# Forest View Acres Water District
## CONSTRUCTION STANDARDS

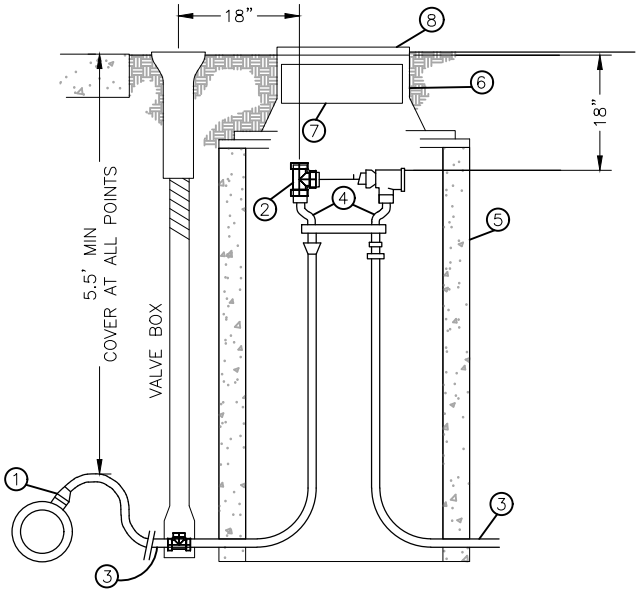
The following approved manufacturers and standard drawings are to be used in conjunction with the latest edition of the Forest View Acres Water District (FVAWD) Rules and Regulations. FVAWD retains the power to impose additional and/or more stringent requirements on all or part of any project as necessary to insure reliability and quality of the FVAWD water system. Prior to construction involving the FVAWD water system or for variance requests contact Community Resource Services (303) 381-4960 or (719) 488-2110. A minmum of 48 hours notice is required prior to any work involving the existing water system.

### *Water System Standard Approved Manufacturers and Specifications*

| COMPONENT | APPROVED MANUFACTURERS | MODEL | SPECIFICATIONS |
|---|---|---|---|
| PVC Tapping Saddle | A.Y. McDonald | 4855A | Two stainless steel straps, ductile iron body, shop coat finish, designed for use on PVC or C-900. |
| | Mueller | BR2S | |
| Service Line Pipe | Cresline | CE Blue Flexible Pipe | DR9, NSF-61, 200 PSI with Stainless Steel Stiffners |
| | ADS | Potable Water Service Tubing | |
| Corporation Stop | Mueller | 300 Ball | AWWA C-800, NSF-61, Ground Key?? |
| | A.Y. McDonald | NL Ball Style Corporation Stop - 74701B | |
| Meter Setter | A.Y. McDonald | NL Meter Setter - 737-2--WDCC 33 | Copper Flare x Copper Flare, NSF-61 |
| Curb Stop | A.Y. McDonald | NL Ball Style Curb Stop - 76100Q | AWWA C800, NSF-61 |
| Meters | Badger | Model 25 LL 5/8" x 3/4" - 3/4 Bore (3/4 x 7 1/2) | AMR and ERT compatible, NSF 61 |
| Fire Hydrants | AVK | Nostalgic | Straight line opening mechanism, self draining, AWWA C502, NSF-61 |
| | Kennedy | Guardian | |
| | Clow Valve Co. | Medallion | |
| Gate Valves 3" and Larger | Mueller | A-2361 or A-2362 | Non-rising, 2 inch operating nut, open left, with o-ring stem seal. FBE coated interior and exterior. AWWA C-515 or C509, C550, NSF61 |
| | M&H Valve Company | 4067 or 7000 | |
| | American | Series 2500 | |
| | Kennedy | KS-RW or KS-FW | |
| | Clow Valve Co. | 2638 or 2639 | |
| PVC Main Line Pipe | JM Eagle | Blue Brute, C-900 | AWWA C-900, ASTM D1784, ASTM D3139, NSF 61, DR18 (235 PSI rating), Bell ends with elastometric gaskets. |
| | Diamond Plastics | Diamond C-900 | |
| | Vinyl Tech | C900-07 PVC | |
| | North American Pipe Corporation | C900-07 PVC | |
| Mechanical Joint Restraints for PVC Pipe | EBAA Iron Inc. | Series 2000PV | AWWA C-900, ASTM D1784, ASTM D3139, NSF 61, DR18 (235 PSI rating) |
| Mechanical Joint Fittings | Star Pipe Products | MJ Fittings | AWWA 153, Ductile Iron ASTM A536, Gaskets ANSI A21.11/AWWA 111 |
| Ductile Iron Flanged Fittings | Star Pipe Products | Flanged Fittings | AWWA C110, Ductile Iron ASTM A536, Class 125, Flange Drilling ANSI B16.1 |

### *Water System Standard Specification Drawings*

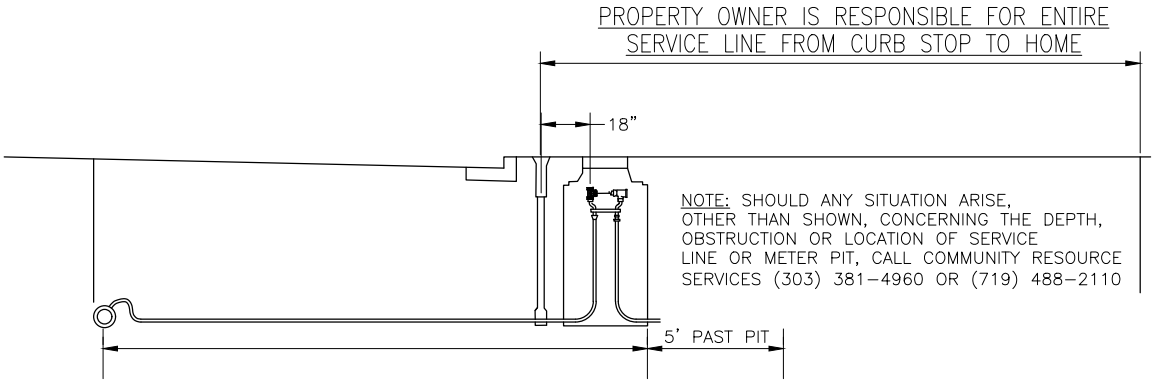
| | |
|---|---|
| W-1 | Curb Stop and Meter Pit Installation |
| W-2 | Service Tapping Detail - 3/4" thru 2" |
| W-3 | Fire Hydrant Installation |
| W-4 | Air/Vacuum Relief Valve Vault |
| W-5 | Pressure Reducing Vault |
| W-6 | Pressure Reducing Vault with Meter |
| W-7 | Typical Trench Cross Section |
| W-8 | Thrust Block Data |
| W-9 | Typical Inline Gate Valve Assembly |
| W-10 | Applications for Mechanical Joint Restraints |
| W-11 | Restrained MJ Pipe Length Data |




LEGEND

1. SADDLE, CORPORATION STOP AND INSULATOR
2. LOCKING SHUT OFF VALVE
3. SERVICE LINE – COPPER (TYPE K) OR PE, DR9, 200 PSI CRESTLINE CE BLUE WITH STAINLESS STEEL STIFFENERS
4. 3/4" METER YOKE WITH CHECK VALVE, VARIANCE REQUIRED FOR OTHER SERVICE LINE SIZES
5. METER PIT: 24" DIAMETER, 4' MINIMUM DEPTH
6. METER PIT BELL AND LID
7. PLASTIC RECESSED FROST LID
8. 2" HOLE IN METER LID

NOTES:
1. WATER METER AND REMOTE READ DEVICE FURNISHED AND INSTALLED BY FOREST VIEW ACRES WATER DISTRICT PERSONNEL.
2. SERVICE LINE MUST HAVE A MINIMUM COVER OF 5.5 FEET.
3. WATER DISTRICT PERSONNEL SHALL INSPECT THE SERVICE LINE FROM THE MAIN TO THE METER PRIOR TO BACKFILLING.
4. INSIDE METER SETTINGS WILL NOT BE PERMITTED.
5. OUTBUILDINGS SUPPLIED WITH WATER SHOULD BE CONNECTED TO PROPERTY OWNER'S SERVICE LINE NO LESS THAN FIVE (5) FEET AFTER THE METER PIT.
6. METER PITS AND CURB STOPS SHALL BE LOCATED IN GRASSY, LANDSCAPED AREAS, UNLESS OTHERWISE APPROVED BY THE BOARD OF DIRECTORS PRIOR TO INSTALLATION. METER PITS CANNOT BE PLACED IN DRIVEWAYS, SIDEWALKS OR UNDER PARKING AREAS.
7. ALL METER SETTINGS MUST BE INSPECTED BY FOREST VIEW ACRES WATER DISTRICT PERSONNEL BEFORE BEING BACKFILLED. METERS WILL NOT BE SET/APPROVED UNLESS METER SETTING AND SERVICE LINE ARE IN FULL COMPLIANCE WITH THE RULES AND REGULATIONS, STANDARD DRAWINGS AND APPROVED PROJECT DRAWINGS AS APPLICABLE.
8. DOMESTIC WATER SERVICES SHALL RUN AT A NINETY (90) DEGREE ANGLE FROM WATER MAIN WITH NO BENDS, NO CHANGES IN PIPE SIZE OR MATERIAL, AND NO CONNECTIONS UNTIL FIVE (5) FEET PAST THE METER PIT. NO JOINTS ARE PERMITTED WITHIN THE METER PIT EXCEPT THOSE SHOWN ON THE STANDARD DRAWINGS.
9. FOREST VIEW ACRES WATER DISTRICT WILL REPAIR SERVICE LINE LEAKS BETWEEN THE CORPORATION STOP AND THE INLET TO THE CURB STOP ONLY. PROPERTY OWNER IS RESPONSIBLE FOR ALL OTHER SERVICE LINE REPAIRS.
10. IF THE SERVICE LINE HAS TO BE REPLACED, THE PROPERTY OWNER IS RESPONSIBLE FOR ENTIRE REPLACEMENT FROM THE CORPORATION STOP ON THE WATER MAIN IN THE STREET TO THEIR HOME.



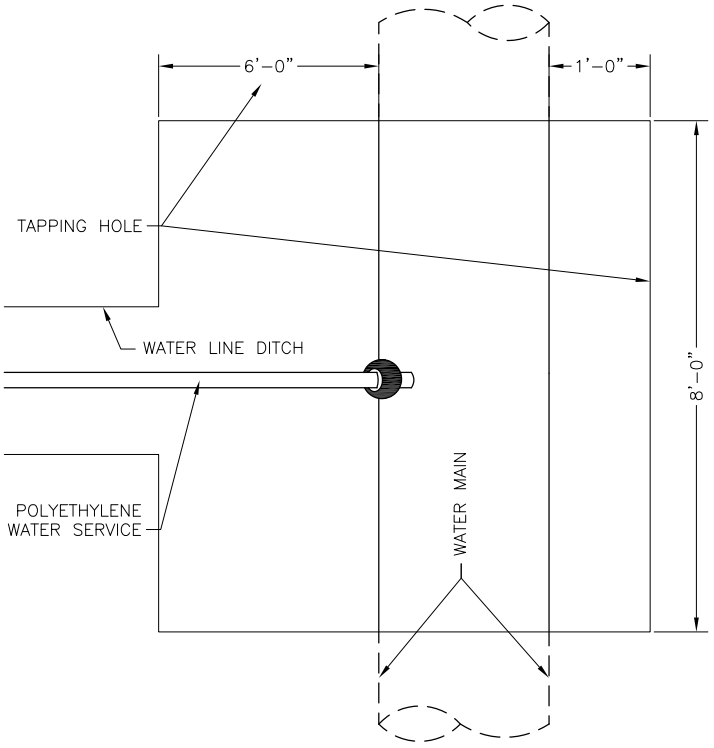

PIPING NOTES:
1. ALL NEW 3/4" SERVICES TO CONSIST OF PIPE TAPPING SADDLE, SOFT COPPER TUBING TYPE K PIPING OF SPECIFIED SIZE ON DRAWINGS, CORPORATION STOPS, AND ANGLE-HEAD VALVE IN PIT.
2. SERVICE TAPS – SERVICE TAPS TO BE WET TAPPED AND COMPLETED AFTER WATER MAIN HAS BEEN PRESSURE-TESTED, DISINFECTED, AND CHARGED. EXISTING TAPS ARE TO BE LEFT OPERATIONAL UNTIL NEW SERVICE LINES ARE READY TO BE "PULLED" OR OPEN CUT INTO EXISTING METER PITS AND WET TAPPED INTO THE NEW WATER MAIN. AFTER NEW SERVICES ARE COMPLETE, ALL EXISTING TAPS ARE TO BE ABANDONED. COORDINATE ALL NEW TAPS WITH THE FOREST VIEW ACRES WATER DISTRICT TO RESPECTIVE WATER USERS CAN BE NOTIFIED FOR TEMPORARY WATER SERVICE SHUTDOWNS.
3. ALL NEW PIPING SHALL BE PRESSURE TESTED AND DISINFECTED/FLUSHED ACCORDING TO DISTRICT PROVIDED SPECIFICATIONS PRIOR TO CONNECTION TO ANY EXISTING WATER MAINS OR COMPLETING ANY DOMESTIC/COMMERCIAL WATER TAPS.

# CURB STOP AND METER PIT INSTALLATION

| | | | | | |
|---|---|---|---|---|---|
| Drawn: | JDS-HYDRO CONSULTANTS, INC. | Revised: 02/24/22 | WATER SYSTEM STANDARD SPECIFICATIONS | Forest View Acres WATER DISTRICT | W-1 |
| Date: | MARCH 2018 | Revised: | | | |
| Scale: | N.T.S. | Revised: | | | |

## SERVICE TAPS 1–1/2" & 2" TAPPING SADDLE

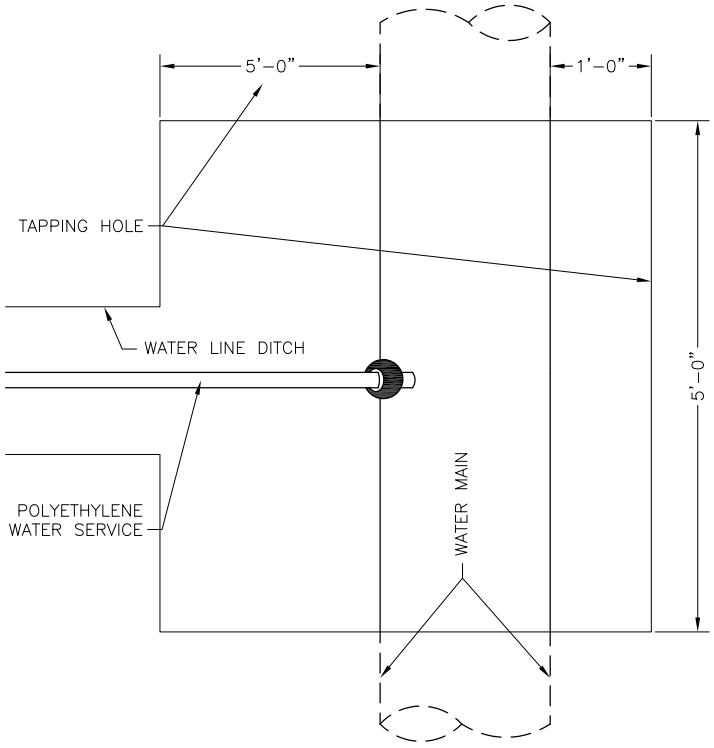
VARIANCE REQUIRED



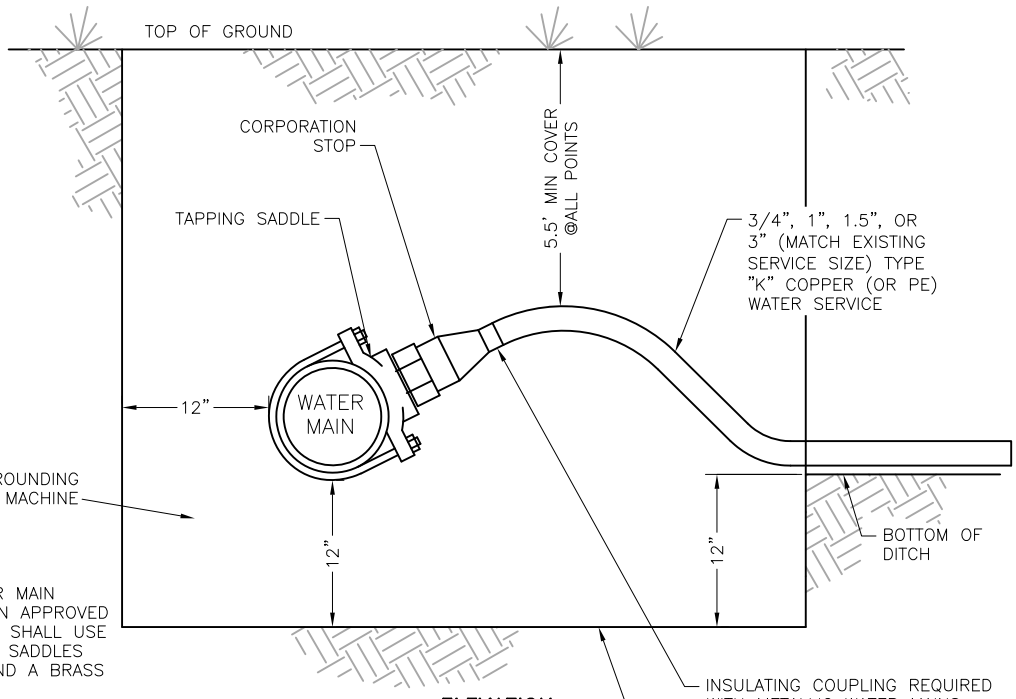

***PLAN***

## SERVICE TAPS 3/4" & 1" CORPORATION ONLY

VARIANCE REQUIRED FOR 1" TAP




***PLAN***



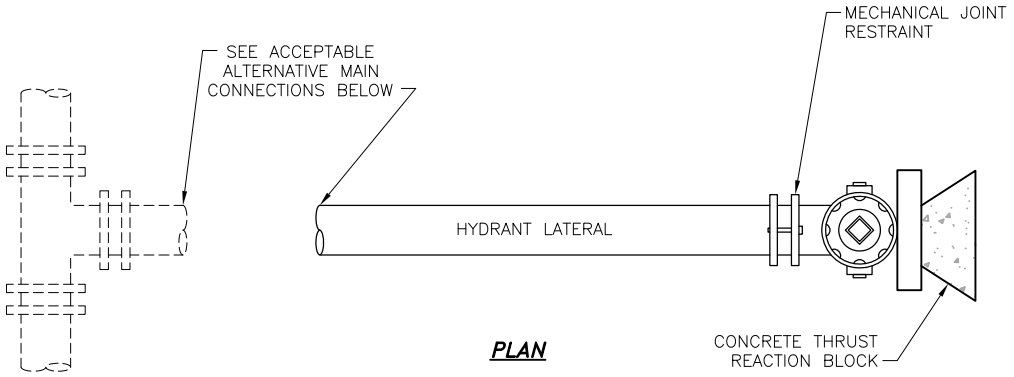

***ELEVATION***

NOTE:

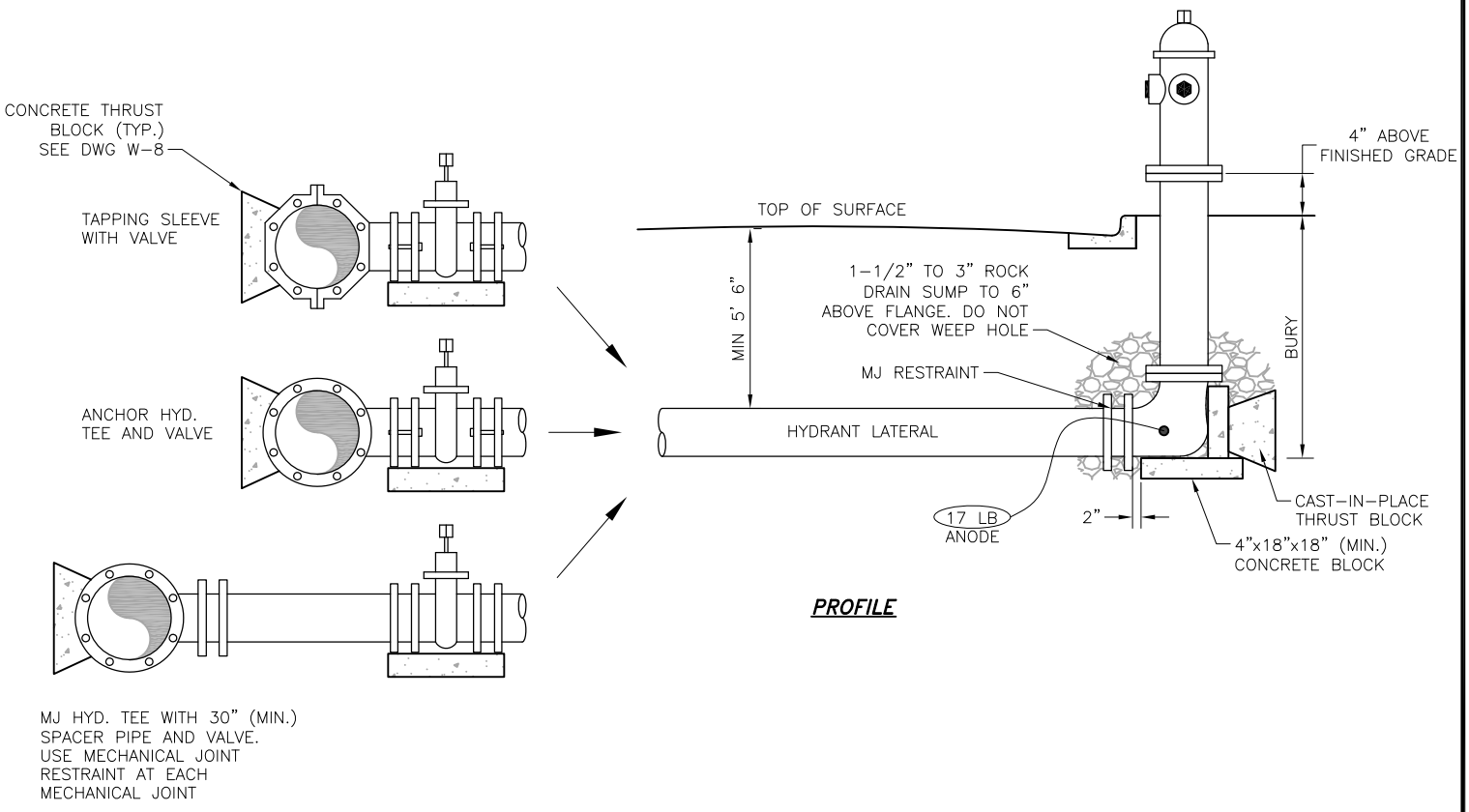
1. DIRECT TAPS TO THE WATER MAIN SHALL BE MADE ONLY WHEN APPROVED BY THE DISTRICT. ALL TAPS SHALL USE TAPPING SADDLES. TAPPING SADDLES SHALL HAVE TWO BANDS AND A BRASS CORPORATION CONNECTION.
2. SERVICE LINES IN EXCESS OF 100FT SHOULD BE 1" SERVICE AND TAP W/ 3/4" METER.

# SERVICE TAPPING DETAIL – 3/4" THROUGH 2"

| | | | | |
|---|---|---|---|---|
| Drawn: JDS–HYDRO CONSULTANTS, INC. | Revised: | WATER SYSTEM STANDARD SPECIFICATIONS | Forest View Acres WATER DISTRICT | W–2 |
| Date: APRIL 2018 | Revised: | | | |
| Scale: N.T.S. | Revised: | | | |




***PLAN***




***PROFILE***

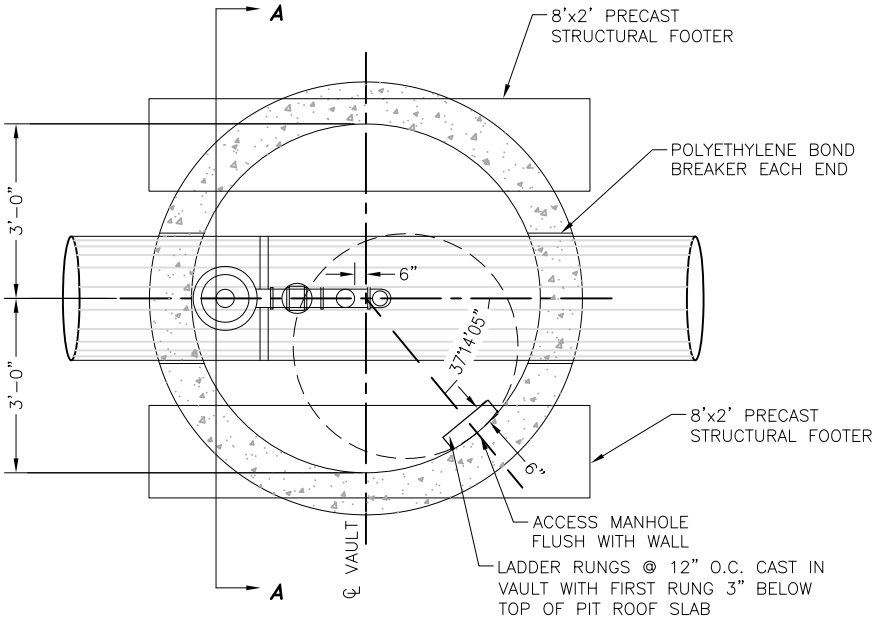
NOTES:
1. ALL JOINTS BETWEEN HYDRANT AND TEE MUST BE RESTRAINED.
2. WHEN LATERAL IS GREATER THAN ONE PIPE LENGTH, RESTRAINT IS REQUIRED AT EACH COUPLING.

# FIRE HYDRANT INSTALLATION

| | | | | | |
|---|---|---|---|---|---|
| Drawn: JDS-HYDRO CONSULTANTS, INC. | Revised: | WATER SYSTEM STANDARD SPECIFICATIONS | Forest View Acres WATER DISTRICT | W-3 |
| Date: MARCH 2018 | Revised: | | | |
| Scale: N.T.S. | Revised: | | | |

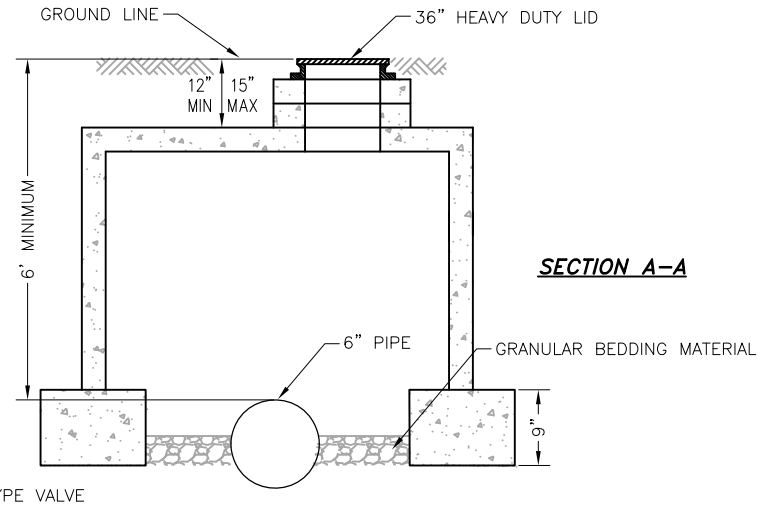
LEGEND

- Ⓐ 1" CORPORATION TAPERED THREADS INLET WITH 1" FEMALE IRON PIPE OUTLET (MUELLER OR FORD)
- Ⓑ 1" CLOSE THREADED BRASS NIPPLE
- Ⓒ 1" THREADED GATE VALVE WITH STANDARD OPENING NUT
- Ⓓ 1" THREADED INLET VAL-MATIC AIR/VACUUM COMBINATION AIR VALVE, MODEL 201C
- Ⓔ 1"x90° PLASTIC ELBOW
- Ⓕ 1"x90° BRASS THREADED ELBOW
- Ⓖ 1" QUICK COUPLER
- Ⓗ 1" THREADED BRASS NIPPLE
- Ⓘ 1" ROMAC MODEL 202BS TAPPING SADDLE OR APPROVED EQUAL
- Ⓙ 1"x1" TEE
- Ⓚ PRESSURE GAUGE 4" FACE (MIN.), 0-150 P.S.I. (MIN.) NOT LESS THAN 150% OF DESIGN PRESSURE "WEKSLER # EA 14 D" OR NON-CORROSIVE BODY EQUAL, GLYCERIN FILLED MAX. 2 P.S.I. INCREMENTS

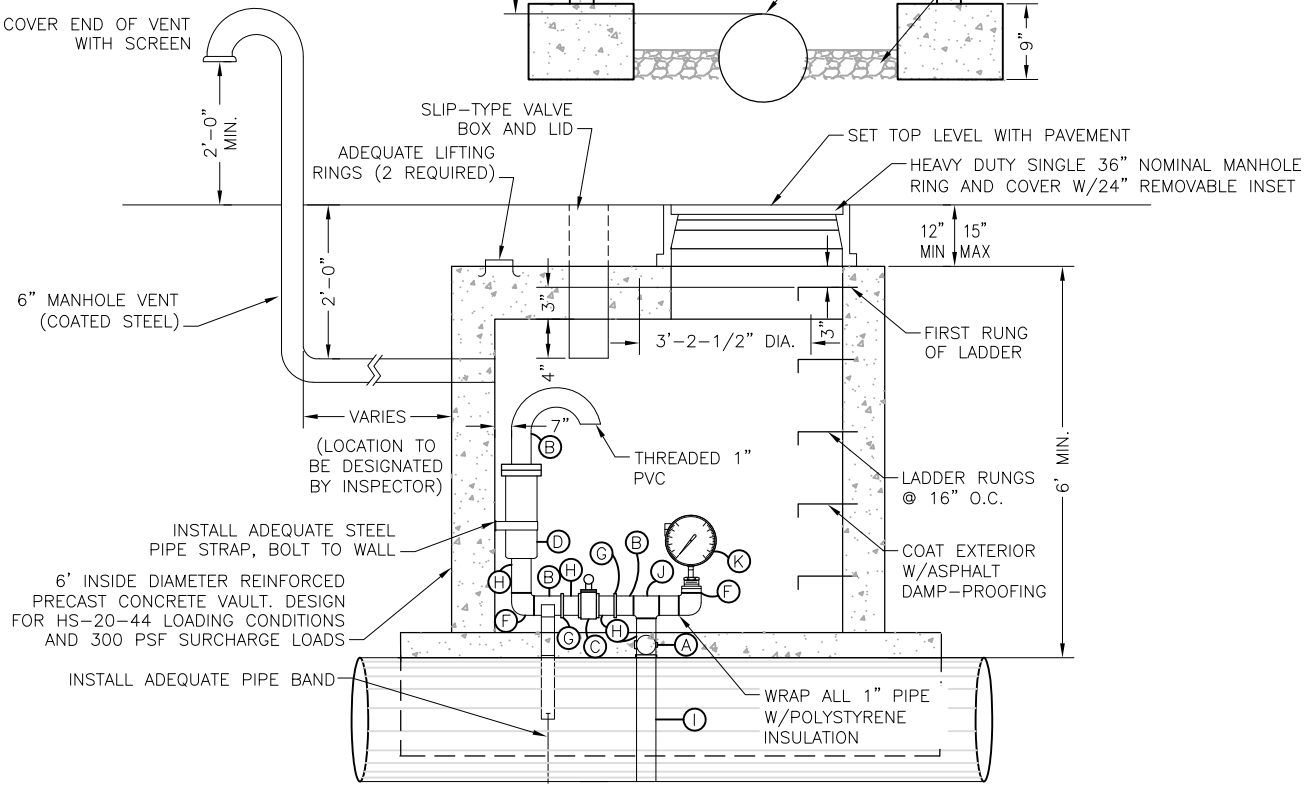



NOTES:

1. ALL CONCRETE WORK SHALL COMPLY WITH LATEST ACI-318 SPECIFICATIONS.
2. ALL SUPPORT MATERIALS SHALL BE GIVEN 2 COATS OF RUST INHIBITIVE PAINT.
3. ALL LADDER RUNGS MUST LINE UP BOTH HORIZONTALLY AND VERTICALLY.
4. ALL SMALL DIAMETER PIPE AND AIR RELEASE VALVE SHALL BE WRAPPED WITH INSULATION AND TAPED.




***SECTION A-A***



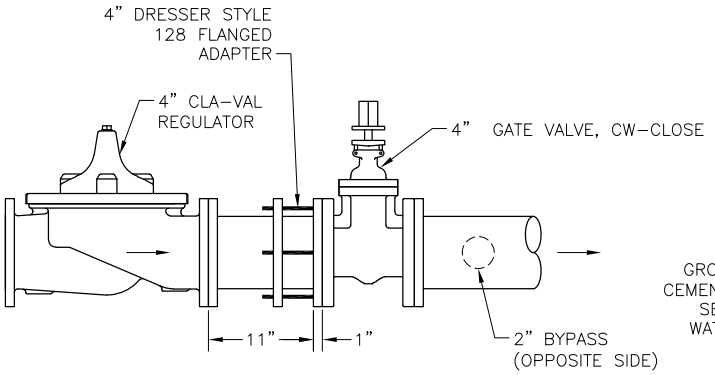

# AIR/VACUUM RELIEF VALVE VAULT

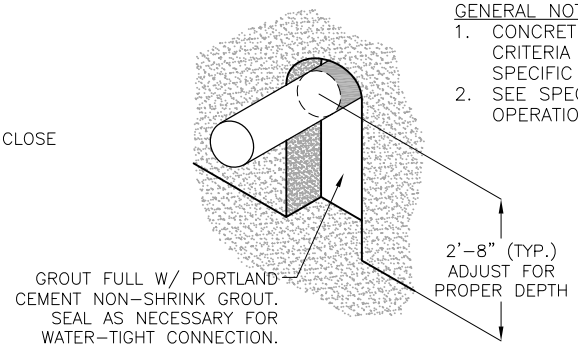
| | | | |
|---|---|---|---|
| Drawn: JDS-HYDRO CONSULTANTS, INC. | Revised: | WATER SYSTEM STANDARD SPECIFICATIONS | W-4 |
| Date: MARCH 2018 | Revised: | | |
| Scale: N.T.S. | Revised: | | |

Forest View Acres WATER DISTRICT

GENERAL NOTES:

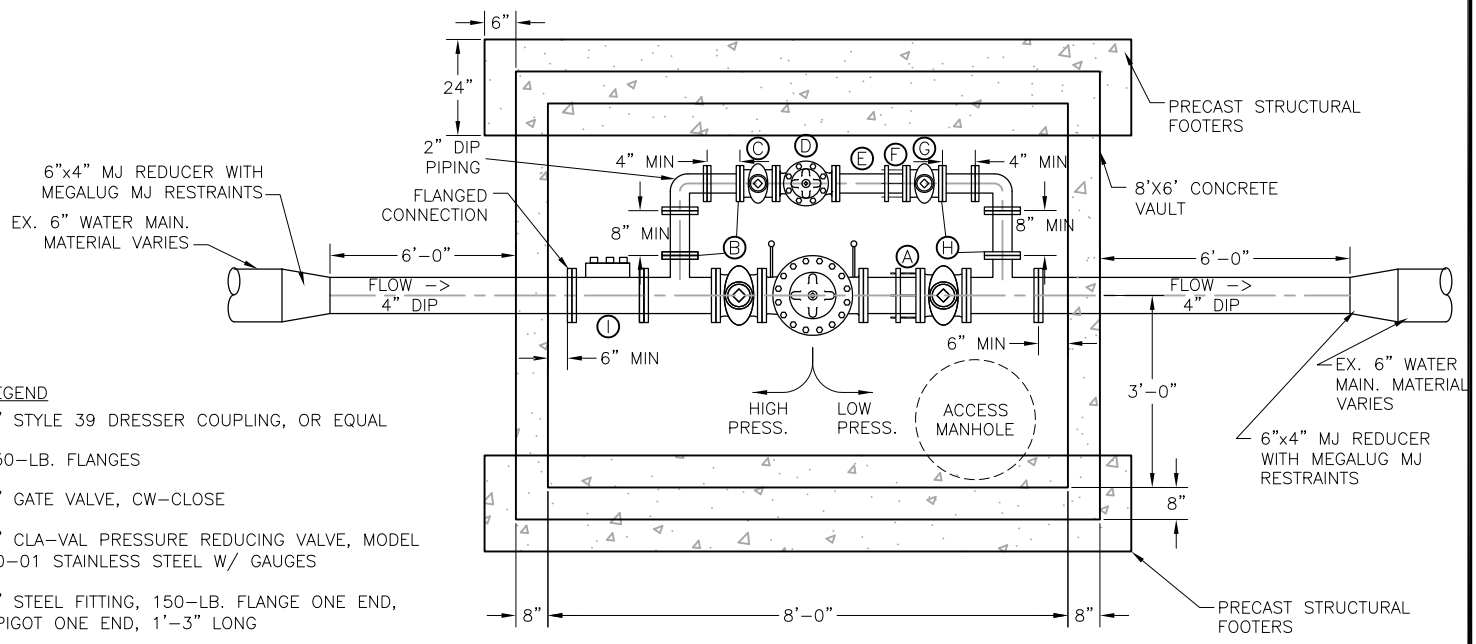
1. CONCRETE VAULTS SHALL MEET ALL CRITERIA AS OUTLINED IN PROJECT SPECIFIC SPECIFICATIONS.
2. SEE SPECIFICATIONS FOR PRV OPERATION.




***DETAIL A – FLANGED ADAPTOR***

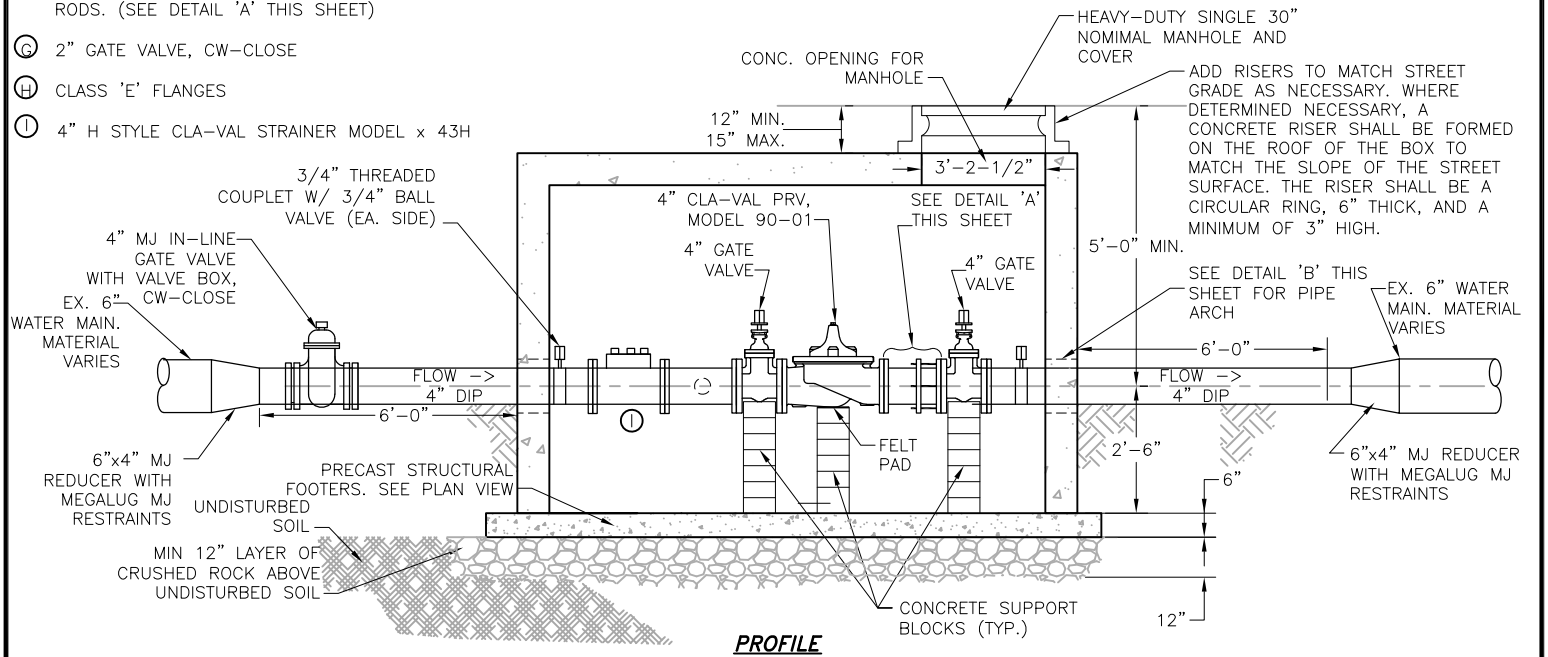
***DETAIL B – PIPE ARCH***




LEGEND

- (A) 4" STYLE 39 DRESSER COUPLING, OR EQUAL
- (B) 150-LB. FLANGES
- (C) 2" GATE VALVE, CW-CLOSE
- (D) 2" CLA-VAL PRESSURE REDUCING VALVE, MODEL 90-01 STAINLESS STEEL W/ GAUGES
- (E) 2" STEEL FITTING, 150-LB. FLANGE ONE END, SPIGOT ONE END, 1'-3" LONG
- (F) 2" DRESSER STYLE 128 FLANGED ADAPTER OR EQUAL. TIE BACK TO REGULATOR W/ TWO 3/4" RODS. (SEE DETAIL 'A' THIS SHEET)
- (G) 2" GATE VALVE, CW-CLOSE
- (H) CLASS 'E' FLANGES
- (I) 4" H STYLE CLA-VAL STRAINER MODEL x 43H

***PLAN***




***PROFILE***

# PRESSURE REDUCING VAULT

| | | | | |
|---|---|---|---|---|
| Drawn: JDS-HYDRO CONSULTANTS, INC. | Revised: | WATER SYSTEM STANDARD SPECIFICATIONS | Forest View Acres WATER DISTRICT | W-5 |
| Date: APRIL 2018 | Revised: | | | |
| Scale: N.T.S. | Revised: | | | |

LEGEND

(A) 4" STYLE 39 DRESSER COUPLING, OR EQUAL

(B) 150-LB. FLANGES

(C) 2" GATE VALVE, CW-CLOSE

(D) 2" CLA-VAL PRESSURE REDUCING VALVE, MODEL 90-0, SS W/ INLET/OUTLET PRESSURE GAUGES

(E) 4" CLA-VAL PRESSURE REDUCING VALVE, MODEL 90-01, SS W/ INLET/OUTLET PRESSURE GAUGES

(F) 2" STEEL FITTING, 150-LB. FLANGE ONE END, SPIGOT ONE END, 1'-3" LONG

(G) 2" DRESSER STYLE 128 FLANGED ADAPTER OR EQUAL. TIE BACK TO REGULATOR W/ TWO 3/4" RODS. (SEE DETAIL 'A' THIS SHEET)

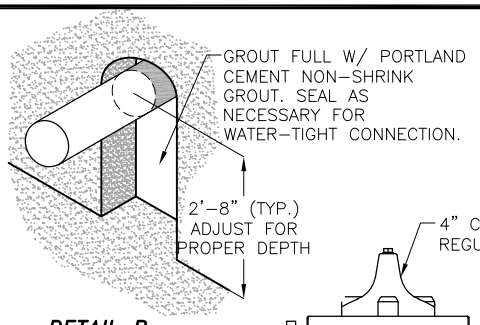
(H) 4" GATE VALVE, CW-CLOSE

(I) CLASS 'E' FLANGES

(J) 4" FLANGED BADGER METER MODEL RECORDALL

(K) 4" H STYLE CLA-VAL STRAINER MODEL X43H

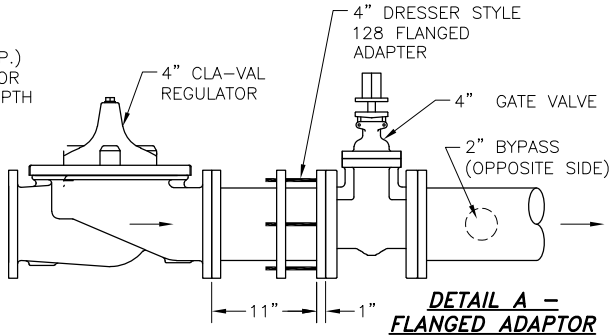
(L) THREADED TAP W/ PRESSURE GAUGE



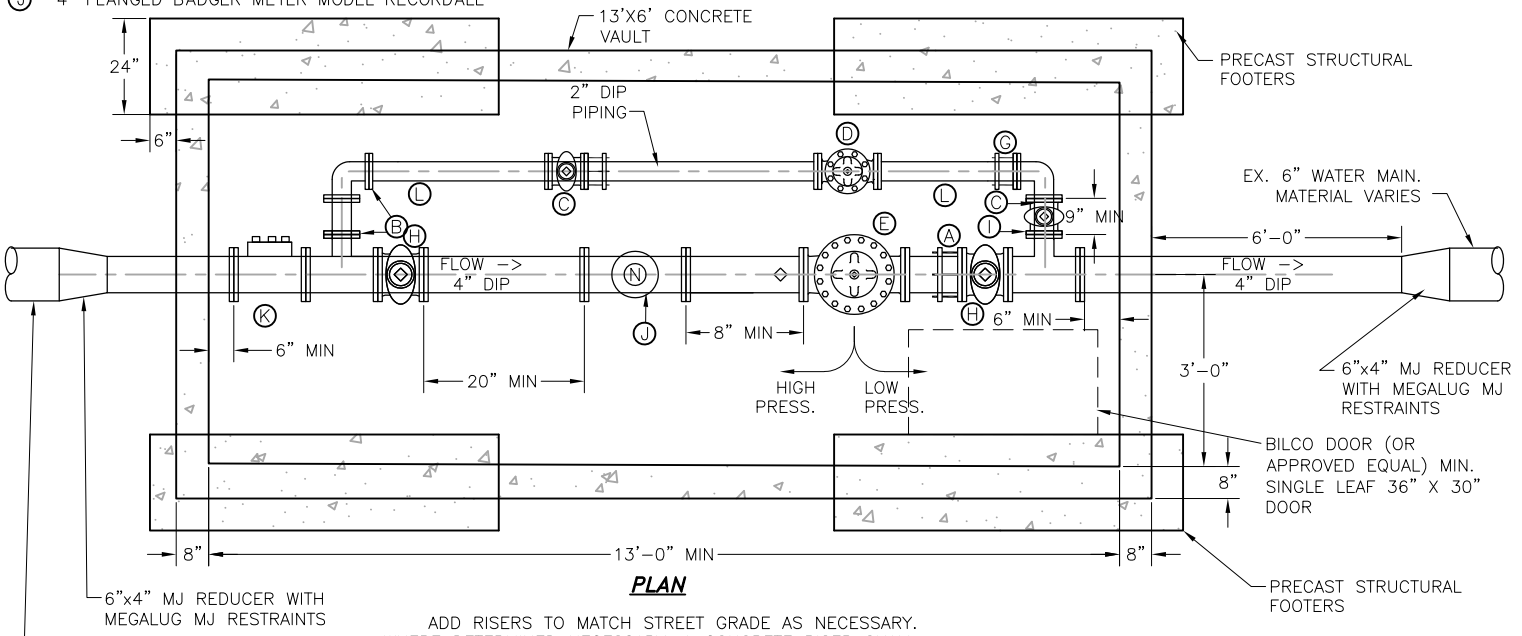

***DETAIL B - PIPE ARCH***

GENERAL NOTES:

1. CONCRETE VAULTS SHALL MEET ALL CRITERIA AS OUTLINED IN PROJECT SPECIFIC SPECIFICATIONS.
2. SEE SPECIFICATIONS FOR PRV OPERATION.




***DETAIL A - FLANGED ADAPTOR***

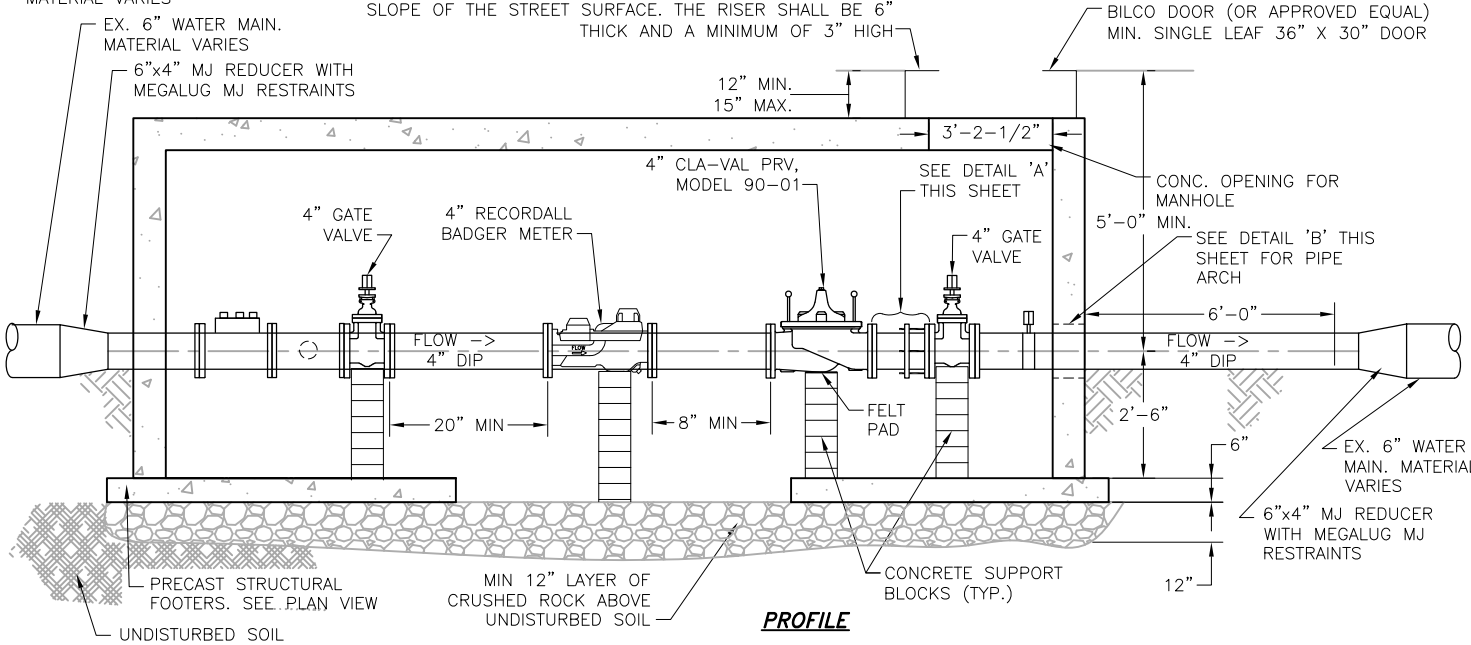



***PLAN***

6"x4" MJ REDUCER WITH MEGALUG MJ RESTRAINTS

EX. 6" WATER MAIN. MATERIAL VARIES

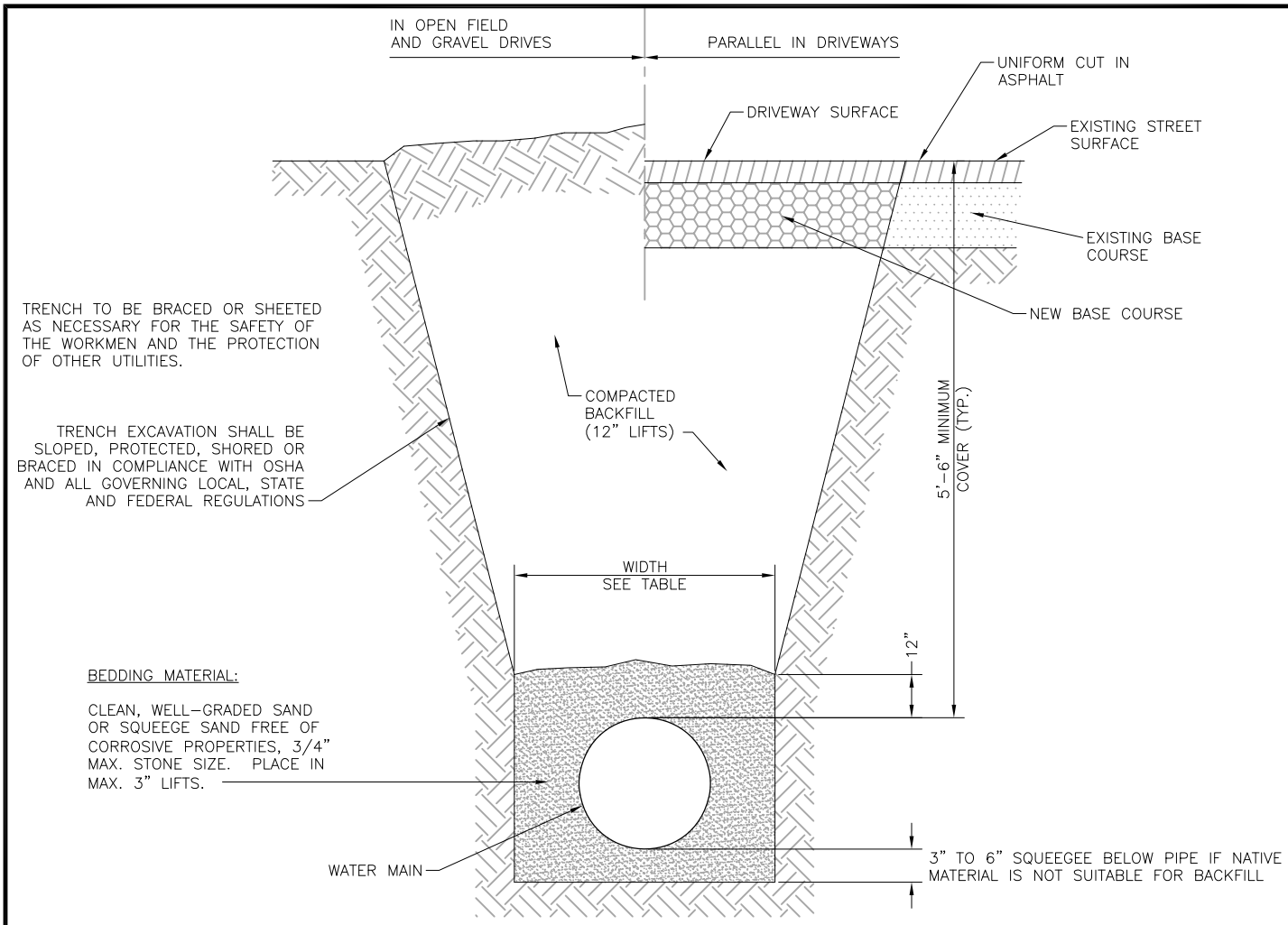
ADD RISERS TO MATCH STREET GRADE AS NECESSARY. WHERE DETERMINED NECESSARY, A CONCRETE RISER SHALL BE FORMED ON THE ROOF OF THE BOX TO MATCH THE SLOPE OF THE STREET SURFACE. THE RISER SHALL BE 6" THICK AND A MINIMUM OF 3" HIGH




***PROFILE***

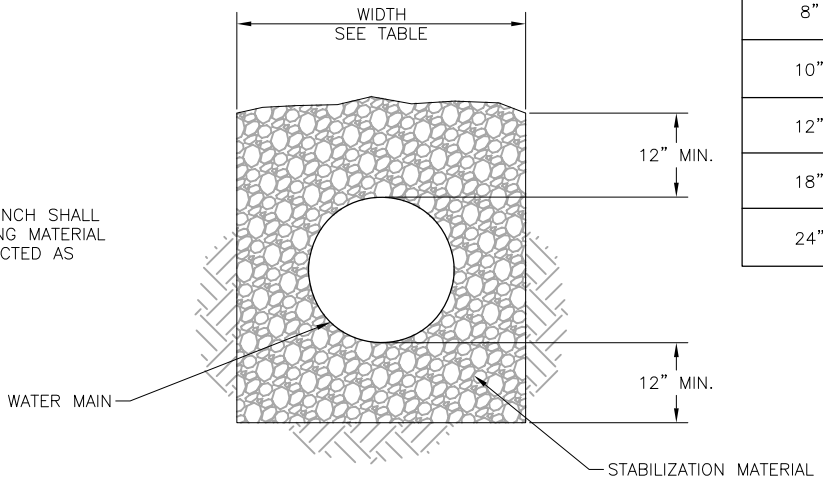
# PRESSURE REDUCING VALVE VAULT WITH METER

| | | | | |
|---|---|---|---|---|
| Drawn: JDS-HYDRO CONSULTANTS, INC. | Revised: | WATER SYSTEM STANDARD SPECIFICATIONS | Forest View Acres WATER DISTRICT | W-6 |
| Date: APRIL 2018 | Revised: | | | |
| Scale: N.T.S. | Revised: | | | |




***TYPICAL TRENCH SECTION***

| PIPE DIAMETER | MINIMUM WIDTH | MAXIMUM WIDTH |
|---|---|---|
| 4" | 2'-2" | 3'-0" |
| 6" | 2'-2" | 3'-0" |
| 8" | 2'-2" | 3'-0" |
| 10" | 2'-4" | 3'-0" |
| 12" | 2'-6" | 3'-6" |
| 18" | 2'-10" | 3'-9" |
| 24" | 3'-2" | 4'-3" |



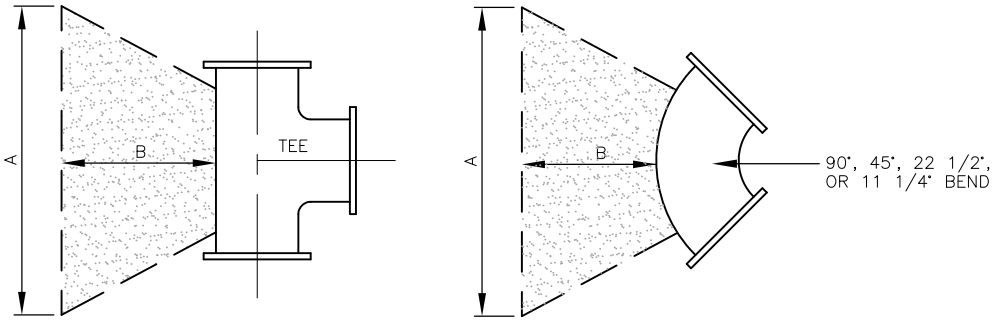

NOTE:
AN OVER-EXCAVATED TRENCH SHALL BE REFILLED WITH BEDDING MATERIAL AND THOROUGHLY COMPACTED AS PER THE SPECIFICATIONS.

***UNSTABLE TRENCH BEDDING DETAIL***

# TYPICAL TRENCH CROSS-SECTION

| | | | |
|---|---|---|---|
| Drawn: JDS-HYDRO CONSULTANTS, INC. | Revised: | WATER SYSTEM STANDARD SPECIFICATIONS | W-7 |
| Date: MARCH 2018 | Revised: | | |
| Scale: N.T.S. | Revised: | | |

Forest View Acres WATER DISTRICT

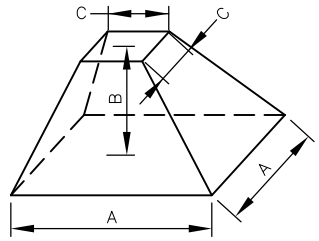



DIMENSIONS AND VOLUMES
(SEE ISOMETRIC VIEW)

| SIZE | TEE | | | 90° | | | 45° | | | 22 1/2° | | | 11 1/4° | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | in. | in. | c.y. | in. | in. | c.y. | in. | in. | c.y. | in. | in. | c.y. | in. | in. | c.y. |
| | A | B | VOL | A | B | VOL | A | B | VOL | A | B | VOL | A | B | VOL |
| 4" | 2'–6" | 0'–10" | 1/8 | 2'–6" | 0'–10" | 1/8 | 2'–6" | 0'–10" | 1/8 | 2'–6" | 0'–10" | 1/8 | 2'–6" | 0'–10" | 1/8 |
| 6" | 3'–2" | 2'–5" | 1/2 | 3'–6" | 3'–0" | 3/4 | 3'–2" | 2'–5" | 1/2 | 2'–6" | 0'–10" | 1/8 | 2'–6" | 0'–10" | 1/8 |
| 8" | 4'–0" | 2'–6" | 3/4 | 4'–10" | 3'–1" | 1–1/4 | 4'–0" | 2'–6" | 3/4 | 2'–6" | 0'–10" | 1/4 | 2'–6" | 0'–10" | 1/8 |
| 10" | 4–'4" | 3–'0" | 1 | 5'–3" | 3'–3" | 1–1/2 | 4–'4" | 3–'0" | 1 | 2'–8" | 1'–7" | 1/4 | 2'–6" | 0'–10" | 1/8 |
| 12" | 4'–10" | 3'–1" | 1–1/4 | 5'–7" | 3'–5" | 1–3/4 | 4'–10" | 3'–1" | 1–1/4 | 2'–8" | 1'–7" | 1/4 | 2'–6" | 0'–10" | 1/8 |
| 20" | 5'–3" | 3'–3" | 1–1/2 | 5'–10" | 3'–7" | 2–0 | 5'–3" | 3'–3" | 1/2 | 3'–2" | 2'–5" | 1/2 | 2'–8" | 1'–7" | 1/4 |

NOTES:

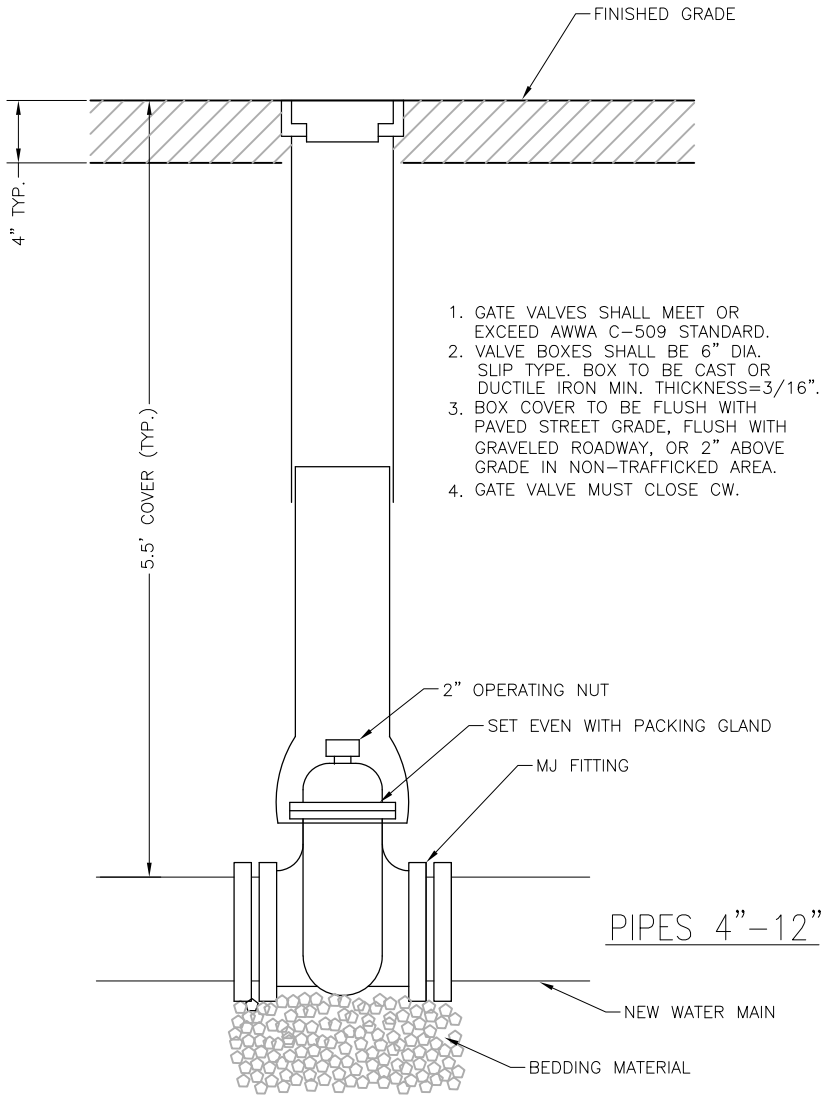
1. THE MINIMUM A AND B DIMENSIONS FOR ANY BLOCK IS 1'–6". DIMENSION C FOR ALL PIPE 12" OR LESS SHALL BE 1'–6".
2. THRUST BLOCK DIMENSIONS AND VOLUMES FOR DEAD ENDS SHALL BE THE SAME AS FOR TEES.
3. THE ABOVE VOLUMES ARE ROUNDED TO THE NEAREST PORTION OF A CUBIC YARD.
4. NUTS AND BOLTS SHALL REMAIN ACCESSIBLE AND FREE OF SPLASHED CONCRETE. A BOND BREAKER IS REQUIRED BETWEEN FITTINGS AND CONCRETE.




ISOMETRIC VIEW SHOWING
A , B, AND C DIMENSIONS

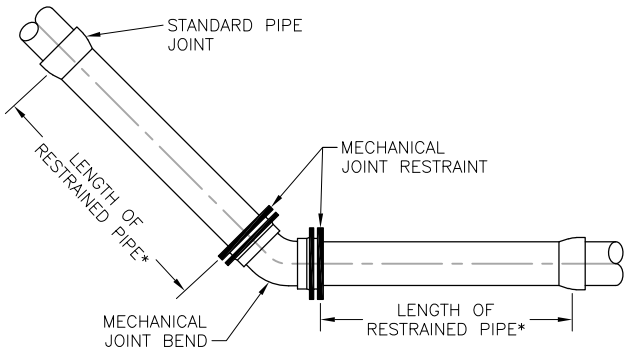
# THRUST BLOCK DATA

| | | | | |
|---|---|---|---|---|
| Drawn: JDS–HYDRO CONSULTANTS, INC. | Revised: | WATER SYSTEM STANDARD SPECIFICATIONS | Forest View Acres WATER DISTRICT | W–8 |
| Date: MARCH 2018 | Revised: | | | |
| Scale: N.T.S. | Revised: | | | |



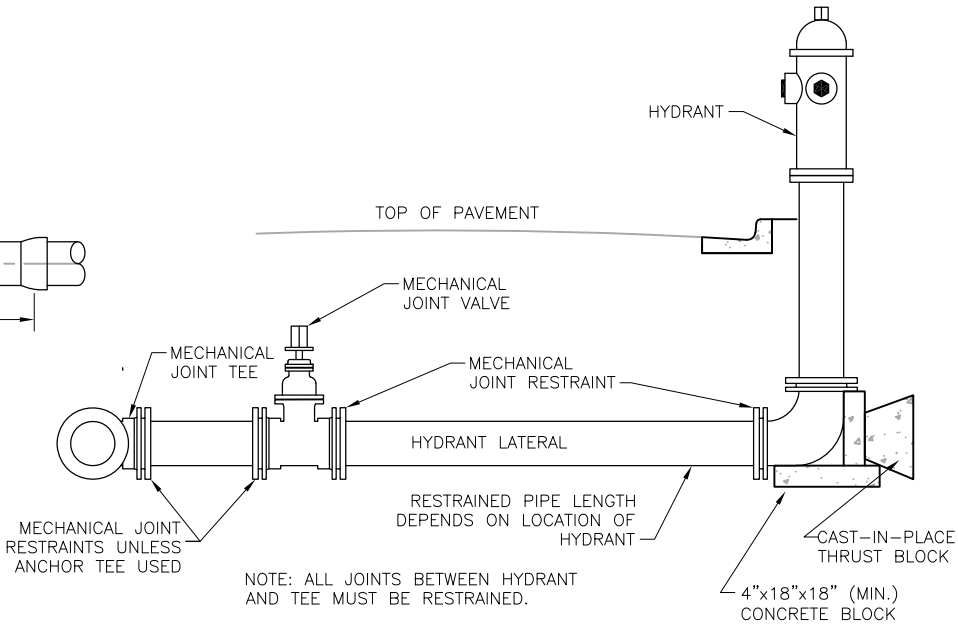

# TYPICAL IN-LINE GATE VALVE ASSEMBLY

| | | | | | |
|---|---|---|---|---|---|
| Drawn: JDS-HYDRO CONSULTANTS, INC. | Revised: | WATER SYSTEM STANDARD SPECIFICATIONS | Forest View Acres WATER DISTRICT | W-9 |
| Date: MARCH 2018 | Revised: | | | |
| Scale: N.T.S. | Revised: | | | |



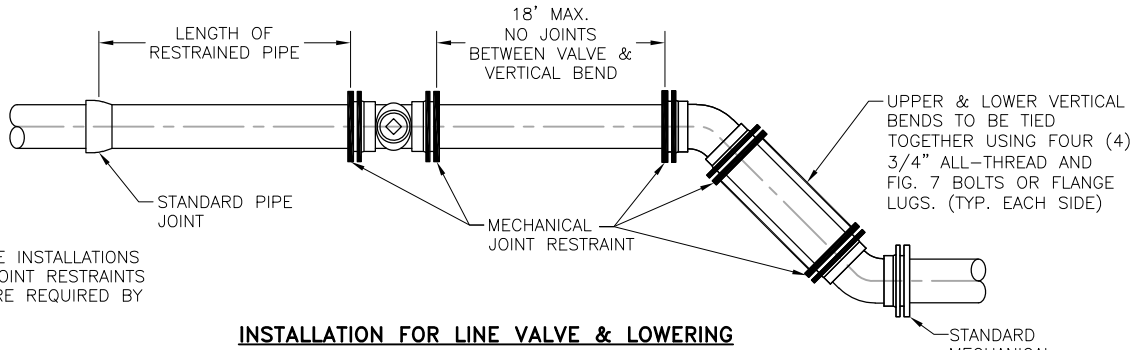

NO THRUST REACTION BLOCK REQUIRED

**INSTALLATION FOR BENDS**



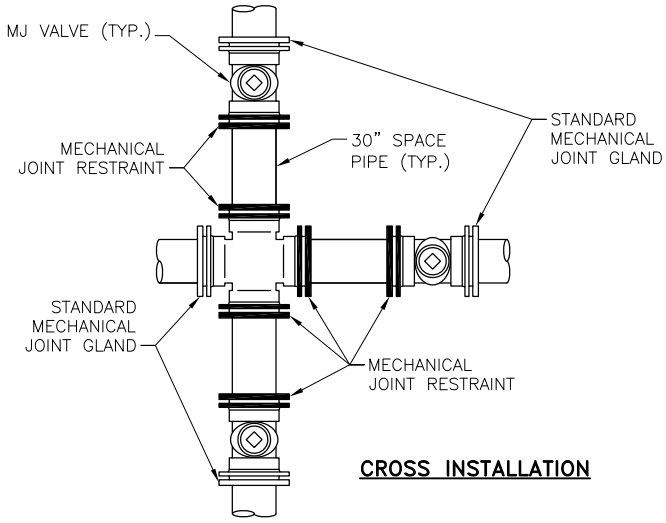

NOTE: ALL JOINTS BETWEEN HYDRANT AND TEE MUST BE RESTRAINED.

**INSTALLATION FOR BENDS**

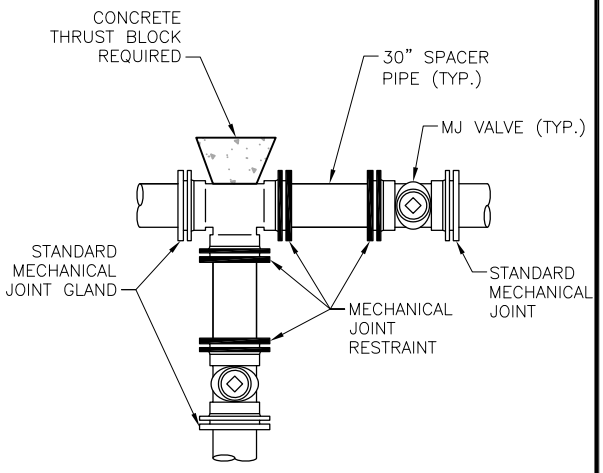



NOTE: FOR LINE VALVE INSTALLATIONS WITHOUT LOWERING, JOINT RESTRAINTS SHALL BE USED WHERE REQUIRED BY THE DISTRICT.

**INSTALLATION FOR LINE VALVE & LOWERING**




**CROSS INSTALLATION**




**TEE INSTALLATION**

NOTES:
1. MECHANICAL JOINTS SHALL BE APPROVED ACCORDING TO MATERIAL SPECIFICATION FOR DIP AND PVC PIPE.
2. LENGTH OF PIPE REQUIRING JOINT RESTRAINT SHALL BE DETERMINED FROM CHART ON DRAWING W-11.
3. RESTRAINED JOINT PVC PIPE SHALL NOT BE USED FOR LOWERINGS.

# APPLICATIONS FOR MECHANICAL JOINT RESTRAINTS

| | | | | |
|---|---|---|---|---|
| Drawn: JDS-HYDRO CONSULTANTS, INC. | Revised: | WATER SYSTEM STANDARD SPECIFICATIONS | Forest View Acres WATER DISTRICT | W-10 |
| Date: MARCH 2018 | Revised: | | | |
| Scale: N.T.S. | Revised: | | | |

## RESTRAINED M.J. PIPE LENGTH (FT)

6–INCH DUCTILE IRON AND PVC

| TYPE OF FITTING | STATIC PRESSURE (PSI) | | |
|---|---|---|---|
| | <100 | 100–150 | 150–200 |
| 90° BEND, TEE, VALVE OR PLUG | 12 | 18 | 24 |
| 45° BEND | 5 | 8 | 10 |
| 22–1/2° BEND | 2 | 4 | 5 |
| 11–1/4° BEND | 1 | 2 | 2 |

8–INCH DUCTILE IRON AND PVC

| TYPE OF FITTING | STATIC PRESSURE (PSI) | | |
|---|---|---|---|
| | <100 | 100–150 | 150–200 |
| 90° BEND, TEE, VALVE OR PLUG | 16 | 24 | 32 |
| 45° BEND | 7 | 10 | 13 |
| 22–1/2° BEND | 3 | 5 | 6 |
| 11–1/4° BEND | 2 | 2 | 3 |

12–INCH DUCTILE IRON AND PVC

| TYPE OF FITTING | STATIC PRESSURE (PSI) | | |
|---|---|---|---|
| | <100 | 100–150 | 150–200 |
| 90° BEND, TEE, VALVE OR PLUG | 23 | 34 | 45 |
| 45° BEND | 9 | 14 | 19 |
| 22–1/2° BEND | 5 | 7 | 9 |
| 11–1/4° BEND | 2 | 3 | 4 |

16–INCH DUCTILE IRON AND PVC

| TYPE OF FITTING | STATIC PRESSURE (PSI) | | |
|---|---|---|---|
| | <100 | 100–150 | 150–200 |
| 90° BEND, TEE, VALVE OR PLUG | 29 | 43 | 58 |
| 45° BEND | 12 | 18 | 24 |
| 22–1/2° BEND | 6 | 9 | 12 |
| 11–1/4° BEND | 3 | 4 | 6 |

18–INCH DUCTILE IRON AND PVC

| TYPE OF FITTING | STATIC PRESSURE (PSI) | | |
|---|---|---|---|
| | <100 | 100–150 | 150–200 |
| 90° BEND, TEE, VALVE OR PLUG | 32 | 48 | 64 |
| 45° BEND | 14 | 20 | 27 |
| 22–1/2° BEND | 7 | 10 | 13 |
| 11–1/4° BEND | 3 | 5 | 7 |

20–INCH DUCTILE IRON AND PVC

| TYPE OF FITTING | STATIC PRESSURE (PSI) | | |
|---|---|---|---|
| | <100 | 100–150 | 150–200 |
| 90° BEND, TEE, VALVE OR PLUG | 35 | 52 | 70 |
| 45° BEND | 15 | 22 | 29 |
| 22–1/2° BEND | 7 | 10 | 14 |
| 11–1/4° BEND | 3 | 5 | 7 |

24–INCH DUCTILE IRON AND PVC

| TYPE OF FITTING | STATIC PRESSURE (PSI) | | |
|---|---|---|---|
| | <100 | 100–150 | 150–200 |
| 90° BEND, TEE, VALVE OR PLUG | 41 | 61 | 81 |
| 45° BEND | 17 | 25 | 34 |
| 22–1/2° BEND | 8 | 12 | 16 |
| 11–1/4° BEND | 4 | 6 | 8 |

NOTES:
1. PRESSURES GREATER THAN 200 PSI REQUIRE SPECIAL DESIGN APPROVED BY THE DISTRICT.
2. LENGTH IS BASED ON MINIMUM 5'–0" OF GROUND COVER AND SOIL COMPACTED TO 95% OF STANDARD PROCTOR DENSITY AT OPTIMUM MOISTURE.
3. APPROVED METHODS OF RESTRAINED PIPE BEYOND INITIAL FITTING SHALL BE:
   A. FOR DUCTILE IRON PIPE, 1100 SERIES MEGALUG BY EBAA IRON OR EQUAL ON MECHANICAL JOINT PIPE OR DOUBLE 1100 SERIES MEGALUG BY EBAA IRON OR EQUAL ON PUSH ON JOINT PIPE.
   B. FOR PVC PIPE, SERIES 1500 OR SERIES 2800 RESTRAINTS BY EBAA IRON OR EQUAL.

# RESTRAINED M.J. PIPE LENGTH DATA

| | | | | |
|---|---|---|---|---|
| Drawn: APPLICATION FOR MECHANICAL JOINT RESTRAINTS | Revised: | WATER SYSTEM STANDARD SPECIFICATIONS | Forest View Acres WATER DISTRICT | W–11 |
| Date: MARCH 2018 | Revised: | | | |
| Scale: N.T.S. | Revised: | | | |