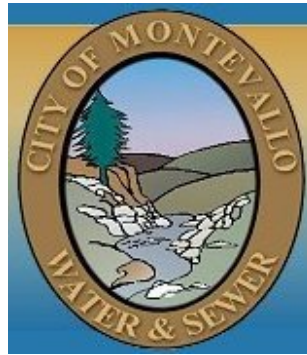


Montevallo Water and Sewer Board



Standard Potable Water Specifications

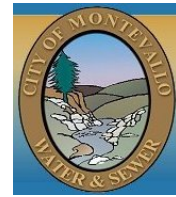
June 2021

ALL PRIOR ISSUES ARE VOID

**Prepared By InSite Engineering, LLC
in conjunction with the Montevallo Water and Sewer Board
for the Protection of Public Safety, Health, and welfare for the Citizens of Montevallo**

Montevallo Water and Sewer Board

Standard Potable Water Specifications



1. GENERAL

This specification covers design and construction of new water mains and other water distribution system appurtenances on the Potable Water System of the Montevallo Water and Sewer Board (“the Board”).

The Board may designate any of its responsibility or authority listed herein to its General Manager, its Engineer, or others deemed to be in the best interest of the Board.

Scope:

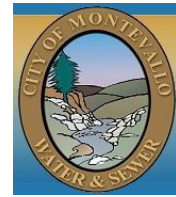
- a. All labor, material, equipment, work and testing required for a complete and functional system shall be furnished by the developer or entity installing the improvements.
- b. Water service design shall be in accordance with AWWA Standards unless otherwise noted.
- c. All work on the water system must be performed by a licensed contractor.
- d. All final subdivision plats must include a signature block indicating acceptance by the Board.
- e. Water service connection permits will not be issued until the Board has approved all construction.
- f. All materials must be submitted to the Board for approval prior to beginning work.
- g. **No contractor or developer shall operate any existing valve on the Board’s water distribution system at any time.** Installing entity shall coordinate with Board personnel to have any necessary valves opened or closed.
- h. All work to be performed off of public right of way must be submitted to the Board for review and approval prior to submission to other agencies for permitting.
- i. The “Developer Water Agreement” must be executed prior to beginning construction.

Quality Assurance:

- a. All improvements will have a 1-year warranty beginning from the date of recording of the final plat.
- b. All items will be maintained for the first year at the developer’s expense. In the event of a failure or break a repair must be made by the developer within a 24-hour period or such repairs will be made and billed to the developer. At the end of that stated year, acceptance of the mains and appurtenances within the right of way will be assumed by the Board except for booster pumping stations. In the event of a problem the one year warranty will restart from the date of repair.
- c. Booster pumping stations must have final inspection at the end of a one-year warranty period. At this time either a final correction list or an acceptance letter will be issued. The developer will retain responsibility for maintenance and upkeep of the booster pumping station until all corrections are made. If a major

Montevallo Water and Sewer Board

Standard Potable Water Specifications



problem exists during this period a repair will be made and billed to the developer.

- d. Plan changes will not be allowed without written approval from the Board and the Design Engineer. Failure to comply with this will result in suspension of the project.
- e. If during construction of the project, the site or project conditions reveal conflicts or harm to existing utilities either by vicinity or by destruction during construction, the developer must repair or relocate the existing utility at the developer's expense. Failure to do this in a timely manner will result in suspension of the project or rejection of final acceptance of the project until the item is corrected. If a major break occurs and the developer does not correct immediately, a repair will be made and billed to the developer.

Plans:

All plans must be submitted on 24 x 36 inch sheets and must include the following:

- North arrow
- Graphic Scale and Noted Scale
- 1" = 50' minimum
- Valve Count by Size Listed
- Footage of Pipe by Size Listed
- Plan View with line numbers, Alabama State Plane West Northing and Easting Coordinates, service tap location and stations, Connection Location, Streets and Road Names, Etc.
- All appropriate trench, backfill, service, etc details
- All current Standard Details of the Board
- For mains 12" or larger, Profile Sheets showing existing and proposed grades and crossings of existing or proposed utilities.
- All other appropriate information concerning the installation, connection, and development of the potable water system for proper review and approval.
- All booster pumping station plans shall be accompanied by the appropriate number of sheets to cover all site, grading, erosion control, mechanical, and electrical plans to allow for proper review and approval.
- Maximum design velocity in any water main shall be four (4) feet per second.
- A benchmark shall be located and shown on each sheet.
- All water mains shall be installed inside public right of way unless an easement is specifically pre-approved by the Board.
- Easements shall be a minimum of 20 feet wide or wide enough to access by OSHA standards, which ever is greater.
- Water mains shall not run under curbs or sidewalks.
- Water mains in high traffic commercial areas are required to be ductile iron.
- All multi-family residential properties shall be master-metered. Individual meters at each unit will not be accepted.

Montevallo Water and Sewer Board

Standard Potable Water Specifications



2. MATERIALS

a. PIPE

- i. Water Mains shall be Ductile Iron Pipe shall meet the requirements of AWWA C151, pressure class 350 with mechanical joint, bell-and-spigot, or restrained joint ends.
 1. All ductile iron pipe shall be cement lined in accordance with AWWA C104.
 2. Glands, gaskets, and bolts for ductile iron pipe shall meet the requirements of AWWA C111 for ductile iron glands, rubber gaskets, and steel bolts.
 3. D.I. Pipe shall be manufactured by U.S. Pipe and Foundry, American Cast Iron Pipe Company, McWane Ductile, or Griffin Pipe Company only. Pipe from other manufacturers will not be accepted.
- ii. Water Services shall be Cross-linked Polyethylene (“PEX”) Pipe meeting the requirements of AWWA C904.

b. FITTINGS

- i. Fittings on Ductile Iron piping shall be restrained joints as follows:
 1. Compact Ductile Iron in accordance with ANSI/AWWA C153/A21.53 with Mega-Lug type retainer glands with twist-off nuts.
 2. Joint restraint may be provided using Lok-Ring, Flex Ring, TR-Flex, or equivalent pipe joints.
 3. Joint restraint may be provided using push on pipe with Fast-Grip, Field Flex-Ring, Field Lok, or equivalent restraining gaskets.
 4. Transition gaskets shall be used with pressure class PVC pipe to Ductile transitions.
- ii. Fittings on PEX water service lines shall use “Q-nut” fittings. Use of push-on/gatorbite/sharkbite fittings is not allowed.
- iii. ROMAC Alpha type restraints are acceptable for use on all fittings and valves.

c. ENCASEMENT

- i. Polyethylene encasement for ductile iron pipe shall meet the requirements of ANSI/AWWA C105/A21.5 and shall be used around natural gas mains or where corrosive soils exist.
- ii. Steel casing pipe shall be ASTM A252, Grade 2, with a minimum of three (3) casing spacers per joint and end seals. Steel casing is required at all bores, road and major driveway crossings, inaccessible areas, and other areas required by regulatory authorities. The inside diameter of all steel casing pipe shall be a minimum of 2” larger than the largest outside diameter of the carrier pipe or carrier pipe bell.

Montevallo Water and Sewer Board

Standard Potable Water Specifications



- iii. Schedule 40 PVC casing pipe shall be installed at all long side services.

d. VALVES AND ACCESSORIES

i. Gate Valves

- 1. Gate valves shall be AWWA C515 resilient-sealed gate valves with ductile iron body and bonnet, bronze or ductile iron gate, bronze or 304SS non-rising stems, and 2" square operating nut.
- 2. Gate valves shall be manufactured by American Flow Control, Mueller Co., M&H Valve Company, United States Pipe and Foundry Company, or approved equivalent.

ii. Butterfly Valves

- 1. Butterfly valves shall be Class 150B body of ASTM A126 Grade B gray iron with ASTM A536 ductile iron and ASTM A276 type 304 stainless steel shaft; resilient seat mating to type 316 stainless steel body seat ring; with all stainless steel hardware.
- 2. Butterfly valves shall be manufactured by Dresser Manufacturing, Henry Pratt Company, American Darling, DeZurik, Val-Matic, or pre-approved equivalent.

- ii. Valve boxes shall comply with AWWA M44 for cast-iron valve boxes with adjustable extension and 5" diameter barrel. The use of PVC valve boxes and/or extensions is prohibited.

- iii. Precast concrete witness posts shall be installed at all buried valves. Witness posts shall be 3" square x 48" minimum height and shall include a brass disc stamped with the distance and direction to the valve.

e. BACKFLOW PREVENTERS

- i. Backflow prevention is the responsibility of the customer.
- ii. Backflow preventers shall be installed on the customer side of each meter.
- iii. Cutoffs shall be installed on the customer side of each backflow preventer outside of the meter box.
- iv. Backflow preventers shall be ASSE standard backflow preventers; lead free; 150 psi minimum working pressure unless otherwise required; bronze body with threaded ends for 2" and smaller; bronze, cast iron, or stainless steel body with flanged ends for 2 1/2" and larger.
- v. Backflow preventers shall be manufactured by Ford, Cla-Val, Febco, Mueller, Watts Industries, or pre-approved equivalent.

f. MISCELLANEOUS

- i. Fire Hydrants shall be American Flow Control Waterous Pacer with ALPHAbase meeting the requirements of AWWA C502 with one 5 1/4" and two 2 1/2" outlets, 5 1/4" main valve, drain valve, 6" inlet, red in color with AWWA C550 interior coating.

Montevallo Water and Sewer Board

Standard Potable Water Specifications



- ii. Water meter boxes shall be NDS D1500-DICIR polypropylene meter boxes with cast iron reader cover.
- iii. Water meters will be furnished by the Board.
- iv. Air Relief, Air/Vacuum, and Combination Air Valves shall be APCO or Val-Matic meeting the requirements of AWWA C512 with a 300-psig working pressure.

3. INSTALLATION

a. PIPE

- i. Ductile iron water pipe shall be installed in accordance with AWWA C600 and AWWA M41.
- ii. 12 gauge tracer wire shall be installed directly over all non-metallic piping. Tracer tape is not allowed. Each service shall have its own tracer wire installed from the main to the meter box.
- iii. Water lines shall be installed with a minimum of 30" of cover and a maximum of 42" of cover from finished grade.
- iv. Water lines shall be installed with a minimum 18" vertical and 60" horizontal separation from sanitary sewer lines.
- v. All water mains under new or existing pavement shall be installed in a steel casing pipe.
- vi. All water services under new or existing pavement shall be installed in a PVC casing pipe that extends beyond the limits of any future sidewalk.
- vii. All water service taps shall be made on the side of the main using a double strap saddle and corporation stop.
- viii. All water service taps will be made after issuance of a building permit and MUST be made in front of the lot they serve. Service lines may not cross adjacent properties.
- ix. All trenches under paving shall be backfilled completely with ALDOT #8910 stone for main lines and with 100% fines for service lines.

b. FITTINGS

- i. Restrained joint ductile iron fittings shall be installed at all changes in direction on water main piping in accordance with AWWA C600.
- ii. Concrete thrust blocks are required at all fittings.

c. POLYETHYLENE ENCASEMENT

- i. Install polyethylene encasement in accordance with ASTM A674 or AWWA C105.

c. VALVES

- i. Gate and Butterfly Valves: Install with stem pointing up and in accordance with AWWA C600 and AWWA M44.
- ii. Corporation Valves and Curb Valves: Install with head pointed up.

Montevallo Water and Sewer Board

Standard Potable Water Specifications



- iii. Cast iron valve boxes and extensions are required at all valves and shall be installed true and plumb, with top of box flush with grade. PVC Valve box extensions are not allowed.
- iv. Air relief valves shall be installed at locations as directed by the Board and will be installed in a bottomless 72" diameter manhole cone section with a rim and cover and a minimum of 3 foot of #57 stone from under the pipe to the bottom of the shut off valve.

e. BACKFLOW PREVENTERS

- i. Install backflow preventers of size, type, and capacity required. Specific attention should be paid to headloss through the backflow preventer.
- ii. Do not install relief drain in vault or other space subject to flooding.
- iii. Do not install bypass around backflow preventers.
- iv. Support 2 1/2" and larger backflow preventers, valves, and piping on brick or concrete piers.
- v. Operation, maintenance, and testing of backflow preventers is the responsibility of the customer.

f. MISCELLANEOUS ACCESSORIES

- i. Fire Hydrants: Install each hydrant in accordance with AWWA M17; with separate gate valve in supply pipe, anchor with retrained joints or thrust blocks, and support in upright position. Adjust hydrants to grade with Grade-Lok fittings as required.
- ii. Water Meters will be installed by the Board.
- iii. All water meter boxes must be installed inside public right of way. Water meters will not be set in meter boxes on private property.

4. TESTING AND CLEANING

- a. Piping Tests: Conduct piping tests after thrust blocks have hardened sufficiently. Fill pipeline 24 hours before testing and apply test pressure to stabilize system. Use only potable water.
- b. Hydrostatic Tests: Test at not less than 1-1/2 times working pressure or 150 psi for 6 hours. Provide pressure charts for the Owner's records.
- c. Leakage Tests: Conduct leakage tests in accordance with AWWA C600 for ductile iron or AWWA C605 for PVC.
- d. All taps and services must be tested.
- e. Preliminary Flushing: Before chlorination, fill lines to remove all air pockets and flush to remove particulates at a velocity not less than 2.5 feet per second.
- f. Disinfection Tests: Conduct disinfection tests in accordance with AWWA C651.
- g. Final Flushing: After applicable retention period, flush heavily chlorinated water. Neutralize chlorine residual in accordance with AWWA C651 if water is discharged to the environment.

Montevallo Water and Sewer Board

Standard Potable Water Specifications



- h. Bacteriological Tests: After Final Flushing and before new mains are connected to the Board's distribution system, perform bacteriological testing in accordance with AWWA C651.
- i. All tests shall be delivered to the Board a minimum of 5 working days prior to requesting approval and shall be accompanied by the as-built survey drawings.
- j. The Board will furnish the initial fill and flush water at no charge. Any additional water required due to leaks or failed tests shall be at the installing entity's expense.

5. INSPECTION

- a. ALL WATER MAINS MUST BE VISUALLY INSPECTED BY THE BOARD PRIOR TO BACKFILLING. ANY MAINS NOT INSPECTED PRIOR TO BACKFILL WILL NOT BE ACCEPTED.
- b. A representative of the Board must be present when all service taps are made. At submerged stub-outs, the water level in the excavation must be lowered and held below the elevation of the cap until the cap is removed and the pipe is extended above the water level. Any caps removed without a representative of the Board present will result in rejection of the connection.
- c. A final inspection of the site will be performed by the Board prior to transfer of water service from builder / developer to the purchaser / owner. Any deviations from the Board's requirements will require modification prior to transfer.
- d. Any meters found within a driveway, travel path, or area that may receive impact from hardscape or traffic will be required to be relocated at the expense of the builder / developer who is performed the work at the time of the finding. Such relocations will require the abandonment of the existing tap and service at the main and installation of a new tap, service, and meter set.

6. PUMPING STATIONS AND TREATMENT FACILITIES

- a. Pumping stations and treatment facilities will be reviewed and evaluated on a case by case basis.

7. AS-BUILTS

As-builts must be furnished to the Board prior to the Board signing the final plat. The following items must be present on the as-builts:

- a. Plan View with valve locations, line numbers, valve numbers, lot numbers, northing and easting (State Plane Coordinates), valve references, curbs, roadway, easements and widths. Service locations and stations, location elevation, northing, easting of a permanent benchmark on the site, street and road names, etc.
- b. Profile View of lines 12" diameter and larger.
- c. Plan View and Profile View must be submitted in paper form with test results for review and comment a minimum of 5 day prior to requesting signature on the plat. After approval from the Board, a mylar of each plan view and profile view,

Montevallo Water and Sewer Board

Standard Potable Water Specifications



along with CADD layout of the lots with sewer and easements of the overall plan view shall be submitted stamped and sealed by the surveyor who performed the as-built survey.

- d. GPS coordinates for all valves, hydrants, and fittings must be included on the As-Built drawings as well as coordinates at 100' intervals along the water main.

8. FEES

- a. All fees for individual houses or commercial lots will be collected on an individual basis prior to issuance of a building permit.
- b. In new subdivisions, all fees for all lots on the plat will be collected prior to the Board signing the Preliminary Plat.
- c. All fees paid remain with the parcel for which they were paid and are non-transferable to other parcels or properties on the Board's system.
- d. Fees are subject to change due to fluctuating material prices and changes in the economy for materials availability

9. OTHER

The Board reserves the right to modify, change, or amend these specifications on a regular basis.

The Board also reserves the right to reject, decline, or turn down any construction, materials, submittals, inspections, test, etc., if found to be out of compliance with the intent of these specifications.

OWNERSHIP AND RESPONSIBILITY FOR REPAIRS

Montevallo Water and Sewer Board is only responsible for the main line, valves, meters, and services to the right of way / easement line. The Customer is responsible for all service lines, backflow flow preventors, check valves, individual boosters, etc. from the customer side of the meter through their home / business.

(Note: The Montevallo Water and Sewer Board is not providing any type of service contract, pump repair, maintenance agreement, etc. The Montevallo Water and Sewer Board is only allowing the owner access to the Water System. The Montevallo Water and Sewer Board will not maintain, service, repair, etc. any portion of the potable water system on private property.)

ADOPTED THIS 9th DAY OF June 2021, BY THE MONTEVALLO WATER AND SEWER BOARD.

BY: _____
Chairman of the Board

MONTEVALLO WATER AND SEWER BOARD WATER SERVICE FINAL INSPECTION TRANSFER FORM

DEVELOPMENT: _____

LOT NUMBER: _____

ADDRESS: _____

SITE INSPECTION DATE: _____

INSPECTOR: _____

TRANSFER ACCEPTABLE: YES / NO

IF NO, NECESSARY ACTION REQUIRED:

Signature

Date

DEVELOPMENT: _____

NUMBER OF LOTS OR UNITS: _____

STATE OF ALABAMA)

COUNTY OF SHELBY)

DEVELOPER WATER AGREEMENT

THIS AGREEMENT is made and entered into by and between **MONTEVALLO WATER AND SEWER BOARD, ("BOARD")**, and _____ (**"DEVELOPER"**) as an owner of lots or other property within **BOARD's** service area effective on this _____ day of _____, 20__.

The **DEVELOPER** desires to install water mains and other related equipment necessary to furnish water to lots or properties and/or homes, and connect water lines to a water main belonging to **BOARD** and **BOARD** is willing to accept **DEVELOPER** onto the system on the terms and conditions as follows:

1. Contact **BOARD's** General Manager describing the development along with your need for water supply.
 - (a) During initial contact, furnish **BOARD** three (3) copies of a preliminary plat showing the location of the subdivision including a section tie point. The preliminary plat should have a scale of not less than 1" equals 100', and contour Interval of not less than 10'. The preliminary plat should identify the road or street system and the proposed lots. Allow thirty (30) days for preliminary review.
2. **DEVELOPER's** engineer must obtain from **BOARD** one set of specifications and standard detail sheets necessary for providing a set of detailed construction plans. These construction plans must meet the requirements of the **BOARD's** Standard Potable Water Specifications. All drawings must be designed by an engineer and bear his stamp..
3. Submit to **BOARD** three (3) sets of plans for approval. Submit payment to **BOARD** for an analysis and review of the plans, in the amount then required by the **BOARD**. All water line sizes and type will be determined by analysis and review.

4. The following Statement shall appear on the preliminary plat and shall be endorsed by an authorized representative of the **BOARD**:

The Montevallo Water and Sewer Board has reviewed the submitted Information for the proposed Development and determined that water service can be made available. All construction shall be the responsibility of the Developer.

Name/Title

Date

5. Service will not begin unless these conditions are met, including the foregoing and the following, but not necessarily limited thereto:
- (a) No service will be provided until all construction is approved and all testing is completed.
 - (b) No meter will be serviced if it does not have at least 30 pounds of pressure at the meter.
 - (c) No individual booster pumps will be placed in the water system. Individual booster pumps on the customer side of the service line are the customer's full responsibility, expense and ownership.
 - (d) Fire hydrants shall be installed at the end of each cul-de-sac.
 - (e) Prior to construction of any water lines, provide **BOARD** the necessary submittal data on materials as outlined in the specifications along with Affidavit of Compliance of the pipe.
 - (f) Prior to construction, provide to **BOARD** a Certificate of Insurance with coverage as outlined in specifications. The Insurance Certificate must include Montevallo Water and Sewer Board, as additional insured.
 - (g) You must provide evidence to **BOARD** that you have complied with all rules and regulations of the Health Department for Shelby County, Alabama, and the State of Alabama, and Alabama Department of Environmental Management, and any other governmental agency, or agency that has an interest in the extension of the water service of **BOARD**.
6. After **BOARD** has received approved plans, submittal data and Certificate of Insurance, the **DEVELOPER's** Engineer or the **DEVELOPER** shall make arrangements for a preconstruction conference to include **BOARD**. Shelby County and/or Alabama Highway Departments, the **DEVELOPER's** Engineer,

Contractor and Sub-Contractors. No preconstruction meeting will be authorized until a signed preliminary plat is received from the County Engineer or approved by the City Engineer if in City Limits.

7. After the preconstruction conference (and not before), the contractor will be authorized to proceed with installation of water mains. The authorization must be in writing, if not, there is no authorization.
8. **BOARD** will provide inspection as the system is installed and must be notified at least one week in advance of commencement of construction.
9. **DEVELOPER** will be responsible for the maintenance of the improvements for a period of one year from the date of the final inspection and acceptance in writing. The **DEVELOPER** will be required to file a maintenance bond with the **BOARD** prior to any water service becoming available. The amount of the bond will be for the full amount of the cost of the improvements based on **BOARD's** Engineer's estimate and will remain in effect during the required maintenance period.
10. The water mains, once tapped into the **BOARD's** System, will become a part of the System and will be total and separate property of the **BOARD**. **DEVELOPER** by the execution of this instrument does hereby transfer, set over and convey unto the **BOARD** all of its rights title and interest in and to the water lines.
11. **BOARD** agrees to furnish water at its regular price charged by the **BOARD** to its customers of like kind, as may be increased or decreased from time to time, together with any fees being charged to its customers of like kind, as such fee or fees may be increased or decreased from time to time.
12. **BOARD** will make no payment whatsoever to the **DEVELOPER** for water lines and/or water systems installed by the **DEVELOPER**. The consideration will be **BOARD's** promise to deliver and/or furnish water to the customers on the lines.
13. All connections to existing mains shall be made by **BOARD**, and material furnished by the **DEVELOPER**. Connections to water mains shall be made with a tapping valve and sleeve if possible. Other types of connections (wet type) shall have the approval of the **BOARD**. All materials for connections shall have prior approval of the **BOARD**. There will be a fee for each tap made by **BOARD** for the **DEVELOPER**. The fee, as established by the **BOARD** for its customers of like kind, from time to time, will be paid to **BOARD**.
14. **DEVELOPER** will be responsible for providing casings for all water service lines installed under existing or proposed paving and sidewalks to all lots within the proposed subdivision. All service casings under roadway shall be 1 ½" (min.) PVC, SCHEDULE 40 pipe as shown on the water line details.

15. Water lines shall not be placed in the same trench as underground electric lines. Water lines shall be placed on the opposite side of the roadway from the underground electric lines. When possible, water meter boxes shall not be placed at or around the location of electric transformers or boxes.
16. The **DEVELOPER** is responsible to **BOARD** for the actions of all contractors, sub-contractors or any other agent involved in construction of this development.
17. **DEVELOPER** will collect the water samples and submit them to the Health Department for testing. **DEVELOPER** will deliver satisfactory test results to the **BOARD**.
18. Obtaining water without the approval of the **BOARD** will be subject to a fine per occurrence in the amount, as established by the **BOARD** for its customers of like kind, from time to time.
19. A cash deposit may be submitted in lieu of completion of construction for signature on final plat. The amount of the deposit shall be 150% of the **BOARD**'s estimate of the remaining construction cost. The cash deposit in no way releases the **DEVELOPER** from any responsibility to complete the development.
20. Final plats submitted for signatures shall be accompanied by two (2) sets of plans and electronic files in both PDF format and DWG, DGN or DXF format.
21. The following certificate shall appear on the final plat to be recorded in Shelby County and shall be endorsed by an authorized representative of the **BOARD**:

The undersigned, a duly authorized representative of the Montevallo Water and Sewer Board, hereby approves the within plat for the recording of same in the Probate Office of Shelby County, Alabama. It is specifically understood that approval of this plat in no way approves or implies an approval of any additional phase, lots or additions to the property contiguous to or adjoining the property described in the plat this the _____ day of _____, 20__.

Name/Title

22. It is specifically understood between the parties to this Agreement that each and every item set forth herein must be completed within the strictest sense of the word, and any noncompliance will relieve the **BOARD** from being obligated to furnish water or take any further action toward furnishing water.
23. This acknowledges receipt of notice of all currently due fees that apply to this Development. Such fees, charges, expenses and costs may be changed, amended

or added to by **BOARD** from time to time, for customers of like kind, and must be paid in full before this agreement is final and Preliminary Plat signed.

24. **THIS AGREEMENT IS FOR THE ABOVE REFERENCED DEVELOPMENT, PHASE OR LOTS AS STATED ONLY. NO OTHER PHASES, LOTS OR ADDITIONS CONTIGUOUS TO OR ADJOINING ARE APPROVED OR IMPLIED TO BE APPROVED NOW OR AT ANY TIME IN THE NEAR FUTURE.**
25. The approval of the plans and specifications above requires that construction of the development begin and be concluded and accepted by **BOARD** within one (1) year from this date. If you have not begun construction within the one (1) year period, or if you began construction, but it has not been completed and accepted by the **BOARD** within one (1) year from this date, then, all plans and specifications will have to be resubmitted to the **BOARD** for approval. At the time of such resubmittal, all then current fees and charges as established by the **BOARD**, as of the resubmittal date, shall become due and payable in full.
26. The amount of any fee, cost, expense or charge set forth herein and provided or required to be paid to **BOARD**, shall be in **the then current amount** as may be set and established by the **BOARD** for its customers of like kind, from time to time.
27. Developer also understands and agrees to make known to any builders / lot purchasers that a final inspection of the site by the Board prior to service being transferred from the builder / developer to the owner is required. Any and all deviations from the Board's requirements will require revisions prior to the transfer being allowed.

Signatures on following page.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals by and through their duly authorized and acting officers, members, managers and/or other duly authorized and acting individual to be effective on the day and date first above written.

MONTEVALLO WATER AND SEWER BOARD

BY: _____

Manager or Authorized Representative

Witness to Signature for **BOARD**

(Print Name) Date: _____

DEVELOPER

BY: _____

(Print Name and Title of Authorized Signer)

Witness to Signature for **DEVELOPER**

Development Name & Number of Lots/Units

BOARD USE ONLY

---SPECIAL NOTES / EXCEPTIONS (IF APPLICABLE) --

DETAIL NUMBER

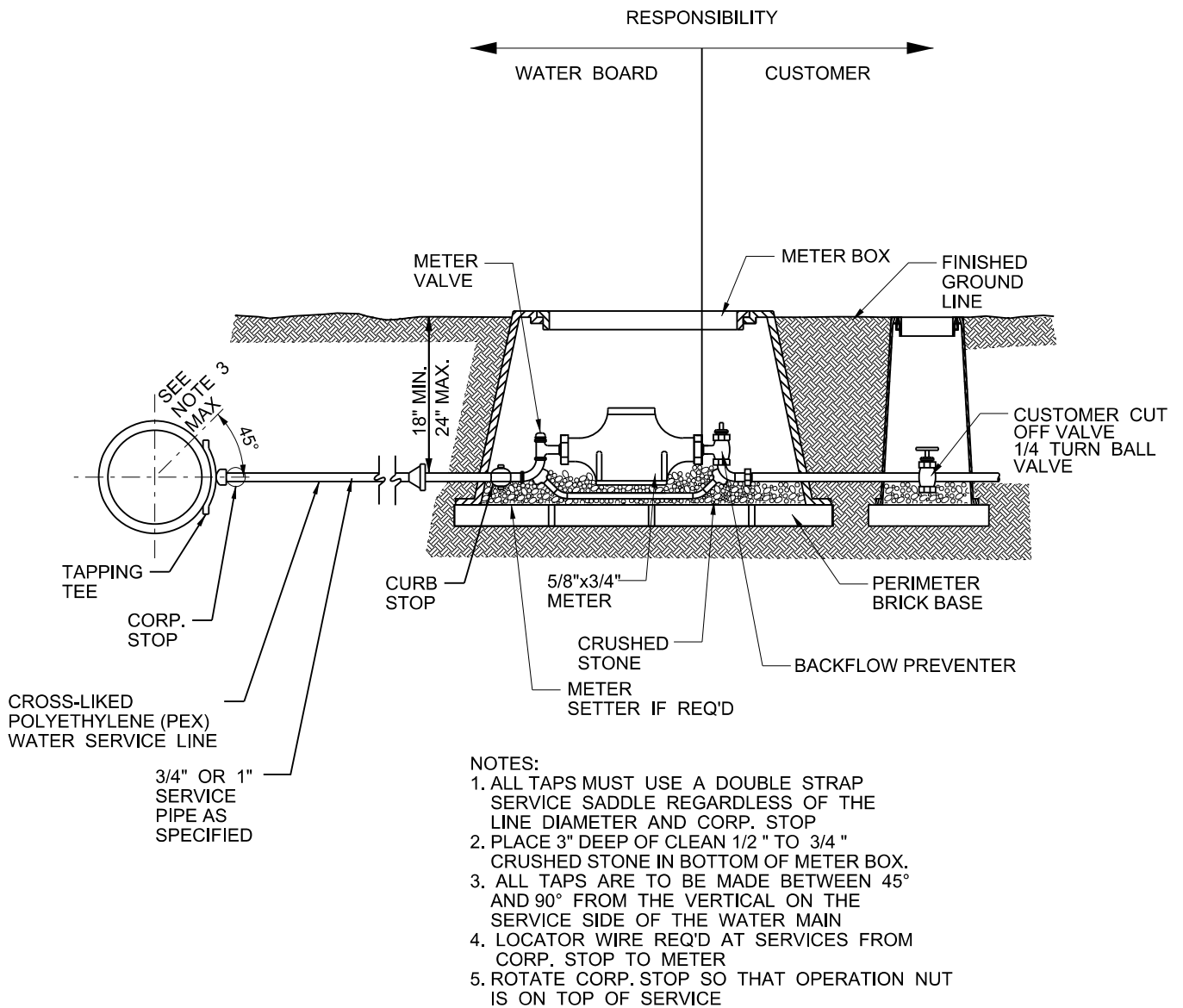
SHEET TITLE

1	TYPICAL WATER SERVICE ASSEMBLY
2	TYPICAL WATER SERVICE ROADWAY CROSSING
3	TYPICAL VALVE BOX SETTING
4	AUTOMATIC AIR RELEASE VALVE FOR 4" - 10" WATER
8	TYPICAL FIRE HYDRANT SETTING
9	TYPICAL PIPE BRACING
10	TYPICAL ANCHORAGE FOR CHANGES IN VERTICAL DIRECTION
11	TYPICAL CREEK CROSSING WITH WATER MAIN
12	BORE AND ENCASEMENT UNDER HIGHWAYS
13	TYPICAL PRESSURE REDUCING VALVE BOX DETAIL
14	3/4" & 1" REDUCED PRESSURE BACKFLOW PREVENTER
15	4" & 8" REDUCED PRESSURE BACKFLOW PREVENTER
16A	STANDARD 4", 6", OR 8" METER AND DCVBA VAULT METER
16B	STANDARD 4", 6", OR 8" METER AND DCVBA VAULT METER
16C	STANDARD 4", 6", OR 8" METER AND DCVBA VAULT METER NOTES
17A	STANDARD 4" METER AND 6" DCVBA VAULT METER
17B	STANDARD 4" METER AND 6" DCVBA VAULT METER
17C	STANDARD 4" METER AND 6" DCVBA VAULT METER NOTES
18A	STANDARD 6" METER AND 8" DCVBA VAULT METER
18B	STANDARD 6" METER AND 8" DCVBA VAULT METER
18C	STANDARD 6" METER AND 8" DCVBA VAULT METER NOTES
19	PIPE BEDDING & BACKFILL UNIMPROVED SURFACES
20	PIPE BEDDING & BACKFILL UNDER PAVEMENT

WATER
DETAIL

WATER DETAIL SHEET INDEX





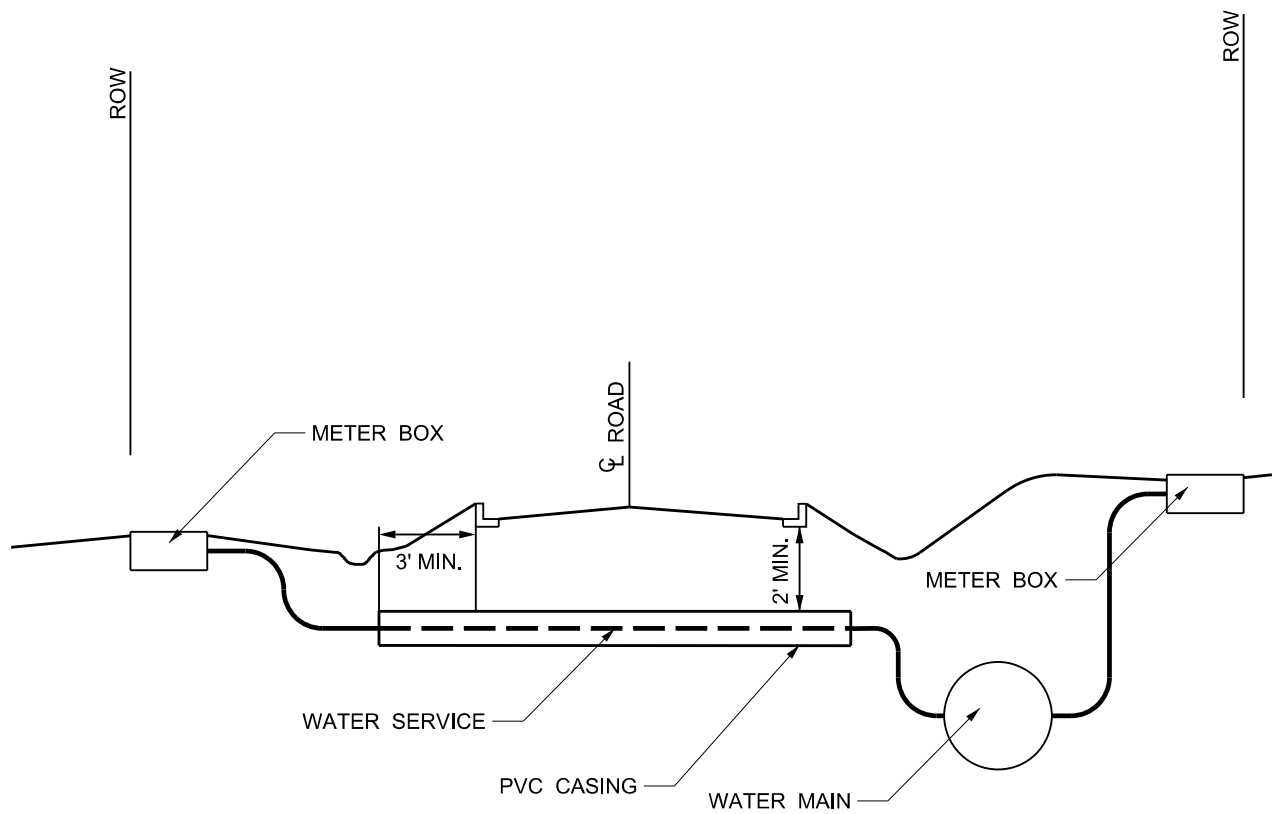
WATER
DETAIL No.

1

TYPICAL WATER SERVICE ASSEMBLY

SCALE: NONE





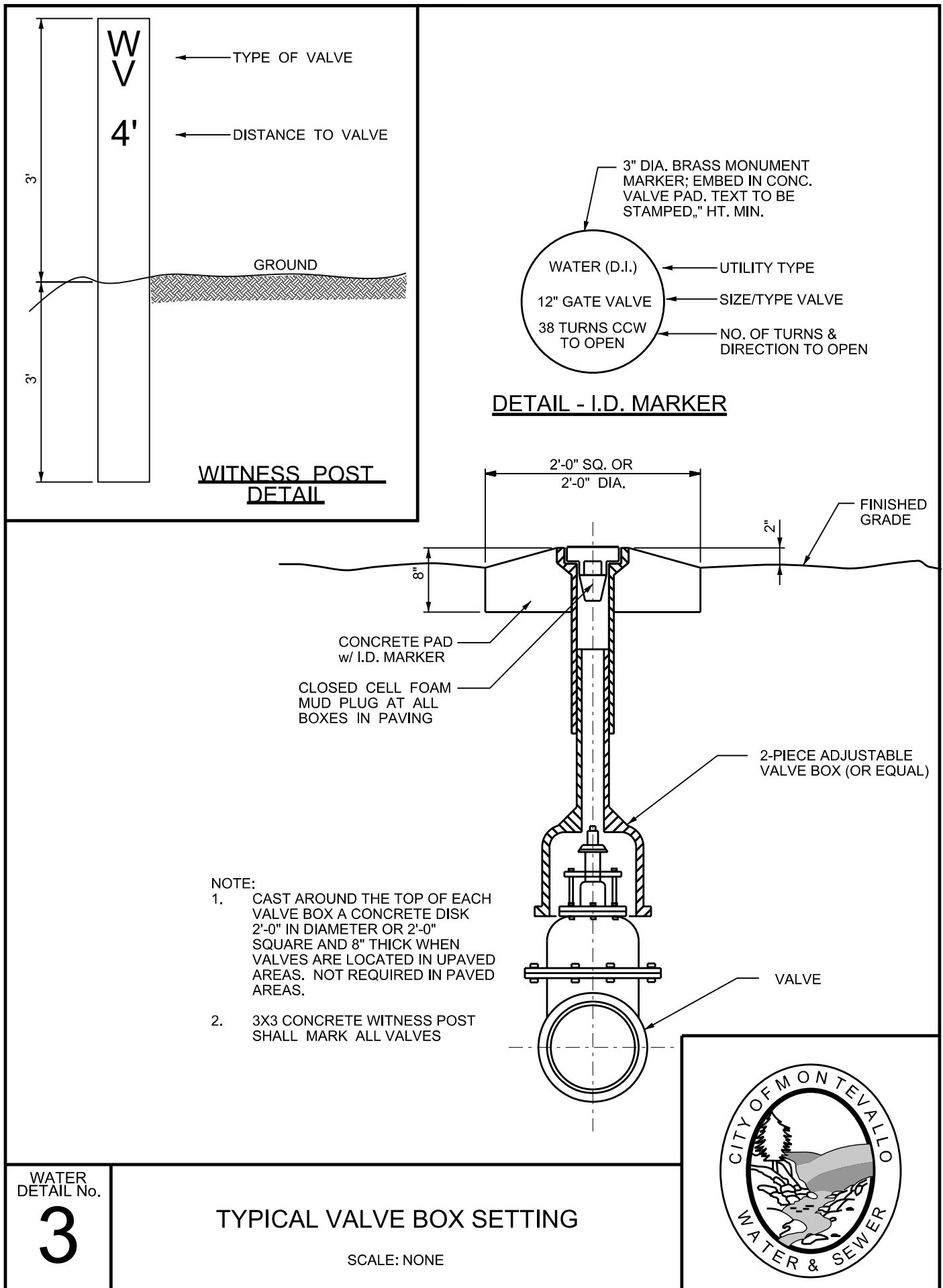
WATER
DETAIL No.

2

TYPICAL WATER SERVICE ROADWAY CROSSING

SCALE: NONE





PIPE ANCHOR; 4" GALV.
CHANNEL, ATTACH TO
WALL w/2- ..." DIA. S.S.
CONC. ANCHORS EA. SIDE

C905 PIPE

1" BRASS PIPE

S.S. U-BOLT

PLAN - ANCHOR

MANHOLE FLAT SLAB TOP
NEENAH FRAME & COVER
PER OWNERS STANDARDS

COMBINATION AIR
AND VACUUM VALVE

1" BRASS UNION

1" GATE VALVE
w/H.W.; 2 TYP.

1" BRASS TEE

1" BRASS PIPE
AS REQ'D.; THRD.

1" CORP. STOP;

PIPE ANCHOR

DOUBLE STRAP
SADDLE; MUELLER

12" CRUSHED
STONE

SECTION

NOTE:

1. STANDARD MANHOLE OUTSIDE
ROADWAY OR PARKING AREA

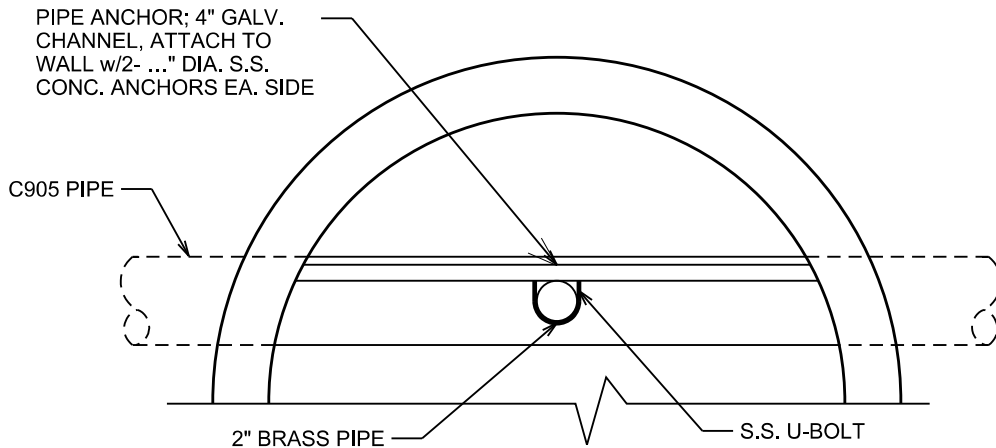
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DETAIL No.

4

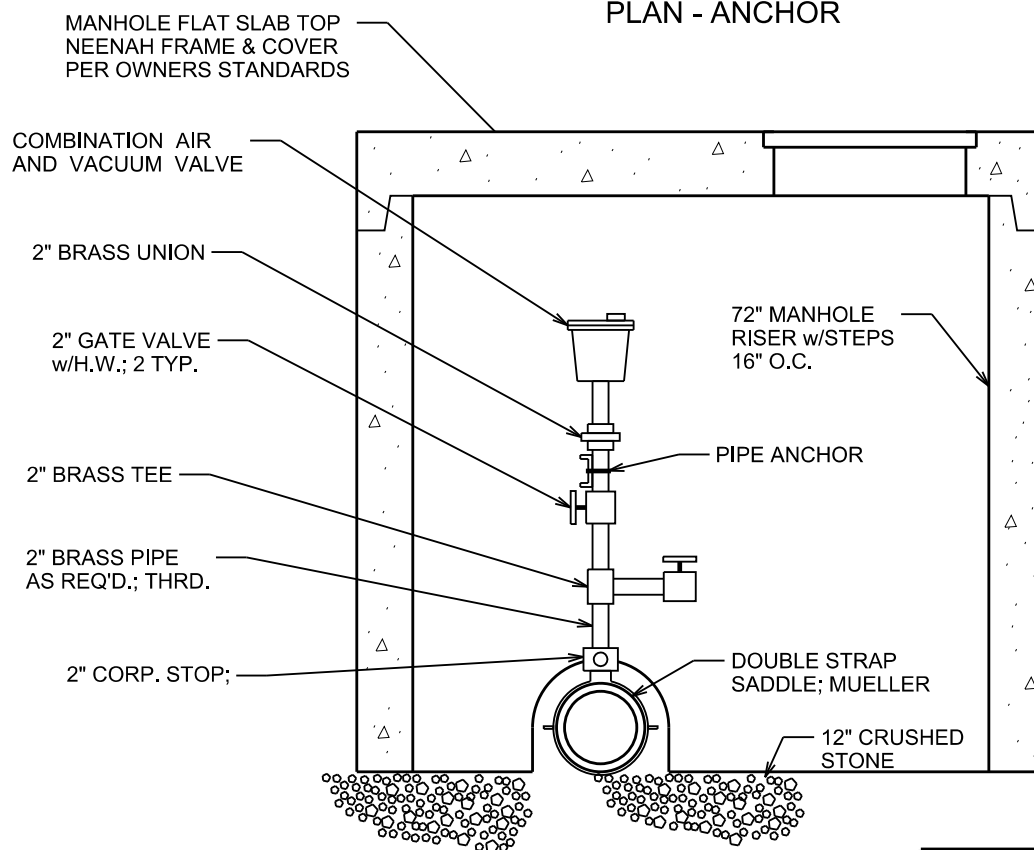
AUTOMATIC AIR RELEASE VALVE FOR 4" - 10" WATER LINE

SCALE: NONE





PLAN - ANCHOR



SECTION

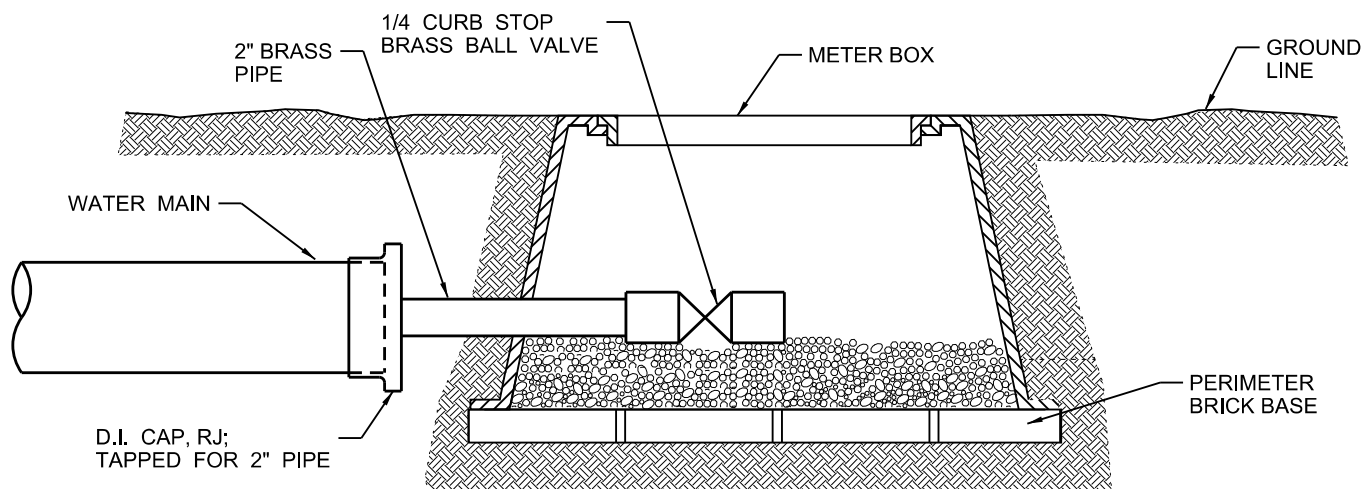
WATER
DETAIL No.

5

AUTOMATIC AIR RELEASE VALVE FOR 12" - 24" WATER LINE

SCALE: NONE





WATER
DETAIL No.

6

FLUSHING ASSEMBLY

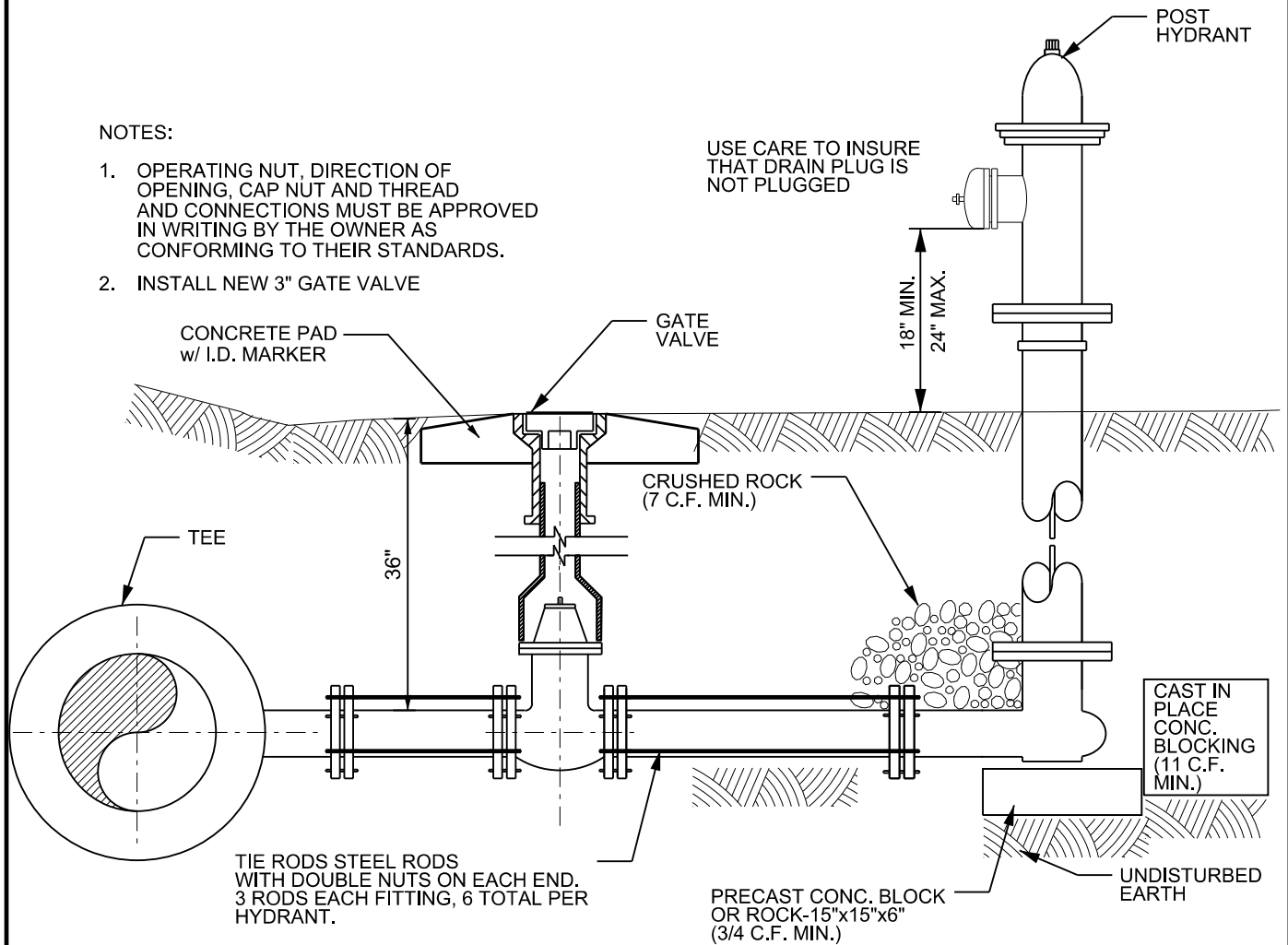
SCALE: NONE



NOTES:

1. OPERATING NUT, DIRECTION OF OPENING, CAP NUT AND THREAD AND CONNECTIONS MUST BE APPROVED IN WRITING BY THE OWNER AS CONFORMING TO THEIR STANDARDS.
2. INSTALL NEW 3" GATE VALVE

USE CARE TO INSURE THAT DRAIN PLUG IS NOT PLUGGED



WATER
DETAIL No.

7

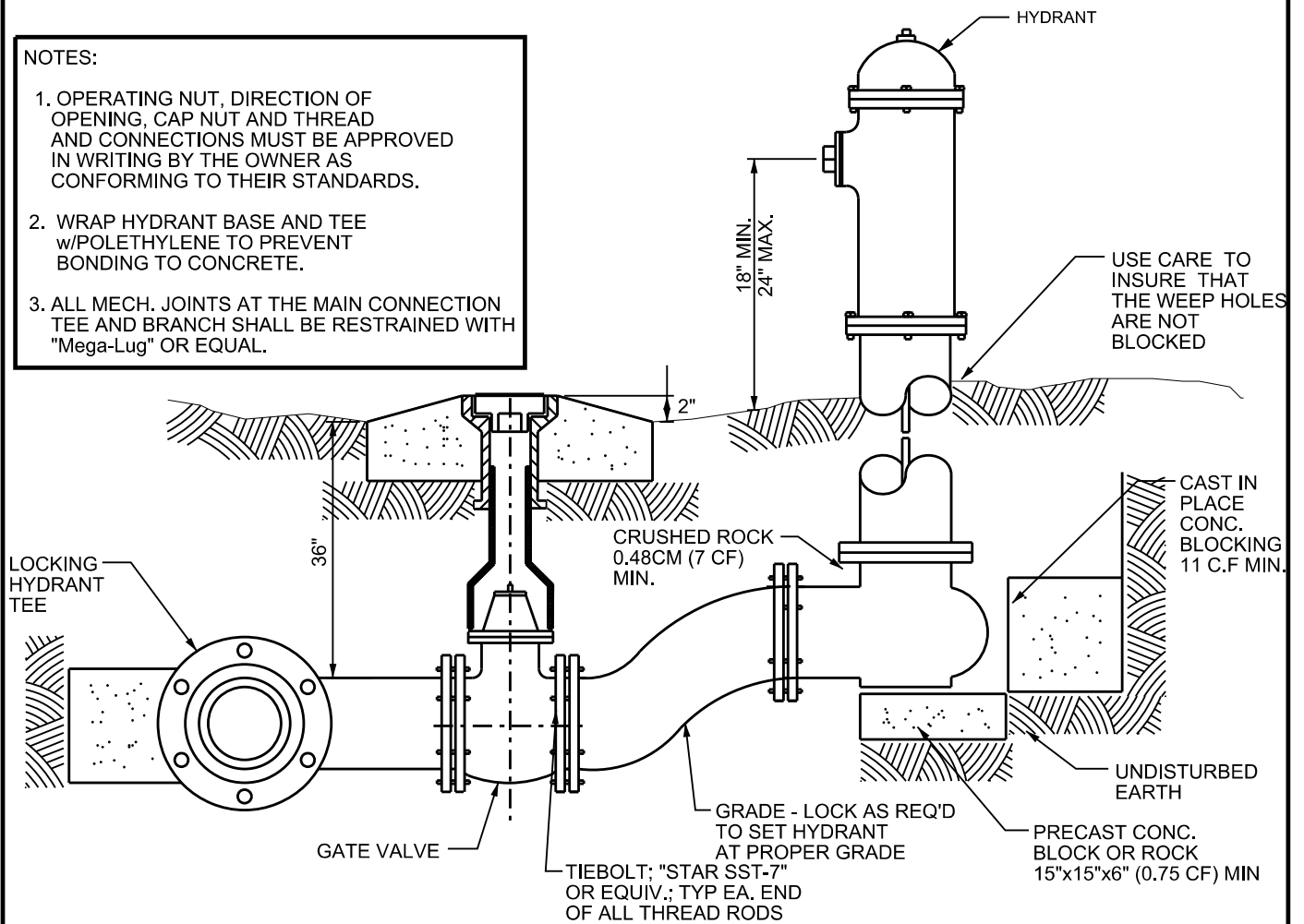
TYPICAL POST HYDRANT DETAIL

SCALE: NONE



NOTES:

1. OPERATING NUT, DIRECTION OF OPENING, CAP NUT AND THREAD AND CONNECTIONS MUST BE APPROVED IN WRITING BY THE OWNER AS CONFORMING TO THEIR STANDARDS.
2. WRAP HYDRANT BASE AND TEE w/POLETHYLENE TO PREVENT BONDING TO CONCRETE.
3. ALL MECH. JOINTS AT THE MAIN CONNECTION TEE AND BRANCH SHALL BE RESTRAINED WITH "Mega-Lug" OR EQUAL.



WATER
DETAIL No.

8

TYPICAL FIRE
HYDRANT SETTING

SCALE: NONE



TABLE OF DIMENSIONS FOR CONCRETE BLOCKERS																									
TEES, CROSSES & PLUGS					90° BENDS					45° BENDS					22-½° BENDS					11-¼° BENDS					PIPE SIZE
H1	H2	V	D	C.F.	H1	H2	V	D	C.F.	H1	H2	V	D	C.F.	H1	H2	V	D	C.F.	H1	H2	V	D	C.F.	
18"	10"	12"	18"	1.90	18"	10"	12"	18"	1.90	18"	6"	12"	18"	1.50	18"	6"	12"	18"	1.50	18"	6"	12"	18"	1.50	2" & 2-1/4"
24"	12"	12"	18"	2.25	24"	12"	12"	18"	2.25	18"	8"	12"	18"	1.60	18"	8"	12"	18"	1.60	18"	8"	12"	18"	1.60	3" & 4"
24"	16"	18"	18"	3.50	30"	16"	18"	18"	4.05	24"	10"	16"	18"	3.20	24"	10"	16"	18"	3.20	24"	10"	16"	18"	3.20	6"
36"	18"	18"	18"	5.05	39"	18"	24"	18"	7.30	30"	11"	18"	18"	3.95	30"	11"	18"	18"	3.95	24"	11"	16"	18"	3.40	8"
48"	24"	18"	24"	7.15	54"	32"	24"	18"	10.25	24"	18"	21"	18"	4.60	24"	18"	21"	18"	4.60	24"	18"	21"	18"	4.60	10"
54"	30"	24"	24"	13.4	54"	32"	36"	24"	18.15	42"	18"	24"	24"	9.60	24"	18"	24"	24"	6.60	24"	18"	21"	24"	6.10	12"
60"	32"	30"	24"	17.9	60"	40"	42"	24"	25.00	44"	24"	30"	24"	13.2	30"	24"	24"	24"	9.20	27"	21"	24"	24"	7.90	14"
66"	34"	36"	24"	22.5	69"	48"	48"	24"	29.00	48"	30"	36"	24"	17.0	36"	30"	27"	24"	11.80	27"	24"	27"	24"	9.10	16"
66"	36"	40"	24"	27.5	69"	48"	48"	24"	33.00	48"	30"	36"	24"	17.0	36"	30"	29"	24"	13.0	27"	30"	29"	24"	11.0	18"
	38"					48"	24"				40"	24"				36"	24"			30"	40"		28"		20"
	42"		24"			60"	24"				48"	24"				42"	24"				42"		32"		24"
	58"		24"			96"	24"				72"	24"				72"	24"				48"		36"		30"

SCALE: NONE

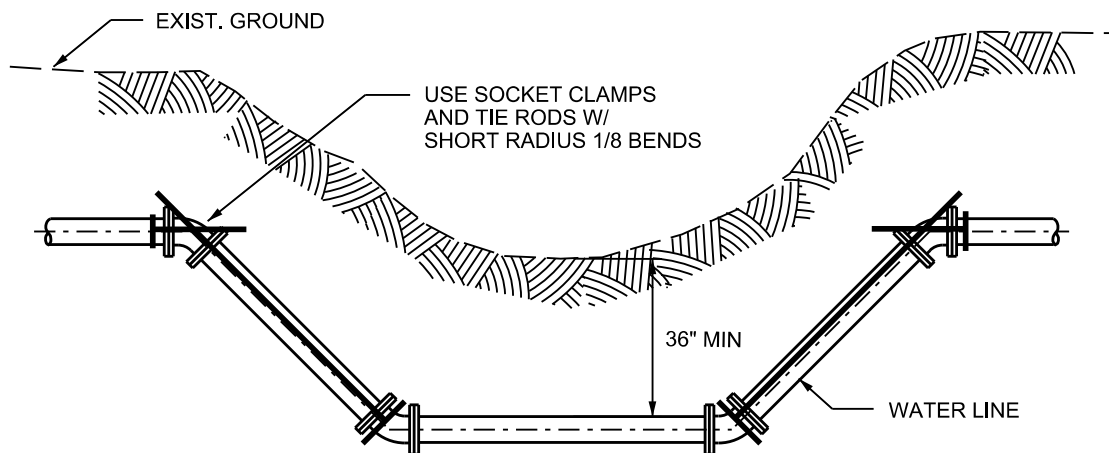
The image contains four technical drawings illustrating trench reinforcement details:

- HORIZONTAL BENDS:** A cross-section of a trench corner. A pipe enters from the left and bends 90 degrees downward. The trench walls are reinforced with concrete blocking. Labels include: "EDGE OF TRENCH", "CONCRETE BLOCKING", "MINIMUM BEARING AGAINST TRENCH WALL", "UNDISTURBED EARTH", and "EDGE OF TRENCH". Dimensions H_1 and H_2 are shown, along with a 3/4" dimension.
- SECTION 'A-A':** A cross-section of a trench corner. A pipe enters from the left and bends 90 degrees downward. The trench walls are reinforced with concrete blocking. Labels include: "MINIMUM THICKNESS", "CONCRETE BLOCKING", "MINIMUM BEARING AGAINST TRENCH WALL", "UNDISTURBED EARTH", and "6" MIN.". Dimension D is shown.
- TEES, CROSSES AND PLUGS:** A cross-section of a trench corner. A pipe enters from the left and bends 90 degrees downward. The trench walls are reinforced with concrete blocking. Labels include: "BRANCH", "CONCRETE BLOCKING", "UNDISTURBED EARTH", "EDGE OF TRENCH", "2" C.I. PIPE STRUT", and "EDGE OF TRENCH". Dimensions H_1 , H_2 , H_3 , H_4 , H_5 , H_6 , and D are shown.
- VERTICAL BENDS:** A cross-section of a trench corner. A pipe enters from the left and bends 90 degrees downward. The trench walls are reinforced with concrete blocking. Labels include: "2"X1/4" GALVANIZED STEEL STRAP", "3/4" THREADED ROD W/ HEX NUTS AND 4"X1/4" PLATE WASHER", "H1 SQUARE", "H2", "H3", "H4", "H5", "H6", "H7", "H8", "H9", "H10", "H11", "H12", "H13", "H14", "H15", "H16", "H17", "H18", "H19", "H20", "H21", "H22", "H23", "H24", "H25", "H26", "H27", "H28", "H29", "H30", "H31", "H32", "H33", "H34", "H35", "H36", "H37", "H38", "H39", "H40", "H41", "H42", "H43", "H44", "H45", "H46", "H47", "H48", "H49", "H50", "H51", "H52", "H53", "H54", "H55", "H56", "H57", "H58", "H59", "H60", "H61", "H62", "H63", "H64", "H65", "H66", "H67", "H68", "H69", "H70", "H71", "H72", "H73", "H74", "H75", "H76", "H77", "H78", "H79", "H80", "H81", "H82", "H83", "H84", "H85", "H86", "H87", "H88", "H89", "H90", "H91", "H92", "H93", "H94", "H95", "H96", "H97", "H98", "H99", "H100", "H101", "H102", "H103", "H104", "H105", "H106", "H107", "H108", "H109", "H110", "H111", "H112", "H113", "H114", "H115", "H116", "H117", "H118", "H119", "H120", "H121", "H122", "H123", "H124", "H125", "H126", "H127", "H128", "H129", "H130", "H131", "H132", "H133", "H134", "H135", "H136", "H137", "H138", "H139", "H140", "H141", "H142", "H143", "H144", "H145", "H146", "H147", "H148", "H149", "H150", "H151", "H152", "H153", "H154", "H155", "H156", "H157", "H158", "H159", "H160", "H161", "H162", "H163", "H164", "H165", "H166", "H167", "H168", "H169", "H170", "H171", "H172", "H173", "H174", "H175", "H176", "H177", "H178", "H179", "H180", "H181", "H182", "H183", "H184", "H185", "H186", "H187", "H188", "H189", "H190", "H191", "H192", "H193", "H194", "H195", "H196", "H197", "H198", "H199", "H200", "H201", "H202", "H203", "H204", "H205", "H206", "H207", "H208", "H209", "H210", "H211", "H212", "H213", "H214", "H215", "H216", "H217", "H218", "H219", "H220", "H221", "H222", "H223", "H224", "H225", "H226", "H227", "H228", "H229", "H230", "H231", "H232", "H233", "H234", "H235", "H236", "H237", "H238", "H239", "H240", "H241", "H242", "H243", "H244", "H245", "H246", "H247", "H248", "H249", "H250", "H251", "H252", "H253", "H254", "H255", "H256", "H257", "H258", "H259", "H260", "H261", "H262", "H263", "H264", "H265", "H266", "H267", "H268", "H269", "H270", "H271", "H272", "H273", "H274", "H275", "H276", "H277", "H278", "H279", "H280", "H281", "H282", "H283", "H284", "H285", "H286", "H287", "H288", "H289", "H290", "H291", "H292", "H293", "H294", "H295", "H296", "H297", "H298", "H299", "H300", "H301", "H302", "H303", "H304", "H305", "H306", "H307", "H308", "H309", "H310", "H311", "H312", "H313", "H314", "H315", "H316", "H317", "H318", "H319", "H320", "H321", "H322", "H323", "H324", "H325", "H326", "H327", "H328", "H329", "H330", "H331", "H332", "H333", "H334", "H335", "H336", "H337", "H338", "H339", "H340", "H341", "H342", "H343", "H344", "H345", "H346", "H347", "H348", "H349", "H350", "H351", "H352", "H353", "H354", "H355", "H356", "H357", "H358", "H359", "H360", "H361", "H362", "H363", "H364", "H365", "H366", "H367", "H368", "H369", "H370", "H371", "H372", "H373", "H374", "H375", "H376", "H377", "H378", "H379", "H380", "H381", "H382", "H383", "H384", "H385", "H386", "H387", "H388", "H389", "H390", "H391", "H392", "H393", "H394", "H395", "H396", "H397", "H398", "H399", "H400", "H401", "H402", "H403", "H404", "H405", "H406", "H407", "H408", "H409", "H410", "H411", "H412", "H413", "H414", "H415", "H416", "H417", "H418", "H419", "H420", "H421", "H422", "H423", "H424", "H425", "H426", "H427", "H428", "H429", "H430", "H431", "H432", "H433", "H434", "H435", "H436", "H437", "H438", "H439", "H440", "H441", "H442", "H443", "H444", "H445", "H446", "H447", "H448", "H449", "H450", "H451", "H452", "H453", "H454", "H455", "H456", "H457", "H458", "H459", "H460", "H461", "H462", "H463", "H464", "H465", "H466", "H467", "H468", "H469", "H470", "H471", "H472", "H473", "H474", "H475", "H476", "H477", "H478", "H479", "H480", "H481", "H482", "H483", "H484", "H485", "H486", "H487", "H488", "H489", "H490", "H491", "H492", "H493", "H494", "H495", "H496", "H497", "H498", "H499", "H500", "H501", "H502", "H503", "H504", "H505", "H506", "H507", "H508", "H509", "H510", "H511", "H512", "H513", "H514", "H515", "H516", "H517", "H518", "H519", "H520", "H521", "H522", "H523", "H524", "H525", "H526", "H527", "H528", "H529", "H530", "H531", "H532", "H533", "H534", "H535", "H536", "H537", "H538", "H539", "H540", "H541", "H542", "H543", "H544", "H545", "H546", "H547", "H548", "H549", "H550", "H551", "H552", "H553", "H554", "H555", "H556", "H557", "H558", "H559", "H560", "H561", "H562", "H563", "H564", "H565", "H566", "H567", "H568", "H569", "H570", "H571", "H572", "H573", "H574", "H575", "H576", "H577", "H578", "H579", "H580", "H581", "H582", "H583", "H584", "H585", "H586", "H587", "H588", "H589", "H590", "H591", "H592", "H593", "H594", "H595", "H596", "H597", "H598", "H599", "H600", "H601", "H602", "H603", "H604", "H605", "H606", "H607", "H608", "H609", "H610", "H611", "H612", "H613", "H61

9

SCALE: NONE





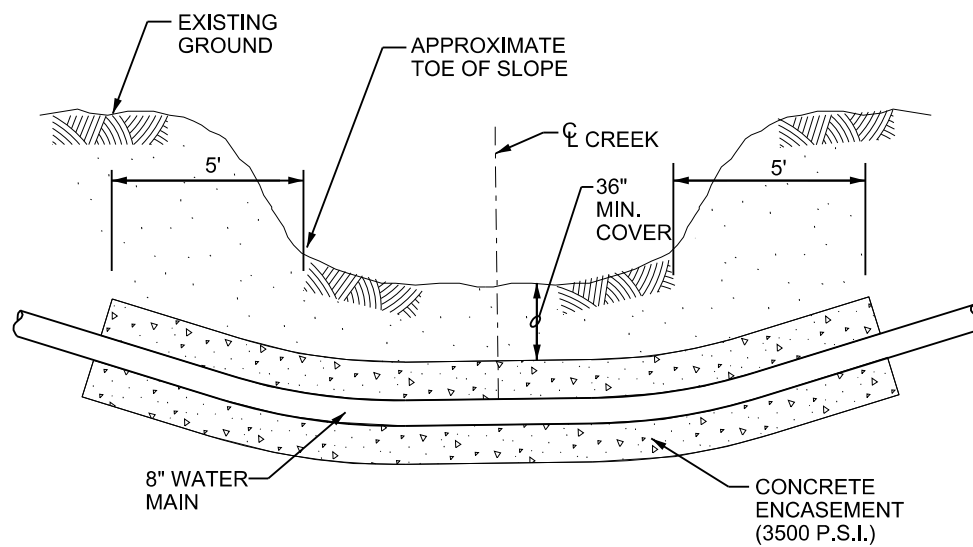
WATER
DETAIL No.

10

TYPICAL ANCHORAGE FOR CHANGES IN VERTICAL DIRECTION

SCALE: NONE





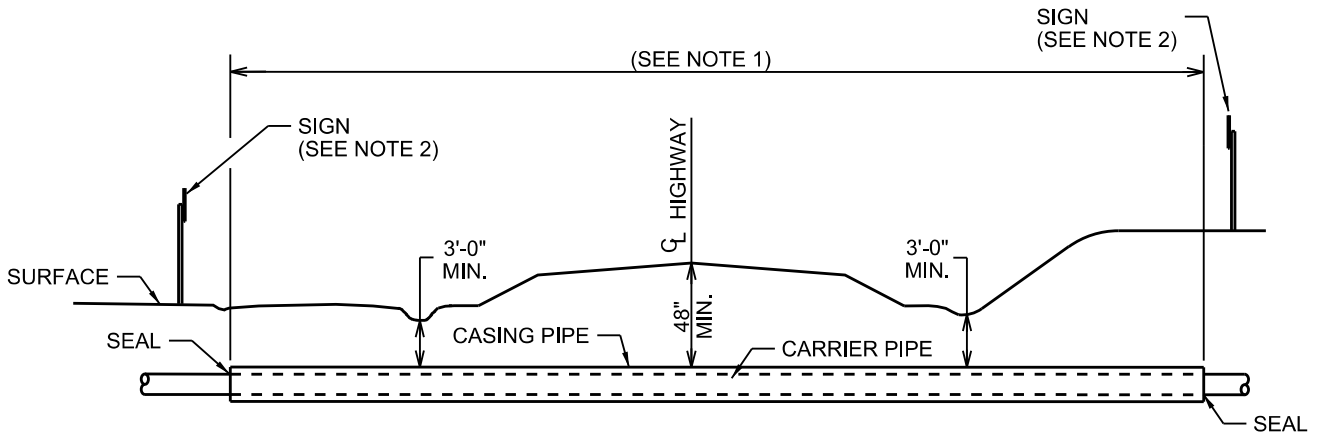
WATER
DETAIL No.

11

TYPICAL CREEK CROSSING WITH WATER MAIN

SCALE: NONE





WATER MAIN LINES

NOTES:

- CASING SHALL EXTEND TO THE GREATER OF THE FOLLOWING DISTANCES:
 - 2' BEYOND TOE OF SLOPE
 - 3' BEYOND DITCH LINE
 - MIN. OF 25' WHEN CASING IS SEALED AT BOTH ENDS.
- SIGN TO INDICATE LOCATION OF PIPE LINE AT R.O.W. LINE, KIND OWNERSHIP, AND DEPTH OF PIPE LINE.
- THE INSIDE DIAMETER OF THE CASING PIPE SHALL BE AT LEAST TWO INCHES GREATER THAN LARGEST DIAMETER OF CARRIER PIPE, JOINTS OR COUPLINGS FOR CARRIER PIPES LESS THAN 6" IN DIAMETER AND AT LEAST 4" GREATER FOR CARRIER PIPES 6" AND OVER IN DIAMETER.
- WATER LINE MUST BE BLOCKED WITH CASING SPACERS INSIDE CASING PIPE TO MAINTAIN ALIGNMENT.

WATER
DETAIL No.

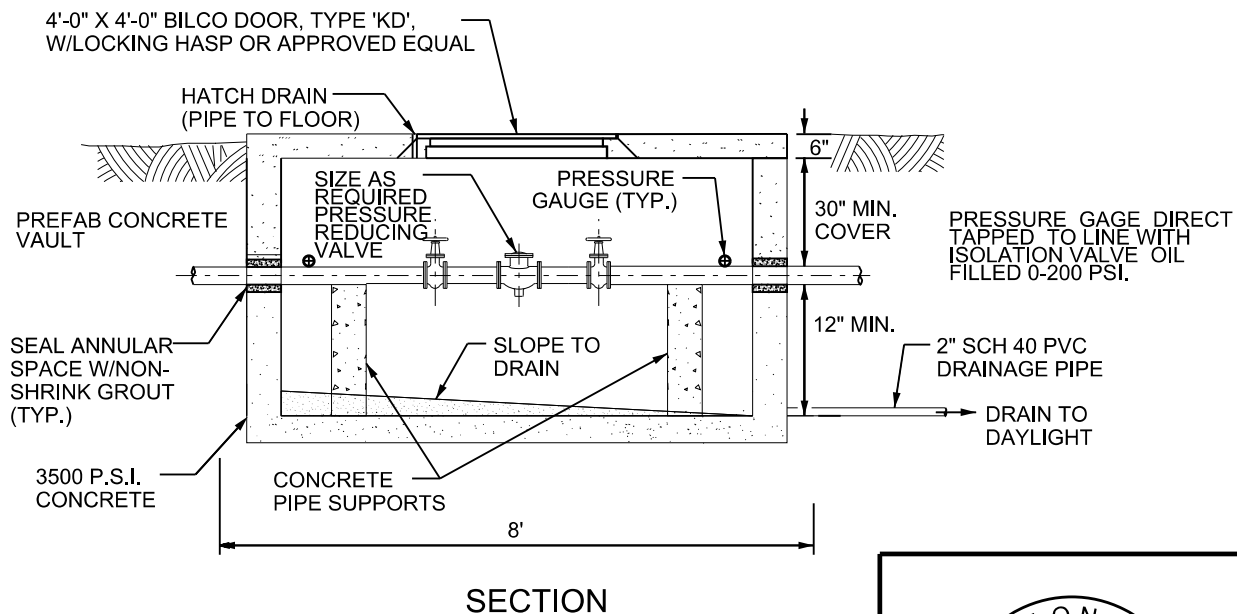
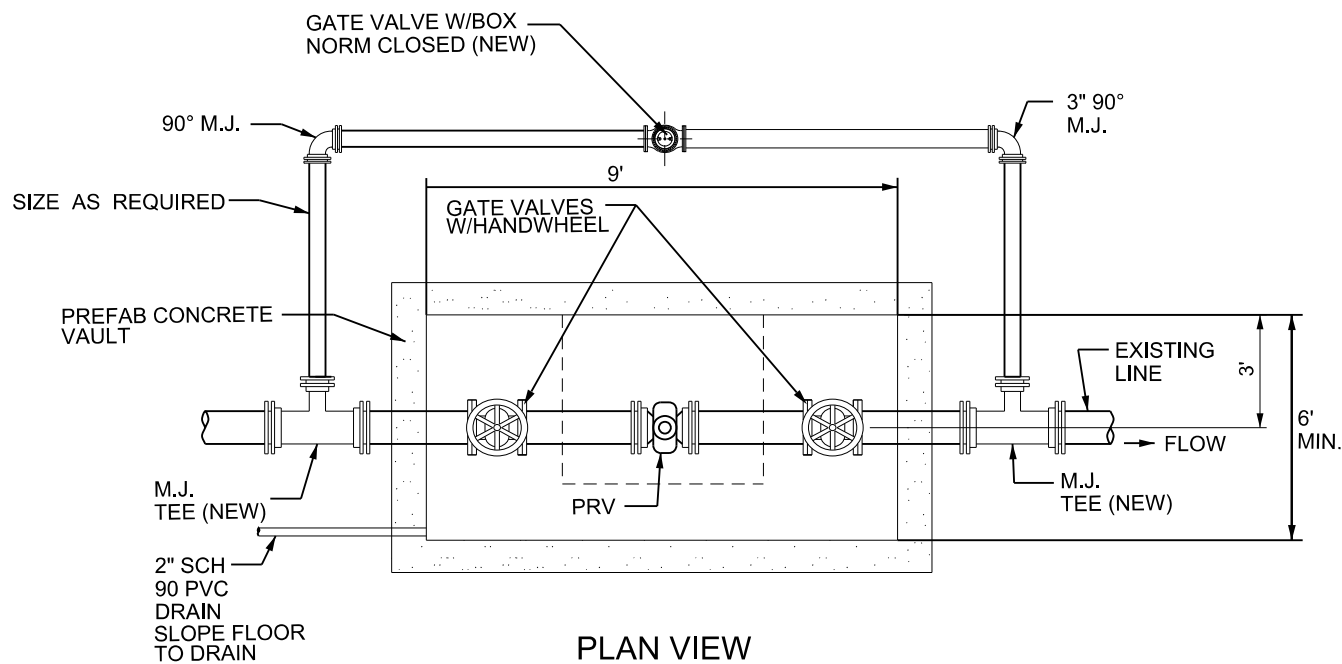
12

BORE AND ENCASEMENT UNDER HIGHWAYS

SCALE: NONE



PRESSURE REDUCING VALVES
SINGER MODEL 106/206-PR



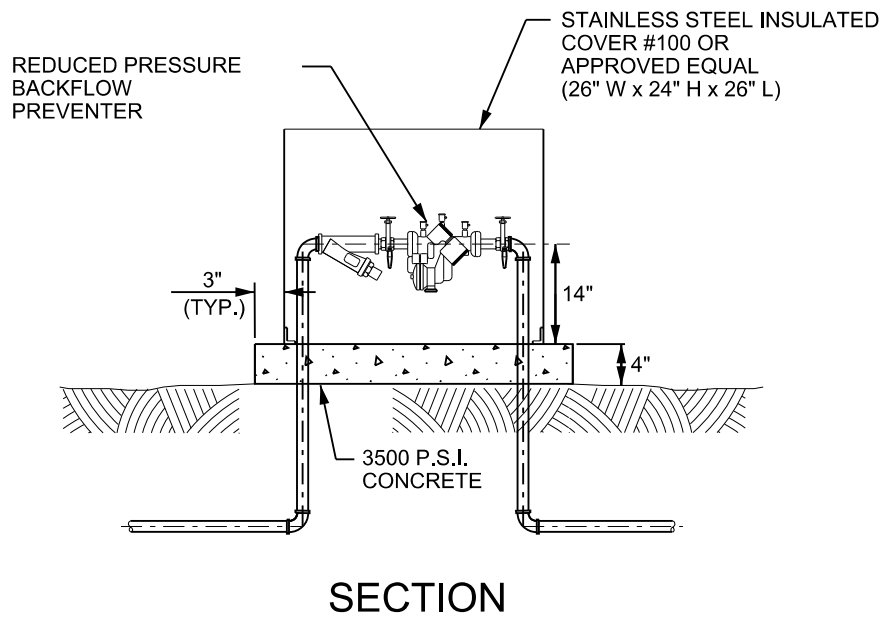
WATER
DETAIL No.

13

TYPICAL PRESSURE REDUCING
VALVE BOX DETAIL

SCALE: NONE





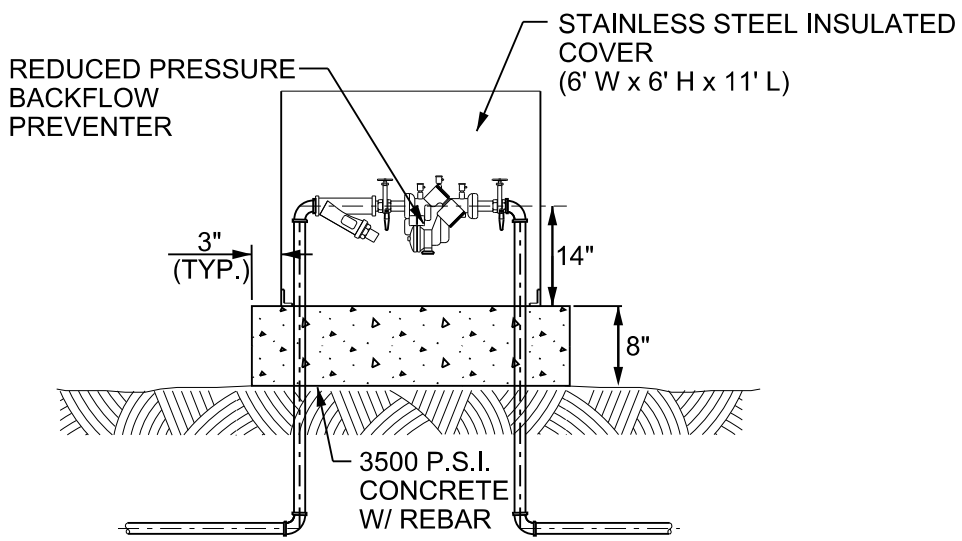
WATER
DETAIL No.

14

3/4" & 1" REDUCED PRESSURE
BACKFLOW PREVENTER

SCALE: NONE





SECTION

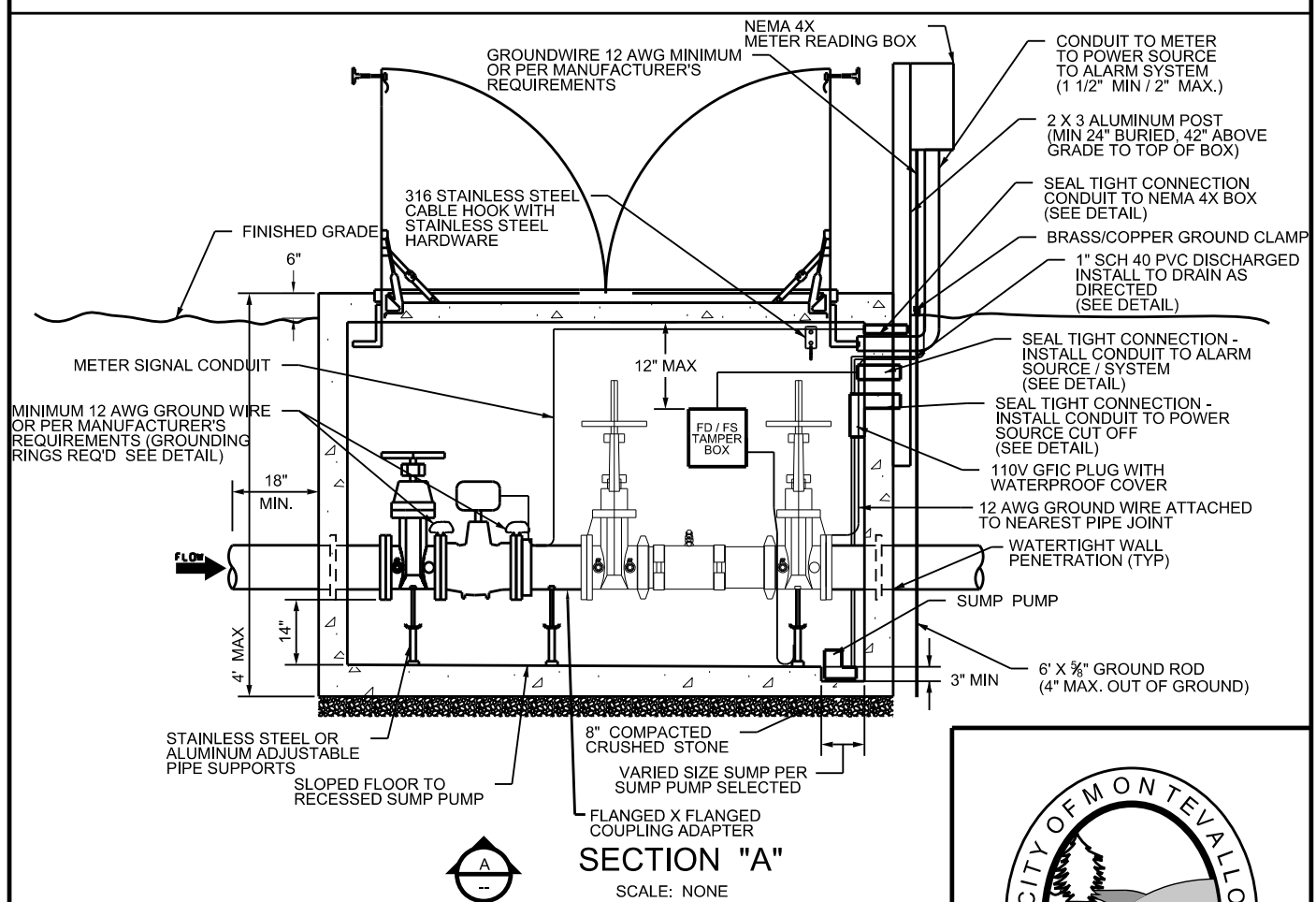
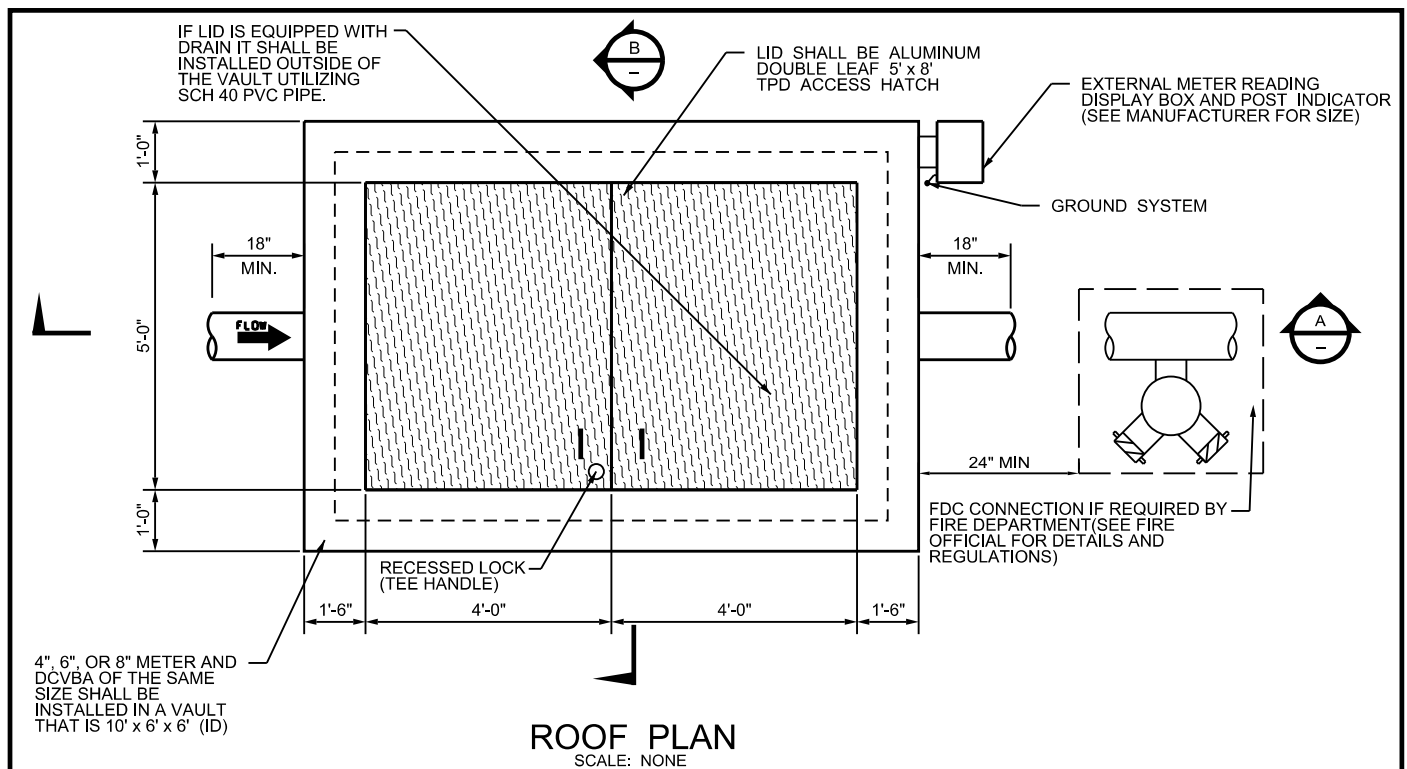
WATER
DETAIL No.

15

4" & 8" REDUCED PRESSURE
BACKFLOW PREVENTER

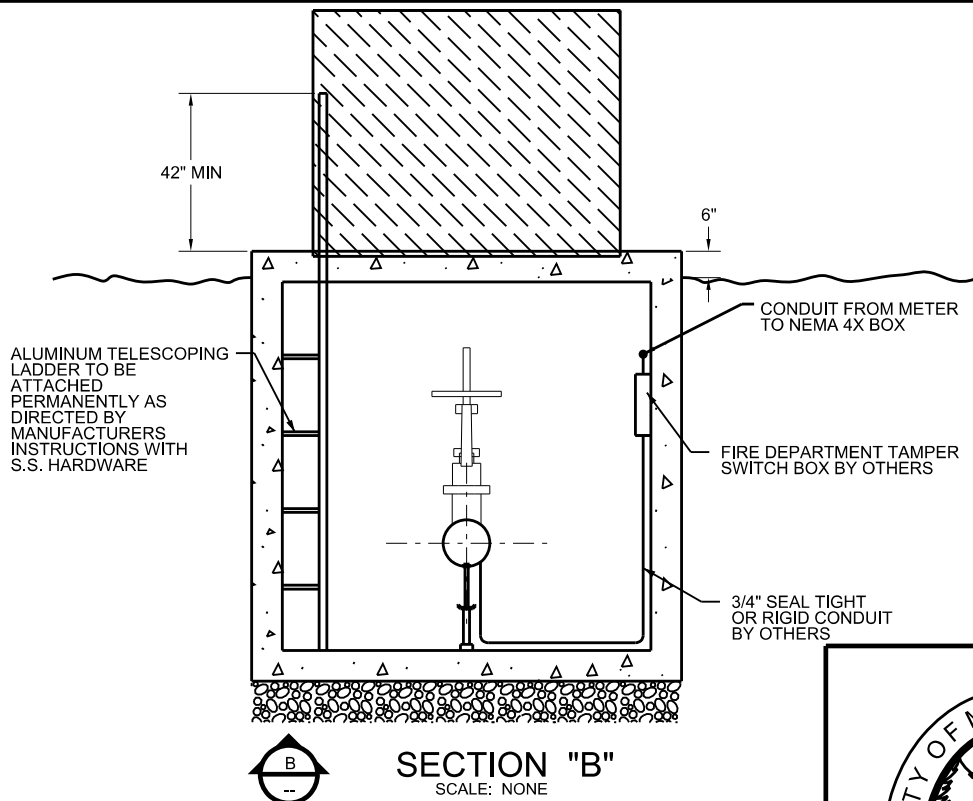
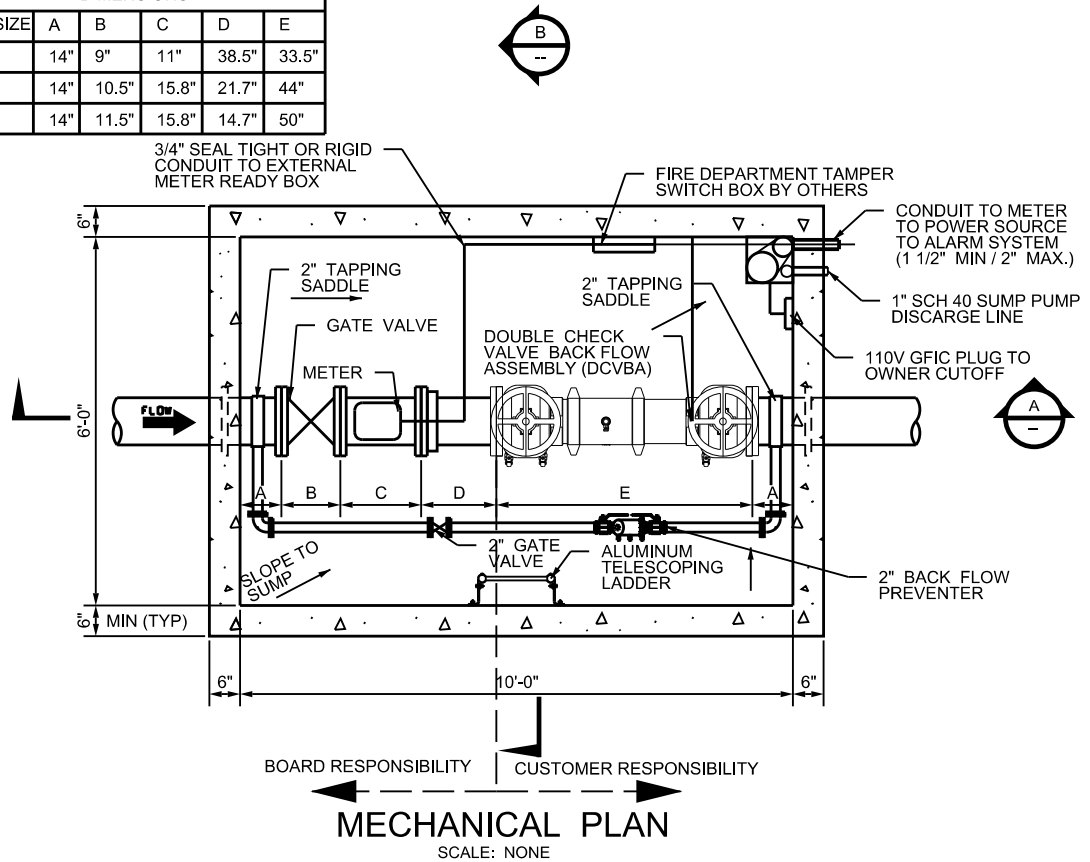
SCALE: NONE





<p>WATER DETAIL No.</p> <h1>16A</h1>	<h2>STANDARD 4", 6", OR 8" METER AND DCVBA VAULT DETAIL</h2> <p>SCALE: NONE</p>	
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DIMENSIONS					
PIPE, METER, AND DCVBA SIZE	A	B	C	D	E
4"	14"	9"	11"	38.5"	33.5"
6"	14"	10.5"	15.8"	21.7"	44"
8"	14"	11.5"	15.8"	14.7"	50"



WATER
DETAIL No.

16B

**STANDARD 4", 6", OR 8" METER
AND DCVBA VAULT DETAIL**

SCALE: NONE

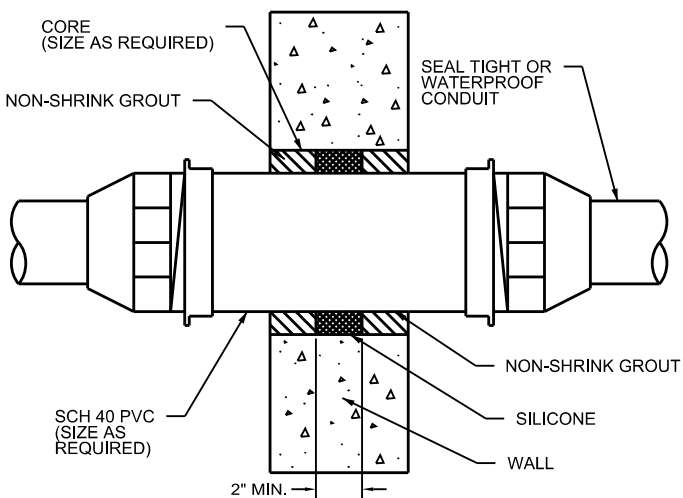


NOTES:

1. 4", 6", OR 8" METER AND DCVBA OF THE SAME SIZE SHALL BE INSTALLED IN A VAULT THAT IS 10' x 6' x 6' (ID) BY BARTOW PRECAST OR BY APPROVED EQUIVALENT.
2. LID SHALL BE ALUMINUM DOUBLE LEAF 5' x 8' TPD ACCESS HATCH BY U.S.F. FABRICATION INC. OR APPROVED EQUIVALENT. WITH FALL PROTECTION SYSTEM.
3. ALL HARDWARE SHALL BE A MINIMUM OF 304 STAINLESS STEEL.
4. DOUBLE CHECK VALVE BACK FLOW ASSEMBLY (DCVBA) SHALL BE WATTS 7570SY OR APPROVED EQUIVALENT.
5. METER SHALL BE MANUFACTURED BY SENSUS OR MASTER METER METER WITH EXTERNAL DISPLAY OR AS DIRECTED BY BOARD
6. GATE VALVE (FLANGE X FLANGE) SHALL BE MANUFACTURED BY M&H VALVE COMPANY OR APPROVED EQUIVALENT.
7. SUMP PUMP SHALL BE 110V WAYNE, PENTAIR, SUPERIOR, OR APPROVED EQUIVALENT WITH VERTICAL FLOAT SWITCH.
8. ALUMINUM TELESCOPING LADDER SHALL BE MANUFACTURED BY U.S.F. FABRICATION INC. OR APPROVED EQUIVALENT.
9. ALL CONDUITS FROM METER AND TAMPER SWITCH, ETC SHALL BE INSTALLED DOWN TO THE FLOOR OF VAULT, STRAPPED TO THE PIPE SUPPORT AND STRAPPED TO THE WALL TO PREVENT MOVEMENT AND TRIP HAZARDS.
10. LIFTING HOOKS / CABLES TO BE FIELD REMOVED AND PROPERTY TERMINATED FLUSH WITH VAULT SURFACES.
11. THIS METER VAULT IS NOT TO BE USED FOR REDUCE PRESSURE ZONE DEVICES (RPZD). ALL RPZD TO BE INSTALLED ABOVE GRADE IN ACCORDANCE WITH FEDERAL RULES AND REGULATIONS. ALL RPZD TO BE INSTALLED IN STAINLESS STEEL ENCLOSURE (HOT BOX).
12. BOARD RESERVES THE RIGHT TO MODIFY, CHANGE OR CORRECT THIS DETAIL AS REQUIRED FOR THE BENEFIT OF THE WATER SYSTEM.
13. VAULT MUST BE DELIVERED TO SITE FULLY ASSEMBLED PRIOR TO INSTALLATION - NO EXCEPTIONS
14. GROUNDING SYSTEM SHALL BE INSTALLED PER THE METER MANUFACTURER'S RECOMMENDED SPECIFICATIONS.
15. THE EXCESS METER CABLE SHALL BE NEATLY COILED UP AND HUNG IN THE VAULT. THE METER CABLE LENGTHS SHALL BE AS PROVIDED BY THE METER SUPPLIER AND SHALL NOT BE CUT OR ALTERED IN ANY WAY.

SITE SPECIFIC NOTES:

1. ALL POWER TO VAULT AND ALL ELECTRICAL WIRING ARE THE RESPONSIBILITY OF THE CUSTOMER.
2. BOARD SHALL OWN AND MAINTAIN FIRE METER.
3. CUSTOMER SHALL OWN, MAINTAIN, REPAIR, TEST OR REPLACE, DOUBLE CHECK VALVE BACK FLOW ASSEMBLY
4. BOARD WILL ONLY ASSIST IN REMOVING WIRE ENDS OR IN THE TERMINATION OF WIRE ENDS IF NECESSARY FOR EXTERNAL DISPLAY
5. BOARD WILL PERFORM ALL METER PROGRAMMING
6. ENDPOINT SHALL BE MOUNTED VERTICAL WITH HEAD UP TO PROVIDE ADEQUATE RADIO SIGNAL



NOTE: ALL PENETRATIONS MUST BE WATER TIGHT

SMALL PENETRATION SEALING DETAIL

SCALE: NONE

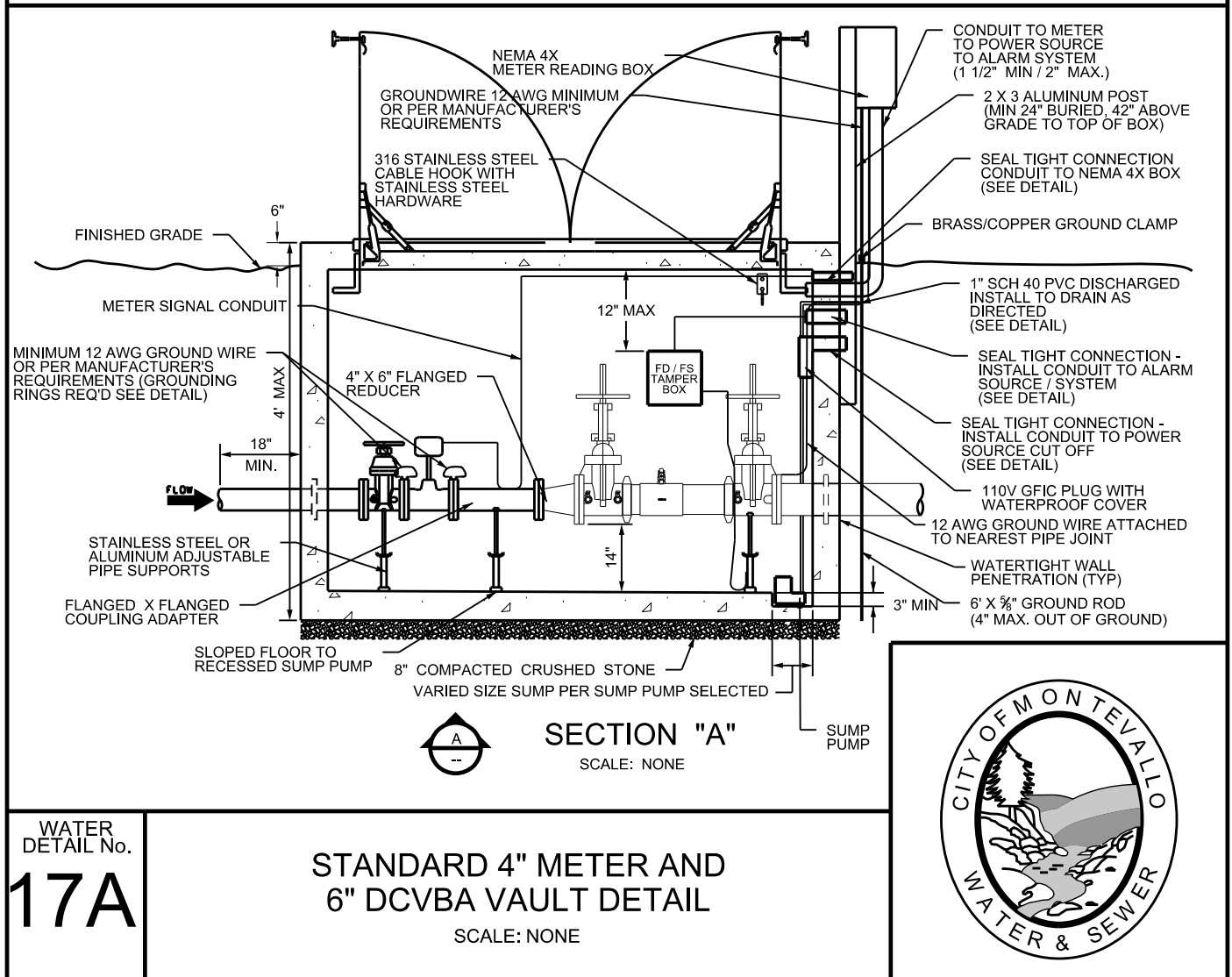
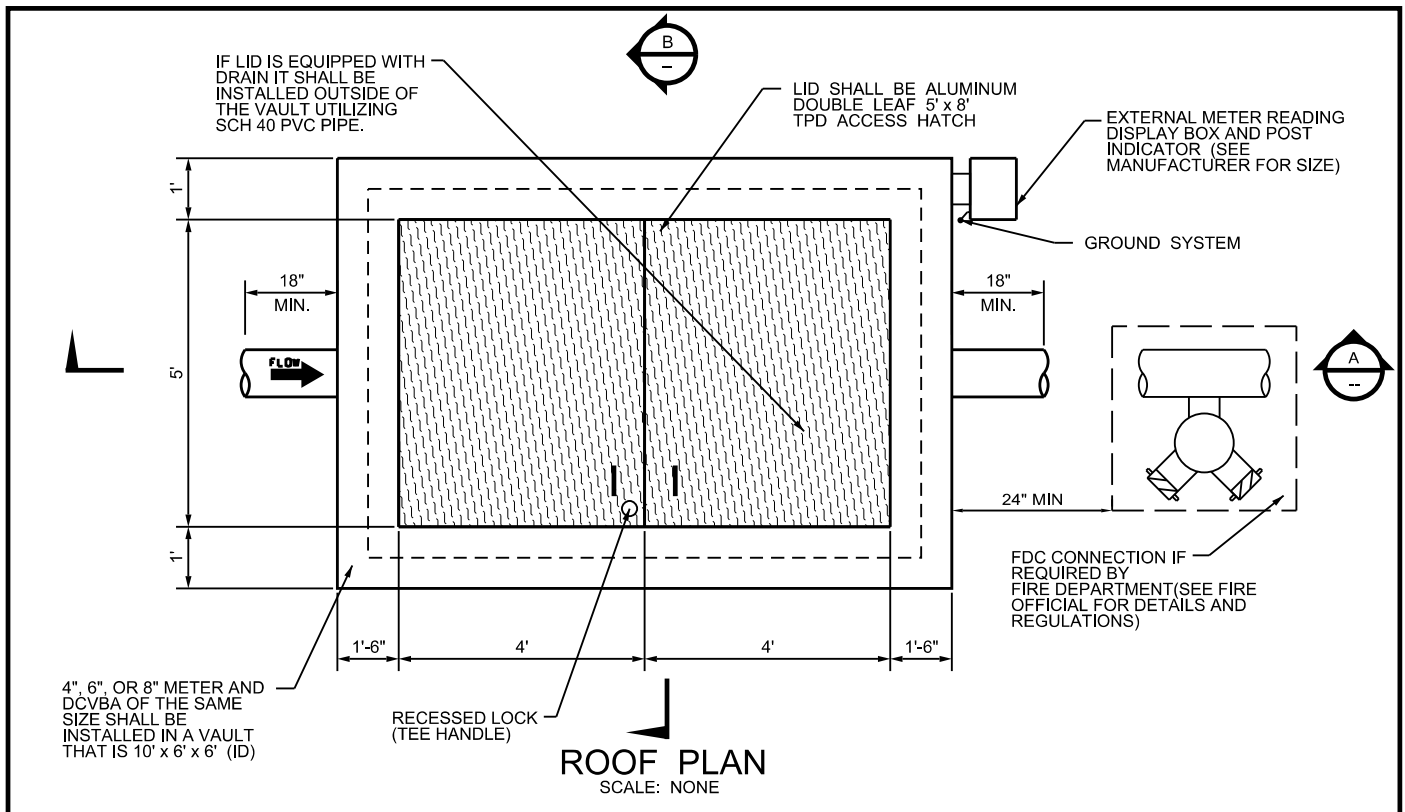
WATER
DETAIL No.

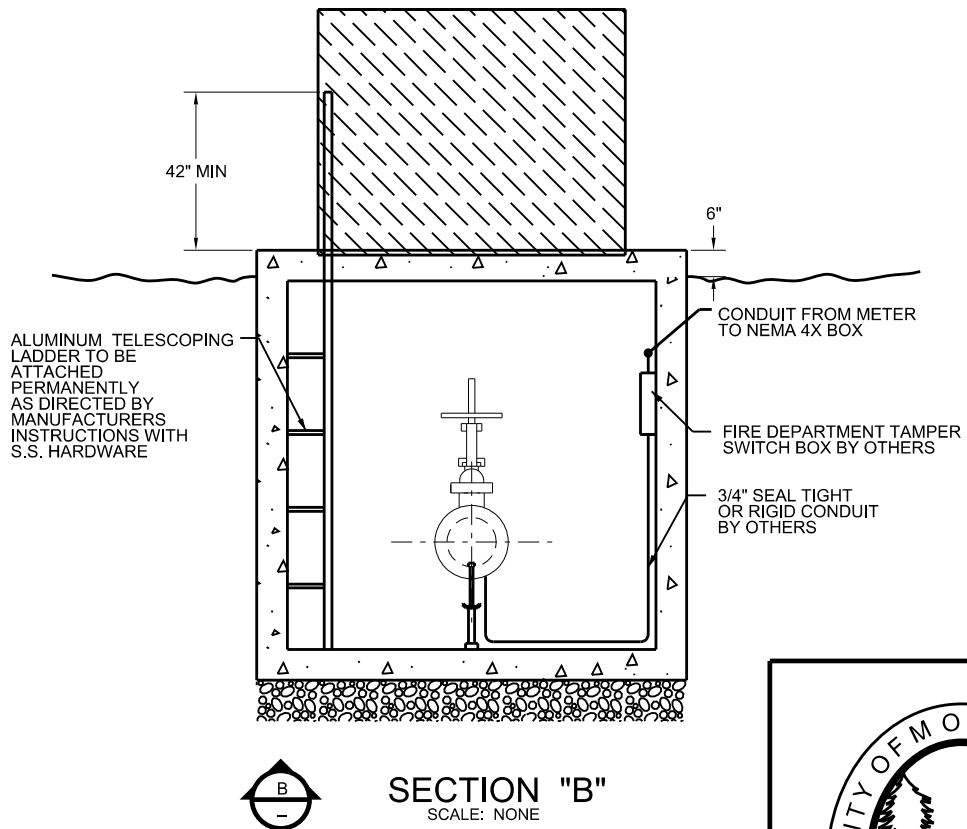
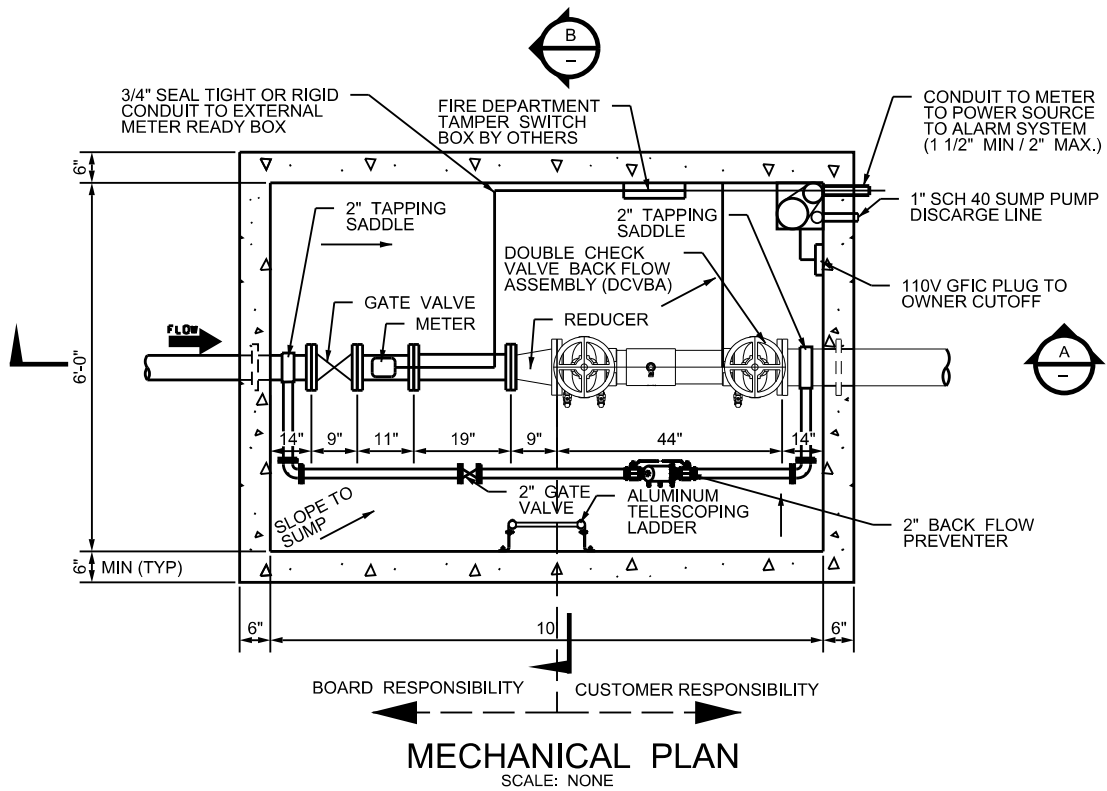
16C

STANDARD 4", 6", OR 8" METER
AND DCVBA VAULT DETAIL NOTES

SCALE: NONE







WATER
DETAIL No.
17B

**STANDARD 4" METER AND
6" DCVBA VAULT DETAIL**

SCALE: NONE

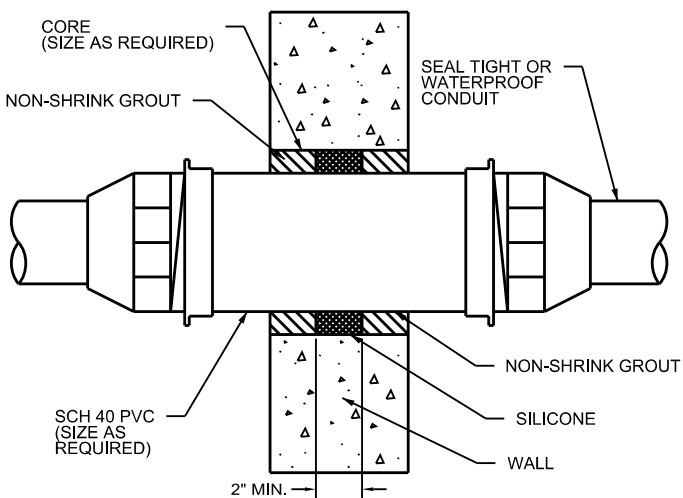


NOTES:

1. 4", 6", OR 8" METER AND DCVBA OF THE SAME SIZE SHALL BE INSTALLED IN A VAULT THAT IS 10' x 6' x 6' (ID) BY BARTOW PRECAST OR BY APPROVED EQUIVALENT.
2. LID SHALL BE ALUMINUM DOUBLE LEAF 5' x 8' TPD ACCESS HATCH BY U.S.F. FABRICATION INC. OR APPROVED EQUIVALENT. WITH FALL PROTECTION SYSTEM.
3. ALL HARDWARE SHALL BE A MINIMUM OF 304 STAINLESS STEEL.
4. DOUBLE CHECK VALVE BACK FLOW ASSEMBLY (DCVBA) SHALL BE WATTS 7570SY OR APPROVED EQUIVALENT.
5. METER SHALL BE MANUFACTURED BY SENSUS OR MASTER METER METER WITH EXTERNAL DISPLAY OR AS DIRECTED BY BOARD
6. GATE VALVE (FLANGE X FLANGE) SHALL BE MANUFACTURED BY M&H VALVE COMPANY OR APPROVED EQUIVALENT.
7. SUMP PUMP SHALL BE 110V WAYNE, PENTAIR, SUPERIOR, OR APPROVED EQUIVALENT WITH VERTICAL FLOAT SWITCH.
8. ALUMINUM TELESCOPING LADDER SHALL BE MANUFACTURED BY U.S.F. FABRICATION INC. OR APPROVED EQUIVALENT.
9. ALL CONDUITS FROM METER AND TAMPER SWITCH, ETC SHALL BE INSTALLED DOWN TO THE FLOOR OF VAULT, STRAPPED TO THE PIPE SUPPORT AND STRAPPED TO THE WALL TO PREVENT MOVEMENT AND TRIP HAZARDS.
10. LIFTING HOOKS / CABLES TO BE FIELD REMOVED AND PROPERTY TERMINATED FLUSH WITH VAULT SURFACES.
11. THIS METER VAULT IS NOT TO BE USED FOR REDUCE PRESSURE ZONE DEVICES (RPZD). ALL RPZD TO BE INSTALLED ABOVE GRADE IN ACCORDANCE WITH FEDERAL RULES AND REGULATIONS. ALL RPZD TO BE INSTALLED IN STAINLESS STEEL ENCLOSURE (HOT BOX).
12. BOARD RESERVES THE RIGHT TO MODIFY, CHANGE OR CORRECT THIS DETAIL AS REQUIRED FOR THE BENEFIT OF THE WATER SYSTEM.
13. VAULT MUST BE DELIVERED TO SITE FULLY ASSEMBLED PRIOR TO INSTALLATION - NO EXCEPTIONS
14. GROUNDING SYSTEM SHALL BE INSTALLED PER THE METER MANUFACTURER'S RECOMMENDED SPECIFICATIONS.
15. THE EXCESS METER CABLE SHALL BE NEATLY COILED UP AND HUNG IN THE VAULT. THE METER CABLE LENGTHS SHALL BE AS PROVIDED BY THE METER SUPPLIER AND SHALL NOT BE CUT OR ALTERED IN ANY WAY.

SITE SPECIFIC NOTES:

1. ALL POWER TO VAULT AND ALL ELECTRICAL WIRING ARE THE RESPONSIBILITY OF THE CUSTOMER.
2. BOARD SHALL OWN AND MAINTAIN FIRE METER.
3. CUSTOMER SHALL OWN, MAINTAIN, REPAIR, TEST OR REPLACE, DOUBLE CHECK VALVE BACK FLOW ASSEMBLY
4. BOARD WILL ONLY ASSIST IN REMOVING WIRE ENDS OR IN THE TERMINATION OF WIRE ENDS IF NECESSARY FOR EXTERNAL DISPLAY
5. BOARD WILL PERFORM ALL METER PROGRAMMING
6. ENDPOINT SHALL BE MOUNTED VERTICAL WITH HEAD UP TO PROVIDE ADEQUATE RADIO SIGNAL



NOTE: ALL PENETRATIONS MUST BE WATER TIGHT

SMALL PENETRATION SEALING DETAIL

SCALE: NONE

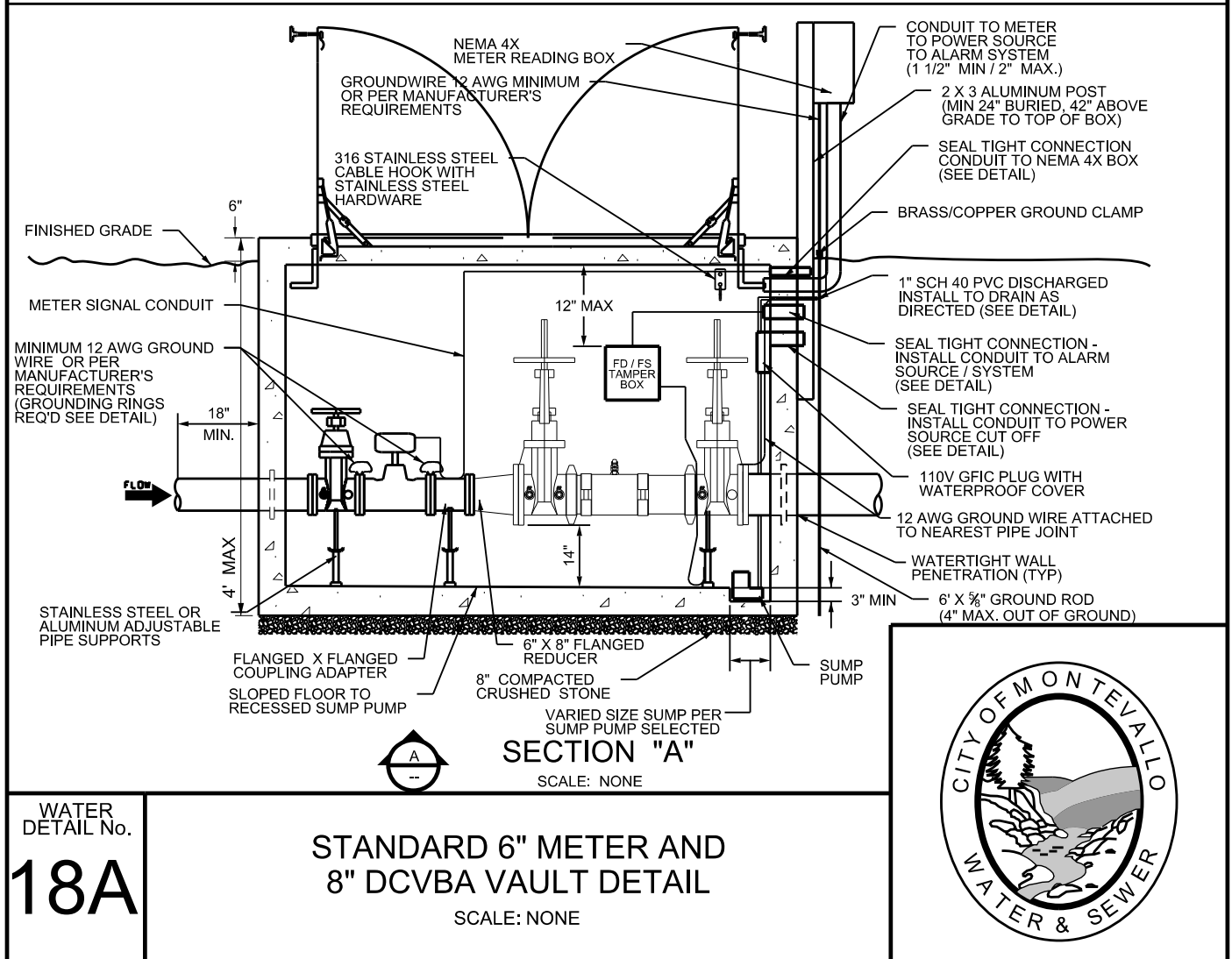
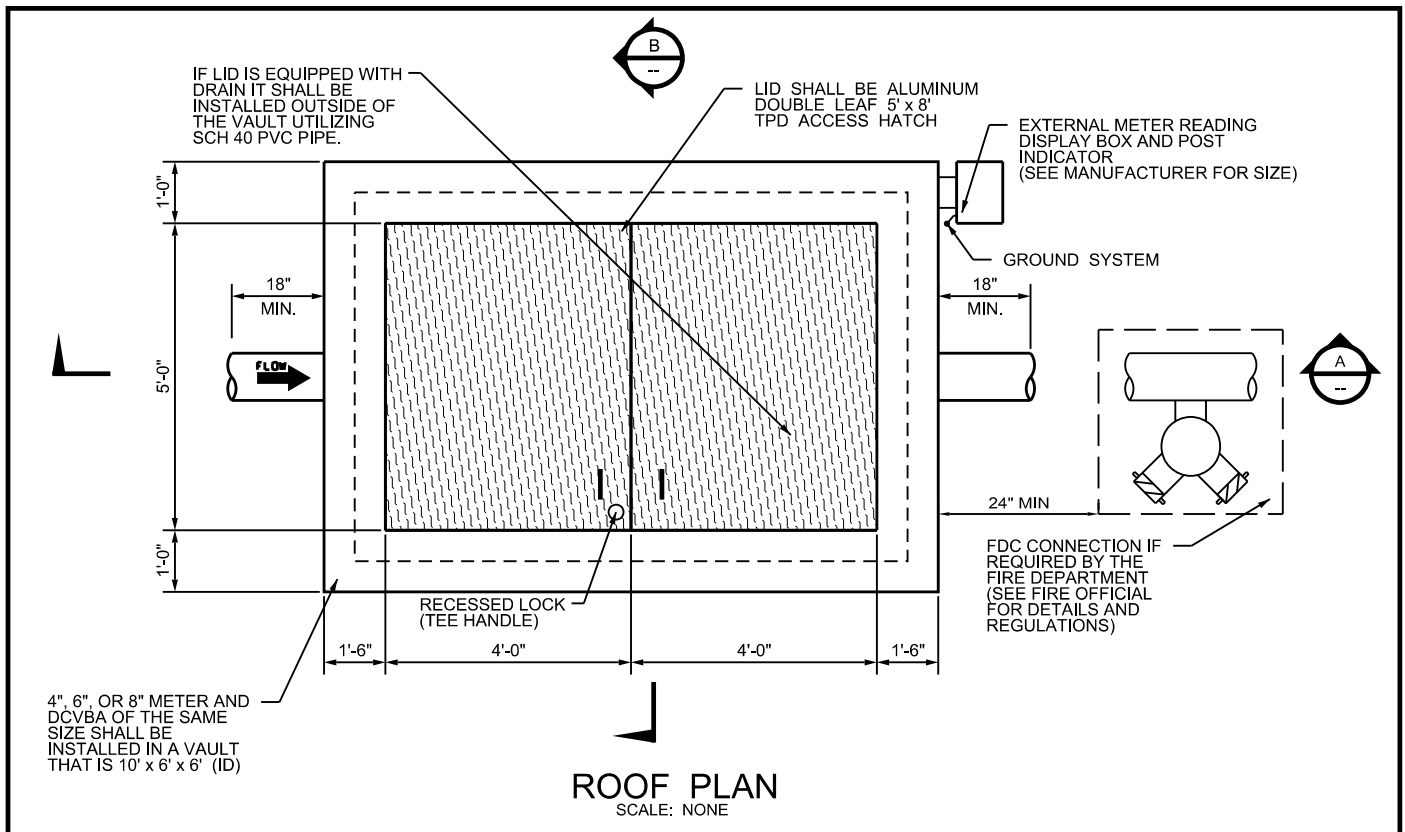
WATER
DETAIL No.

17C

STANDARD 4" METER AND
6" DCVBA VAULT DETAIL NOTES

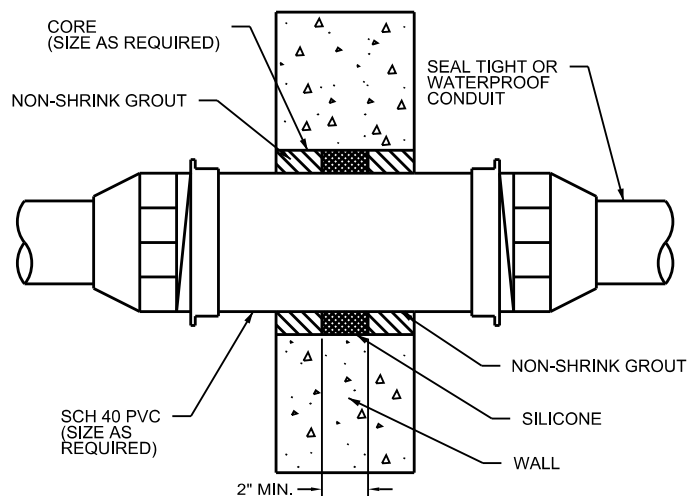
SCALE: NONE





1. 4", 6", OR 8" METER AND DCVBA OF THE SAME SIZE SHALL BE INSTALLED IN A VAULT THAT IS 10' x 6' x 6' (ID) BY BARTOW PRECAST OR BY APPROVED EQUIVALENT.
2. LID SHALL BE ALUMINUM DOUBLE LEAF 5' x 8' TPD ACCESS HATCH BY U.S.F. FABRICATION INC. OR APPROVED EQUIVALENT. WITH FALL PROTECTION SYSTEM.
3. ALL HARDWARE SHALL BE A MINIMUM OF 304 STAINLESS STEEL.
4. DOUBLE CHECK VALVE BACK FLOW ASSEMBLY (DCVBA) SHALL BE WATTS 7570SY OR APPROVED EQUIVALENT.
5. METER SHALL BE MANUFACTURED BY SENSUS OR MASTER METER METER WITH EXTERNAL DISPLAY OR AS DIRECTED BY BOARD
6. GATE VALVE (FLANGE X FLANGE) SHALL BE MANUFACTURED BY M&H VALVE COMPANY OR APPROVED EQUIVALENT.
7. SUMP PUMP SHALL BE 110V WAYNE, PENTAIR, SUPERIOR, OR APPROVED EQUIVALENT WITH VERTICAL FLOAT SWITCH.
8. ALUMINUM TELESOPING LADDER SHALL BE MANUFACTURED BY U.S.F. FABRICATION INC. OR APPROVED EQUIVALENT.
9. ALL CONDUITS FROM METER AND TAMPER SWITCH, ETC SHALL BE INSTALLED DOWN TO THE FLOOR OF VAULT. STRAPPED TO THE PIPE SUPPORT AND STRAPPED TO THE WALL TO PREVENT MOVEMENT AND TRIP HAZARDS.
10. LIFTING HOOKS / CABLES TO BE FIELD REMOVED AND PROPERTY TERMINATED FLUSH WITH VAULT SURFACES.
11. THIS METER VAULT IS NOT TO BE USED FOR REDUCE PRESSURE ZONE DEVICES (RPZD). ALL RPZD TO BE INSTALLED ABOVE GRADE IN ACCORDANCE WITH FEDERAL RULES AND REGULATIONS. ALL RPZD TO BE INSTALLED IN STAINLESS STEEL ENCLOSURE (HOT BOX).
12. BOARD RESERVES THE RIGHT TO MODIFY, CHANGE OR CORRECT THIS DETAIL AS REQUIRED FOR THE BENEFIT OF THE WATER SYSTEM.
13. VAULT MUST BE DELIVERED TO SITE FULLY ASSEMBLED PRIOR TO INSTALLATION - NO EXCEPTIONS
14. GROUNDING SYSTEM SHALL BE INSTALLED PER THE METER MANUFACTURER'S RECOMMENDED SPECIFICATIONS.
15. THE EXCESS METER CABLE SHALL BE NEATLY COILED UP AND HUNG IN THE VAULT. THE METER CABLE LENGTHS SHALL BE AS PROVIDED BY THE METER SUPPLIER AND SHALL NOT BE CUT OR ALTERED IN ANY WAY.

1. ALL POWER TO VAULT AND ALL ELECTRICAL WIRING ARE THE RESPONSIBILITY OF THE CUSTOMER.
2. BOARD SHALL OWN AND MAINTAIN FIRE METER.
3. CUSTOMER SHALL OWN, MAINTAIN, REPAIR, TEST OR REPLACE, DOUBLE CHECK VALVE BACK FLOW ASSEMBLY
4. BOARD WILL ONLY ASSIST IN REMOVING WIRE ENDS OR IN THE TERMINATION OF WIRE ENDS IF NECESSARY FOR EXTERNAL DISPLAY
5. BOARD WILL PERFORM ALL METER PROGRAMMING
6. ENDPOINT SHALL BE MOUNTED VERTICAL WITH HEAD UP TO PROVIDE ADEQUATE RADIO SIGNAL

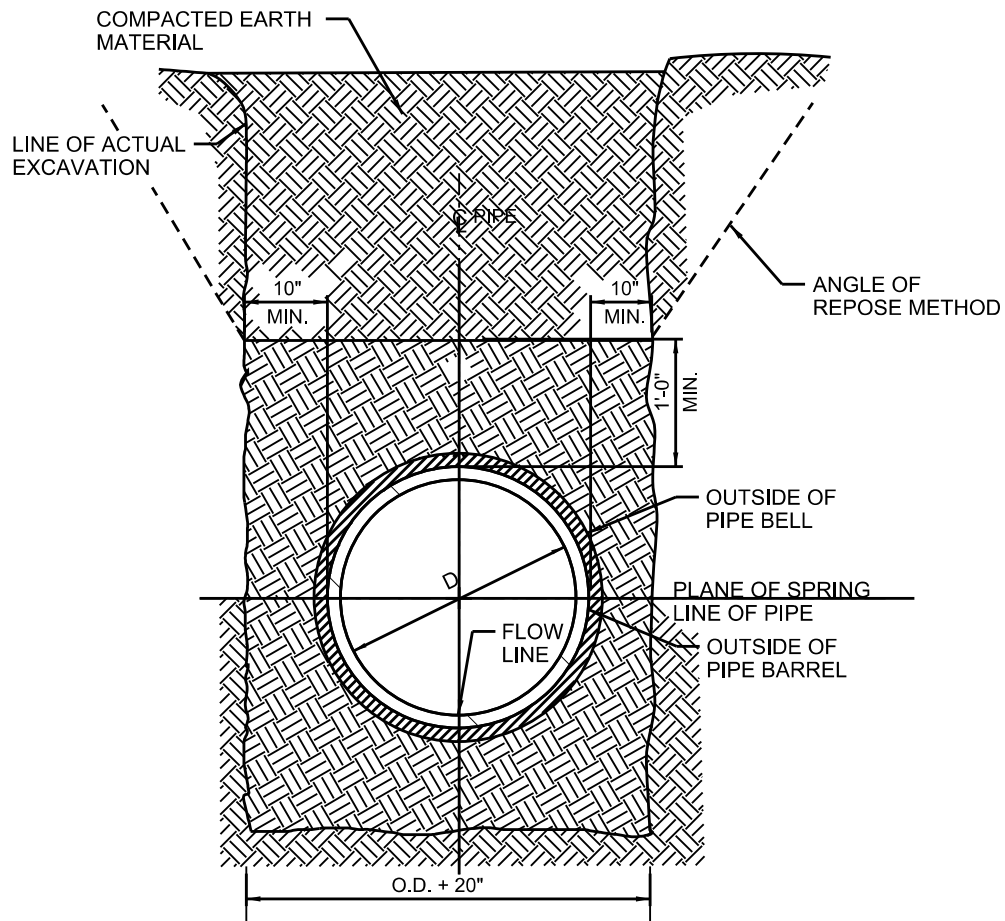


SMALL PENETRATION SEALING DETAIL

WATER
DETAIL No.

18C

STANDARD 6" METER AND 8" DCVBA VAULT DETAIL NOTES



NOTES:

1. ONLY ACCEPTABLE GRANULAR MATERIAL WILL BE CONSIDERED FOR SELECT EARTH MATERIAL. MATERIAL MUST BE COMPACTED TO 95% STANDARD PROCTOR DENSITY AND THE RESULTS OF THE STANDARD PROCTOR DENSITY TEST AND THE COMPACTION TEST SHALL BE SUBMITTED TO THE ENGINEER.
2. ALL PIPE SHALL HAVE A MINIMUM DEPTH OF 4" PIPE BEDDING IN A SOIL TRENCH, AND A MINIMUM DEPTH OF 6" PIPE BEDDING IN A ROCK TRENCH.
3. IF ROCK OR UNSUITABLE SOILS ARE PRESENT, PIPE SHALL BE WRAPPED WITH #8910 OR #57 STONE 6" ON SIDES, 12" BELOW AND 12" ABOVE.

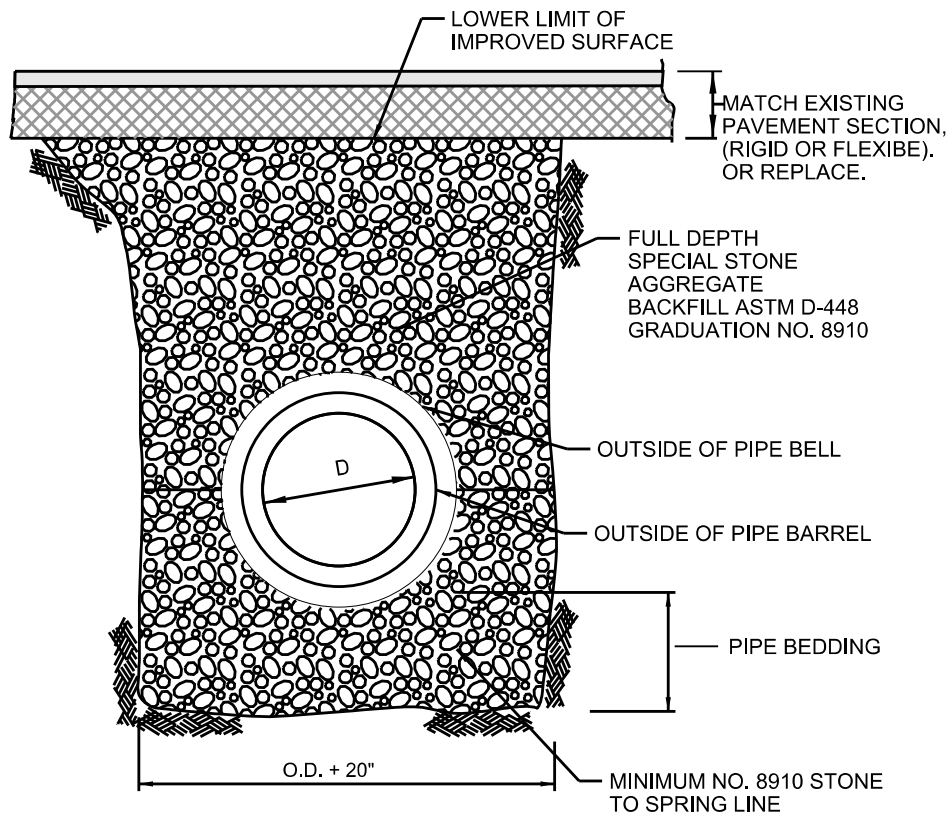
WATER
DETAIL No.

19

PIPE BEDDING & BACKFILL
UNIMPROVED SURFACES

SCALE: NONE





1. TRENCH CONFIGURATION SHOWN DEPICTS THE USE "TRENCHWALL SHORING" METHOD. WHICH SHALL BE USED UNDER ALL PAVED AREAS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR SHALL REFER TO APPLICABLE "O.S.H.A. REGULATIONS FOR "OPEN TRENCH EXCAVATIONS".

WATER
DETAIL No.

20

PIPE BEDDING & BACKFILL UNDER PAVEMENT

SCALE: NONE

