinois Environmental Protection Agency (IEPA), the American Water Works Association Manual (AWWA), the American Society for Testing and Materials Standards (ASTM) and the Ordinances of the Metropolitan Water Reclamation District of Greater Chicago shall govern the construction of all improvements except as modified or permitted by the Village Engineer.

[Matteson's Codes of Ordinances](#)

[IDOT - Standard Specifications/ Highway Standards](#)

[MWRDGC - Metropolitan Water Reclamation District of Greater Chicago](#)

Plan Preparation

Plans shall be prepared on 36 in. x 24 in. (full-sized) working sheets for the preliminary and pre-final and final design stages. To provide consistency in the submittals of plans, the sheets should typically be assembled in the recommended sequence as follows:

1. **Cover Sheet;** Location map, vicinity map, scale, North Arrow, Engineer's title block, project title block, USGS benchmark, Professional Engineer seal and signature, Insurance and indemnifications, revision dates, previous detention permit number(s), Owner, Professional Design Firm number, contacts, Village of Matteson's zoning for property, project number, drainage certificates, applicable permits, project's gross area and sheet index.
2. **General Notes;** Applicable project notes, Village of Matteson Engineering notes, MWRD notes, storm sewer, sanitary sewer and water main notes, abbreviations, drawing legend for existing and proposed work and roadway typical sections.
3. **Summary of Quantities;** earth excavation, embankment, pavement improvements, underground improvements, trench backfill, erosion control and lighting improvements.

4. **Topographical Survey;** Map scaled at 1" = 50' or less, wetlands, lakes, ponds, normal water elevation, on or near site buildings, existing spot elevations, elevations on site and within 100' of site, lowest floor and lowest point of entry for each building within 100' of improvement, elevation along property lines and at property corners at 50' minimum spacing, elevations at on and off site building corners, finished floor, top of foundation, existing contour lines corresponding with spot elevations, structures, utilities, location of water mains, hydrants, valve boxes, vaults, "B" boxes and services, stubs etc. Legend, North arrow, Professional Land Surveyor's seal and signature, USGS benchmark, drainage and utility easements.
5. **Demolition Plan;** Water service abandonment, sanitary service abandonment, silt fence and soil erosion plan, building structures to be demolished, site clearing and grubbing proposed, soil remediation proposed, existing well to be abandoned, existing septic to be abandoned and other utilities to be abandoned.
6. **Geometric Plan;** Lot dimensions, building or structure dimensions, parking area dimensions, turning radii, alignments, ties, benchmarks, vertical curve data, horizontal curb datum and control points. Show schematics for reference tie locations which will include: the applicable centerline station, applicable control tie(s) and the complete description of the features used to determine the other facilities.
7. **Grading Plan;** Storm water submittal requirements, general topographic Information, location of wetlands, lakes, ponds with normal water elevation noted. Top of floor elevation, corner spot elevation of all existing buildings on or adjacent to site. Existing spot elevations on site and within 100' of site, identification of lowest floor and lowest point of entry for each building, existing and proposed elevations along property lines and at property corners, proposed top of foundation, finish floor and building corner elevations, existing and proposed contour lines corresponding with existing and proposed spot elevations, sidewalk pitches. Location, size rim and invert elevations of existing and proposed storm sewers, manholes, culverts and ditches and other major and minor storm water systems. Proposed spot elevations for curbs, islands, sidewalks and structures.
8. **Storm Water Pollution Prevention Plan;** Obtain National Pollutant Discharge Elimination System (NPDES) Permit Coverage from the appropriate authorities. Provide a comprehensive plan for the development, implementation and maintenance of sediment and erosion control measures at the proposed construction site. The SWPPP shall:

- Define the characteristics of the site and the type of construction which is proposed.
 - Describe the site plan for the facility to be constructed.
 - Describe the practices that will be implemented to control erosion and the release of pollutants in storm water.
 - Describe the final stabilization/termination design to minimize erosion and prevent storm water impacts after construction is complete.
 - Identify the person(s) responsible for implementing and maintaining the SWPPP during construction.
 - Description of storm water management controls and various Best Management Practices (BMPs) necessary to reduce erosion, sediment And pollutants in storm water discharge.
 - BMP Design Criteria (soil type, vegetation and land cover conditions, contributory drainage area, sizing and effectiveness calculations, etc.)
9. **Utility Plan;** Potable water system, location and size(s) of existing water mains, hydrants, valve boxes, vaults, "B" boxes and services. Water main extensions, horizontal and vertical separation, utility crossing information, hydrant spacing (300'), valve locations, location and size of fire line, location and size of domestic service(s), separate valves for fire line and domestic service(s), delineate trench backfill areas. Location, size, rim and invert elevations of existing sanitary or combined sewers, manholes, services and stubs. Manhole maximum spacing (400'), locations of water main quality pipe identified. Location, slope, size and inverts of proposed sanitary service(s). Location of existing utility poles, electrical wires, pipelines communication lines, etc.
10. **Provide MWRD Sanitary Sewer Routing Map for improvement;**
Where applicable, provide routing map of proposed improvement sanitary sewer relative to the existing MWRD sanitary alignment.
11. **Plan/Profile Sheets**
12. **Construction Detail Sheets;** Include all relevant IDOT Highway and IEPA Standards for the construction of project. In addition, provide project specific details as required, which may not be standardized or illustrated in the IDOT Highway and IEPA design standards.

Traffic Control

Traffic control shall be in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, the applicable guidelines contained in the Illinois Manual of Uniform Traffic Control Devices for Streets and Highways.

To ensure a prompt response to incidents involving the integrity of work zone traffic control, the trade contractor shall provide a telephone number where a responsible individual can be contacted 24 hours-a-day.

When the Village Engineer is notified, or determines a traffic control deficiency exists, he/she will notify the trade contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the trade contractor, will be from ½ hour to 12 hours based upon the urgency of the situation and the nature of the deficiency. The Village Engineer shall be the sole judge.

If the trade contractor fails to correct a deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with notification to the trade contractor and end with the Engineer's acceptance of the correction. The daily monetary deduction will be either \$1000.00 or 0.05 percent of the contract value, whichever is greater. For those deficiencies where corrective action was not an option this monetary deduction will be immediate. In addition, if the trade contractor fails to respond, the Village Engineer may correct the deficiency and the cost thereof will be deducted from monies due or which may become due the trade contractor. This corrective action will in no way relieve the trade contractor of his/her contractual requirements or responsibilities.

[Illinois Manual of Uniform Traffic Control Devices](#)

[Work Zone Quality Standards](#)

Materials Testing and Inspection

Certification: All valves, hydrants, gaskets, piping, brass goods, restraints, streetlights, conduit, underground wiring and catalog cuts proposed to be used shall be approved by the Village Engineer, in writing, prior to constructing. The contractor(s) shall submit certified copies of all reports of tests conducted by independent laboratories before installations of all underground utilities and appurtenances.

The trade contractor shall submit evidence of materials inspection to identify the manufacturer and certifications of the materials incorporated into project. See Project Procedures Guide link for details.

[Project Procedures Guide](#)

Sampling frequencies for materials testing and inspection shall adhere to the latest edition of the "Project Procedures Guide" of the Illinois Department of Transportation except as modified by the Village Engineer.

All concrete construction shall be cured and protected in accordance with the "Index Table of Curing and Protection of Concrete Construction" of Article 1020.13 of the Illinois Department of Transportation Standard Specifications.

General Construction Notes:

1. The contractor shall be responsible for providing liability insurance to protect the Village of Matteson, the developer, the Design Engineering Company and the Design Engineer from all suits and claims made against this project, its design or implementation. Each of the above shall be named in the certificate. The minimum insurance requirements as they refer to the indemnification and insurance requirements are as follows:
 - A. Public liability bodily insurance of not less than one million dollars (\$1,000,000.00) for injuries, including death, to any one person, and subject to the same limit for each person, in an amount of not less than two million (\$2,000,000.00) on account of one accident.
 - B. Public liability property damage insurance in an amount of not less than five hundred thousand dollars (\$500,000.00).
 - C. Automobile public liability bodily injury (\$1,000,000.00/\$2,000,000.00) and

property damage (\$2,000,000.00) limits.

- D. Contractual insurance of the same limits as required under paragraph (A.).
 - E. The contractor shall not be allowed to start construction until certificates of Insurance indemnifying the additional insured have been delivered and approved by the Village of Matteson.
2. A preconstruction meeting for the representatives of the Owner, Design Engineer, Village Engineer and Contractor shall be held prior to the commencement of construction. The Contractor shall prepare and submit a Progress Schedule, IDOT form BC 255, to be used by the Village Engineer and others as an aid in determining the progression of improvements and estimated completion. The preconstruction meeting shall be held at a time and location that is agreeable to all parties for the review of the Contractor's Progress Schedule, utility issues, shop drawings, material certification submittals, emergency contacts and to establish a uniform understanding of the contract work.
 3. One set of Village of Matteson approved Civil plans must be available on construction sites at all times.
 4. All existing pavement to be removed shall be saw cut to full depth along the removal limits.
 5. All removed pavements shall be replaced within one week of their removal unless written permission has been granted by the Village Engineer.
 6. Disturbed parkways shall be restored with (4") of vegetation sustaining topsoil prior to sodding. The areas to be sodded shall be finished according to Section 212 of the latest edition of the Standard Specifications for Road and Bridge Construction prepared by the Illinois Department of Transportation.
 7. The trade contractor shall be responsible for dust control by means acceptable to the Village Engineer. The trade contractor is responsible for debris control and removal for materials deposited onto work sites resulting from construction work.
 8. All trees and stumps to be removed shall be removed to a depth of not less than (12 ") below the elevation of the subgrade, the finished earth surface or the ground line.
 9. Soil erosion control measures shall be implemented prior to any construction operations.

10. All construction sites shall have a stone ingress/egress road with a minimum (6") depth of an approved coarse aggregate.
11. All portland cement concrete pavements shall be vibrated with a surface pan type vibrator or internal vibrator approved by the Engineer according to 420.11 of the Standard Specifications for Road and Bridge Construction.

Hand vibrators shall have a non-metallic head for areas containing epoxy coated reinforcement. The head shall be coated by the manufacturer. The hardness of the non-metallic head shall be less than the epoxy coated reinforcement, resulting in no damage to the epoxy coating. Slip-on covers will not be allowed.

12. Prior to the placement of bituminous surface course: all damaged binder course and concrete curb and/or gutter caused by wear, construction traffic or deterioration shall be repaired to the satisfaction of the Village Engineer.
13. All street pavements shall be constructed in accordance with the design criteria for the various classes as established in the "Bureau of Design and Environment Manual" and "Highway Standards" of the State of Illinois Department of Transportation, latest edition.

Streets shall not be constructed on subgrades having an Illinois Bearing Ratio (I.B.R.) of less than 3.0. If the Soils Report indicates that the support value of the subgrade has a minimum I.B.R. value less than 3.5, or a silt content equal to or greater than ten percent (10%), then an approved non-woven pavement fabric shall be used, along with an open-graded granular base and under drain system connected to the storm sewer as approved by the Village Engineer.

The Village Engineer or his designee shall require subgrade and sub base compaction testing for roadway improvements. The Village Engineer may approve lime stabilization, when soils are compatible, as determined by a geotechnical engineer. The lime shall be mixed to a minimum depth of sixteen inches (16") and meet the Illinois Department of Transportation's Bureau of Materials and Physical Research guidelines for lime stabilized soil mixtures.

Sub base material shall not be placed prior to approval of the subgrade by the Village Engineer. Test rolling may be allowed to verify the stability and uniformity of the subgrade in private developments. The subgrade and base course shall be test rolled by the Owner. The Village Engineer shall be notified a minimum of forty-eight (48) hours prior to the scheduled proof roll. Test rolling shall be performed as follows:

Use a test roller conforming to the following:

- A. A loaded eighteen (18) wheel tractor-trailer truck shall be used and loaded

to a net weight of no less than twenty two (22) tons. An approved scale weight ticket shall be provided.

- B. The tire pressure shall be no less than 90 percent of the manufacturer's recommended maximum inflation.
 - C. Operate equipment at a rate not to exceed 3-5 miles per hour or a comfortable walking pace for the inspector.
 - D. Proof rolling shall be performed in a manner that all areas are loaded with a minimum of one pass.
 - E. Rutting up to ($\frac{3}{4}$ ") is acceptable. Any unstable or deflected subgrade and base courses shall be removed and replaced to the satisfaction of the Village Engineer.
14. Where retaining walls are necessary, a typical detail shall be provided on the civil plans indicating the type, size dimensions and under drain outlet location(s). Additionally, the detail shall specify the design criteria. All retaining walls greater than three feet (3') in height shall be designed and sealed by a registered Illinois Structural Engineer. Additionally, retaining walls greater than three feet (3') in height shall be constructed at a minimum 1:1 slope grading. The ends of the retaining walls shall not exceed a 4:1 transition grading.
15. The existing pavement grades shall be field verified prior to construction. proposed grades shall be adjusted to conform to existing elevation and drainage patterns.
16. The Contractor shall be responsible for providing safe and healthful working conditions throughout the construction the proposed improvements. The minimum safety standards set forth in Public Law 91-596 administered by the Federal Department of Labor Occupational Safety and Health Administration and as further defined in part 1926 of title 29 code of the Federal regulations entitled "Safety and Health Regulations for Construction".
17. The sub divider shall submit three copies of "as built" plans including Global Positioning System (GPS) geometry coordinates to determine the precise location (longitude, latitude and altitude) for all underground utilities and structures. The coordinates shall be integrated with the Village of Matteson's Geographic Information System (GIS), via the Orland Hills reference station (IL KA10 Station), prior to the Village Engineer writing his/her letter recommending acceptance.

Underground Utilities

All storm and sanitary sewers are to be constructed using a laser instrument to maintain line and grade.

SANITARY

1. Metropolitan Water Reclamation District of Greater Chicago Engineering Forms (Detention Schedules, Request for Inspection) may be obtained from the following link.

[MWRDGC Engineering Forms](#)

2. All sanitary sewers including service lines shall be subjected to an air test and applicable deflection tests by the contractor. The Village of Matteson requires an exfiltration test followed by televising. Allowable exfiltration shall not exceed 50 gallons per inch diameter of pipe per mile per day. The contractor shall coordinate all testing so that it can be witnessed by the Village Engineer, Village Public Works Department and the Sanitary District as required.
3. The contractor shall televise all sanitary sewers constructed, by closed circuit television to determine acceptance. Where the tested sewers are found to be unacceptable, the corrections shall be made by the contractor and the televising shall be repeated at the expense of the contractor until satisfactory results are achieved.

Prior to televising, the contractor shall flush and clean all sewers with water. If the sewers are found not to be clean during televising, the contractor will be required to repeat flushing and cleaning of the sewers, followed by televising at the contractor's expense. Any deflections found to exceed (2") in depth shall be repaired or replaced. All testing shall be incidental to the cost of sanitary sewer.

4. Leakage testing shall be performed on all sanitary manholes in accordance with ASTM C1244-02, the standard test method by negative pressure vacuum test. Vacuum testing of each manhole for sewers (36") and less shall be carried out after final surface restoration has been completed. 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 into 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 frame and the seal inflated in accordance with the manufacturer's recommendation.

A vacuum of (10") of mercury shall be drawn and the vacuum pump shut off. With the valves closed, the elapsed time shall be measured for the vacuum to

drop to (9"). The manhole shall pass if the time exceeds 60 seconds for a (48") diameter manhole, 75 seconds for a (60") manhole and 90 seconds for a (72") manhole. Where the manhole fails the initial test, necessary repairs shall be made with a non-shrink grout while the vacuum is being drawn. Retesting shall continue until acceptance.

STORM

1. All field tile encountered during site improvement construction shall be connected to the proposed storm sewer or extended to outlet into a proposed drainage way. If this cannot be achieved the field tile shall be repaired with a new pipe of similar diameter and material to the original line and returned to operational condition. Additionally, an "AS-BUILT" record of the location of all field tiles for on-site drain pipe encountered shall be made by the contractor and submitted to the engineer upon completion of the project.
2. The contractor shall televise all storm sewers constructed, by closed circuit television to determine acceptance. Where the tested sewers are found to be unacceptable, the corrections shall be made by the contractor and the televising shall be repeated at the expense of the contractor until satisfactory results are achieved.

For PVC storm sewers with diameters (24") or smaller, a mandrel drag shall be used for deflection testing. For PVC storm sewers with diameters over (24"), deflection measurements other than by a mandrel drag shall be used.

Prior to televising, the contractor shall flush and clean all sewers with water. If the sewers are found not to be clean during televising, the contractor will be required to repeat flushing and cleaning of the sewers, followed by televising at the contractor's expense. Any pipe found to have a deflection greater than that defined in ASTM D 3034 methodology shall be removed, replaced and retested. All testing shall be considered to be incidental to the cost of storm sewer.

WATER

1. All testing shall be witnessed by the Village Engineer or his designee. Engineering and Regulatory Services 708.283.4948, must be notified forty-eight (48) hours in advance for all inspections; hydrostatic testing, leakage testing, chlorination and water main taps.
2. All temporary and permanent water main shutdowns shall be performed by the Village of Matteson's personnel. A minimum of twenty-four (24) hours notice shall be given to the Public Works Department prior to the scheduled shutdown 708.748.1411.
3. Manholes and "B" boxes incorporated into PCC driveways shall be boxed uniformly with expansion material.
4. All water main valves shall only be operated by the Village of Matteson Department of Public Works with a minimum 48 – hour notification during business days.
5. Fire hydrants, subject to the approval of the Village, shall be equipped with a six-inch auxiliary valve and valve box. All fire hydrants shall be equipped with one 4" steamer connection and one five-inch (5") Harrington Integral Storz fitting port outlet and no hose nozzles.

6. Hydrant caps shall be painted the following colors based on pressure after acceptance by the Village of Matteson.

<u>PRESSURE (psi)</u>	<u>TNEMEC PAINT COLOR</u>	<u>TNEMEC #</u>
0-500	CANDY APPLE RED/SAFETY	06SF
500-1000	TANGERINE ORANGE/SAFETY	04SF
1000-1500	SPEARMINT GREEN/SAFETY	09SF
1500>	TRUE BLUE/SAFETY	11SF
DEAD END MAIN	SILVER BARREL	

HYDRANT COLOR	LEMON YELLOW/SAFETY
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7. All ductile iron water mains shall be wrapped in polyethylene film in accordance with ANSI A21.4 or AWWA C105.
8. All fire hydrants shall be bagged immediately after installation. Bags may be removed after the approved completion of hydrostatic testing and chlorination.
9. The Contractor shall install 4" X 4" X 6' post adjacent to the terminus of the sanitary service, water main service, sanitary manholes, storm manholes, catch basins, inlets and water vaults. The top 2' of said post shall be painted as follows: SANITARY – GREEN, WATER MAIN – BLUE.

APPROVED MATERIALS FOR SANITARY SEWER & STORM SEWER INSTALLATIONS

PRODUCT	MANUFACTURER	SPEC/CLASS/MODEL
PVC GRAVITY SEWER PIPE ¹ (4"-15")	IPEX Diamond Royal Pipe National Pipe JM Manufacturing	ASTM D-3034/SDR 35/ASTM F-1760 ASTM D-3034 SDR-35, F789-PS46 ASTM D-3034 SDR-35, F789-PS46 ASTM D-3034 SDR-35, F789-PS46 ASTM D-3034 SDR-35, F789-PS46
PVC CLOSED PROFILE GRAVITY SEWER PIPE High Capacity (18" - 48")	Con-Tech Diamond Lamson-Vylon	ASTM F1803, F794 UNIB9 ASTM F1803, F794 UNIB9 ASTM F1803, F794 UNIB9
PVC PRESSURE SEWER PIPE	National Pipe JM Mfg. IPEX Royal Pipe Diamond	ASTM D-2241, SDR-18, C-900 ASTM D-2241, SDR-18, C-900, Blue Brute ASTM D-2241, SDR-18, C-900 ASTM D-2241, SDR-18, C-900 ASTM D-2241, SDR-18, C-900
HIGH DENSITY POLYETHYLENE PIPE Fusion Welded, Solid Wall	Gulf Performance Spirolite	ASTM F894 ASTM F894 ASTM F894
DUCTILE IRON SEWER PIPE	Griffin Pipe Atlantic States US Pipe	H2 Sewer Safe with SewperCoat Lined, Tyton, Class 52 Coating 401, ASTM A-746 Protecto 401 Pipe & Fittings

¹ Note: PVC Pipe 4"-27": Minimum Cover of 3.5 feet
C-900 PVC SDR-18 is allowed for deep or shallow installation: Minimum Cover of 2.0 feet
Polyethylene and Concrete Pipe: Minimum Cover of 3.0 feet
All PVC pipe shall have retained gaskets, O-rings are not allowed.

APPROVED MATERIALS FOR SANITARY SEWER & STORM SEWER INSTALLATIONS

PRODUCT	MANUFACTURER	SPEC/CLASS/MODEL
PRESTRESSED CONCRETE PRESSURE PIPE	IDOT – MISTIC APPROVED SOURCE LISTING	AWWA C-301 Steel Cylinder Type AWWA C-301 Steel Cylinder Type
REINFORCED CONCRETE SEWER PIPE	IDOT – MISTIC APPROVED SOURCE LISTING	ASTM C-76, Class V
FIBERGLASS SEWER PIPE	Ameron Ciba-Geigy	Glass Fiber Reinforced Thermosettin Resin, ASTM-3262 Glass Fiber Reinforced Thermosettin Resin, ASTM-3262
STORM DRAIN PIPE	ADS Con-Tech ETI Inc. Hancor	AASHTO M252 and M294, N-12, HDPE, Type S ASTM F949 AASHTO M 304M, ASTM F949, Ultra-Corr AASHTO 14252, ASTM F477, Sure Lok, Type S
PVC FITTINGS	Harco (Harrington Co.) GPK Products Multi IPEX Harco (Harrington Co.)	ASTM F1336 ASTM F1336 ASTM F1336 ASTM F1336 C-900 to PVC SDR-35, Adapter #337 Series
MANHOLE CASTINGS, FRAMES, COVERS & RISERS ASTM A48/A48M, AASHTO M105-96, Domestic/NAFTA, 24-1/4" gasketed cover opening with standard 36" frame and old style 24" frame	LeBaron Foundry LeBaron Foundry LeBaron Foundry LeBaron Foundry LeBaron Foundry Neenah Foundry Bibby-Ste Croix Turner	LJ-105 Frame (modified) L24C21 Cover Vented "Storm, Sewer or Water" L2440912Z, CI, 1-1/2" Riser ring L2440914Z, CI, 1-3/4" Riser ring L2440916Z, CI, 2-0" Riser ring C-35 and C-35B Polyethylene Manhole Riser

APPROVED MATERIALS FOR SANITARY SEWER & STORM SEWER INSTALLATIONS

PRODUCT	MANUFACTURER	SPEC/CLASS/MODEL
PRECAST MANHOLES	IDOT – MISTIC APPROVED SOURCE LISTING	ASTM C478 and C361 ASTM C478 and C361 ASTM C478 and C361 ASTM C478 and C361 ASTM C478 and C361 ASTM C478 and C361
MANHOLE STEPS Plastic	American Step Company M.A. Industries	Copolymer Polypropylene ASTM D 4101 with ½" grade 60 steel, ASTM A-496, Epoxy Coating ASTM A-934/A-934M-95 Model PS2-PF-SL
MANHOLE CONNECTIONS	NPC Inc.	ASTM C923
PRECAST SEWER CHIMNEY	IDOT – MISTIC APPROVED SOURCE LISTING	
MANHOLE REHABILITATION	Action Products Marketing Canusa Parsons Environmental	Permaform WrapidSeal
PRECAST STRUCTURES	IDOT – MISTIC APPROVED SOURCE LISTING	
SEWER BRICK	Baltimore Brick Powell & Minnock Brick, Inc. Powell & Minnock Brick, Inc.	Common Hard Solid, ASTM C32, Grade SM Molded (non-frogged), ASTM C32, Grade SM Brockway Modular, Side Molded, ASTM C-32,

APPROVED MATERIALS FOR SANITARY SEWER & STORM SEWER INSTALLATIONS

PRODUCT	MANUFACTURER	SPEC/CLASS/MODEL
GEOTEXTILE	K.F. Brick, Inc.	Grade SM
	Cromwell Concrete Products, Inc.	Red Pavers , ASTM C-32, Grade SM
		Concrete Building Brick (not for inverts or water tables), 2- ¹ / ₄ x 3- ³ / ₈ , x 7- ⁵ / ₈ ASTM C-55, Grade P-II
	Stiles & Hart Brick Company	Solid Brick with S&H Frog, ASTM C-32, Grade SM
	McAvoy Vitrified Brick Co.	2- ¹ / ₄ Cob Set Sewer Brick, ASTM C-32, Grade SS
	Mirafi, Inc.	140N, 4 oz., Filter fabric
	Mirafi, Inc.	500X Stabilization fabric
	TNS Mills, Inc.	TNS R042, 4 oz., Filter fabric
	Contech	C-45NW, 4 oz., Filter fabric
	Contech	C-200, Stabilization fabric (silt fence)
	Linq	130EX and 150EX 4 oz., Filter fabric
	Typar	3151, Filter fabric
	Synthetic Industries, Inc.	GEOTEX 401, Nonwoven
	Synthetic Industries, Inc.	200 ST Stabilization Fabric

APPROVED MATERIALS FOR WATER MAIN INSTALLATIONS

PRODUCT	MANUFACTURER	SPEC/CLASS/MODEL
DUCTILE IRON PIPE	Atlantic States Pipe (McWane) Clow Corporation (McWane) Griffin Pipe Products, Inc. McWane U.S. Pipe & Foundry Co.	Type: Ductile Iron, AWWA C151 Thickness: Class: 52 Joint Type: Push-On Joints, AWWAC111 Gasket: Rubber, AWWA C111 Interior Surface: Cement-mortar lining, double thickness, AWWA C104 Exterior Surface: Asphaltic coating 1-mil thick, AWWA C151
RESTRAINED JOINT PIPE	Clow Corp (McWane) U.S. Pipe & Foundry Co.	AWWA C151, Class-54, Superlock AWWA C151, Class-54, TR-Flex
GRAY IRON OR DUCTILE IRON MJ FITTINGS	Clow Corp (McWane) Griffin Pipe Products, Inc. Sigma Star Pipe Products Tyler Pipe Industries (McWane) U.S. Pipe & Foundry Co.	AWWA C153, CL350, AWWA C110, CL250 AWWA C153, CL350, AWWA C110, CL250 AWWA C153, CL350, AWWA C110, CL250 AWWA C153, CL350, AWWA C110, CL250 AWWA C153, CL350, AWWA C110, CL250 AWWA C153, CL350, AWWA C110, CL250
EPOXY COATED MJ FITTINGS	U.S. Pipe & Foundry Co. Tyler Pipe Industries (McWane) Sigma Infact Corporation	ANSI/AWWA C550, AWWA C116/A21.16 ANSI/AWWA C550, AWWA C116/A21.16 ANSI/AWWA C550, AWWA C116/A21.16 Foster Adapter
BOLTED COUPLINGS	Dresser Ford Smith Blair Muller	Style 253 (2"-16"), Style 38 (18" and larger) Style FC Series No. 441 (2"-16"); No. 411 (18" and larger); No. 413 (transition) Viking Johnson bolt on couplings
JOINT RESTRAINT	EBBA Iron Sales, Inc. EBBA Iron Sales, Inc. Ford Meter Box Co. Ford Meter Box Co. Sigma	Series 1100 Megalug for MJ fitting restraint Series 1700 Megalug for push on pipe restraint Series 1400 Uni-Flange for MJ fitting restraint Series 1450 Uni-Flange for push on pipe joint One Lok (3"-16") 350psi; (18"-24") 250psi

APPROVED MATERIALS FOR WATER MAIN INSTALLATIONS

PRODUCT	MANUFACTURER	SPEC/CLASS/MODEL
	Star Pipe	Heavy Duty Retainer Gland, wedge type only
TAPPING SLEEVES	Ford JCM Industries Powerseal Pipeline Products Romac Smith Blair	"FTSS, FAST" style, all stainless steel incl. flange Model 432 and 452 all stainless steel incl. flange Models 3480 or 3490, stainless steel incl. flange All stainless steel Models 663 or 665, all stainless steel incl. flange
TAPPING GATE VALVES Resilient Seat	Clow Corp. (McWane) M & H Valve Co. (McWane) Kennedy Valve Mfg. Co. Muller Co. U.S. Pipe & Foundry Co. American Flow Control AVK Valves	AWWA C509, C-950, F-6114 AWWA C509, Style 3751 AWWA C509, No. 4950 AWWA C509, T-2360 AWWA C509, Metroseal No. 5860 AWWA C509, Series 2500 AWWA C509, Series 45
GATE VALVES Resilient Seat	American Flow Control Clow Corp (McWane) Kennedy Valve (McWane) Mueller U.S. Pipe & Foundry M & H Valve Co. (McWane) AVK Valves	AWWA C515, Series 2500 – Reduced Wall D.I. AWWA C509, Series 2630 – Cast Iron AWWA C509, Series 2630 – Full Wall Ductile Iron AWWA C515, Series 2630 – Reduced Wall D.I. AWWA C509, Style 8000 – Cast Iron AWWA C515, Style 8000 – Reduced Wall D.I. AWWA C509, Series 2360 – Cast Iron AWWA C515, Series 2360 – Reduced Wall D.I. * AWWA C509, Series A-USPO – Cast Iron AWWA C515, Series A-USPI – Red. Wall D.I. * AWWA C509, Series 4067 – Cast Iron AWWA C515, Series 7000 – Reduced Wall D.I. AWWA C509, Series 25 – Cast Iron AWWA C509, Series 45 – Full Wall Ductile Iron

* Ductile Iron only for valves over 14 inches.

APPROVED MATERIALS FOR WATER MAIN INSTALLATIONS

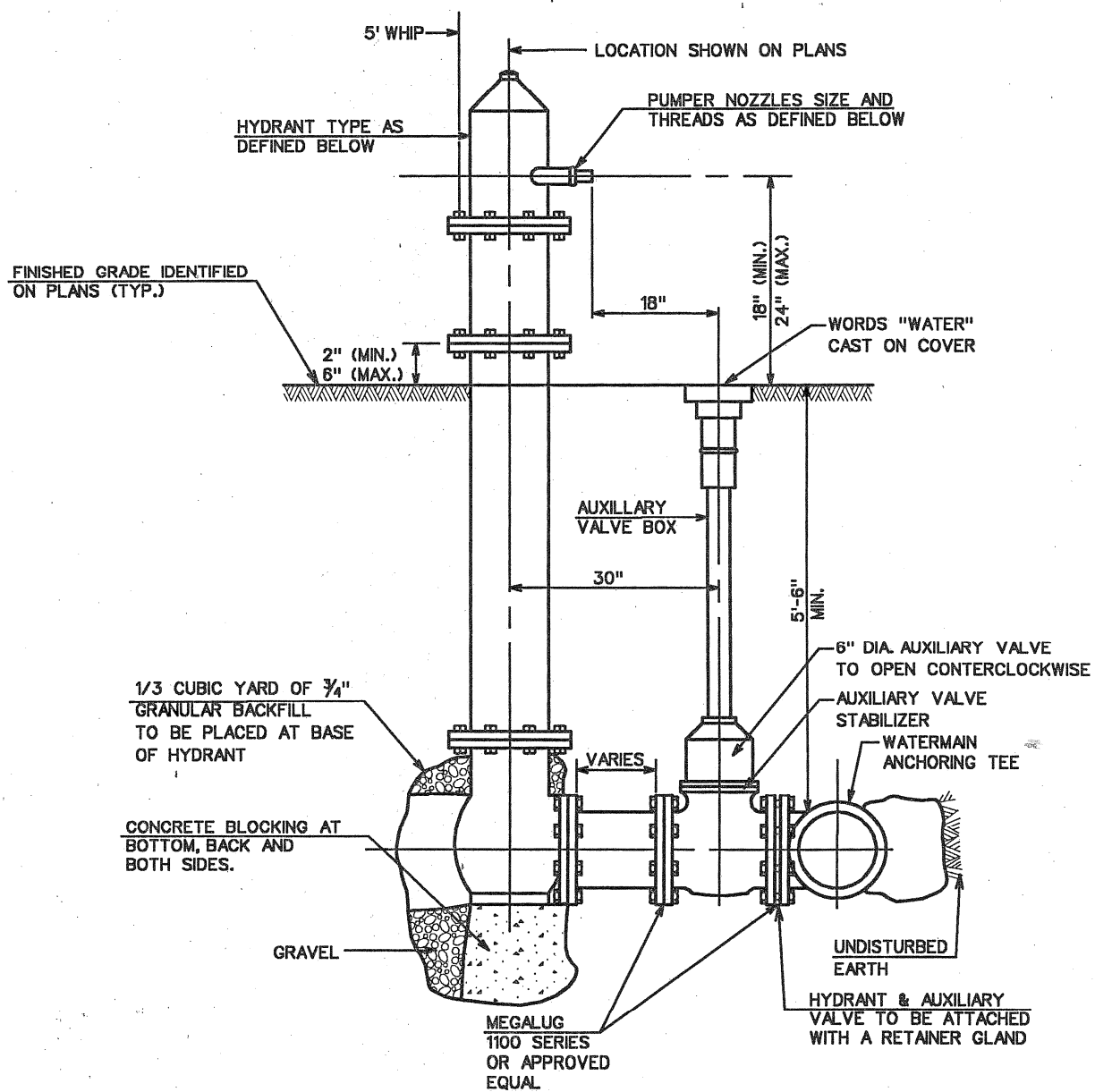
PRODUCT	MANUFACTURER	SPEC/CLASS/MODEL
BUTTERFLY VALVES	Clow Corp. (McWane) Kennedy (McWane) M&H Valve Co. (McWane) Mueller Co. Pratt Co.	AWWA C504, Style 2810 AWWA C504, Model 4500 AWWA C504, Model 4500 AWWA C504, Linesal III B3211 AWWA C504, Groundhog HP250
GATE BOXES	Bibby Ste. Croix Bingham & Taylor	ASTM A126, MDC "Dwyer" Style, Domestic, cover 8-3/8" or 6-3/8" and must read "water"
GATEBOX EXTENSIONS	Bingham & Taylor LaBaron Foundry Co. Turner	ASTM A126, MDC "Dwyer" Style, Domestic ASTM A126, MDC "Dwyer" Style, Domestic Polyethylene
REPAIR CLAMPS	Dresser Pipe Specialties Ford Smith Blair	Style 360 wrap around repair clamp Style FS Series No.'s 226, 227, 228 wrap around repair clamp
HYDRANTS	East Jordan Iron Works, Inc.	Watermaster 5BR250 Fire Hydrant meeting the requirements of AWWA C502 (yellow) with two pumper nozzles.
CORPORATION	Ford McDonald Mueller	AWWA C800 and ASTM B-62; thread x comp. AWWA C800 and ASTM B-62; thread x comp. AWWA C800 and ASTM B-62, Outlet Ball Type, No. B25008 or H15008; thread x compression

APPROVED MATERIALS FOR WATER MAIN INSTALLATIONS

PRODUCT	MANUFACTURER	SPEC/CLASS/MODEL
CURB STOP	Ford McDonald Mueller	AWWA C800 and ASTM B-62, Compression-Ball AWWA C800 and ASTM B-62, Compression-Ball AWWA C800 and ASTM B-62, Compression-Ball Type; B25209 or H15209
CURB BOX or SERVICE BOX and ROD	Mueller Ford (Domestic) Clow (Canada) Bibby Ste. Croix	ISO 9000 or Domestic, Style H-10314, No.1 Erie, Cover to read "water" with 35-inch rod
COPPER TUBING	Cambridge Lee Industries Cerro Halstead Howell Metal Company Mueller Wolverine	ASTM B 88-96, Type "K" soft ASTM B 88-96, Type "K" soft ASTM B 88-96, Type "K" soft ASTM B 88-96, Type "K" soft ASTM B 88-96, Type "K" soft ASTM B 88-96, Type "K" soft
BRASS FITTINGS	Ford McDonald Mueller	AWWA C800 and ASTM B-62 Compression AWWA C800 and ASTM B-62 Compression AWWA C800 and ASTM B-62 Compression
BACKFLOW PREVENTERS	Conbraco Febco Flowmatic Watts Wilkins	AWWA C510, C511 and ASSE AWWA C510, C511 and ASSE AWWA C510, C511 and ASSE AWWA C510, C511 and ASSE AWWA C510, C511 and ASSE
DETECTOR CHECK VALVES	Hersey	Model EDC III (operated by a weighted lever)
METER BOXES (5/8" – 2" meters)	Ford QWP (Quality Water Products)	

APPROVED MATERIALS FOR WATER MAIN INSTALLATIONS

PRODUCT	MANUFACTURER	SPEC/CLASS/MODEL
MANHOLE FRAME, COVER and RISER RINGS	LaBaron Foundry Co. Neenah Foundry Co. Bibby Ste Croix Turner	ASTM A48/A48M, AASHTO M-105-96, Domestic, 24-1/4" cover opening with standard 36" frame and old style 24" frame Polyethylene Manhole Riser
AIR VALVE/ CHLORINATION VALVE INLET	Wedge	



FIRE HYDRANTS SHALL BE EAST JORDAN IRON WORKS WATERMASTER 5-BR, TRAFFIC MODEL WITH BREAK FLANGE HAVING NATIONAL THREADS, HAVING ONE (1) FOUR-INCH (4") STEAMER CONNECTION AND ONE (1) FIVE-INCH (5") HARRINGTON INTEGRAL STORZ FITTING. FIRE HYDRANTS SHALL BE EQUIPPED WITH A SIX-INCH (6") AUXILIARY VALVE AND VALVE BOX.

NOTES:

1. USE MEGALUG OR UNIFLANGES ON THE HYDRANT AND AUXILIARY VALVES.
2. ADD A FIVE FOOT FIBERGLASS MARKING WHIP TO THE HYDRANT.
3. BOLTS TO BE COR-TEN STEEL.
4. HYDRANT TO HAVE A BREAWAY FLANGE, 6" MINIMUM BARREL AND 5" OPERATING VALVE.
5. HYDRANT CAPS SHALL BE FACTORY PAINTED THE FOLLOWING COLORS, BASED ON PRESSURE, AFTER ACCEPTANCE BY THE VILLAGE OF MATTESON FIRE DEPARTMENT:

PRESSURE	TNEMEC PAINT COLOR	TNEMEC NO.
0-500	CANDY APPLE RED/SAFETY	06SF
500-1000	TANGERINE ORANGE/SAFETY	04SF
1000-1500	SPEARMINT GREEN/SAFETY	09SF
1500	TRUE BLUE/SAFETY	11SF
DEAD END MAIN	SILVER BARREL	
HYDRANT COLOR	LEMON YELLOW/SAFETY	02SF

6. VALVE BOX TO BE 3-PIECE SCREW TYPE, 5/4" SHAFT WITH NO. 6 ROUND BASE MUELLER NO. H-10357 OR VILLAGE APPROVED EQUAL.
7. HYDRANT SHALL HAVE DOUBLE STEAMER PORT.

STANDARD HYDRANT ASSEMBLY



STANDARD SPECIFICATIONS FOR WATER & SEWER MAIN CONSTRUCTION IN ILLINOIS

ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS
ILLINOIS MUNICIPAL LEAGUE
THE ASSOCIATED GENERAL CONTRACTORS OF ILLINOIS
UNDERGROUND CONTRACTORS ASSOCIATION

**MAY
1996**
Fifth Edition

AIR TEST TABLE
SPECIFICATION TIME (min:sec) REQUIRED FOR PRESSURE DROP
FROM 3 1/2 TO 2 1/2 PSIG (24 kPag - 17 kPag)
WHEN TESTING ONE PIPE DIAMETER ONLY
PIPE DIAMETER, INCHES (MILIMETERS)

Length of Sewer Pipe In Feet (Meters)	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	15 (380)	18 (450)	21 (525)	24 (600)
25 (7.62)	0:04	0:10	0:18	0:28	0:40	1:02	1:29	2:01	2:38
50 (15.24)	0:09	0:20	0:35	0:55	1:19	2:04	2:58	4:03	5:17
75 (22.87)	0:13	0:30	0:53	1:23	1:59	3:06	4:27	6:04	7:55
100 (30.5)	0:18	0:40	1:10	1:50	2:38	4:08	5:56	8:05	10:34
125 (38.1)	0:22	0:50	1:28	2:18	3:18	5:09	7:26	9:55	11:20
150 (45.7)	0:26	0:59	1:46	2:45	3:58	6:11	8:30		
175 (53.35)	0:31	1:09	2:03	3:13	4:37	7:05			
200 (61)	0:35	1:19	2:21	3:40	5:17				12:06
225 (68.6)	0:40	1:29	2:38	4:08	5:40			10:25	13:36
250 (76.2)	0:44	1:39	2:56	4:35			8:31	11:35	15:07
275 (83.84)	0:48	1:49	3:14	4:43			9:21	12:44	16:38
300 (91.5)	0:53	1:59	3:31				10:12	13:53	18:09
350 (106.7)	1:02	2:19	3:47			8:16	11:54	16:12	21:10
400 (122.0)	1:10	2:38			6:03	9:27	13:36	18:31	24:12
450 (137.2)	1:19	2:50			6:48	10:38	15:19	20:50	27:13
500 (152.5)	1:28			5:14	7:34	11:49	17:01	23:09	30:14

(4) Deflection Limits for Flexible Thermoplastic Pipes:

(a) Deflection of Polyvinyl Chloride (PVC) pipe shall not exceed 5.0% of the "Base I.D." (internal diameter) of the pipe. "Base I.D." shall be calculated in accordance with the following.

$$\text{Avg ID} = \text{Avg OD} - 2(1.06)t$$

$$\text{Tolerance Package} = (A^2 + B^2 + B^2 + C^2)^{1/2}$$

Where:

A = OD Tolerance (ASTM D3034)

B = Excess Wall Thickness Tolerance = 0.06t

C = Out-of-Roundness Tolerance = 0.015 (avg. OD)

t = Minimum Wall Thickness (ASTM D3034)

$$\text{Base ID} = \text{Avg. ID} - \text{Tolerance Package}$$

(b) Deflection of Composite pipe ("Truss" pipe) shall not exceed 3.0% of the average inside diameter (ID) of the pipe in accordance with ASTM D2680.

pressure is defined as the maximum operating pressure of the section under test and is based on the elevation of the lowest point in the line or section under test corrected to the elevation of the test gauge. Applicable provisions of AWWA C-600 and C-603 shall apply. Duration of each leakage test shall be a minimum of one (1) hour in addition to the pressure test period.

(2) Allowable leakage in gallons per hour for pipe line shall not be greater than that determined by the formula:

$$L = \frac{ND \sqrt{P}}{7400} \quad \left(L_m = \frac{ND \sqrt{P}}{130,380} \right)$$

Note: L = Allowable leakage in gallons per hour (liters per hour).
 N = Number of joints in length of pipeline tested.
 D = Nominal diameter of the pipe in inches (millimeters).
 P = Average test pressure during leakage test in pounds per square inch (kPa) gauge.

(3) Leakage is defined as the quantity of water to be supplied in the newly laid pipe or any valved section under test, which is necessary to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled.

(4) Flanged pipe shall be "bottle tight".

41-2.14 DISINFECTION OF WATER MAINS

Any of the methods stated in AWWA Standard C651-92 are accepted as a means of disinfection of water mains.

41-2.14A FLUSHING

Sections of pipe to be disinfected shall first be flushed to remove any solids or contaminated material that may have become lodged in the pipe. If no hydrant is installed at the end of the main, then a tap should be provided large enough to develop a velocity of at least two and five-tenths (2.5) feet per second (.762 meter per second) in the main. A two and one-half (2 1/2) inch (63.5 mm) hydrant opening will, under normal pressures, provide this velocity in pipe sizes up to and including twelve (12) inch (305 mm).

All taps two (2) inch (51 mm) size and smaller required for chlorination or flushing purposes, or for temporary or permanent release of air shall be provided for by the CONTRACTOR as a part of the construction of water mains. Taps larger than two (2) inch (51 mm) shall be paid for as a bid item or as Extra Work.

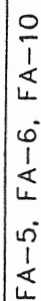
41-2.14B REQUIREMENT OF CHLORINE

Before being placed into service, all new mains and repaired portions of, or extensions to existing mains shall be chlorinated so that the initial chlorine residual is not less than fifty (50) mg/L and that a chlorine residual of not less than twenty-five (25) mg/L remains in the water after standing twenty-four (24) hours in the pipe.

See Section 7-12 "Use of Fire Hydrants" regarding use of water for flushing and disinfection.

WIDTH OF PERMANENT
PAVEMENT REMOVAL
AND REPLACEMENT
FOR PAYMENT PURPOSES

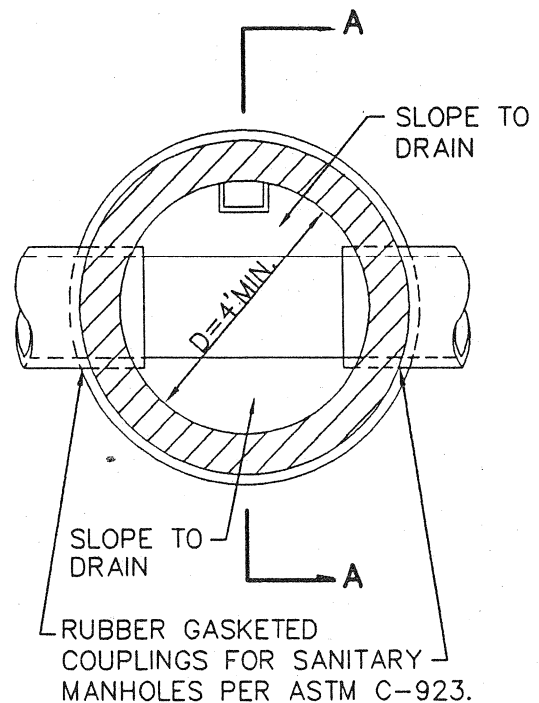
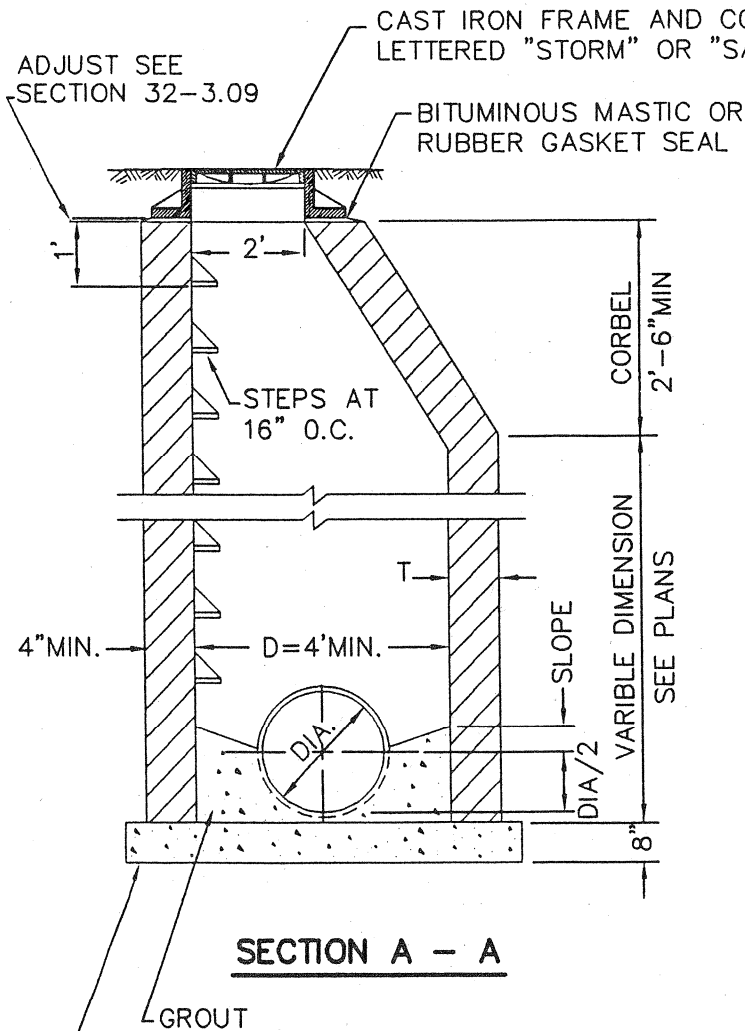
TERMINOLOGY, DIMENSIONS
AND TYPE OF SELECT
MATERIAL, WHEN REQUIRED



NOTE: TRENCH BOX SHALL NOT EXTEND BELOW TOP OF PIPE, HOWEVER IT SHALL NOT EXCEED 2 FEET FROM THE BOTTOM OF THE TRENCH.

DIV.V/STANDARD DRAWING NO.1

MATERIAL WALL THICKNESS (T)
 PRECAST CONC. MIN. 1/12 "D"
 CAST-IN-PLACE CONC. MIN. 6"



SECTION A - A

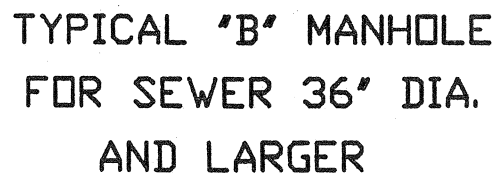
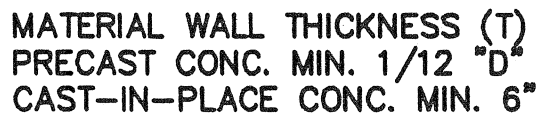
SECTIONAL PLAN

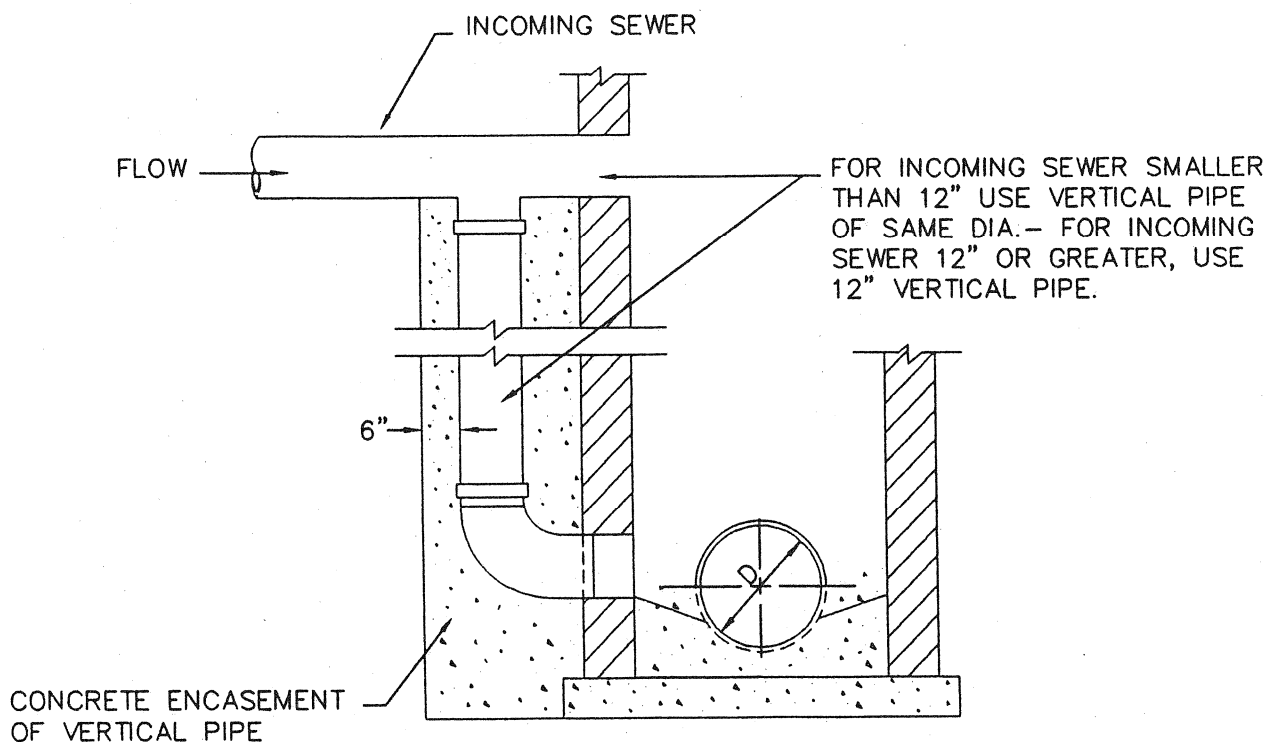
—GROUT
 BOTTOM SLAB: 3500 PSI CONCRETE OR
 PRECAST REINFORCED CONCRETE SLAB ON
 6" SAND CUSHION BOTTOM SLAB, MAY BE
 PRECAST MONOLITHIC WITH MANHOLE WALL
 SECTION

NOTE: STEPS REQUIRED, UNLESS DELETED
 BY SPECIAL PROVISIONS.

NOTE: SEPARATE SANITARY SEWER
 MANHOLES SUBJECT TO SATURATED SOIL
 CONDITIONS OR SURFACE SUBMERGENCE
 SHALL BE EQUIPPED WITH CHIMNEY SEALS
 AND WATER TIGHT MANHOLE COVERS.

**TYPICAL
 MANHOLE TYPE A**





DROP MANHOLE CONNECTION

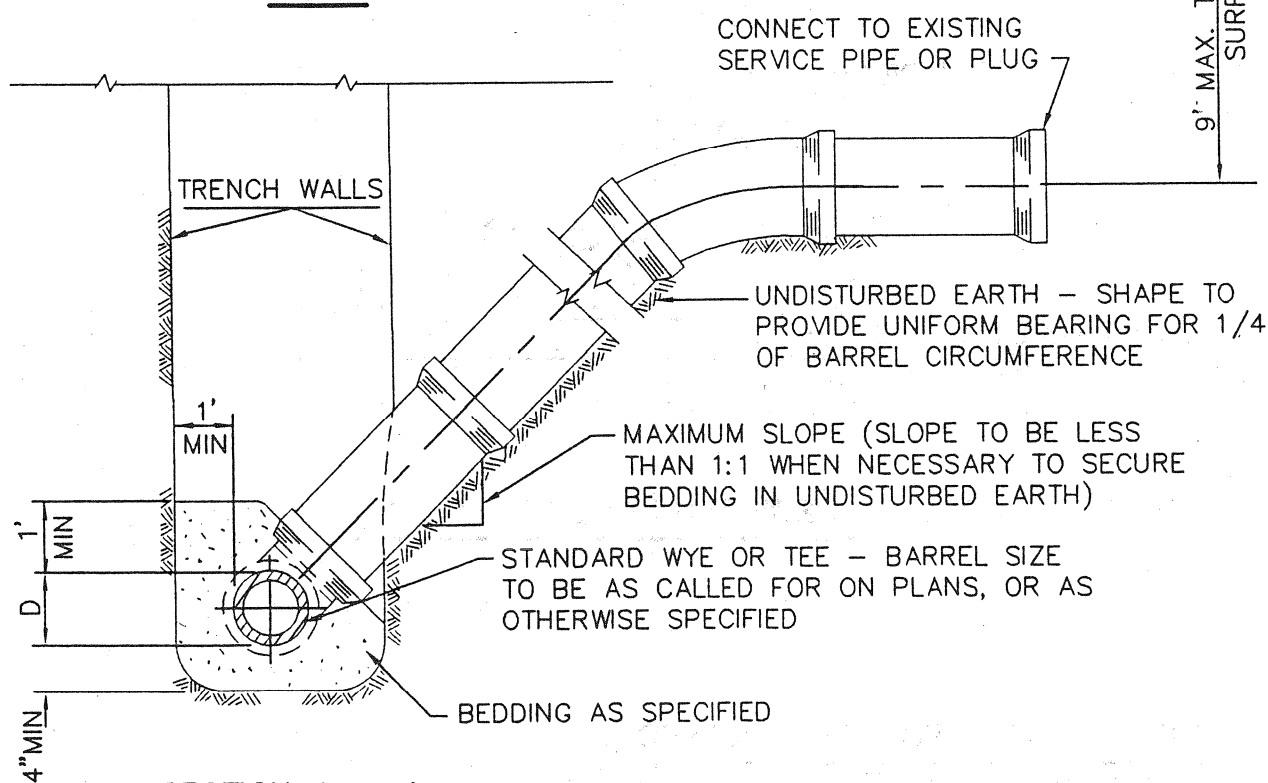
NOTE: PAYMENT FOR DROP MANHOLE CONNECTION TO BE MADE AT CONTRACT UNIT PRICE PER EACH "DROP MANHOLE CONNECTION."

NOTE: TO BE USED IN CONJUNCTION WITH TYPE "A" MANHOLES WHERE SEWER ENTERS 2'-0" OR MORE ABOVE LOWEST INVERT. NOT TO BE USED FOR INLET OR CATCH BASIN CONNECTION.

NOTE: THIS DETAIL APPLIES TO INCOMING SEWERS OF 18" DIAMETER OR LESS.

DROP MANHOLE CONNECTION DETAIL

PLAN

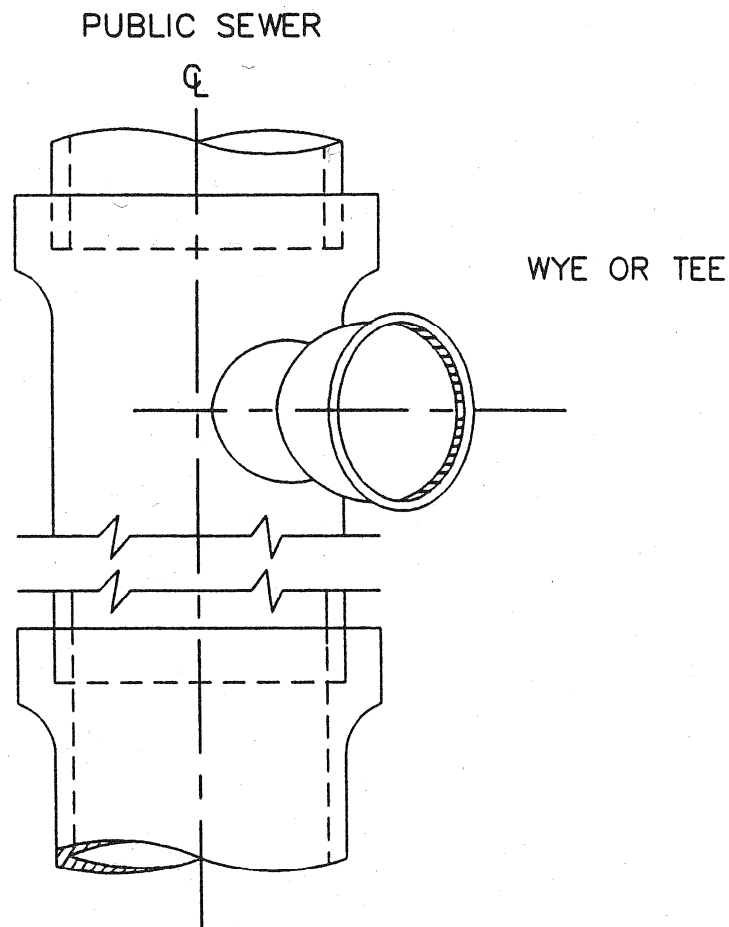


SECTION A - A

NOTE: WHERE SERVICE LINE IS BELOW FORCE
MAIN, CONNECTION IS MADE ABOVE NORMAL
FLOW OF MAIN SEWER.

NOTE: RISERS TO BE CONSTRUCTED IN LIEU OF
WYES WHERE SEWER DEPTH EXCEEDS 12'-0".
FOR PIPE MATERIAL AND CONCRETE SEE
SPECIFICATIONS.

TYPICAL
RISER FOR
SERVICE LATERAL



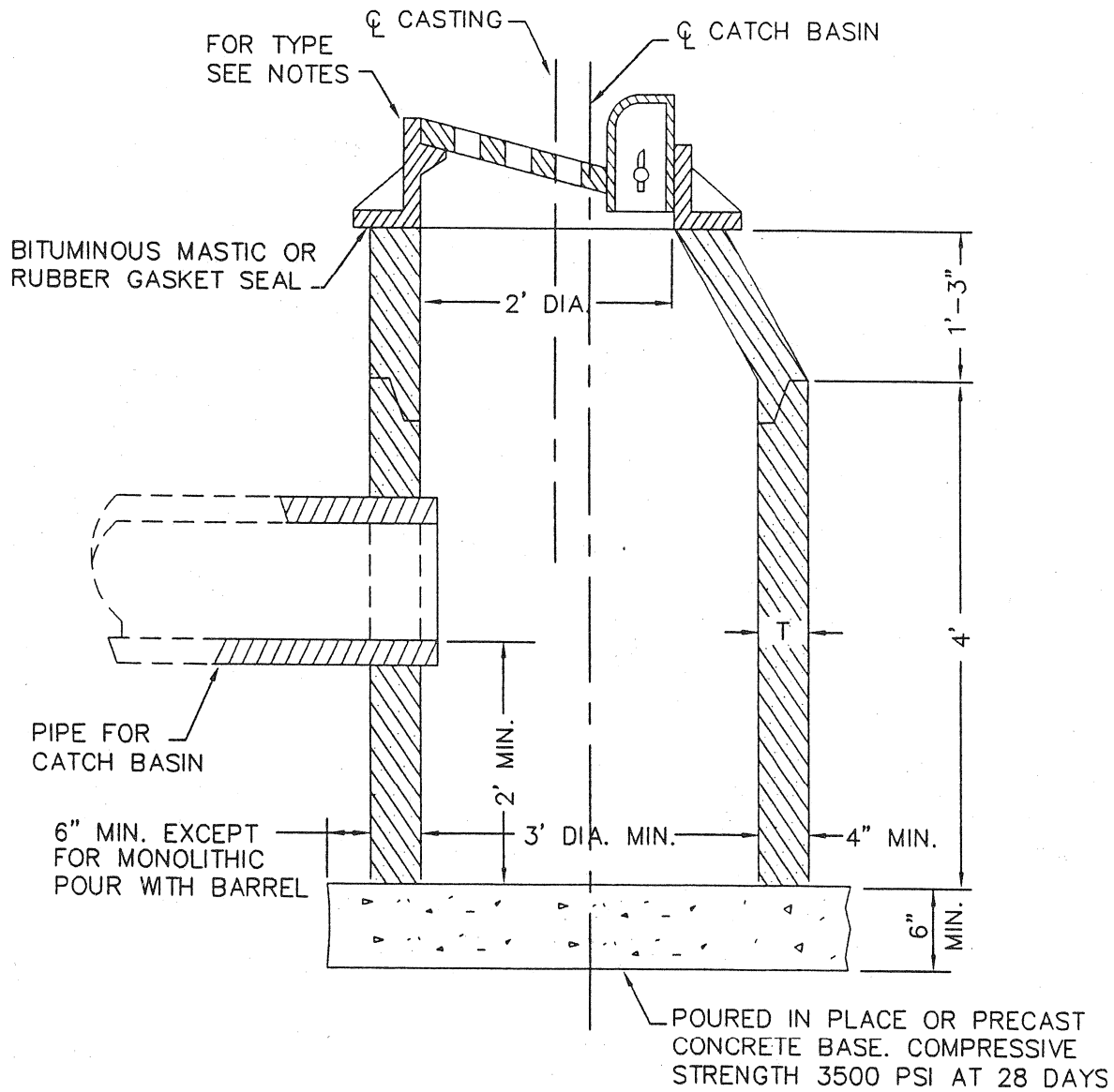
**PLAN OF SEWER
AT HOUSE INLET**

WHERE TEES AND WYES ARE NOT PROVIDED,
TAPPING SADDLES WILL BE REQUIRED. AXIS
OF OUTLET PLACED AT 45° SLOPE WITH
HORIZONTAL. OUTLET TO BE PROVIDED
WITH STOPPER.

**TYPICAL
HOUSE INLET**

DMS

MATERIAL WALL THICKNESS (T)
 PRECAST CONC. — MIN. 1/12 "D"
 CAST-IN-PLACE CONC. MIN. 6"



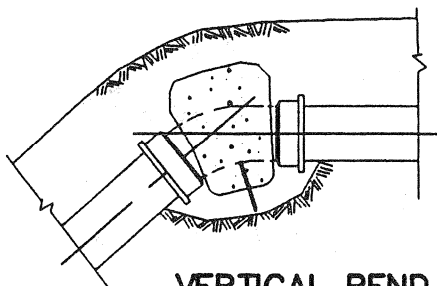
NOTE: CATCH BASINS SHALL BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE RINGS OR MAY BE POURED MONOLITHIC WITH BARREL SECTION.

WHEN LOCATED ALONG CURB, FRAME AND GRATE SHALL BE AS SPECIFIED IN SPECIAL PROVISIONS.

DETAIL OF CATCH BASIN

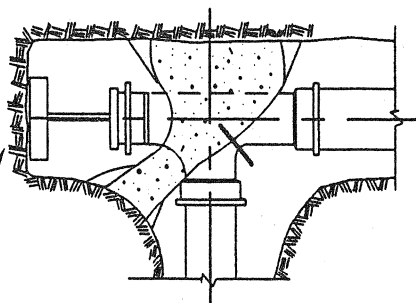
DIV.V/STANDARD DRAWING NO.10

DIV: V
 PAGE: 144



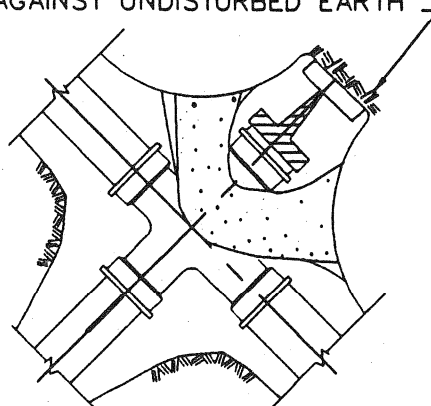
VERTICAL BEND

BRACE PLUG AGAINST UNDISTURBED EARTH

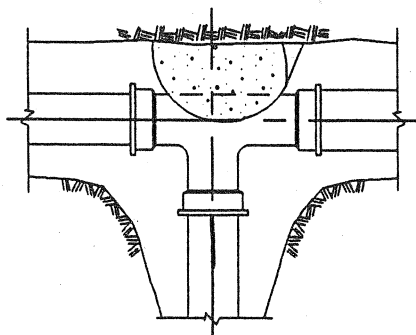


BRACE PLUG AGAINST UNDISTURBED EARTH

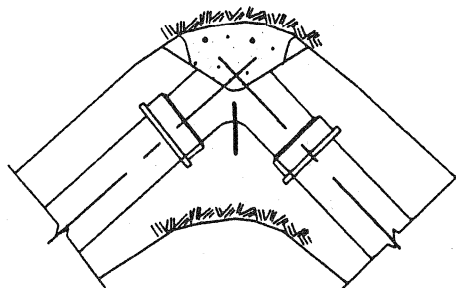
PLUGGED TEE



PLUGGED CROSS



TEE



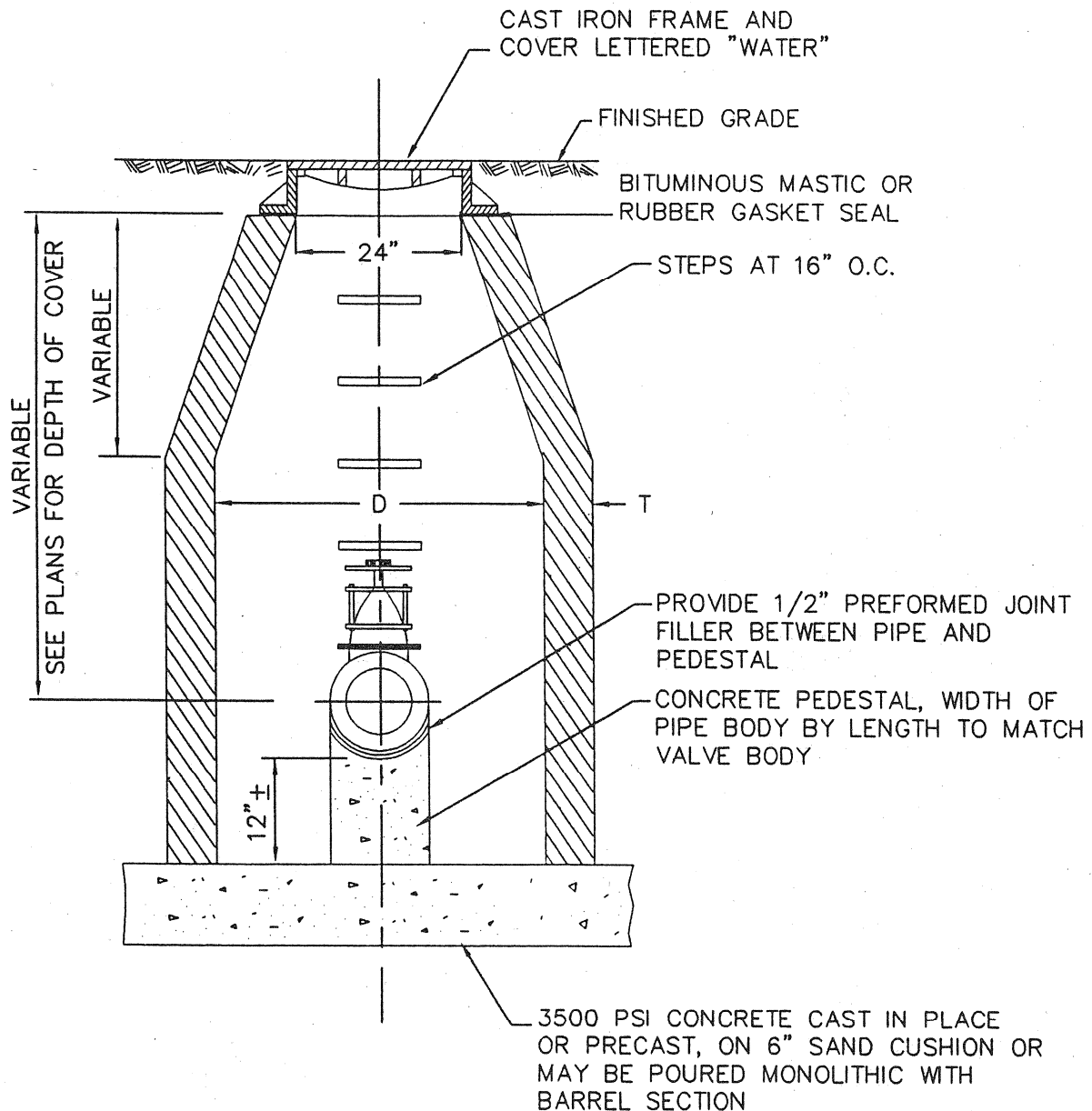
90° ELBOW

NOTE: ALL BLOCKS BEAR AGAINST
UNDISTURBED EARTH.
ARROWS INDICATE DIRECTION OF THRUST.
ALL BLOCKS TO BE 3000 P.S.I. CONCRETE.
ALL FITTINGS SHOWN IN PLAN EXCEPT
VERTICAL BEND.

**TYPICAL
THRUST BLOCK
INSTALLATIONS**

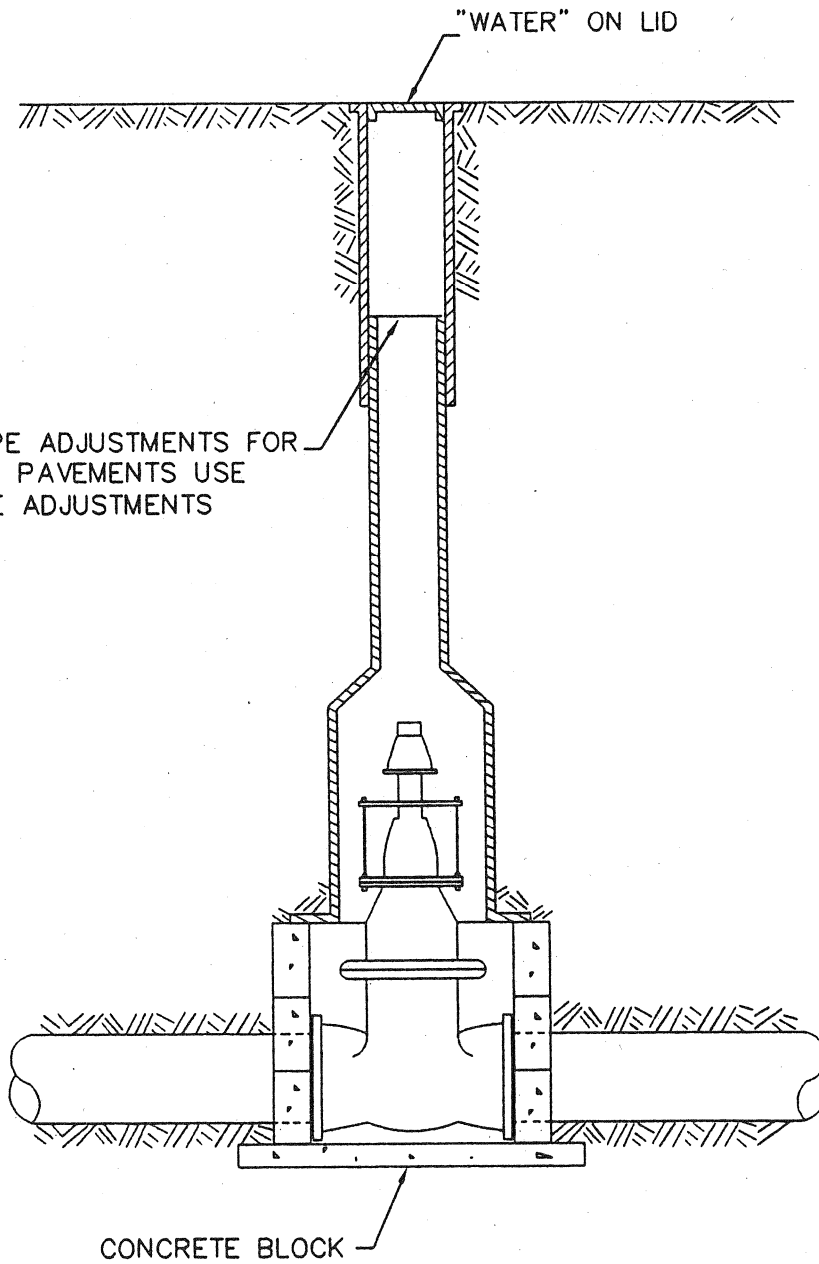
DMS

MATERIAL WALL THICKNESS (T)
PRECAST CONC. - MIN. 1/12 "D"
CAST-IN-PLACE CONC. MIN. 6"



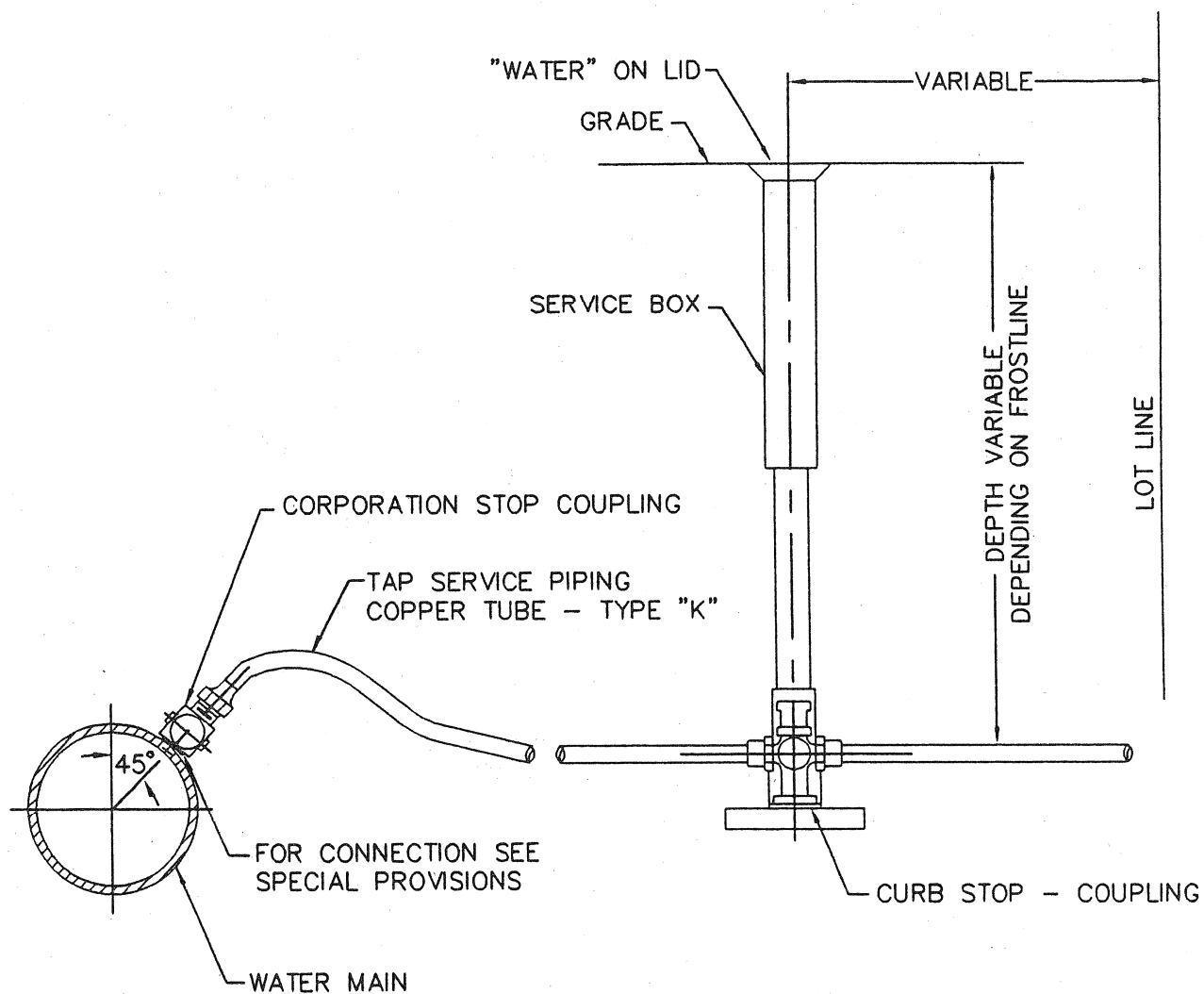
NOTE: VALVE VAULT DIA. SHALL BE
 48" FOR 8" AND SMALLER VALVES
 AND 60" FOR 10" AND LARGER VALVES.
 D = DIAMETER OF MANHOLE

**TYPICAL
 VALVE VAULT
 DETAIL**



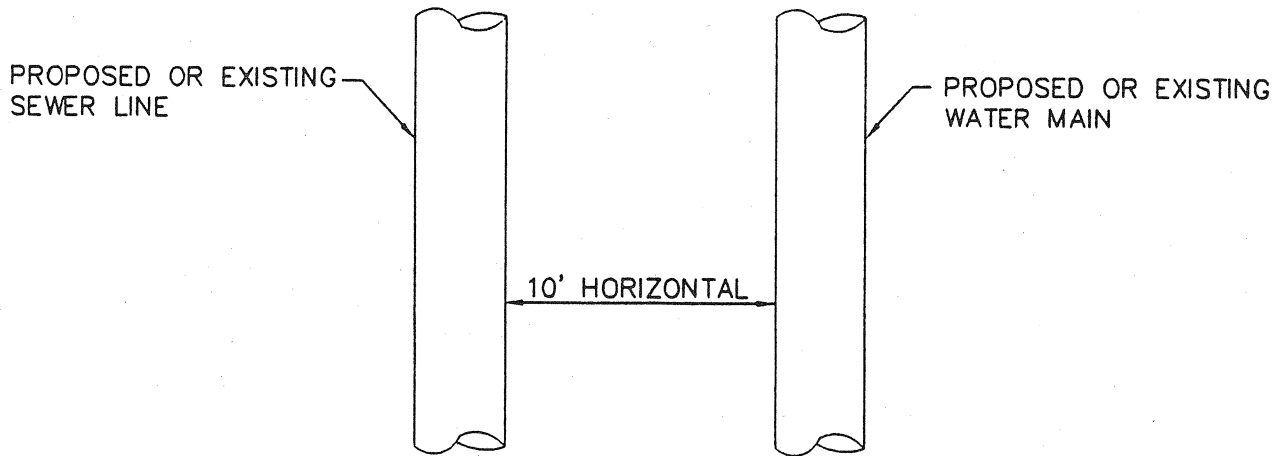
**TYPICAL
VALVE BOX
INSTALLATION**

DMS



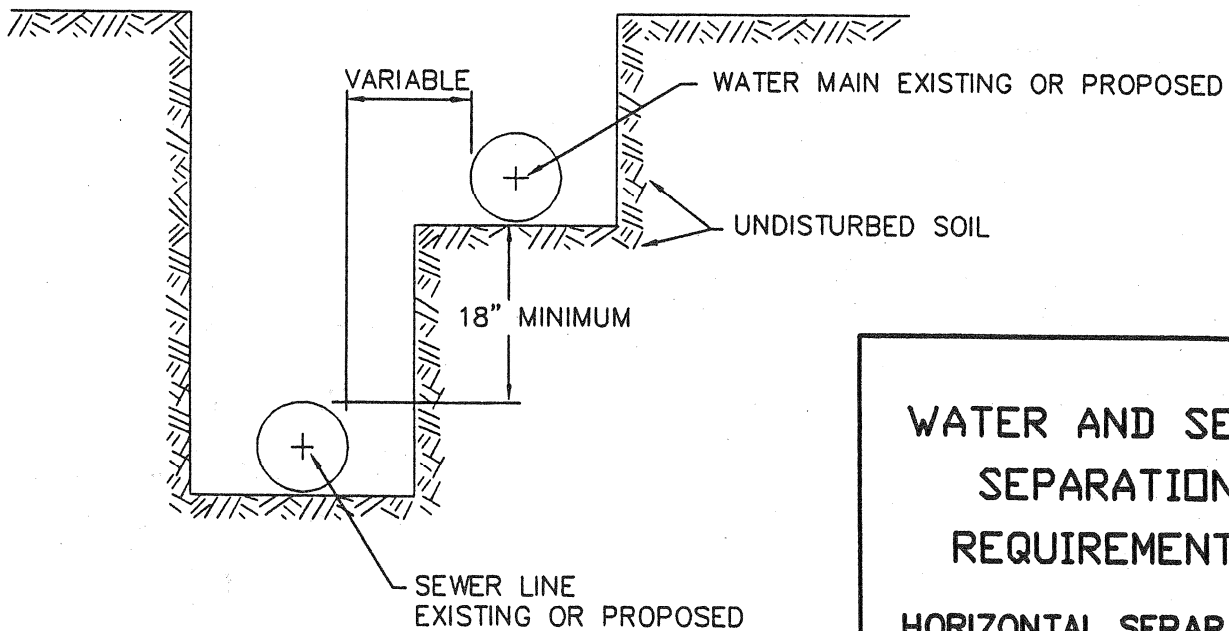
**TYPICAL
TAP SERVICE
PIPING (COPPER)**

WHEN **PROPOSED** SEWER (OR WATER) IS LOCATED 10 FEET OR MORE FROM EXISTING WATER (OR SEWER), NO SPECIAL CONSTRUCTION REQUIRED. SEE SECTION 41-2.01B (1)



PLAN VIEW

WHEN **PROPOSED** SEWER (OR WATER) IS LOCATED **LESS THAN 10 FEET** FROM EXISTING WATER (OR SEWER), DETAILS BELOW SHALL APPLY. SEE SECTION 41-2.01B (2)



**WATER AND SEWER
SEPARATION
REQUIREMENTS
HORIZONTAL SEPARATION**

DMS

NOTE :

MANUFACTUREER TO FURNISH TEMPLATE
DRAWING FOR SETTING OF ANCHOR BOLTS

LIGHT POST:

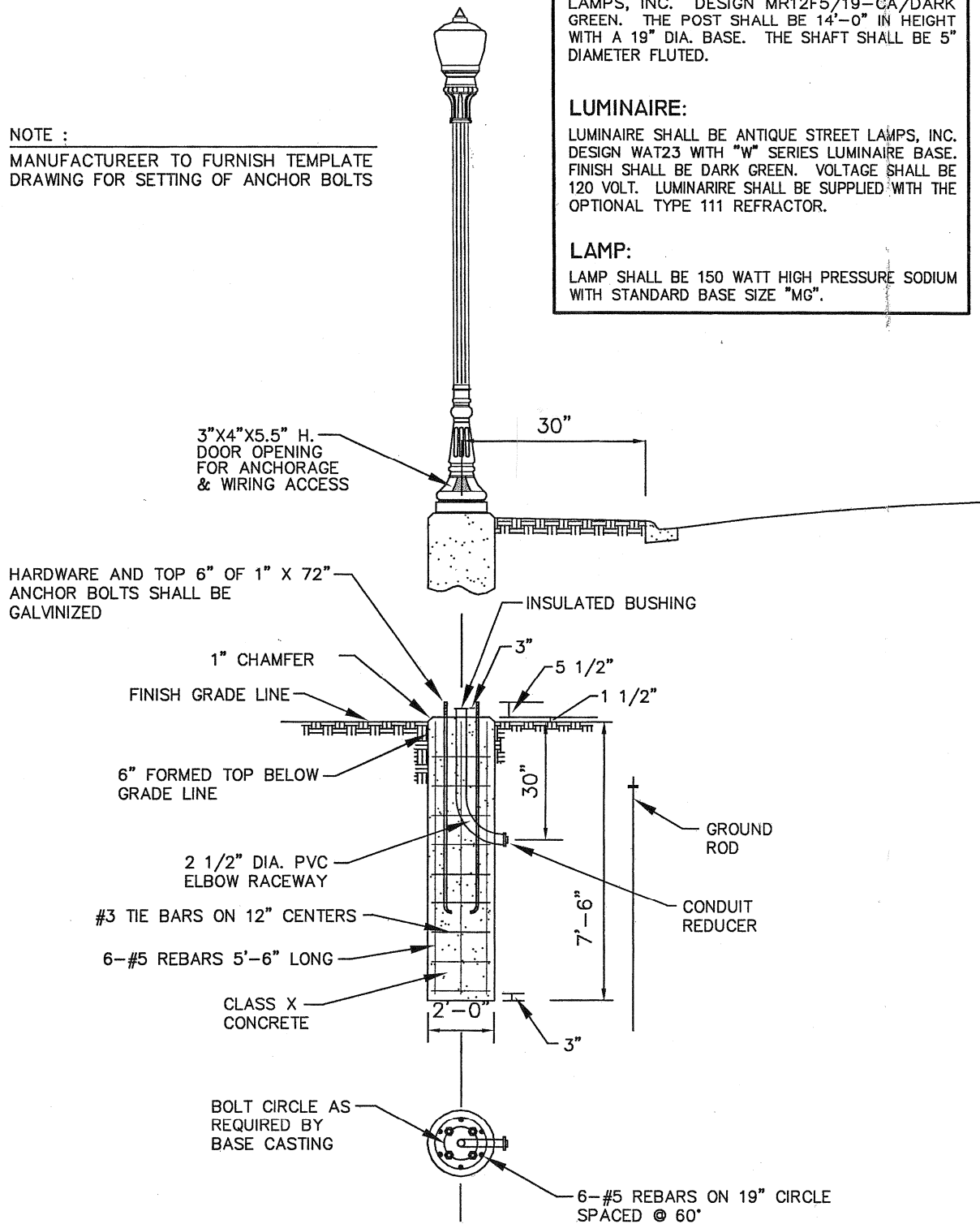
CAST ALUMINUM POST SHALL BE ANTIQUE STREET LAMPS, INC. DESIGN MR12F5/19-CA/DARK GREEN. THE POST SHALL BE 14'-0" IN HEIGHT WITH A 19" DIA. BASE. THE SHAFT SHALL BE 5" DIAMETER FLUTED.

LUMINAIRE:

LUMINAIRE SHALL BE ANTIQUE STREET LAMPS, INC. DESIGN WAT23 WITH "W" SERIES LUMINAIRE BASE. FINISH SHALL BE DARK GREEN. VOLTAGE SHALL BE 120 VOLT. LUMINAIRE SHALL BE SUPPLIED WITH THE OPTIONAL TYPE 111 REFRACTOR.

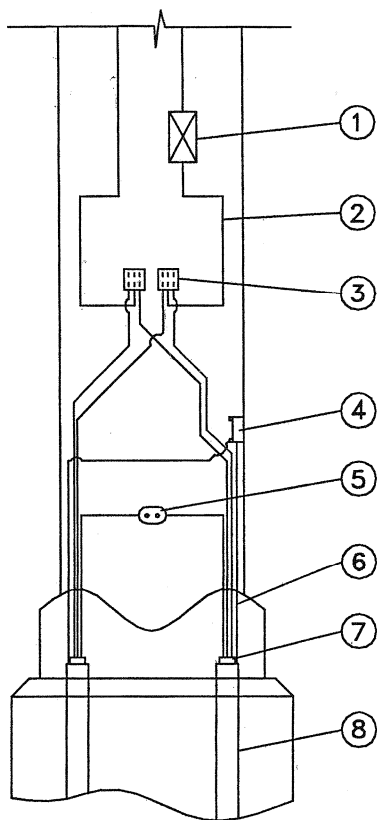
LAMP:

LAMP SHALL BE 150 WATT HIGH PRESSURE SODIUM WITH STANDARD BASE SIZE "MG".



MANUFACTURED BY : ANTIQUE Street Lamps, Inc.

STREET LIGHT DETAIL



1. CONNECTOR KIT W/10 AMP FUSE HOLDER AND INSULATING BOOTS
2. NO. 10 A.W.G. WIRE
3. MULTIPLE COMPRESSION FITTINGS
4. GROUND LUG
5. INSULATING LINK
6. NO. 8 COPPER COATED WIRE
7. DUCT W/3-1/C, NO. 6 A.W.G. WIRES
8. 2 1/2" P.V.C. CONDUIT

NOTE :

ALLOW 30" LOOP OF CABLES TO INSURE SUFFICIENT SLACK FOR WITHDRAWAL OF THE CONNECTORS OUTSIDE OF THE POLE HANDHOLE.

POLE HANDHOLE WIRING DIAGRAM

NOTES :

A YELLOW PLASTIC WARNING TAPE SHALL BE INSTALLED 18" ABOVE UNIDUCT IN THE SAME TRENCH

STREET LIGHTING SPECIFICATIONS

1. LIGHTING UNIT COMPLETE

THE LIGHTING UNIT COMPLETE SHALL CONSIST OF THE FOLLOWING EQUIPMENT:

A. LIGHT POST: CAST ALUMINUM POST SHALL BE ANTIQUE STREET LAMPS, INC.. DESIGN MR12F5/19-CA/DARK GREEN. THE POST SHALL BE 14'-0" IN HEIGHT WITH A 19" DIAMETER BASE. THE SHAFT SHALL BE 5" DIAMETER FLUTED.

B. LUMINAIRE: LUMINAIRE SHALL BE ANTIQUE STREET LAMPS, INC. DESIGN WAT23 WITH "W" SERIES LUMINAIRE BASE. FINISH SHALL BE DARK GREEN. VOLTAGE SHALL BE 120 VOLT. LUMINAIRE SHALL BE SUPPLIED WITH THE OPTIONAL TYPE 111 REFRACTOR.

C. LAMP: LAMP SHALL BE 150 WATT HIGH PRESSURE SODIUM WITH STANDARD BASE SIZE "MG".

D. POLE WIRING: POLE WIRING SHALL CONSIST OF TWO NO. 10 A.W.G. 7 STRAND SINGLE CONDUCTOR SOFT DRAWN COPPER WIRE WITH TYPE XLP INSULATION.

E. FUSES: IN THE BASE OF EACH NEW LIGHT STANDARD SHALL BE INSTALLED ONE TRON IN THE LINE WATERPROOF FUSE HOLDER. INCLUDING A 10 AMPERE FUSE AS MANUFACTURED BY THE BUSSMAN MFG. DIVISION OF THE MCGRAW-EDISON COMPANY. INSULATING BOOTS SHALL BE INSTALLED ON BOTH SIDES OF THE HOLDER.

F. SPLICING: POLE SPLICING SHALL BE ACCOMPLISHED USING MULTIPLE COMPRESSION FITTINGS ON THE POLE SUPPLY WIRES AND AN INSULATING LINK ON THE ALTERNATE POLE CABLE. SAMPLES OF ALL SPLICES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO ANY SPLICING BEING DONE.

G. CONSTRUCTION METHODS: THE LIGHT POLES SHALL BE SET PLUMB WITHOUT THE USE OF SHIMS OR GROUT. THE POLE SHALL BE FASTENED TO THE ANCHOR BOLTS WITH NUTS AND WASHERS WHICH ARE OF GALVANIZED STEEL OR STAINLESS STEEL. THE TORQUING REQUIREMENTS RECOMMENDED BY THE MANUFACTURER SHALL BE OBSERVED. POLE WIRING SHALL CONTAIN SUFFICIENT SLACK TO BE WITHDRAWN THROUGH THE POLE HANDHOLDER FOR EASE OF SPLICING. EACH LUMINAIRE SHALL BE LEVELED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION IN THE PRESENCE OF THE ENGINEER.

2. LIGHT SERVICE CENTER

AN ASCO AUXILIARY CONTROL RELAY TWO WIRE CONTROL, ACCESSORY 47, CATALOGUE 321A40 BE INSTALLED IN THE LINE FROM THE NEW PHOTO CELL CONTROL TO THE DISCONNECT SWITCH, THE SWITCH SHALL BE ASCO 920 REMOTE CONTROL SWITCH. A PHOTO CELL SHALL BE PLACED ON TOP OF A CONVENIENT LIGHT STANDARD NEAREST TO EACH LIGHT SERVICE CENTER.

3. FOUNDATION - LIGHT POLES

PORTLAND CEMENT CONCRETE FOUNDATIONS SHALL BE CONSTRUCTED FOR EACH LIGHT STANDARD. FOUR EACH 1" BY 72" ANCHOR RODS SHALL BE INSTALLED WITHIN EACH FOUNDATION UNLESS A DIFFERENT DIAMETER IS RECOMMENDED BY THE POLE MANUFACTURER. THE CONCRETE USED IN THE FOUNDATION SHALL BE READY MIX, CLASS X CONCRETE.

EACH FOUNDATION SHALL HAVE CONSTRUCTED INTEGRALLY TWO 2- 2@ P.V.C. ELBOW RACEWAYS EXTENDING 2" ABOVE THE TOP OF THE FOUNDATION AND ENTERING THE BASE AT A DEPTH OF 30" BELOW THE TOP OF THE CURB AND EXTENDING 6" BEYOND THE WALL OF THE FOUNDATION. THE TOP OF THE FINISHED FOUNDATIONS SHALL BE 1- 2@ ABOVE THE TOP OF THE CURB. THE CONCRETE FOUNDATION SHALL BE 90" IN OVERALL DEPTH AND BE OF 24" DIA. CYLINDER. A 2@ 8' COPPER WELD GROUND ROD SHALL BE INSTALLED ADJACENT TO EACH FOUNDATION AND CONNECTED TO THE GROUND LUG OF THE LIGHT POLE USING NO. 6 BARE COPPER WIRE. THE LEVELING OF LIGHT STANDARDS SHALL NOT BE DONE BY THE USE OF SHIMS BUT BY CAREFULLY FINISHING THE TOP SURFACE OF THE FOUNDATION.

NOTE: THE VILLAGE OF MATTESON ALLOWS AN ALTERNATE TYPE FOUNDATION, THE METAL HELIX TYPE, J.H. BOLTS OR APPROVED EQUAL. GROUND ROD NOT REQUIRED WITH HELIX TYPE FOUNDATIONS.

TRENCH BACKFILL

THIS WORK SHALL CONSIST OF CONSTRUCTING AND BACKFILLING A TRENCH FOR THE ACCOMMODATION OF CABLES, DUCT OR CONDUIT INCLUDED IS THE FURNISHING OF BACKFILL MATERIAL AND DISPOSING OF EXCESS OR UNSUITABLE BACKFILL MATERIAL. TRENCHES SHALL HAVE A MINIMUM DEPTH OF 30" AND SHALL NOT EXCEED 12" IN WIDTH WITHOUT PRIOR APPROVAL OF THE ENGINEER. THE TRENCHES SHALL BE CONSTRUCTED TO PERMIT EACH INSTALLATION OF CABLE OR DUCT WITHOUT TWISTING, KINKS OR SHARP BENDS. WHERE CONDUIT ENTERS THE TRENCH THE BOTTOM OF THE TRENCH SHALL BE BUILT UP TO AT LEAST HALF THE DIAMETER OF THE CONDUIT OPENING SO THAT EMERGING UNIT DUCT OR CABLE WILL HAVE A SMOOTH BED.

ANY MATERIAL EXCAVATED FROM THE TRENCH, WHICH IN THE OPINION OF THE ENGINEER IS SATISFACTORY BACKFILLING MATERIAL MAY BE USED EXCEPT THAT WHEN THE INNER EDGE OF THE TRENCH IS WITHIN 2 FEET OF THE EDGE OF THE PROPOSED PAVEMENT, CURB, GUTTER, CURB AND GUTTER, STABILIZED SHOULDER OR SIDEWALK MATERIAL MEETING THE REQUIREMENTS OF ARTICLES 703.04 (S.S.) SHALL BE USED. CINDERS, FROZEN EARTH OR STONES GREATER THAN 2" DIA. WILL NOT BE PERMITTED IN THE BACKFILL.

BACKFILL SHALL BE DEPOSITED IN UNIFORM LAYERS NOT EXCEEDING 6" THICK LOOSE MEASURE. THE MATERIAL IN EACH LAYER SHALL BE MECHANICALLY COMPACTED BY RAMMING OR TAMPING WITH POWER TOOL APPROVED BY THE ENGINEER IN SUCH A MANNER AS NOT TO DISTURB, KINK, OR CRUSH THE CABLES, CONDUCTOR, DUCT OR CONDUIT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE INCURRED BY HIM IN ANY AREA OF THE PROJECT SUCH AS MEDIANS, PAVEMENT, SHOULDERS, BACKSLOPED DRIVEWAYS AND SIDEWALKS AND SHALL RESTORE THEM TO THEIR ORIGINAL CONDITION AS DIRECTED BY THE ENGINEER. LANDSCAPED AREA SHALL BE RE-SODDED AND DAMAGED PLANT MATERIALS REPLACED TO THE SATISFACTION OF THE ENGINEER.

METHOD OF MEASUREMENT THE WORK WILL BE MEASURED FOR PAYMENT AS FOLLOWS:

1. TRENCH AND BACKFILL FOR ROADWAY LIGHTING WILL BE MEASURED IN LINEAL FEET ALONG THE CENTERLINE OF THE TRENCH.
2. TRENCH AND BACKFILL WILL NOT BE MEASURED FOR CONDUIT WHICH IS PUSHED.

GROUND WIRE

THIS ITEM SHALL CONSIST OF A SOLID COATED COPPER WIRE WITH 98 % CONDUCTANCE. THE GROUNDING COPPER WIRE SHALL BE SOLIDLY CONNECTED TO THE GROUNDING LUG OF EACH POLE AND THE NEUTRAL GROUND STRIP OF THE CONTROL CABINET. THE SINGLE CONDUCTOR NO. 8, 7 STRANDS SOFT DRAWN COATED COPPER GROUND CONDUCTOR WILL BE LAID WITHIN THE DUCT.

GALVANIZED STEEL CONDUIT PUSHED

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING BY PUSHING A 2" RIGID GALVANIZED STEEL CONDUIT INCLUDING ALL ASSOCIATED COUPLINGS BUSHINGS AND OTHER REQUIRED HARDWARE. GALVANIZED STEEL CONDUIT SHALL MEET THE REQUIREMENTS OF AMERICAN NATIONAL STANDARDS INSTITUTE C80.1 AND BE TESTED AND LABELED BY THE UNDERWRITERS LABORATORY. PUSH HOLES AND OTHER DAMAGED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. LANDSCAPED AREAS MUST BE RE-SODDED.

CABLE DUCT 4-1/C

THIS ITEM CONSISTS OF INSULATED CABLES CONTAINED IN A DUCT AND FACTORY ASSEMBLED. THEY SHALL BE MANUFACTURED FROM BLACK POLYETHYLENE. COMPLYING WITH NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION STANDARD FOR HIGH DENSITY SMOOTH WALL COILABLE POLYETHYLENE ELECTRICAL PLASTIC DUCT PUBLICATION NO. TC7. THE DESIGN SHALL INCLUDE A MINIMUM OF A 1- 3/8 DIA. MOLDED FLEXIBLE PLASTIC ACABLE-IN-DUCT @ WITHIN WHICH THERE SHALL BE A MINIMUM OF THREE EACH NO. 6 7 STRANDS, SINGLE CONDUCTOR, 600 VOLT, SOFT DRAWN UNCOATED COPPER WIRE, WITH TYPE XPL INSULATION. THE CABLE DUCT SHALL BE INSTALLED AS STRAIGHT AS POSSIBLE TO FACILITATE CABLE REPLACEMENT. CABLE DUCT SHALL EXTEND A MINIMUM OF 12" ABOVE LIGHT POLE FOUNDATIONS, 4" ABOVE ANY CONTROL CABINET FOUNDATION AND 2" INTO ANY JUNCTION BOX. A NO. 8 COATED COPPER GROUND WIRE SHALL BE LOCATED INSIDE THE DUCT. ALL CABLES ARE TO BE COLOR CODED. COLOR CODING BY STRIPING WILL NOT BE ACCEPTED.

GENERAL PROVISIONS

THE STREET LIGHTING SHALL BE INSTALLED IN A WORKMAN LIKE MANNER TO THE SATISFACTION OF THE VILLAGE ENGINEER OF MATTESON, ILLINOIS. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE STATING THAT THE WORK WILL BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF COMPLETION AS DETERMINED BY THE DATE OF FINAL ACCEPTANCE OF THE JOB. THE CONTRACTOR FURTHER AGREES THAT HE WILL AT HIS OWN EXPENSE REPAIR OR REPLACE WORK WHICH BECOMES DEFECTIVE DURING THE TERM OF THE GUARANTEE, AND ANY OTHER WORK DAMAGED BECAUSE OF DEFECTS.

TESTING

PRIOR TO ACCEPTANCE OF THE INSTALLATION, THE STREET LIGHTING SYSTEM SHALL BE PUT INTO OPERATION BY THE INSTALLATING CONTRACTOR AND WITNESSED BY THE SUBDIVIDER-S ENGINEER AND THE VILLAGE ENGINEER. THE CONTRACTOR SHALL PROVIDE ELECTRICAL TEST INSTRUMENTS AND PERSONNEL TO RUN INSULATION RESISTANCE VOLTAGE AND CURRENT MEASUREMENTS AS REQUESTED BY THE VILLAGE ENGINEER. ANY DEFECTS WHICH BECOME EVIDENT DURING THIS TEST SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE. THE GUARANTEE AND TESTING SHALL NOT BE PART OF ANY PAY ITEM, BUT SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE CONTRACT.

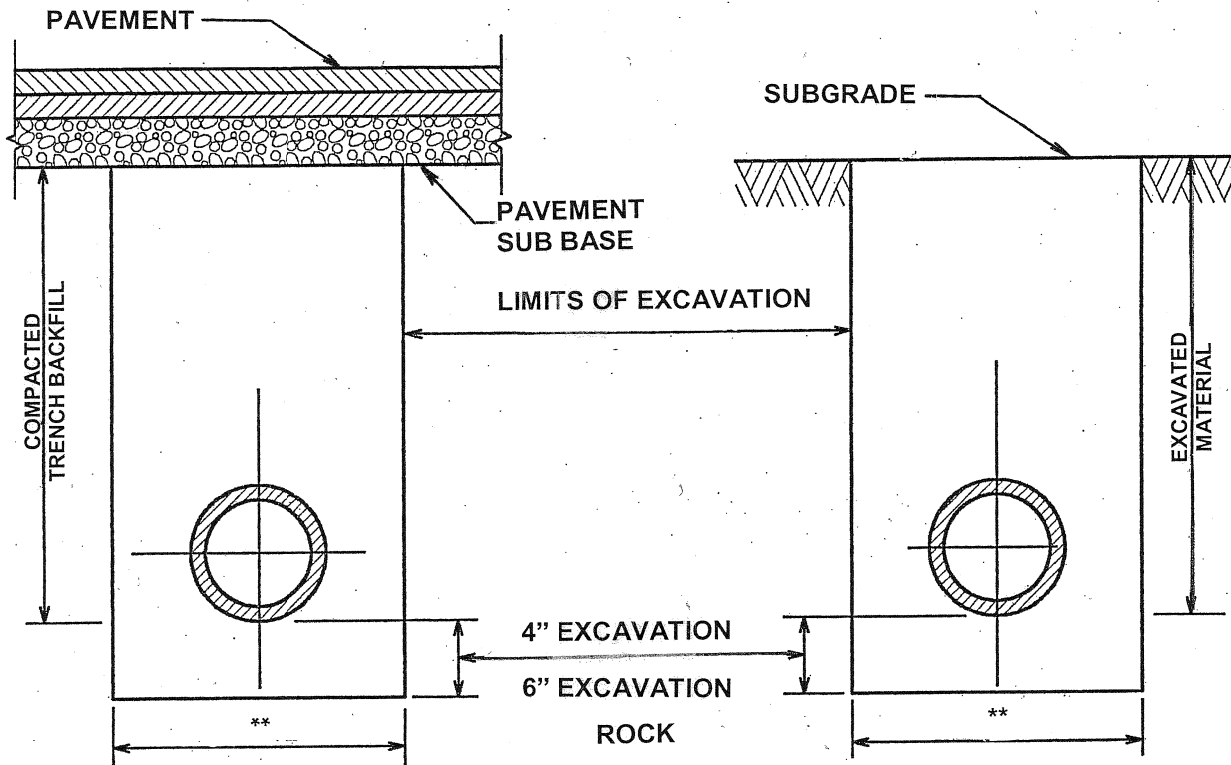
SUBMITTALS

THE CONTRACTORS SHALL FURNISH FOR APPROVAL, SEVEN SETS OF CATALOG CUTS AND DRAWINGS ON MATERIAL TO BE FURNISHED ON THIS PROJECT. THIS WILL INCLUDE SPLICING MATERIALS, GROUND RODS, CONTROL CENTER WIRING DIAGRAM AND OTHER MAJOR ITEMS TO BE SUPPLIED. PHOTOMETRIC DATA SHALL BE FURNISHED ON THE LUMINAIRE TO BE USED. SEVEN SETS OF THE ABOVE MATERIAL SHALL BE FURNISHED TO THE VILLAGE ENGINEER FOR APPROVAL BEFORE PURCHASING SUCH MATERIAL.

INSURANCE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING LIABILITY INSURANCE TO PROTECT THE VILLAGE OF MATTESON, THE DEVELOPER, THE EDWIN HANCOCK ENGINEERING CO., AND THE DESIGN ENGINEER FROM ALL SUITS AND CLAIMS MADE AGAINST THIS PROJECT. ITS DESIGN OR IMPLEMENTATION. EACH OF THE ABOVE SHALL BE NAMED IN THE CERTIFICATE. THE MINIMUM INSURANCE REQUIREMENTS AS THEY REFER TO THE INDEMNIFICATION AND INSURANCE REQUIREMENTS ARE AS FOLLOWS:

- A. PUBLIC LIABILITY BODILY INSURANCE OF NOT LESS THAN ONE MILLION DOLLARS (\$1,000,000) FOR INJURIES, INCLUDING DEATH, TO ANY ONE PERSON, AND SUBJECT TO THE SAME LIMIT FOR EACH PERSON, IN AN AMOUNT OF NOT LESS THAN TWO MILLION (\$2,000,000) ON ACCOUNT OF ONE ACCIDENT.
- B. PUBLIC LIABILITY PROPERTY DAMAGE INSURANCE IN AN AMOUNT OF NOT LESS THAN FIVE HUNDRED THOUSAND DOLLARS (\$500,000).
- C. AUTOMOBILE PUBLIC LIABILITY BODILY INJURY \$1,000,000/\$2,000,000 AND PROPERTY DAMAGE \$2,000,000 LIMITS.
- D. CONTRACTUAL INSURANCE OF THE SAME LIMITS AS REQUIRED UNDER PARAGRAPH (A.).
- E. THE CONTRACTOR SHALL NOT BE ALLOWED TO START CONSTRUCTION UNTIL CERTIFICATES OF INSURANCE INDEMNIFYING THE ADDITIONAL INSUREDS HAVE BEEN DELIVERED AND APPROVED BY THE EDWIN HANCOCK ENGINEERING CO.



PAVED AREAS

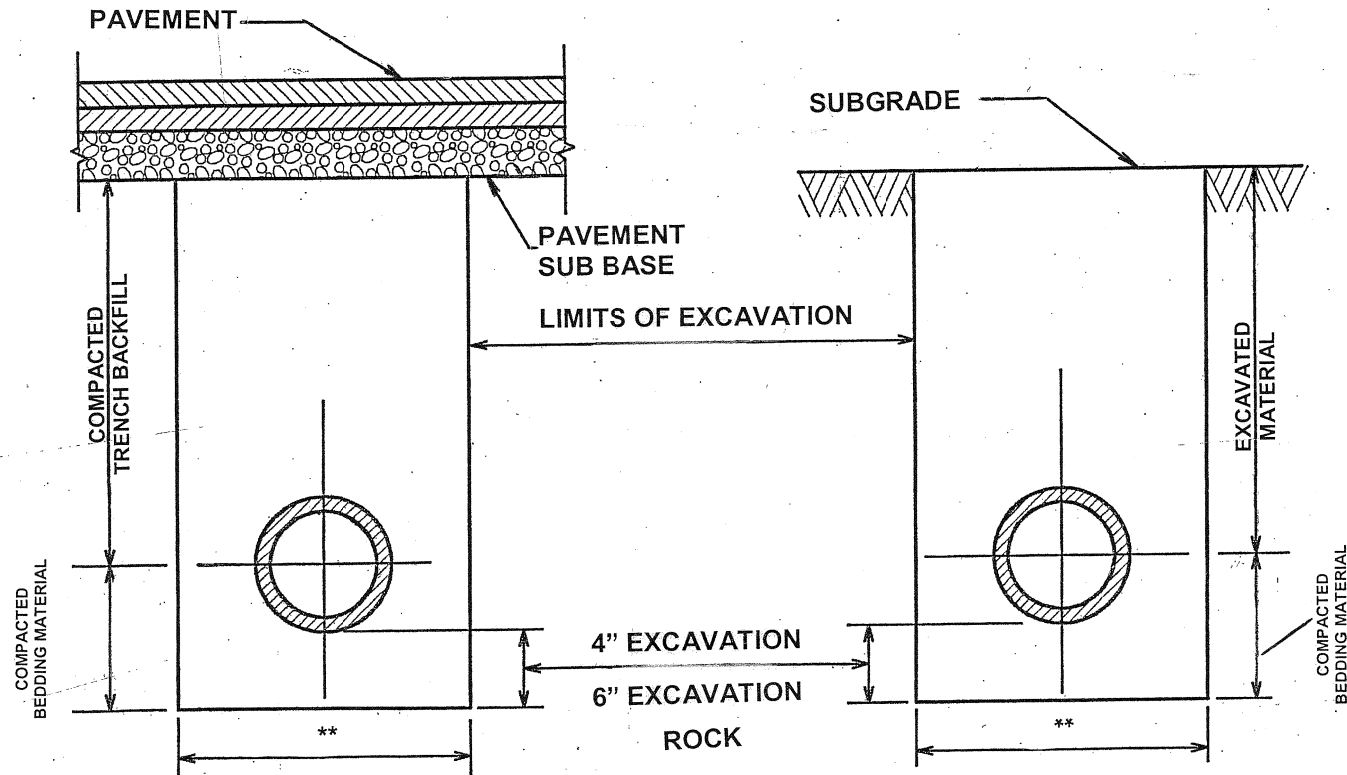
NON-PAVED AREAS

WIDTH (MAX.) = 9" + OD + 9", WHEN TRENCH < 5 ft.

**

WIDTH (MAX.) = 18" + OD + 18", WHEN TRENCH ≥ 5 ft

WATER MAIN TRENCH BACKFILL



PAVED AREAS

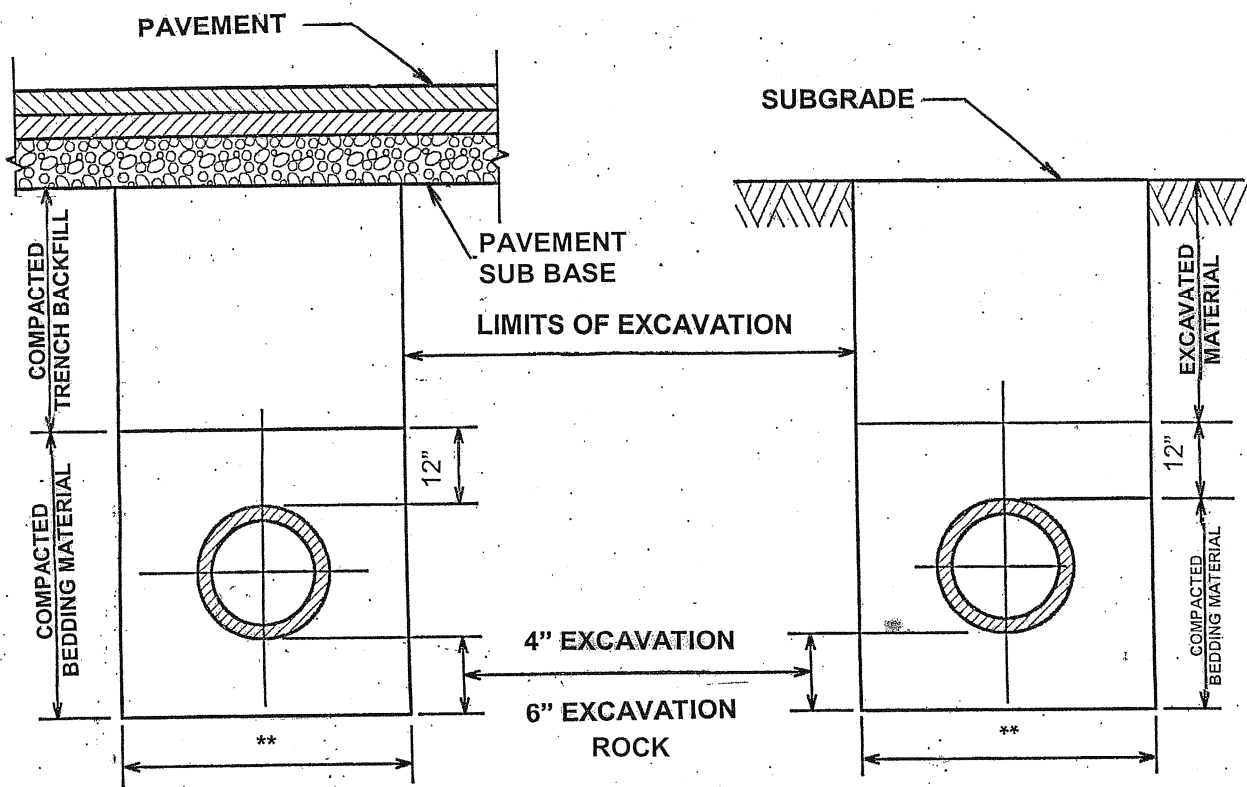
NON-PAVED AREAS

WIDTH (MAX.) = 9" + OD + 9", WHEN TRENCH < 5 ft.

**

WIDTH (MAX.) = 18" + OD + 18", WHEN TRENCH ≥ 5 ft

STORM SEWER TRENCH BACKFILL



PAVED AREAS

NON-PAVED AREAS

WIDTH (MAX.) = 9" + OD + 9", WHEN TRENCH < 5 ft.

** WIDTH (MAX.) = 18" + OD + 18", WHEN TRENCH ≥ 5 ft

**SANITARY SEWER
TRENCH BACKFILL**

UTILITY PERMIT PROCESSING

REQUIREMENTS FOR SECURING A PERMIT FOR UTILITY CONSTRUCTION IN PUBLIC RIGHTS-OF-WAY AND PUBLIC UTILITY EASEMENTS

TABLE OF CONTENTS

- I. PURPOSE**
- II. GENERAL INFORMATION AND OVERVIEW**
- III. PERMIT APPLICATION AND FEES**
- IV. ENGINEERING PLAN REQUIREMENTS**
- V. CONSTRUCTION REQUIREMENTS**
- VI. RECORD DRAWINGS (AS BUILT RECORDS)**
- VII. MINIMUM COVER REQUIREMENTS**
- VIII. CONSTRUCTION CHECKLIST**

I. PURPOSE

This manual specifies the requirements for securing a permit for utility including telecommunications construction in public rights-of-way and public utility easements.

II. GENERAL INFORMATION AND OVERVIEW OF PROCESS

The Village of Matteson grants permission for locating existing utilities and for all construction or maintenance work in public rights-of-way and public utility easements by issuance of a permit within the Village's Community Development and Public Works Departments.

Utility companies, governmental agencies and other companies providing cable television, communication lines, electricity, gas, irrigation, petroleum, etcetera, receive permits from the Engineering Division.

The Village of Matteson administers all utility line planning, permitting and construction processes in accordance with the provisions of Ordinance 3042, Chapter 125 entitled, "Construction of Utility Facilities in the Rights-of-Way", the Illinois Municipal Code, the Telephone Company Act, the Illinois Highway Code, the Simplified Municipal Telecommunications Tax Act and the Cable and Video Competition Law of 2007 except as may be modified by this manual.

Need for a Permit

Permits are necessary to assure that all utility company facilities are constructed in the proper location with adequate spacing, built with acceptable materials and in accordance with current specifications, installed in a safe manner and that final completion is assured and acceptable; all infrastructure is protected, protect against visual and physical obstructions to vehicular and pedestrian traffic, preserve the character of the neighborhoods in which the facilities are installed, prevent visual blight and to assure that all landscaping is restored and liability issues are properly addressed.

Engineered construction plans must be submitted for review. The objective is to make optimum utilization of the space available in the public utility easements to assure compliance with the Village's Ordinances and policies, to coordinate work with other utility companies and to reduce risk and inconvenience to the public.

III. PERMIT APPLICATION AND FEES

Annual Registration Required

Every utility that occupies right-of-way within the Village shall register on January 1 of each year with the Director of Public Works.

Application for a permit, along with supporting documents shall be submitted on the Utility Permit Application Form. This form shall be used for all utility permits.

Fees for all permits will be charged as stipulated by the Village of Matteson in accordance with the permit fee schedule. Permittees must demonstrate proof of insurance with agreed limits of liability and naming the Village as additionally insured before issuance of any permits. Fees to be paid shall be processed concurrently with permit approval and issuance.

Permit Process-Overview

A Utility permit for Construction in Public Rights-of-Way and Public Utility Easements is submitted to the Village of Matteson. Building Services Department (4900 Village Commons) together with a minimum of three sets of engineering construction plans, details and notes.

Upon receipt of the application, plans with appropriate drawings, details and notes, Village staff will log the request into the Village's permit system and route the documents for technical review in accordance with the [Permit Processing Flow Chart](#). This review includes checking for compliance with construction standards, approving alignments, verifying that the work will be constructed in the public right-of-way or public utility easement, determining if other work will be occurring at the same time or in proximity to the site, verifying that all joint trench opportunities have been incorporated into the design, checking for conflicts, determining if the work is proposed in newly paved streets or alleys, checking traffic flows, verifying that proper pavement replacement or bore requirements have been utilized and verifying that all Village requirements have been satisfied.

Upon completion of the review process, a permit will be either:
Approved - authority to work will be granted to the applicant or
Denied - additions or corrections are required to the plans or permit application, the applicant will be notified and asked to make corrections and resubmit.

IV. ENGINEERING PLAN REQUIREMENTS

Submit three sets of construction plan drawings, details and notes at a minimum scale of 1" = 20' for approval. The plans should provide the following information:

- Vicinity and location maps showing major cross streets and North arrow.
- Brief description of proposed improvement.
- Project legend including all graphic symbols used in plans.
- Construction/Project number.
- A Summary of Quantities schedule.
- Topography survey or aerial photograph taken within six months of plan submittal date.
- Existing and proposed rights-of-way and public utility easements with dimensions.
- Stationing.
- Show the information for J.U.L.I.E. and project contact persons.
- Plans should show property lines and easements with dimensions, all existing curb, gutter and sidewalk, driveways, planter strip with dimensions, existing underground, above ground and overhead utilities (e.g., sewer storm drain, water valves, fire hydrants, streetlights, trees, landscaping and dimensions of all proposed structures and conduits.
- Location, depth and size of all existing and proposed utility facilities and street improvements to which the proposed construction will either cross or run parallel within the right-of-way corridor.
- Existing and proposed contour lines corresponding with existing and proposed spot elevations. Elevations taken from the existing surface grades at intervals of fifty (50) feet or less in the same alignment as the proposed construction (where applicable).
- Statement which indicates that all sidewalk will comply with the Americans with Disabilities Act (where applicable).
- Catalogue cut sheets/standards for all proposed equipment and materials incorporated into project.
- For all proposed improvements with cabinet work, please provide two sets of photos (pre-construction and post construction with the proposed above ground structure(s) superimposed).
- Location and limits of proposed construction.
- Dimensioned ties to monument lines in streets and to property lines in alleys and easements.
- Plan and Profile Views.
- Upon approval of plans, a construction schedule must be submitted one week before construction to the Director of Public Works. The schedule shall include proposed starting and completion dates.
- All applicable standards for work (trench details, MUTCD traffic control concrete pad details, cabinet details, etc.).

V. **DESIGN REQUIREMENTS**

In addition to the provisions of Ordinance 3042, Chapter 125 entitled, "Construction of Utility Facilities in the Rights-of-Way" and the Village of Matteson's Engineering Notes, the following shall apply:

All facilities that are being abandoned shall be removed and existing infrastructure restored. No facility, which use is abandoned may remain in place.

Where necessary for protection, cabinets should be protected with bollards.

Cabinets should have an anti-graffiti finish.

Cabinets located adjacent to street curb should have low-profile stoppers that will minimize damage to the cabinets from parked street vehicles and at least thirty (30) inches from the back of the curb.

Cabinets should have clearance from any existing underground utilities, existing trees and light poles.

Cabinets located in the sidewalk areas should have at least four (4) feet clearance to comply with ADAAG policies.

Cabinets should have a minimum of ten (10) feet of clearance from an existing fire hydrant.

Cabinets should preferably be located in side yard areas where perimeter wall of fence exists to minimize visual impact.

Fiber optic cable is to be installed along with tracing or locating wire in the conduit of its trench.

Utility crossings under existing paved streets shall be accomplished by jacking or boring, unless open trenching is authorized by the Village of Matteson.

Upon completion of the project, the permittee shall make request for final inspection (R.F.I.) with the Village of Matteson's Engineering Division for acceptance of the improvement.

All restoration work shall be completed with sod.

VI. RECORD DRAWINGS (AS BUILT RECORDS)

Record drawings of the complete construction shall be maintained by the permittee in accordance with State Statutes and shall be provided upon final inspection acceptance.

VII.

MINIMUM COVER REQUIREMENTS

FOR
PROPOSED UTILITIES IN PUBLIC RIGHTS-OF-WAY

ITEM	DESCRIPTION	PUBLIC STREETS
Power		
	0-600 Volts	36"
	601-7200 Volts	42"
	12 KV	
	12KV +	
	Street Light Circuits	30"
	Warning Tape	18"
Gas		
	Services	36"
	1" - 6" diameter	36"
	> 6" diameter	48"
Manholes		
		36"
Conduits		
		36"
Telecommunications (copper or fiber optic)		
	Trunklines	48"
	Copper Service Drops	36"
	Other	36"
CATV	Coaxial	36"

Village Engineer may approve deviations from these standards
under unusual and compelling circumstances.

VIII. **CONSTRUCTION CHECKLIST**

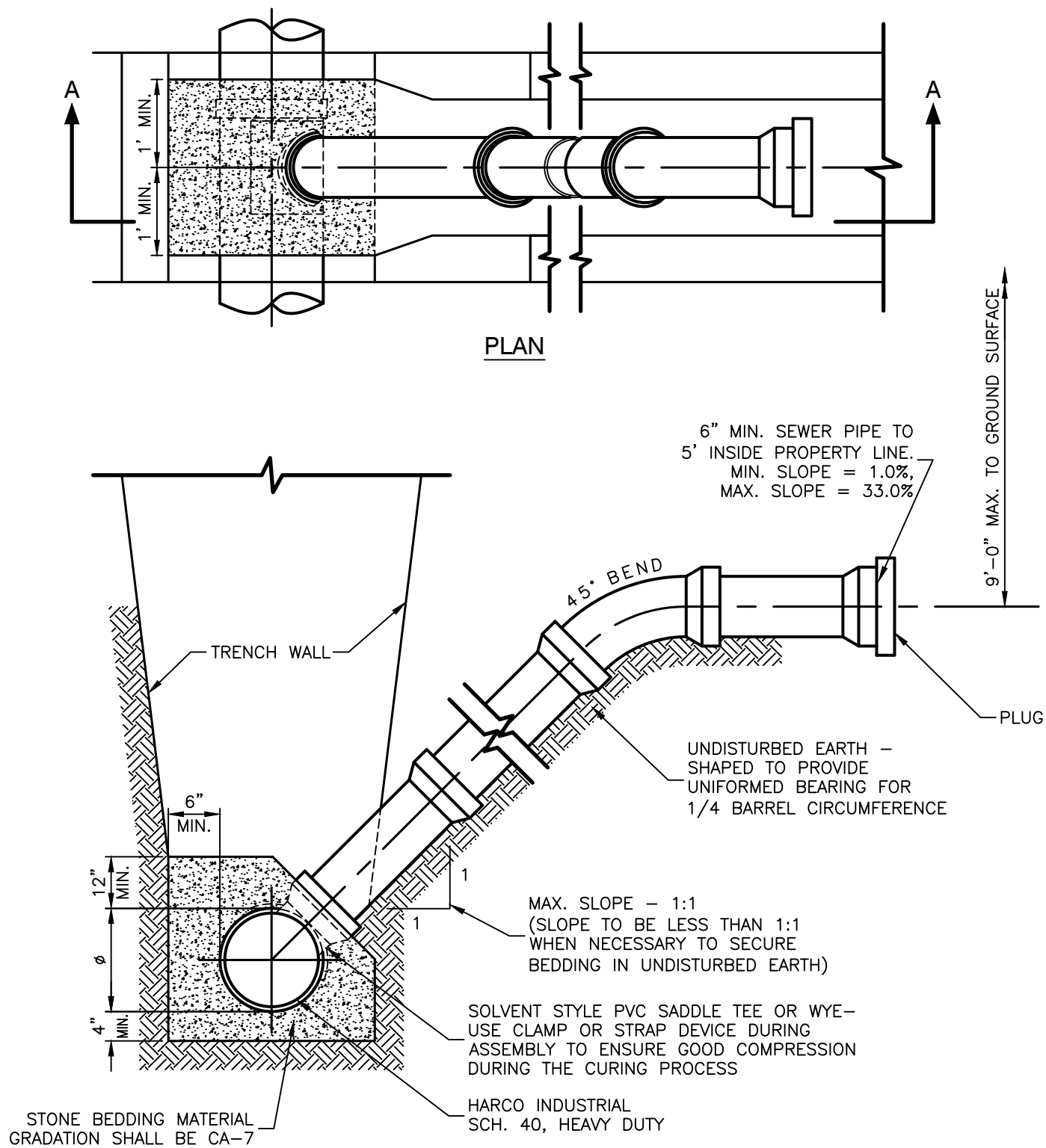
- ✓ Complete and sign the permit application form.
- ✓ Submit information including analysis of project impact and individual cabinet locations.
- ✓ Avoidance of line of sight issues for traffic safety.
- ✓ Deterrent for graffiti and/vandalism.
- ✓ Delineate new or existing Public Utility Easement (where required)
- ✓ Submit two sets of photos (pre-construction and post construction with proposed structure superimposed).
- ✓ Cabinets should be installed within the public right-of-way or existing public easements.
- ✓ At least two construction notices to residents shall be given to impacted residents prior to commencement of proposed construction.
- ✓ The permittee shall make reasonable efforts to notify property owners if proposing to place a cabinet in front of the owner's private property.
- ✓ The permittee must demonstrate proof of insurance with agreed limits of liability and naming the Village as additionally insured before issuance of any permits.
- ✓ All contractors must acquire a valid Village of Matteson business license prior to commencement of proposed construction.
- ✓ Approval from other agencies as required (Cook County, IDOT, MWRDGC, etc.), where necessary.



STANDARD DETAILS

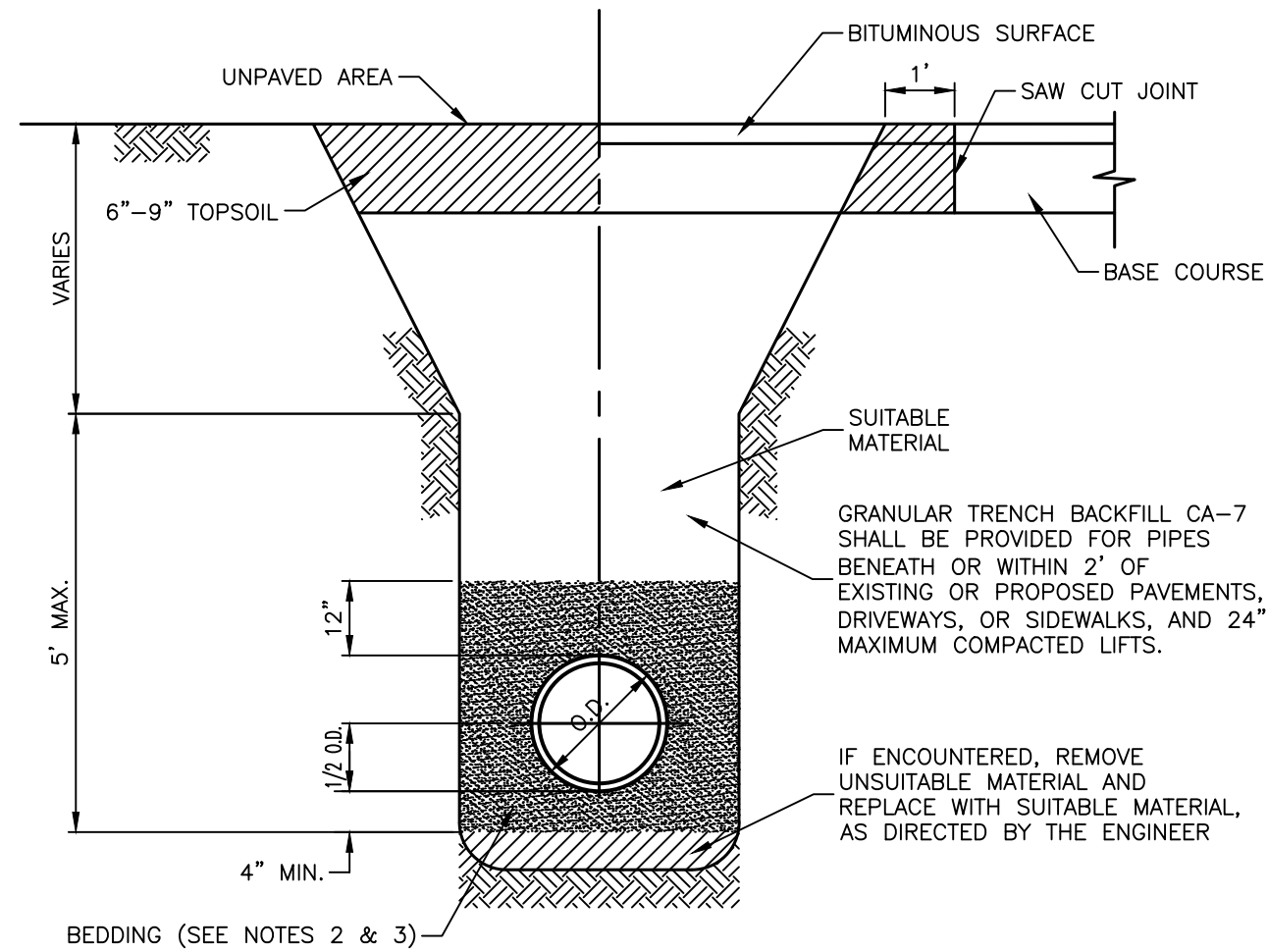


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Chicago, Illinois 60610



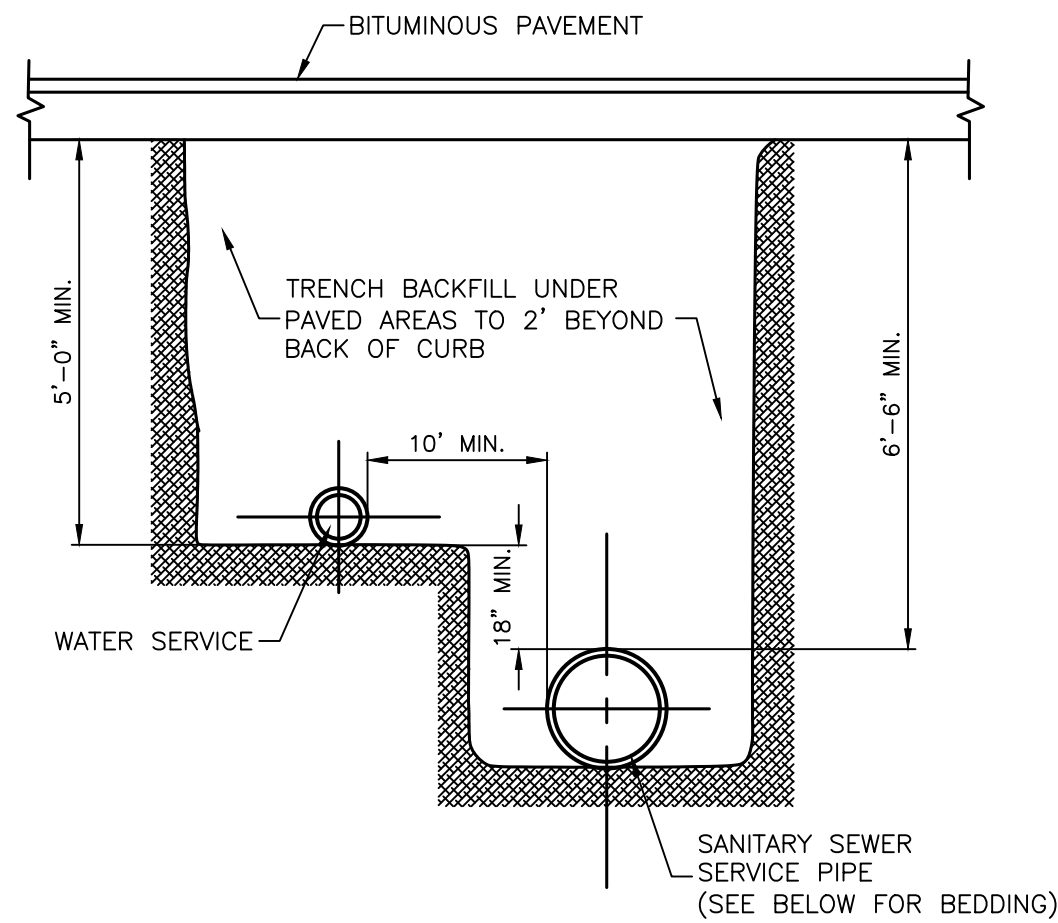
SECTION A-A

TYPICAL SANITARY SEWER SERVICE LATERAL



- NOTES:
1. TRENCH SHALL BE IN ACCORDANCE WITH OSHA SAFETY STANDARDS.
 2. BEDDING SHALL BE REQUIRED TO BE A MINIMUM THICKNESS EQUAL TO 1/4 OF THE OUTSIDE DIAMETER OF THE PIPE BUT SHALL NOT BE LESS THAN 4". BEDDING AND HAUNCHING MATERIAL GRADATION SHALL BE CA-7.
 3. FOR PVC PIPE THE BEDDING MATERIAL SHALL BE PLACED A MINIMUM 12" OVER THE TOP OF THE PIPE AND GRADATION SHALL BE CA-7 AND SHALL BE CAREFULLY PLACED SO AS TO FILL THE SPACE UNDER AND AROUND THE PIPE.

TRENCH BACKFILL DETAIL FOR SANITARY SEWER

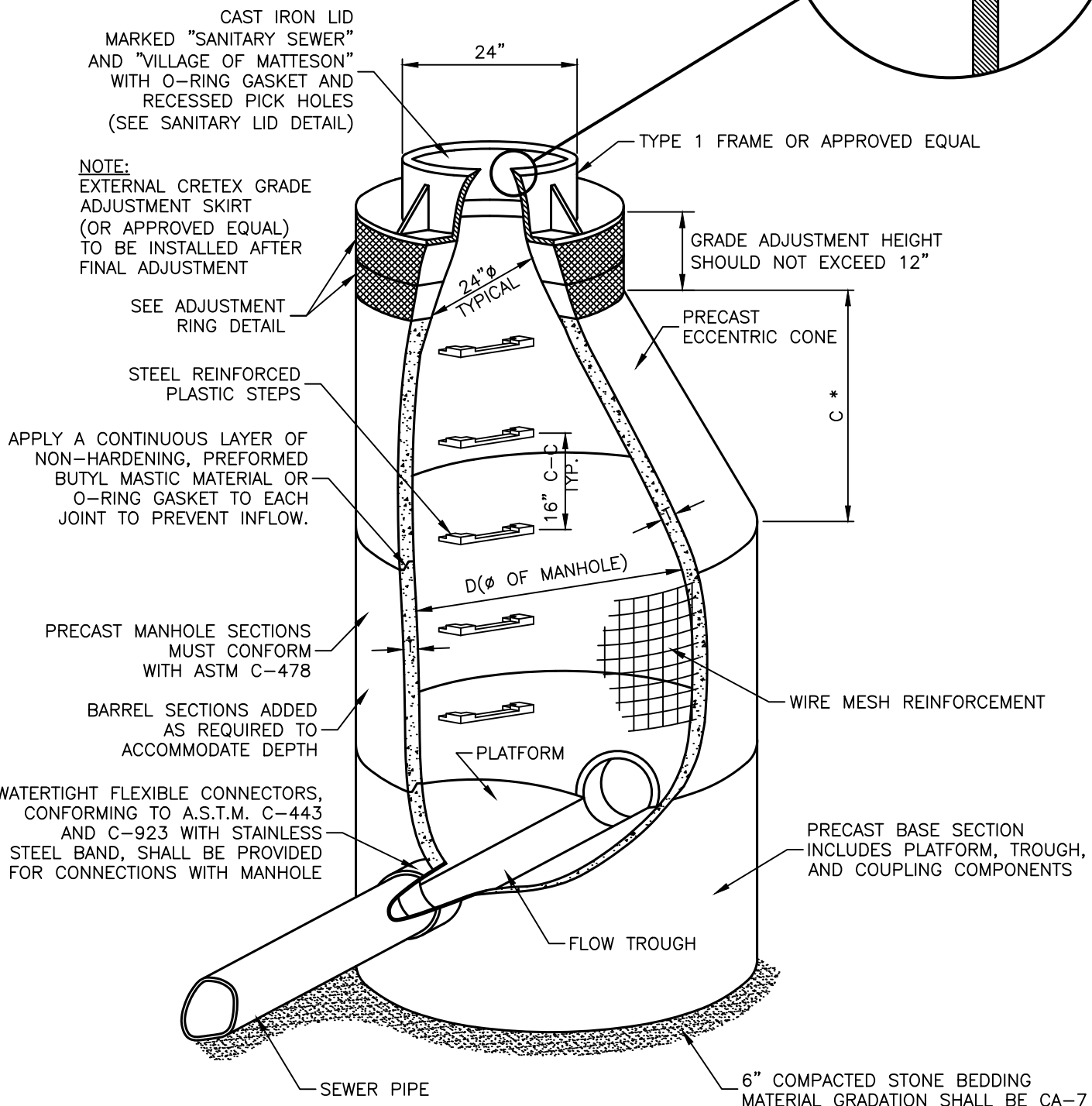


TRENCH BACKFILL DETAIL FOR
SANITARY SEWER & WATER SERVICES

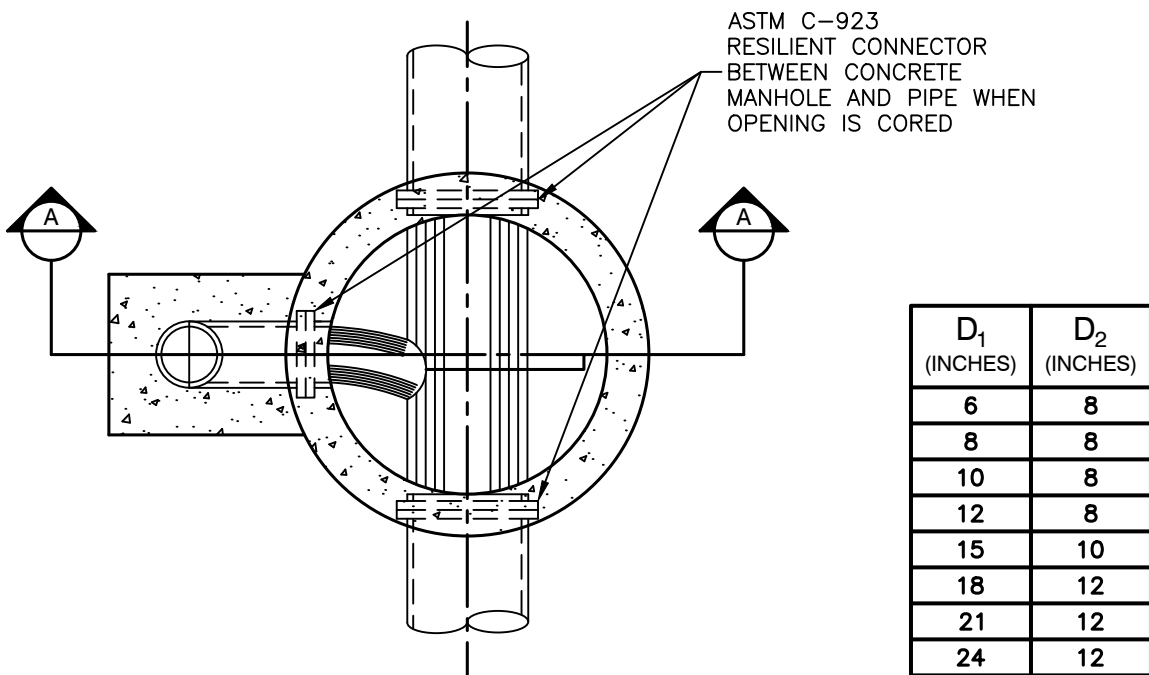
SANITARY SEWER PIPE BEDDING SHALL CONSIST OF GRAVEL, CRUSHED GRAVEL, PEA GRAVEL, CRUSHED STONE OR SLAG, 1/4" TO 3/4" IN SIZE. AS A MINIMUM THE MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF ART. 1004.01 OF THE STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION OF THE STATE OF ILLINOIS.

ALTERNATE MATERIALS FOR WALLS	D	C	T
PRECAST REINFORCED CONCRETE SECTION	4'-0" 5'-0"	2'-6" 3'-9"	4" 5"
CAST-IN-PLACE CONCRETE	4'-0" 5'-0"	2'-6" 3'-9"	6" 6"

* DIMENSION "C" FOR PRECAST REINFORCED CONCRETE SECTION MAY VARY FROM THE DIMENSION GIVEN $\pm 6"$



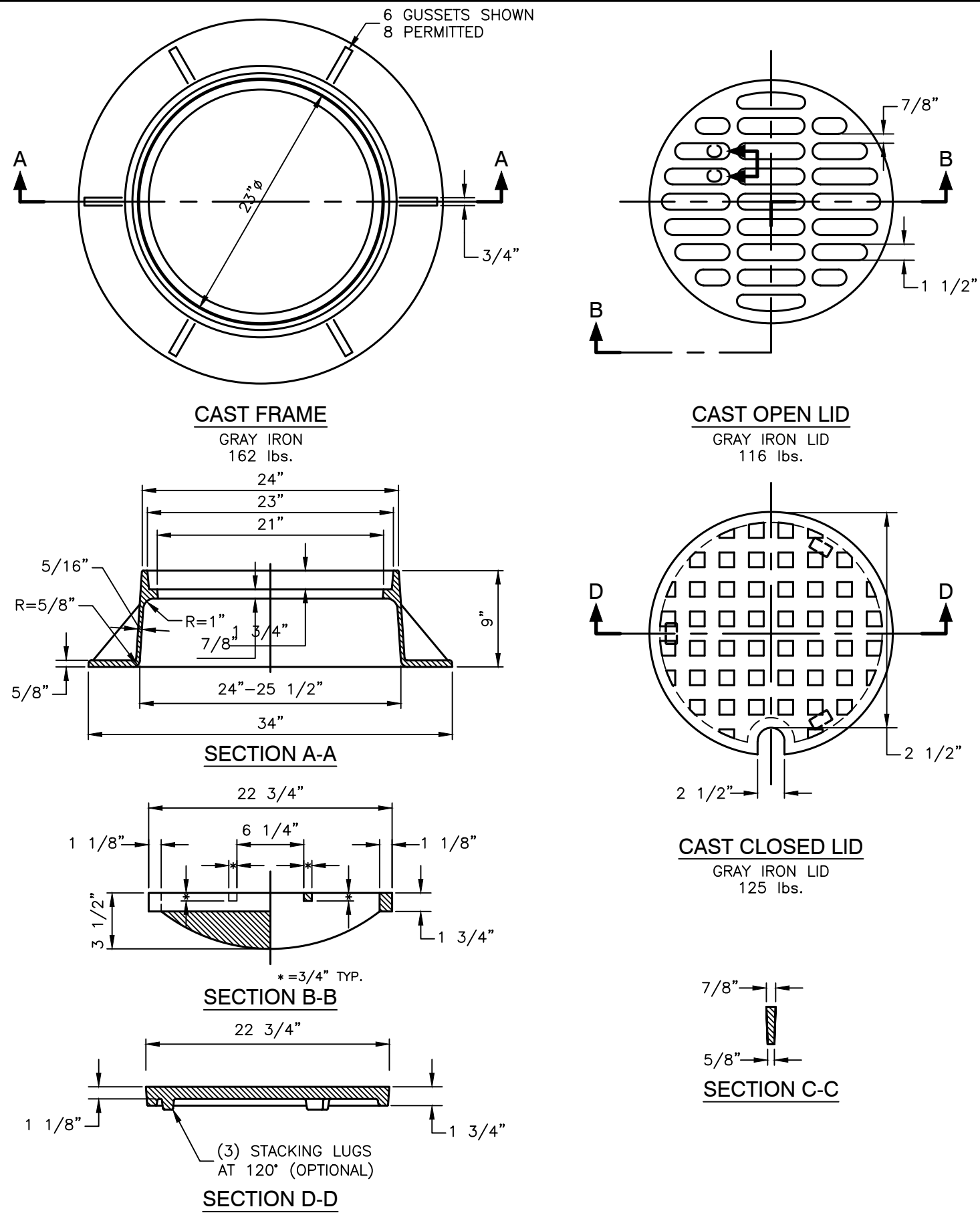
SANITARY MANHOLE



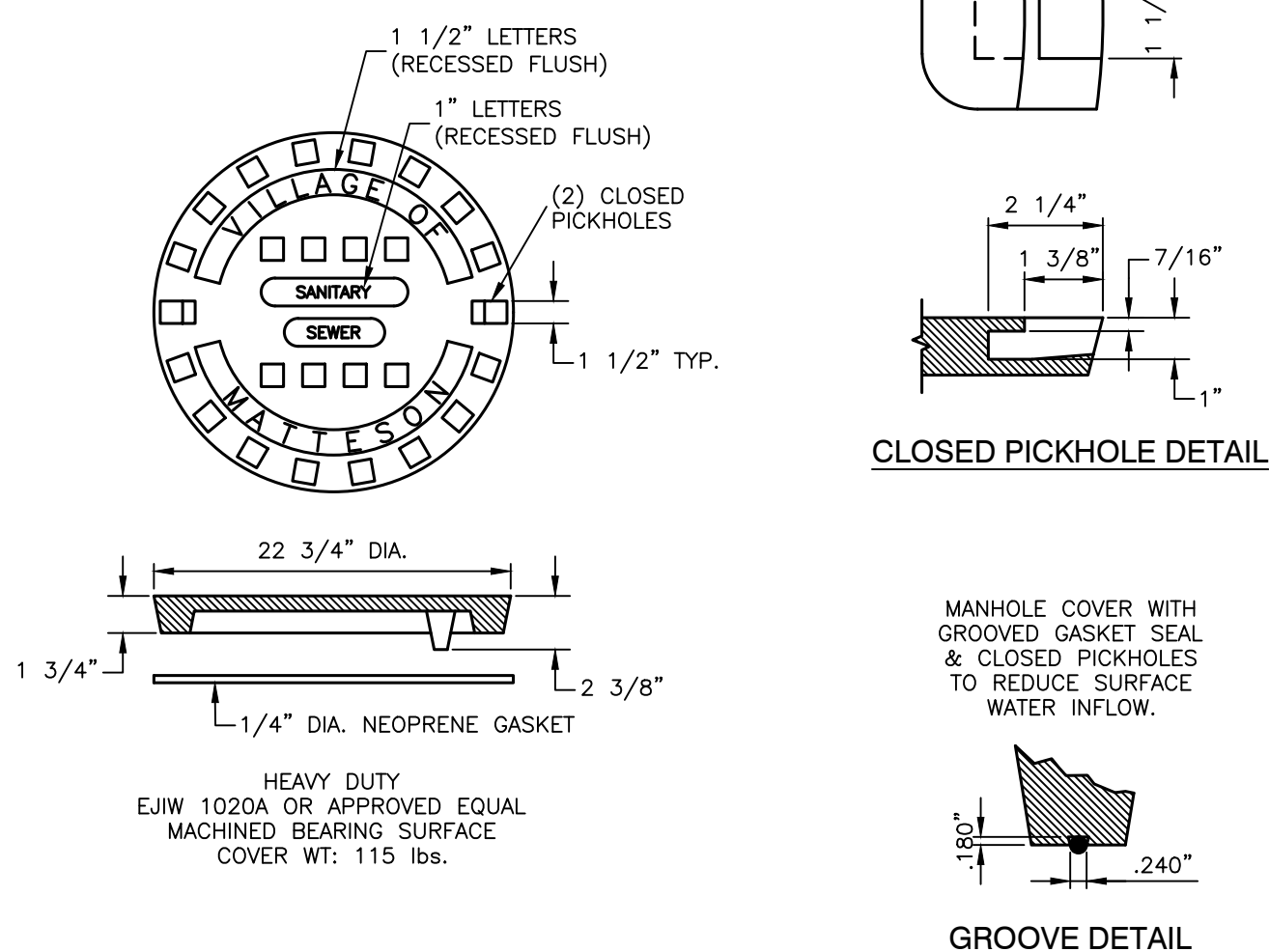
SECTION C-C

SECTION A-A

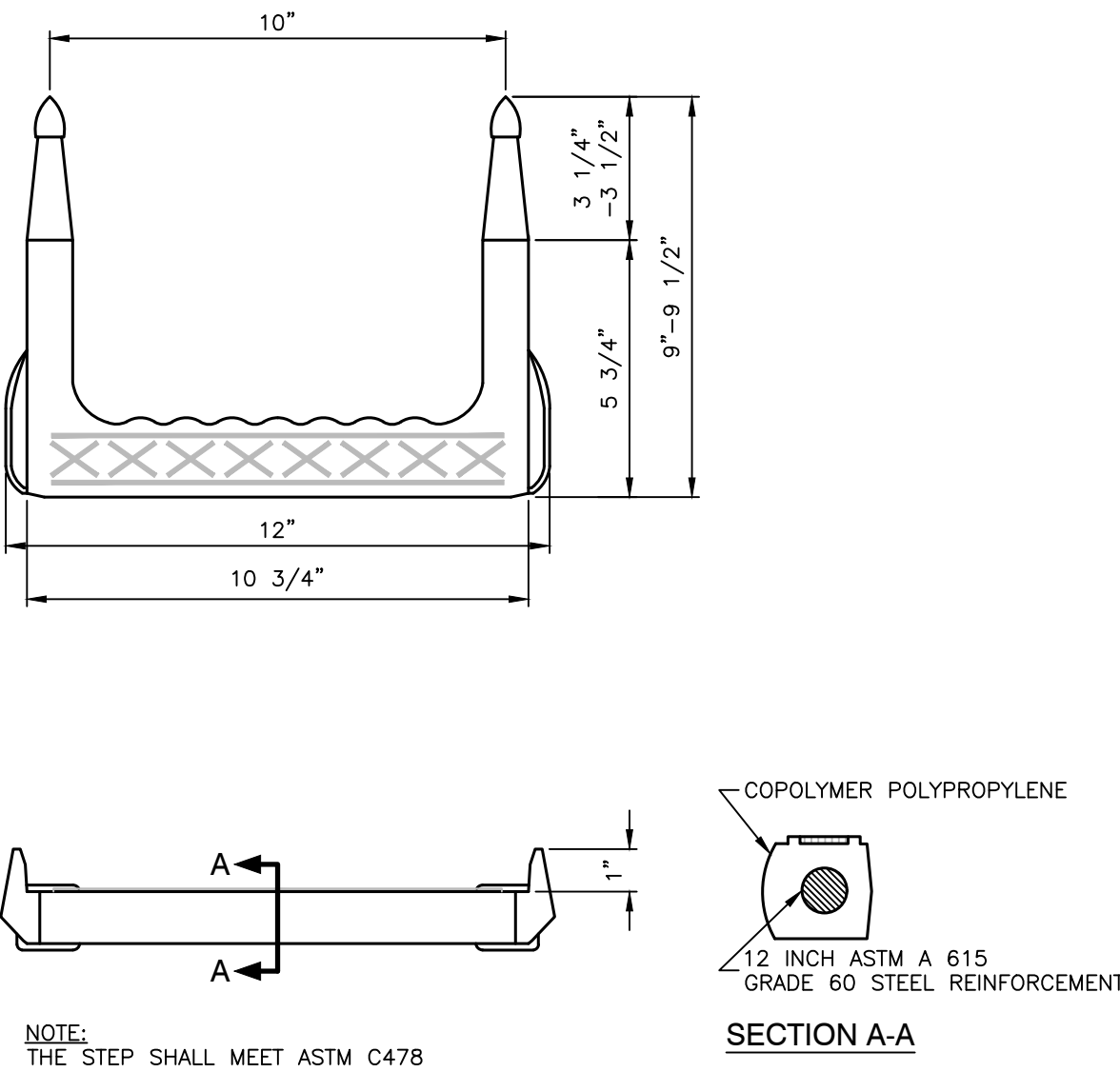
STANDARD DROP MANHOLE



TYPE 1 FRAME AND LIDS

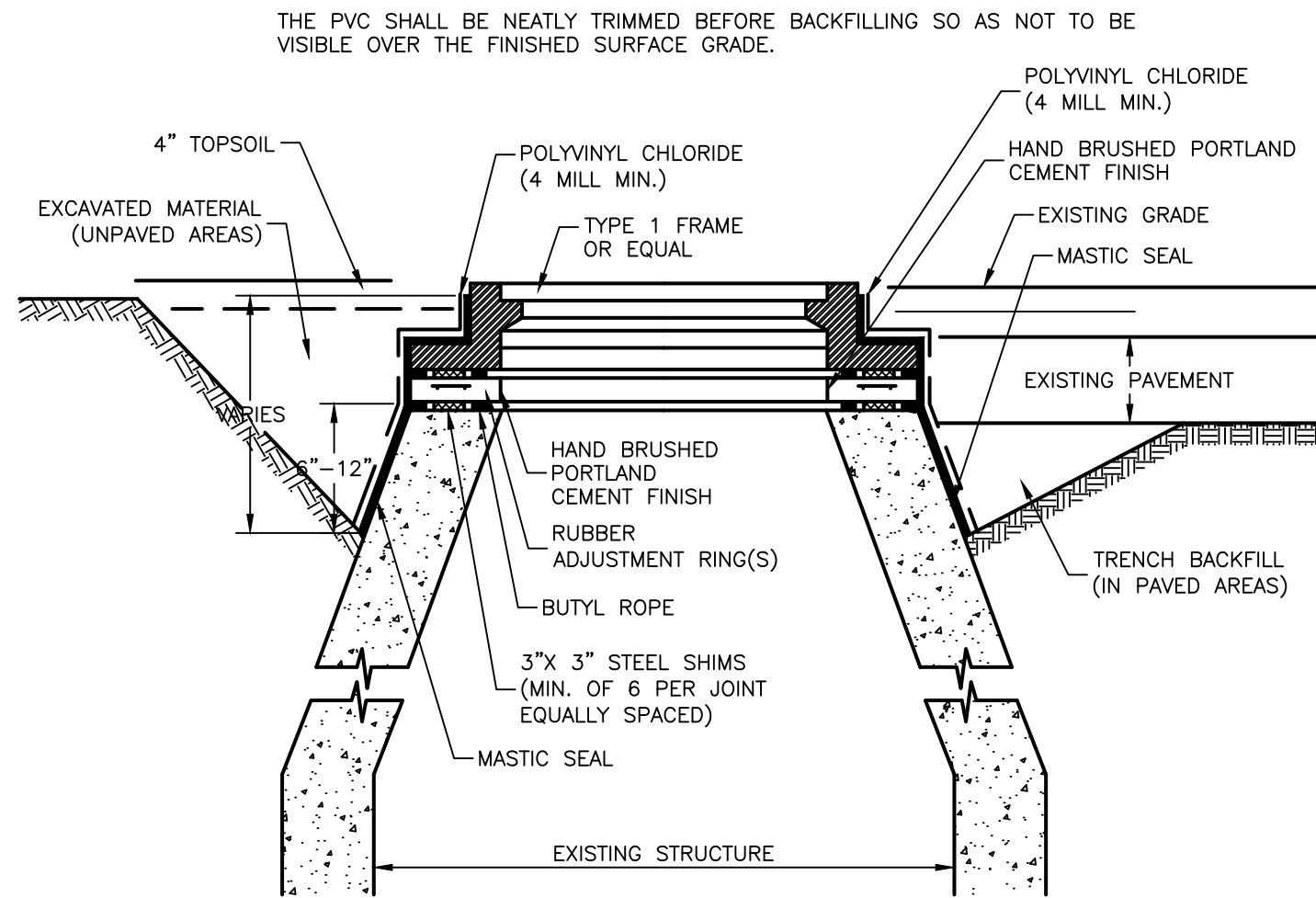


SPECIAL LETTERED SANITARY MANHOLE LID



STEEL REINFORCED PLASTIC STEPS

VILLAGE OF MATTESSON
STANDARD DETAILS
SANITARY SEWER-1



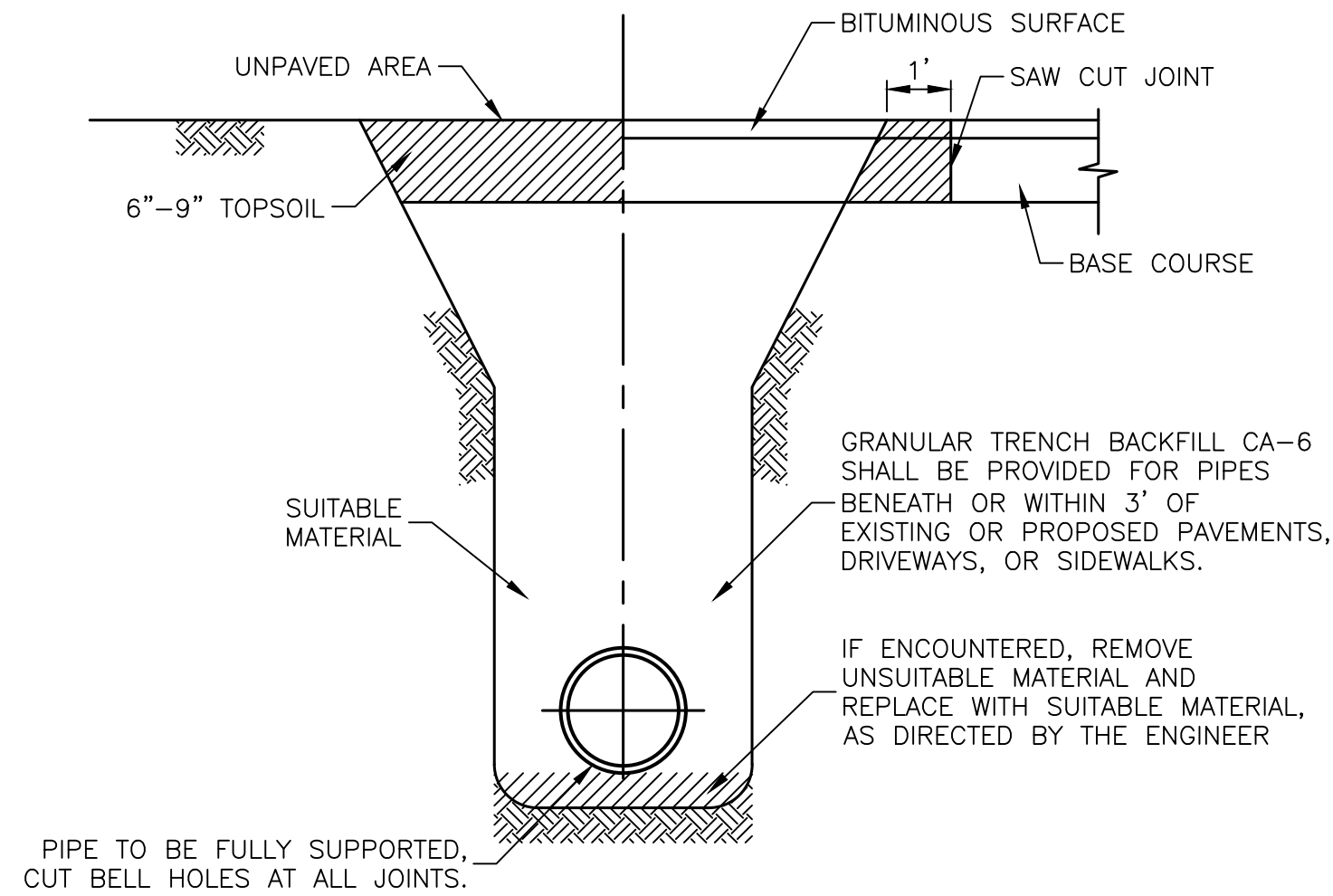
TO BE USED ON: RAISE MANHOLE FRAME, ADJUST AND/OR SEAL MANHOLE FRAME, REPLACE FRAME, AND INSTALL GASKET SEAL COVER.

NOTE:

- 1) STEEL SHIMS SHALL BE 1/8" LESS IN HEIGHT THAN THE BUTYL ROPE TO ALLOW FOR COMPRESSION AND SEATING OF THE BUTYL ROPE. THE FRAME AND RUBBER ADJUSTMENT RING(S) SHALL BE POSITIVELY POSITIONED AND SECURELY FASTENED AND SHALL MATCH THE SURFACE GRADE AND SLOPE, AND PREVENT MOVEMENT UNDER TRAFFIC LOADING.
- 2) STEEL SHIMS SHALL NOT BE USED TO ADJUST THE HEIGHT OF THE FRAME MORE THAN 15/16 INCH. ADJUSTMENTS EQUAL TO OR GREATER THAN 1 INCH, AND LESS THAN 2 INCHES REQUIRE 1 INCH ADJUSTING RINGS.
- 3) THE CONTRACTOR SHALL USE THE LARGEST (IN HEIGHT) COMMERCIALY AVAILABLE ADJUSTMENT RINGS, MINIMIZING THE NUMBER OF ADJUSTMENT RINGS USED TO ATTAIN THE DESIRED ELEVATION. MAXIMUM ADJUSTMENT RING HEIGHT IS 12 INCHES.
- 4) STEEL SHIMS ARE TO BE USED ONLY ON MANHOLES IN PAVED AREAS, STREETS, ALLEYS, SIDEWALK, DRIVEWAYS, ETC. STEEL SHIMS ARE NOT REQUIRED IN PARKWAY AREAS.

ADJUST AND/OR SEAL MANHOLE FRAME
(SANITARY SEWER)

REVISION DATE:

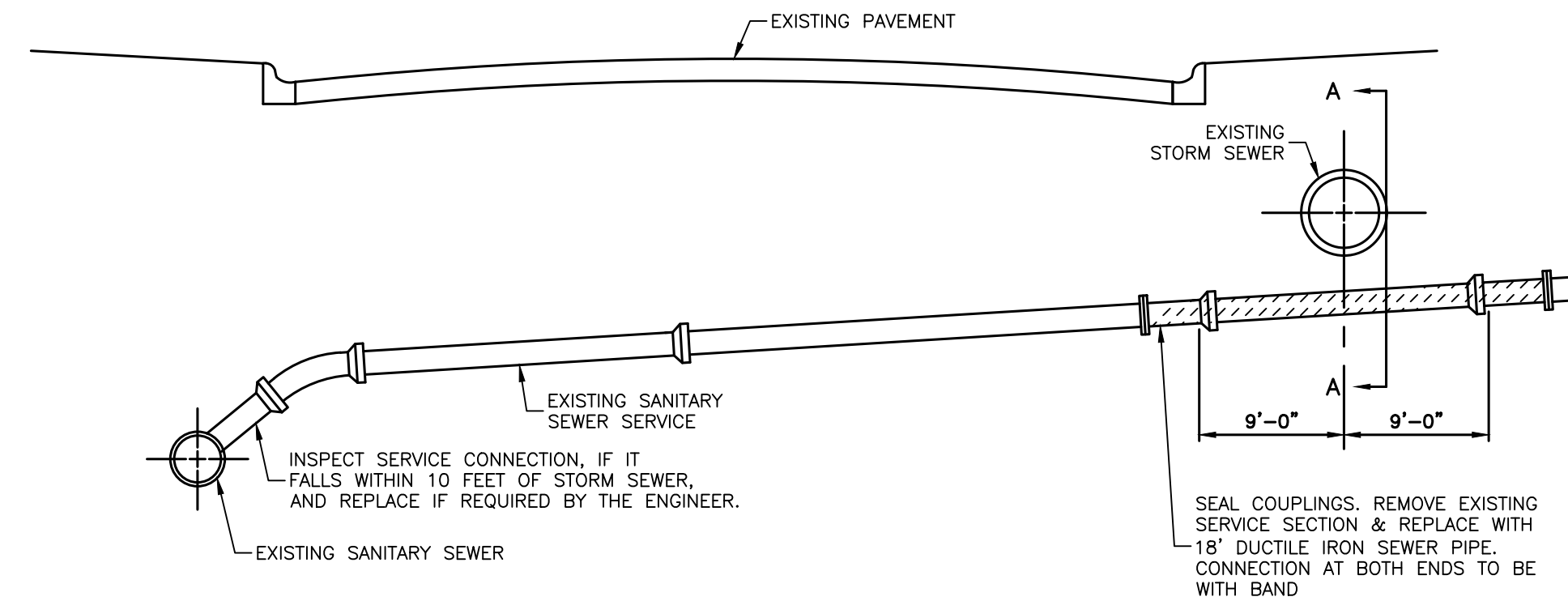
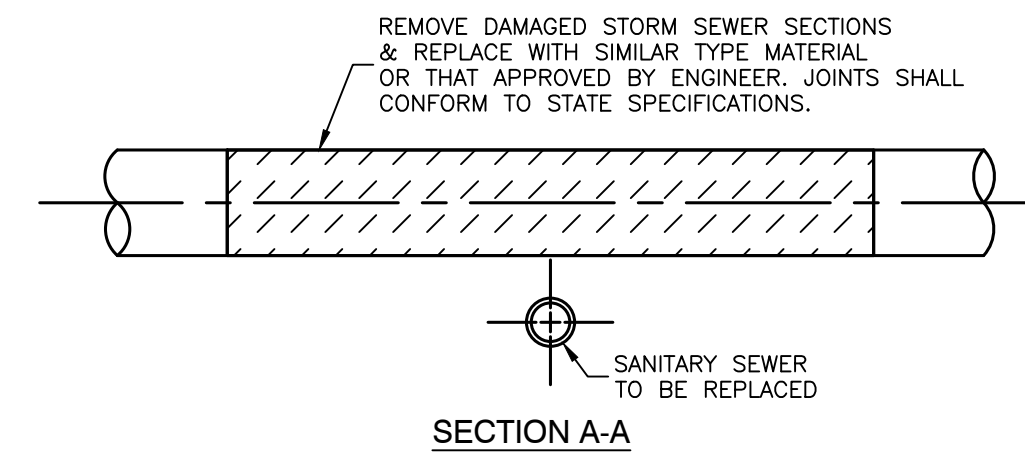


NOTES:

1. TRENCH SHALL BE IN ACCORDANCE WITH OSHA SAFETY STANDARDS.

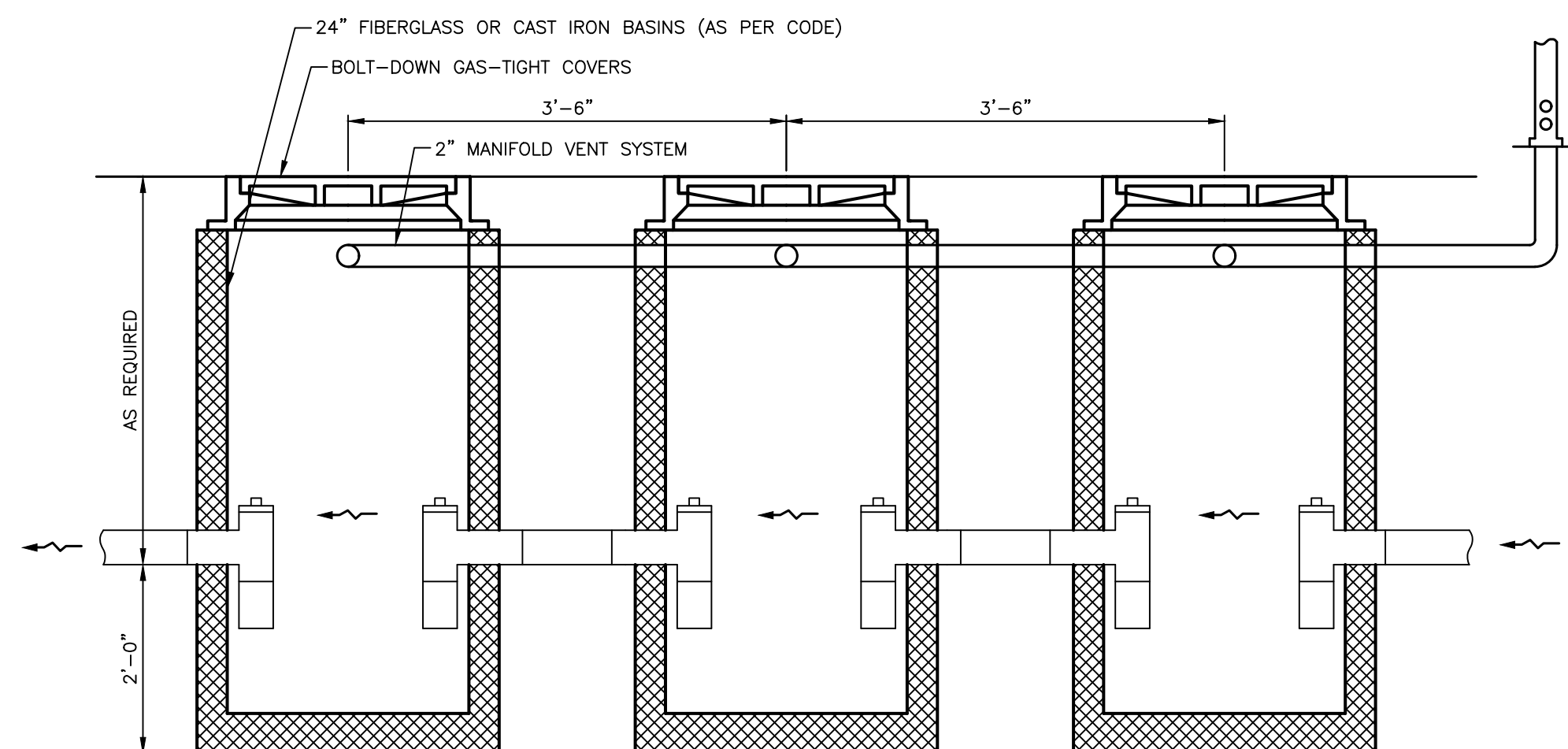
TRENCH BACKFILL DETAIL FOR FORCE MAIN

REVISION DATE:



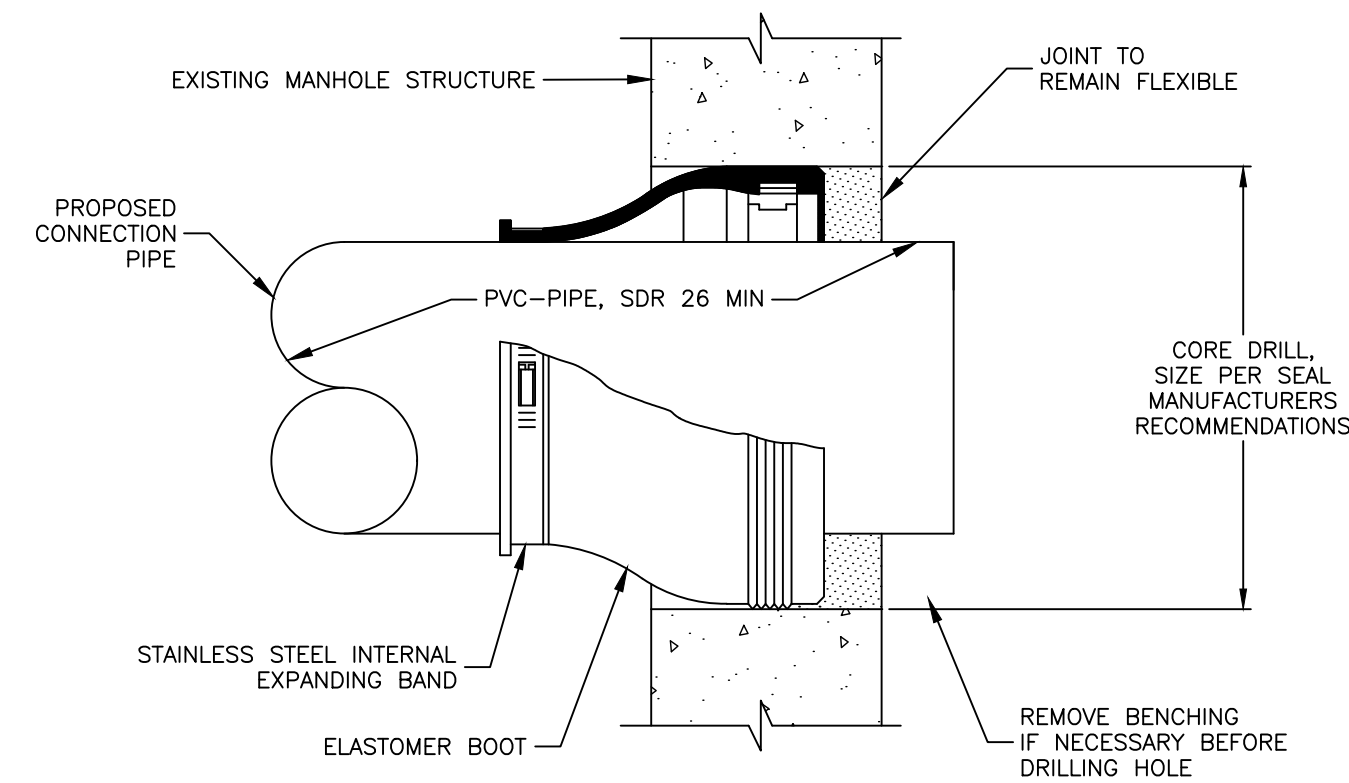
TYPICAL SERVICE POINT REPAIRS

REVISION DATE:



TRIPLE OIL SEPARATOR BASINS

REVISION DATE:



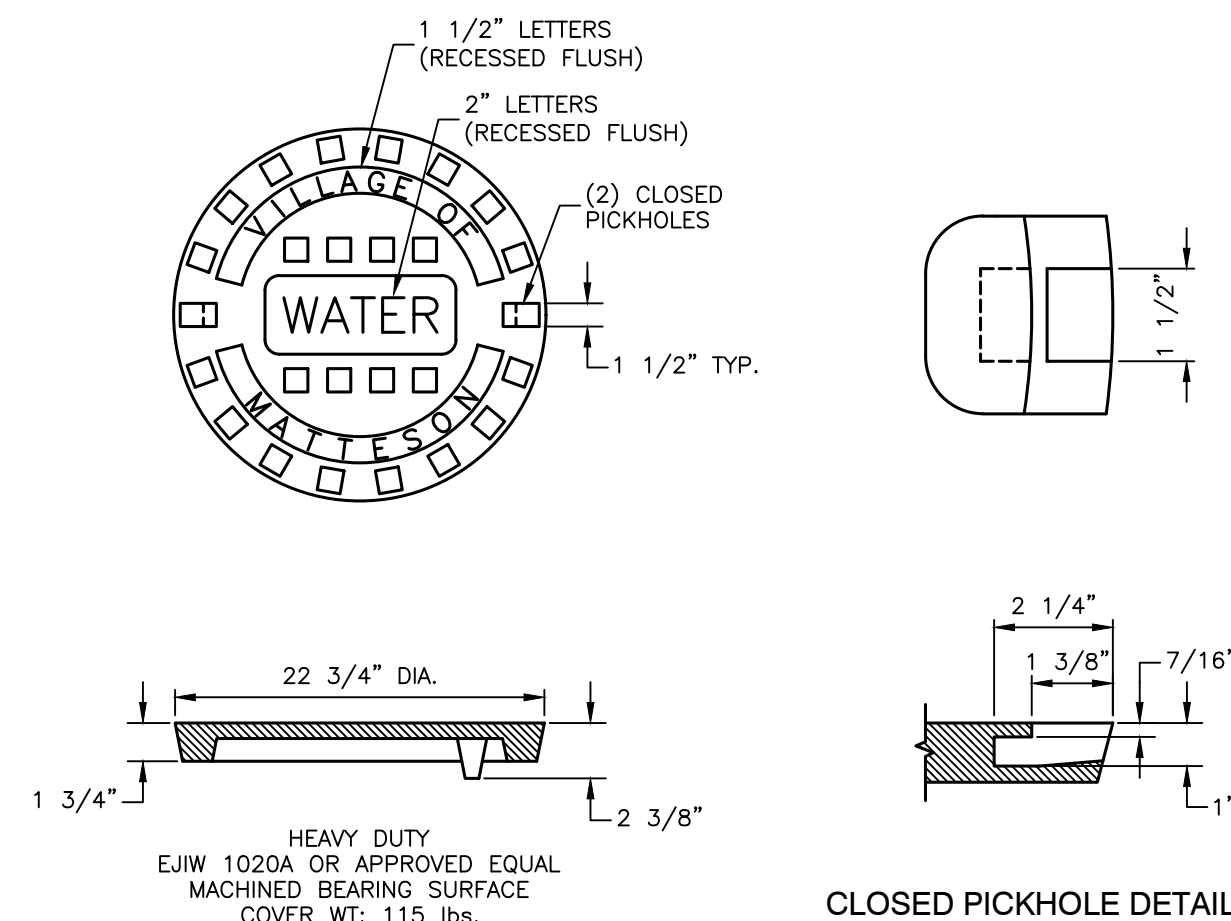
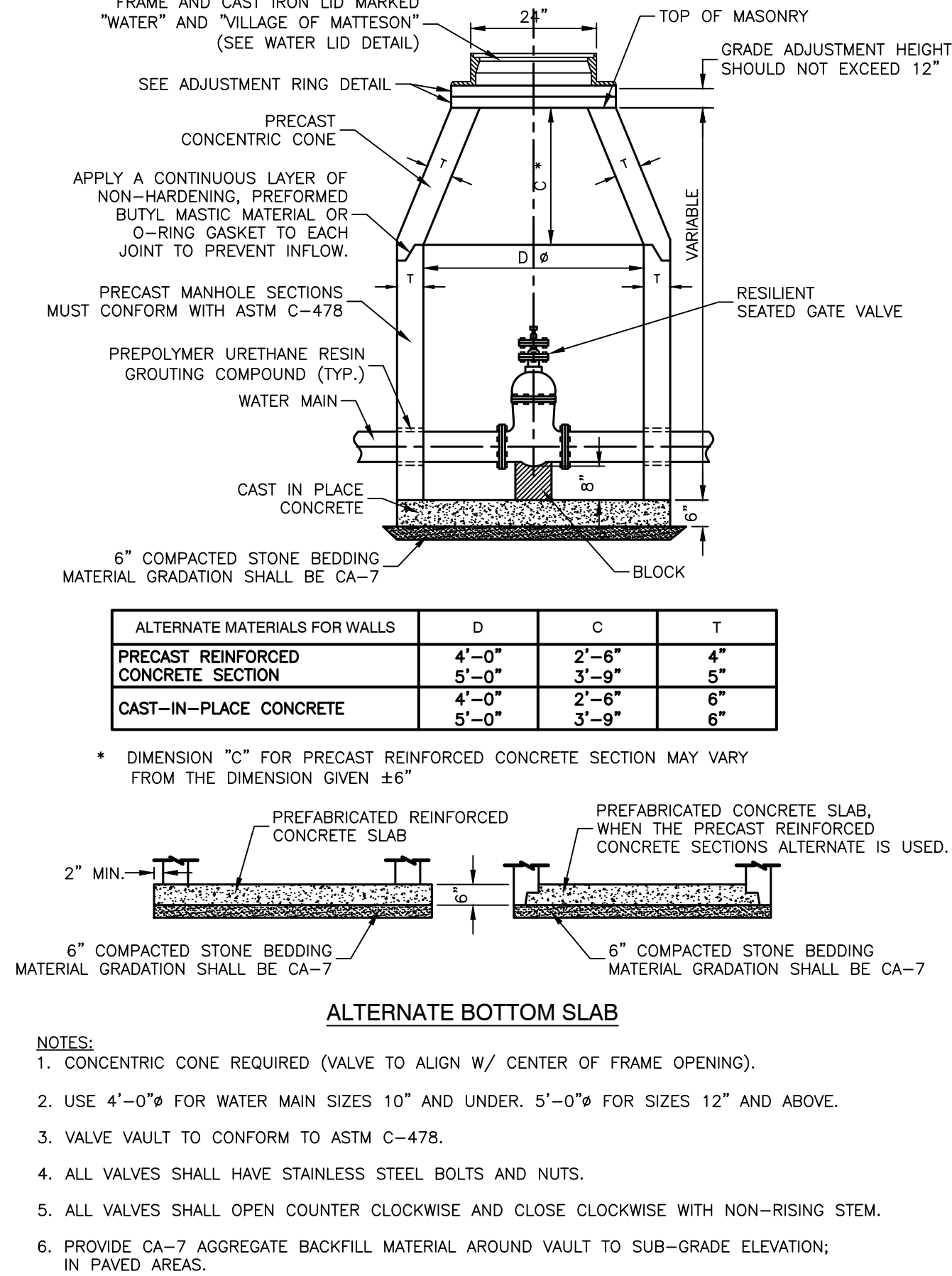
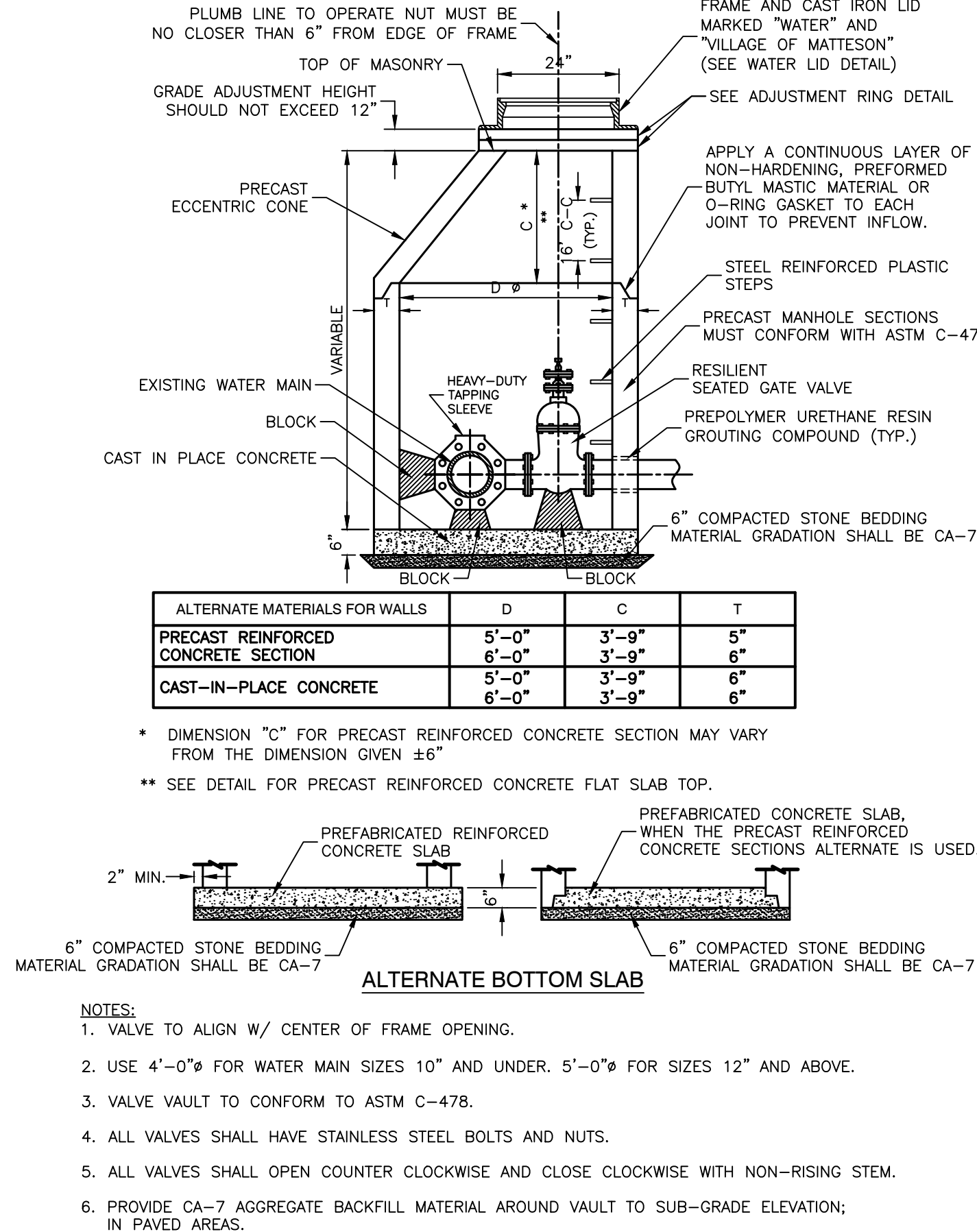
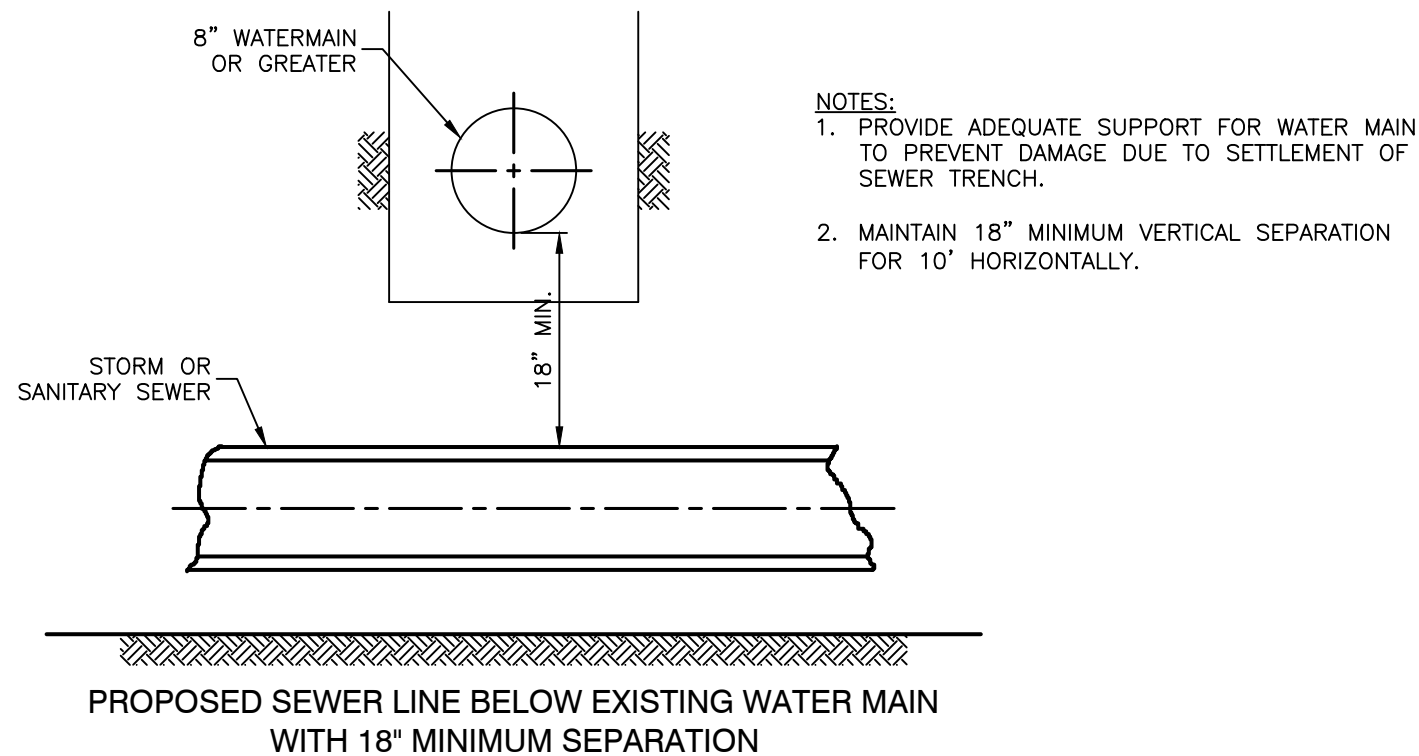
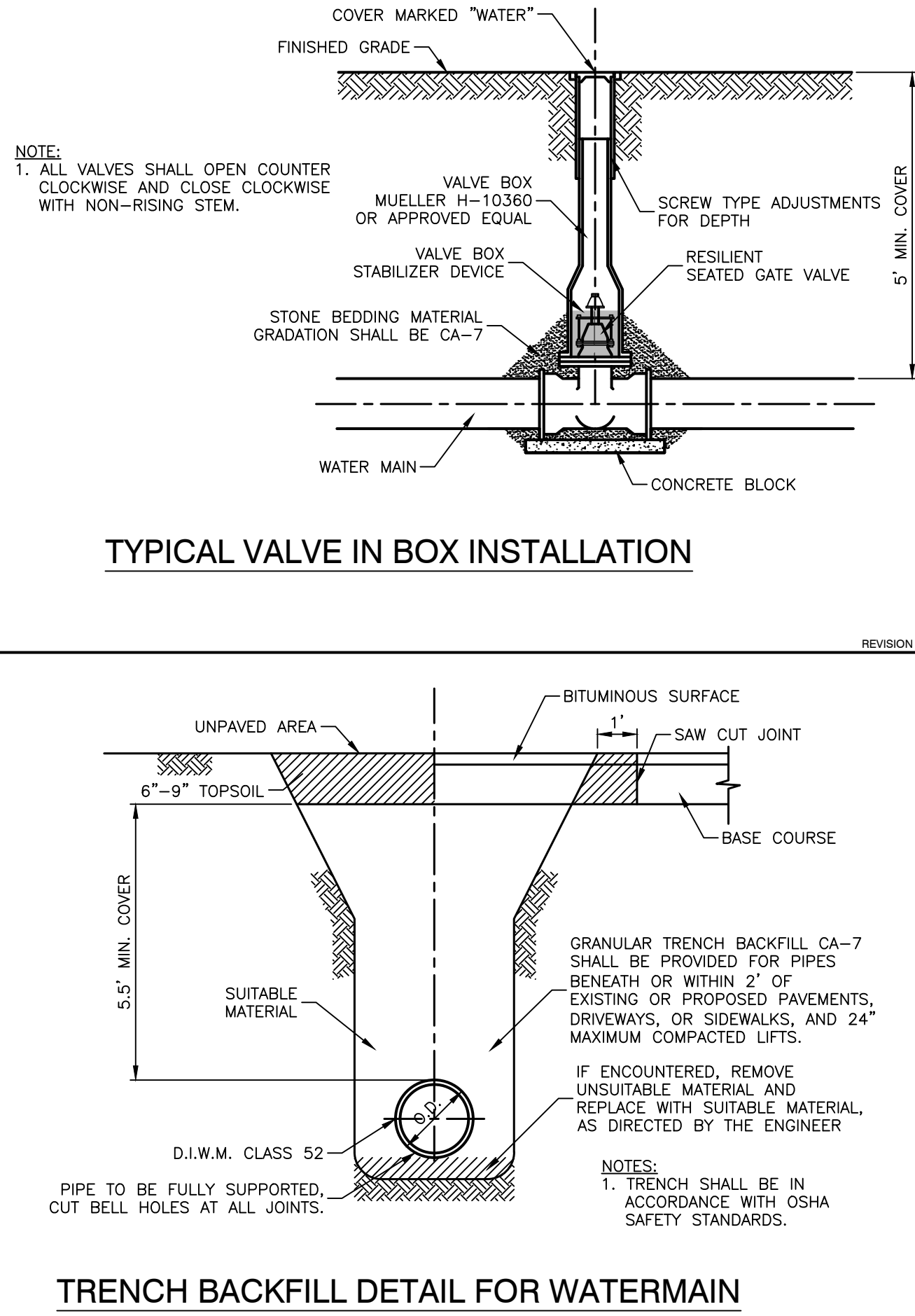
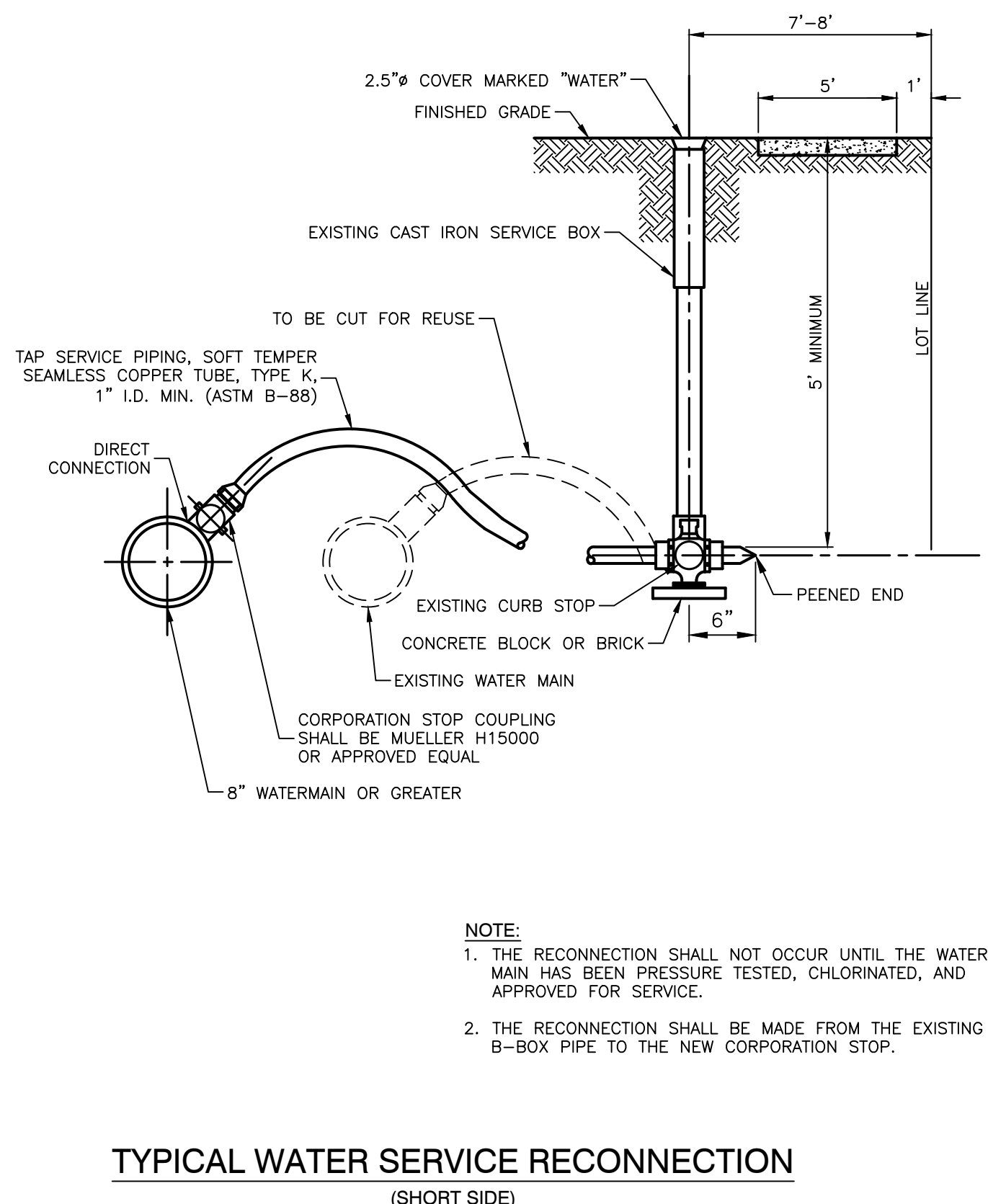
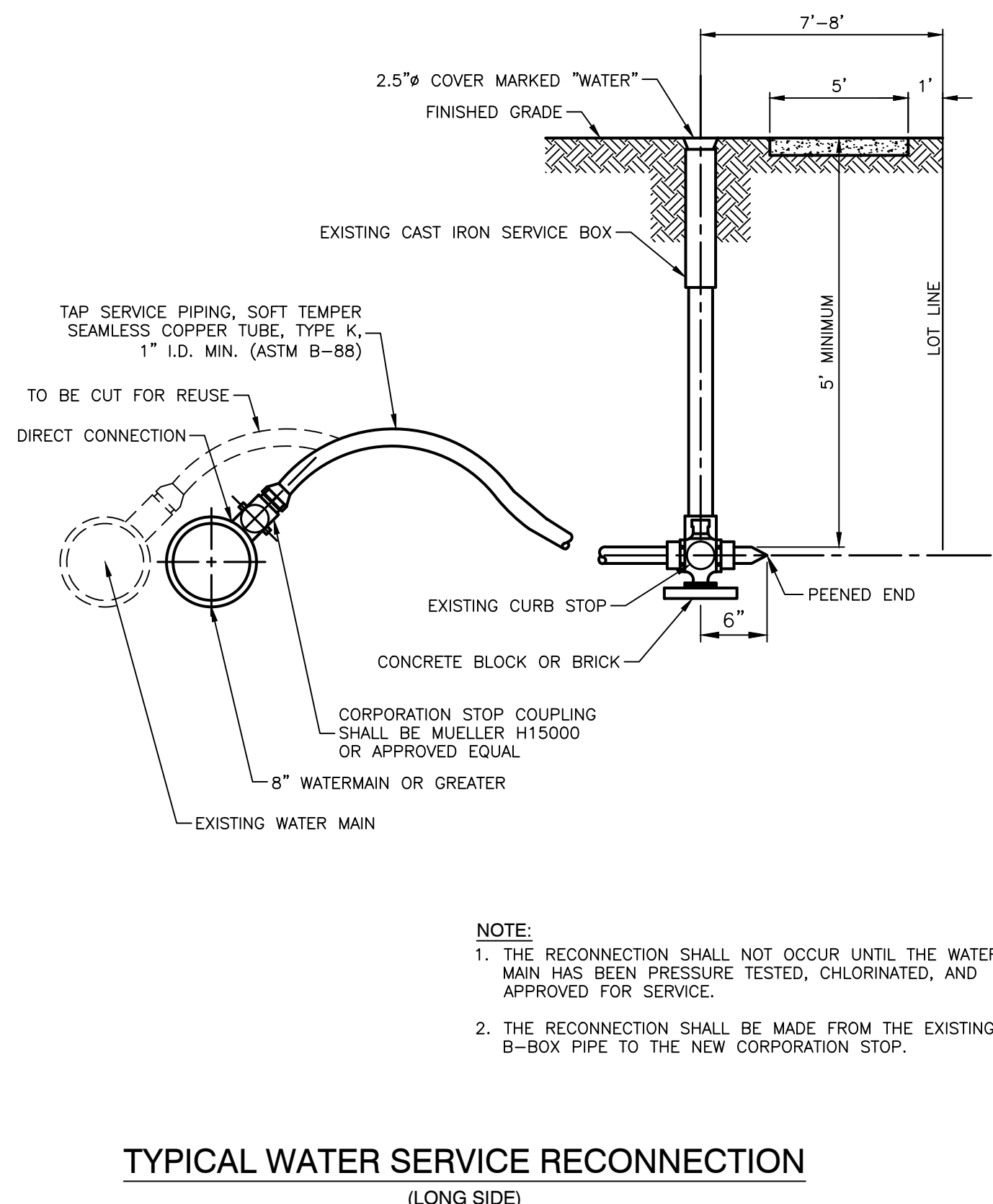
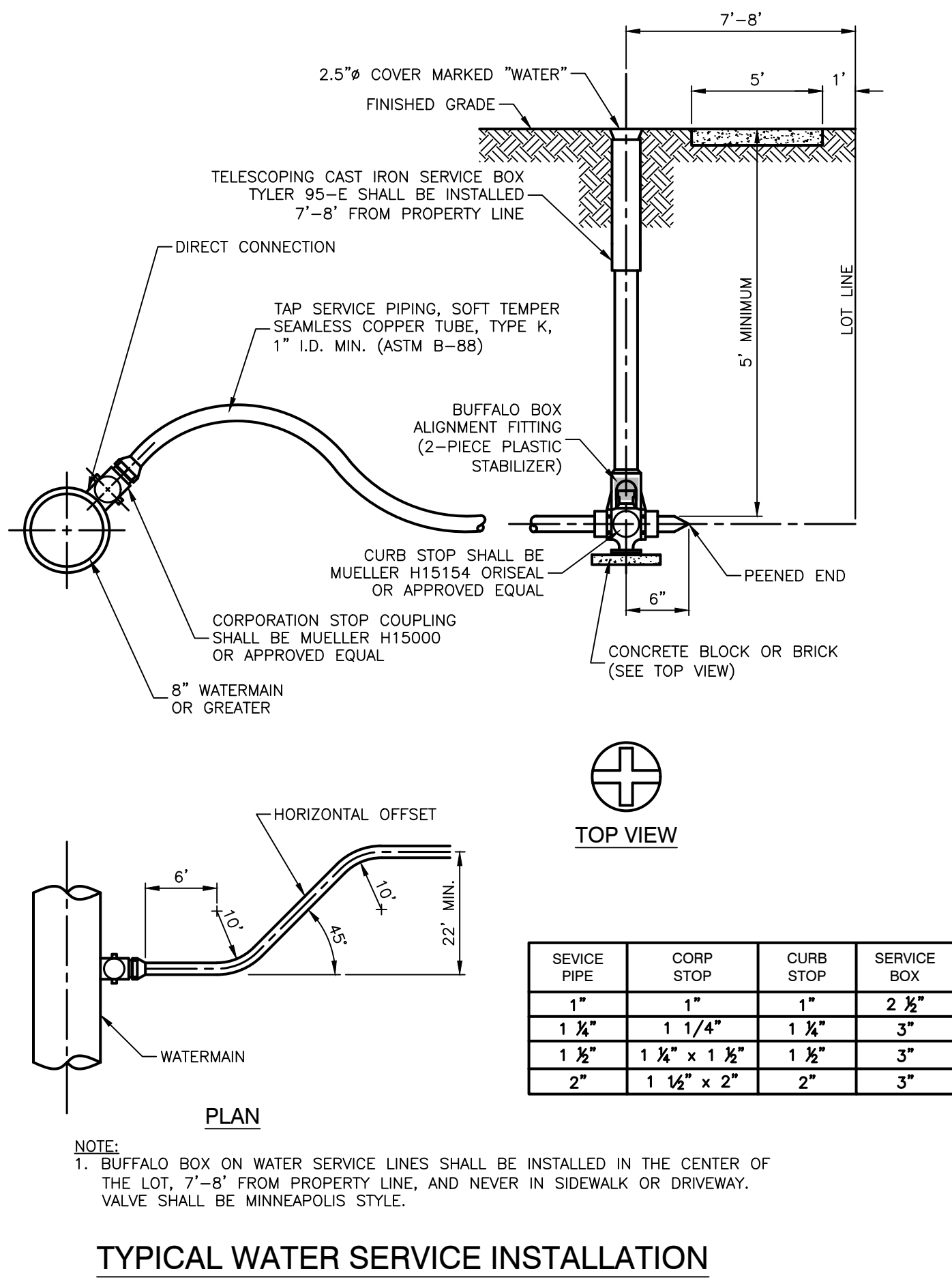
NOTES:

1. WALL PENETRATIONS SHALL BE LOCATED WITHIN A RISER SECTION AND NOT A WALL JOINT
2. CORE-DRILL CIRCULAR OPENING IN MANHOLE WALL OF DIAMETER TO FIT THE REQUIRED BOOT SIZE.
3. KOR-N-SEAL FLEXIBLE RUBBER BOOT (MANUFACTURED BY NATIONAL POLLUTION CONTROL SYSTEMS, INC.) OR APPROVED EQUAL SHALL BE USED FOR WATERTIGHT CONNECTION.
4. CUT, SHAPE, AND SLOPE NEW INVERT CHANNEL IN THE EXISTING CONCRETE BENCH FOR SMOOTH FLOW FROM NEW STORM SEWER CONNECTION.
5. CLEAN EXISTING MANHOLE OF ANY DIRT, CONCRETE, OR DEBRIS WHICH MAY ACCUMULATE DURING THE CONSTRUCTION PROCESS.

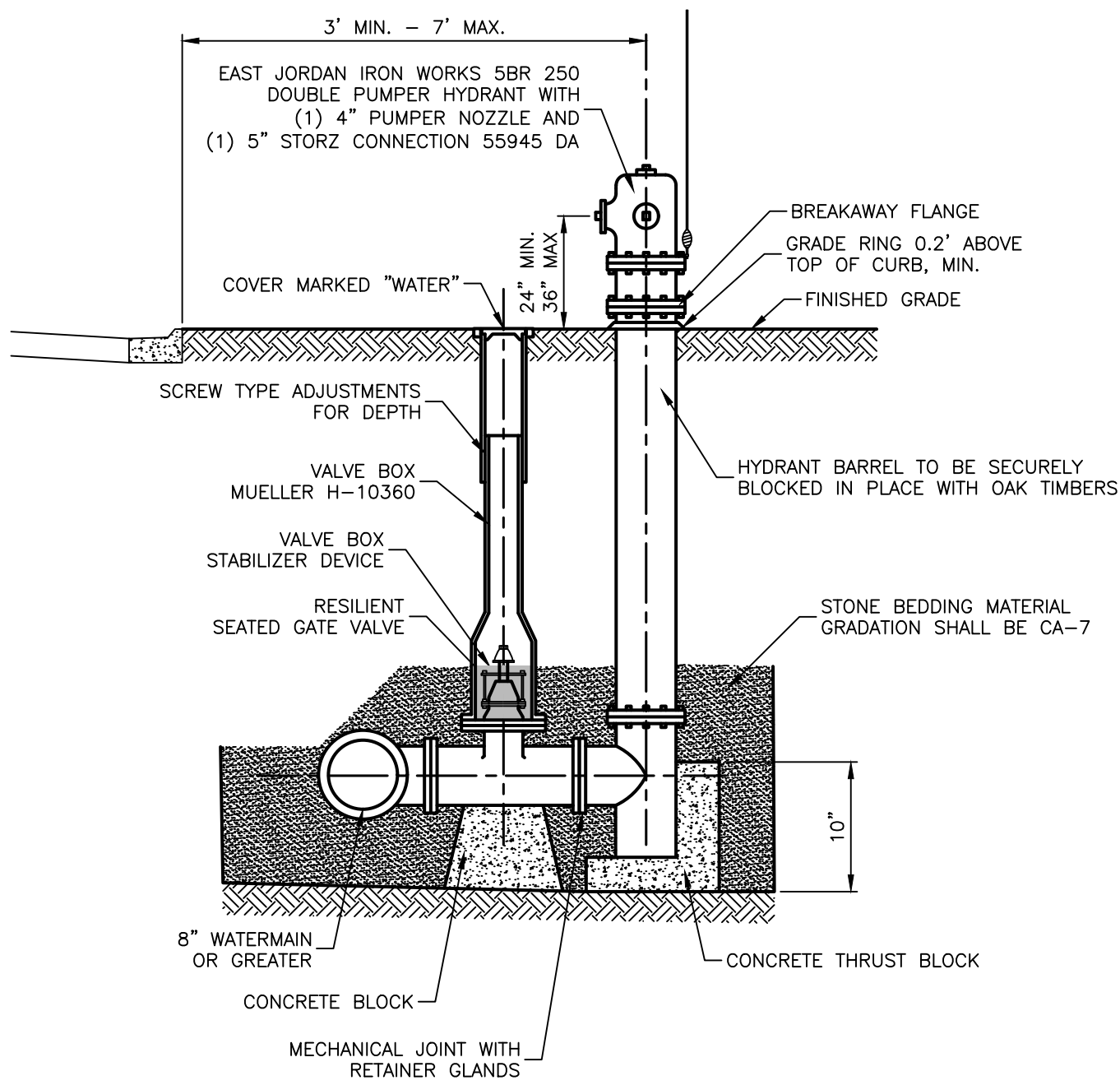
CONNECTION TO EXISTING MANHOLE

REVISION DATE:

**VILLAGE OF MATTESON
STANDARD DETAILS
SANITARY SEWER-2**



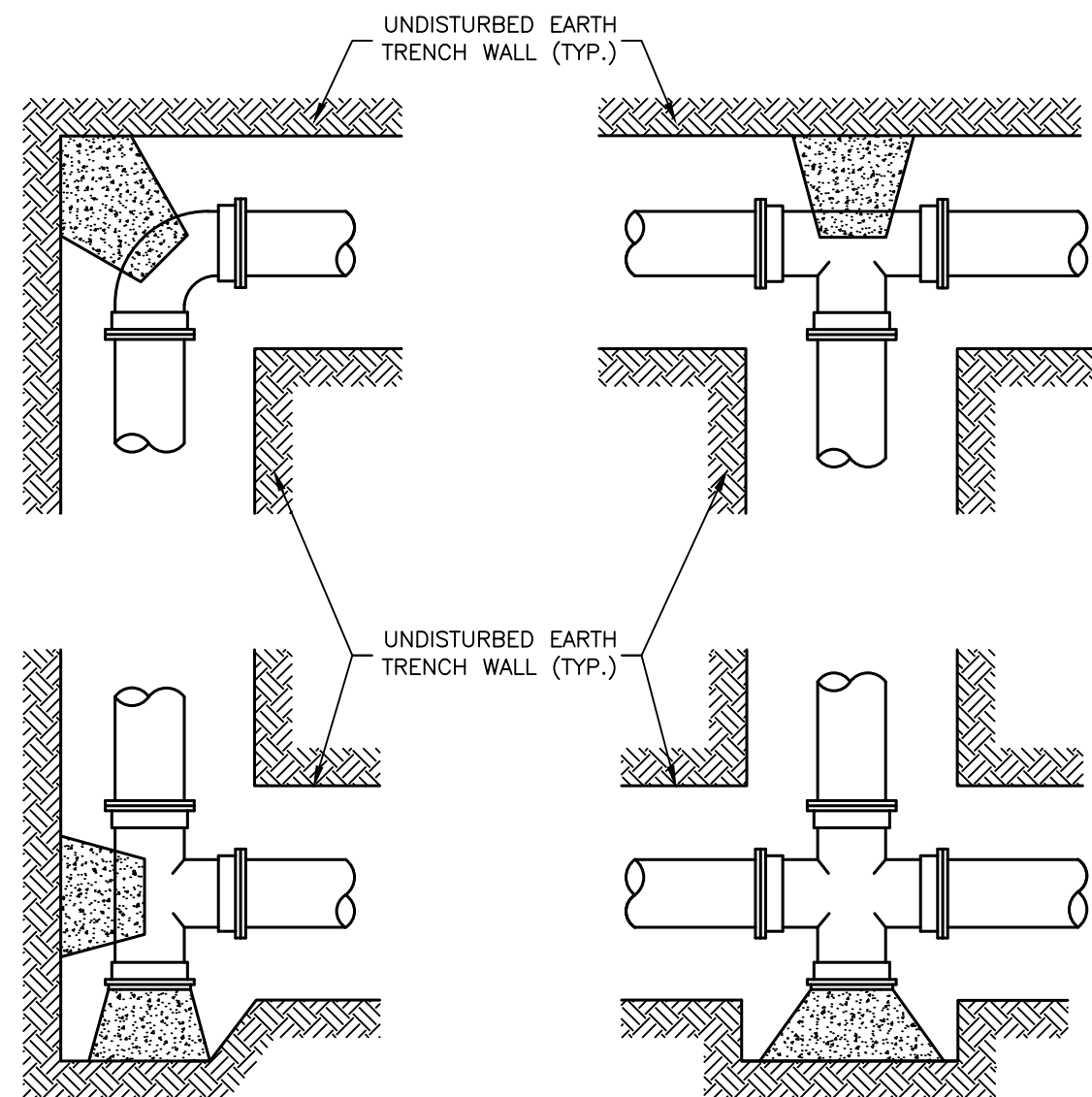
VILLAGE OF MATTESON STANDARD DETAILS WATER MAIN-1



- NOTES:
1. HYDRANTS SHALL BE INSTALLED FACING TOWARD THE CURB. NO HYDRANT SHALL BE INSTALLED WITHIN 48" OF ANY OBSTRUCTION NOR SHALL ANY OBSTRUCTION BE PLACED WITHIN 48" OF A HYDRANT. ALL HYDRANTS SHALL BE PAINTED SAFETY YELLOW BY THE MANUFACTURER.
 2. ALL VALVES SHALL OPEN COUNTER CLOCKWISE AND CLOSE CLOCKWISE WITH NON-RISING STEM.
 3. HYDRANT DRAIN HOLE SHALL BE FREE OF CONCRETE.

FIRE HYDRANT INSTALLATION

REVISION DATE:



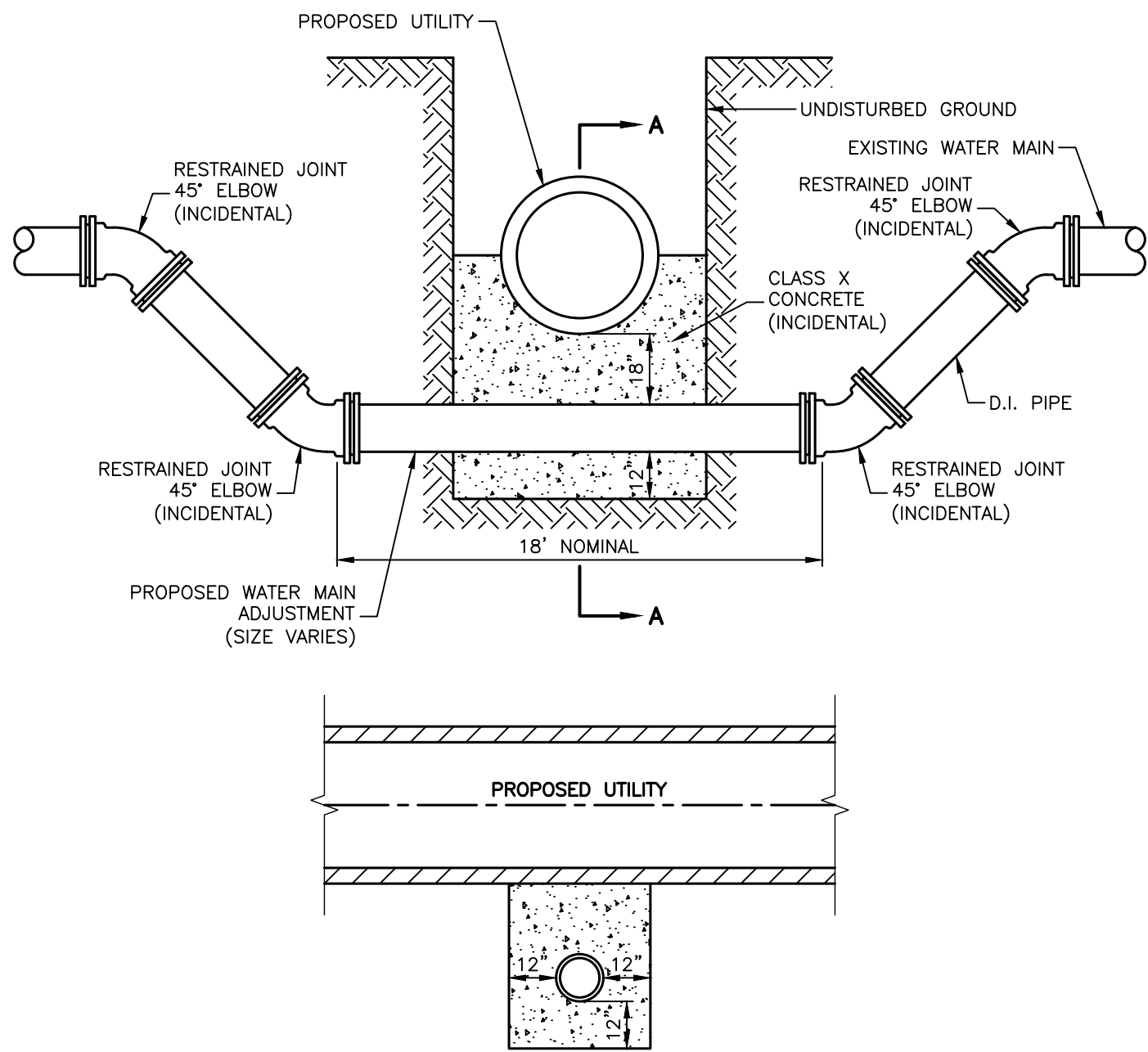
PLANS

- NOTES:
1. PROVIDE PRECAST CONCRETE THRUST BLOCKS OF ADEQUATE SIZE AND THRUST BEARING SURFACE TO PREVENT MOVEMENT OF PIPELINE UNDER PRESSURE.
 2. PLACE THE BASE AND THE THRUST BEARING SIDES OF THRUST BLOCK DIRECTLY AGAINST UNDISTURBED EARTH.
 3. PLACE THRUST BLOCKING SO THE FITTING JOINTS WILL BE ACCESSIBLE FOR REPAIR.
 4. THRUST BLOCKING DOES NOT SUBSTITUTE FOR MEGALUG RESTRAINED JOINTS.

SECTION

TYPICAL THRUST BLOCK INSTALLATIONS

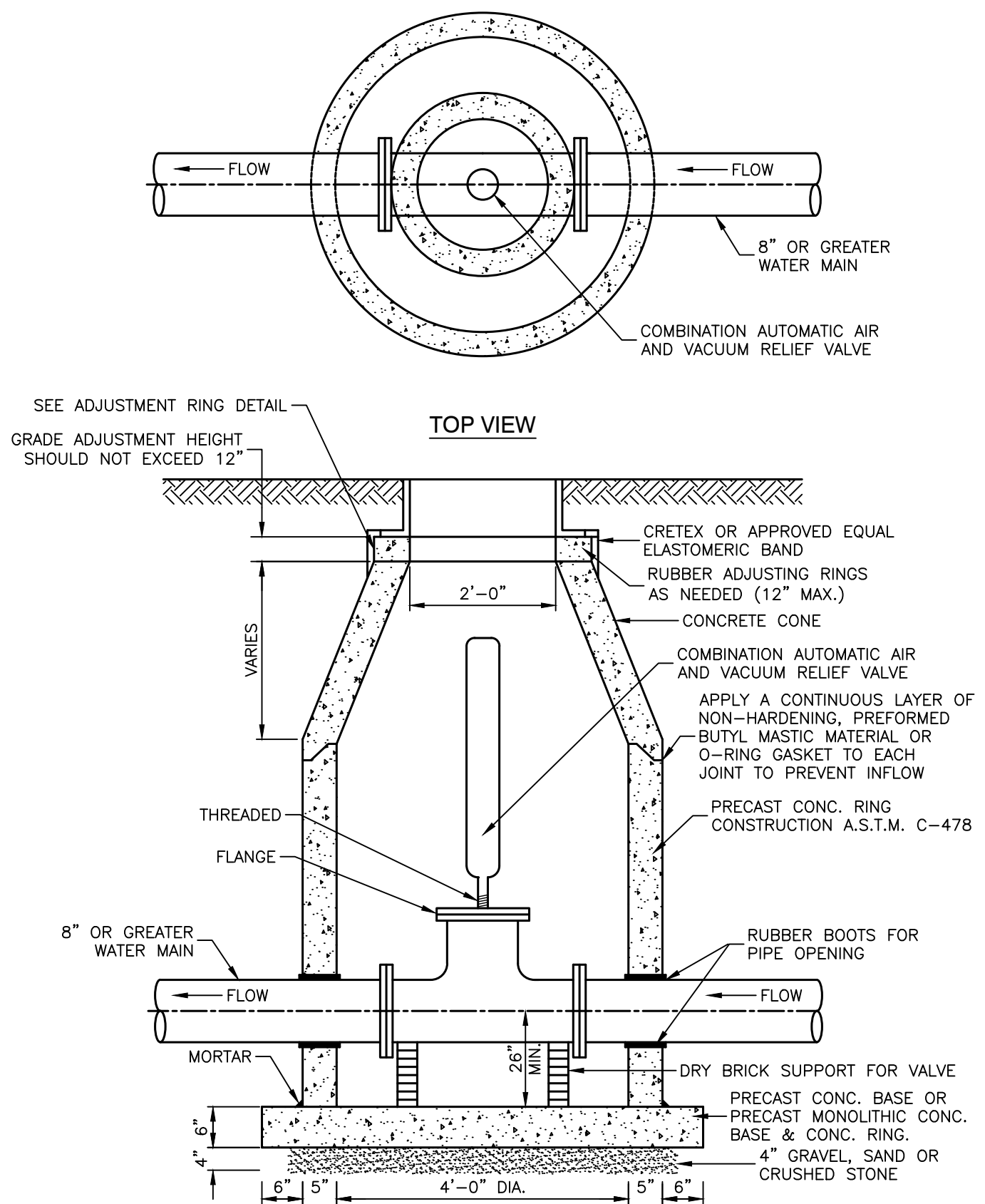
REVISION DATE:



SECTION A-A

DETAIL OF WATERMAIN ADJUSTMENT

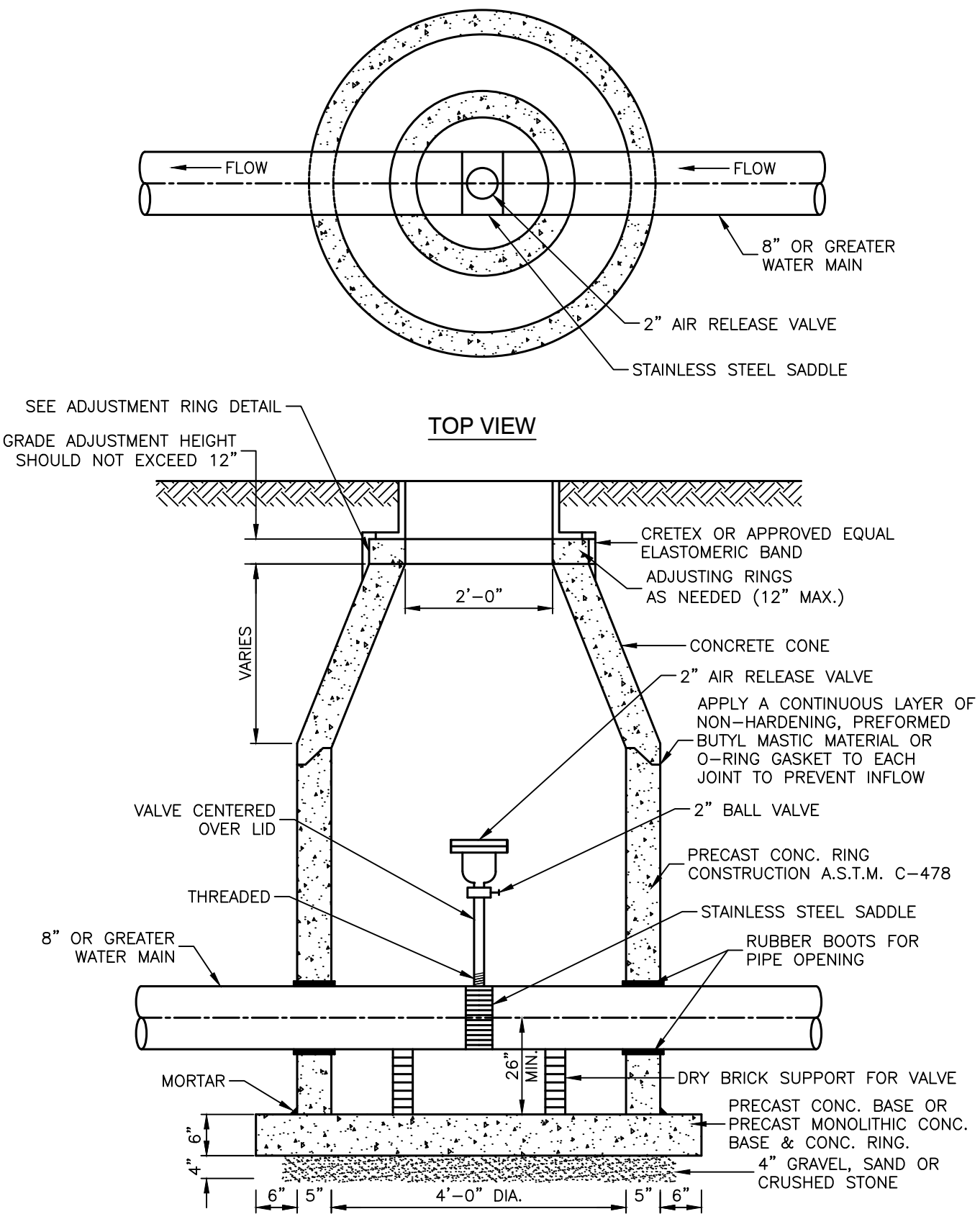
REVISION DATE:



- NOTE:
1. PIPE OPENINGS CAST INTO WALL.

AIR RELEASE DETAIL

REVISION DATE:

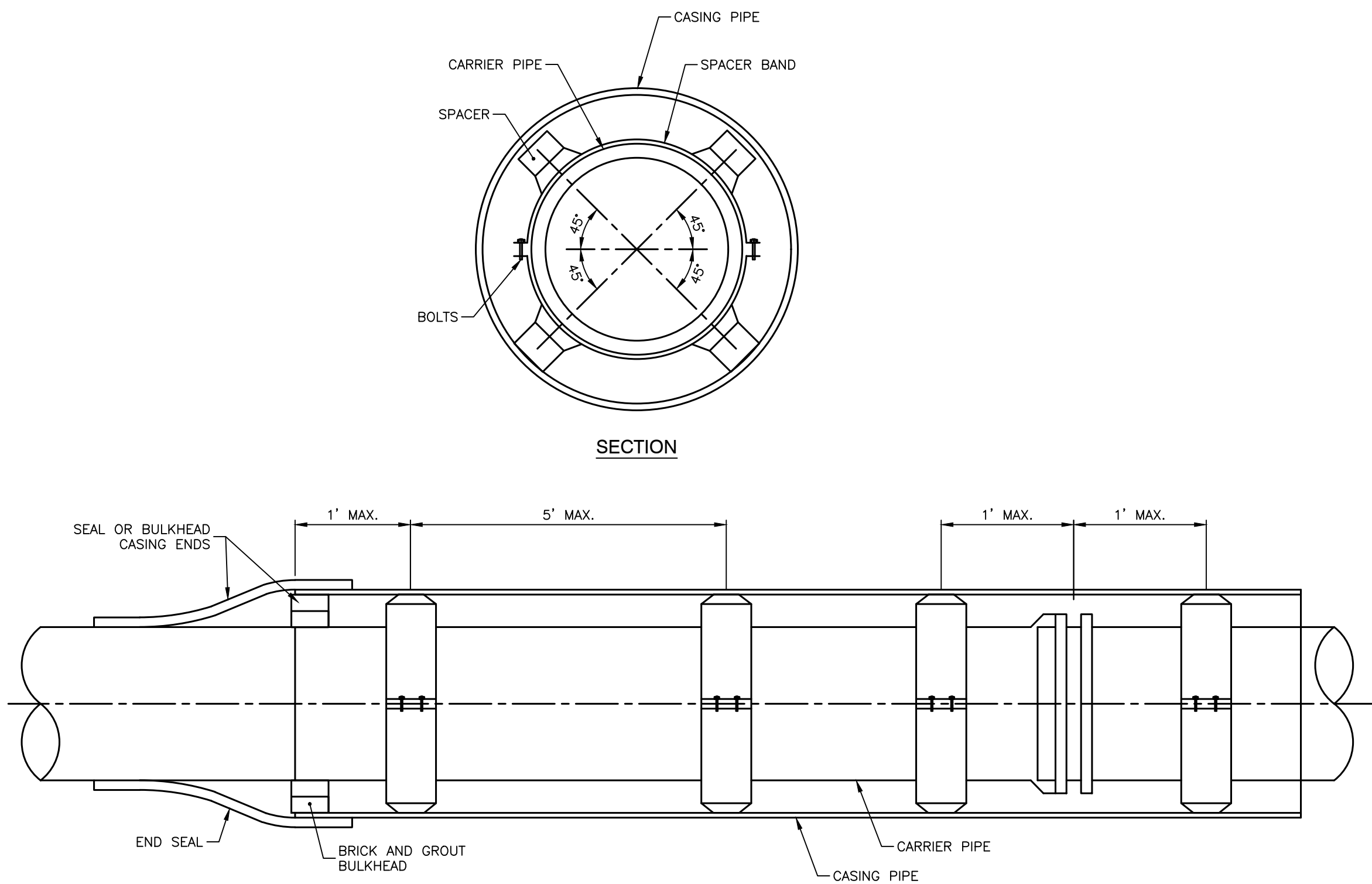


- NOTE:
1. PIPE OPENINGS CAST INTO WALL.

AIR RELEASE DETAIL

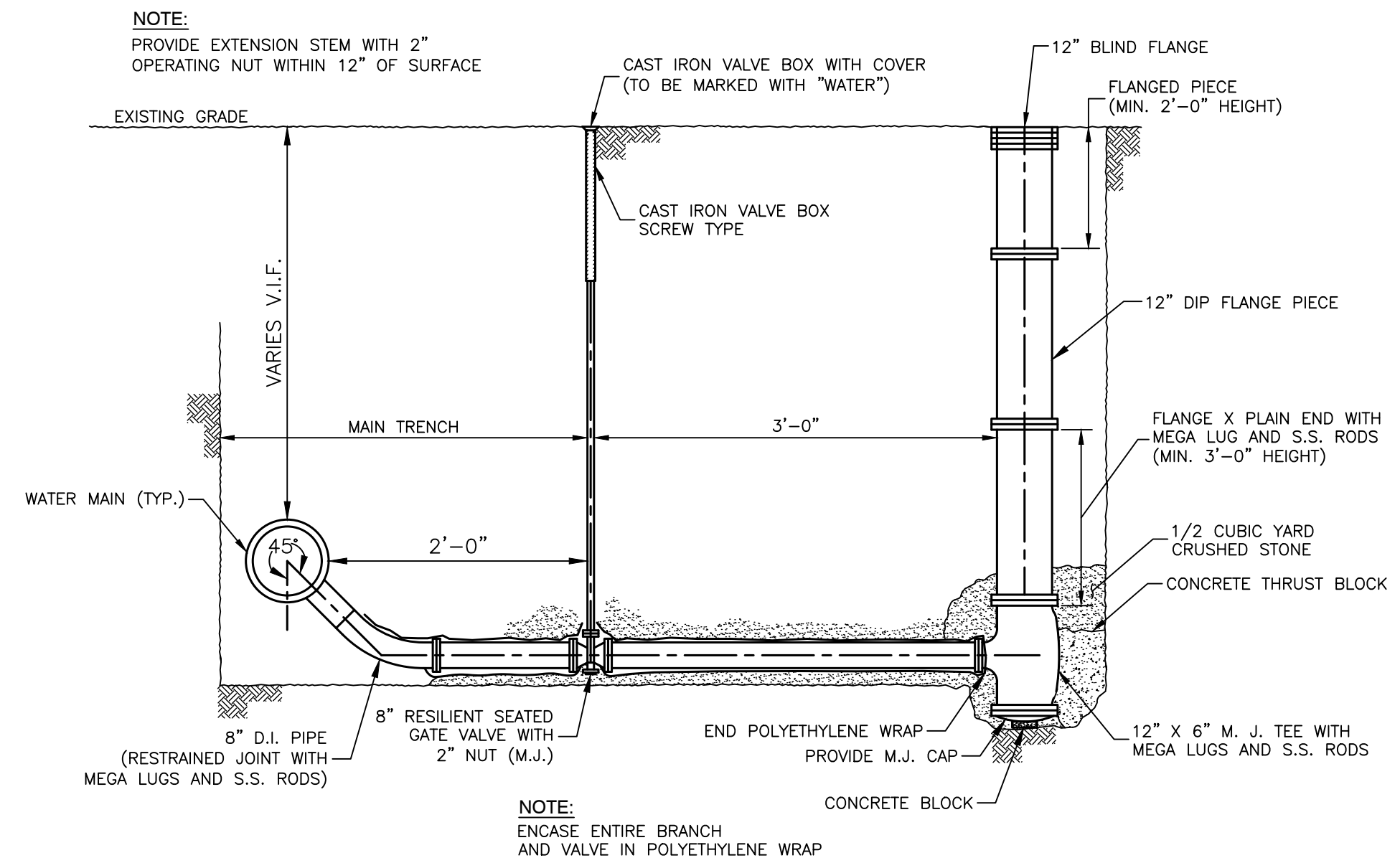
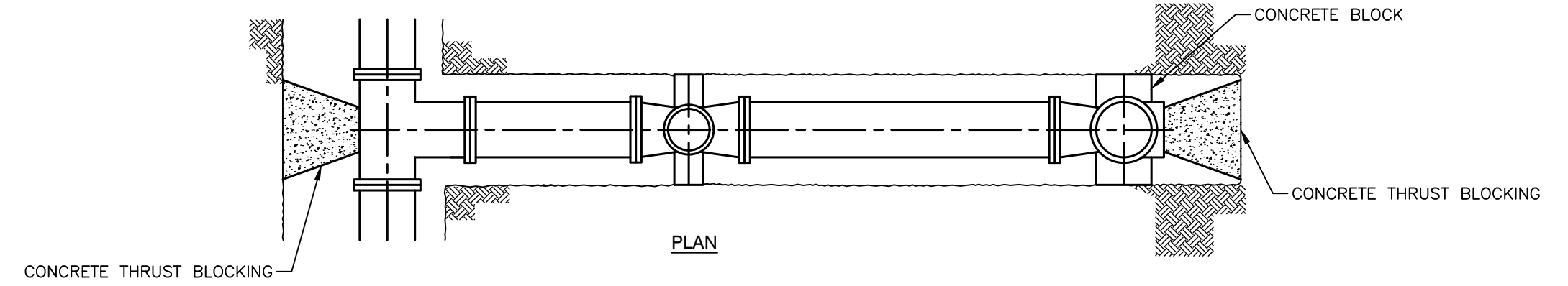
REVISION DATE:

VILLAGE OF MATTESON
STANDARD DETAILS
WATER MAIN-2

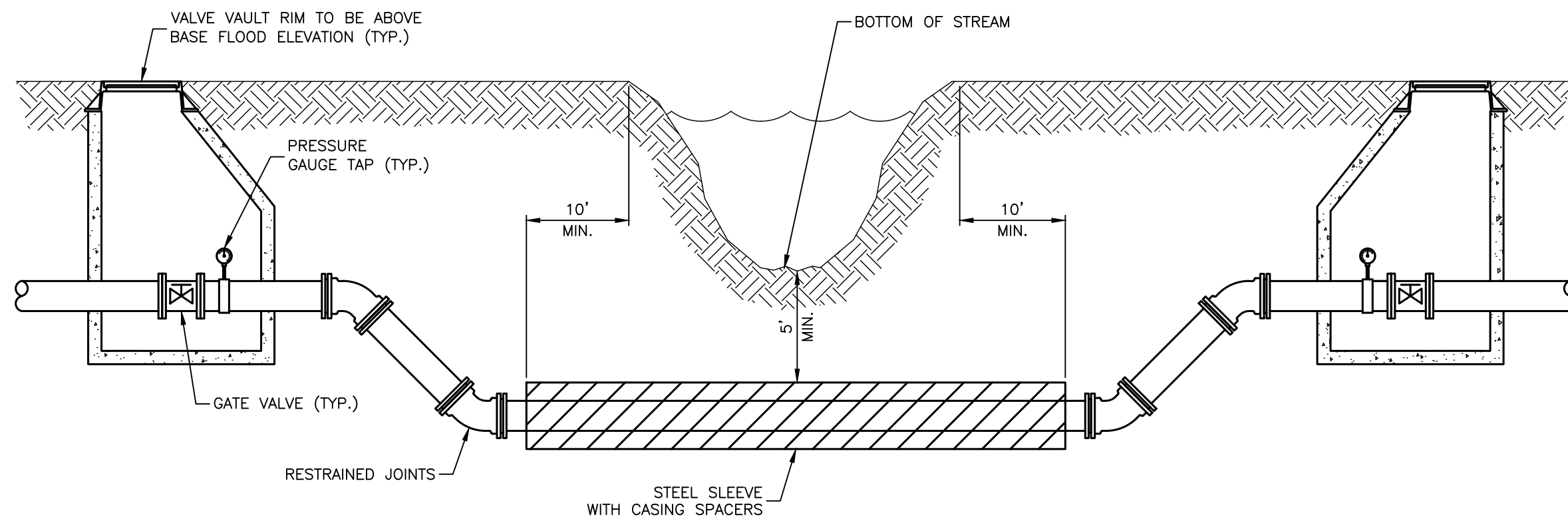


NOTE:
SPACER SEPERATION SHALL BE BASED ON PIPE TYPE, PIPE DIAMETER, AND MANUFACTURERES RECOMMENDATIONS.

CASING SPACER INSTALLATION



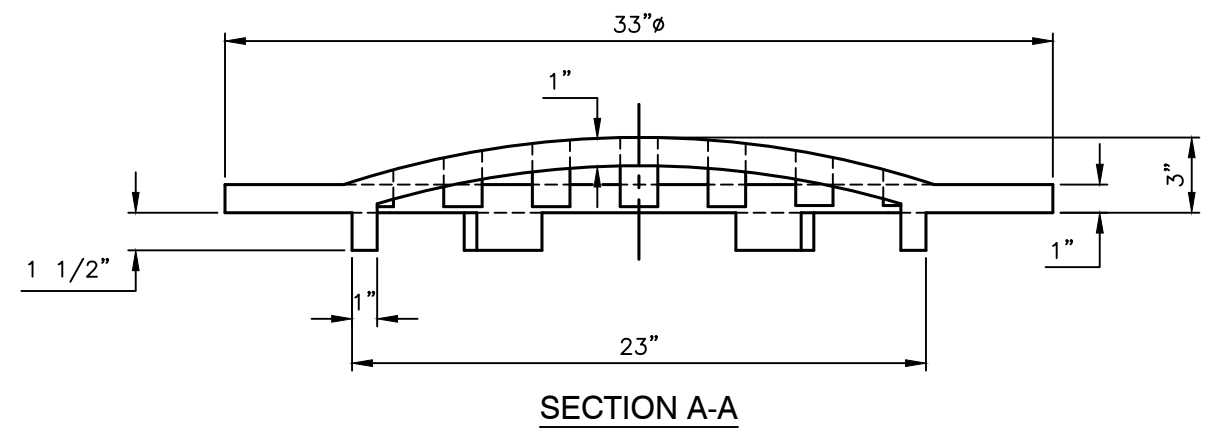
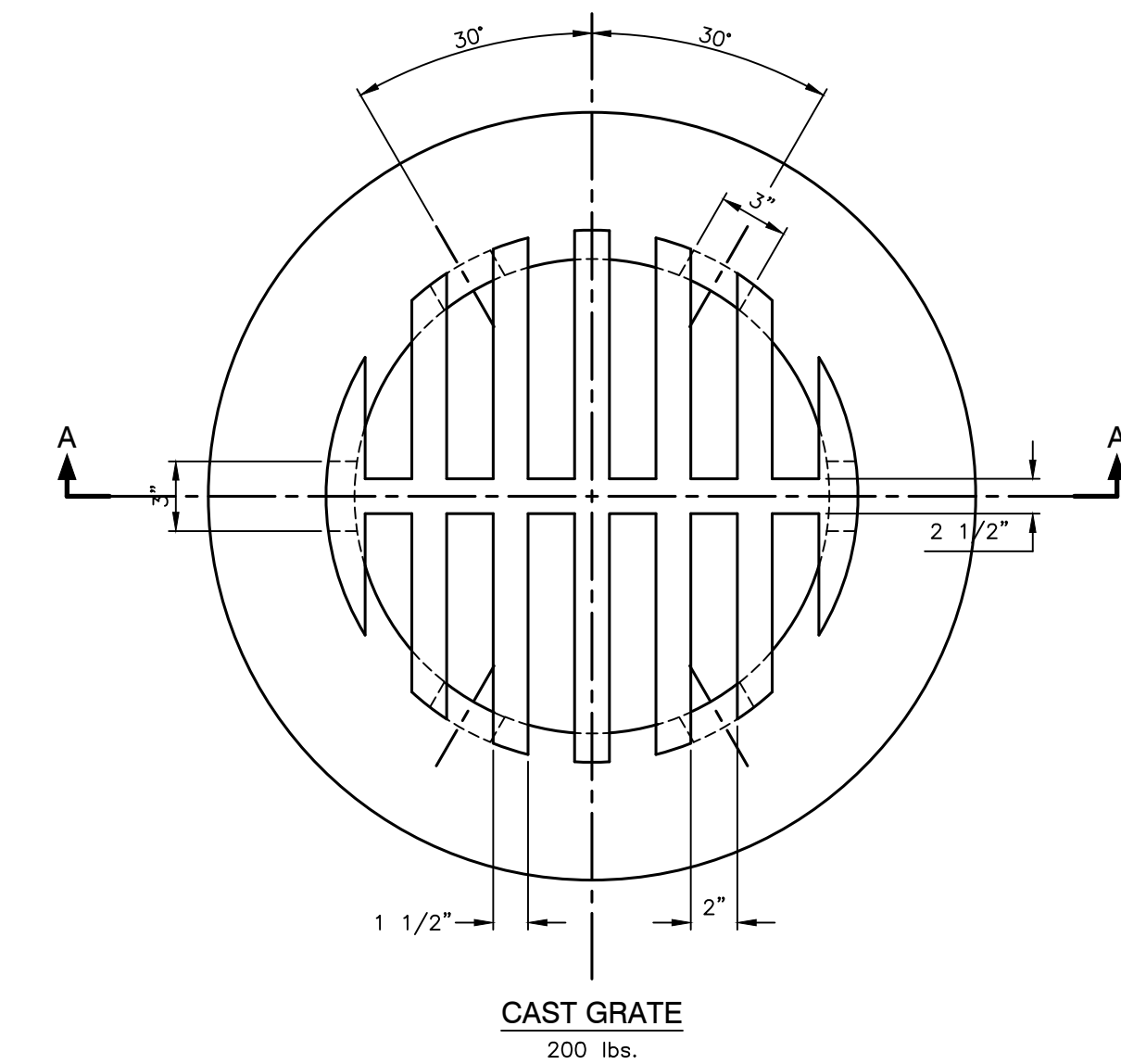
FLUSHING STATION



MINIMUM WALL THICKNESS FOR STEEL CASING PIPE	
NOMINAL INSIDE DIAMETER	NOMINAL WALL THICKNESS
24" AND UNDER	3/8"
24"-36"	1/2"
36"	5/8"
OVER 36"	AS APPROVED BY ENGINEER

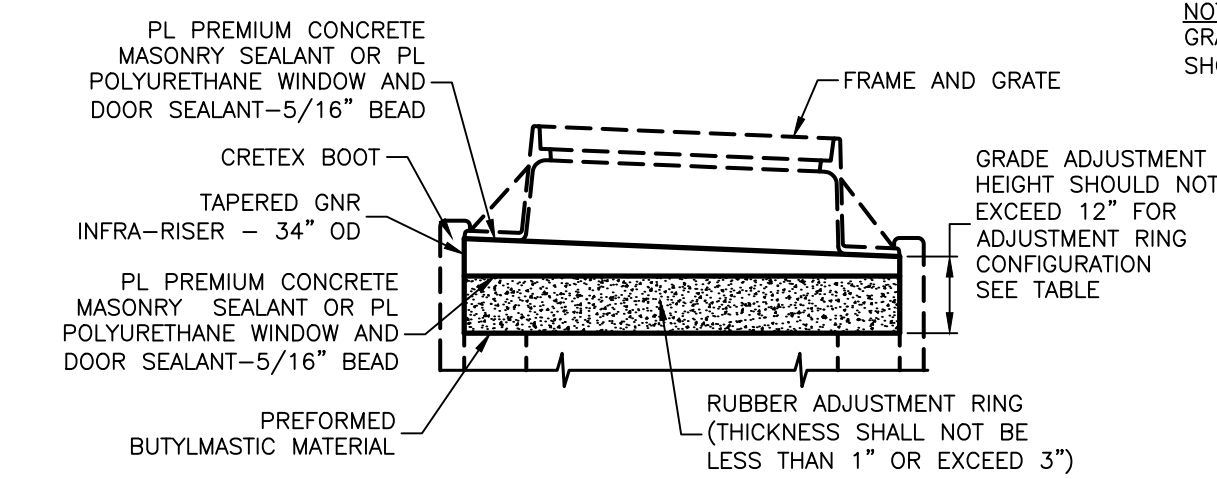
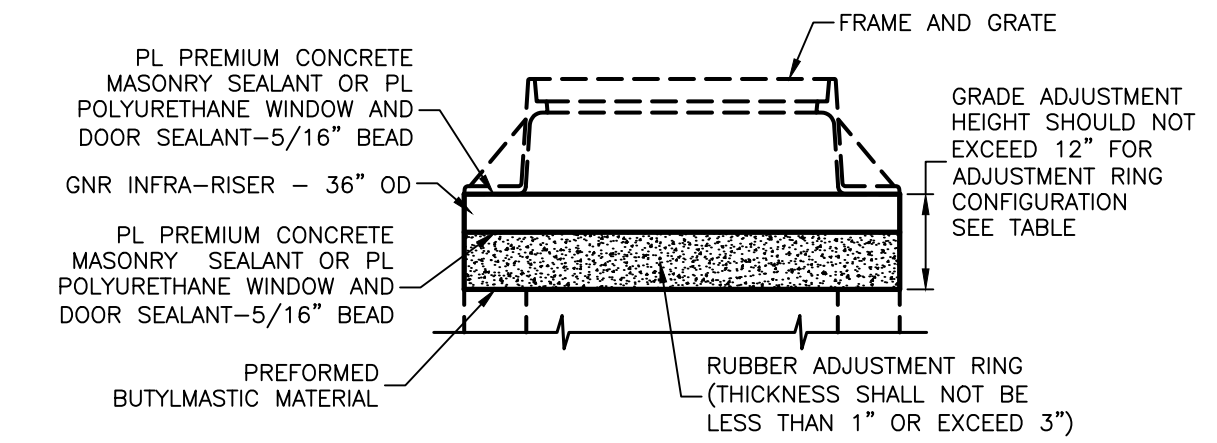
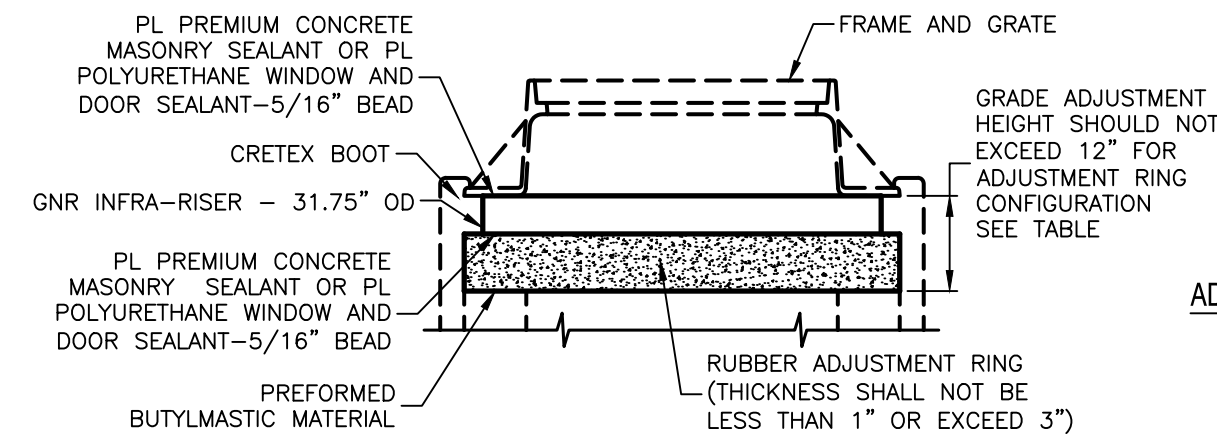
CREEK CROSSING DETAIL

**VILLAGE OF MATTESON
STANDARD DETAILS
WATER MAIN-3**



GRATE TYPE 8
(GRASS AREAS ONLY)

REVISION DATE:



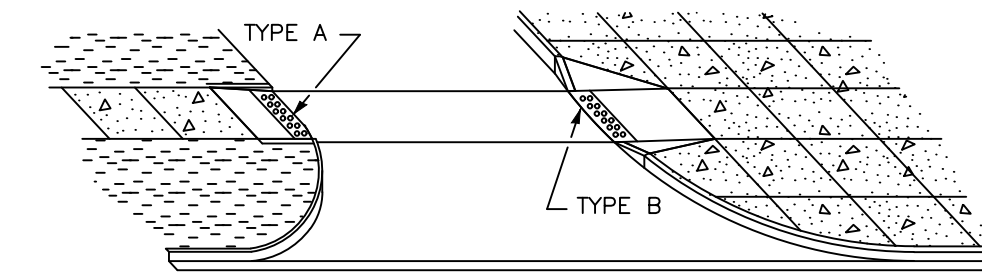
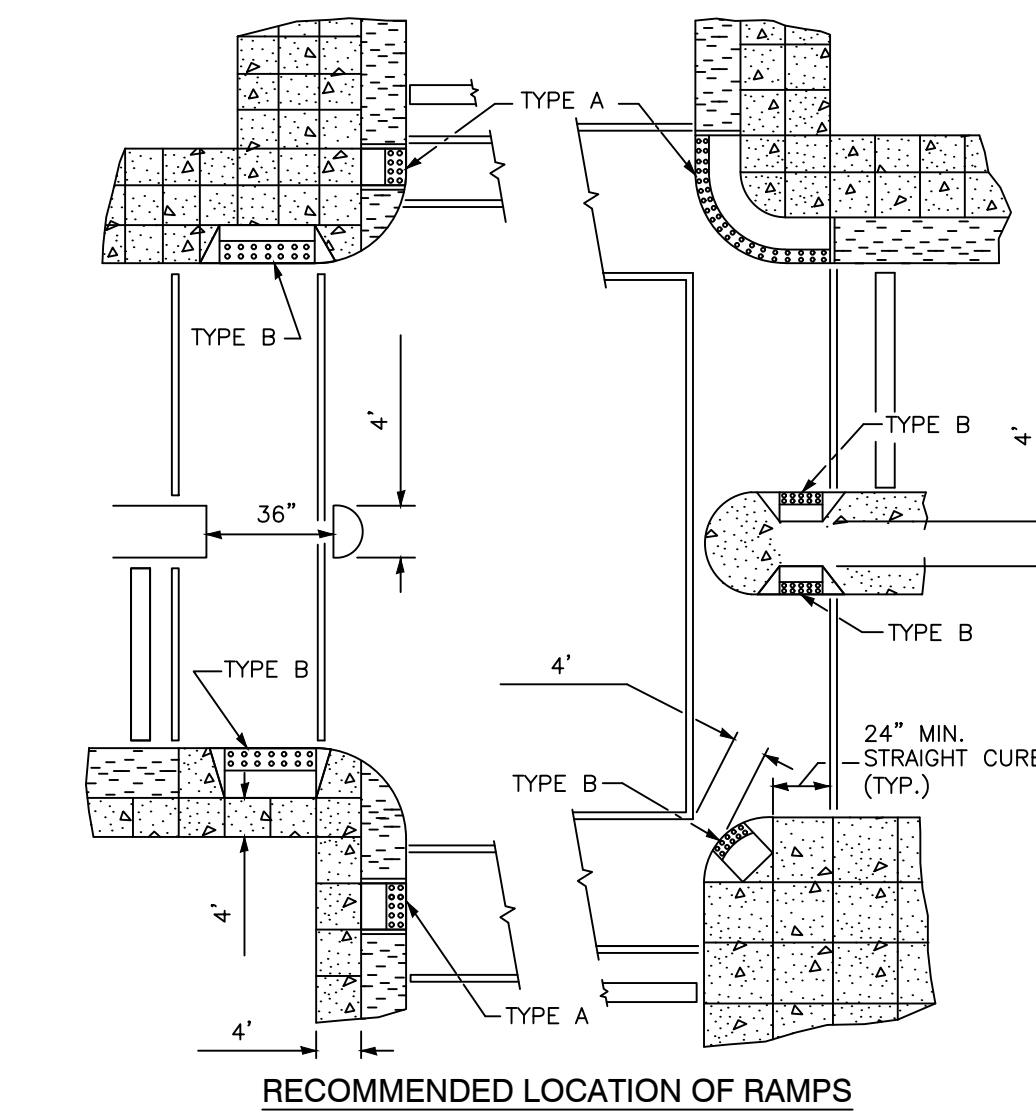
ADJUSTMENT RING TABLE

ADJUSTMENT HEIGHT	RUBBER
0"	—
1"	1"
2"	2"
3"	3"
4"	1"
5"	2"
6"	3"
7"	1"
8"	2"
9"	3"
10"	1"
11"	2"
12"	3"

NOTE: GRADE ADJUSTMENT HEIGHT SHOULD NOT EXCEED 12"

ADJUSTMENT RING DETAIL

REVISION DATE:



LEGEND

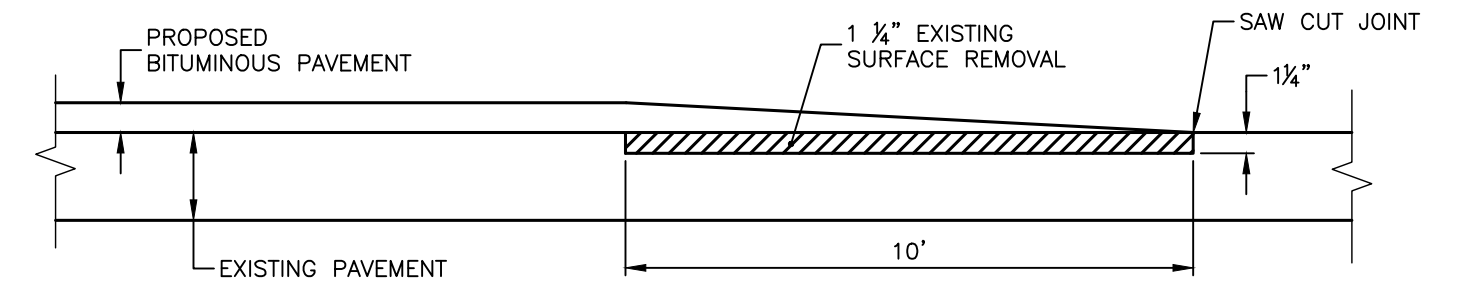
- SIDEWALK
- RAMP
- DETECTABLE WARNINGS
- NON WALKING AREA

NOTES:

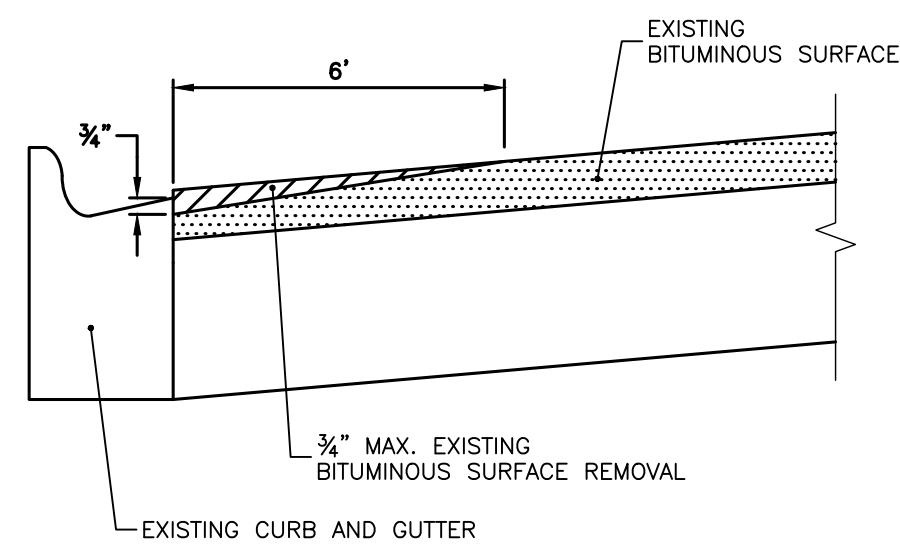
1. DETECTABLE WARNINGS SHALL BE 24" X 60" ARMOR-TILE CAST-IN-PLACE INLINE DOME TILE, FEDERAL STANDARD COLOR 30166 BRICK RED.
2. FOR ADDITIONAL DETAILS, SEE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD DRAWING 424001, CURB RAMPs FOR SIDEWALKs.

SIDEWALK RAMP DETAILS

REVISION DATE:

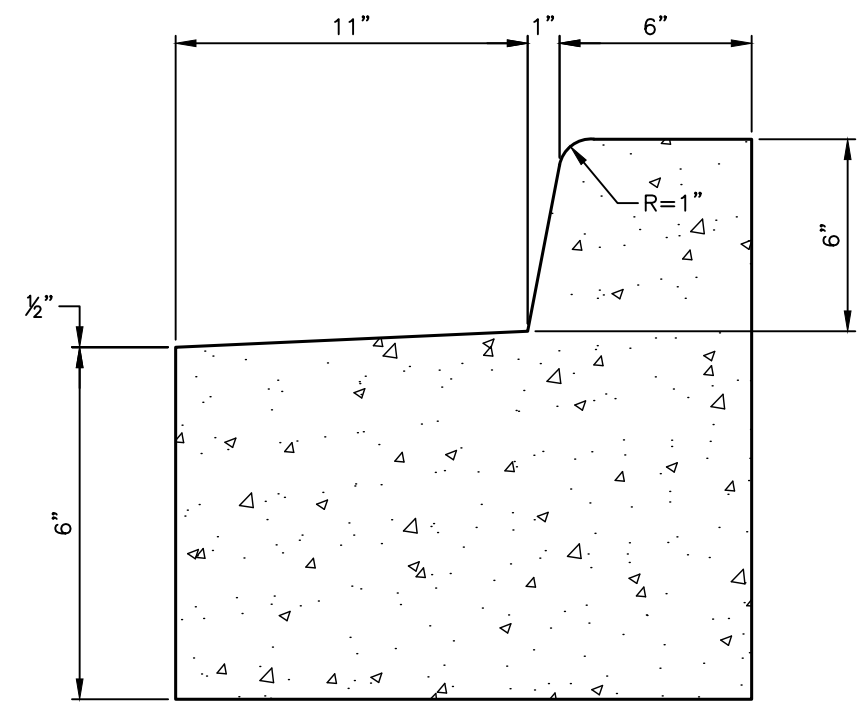


REVISION DATE:



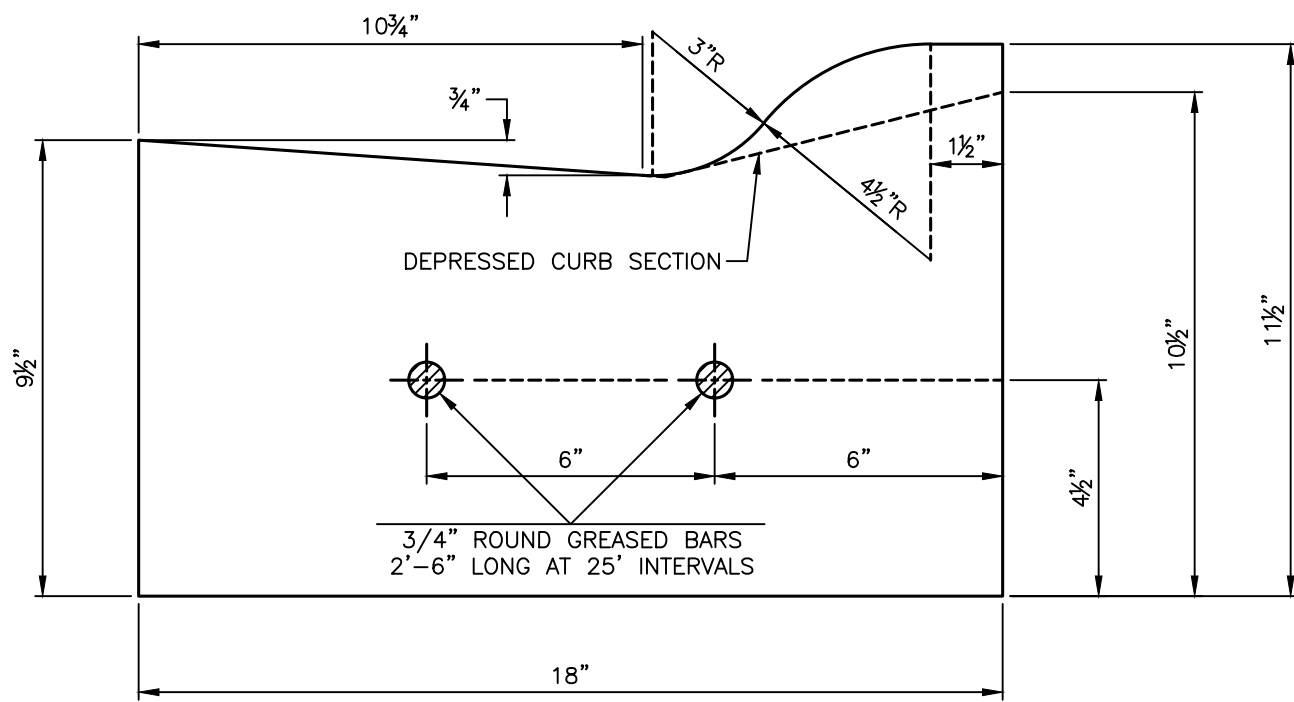
REVISION DATE:

**VILLAGE OF MATTESON
STANDARD DETAILS
MISCELLANEOUS-1**



CURB DETAIL TYPE B6.12 (SPECIAL)

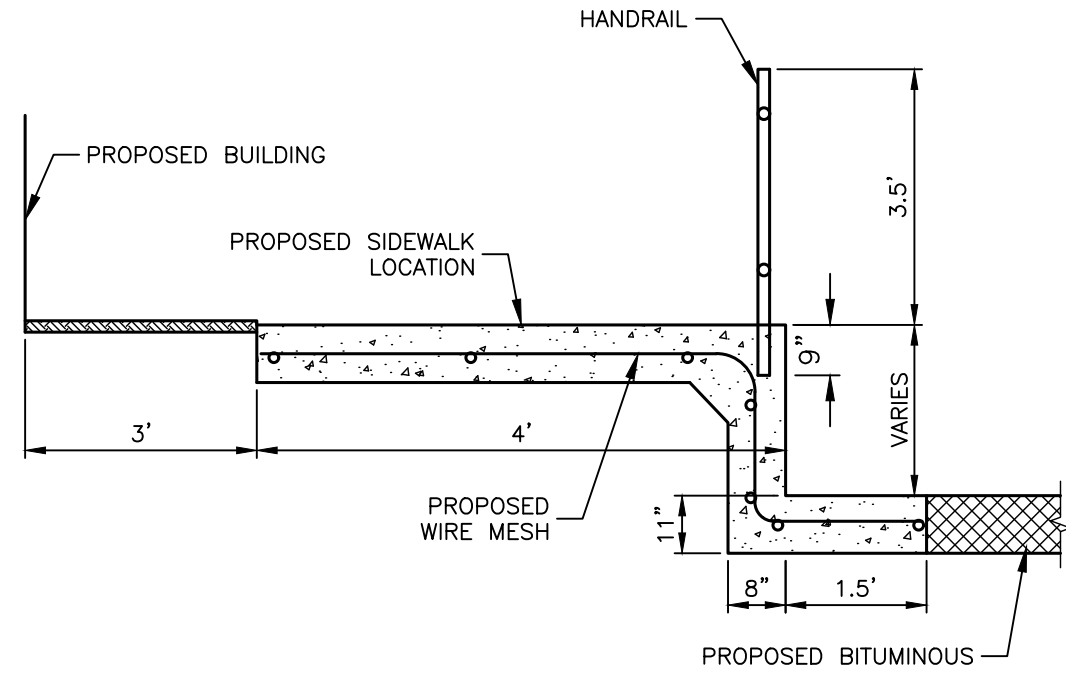
REVISION DATE:



NOTE:
FORM SIZES TO BE USED 2"x10" IN FRONT AND 2"x12" IN BACK. ANY UNDERCUT BENEATH THE CURB SHALL BE BROUGHT UP TO GRADE WITH SAND OR STONE SCREENINGS, THE COST OF WHICH SHALL BE BORNE BY THE CONTRACTOR.

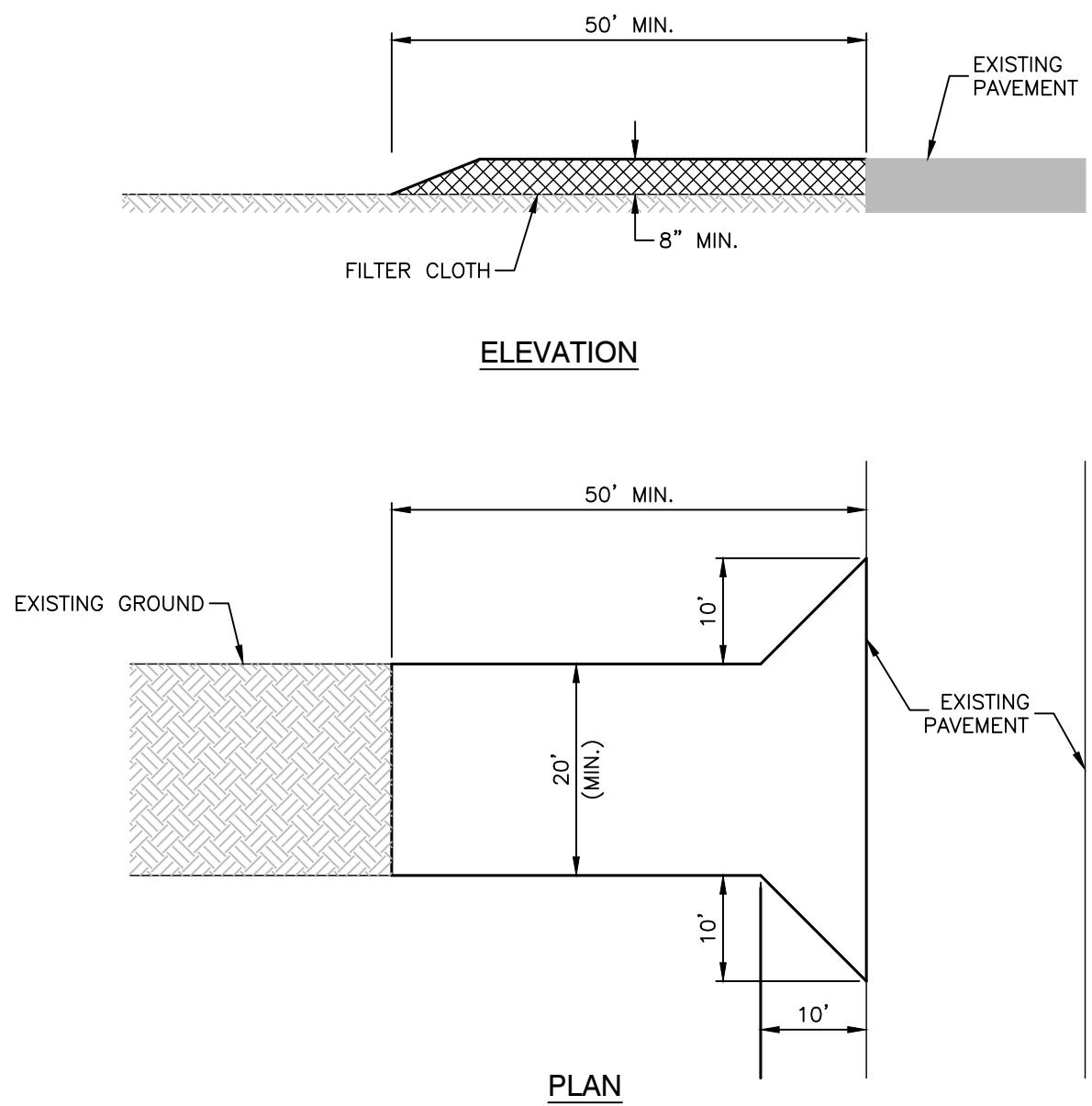
TYPE 2 CURB AND GUTTER DETAIL

REVISION DATE:



PROPOSED MONOLITHIC CURB & SIDEWALK
(SEE ARCHITECTURAL DRAWINGS FOR HANDRAIL DETAIL)

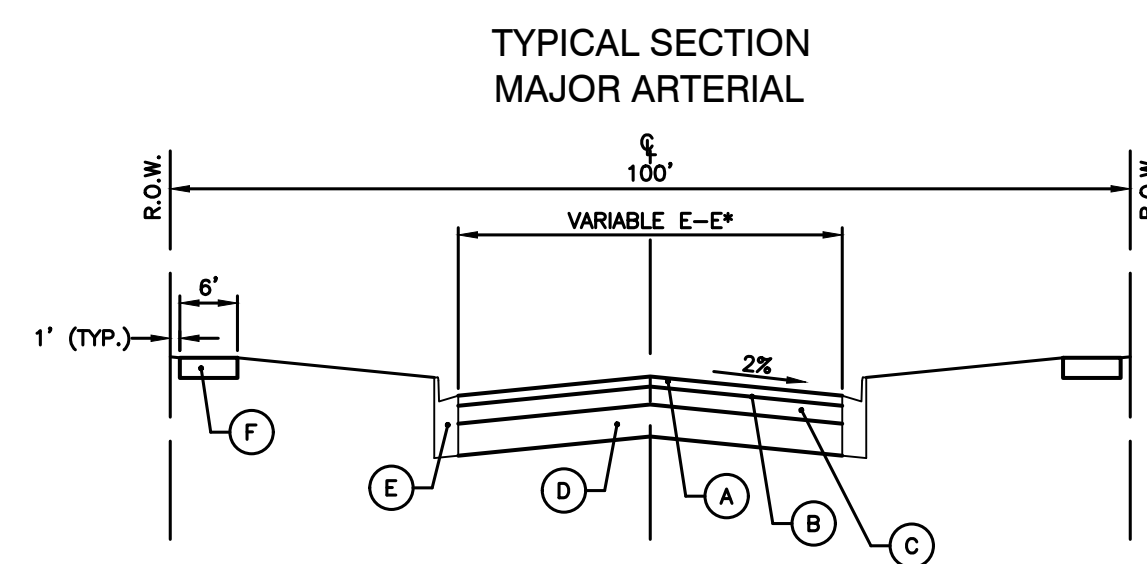
REVISION DATE:



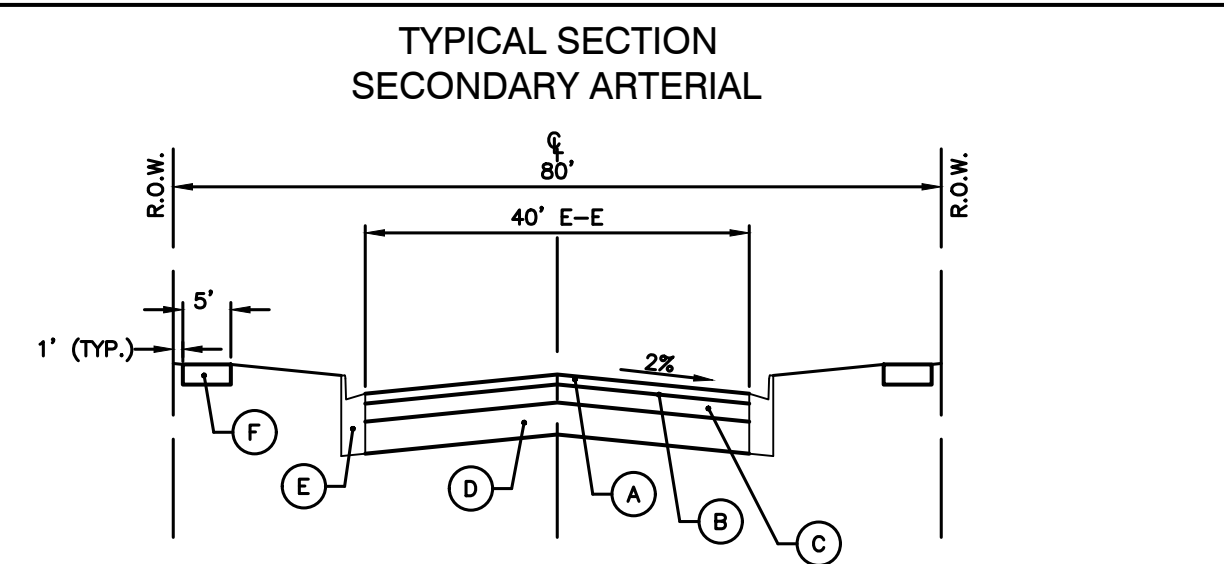
NOTES:
1. USE 2" TO 3" WASHED STONE OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE SHOULD MUD BE TRACKED OR WASHED ONTO STREET IT MUST BE REMOVED IMMEDIATELY.
3. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO STREET.

TEMPORARY CONSTRUCTION ENTRANCE

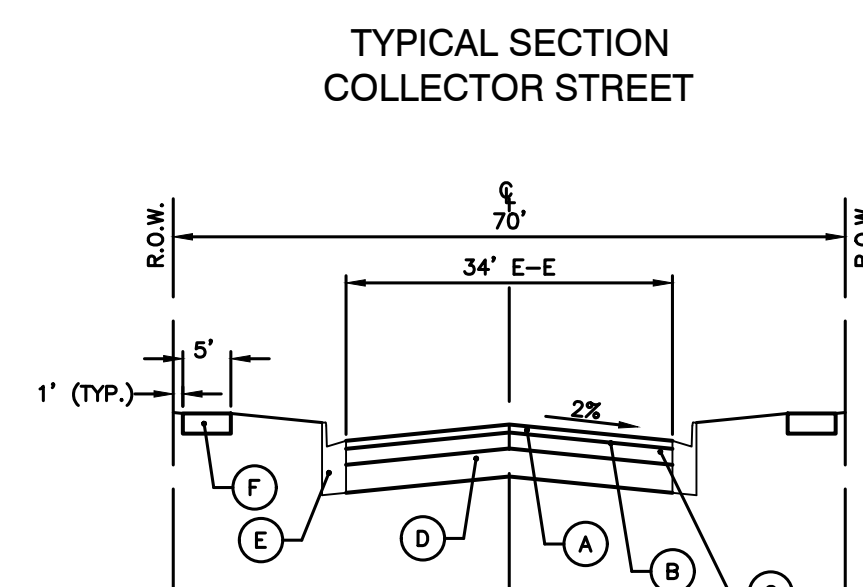
REVISION DATE:



- | <u>LEGEND</u> | |
|--|--|
| <p>(A) HOT-MIX ASPHALT SURFACE COURSE, MIX. C, NSO, 2 1/2"</p> <p>(B) BITUMINOUS MATERIALS (PRIME COAT)</p> <p>(C) HOT-MIX ASPHALT BINDER COURSE, IL-19.0, NSO, 4 1/2"</p> | <p>(D) AGGREGATE BASE COURSE, TYPE B, 8"</p> <p>(E) COMBINATION CURB & GUTTER, TYPE B-6.24</p> <p>(F) PC CONCRETE SIDEWALK, 5" (WITH 4" AGGREGATE SUB-BASE)</p> <p>* IN ACCORDANCE WITH FEDERAL, STATE, OR COUNTY REQUIREMENTS</p> |

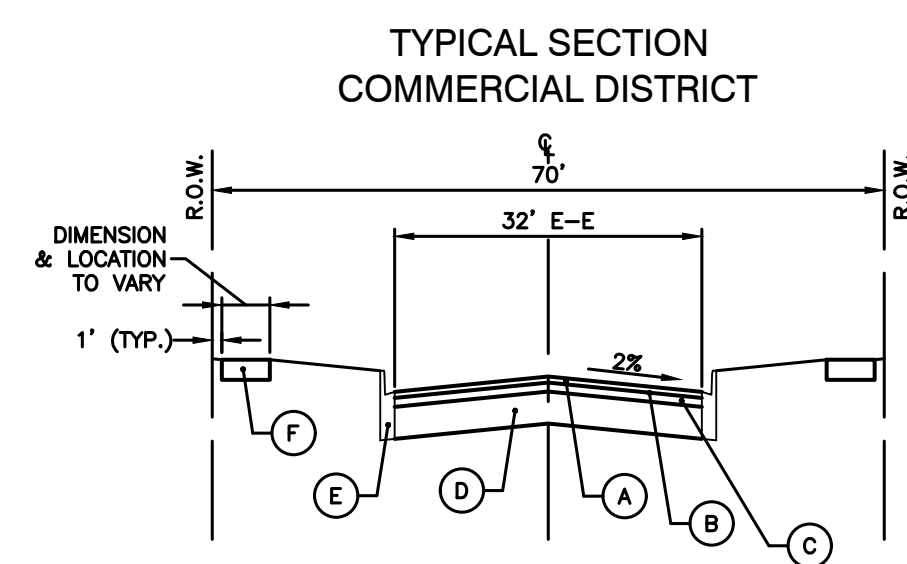


- | <div> <div></div> <div>LEGEND</div> </div> | |
|--|--|
| <div> <div>(A)</div> <div>HOT-MIX ASPHALT SURFACE COURSE,
MIX. C, N50, 2 1/2"</div> </div> | <div> <div>(D)</div> <div>AGGREGATE BASE COURSE, TYPE B, 8"</div> </div> |
| <div> <div>(B)</div> <div>BITUMINOUS MATERIALS (PRIME COAT)</div> </div> | <div> <div>(E)</div> <div>COMBINATION CURB & GUTTER, TYPE B-6.24</div> </div> |
| <div> <div>(C)</div> <div>HOT-MIX ASPHALT BINDER COURSE,
IL-19.0, N50, 4 1/2"</div> </div> | <div> <div>(F)</div> <div>PC CONCRETE SIDEWALK, 5"
(WITH 4" AGGREGATE SUB-BASE)</div> </div> |

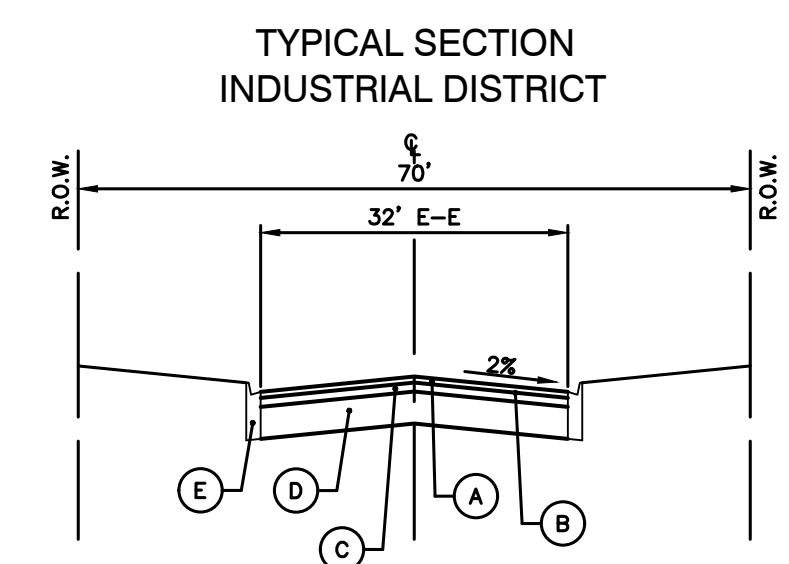


- LEGEND

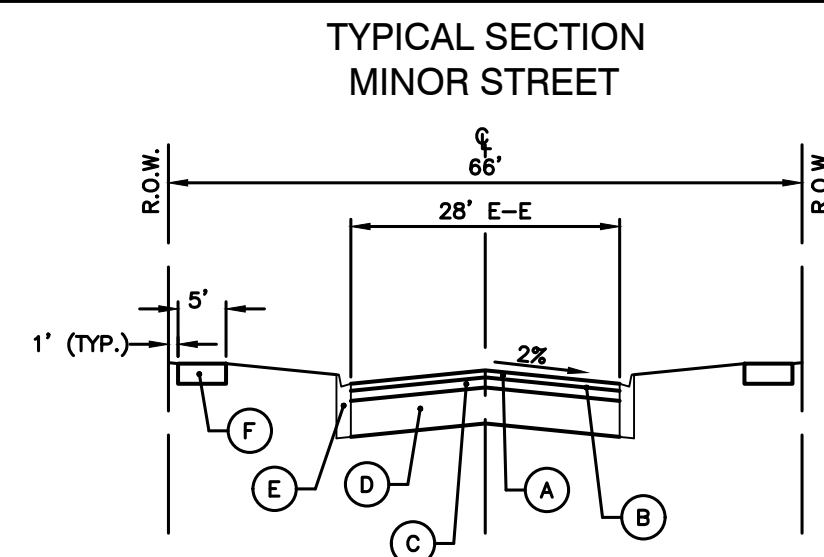
<p>(A) HOT-MIX ASPHALT SURFACE COURSE, MIX. C, N50, 2"</p> <p>(B) BITUMINOUS MATERIALS (PRIME COAT)</p> <p>(C) HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 4"</p>	<p>(D) AGGREGATE BASE COURSE, TYPE B, 7"</p> <p>(E) COMBINATION CURB & GUTTER, TYPE B-6.24</p> <p>(F) PC CONCRETE SIDEWALK, 5" (WITH 4" AGGREGATE SUB-BASE)</p>
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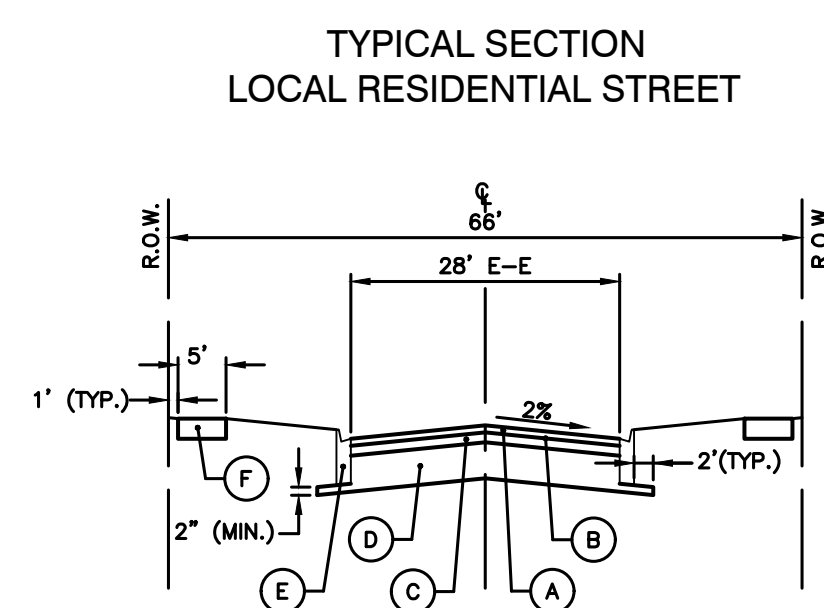
- | LEGEND | |
|--------|--|
| (A) | HOT-MIX ASPHALT SURFACE COURSE,
MIX. C. N50, 1 1/2" |
| (B) | BITUMINOUS MATERIALS (PRIME COAT) |
| (C) | HOT-MIX ASPHALT BINDER COURSE,
IL-19.0, N50, 2 1/4" |
| (D) | HOT-MIX ASPHALT BASE COURSE, 8" |
| (E) | BARRIER CURB & GUTTER, TYPE B-6.12 |
| (F) | PC CONCRETE SIDEWALK, 5"
(WITH 4" AGGREGATE SUB-BASE) |



- | LEGEND | |
|--|--|
| (A) HOT-MIX ASPHALT SURFACE COURSE,
MIX. C, N50, 1 1/2" | (D) HOT-MIX ASPHALT BASE COURSE, 8" |
| (B) BITUMINOUS MATERIALS (PRIME COAT) | (E) MOUNTABLE CURB & GUTTER, TYPE M-6.12 |
| (C) HOT-MIX ASPHALT BINDER COURSE,
IL-19.0, N50, 2 1/4" | |

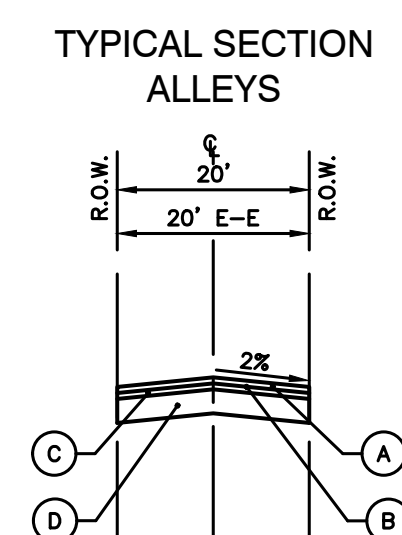


- | LEGEND | |
|---|---|
| (A) HOT-MIX ASPHALT SURFACE COURSE, MIX. C, N50, 1 3/4" | (D) AGGREGATE BASE COURSE, TYPE B, 9" |
| (B) BITUMINOUS MATERIALS (PRIME COAT) | (E) MOUNTABLE CURB & GUTTER, TYPE M-3.12 |
| (C) HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2 1/2" | (F) PC CONCRETE SIDEWALK, 5" (WITH 4" AGGREGATE SUB-BASE) |

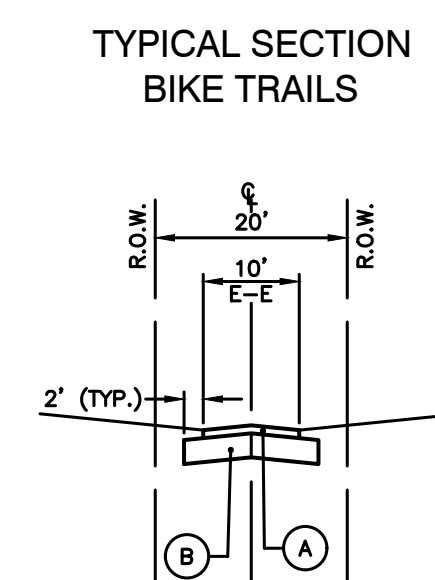


- LEGEND

<p>(A) HOT-MIX ASPHALT SURFACE COURSE, MIX. C, N50, 1 3/4"</p>	<p>(D) AGGREGATE BASE COURSE, TYPE B, 9"</p>
<p>(B) BITUMINOUS MATERIALS (PRIME COAT)</p>	<p>(E) MOUNTABLE CURB & GUTTER, TYPE M-3.12</p>
<p>(C) HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2 1/2"</p>	<p>(F) PC CONCRETE SIDEWALK, 5" (WITH 4" AGGREGATE SUB-BASE)</p>



- LEGEND
- | | |
|-----|--|
| (A) | HOT-MIX ASPHALT SURFACE COURSE,
MIX. C, N50, 1 1/2" |
| (B) | BITUMINOUS MATERIALS (PRIME COAT) |
| (C) | HOT-MIX ASPHALT BINDER COURSE,
IL-19.0, N50, 1 1/2" |
| (D) | AGGREGATE BASE COURSE, TYPE B, 6" |



- LEGEND
- (A) HOT-MIX ASPHALT SURFACE COURSE,
MIX. C, N50, 2"
- (B) AGGREGATE BASE COURSE, TYPE B, 6"

NOTE:
DROP GATE AT EVERY INTERSECTION

VILLAGE OF MATTESON STANDARD DETAILS TYPICAL CROSS SECTIONS