

**EAST RIO HONDO WATER SUPPLY CORPORATION
SUBDIVISION & NON-STANDARD SERVICE APPLICATION**

Date: _____ Applicant's Legal Name: _____

If Applicant is an entity, provide a **Point of Contact (name and title)**: _____

Applicant's Address: _____

Phone Number: _____ Cellular Number: _____

Fax Number: _____ Other Number: _____

Subdivision Name: _____

Total Acreage: _____ # of Proposed Lots: _____ Deed Vol. _____ Pg # _____

Subdivision Engineer: _____

Engineer Ph #: _____ Engineer Fax #: _____

Legal Description of Property and Directions from Nearest Highway Intersection:

Special Service Needs or Conditions: _____

Applicant's Signature: _____

ACKNOWLEDGMENT

STATE OF TEXAS §
 §
COUNTY OF _____ §

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this day personally appeared _____ known to me to be the person(s) whose name(s) is (are) subscribed to the foregoing instrument, and acknowledged to me that he (she) (they) executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE ____ day of _____, 20____.

Notary Public in and for _____ County, Texas

My Commission Expires: _____

The following must be provided before this application will be processed: 1) payment of an initial \$300 service investigation fee; 2) two blue-line copies of the proposed final plat and construction plans 3) Deed to property. ERHWSC will complete a site assessment and hydraulic analysis of the proposed subdivision and determine minimum line sizes for system extensions and inside of the proposed development. Additional service investigation fees and all tap related fees will be determined along with legal requirements. This will be summarized for the developer in a uniform non-standard service agreement, which must be executed and completed prior to any construction and prior to ERHWSC Board approval of plat.

(For Office Use Only) Payment of initial \$300.00 service investigation fee has been paid Yes / No (Circle One)

East Rio Hondo Water Supply Corporation

206 Industrial Pkwy. * P.O. Box 621 * Rio Hondo, Texas 78583 * www.erhwsc.com * Phone (956) 748-3633 Fax 748-3179

"This institution is an equal opportunity provider and employer"

The following are the requirements for developers of subdivisions requesting service from East Rio Hondo Water Supply Corporation:

1. Completely filled out Subdivision Application
2. \$300.00 Subdivision Investigation Fee
3. 2 Blue-line copies of the Final Subdivision Plat
4. 2-Blue-line copies of Final Construction Plans
5. Copy of Deed (Proof of ownership of land to be subdivided)
6. ERHWSC will perform a hydraulic analysis of the proposed subdivision to determine minimum water line sizes or system extensions and inside of proposed development.
7. ERHWSC will provide developer with a Uniform Non-Standard Water Service Agreement outlining these requirements and must be approved by the Board.
8. 2-Mylar Copies of Final Subdivision Plat
9. All fees must be paid (\$2,857.50 / lot)

Fees included: **\$125.00 Membership Fee**
 \$420.00 Meter Installation Fee
 \$1,300.00 Water Rights Fee
 \$1,012.50 Impact Fee

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The following language should be noted on plat under NOTES or DEED RESTRICTIONS:

The East Rio Hondo Water Supply Corporation Utility Easements are exclusive and shall be kept clear of fences, buildings, plantings, and other obstructions that would interfere with operation and maintenance of the ERHWSC utilities.

The Signature block should read as follows:

This plat of XYZ Subdivision has been considered and approved by East Rio Hondo Water Supply Corporation of Cameron County, Texas ("ERHWSC"). ERHWSC hereby certifies that potable water is available to the subdivision in accordance with ERHWSC's Uniform Subdivision Non-Standard Water Service Agreement executed by _____, ERHWSC's regulations, and payment of appropriate fees. Any modification to this plat after this date shall cause this approval to become void.

Dated this _____ day of _____, 20____

**Approved by: _____
General Manager**

East Rio Hondo Water Supply Corporation

206 Industrial Parkway • P.O. Box 621 • Rio Hondo, Texas 78583

"This Institution is an Equal Opportunity Provider and Employer"

SUBDIVISION SPECIFICATIONS/REQUIREMENTS

Date: June 9, 2021

WATER DISTRIBUTION REQUIREMENTS

1. All water lines will be placed in a 15-ft (in water CCN only areas) or 20-ft private non-fenced easement adjacent to the road right of way. This easement will be deeded to East Rio Hondo Water Supply Corporation (ERHWSC) via a written right-of-way easement agreement for the subdivision and drawn on the plat as well. Water lines will not be laid in road right of ways except for crossings.

2. All materials to be used on a new subdivision will be inspected by ERHWSC before installation. This includes pipe, valves, fittings, meter boxes, copper tubing, etc. All fittings, valves, taps, and casings must be observed by ERHWSC before burying, or the contractor will dig them up for inspection, with no exceptions. Work done on weekend must be left open for Monday inspection or uncovered later. ERHWSC can be notified of construction activities needing inspection at (956)-748-3143 or 3633. Inspections will be conducted within 24 hours of notification.

3. All water mains will be Ultra-Blue Class 200 or PVC rubber gasketed pipe (ASTM F1483) or Class 160 DR 26, unless otherwise allowed by ERHWSC. All pipe smaller than 4-in must be SDR 21, 200 psi, rubber gasket pipe. Pipe in casing will be Yelo-mine Certa-Lok pressure pipe with Ranger II casing skids, unless otherwise allowed by ERHWSC. Pipe must not be older than 12 months at time of installation and must be WHITE in color with no sun discoloration. Water mains on developments and subdivisions will be 6" minimum diameter, and adjacent to main County roads will be 8" minimum diameter pipe. Subdivisions or developments with fire hydrants will utilize 8" minimum diameter pipe.

4. All fittings 4-in and smaller may be Harco, or preapproved equal, rubber gasketed, Class 200, white, PVC fittings, or ductile iron Class 350 mechanical joint fittings. This includes tees, 90° bends, 45° bends, and 22.5° bends. End caps for flush valves on 4, 6, and 8-in pipe will be Class 350 ductile iron mechanical joint with 2-in threaded IPS center outlet. All fittings 6-in and larger will be Class 350 ductile iron fittings with connections as specified on each project. Ductile iron fittings are to be made in the U.S.A. for quality assurance or as otherwise approved by ERHWSC. T-bolts on mechanical joints must be Corten. Mechanical joint t-bolts, and bolts and nuts must be greased. Flanged bolts must be 304 or 316 SS. The entire fitting must be wrapped in 6-mil polyethylene plastic, duct taped, and tied with nylon string over the tape. Valve clusters will be assembled and inspected above ground before installation on the pipe.

5. Valves will be Mueller A-2360 resilient wedge gate valves. All exterior bolts must be 304 or 316 stainless steel (SS). All mechanical joint t-bolts and nuts must be coated in grease. Tapping valves will be mechanical joint by flange. 2-in flush valves will be same as above. Flange bolts and nuts must be 304 or 316 SS. All valves must be

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completely wrapped in 6-mil polyethylene plastic excluding the operating nut. The plastic must be duct taped shut and tied with nylon string.

6. Valves and fittings must be thrust-blocked with concrete. Joint restraint will be required where necessary.
7. The end of each line will have a flush assembly. Flush assemblies will be approved by ERHWSC before installation. Two-inch or four-inch flush assemblies may be specified. For 2-in flush valves, caps with 2-in threaded outlet on the end of PVC piping must be secured with Mega-Lug, All-Grip or approved equal. All horizontal piping and the lower 90° bend on the flush valve will be brass. Upper 90° bends and 72-inch vertical piping will be galvanized pipe. The flush valve assembly must have a 2-in close brass nipple with PVC cap at the discharge end.
8. All main-line road, drain-ditch, and highway crossings will be cased with steel pipe. Pipe will be 0.375-in wall thickness for state highway and drain-ditch/canal crossings, and 0.25-in wall thickness for city and county road crossings. All piping inside of steel casing must be wrapped with Ranger II casing spacers (plastic skids) at every 6 feet. Road or highway service crossings will be with 2" Yelo-mine Certa-Lok PVC pressure pipe inside 4" SDR 35 casing. All casing must be approved for use by ERHWSC before installation.
9. Only single water connections will be used (No double service connections). All taps to the water main will be at least 5' from all power poles. Taps will be 6' apart. All taps will be at 3 or 9 o'clock on the main.
10. All tapping saddles will be brass ¾-in or 1-in IPS, Ford S71 or equal as approved by ERHWSC.
11. Corp stops will be ¾-in or 1-in Ford F-1100 or equal as approved by ERHWSC.
12. Angle stops will be Ford Angle Ball Meter Valve BA43-232W, BA43-342W, or BA43-242W with locking top or equal as approved by ERHWSC.
13. Tubing will be ¾-in or 1-in high density polyethylene.
14. Meter boxes will be black plastic, DFW model D1200-B/O with plastic overlapping lid with cast-iron reader. Pin support on reader will be 304 or 316 SS. Meter boxes will be located at least 7.5' from the property line and may not lay in dual utility easements.
15. Valve boxes will be cast iron and made in U.S.A. Boxes may not be made in China. Extensions may be made with PVC pipe approved by ERHWSC. Valve boxes will be set flush to the ground on ERHWSC easement and 12-in below ground on state or county property.

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16. Valve markers will be placed in concrete at the edge of the right of way for each valve. Markers will be provided by ERHWSC. Lettering must face the road.
17. Meter boxes will be set with the lid 1.5-in above the ground and soil beneath the meter box must be compacted to prevent settling.
18. All water mains will have at least 48-in of cover on the pipe in ERHWSC easement. On state highway or county road crossings, the steel casing must have 48-in of cover minimum under the pavement and 24-in at the centerline of the ditch. Sand bedding will be provided 6-in minimum on all sides of the pipe. A 6-in bedding will be placed in the trench before the pipe. The pipe is then laid and sand backfill is manually tamped under the pipe haunch up to the spring line. From the spring line up, sand backfill is placed in 6-in lifts and manually tamped. 6-in blue and silver Detectatape & Markline (tape) as manufactured by Allen Systems will be buried, centered on the pipe, with 18-in of cover on the tape.
19. Taps on all mains larger than 2-in will be made using all stainless steel tapping sleeve such as JCM Model 452 or cutting in a ductile iron tee. Flange bolts and nuts between the gate valve and tapping sleeve or tee will be 304 or 316SS. ERHWSC will specify use of a cut-in tee or stainless steel tapping sleeve for each tap. ERHWSC will provide all cut-ins and taps on its existing distribution mains or be continually present on site when an approved contractor does the work.
20. Upon completion, the new water system will be filled from the existing ERHWSC distribution system. The existing system must be tapped with a brass saddle with 2-in discharge and gate valve or corporation stop. Water will flow to the new system through a 2-in backflow prevention device provided by ERHWSC. Water will enter the new pipe through a 2-in valve/corporation stop and brass saddle. The new system will be tested at 125 psi overnight (14 hour minimum). The pressure loss shall not exceed 5.0 psi. The pressurization equipment must be positioned downstream of the backflow preventer. A pressure recording chart and gauge will be located on a system flush valve or meter service.
21. After the pressure test is passed, the new system must be hyperchlorinated to 50 ppm. After 24 hours contact time, the system must be flushed and bacteriological samples collected by ERHWSC personnel at each flush valve or every 1000-ft, whichever is greater. ERHWSC must observe hyperchlorination and flushing.
22. Upon receipt of non-detect bacteriological results, and all other requirements noted above are met, ERHWSC will provide the subdivider with certification that the subdivision has passed all requirements.
23. Unless ERHWSC administers the construction contract for the subdivision, the subdivider will be responsible for all meter taps and boxes until each lot is sold. At that time the buyer will become responsible. If the Subdivider contracts the work, he/she will provide ERHWSC a one-year warranty on the system. If this warranty is not met in an

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expedient manner, service will not be provided to any lots until the subdivision owner clears all debts and penalties to ERHWSC for system repairs. Contractors must be approved by ERHWSC before bidding construction work.

24. If the property being developed lays in any city's extra territorial jurisdiction (ETJ) or city limits, the city's written requirements and/or comments on the subdivision/development must be obtained before submission of the plat to ERHWSC.

25. The developer must execute a Uniform Subdivision Non-standard Service Agreement with ERHWSC, which includes terms of the 30-year service contract in accordance with the Texas Water Development Board Model Subdivision Rules (if required), and pay all fees and/or provide required water rights before any construction may begin. Both contracts will be contingent upon County approval of the subdivision.

26. Mueller Super Centurion 250 mechanical joint (MJ) fire hydrants, isolated via a 6" Mueller Flange by MJ gate valve, will be allowed on the subdivision if painted red with a white bonnet (cap).

SANITARY SEWER REQUIREMENTS

1. All sanitary sewer lines will be placed in a 20-ft private non-fenced easement adjacent to the road right of way. This easement will be deeded to East Rio Hondo Water Supply Corporation (ERHWSC) via a written right-of-way easement agreement for the subdivision and drawn and dedicated on the plat as well. Sanitary sewer lines will not be laid in road right of ways except for crossings.

2. All materials to be used on a new subdivision will be inspected by ERHWSC before installation. This includes pipe, manholes, valves, fittings, wetwells, pumps controls, all electrical components, etc. All manholes, wetwells, fittings, air release valves, cleanouts, and casings must be observed by ERHWSC before bury, or the contractor will excavate for inspection, with no exceptions. Work done on weekend must be left open for Monday inspection or uncovered later. ERHWSC can be notified of construction activities needing inspection at (956)-247-7741 or 956-748-3633. Inspections will typically be conducted within 24 hours of notification.

3. All sanitary sewer gravity lines shall conform to ASTM D-3034 and be SDR-35 or SDR-26 or ASTM F-679 and be PS-46, unless otherwise allowed or requested by ERHWSC. Joints shall meet the requirements of ASTM D-3212. Joint seals shall be compression type rubber gaskets in compliance with the requirements of ASTM F-477. Pipe shall be installed in accordance with ASTM D-2321 and the manufacturer's recommendations. Gravity sewer pipe must not be older than 12 months at time of installation and must be GREEN in color with no sun discoloration.

4. Pipe and fittings for property service connections shall be installed using Polyvinyl Chloride Pipe (PVC). The pipe shall be SDR-26 and shall be manufactured in accordance with ASTM D-3034 with compression type rubber gasket joints conforming

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to ASTM D-1869 or, when the TCEQ separation distance cannot be achieved, use solvent welded joint PVC pipe with minimum 150psi pressure rating conforming to ASTM D-2665.

5. All sanitary sewer pressure mains (force mains) shall conform to ASTM D-1784 and be DR-26 or AWWA C-900. All sanitary sewer pressure mains must not be older than 12 months at time of installation and must be GREEN in color with no sun discoloration. PVC pressure pipe within lift station wetwells and valve vaults shall be Yelo-mine Certa-Lok SDR21 Class 200 (ASTM D2241) RJ Restrained Joint PVC Pipe and yellow in color. Polyvinyl chloride pipe for directional bored force mains shall conform to Fusible AWWA C-900 DR-25 PVC or Yelo-mine Certa-Lok PVC pressure pipe. Pipe within casing shall be the same Yelo-mine Certa-Lok pressure pipe as described above with all PVC casing skid spacers manufactured by Ranger II or approved equal (no metal components allowed).

6. Fiberglass manholes shall be a one-piece monolithic designed unit constructed of glass-fiber reinforced polyester (fiberglass) meeting H-20 wheel load (minimum 16,000 pounds dynamic wheel load) as manufactured by shall be Containment Solutions, Inc. Fiberglass manholes shall be manufactured in accordance with ASTM D-3753 and any applicable Texas Administrative Code (TAC) rules to include: 30 TAC 213.5 and design criteria for sewerage systems 30 TAC 217.53, 30 TAC 217.54, 30 TAC 217.54 and 30 TAC 217.55, or any revisions thereto as applicable. Manholes are required to have a minimum of ½ inch thick resin fiber reinforced bottom and a minimum 3-inch anti-flotation ring. Manhole inverts and benches shall be factory installed utilizing non-corrosive materials encapsulated in fiberglass with a minimum 1/4" thickness. The manway reducing cone section shall be centered on the manhole barrel and must provide a bearing surface on which a standard ring and cover may be supported and adjusted to grade. The reducer shall be joined to the barrel section at the factory with resin and glass fiber reinforcement, thus providing required monolithic design to prevent infiltration and/or exfiltration through the manhole.

Connections for sewer pipeline and drop connections sizes 4" - 12" shall be made by means of Inserta-Tee watertight compression connection on existing manholes. On new construction said connections shall be factory installed. Installation shall be in strict accordance with manufacturer's written instructions utilizing installation equipment approved for use by the manufacturer of the Inserta-Tee fitting.

Manholes shall be installed with a 12-inch thick (including the 3-inches of concrete above the anti-flotation ring), 3000-psi concrete pad with No. 5 rebar at 12-inch on-center-each-way (OCEW), extending outside the manhole wall by a minimum of 12" in all locations. Concrete pads shall be installed on a 4"-6" thick crushed limestone leveling course (if necessary) on top of a single mat of biaxial geogrid. Larger concrete pads will be required for larger diameter manholes and may be necessary to meet buoyancy requirements.

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7. Manhole cover and frame shall be a 30" CAP ONE-30 composite ring and cover with 316 stainless steel 4-bolt system for a water-tight seal.

To bring the manhole to finished grade and provide support for ring and cover, construct chimney using HDPE rings by Lad Tech or approved equal and install as per manufacturer's requirements. Butyl mastic MUST be used between the grade rings.

Manhole concrete tops shall be a centered 6-foot x 6-foot poured monolithically with a 6-inch thick manhole concrete collar extending 6-inches below the manhole cone-barrel joint. Concrete tops shall be 3000-psi concrete pad with No. 5 rebar at 8-inches OCEW.

8. Force main isolation valves will be Crispen K-flo Series 800 ball-type plug valves, for wastewater applications. All exterior bolts must be 304 or 316 stainless steel (SS). All mechanical joint t-bolts and nuts must be coated in grease. Bellow ground installations will be mechanical joint connections. Above ground installations will be flanged connections. All valves must be completely wrapped in 8-mil polyethylene plastic excluding the operating nut. The plastic must be duct taped shut and tied with nylon string.

9. Valves and fittings must be thrust-blocked with concrete. Joint restraint will be required where necessary. Valve boxes will be cast iron and made in U.S.A. Extensions may be made with PVC pipe approved by ERHWSC. Valve boxes will be set flush to the ground on ERHWSC easement and 12-in below ground on state or county property. Standard ERHWSC valve markers will be placed in concrete at the edge of the right of way for each valve. Markers will be provided by ERHWSC. Lettering must face the road.

10. All force main road, drain-ditch, and highway crossings will be cased with steel pipe. Pipe will be 0.375-in wall thickness for state highway and drain-ditch/canal crossings, and 0.25-in wall thickness for city and county road crossings. All piping inside of steel casing shall be Yelomine Certa-Lok pipe with Ranger II casing spacers (plastic skids) at every 6 feet and PSI Model "C" or "W" Wrap-around end seals. All casing must be approved for use by ERHWSC before installation.

11. All gravity sewers and force mains will have at least 48-in of cover on the pipe in ERHWSC easement. On state highway or county road crossings, the steel casing must have 48-in of cover minimum under the pavement and 24-in at the centerline of the ditch. Sand bedding will be provided 6-inch minimum on all sides of the pipe or as per manufacturer's recommendations. A 6-inch bedding will be placed in the trench before the pipe. The pipe is then laid and sand backfill is manually tamped under the pipe haunch up to the spring line. From the spring line up, sand backfill is placed in 6-in lifts and manually tamped. A 6-inch green detectable tape with "Sewer" noted on tape will be buried, centered on the pipe, with no more than 18-in of cover on the tape or as per manufacturer's recommendations.

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12. Force main air release valves shall be required at force main high points and on both sides (upstream and downstream) of any drainage canal, irrigation ditch, resaca, or other crossing or structure causing a significant elevation change. Air release valves shall be ARI D025 combination air valve for wastewater and be installed in accordance with ERHWSC Standard Automatic Air Release Valve detail.

13. TESTING – All installed sections of the gravity sewer system shall be tested using low air pressure tests and mandrel tests per TCEQ standards. Air testing will achieve two times the value of T as per Equation C.3, 30 TAC 217.57, before the loss of 1.0 psi of air pressure. Mandrel testing shall be conducted no sooner than 30 days after installation, backfilling, and water jetting (flooding) the gravity sewer pipeline trench, nor later than 12 months after installation, backfilling, and water jetting the gravity sewer pipeline trench. The test results will be used to evaluate materials and construction methods on the pipe line sections, and successful mandrel and air tests shall be mandatory for the acceptance of the lines.

After completion of manhole construction, or rehabilitation, test manholes for water tightness using vacuum testing procedures. The vacuum test will start at 10" of Hg and the two-minute test starts when the pump is off, and the manhole must hold 9" of Hg after two minutes. Manholes shall be tested after installation with grade rings, manhole ring, and all connections (existing and/or proposed) in place.

Additional leakage tests may be requested by ERHWSC at any time to determine whether or not there is infiltration and to assure that the sewer section is substantially watertight.

Upon completion of all testing requirements and prior to final acceptance, all gravity sewer lines shall be cleaned of soil, sand, rocks, solids, grit and other debris, thus improving flow and facilitating television inspection for sewer evaluation. Cleaning includes initial manhole wall washing by high-pressure water jet. Immediately after cleaning, the gravity sewer shall be televised to document the condition of the line. A television inspection report shall be provided on a high-quality video (including audio) MPEG4 format with corresponding location instructions. The electronic video shall be provided on flash-drive or other approved digital format labeled by line segment. ERHWSC reserves the right to have the developer repeat the process until the work is accepted. Any sags creating standing water, damaged gaskets or other deficient installation shall be repaired. Final determination of repairs shall be at the sole discretion of ERHWSC.

Force mains shall be pressure tested for a minimum of 14 hours overnight with a minimum of 125 psi and no pressure loss greater than 5.0 psi.

The Contractor shall furnish all labor and material required to complete all testing and cleaning requirements. Upon approval of all testing requirements noted above, ERHWSC will provide the subdivider with certification that the subdivision has passed all requirements.

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14. LIFT STATIONS – Wastewater lift stations shall be constructed with submersible pumps housed in a fiberglass wet well with reinforced concrete base and top slabs with above ground or separate concrete valve vault and electrical rack. The design of the lift station shall be such that the pumping units can be easily removed from the wet well for inspection or service without disconnecting or disturbing the discharge piping.

Wetwell Structure, Piping, Guides, Level Controls and Hatch – Wetwell Structure shall be fabricated with a one-piece fiberglass reinforced polyester wet well, as manufactured by Containment Solutions, Inc., embedded into reinforced concrete top and bottom slabs extending outside the wetwell wall by a minimum of 18” in all directions. Top slabs shall be a minimum of 14-inches with no loading on the fiberglass wetwell and the bottom slab shall be designed to meet the buoyancy requirements but no less than 12-inches thick. The top slab shall have a finished elevation of at least 1-foot above the elevation of the adjacent property and at least 18-inches above any 100-year flood plain. The interior floor slab-wetwell wall shall be grout filled at a 1:1 slope for a length of 18-inches towards the center of the wetwell. Access hatches, frames and grating shall be of all aluminum construction with hardware, such as hinges, nuts, bolts, locking devices, etc., being 316SS. Each access cover shall have a safety latch to hold the cover in an open position. A "safety hatch" type accessory shall be included to provide fall-through and confined space access protection as required by OSHA. Cover frames shall be self-draining type and include provisions for mounting upper guide rail brackets and cable rack. The hatch opening shall be sized to provide a clear opening to freely remove each pump without maneuvering the pump.

Pump guide bars shall be a dual rail 316 stainless steel schedule 40 pipe sized according to the manufacturer's recommendations but, not less than 2 inches. Pump guide bars shall be held in place by upper and lower guide bar supports. Upper guide bar support shall be 316 stainless-steel. Lower guide bar supports shall be an integrally cast boss on the discharge connection and arranged such that the guide bar is held in place by sliding over the boss. Hardware shall not be required in the wet pit to hold the guide bar in place except for intermediate guide bar supports (316SS) for guide bars lengths of more than 10 feet long.

The cable rack shall be 316 stainless steel and shall be attached to the underneath side of the access cover frame. Cable kellems shall be connected to the cable rack on separate hooks with individual kellems for each pump cable, float level sensor and level transducer.

Pump lifting chain shall be 316 stainless steel of strength sufficient to lift two-times the pump weight and should be attached to the pump lifting handle with a 316 stainless-steel clevis. The length of the lifting chain shall be such that it extends a minimum of 10 feet above deck level.

The Level Control System shall consist of a submersible transducer and an associated Programmable Logic Controller shall actuate the pumps on an alternating "lead-lag" with

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over-ride basis, with independently adjustable lead pump and lag pump start levels. A Back-Up Redundancy float system shall be comprised of two mechanical tilt float switches (J.E. Rhombus, or equivalent); one at high level and one at the stop pumps level.

Discharge piping shall be Certa-Lok Yelomine pipe PVC with coated ductile iron with flanged connections fittings. All discharge pipe penetrations through the fiberglass wetwell shall be installed with an approved link seal. Discharge piping shall be supported with 316 stainless steel bar support at 10-foot spacing or less.

All wetwell surfaces (except for the fiberglass wetwell, face of base elbow pump mating surface, power and control cables, and 316 stainless steel guide rails) shall be coated with 8 mils of Raven 155 epoxy primer and 125 mils of Raven 405, or alternate coating system approved in advance by ERHWSC.

Discharge Header Assembly – The discharging force mains shall exit the wetwell with a cover of 30-inches from the finished grade and extend a minimum of 2-feet beyond the wetwell concrete top slab. The force mains shall connect to the force main assembly comprised of check valves, plug valves, blind tees and other fittings located 3-feet above the finished grade. Each pump shall be equipped with a check valve, tee with blind flange and shut off valve supported with a minimum of two pipe supports (Stand-On Pipe Support System Model S-89 or approved equal). The shut off valves shall be non-lubricated full-port eccentric plug valves with position indicator, cast iron construction and resilient faced plugs, for flanged connection. Check valves shall be Series 500 with backflow actuator by Val-Matic Valve and Manufacturing Corp. The valve assembly shall be installed on a 6-inch thick concrete pad matching the width and finished grade elevation of the wetwell top slab and extend a minimum of 3-feet beyond any of the valve assembly piping.

All fittings for the discharge header and valve assembly shall be flanged fittings with 316SS bolts. All ductile iron pipe, fittings, valves, and flanges adapters shall be protected with a two-part epoxy coating of TNEMEC Series 1 Omnithane 6.0 to 8.0 dry mils plus TNEMEC Series N69 Hi-Build Epoxoline II 6.0 to 8.0 dry mils or alternate coating system approved in advance by ERHWSC.

Pumps & Controls – Request lift station pump and control design requirements from ERHWSC prior to initiation of any planning efforts. Refer to spec sections 16910 (Electrical General Requirements and 16911 Electrical Control Auxiliaries and Control Panel).

Site Improvements - The lift station shall be protected by a 6-foot high vinyl-coated chain-link fence topped with triple barbed wire, totaling a total 8-foot height, at least 3.0-foot inside the perimeter of the lift station property boundaries. Fence shall be provided with a double-swinging gate (minimum 12-foot wide) centered on the access roadway. The lift station surface area shall be cover with geotextile membrane installed on 2-inches of compacted sand and covered with 4 inches of clean crushed limestone (1 ½-inch diameter). The geotextile membrane shall be sloped to drain away from the wet well,

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valve vault and control panels and extend to the property line of the lift station.

The site shall be provided with a 14-foot wide all-weather driveway from the nearest public access roadway. The roadway shall be comprised of 6-inches of compacted (95-percent std. proctor, +3/-2% moisture) crushed limestone, Tensar Biaxial (BX1100) geogrid (or approved equal), and 16-foot wide compacted subgrade (95-percent std. proctor, +3/-2% moisture).

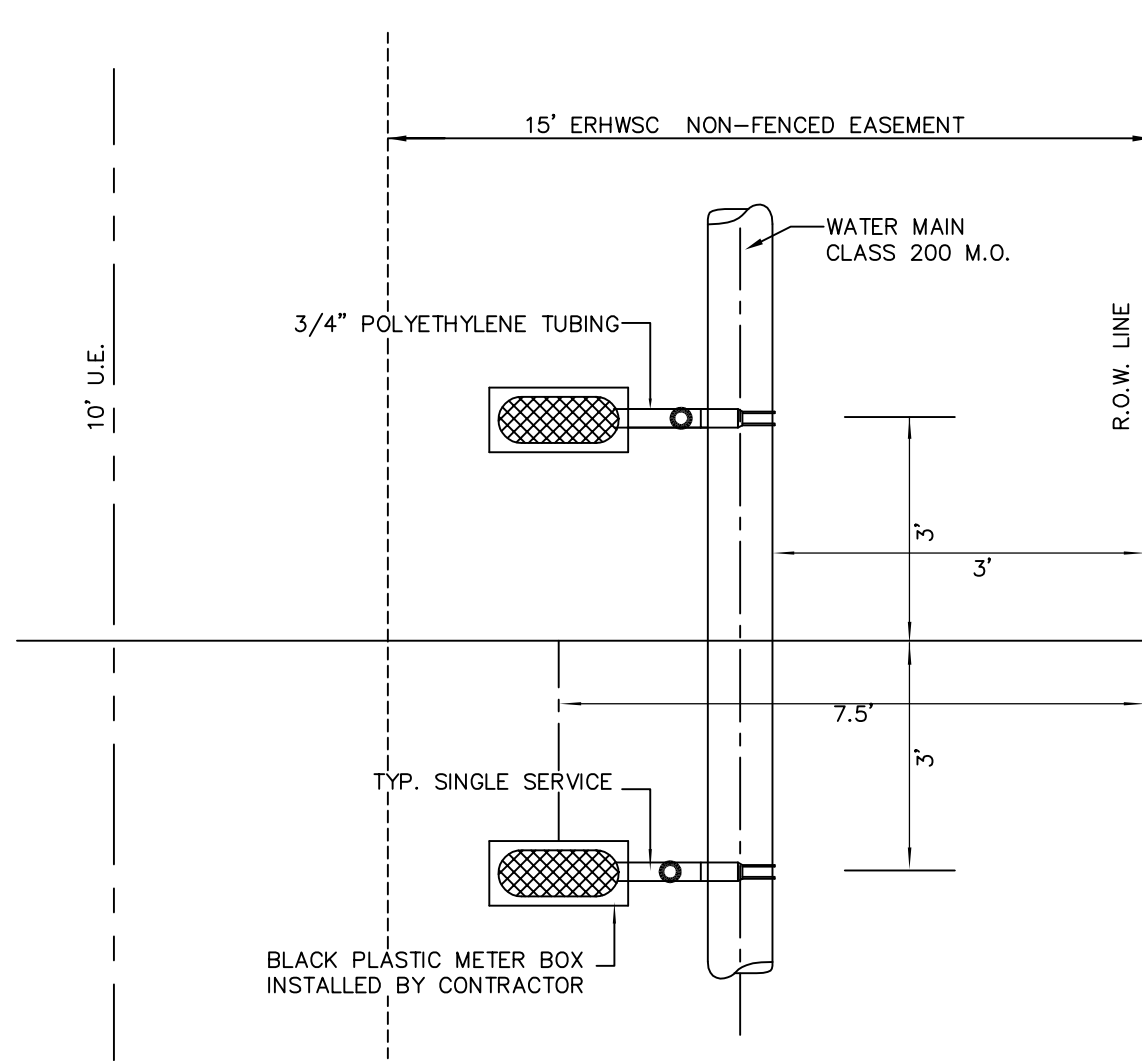
Electrical Service dropped and meter shall be installed on a 30-foot treated wood pole. The developer shall coordinate service account set-up and service installation with the electric service provider and ERHWSC. The service pole shall include a Heavy-Duty LED Flood Light (Cooper Cata# LD-RC-RW-AD4-E-PER and P200S020 Bracket or approved equal) security light.

A minimum 4-inch diameter vent pipe shall extend from the wet well, directly above the inlet piping, to a separate pole from the electrical power service and communications, terminating in a 3/16-inch 316 stainless steel mesh screen on a gooseneck vent at a minimum height of 20 feet above the finish grade of the site mounted on a 30-foot wooden pole in the southwest corner of the lift station site.

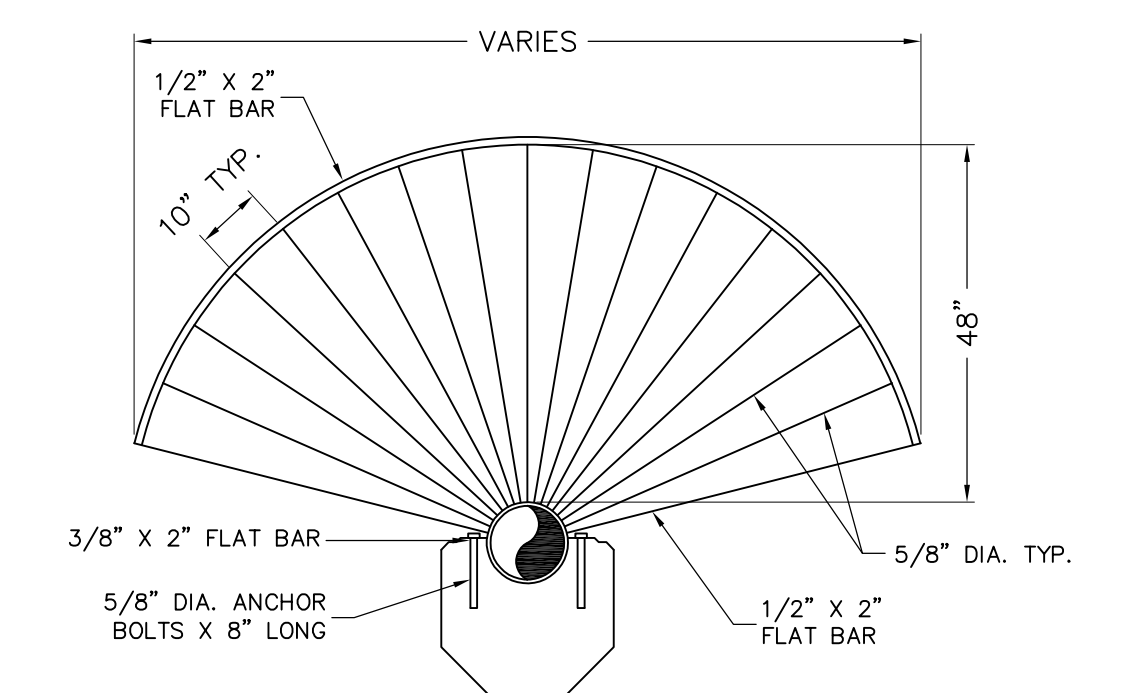
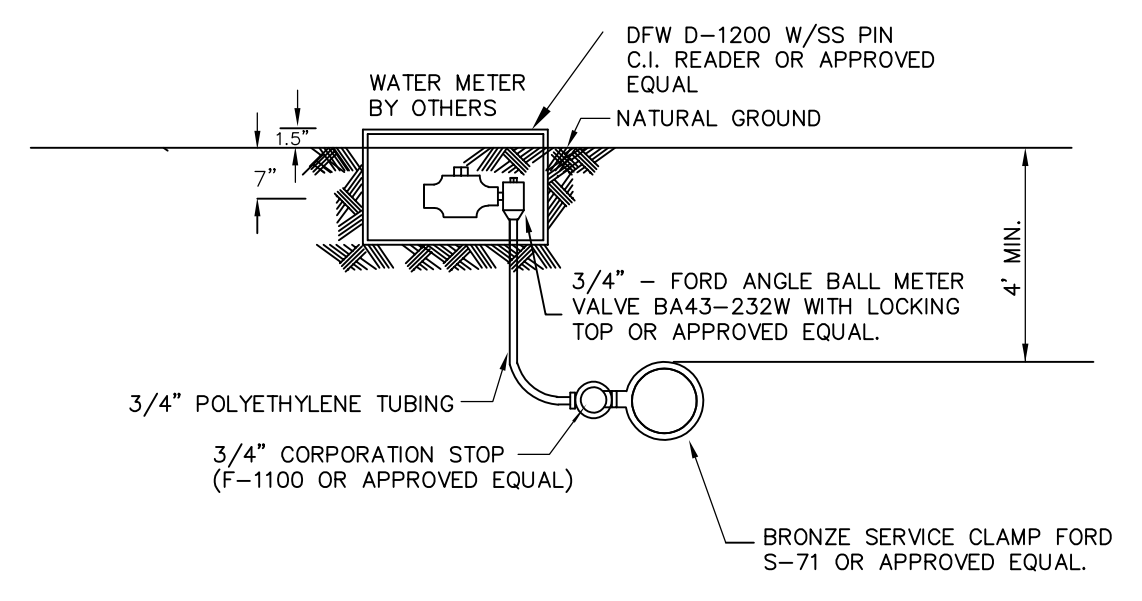
Water supply inside lift station site shall be a minimum 1" service line with reduced-pressure zone type backflow preventer assembly and 3/4" hose bib. Exposed water supply system components shall be freeze-protected (self-draining, insulated, and/or installed in thermal enclosure) painted blue.

All lift station designs shall comply with the Owner's lift station design criteria; Texas Administration Code (TAC) 30 Chapter 217 requirements; and other applicable regulatory codes, such as electrical, sanitary, safety, plumbing, etc.

15. The developer must execute a Uniform Subdivision Non-standard Service Agreement with ERHWSC, which includes terms of the 30-year service contract in accordance with the Texas Water Development Board Model Subdivision Rules (if required) and pay all fees before any construction may begin. Both contracts will be contingent upon County approval of the subdivision.

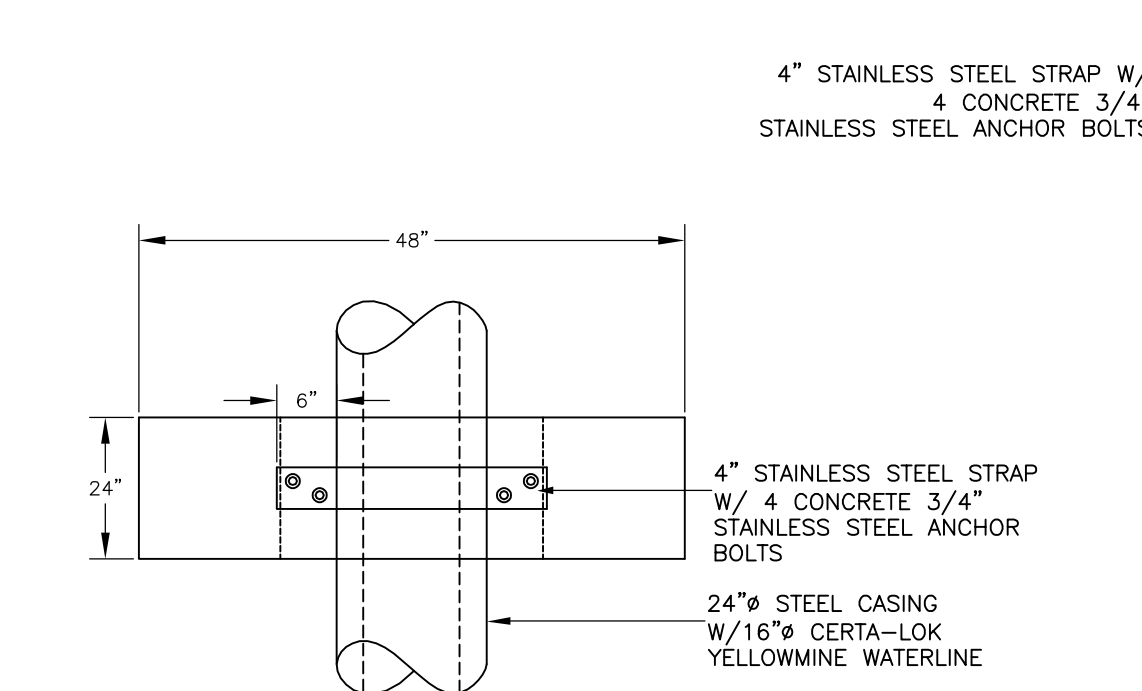


TYPICAL SINGLE WATER SERVICE CONNECTION (NEAR SIDE)
N.T.S.

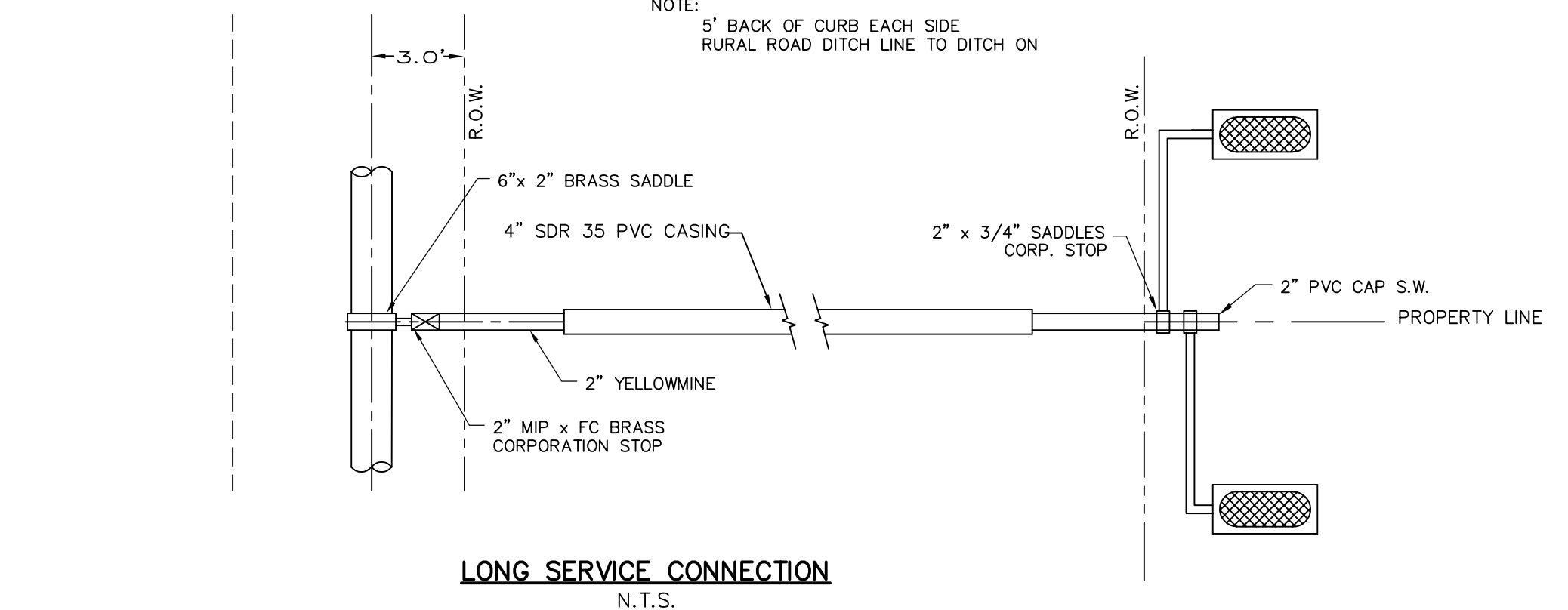


- NOTE:
- FAN GUARDS SHALL BE PLACED AT EACH END OF CANAL CROSSING.
 - ANCHOR BOLTS AND MISCELLANEOUS HARDWARE, NUTS, BOLTS, SHALL BE STAINLESS STEEL.
 - FANGUARD SHALL BE FABRICATED FROM GALVANIZED STEEL.

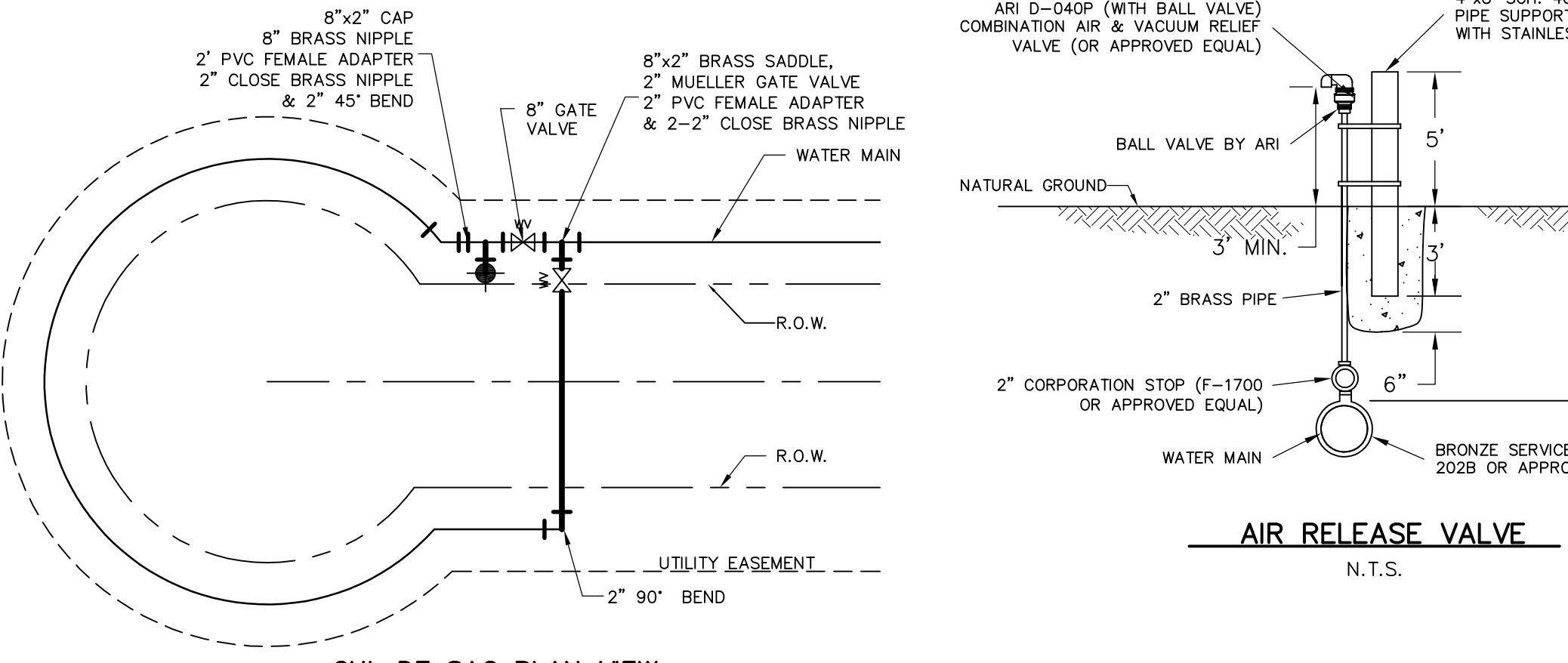
ACCESS BARRIER
NOT TO SCALE



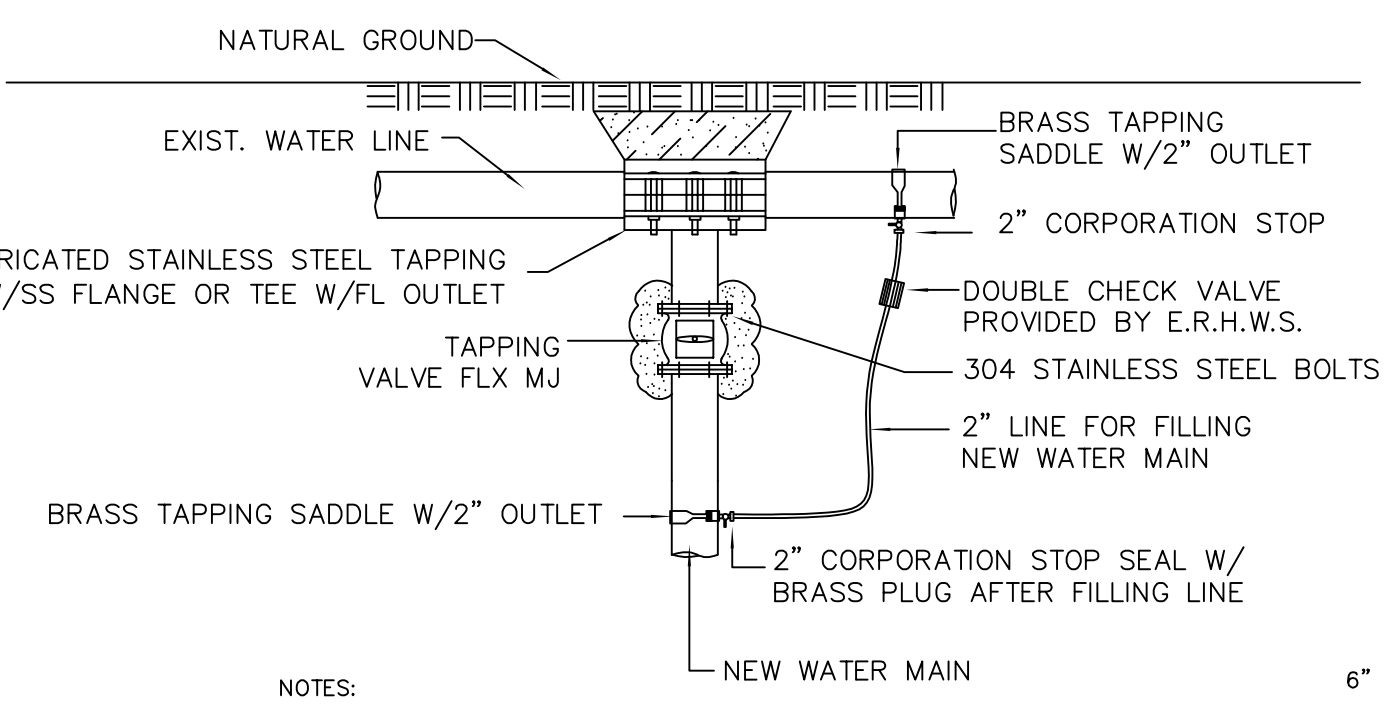
CONCRETE PILING DETAIL
NOT TO SCALE



LONG SERVICE CONNECTION
N.T.S.



CUL DE SAC PLAN VIEW
N.T.S.



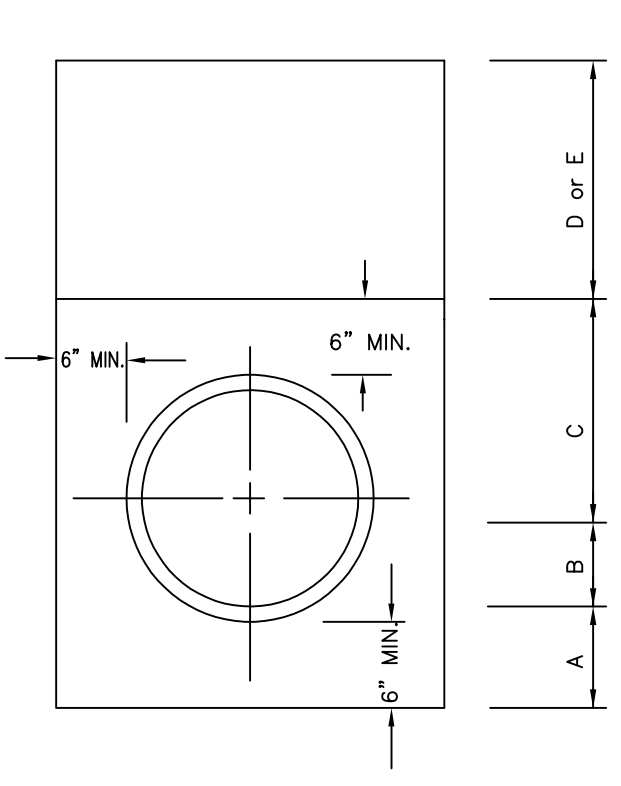
- NOTES:
- THIS METHOD SHALL ALSO BE USED AT A NEW CONSTRUCTION TO AN EXISTING DEAD END LINE.
 - AFTER THE NEW LINE HAS BEEN DISINFECTED & PRESSURIZED, THE VALVE AT THE CONNECTION TO THE EXISTING LINE SHALL OPENED BY ERHWC TO THOROUGHLY FLUSH OUT THE LINE.

METHOD FOR FILLING NEW WATER LINES PRIOR TO CHLORINATION AND TESTING
NOT TO SCALE

THRUST BLOCK SIZE			
DIAMETER OF PIPE IN INCHES	HORIZONTAL BEND		WEIGHT AT VERTICAL BENDS -LBS.
	SURFACE AREA SQ. FT.	THICKNESS IN INCHES	
22-1/2 BENDS			
6 or LESS	2	12	1,700
8	3	12	3,000
10	3.5	12	4,500
12	4	14	6,600
14	5	18	9,000
16	6	18	11,800
45 & 90 BENDS			
6 or LESS	6	12	9,000
8	8	15	10,700
10	10	18	16,700
12	12	18	24,000
14	18	24	32,600
16	21	24	42,700
TEES & DEAD ENDS			
6 or LESS	3	12	---
8	4	15	---
10	6	18	---
12	8.5	18	---
14	11.5	24	---
16	15	24	---

NOTE: ALL VALUES SHOWN ARE MINIMUM FOR A HYDROSTATIC PRESSURE OF 150 P.S.I. AND A SOIL RESISTANCE OF 2,000 LBS. PER SQ. FT. WITH PIPELINE HAVING A MINIMUM COVER AS FOLLOWS:

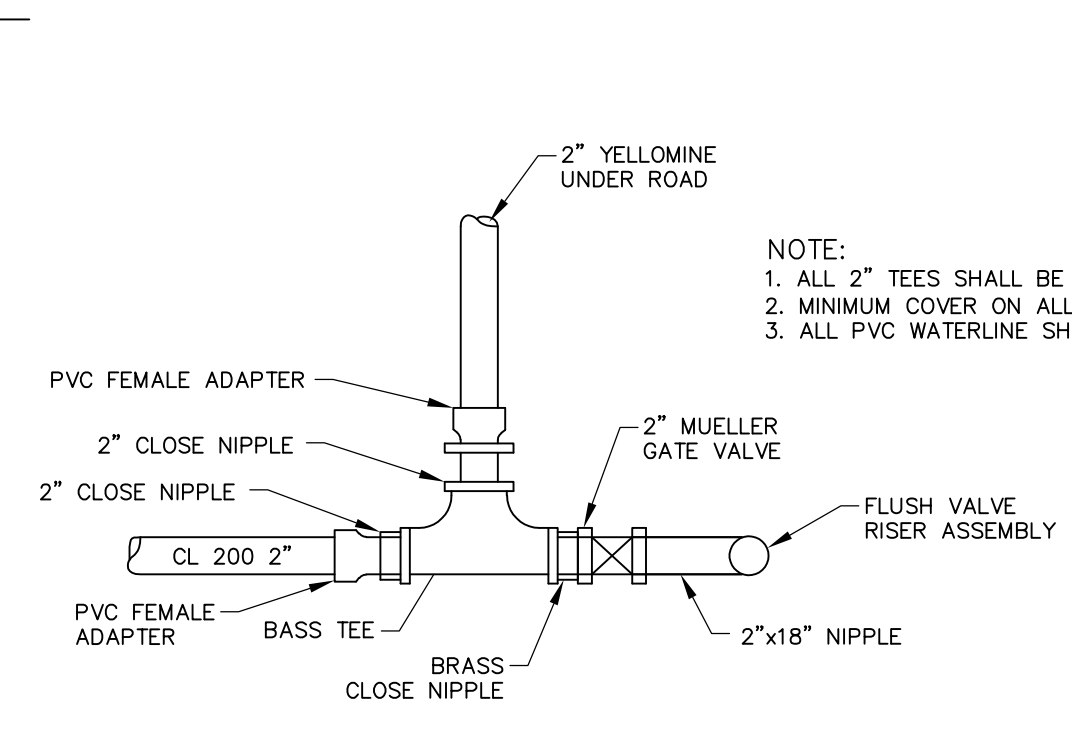
THRUST BLOCKS DETAILS



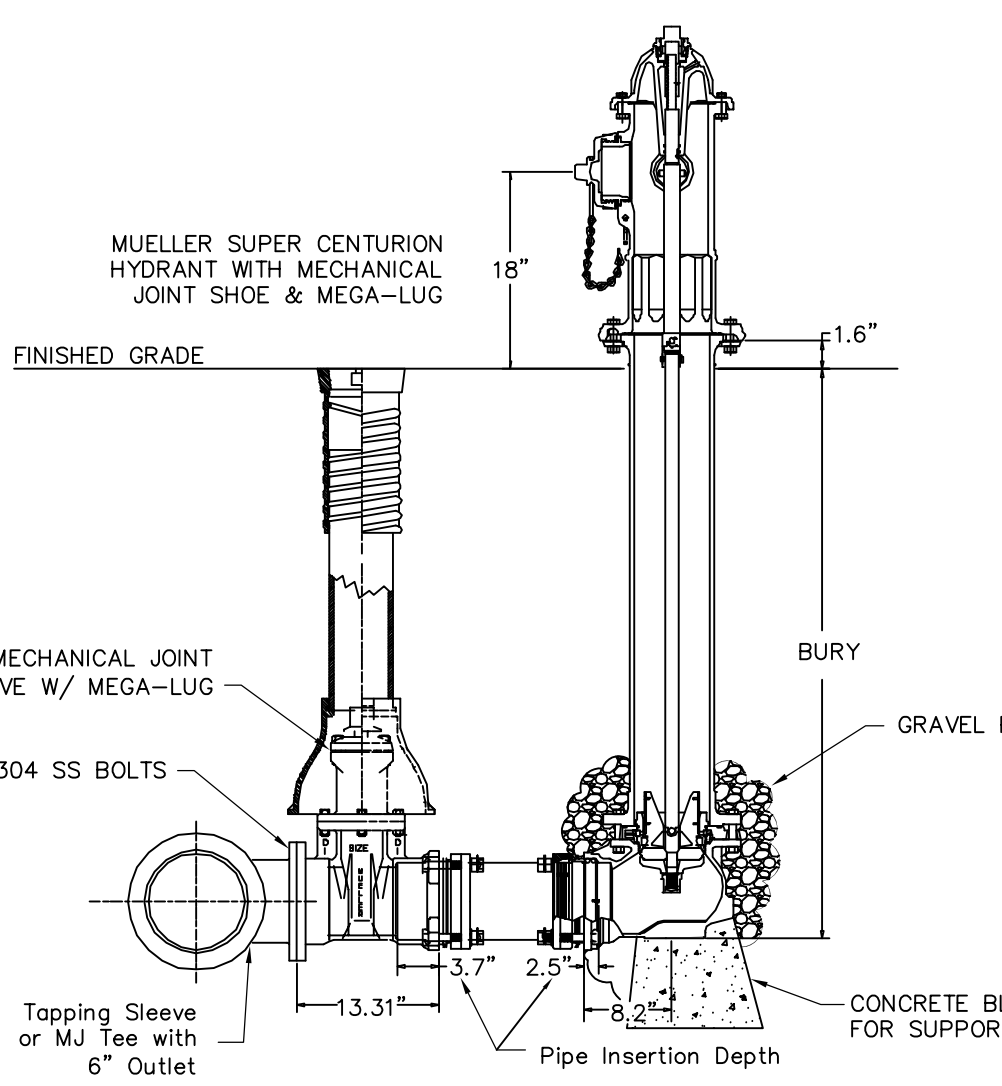
- SAND BACKFILL PLACED BEFORE PIPE IS LAID UP TO FLOWLINE OF PIPE. (MINIMUM DEPTH OF 6")
- SAND BACKFILL PLACED AFTER PIPE IS LAID FROM BOTTOM OF PIPE TO SPRING LINE OF PIPE AND HAND TAMPED OR WATER JETTED IN.
- SELECT BACKFILL PLACED FROM SPRING LINE OF PIPE TO A LEVEL OF 6" ABOVE TOP OF PIPE IN 8" LAYERS HAND TAMPED OR WATER JETTED IN.
- SAND OR SELECT EARTH BACKFILL CLASS "A" MECHANICAL COMPACTION. (6" LIFTS) (WHERE LOCATED UNDER FUTURE PAVEMENT).
- EARTH BACKFILL CLASS "B" MECHANICAL COMPACTION. (8" LIFTS OR WATERJETTING AT 18" LIFTS WHERE NOT UNDER FUTURE PAVEMENT).
- FOUNDATION PREPARATION (WELLPOINTS, GRAVEL OR CEMENT STABILIZATION OR APPROVED SUBSTITUTE) SHALL BE REQUIRED WHEN TRENCH BOTTOM IS UNSTABLE.

NOTE: ALL TRENCHES AND EXCAVATIONS SHALL BE BACKFILLED IMMEDIATELY AFTER PIPE IS LAID THEREIN AND UNDER NO CIRCUMSTANCE SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER PIPE HAS BEEN PLACED. THE CONTRACTOR SHALL PROVIDE SAND UP TO THE SPRING LINE WITH A P<15-15% PASSING #200 SIEVE AND THE REMAINING TRENCH WITH SELECT EXCAVATED MATERIAL PLACED AND COMPACTED WITH MECHANICAL TAMPERS IN EIGHT INCH (8") LIFTS WITH SUFFICIENT MOISTURE ADDED, IF NECESSARY TO PROVIDE A DENSITY EQUAL TO THE ADJACENT UNDISTURBED EARTH (95%).

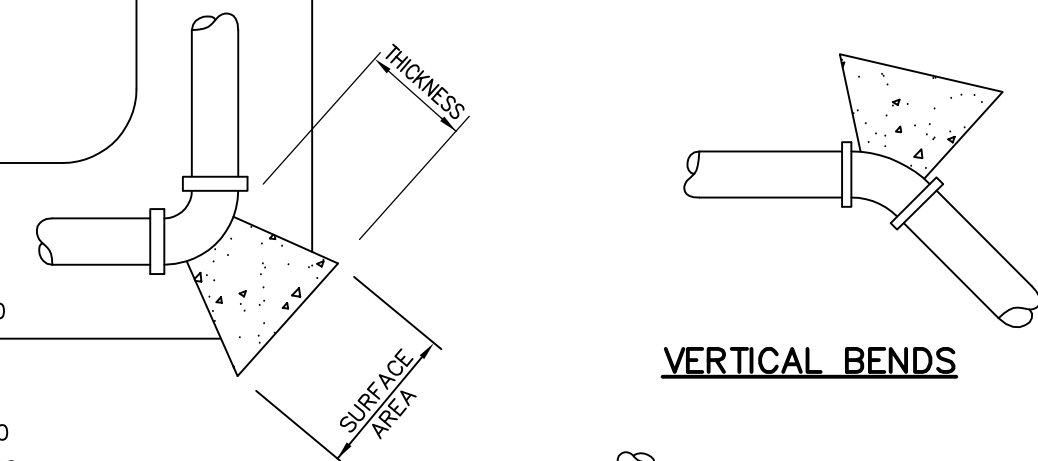
STANDARD PIPE BEDDING



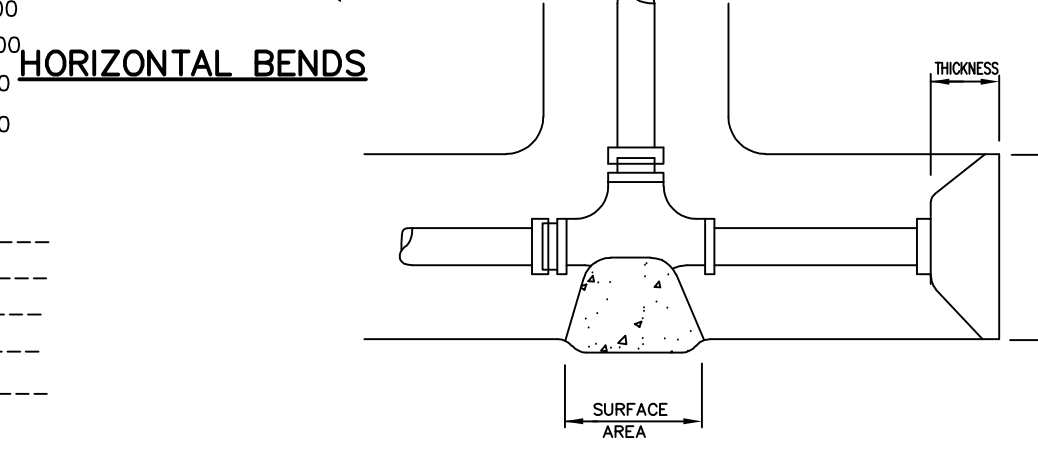
FLUSH VALVE DETAIL ON 2" LINE IN CUL DE SAC



FIRE HYDRANT ASSEMBLY

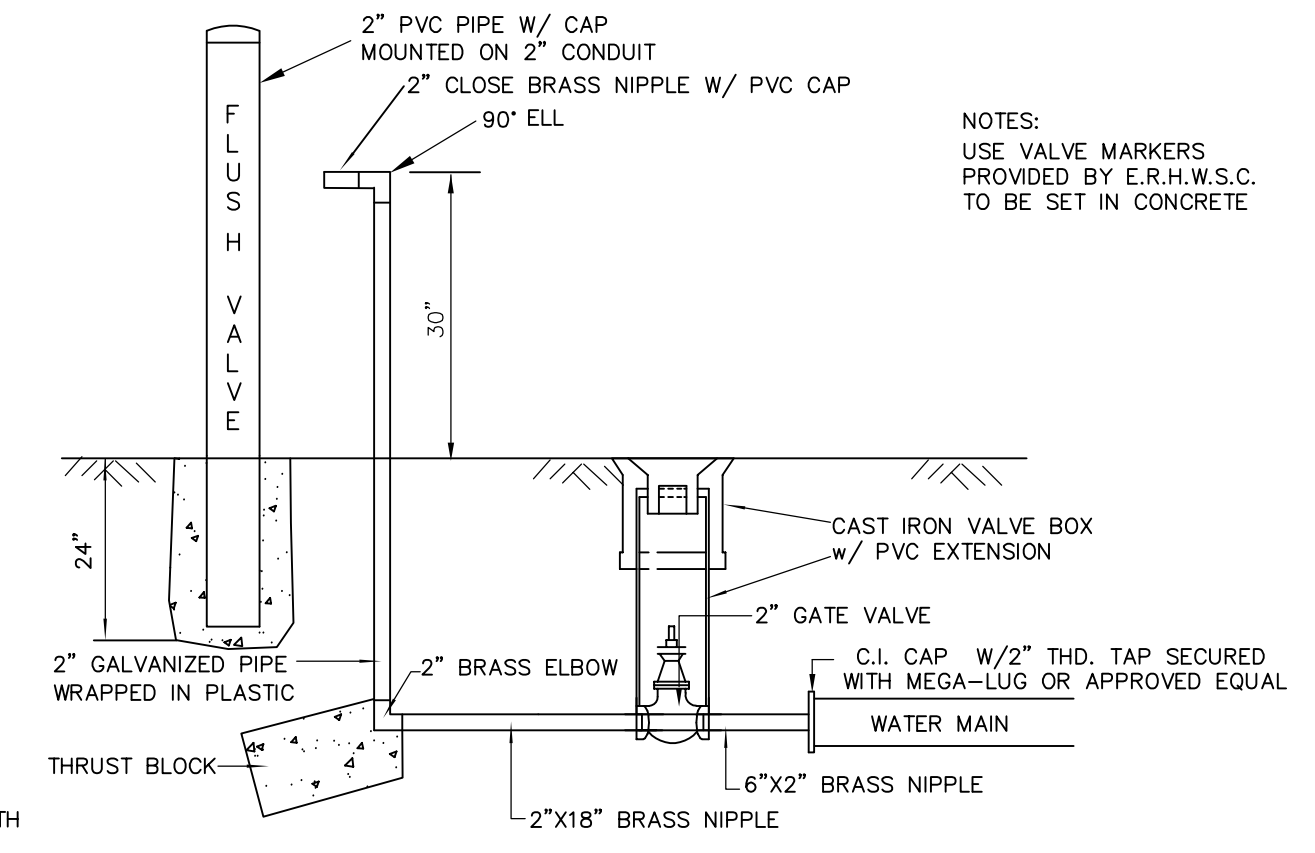


VERTICAL BENDS

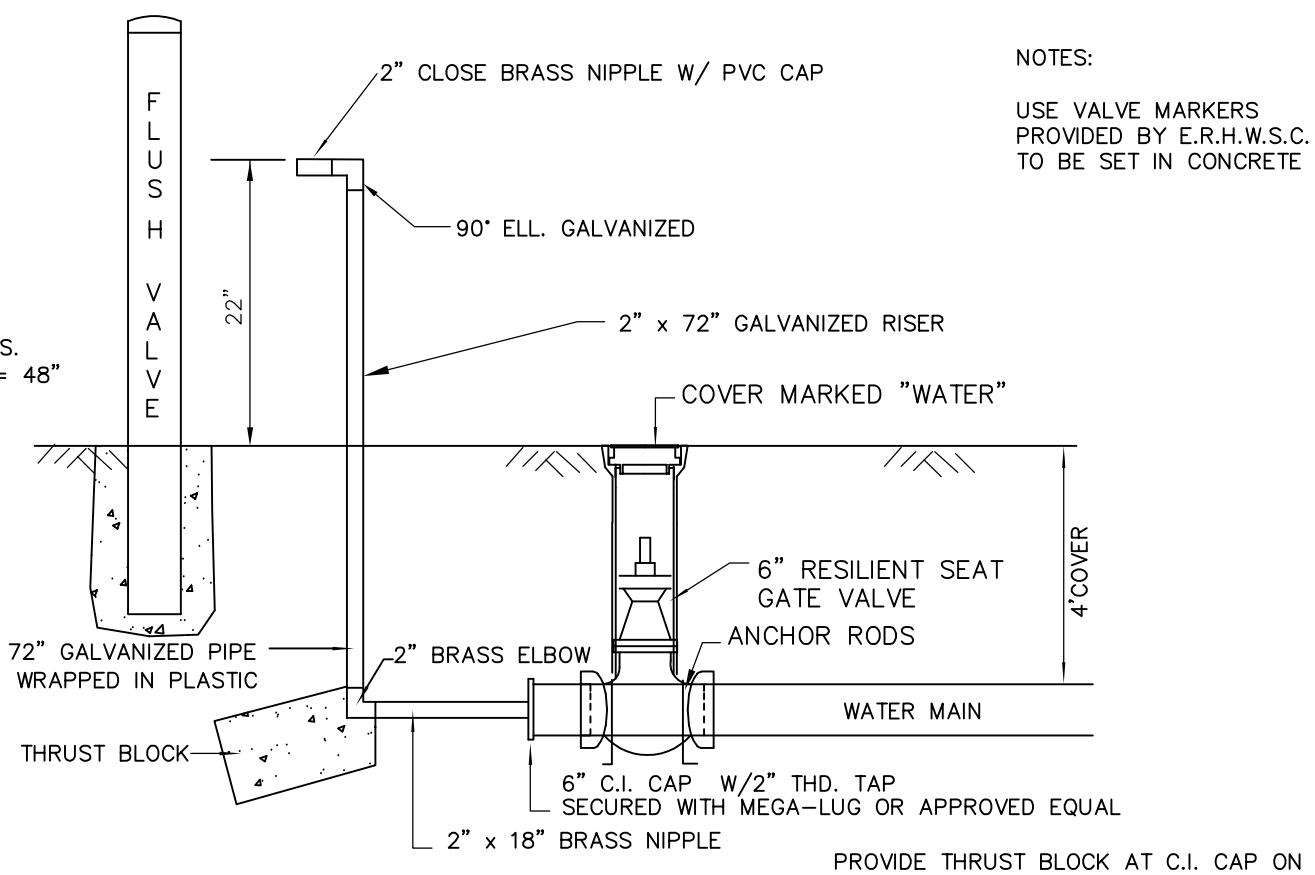


TEES & DEAD ENDS

NOTE: SEE THRUST BLOCK SIZE CHART FOR PROPER THICKNESS AND SURFACE AREAS

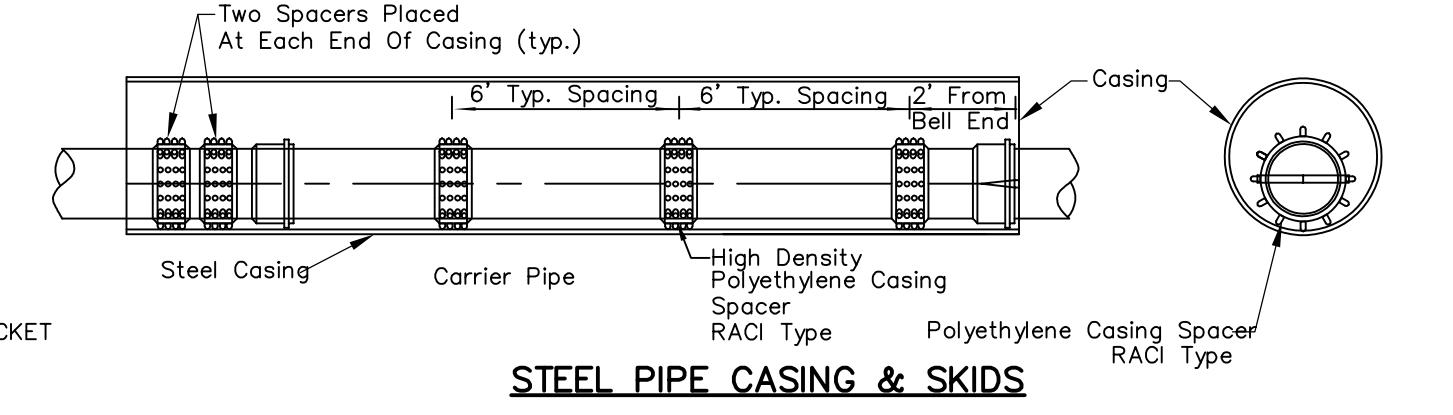


FLUSH VALVE DETAIL W/2" VALVE
WATER LINE CONSTRUCTION

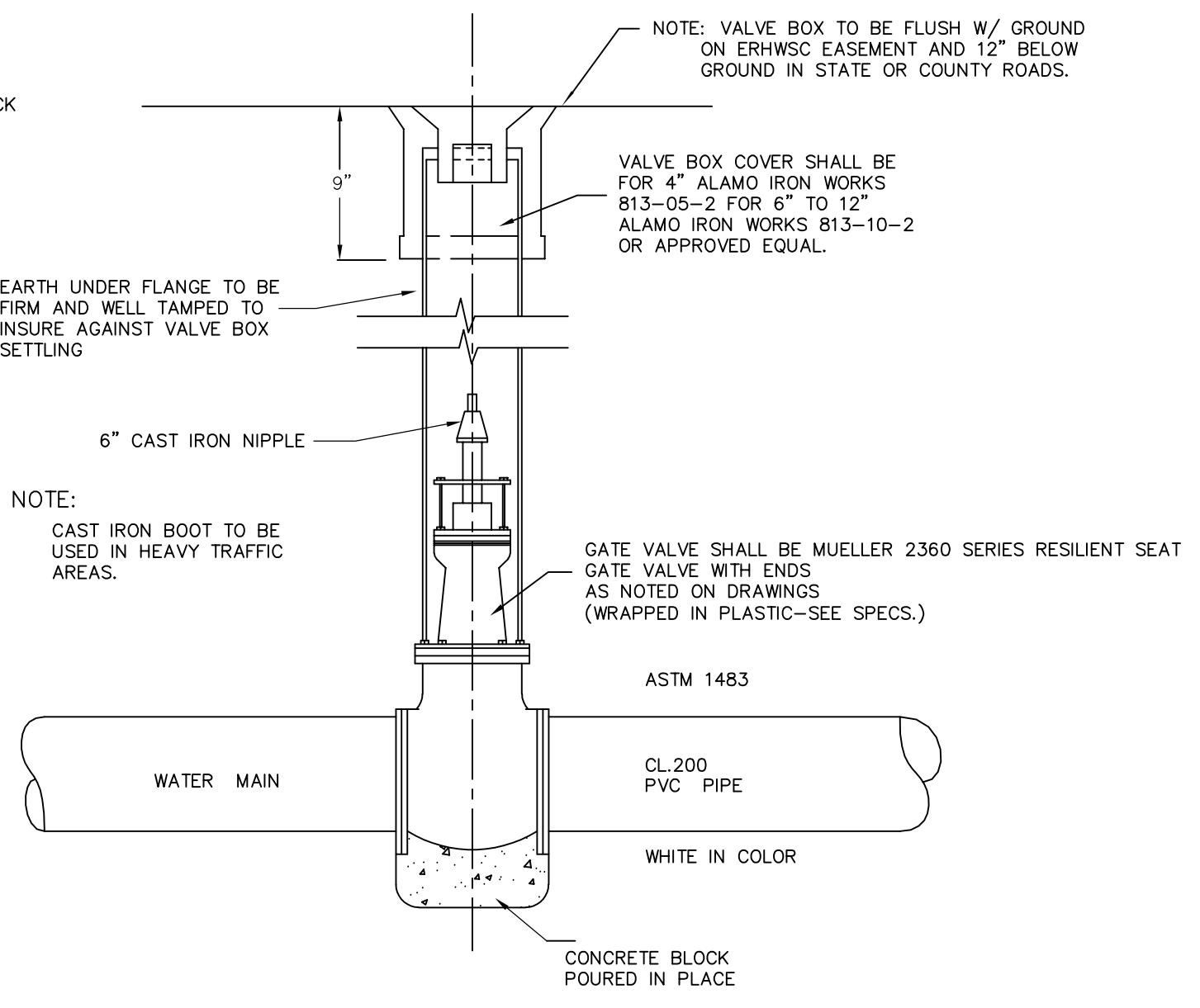


FLUSH VALVE DETAIL ON 6" LINE
WATER LINE CONSTRUCTION

Nominal Pipe Size	Casing Size	Thickness
6"	12"	1/4"
8"	16"	5/16"
12"	20"	3/8"
16"	24"	7/16"



STEEL PIPE CASING & SKIDS



TYPICAL VALVE AND VALVE BOX INSTALLATION ON MAIN LINE