

# WATER



## City of North Salt Lake Water Standards Manual

September 2025





**City of North Salt Lake**  
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# City of North Salt Lake

## Water Department Specification Manual

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# Design Requirements

## Water System Design

### Minimum Water Main Size

- North Salt Lake City requires that all new culinary water main lines be a minimum of eight inches in diameter. Larger diameter main lines may be required based on flow demands and pressure requirements in accordance with the North Salt Lake City Water Master Plan or City Engineer requirements.
- Fire hydrant laterals shall be six inches in diameter

### Fire Protection

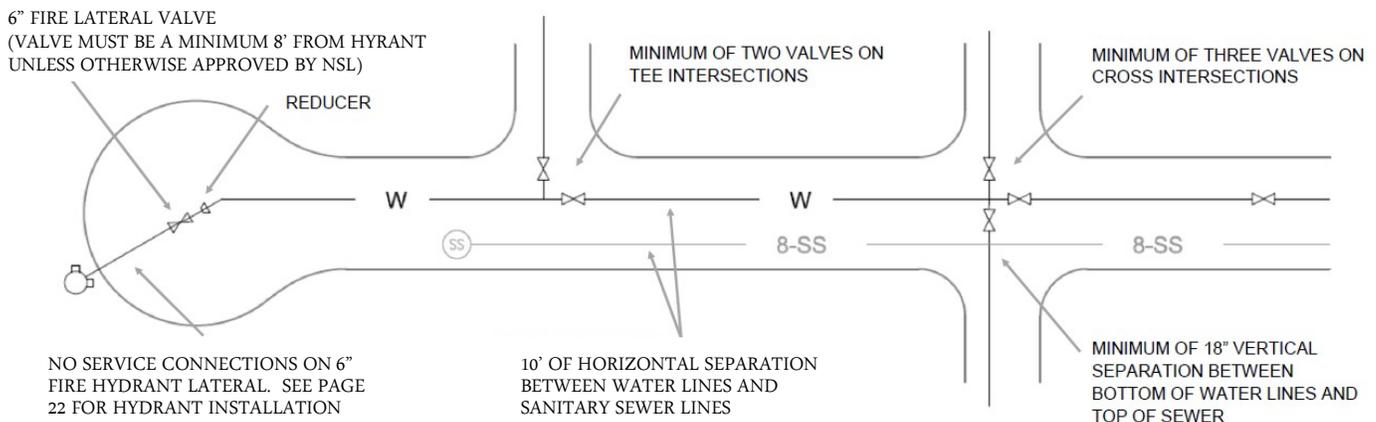
- Fire hydrants shall be installed at locations determined by the North Salt Lake City Engineering, Water Department and South Davis Metro Fire.
- Hydrant spacing shall meet the requirements of Appendix C of the International Fire Code (IFC).
- No dwelling unit shall be located farther than 250' from a fire hydrant, measured along the curb.

### Dead Ends

- All dead-end water mains shall be equipped with a fire hydrant.
- Blow-offs or other considerations must be approved by North Salt Lake City Water Department.

### Valve Installation

- A sufficient number of isolation valves shall be provided on mains to minimize inconvenience, sanitary hazards and loss of service during repairs. No more than four valves should be needed to isolate a section of main line.
- One valve shall be placed at each branch off of a main. A minimum of two valves shall be installed at every tee-intersection and a minimum of three valves at every cross-intersection.
- Valves shall be located at not more than 500 foot intervals in commercial districts and not more than 800 foot intervals in other districts.
- More valves may be required at North Salt Lake City's discretion.



### Separation of Water & Sewer Lines

- Water lines and sewer lines must have a horizontal separation of at least 6 feet, this distance shall be measured edge to edge.
- Where local conditions prevent 6 feet of separation, or when water and sewer lines must cross, the bottom of the water line shall be at least 18 inches above the top of the sewer line.
- If the separation requirements above cannot be met, the following construction standards shall be used:
  1. Sewer lines passing over or under water lines shall be constructed with a solid length of new ductile iron pipe or PVC pipe, extending at least 10 feet in both directions of the water line;
  2. Approved stainless-steel shear band couplings;
  3. Adequate structural support for sewer line to prevent deflection of joints and settling on water line (concrete cradle may be required); and
  4. Separation of at least 6 inches must be maintained between all utilities;
  5. If a sewer line must go over a lateral water line, it must have a 10 foot minimum sleeve (C900 or C905)
- Anything deviating from these requirements must be approved by North Salt Lake City Public Works and the City Engineer.

### Pressure Reducing Valve Stations

- Any water line construction involving pressure reducing stations on more than one pressure zone must have an engineered plan taking into consideration the Water System's hydraulic grade line.

### Surface Water Crossings

- All surface water crossings must have engineered plans, approved by the City of North Salt Lake that meet the Utah Administrative Code Rule R309-550-8 (8) dealing with transmission and distribution pipelines and the installation of water mains.

### Sampling Station Requirements

- The City of North Salt Lake may require the installation of sampling stations locations and the quantity will be determined at Plan Review.



# Pre Construction

## Pre Construction

- Prior to installation, all extensions or connections to water mains must be approved in advance by the City Engineer or designated Professional Engineer (P.E.) in accordance with North Salt Lake City Code.
- Water connection impact fees must be paid prior to new development which includes remodeling, building enlargement, or any other construction or improvement which will place an increased burden on the city water system in accordance with North Salt Lake City Code 9-11c.
- Obtain all street excavation permits and any other permits applicable to the work being performed.
- On mainline pipe jobs a pre construction meeting must be set up by the City and attended by the developer. The meeting should include the developer, contractors and North Salt Lake City personnel who will be involved in the project. This meeting is generally beneficial for all parties involved.

## Construction

- North Salt Lake City must be given a minimum 48 hours advance notification of when work is to begin.
- It is unlawful for any person, without authority, to open any valve or other fixture attached to the city waterworks system in accordance with North Salt Lake City Code 7-4.1.
- North Salt Lake City personnel will inspect all work being performed and nothing shall be buried until approved by an authorized inspector. North Salt Lake maps all new construction with a global positioning system (GPS) and if water features are buried before they are documented or inspected they must be exposed for inspection.
- North Salt Lake personnel may also require extended range ball markers be installed to help with future locating. These ball markers will be provided by North Salt Lake City.
- All testing shall be overseen by North Salt Lake personnel. No waterline will be accepted into the existing system until all tests have been completed. A complete disinfection and testing requirements checklist has been provided in this manual (Please see page 27).
- Water shut down date and time frame must be approved by North Salt Lake personnel prior to public notification and shut downs can only be performed by North Salt Lake personnel.
- Any time water will be shut off, it is the contractors job to give a minimum of 24 hours advanced notification to all those who will be affected. This notification shall include: Contractors name and telephone number, the date the water will be shut off, and an approximate time that the water will be shut off and turned back on.

## Hydrant Meter Rentals & Construction Water

- The City of North Salt offers hydrant meter rentals during construction.
- Home construction water is only available after the lateral has passed inspection and the meter has been set. North Salt Lake does not allow jumpers in place of the meter.
- To sign up contact North Salt Lake City at 801.335.8700.

## Contact Information

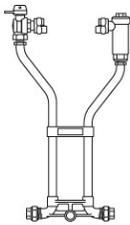
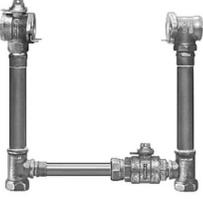
Name	Title	Phone	Email
City Hall	General Information	801.335.8700	
Randy Simmons	Public Works Operations Manager	801.335.3218	randys@nslcity.gov
Josh Taylor	Public Works Inspector	801.335.0530	josht@nslcity.gov
John Lovato	Water Superintendent	801.335.8685	johnl@nslcity.gov



# Material Specifications

	<h3>Pipe</h3> <p>C900 and C905, Pipe size will be approved by the North Salt Lake Water Department Ductile pipe may be required by NSL based on engineering requirements</p>
	<h3>Pipe Wrap</h3> <p>Polyethylene Encasement All fittings, hydrants and valves must be wrapped with AWWA approved polyethylene</p>
	<h3>Fittings</h3> <p>Ductile Iron Cement Lining and Asphaltic seal coat</p>
	<h3>Grip Rings</h3> <p>Romac Grip Rings with Blue Bolts up to 12" Megalugs should be used on installation 14" and above</p>
	<h3>Valves</h3> <p>Gate: Mueller resilient seat valves or the use of a suitable equivalent with approval by North Salt Lake Water Department prior to installation (Clow approved alternate)</p>
	<h3>Valve Boxes</h3> <p>Sliding adjustable type, cast iron, with the word "WATER" or appropriate word cast into it. Valve Box Adaptor II required on valve box installations.</p>

	<h3>Tracer Wire</h3> <p>DBR Connector Required Min. 12" Gauge rated for Direct Burial (Details on Page 19)</p>
	<h3>Grease</h3> <p>FM Food Quality Grease Applied to all nuts and bolts 2" Wide 20 Mill Tape No other tape will be allowed</p>
	<h3>Tapping Sleeves</h3> <p>Ford or Romac stainless steel sleeves. Should be greased and wrapped in accordance with these specs</p>
	<h3>Fire Hydrants</h3> <p>Mueller Super Centurion 250, Clow Medallion or the use of suitable equivalent with approval by North Salt Lake Water Department prior to installation</p>
	<h3>Service Line</h3> <p>CTS Polyethylene Pipe Minimum service new installations will be 3/4" North Salt Lake City may require larger lines to meet minimum flow requirements</p>
	<h3>Service Fittings</h3> <p>Ford or Mueller with insert in accordance with AWWA Standards</p>

	<p><b>Corporation Stops</b></p> <p>All corporation stops to be ball valve Compression fittings either Ford or Mueller for all connections</p>
	<p><b>Saddles</b></p> <p>Double strap brass saddles Ford or Mueller</p>
	<p><b>CULINARY WATER</b> <b>3/4" or 1" Meter Setters</b></p> <p>18" copper setter with a ball valve, check valve, cross bar and unions. Ford or Mueller Ford # VBHC72-18W-11-33NL-3/4" Ford # VBHC72-18W-11-44-NL-1"</p>
	<p><b>SECONDARY WATER</b> <b>3/4" or 1" Meter Setters</b></p> <p>18" copper setter with a ball valve, cross bar (No check valve required) and unions. Ford or Mueller</p>
	<p><b>1 1/2" &amp; 2" Meter Setters</b></p> <p>1 1/2" and 2" meter setters must be an 18" copper setter. Double valve, inlet and outlet with lockable bypass and check valve. Ford or Mueller</p>
	<p><b>3/4" &amp; 1" Meter Box</b></p> <p>ADS 21" Wide 36" Tall Note: 2" Conduit may be required to connect adjacent meter boxes for radio equipment when deemed appropriate</p>

	<p><b>1 1/2" &amp; 2" Meter Box</b></p> <p>4X4 Dura-Crete removable top box without a floor, or pre-approved suitable equivalent Contractor to provide drawings which must be approved by North Salt Lake City</p>
	<p><b>Meter Rings &amp; Lids</b></p> <p>Cast iron that fit the appropriate box with 2" recessed holes for the AMR systems. 21" Diameter. Marked "WATER" or "IRRIGATION" Available at DL Supply L-2242 &amp; L-2240-10</p>
	<p><b>Larger Meter Lids</b></p> <p>Cast iron that fit the appropriate box with 2" recessed holes for the AMR systems. 30" Diameter. Marked "WATER" or "IRRIGATION" Available at DL Supply</p>
	<p><b>Water Meters</b></p> <p>North Salt Lake provides all water meters based on planned flow (Sensus Meters) All meters above 2" the contractor is required to supplies as per this specification.</p>
	<p><b>Sampling Stations</b></p> <p>Kupferle Eclipse #88-SS</p>
	<p><b>Bolts &amp; Nuts</b></p> <p>Flanged fittings: 316 Stainless Steel nuts &amp; bolts Megalug/Grip ring fittings: blue nuts &amp; bolts</p>



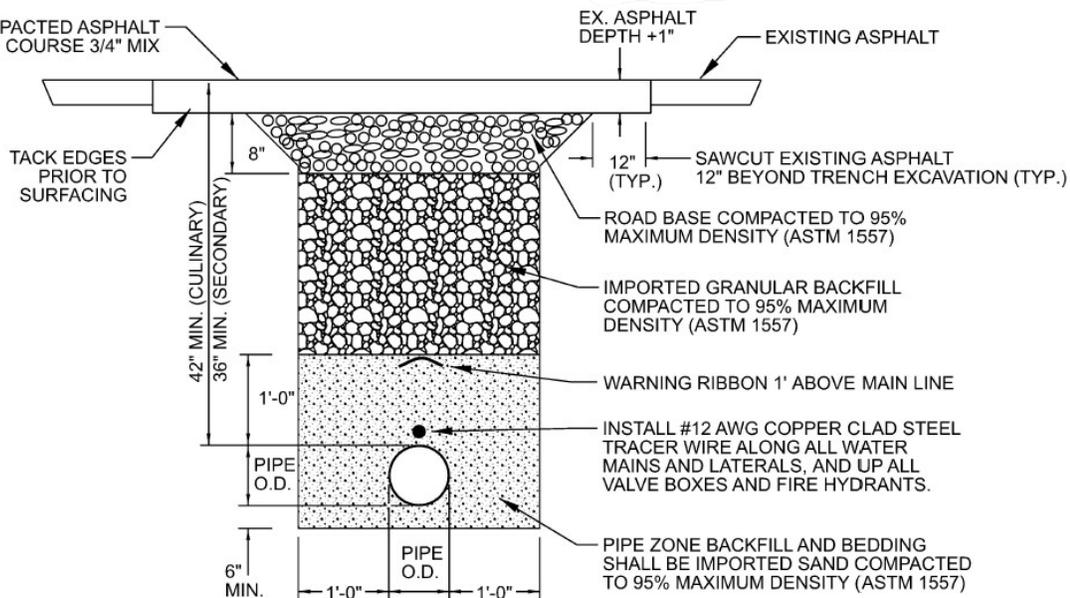
# Installation

## Pipe & Pipe Fittings

1. The contractor shall have on the job site with each pipe laying crew, all the proper tools to install the pipe.
2. All pipe and fittings shall be thoroughly cleaned before being laid and shall be kept clean until installed.
3. All materials that come in contact with drinking water shall meet ANSI/NSF Standard 61, Drinking Water System Components-Health Effects.
4. Pre-used materials must be approved by North Salt Lake personnel and have only been previously used for drinking water. Used materials should meet all standards, be cleaned and restored to their original condition.
5. Pipe should be laid in the dry trench conditions. At no time should water in the trench be allowed to flow into the pipe. At any time that work is not in progress, or the trench is unattended, the end of the pipe shall be suitably closed to prevent the entry of animals, earth, water, etc. using a water tight expandable plug. The expandable plug will always be kept at a close proximity to the end of the pipe in case of an emergency.
6. Lay pipe and fittings in accordance with the requirements of AWWA C600, except when noted otherwise herein.
7. North Salt Lake City has a minimum depth requirement of 42 inches to top of pipe for culinary and 36 inches for irrigation water lines. Once the excavation has been completed to the proper depth the pipe bed should be prepared as follows.
  - Pipe that is to be laid on undisturbed sub grade should be manually excavated around the pipe bells assuring a uniform surface along the pipe barrel.
  - North Salt Lake City requires that pipe be laid on an imported bedding material unless the native soil meets the sand specification requirements and is approved by North Salt Lake.
8. Jointing shall conform to manufacturer's instructions and appropriate AWWA standards. Apply lubricant to the exposed surface of the gasket and plain end of the pipe in accordance with the pipe manufacturer's recommendations. Lubricant is furnished in sterile containers, and every effort should be made to protect against contamination.
9. North Salt Lake City requires the use of Grip Rings with Blue Bolts up to 12" and Megalugs should be used on 14" and above (Megalug or the use of a suitable equivalent with the approval of the North Salt Lake City Water Department prior to construction).
10. North Salt Lake requires the use of 316 Stainless Steel Bolts and Nuts on all flange fittings. Blue bolts and nuts are required on all Megalug fittings.
11. All fitting installations should conform to the manufacturer's instructions.
12. All fittings should be greased on nuts and bolts and then wrapped with polyethylene encasement and secured with 2" wide 20 mill tape. All small rips, tears and other damaged should be repaired with 2" wide 20 mill tape.
13. Install concrete thrust blocks at all fittings and other locations, as directed by North Salt Lake City Water Department. Class 3000 (6 1/2 Bags ) the minimum requirement for all concrete (See page 11 for minimum size of thrust blocks). On site concrete mix for thrust blocks is permitted only with advance approval by City Engineer.
14. All fire lines, main lines, or any other water lines removed from service shall be removed at the main line connection point. Valves shall be removed from tees and replaced with a flanged cap or MJ plug. No length of pipe beyond the tee may remain. If a cap or plug cannot be properly installed, the tee must be removed entirely.
15. Service laterals removed from service shall be completely removed at the main line, including removal of saddle and corp stop. Main water line shall be repaired with an approved full circle repair clamp or other means with approval by City Engineer or Public Works Inspector. No saddles or other connections may be abandoned in place if the main water line will remain in service.

**WATER SYSTEM NOTES**

1. ALL WATER SYSTEM COMPONENTS AND INSTALLATION TECHNIQUES SHALL COMPLY WITH THE UTAH ADMINISTRATIVE CODE RULE R309-550 "FACILITY DESIGN AND OPERATION: TRANSMISSION AND DISTRIBUTION PIPELINES" OF THE UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF DRINKING WATER.
2. ALL WATER MAINS, SERVICES, METER BOXES AND APPURTENANT MATERIALS SHALL BE CONSTRUCTED PER THE REQUIREMENTS OF NORTH SALT LAKE. NOTIFY NORTH SALT LAKE ENGINEERING DEPARTMENT PRIOR TO COMMENCEMENT OF ANY WORK TO ALLOW THEM TO INSPECT ALL PHASES OF THE WORK.
3. ALL WATER MAINS SHALL BE MANUFACTURED OF POLYVINYL CHLORIDE (PVC) AND SHALL MEET THE REQUIREMENTS OF AWWA C-900/905. ALL CULINARY WATER MAINS SHALL BE BLUE IN COLOR. ALL SECONDARY WATER MAINS SHALL BE PURPLE IN COLOR. THE DIMENSION RATIO (DR) OF THE PIPE SHALL BE 18. DEFLECT JOINTS NO MORE THAN THE DEFLECTION RECOMMENDED BY THE PIPE AND JOINT MANUFACTURER. MINIMUM PIPE SIZE SHALL BE 8" (CUL-DE-SACS SERVING FOUR OR FEWER HOME LOTS MAY USE 6" PIPE). A 14 GA. TRACER WIRE RATED FOR DIRECT BURIAL SHALL BE INSTALLED ALONG ALL WATER MAINS AND INDIVIDUAL LATERALS. THE TRACER WIRE SHALL BE CONNECTED AND BROUGHT TO 2' ABOVE THE SURFACE AT EACH VALVE AND METER BOX. WIRE SHALL BE RUN UP OUTSIDE OF VALVE BOX AND TAPPED IN AT A POINT 6" FROM THE TOP OF BOX.
4. ALL VALVES SHALL BE GATE STYLE VALVES MEETING THE REQUIREMENTS OF AWWA C-509 (MUELLER RESILIENT WEDGE GATE VALVES). BUTTERFLY VALVES MEETING THE REQUIREMENTS OF WWA C-504 MAY BE USED ONLY WITH PRIOR APPROVAL FROM CITY ENGINEER. ALL VALVES SHALL BE DESIGNED FOR DIRECT BURY APPLICATIONS, SHALL HAVE A 2" SQUARE OPERATING NUT, AND SHALL BE FURNISHED WITH A TWO-PIECE, CAST IRON, SLIP-TYPE VALVE BOX (D&L FOUNDRY MODEL M-8042), WITH THE LID MARKED "WATER" OR "IRRIGATION" AS REQUIRED. ALL VALVES SHALL BE WRAPPED IN 8-MIL POLYETHYLENE PLASTIC, AND ALL CONNECTING BOLTS SHALL BE COATED WITH FM GREASE.
5. ALL WATER MAINLINE FITTINGS SHALL BE CAST IRON FITTINGS MEETING THE REQUIREMENTS OF AWWA C-110 AND C-111, AND SHALL BE EITHER FLANGED OR MECHANICAL JOINT COUPLED. INSTALL ALL FITTINGS AS RECOMMENDED BY MANUFACTURER. COAT ALL BOLTS WITH FM GREASE, AND WRAP ALL FITTINGS TO BE THRUST-BLOCKED WITH 8-MIL POLYETHYLENE.
6. CONCRETE THRUST BLOCKS AND NSL-APPROVED MECHANICAL RESTRAINT DEVICES SHALL BE USED AT ALL VALVES, FITTINGS, AND CHANGES IN PIPE DIRECTION. THRUST BLOCKS SHALL BE SIZED TO ACCOMMODATE THE ANTICIPATED THRUST, AND TO DISTRIBUTE THE THRUST TO THE SOIL AT A PRESSURE ACCEPTABLE TO THE SOIL PARAMETERS. SEE THE THRUST BLOCK DETAILS ON THIS SHEET.
7. ALL CULINARY WATER MAINS SHALL BE BURIED WITH A MINIMUM COVER OF 42". ALL SECONDARY WATER MAINS SHALL BE BURIED WITH A MINIMUM COVER OF 36".
8. ALL WATER MAINS, SERVICE LATERALS, TAPPING SADDLES, CORPORATION STOPS, AND FIRE HYDRANTS SHALL BE PRESSURE TESTED TO 200 PSI MAINTAINED FOR A MINIMUM OF 2 HOURS. ALL PRESSURE TESTING SHALL BE IN ACCORDANCE WITH NORTH SALT LAKE PROCEDURES. SCHEDULE ALL TESTING A MINIMUM OF 24 HOURS IN ADVANCE WITH NORTH SALT LAKE PERSONNEL SO TESTING CAN BE WITNESSED AND VERIFIED.
9. ALL SERVICE TAPS SHALL BE MADE USING AN ALL BRONZE, DOUBLE-STRAP SERVICE SADDLE (FORD 202BS OR APPROVED EQUAL) AND FORD F1100 CORPORATION STOP. CONNECT TRACER WIRE FROM MAIN LINE TO METER BOX WITH DIRECT BURIAL CONNECTOR (PROVIDE COIL TO EXTEND 2' ABOVE TOP OF BOX) PER NORTH SALT LAKE STANDARDS. SERVICE LATERALS SHALL BE INSTALLED WITHOUT JOINTS EXCEPT AT THE FITTINGS REQUIRED AT THE MAIN LINE AND AT THE METER SETTER OR DOWNSTREAM CONTROL VALVE.
10. ALL WATER SERVICE LATERAL FITTINGS SHALL BE LEAD-FREE BRASS, AND SHALL BE INSTALLED USING TEFLON TAPE OR OTHER LUBRICATING MATERIAL.
11. ALL HDPE TUBING USED SHALL BE BLUE IN COLOR FOR CULINARY WATER, PURPLE IN COLOR FOR SECONDARY WATER, AND SHALL BE COPPER TUBE SIZE (CTS).
12. THE HORIZONTAL DISTANCE BETWEEN WATER LINES AND SANITARY SEWER LINES SHALL BE AT LEAST 10'. WHERE A WATER LINE AND SANITARY SEWER LINE MUST CROSS, THE WATER MAIN SHALL BE AT LEAST 18" ABOVE THE SANITARY SEWER LINE, MEASURED EDGE-TO-EDGE. WATER MAINS AND SANITARY SEWER LINES SHALL NOT BE INSTALLED IN THE SAME TRENCH.



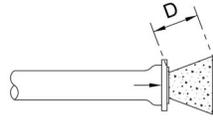
**TYPICAL WATER MAIN TRENCH  
WITHIN CITY RIGHT-OF-WAY**

NTS

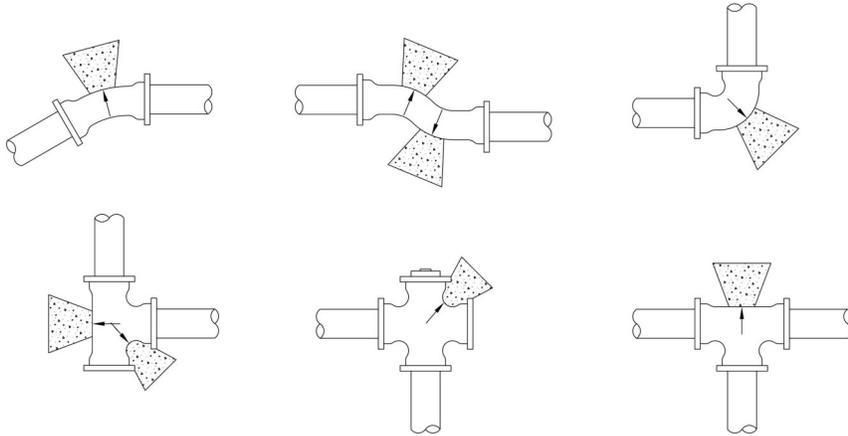


# Installation

## Pipe & Pipe Fittings (Continued)



NOTE: DEPTH OF THRUST BLOCK (D) SHALL BE 3 TIMES PIPE DIAMETER



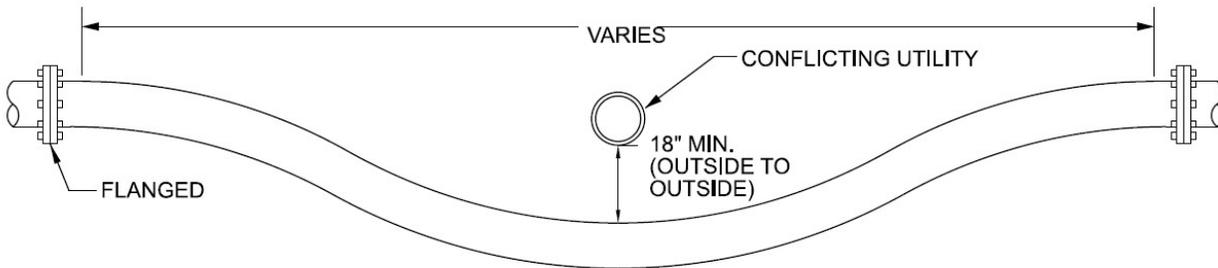
## WATER MAIN LINE THRUST BLOCKS

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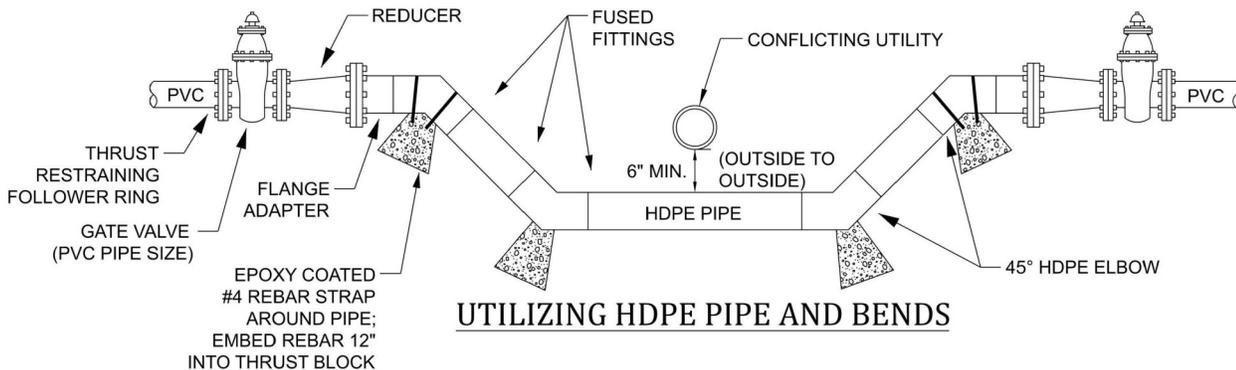
### THRUST BLOCK NOTES:

1. NORTH SALT LAKE REQUIRES BOTH CONCRETE THRUST BLOCKS AND THRUST RESTRAINING FOLLOWER RINGS (NSL-APPROVED).
2. THRUST BLOCKS ARE REQUIRED AT ALL BENDS AND TEES.
3. CONCRETE USED FOR THRUST BLOCKS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI AND SHALL BE CAST AGAINST UNDISTURBED SOILS.
4. CONCRETE SHALL NOT BE PLACED AROUND BOLTS, AND FITTINGS SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE TO KEEP CONCRETE FROM DIRECT CONTACT WITH FITTINGS.
5. THRUST BLOCKS SHALL BE ALLOWED TO CURE FOR 5 DAYS PRIOR TO PRESSURE TESTING THE PIPE.
6. ALL THRUST BLOCKS SHALL BE VISUALLY INSPECTED AND ACCEPTED BY THE NORTH SALT LAKE ENGINEERING DEPARTMENT BEFORE BACKFILLING.
7. BEARING AREAS FOR THRUST BLOCKS SHALL BE AS SHOWN IN THE TABLE, SIZED FOR THE LARGEST PIPE INVOLVED. GENERAL BLOCK SHAPE SHALL BE TRAPEZOIDAL AS SHOWN IN DETAILS BELOW. CONFIGURATIONS NOT SHOWN SHALL REQUIRE SPECIAL DESIGN AND ACCEPTANCE BY CITY PERSONNEL.
8. THE CITY MAY REQUIRE THRUST BLOCK SIZES INCREASED DEPENDING ON THE SOIL BEARING CAPACITY.

MINIMUM THRUST BLOCK BEARING AREA IN SQ. FT.					
SIZE OF PIPE	TEES, VALVES, DEAD ENDS	90° BENDS	45° BENDS	22.5° BENDS	11.25° BENDS
4"	2	3	2	2	2
6"	4	5.5	3	1.5	1
8"	6.5	9.5	5	2.75	1.5
10"	10	15	8	4	2.25
12"	14	20	11	5.5	3
14"	19	26.5	14.5	7.5	4
16"	24	34	18.5	9.5	6
20"	27	52	28.5	14.5	16
24"	53	74	41	21	53
30"	81	114	62	32	16



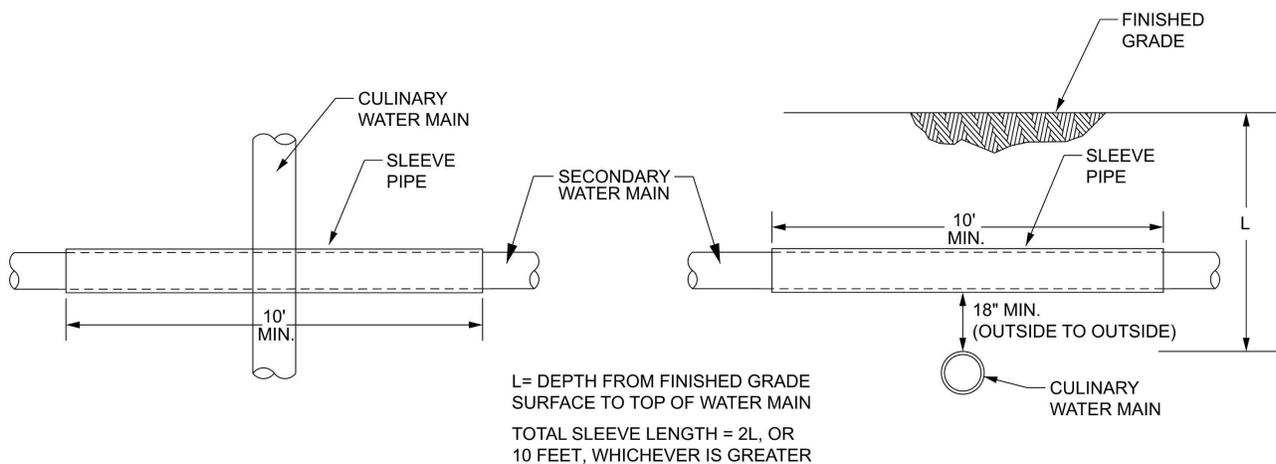
## UTILIZING HDPE PIPE WITHOUT BENDS-PREFERRED



## WATER LOOP UNDER CONFLICTING UTILITY

ALTERNATE MUST HAVE APPROVAL

NTS



PLAN VIEW

PROFILE VIEW

## SECONDARY WATER MAIN CROSSING OVER CULINARY MAIN

ALTERNATE MUST HAVE APPROVAL

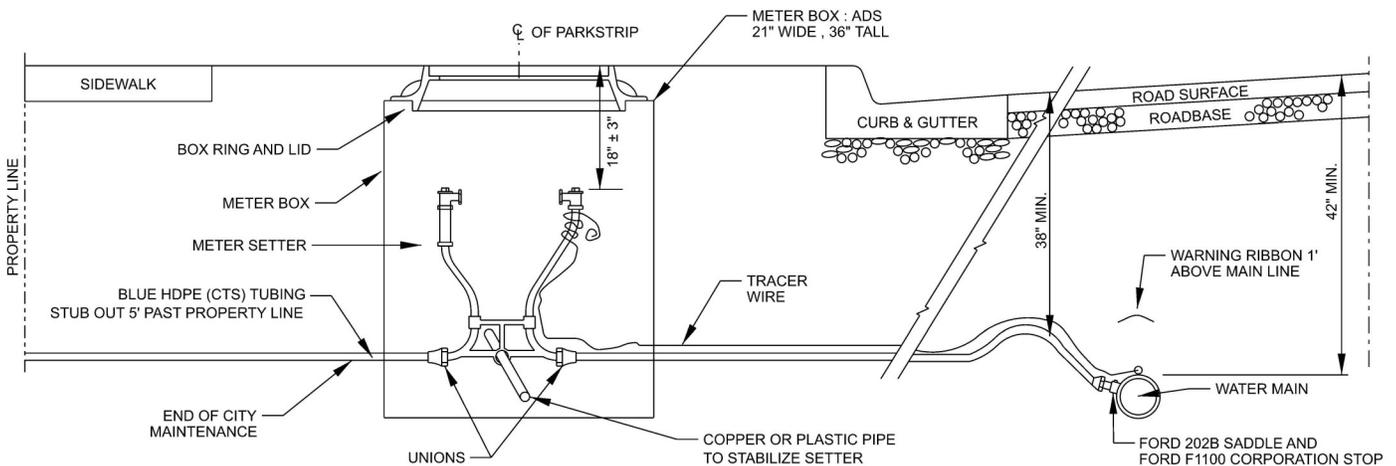
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# Installation

## Water Service Installation

1. All corporation stops should be rotated so that the valve actuator runs parallel with the pipe or in other words the valve actuator is not on the top or bottom but placed on the side (see photo below).
2. Do not install corporation stops in the new water main at the time of pipe installation. They shall be installed later when the service connections are constructed. Service connections shall not be installed until after the mainline has been disinfected with Bac-T test done as well as the pressure test.
3. Corporation stops shall be tightened only sufficiently to be watertight.
4. Install blue HDPE (CTS) tubing with tracer wire from the corporation stop to the water meter, or to the existing service if performing a changeover.
5. Care should be exercised in the placing and laying of HDPE (CTS) tubing to be sure that the pipe does not have any kinks and is not installed near any sharp stones that may cause damage to the HDPE.
6. Blue HDPE (CTS) tubing must also be installed from the water main to the (Point of Use) building or residence
7. All saddles (service connections) must have minimum 5 ft separation from any fitting or bell joint. All exceptions must be approved in advance by NSL Water Department.



METER SIZE	SETTER TYPE	BALL VALVE	METER BOX - 36" DEEP	METER RING AND LID
3/4"	FORD VBHC72-18W-11-33-NL	FORD B41-333-Q-NL	21" DIAM ADS PIPE	D&L SUPPLY L-2242 RING AND L-2240-10 LID MARKED "WATER"
1"	FORD VBHC74-18W-11-44-NL	FORD B41-444-Q-NL	21" DIAM ADS PIPE	D&L SUPPLY L-2242 RING AND L-2240-10 LID MARKED "WATER"
1 1/2"	FORD VBHH76-21BHC-11-66-NL	FORD B41-666-Q-NL	30" DIAM ADS PIPE	D&L SUPPLY A-1181 (LID WITH 2" HOLE, MARKED "WATER")
2"	FORD VBHH77-21BHC-11-77-NL	FORD B41-777-Q-NL	30" DIAM ADS PIPE	D&L SUPPLY A-1181 (LID WITH 2" HOLE, MARKED "WATER")
3" OR MORE	SEE CITY ENGINEER	SEE CITY ENGINEER	SEE CITY ENGINEER	SEE CITY ENGINEER

## CULINARY WATER SERVICE

NTS

### CULINARY WATER SYSTEM NOTES:

1. CULINARY WATER MAIN LINES SHALL BE BLUE PVC C900/905 (CLASS 150 - DR18). DUCTILE IRON PIPE MAY BE USED IF APPROVED BY CITY ENGINEER
2. CULINARY WATER MAIN LINES SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF 42"
3. ALL MECHANICAL JOINT FITTINGS SHALL BE TORQUED AS RECOMMENDED BY MANUFACTURER
4. ALL BEVELED EDGES SHALL BE CUT OFF BEFORE BEING CONNECTED TO A MECHANICAL JOINT FITTING
5. ALL CULINARY METER BOX LIDS SHALL HAVE A 2" DIAMETER HOLE IN THEM
6. ALL POLYETHYLENE LATERALS MUST HAVE A STAINLESS STEEL INSERT STIFFENER AT ALL CONNECTIONS
7. TRACER WIRE TO BE INSTALLED FOR ALL WATER LINES CONNECTED TO THE SYSTEM OR IN CITY R.O.W.
8. ALL SPLICES ON TRACER WIRE TO BE CONNECTED WITH 3M DBR (DIRECT BURIAL) CONNECTOR OR EQUIVALENT
9. CULINARY METER BOXES SHALL NOT BE INSTALLED IN DRIVEWAY APPROACH
10. CULINARY WATER METERS TO BE SUPPLIED AND INSTALLED BY NSL CITY
11. METALLIC WARNING TAPE SHALL BE INSTALLED 1' ABOVE MAIN LINE
12. ALL METER SETTERS SHALL HAVE THE CORRECT SIZE PIPE INSTALLED IN BOTTOM OF EYELET TO PREVENT SETTER FROM TIPPING OR RESTING AGAINST METER BOX

## Meter Box Installation

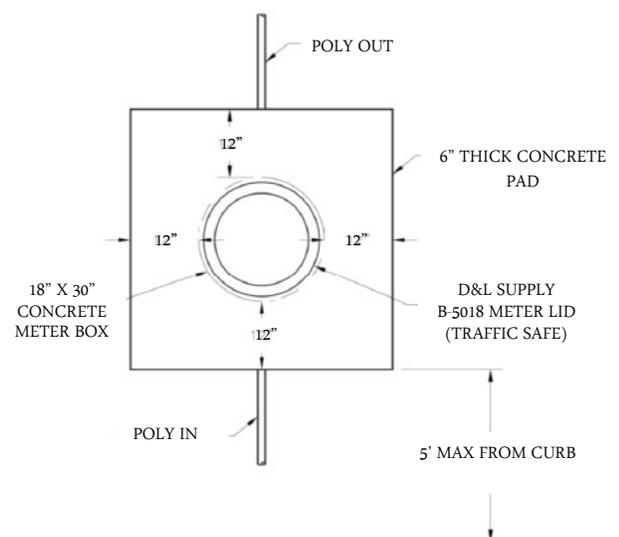
1. All meters are to be installed in the park strip or within 5 feet of the property line (street side where sidewalk is present).
2. Do not install meter boxes under driveway approaches, sidewalks, in parking lots, or under curb and gutter. Box shall be placed in a landscaped area.
3. The box shall be set so that the grade of the frame and the cover matches the grade of the surrounding surface.
4. Concrete meter boxes with larger, traffic safe lids may be deemed necessary by North Salt Lake City personnel in a situation where the meter must be placed in an asphalt, concrete or other high traffic area (See drawing below).
5. All meter relocations must be approved by North Salt Lake City personnel and all costs will be the responsibility of the property owner.
6. Water meter boxes in townhouses or other locations where the meters are 4' or closer to each other, or in a grouping, must have house/ unit number mounted inside each meter box. Numbers (plastic or metal) must be 4" tall and mounted 12" below the top of meter box with screw or rivets.



## Meter Box in Concrete Installation

(When approved for an asphalt, concrete or other high traffic area)

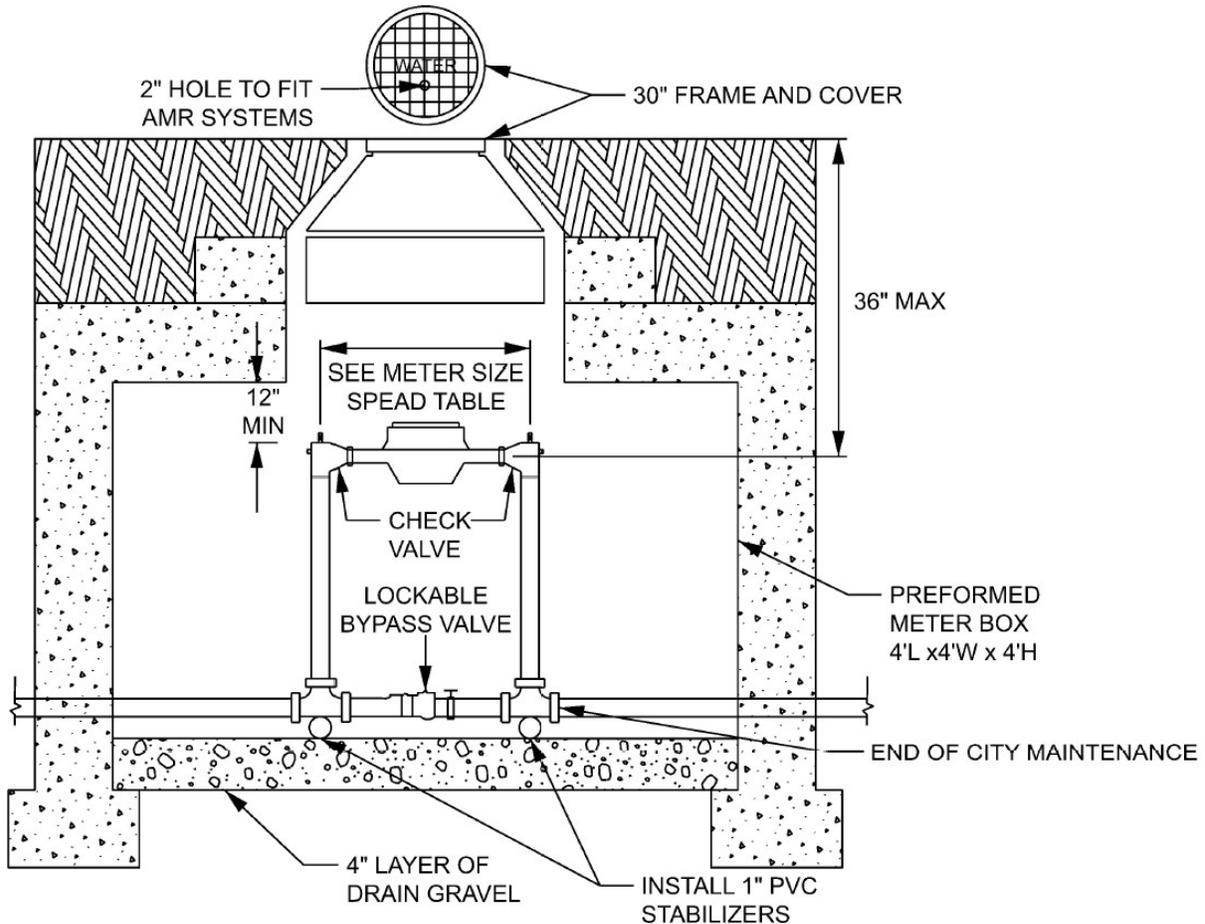
1. Concrete meter boxes with larger lids may be deemed necessary by North Salt Lake City personnel in a situation where the meter must be placed in an asphalt, concrete or other high traffic area.
2. All work must be inspected by North Salt Lake personnel.
3. Concrete shall be 6" thick, 3000 psi.
4. Expansion board all around
5. Control joints from lid to edge of pad
6. Box shall be set so that the grade of the frame and the cover matches the grade of the surrounding surface.





# Installation

## 1 1/2" & 2" Meters



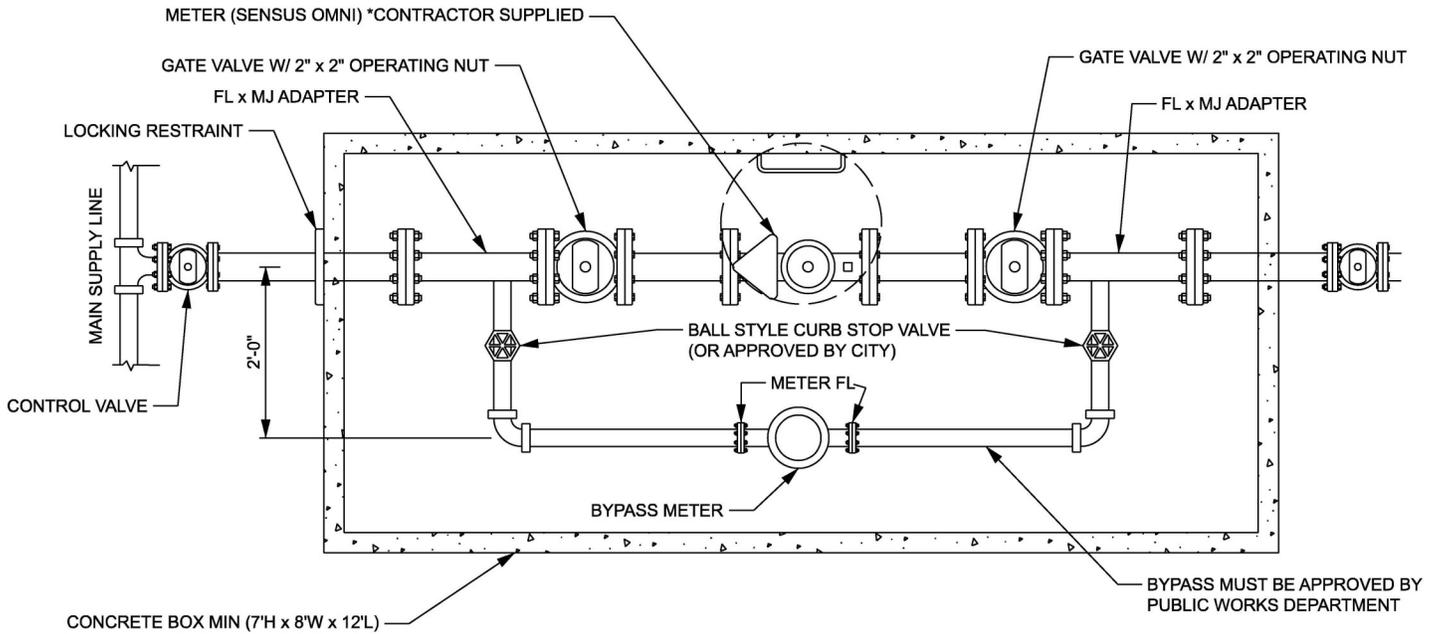
**1 1/2" & 2" METER DETAIL**  
NTS

METER SIZE SPREAD TABLE	
METER SIZE	SPREAD
1 1/2"	13"
2"	17"

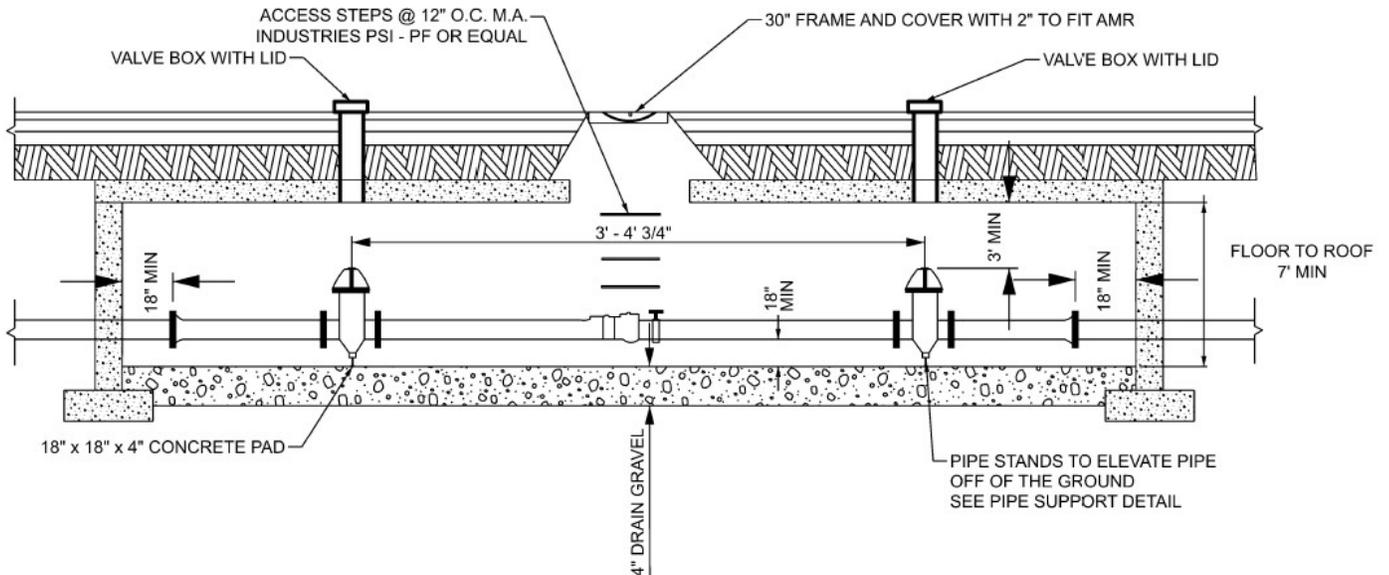
### NOTES:

1. ALL WORK MUST BE INSPECTED BY NORTH SALT LAKE PERSONNEL PRIOR TO BACKFILL
2. CENTER MANHOLE OVER METER
3. TURBINE METERS ON ALL SYSTEMS USED EXCLUSIVELY FOR IRRIGATION OR FIRE PROTECTION WHERE DOMESTIC USE IS TO BE USED, USE A STANDARD METER
4. 6" GRADE RING REQUIRED
5. NORTH SALT LAKE CITY TO SUPPLY WATER METER
6. MINIMUM DEPTH FOR WATER SERVICE TO BE 48 INCHES EXCEPT WHERE DESIGNATED BY THE ENGINEER

## Meters Between 4" to 6"



**4-6" METER PLAN VIEW**  
NTS

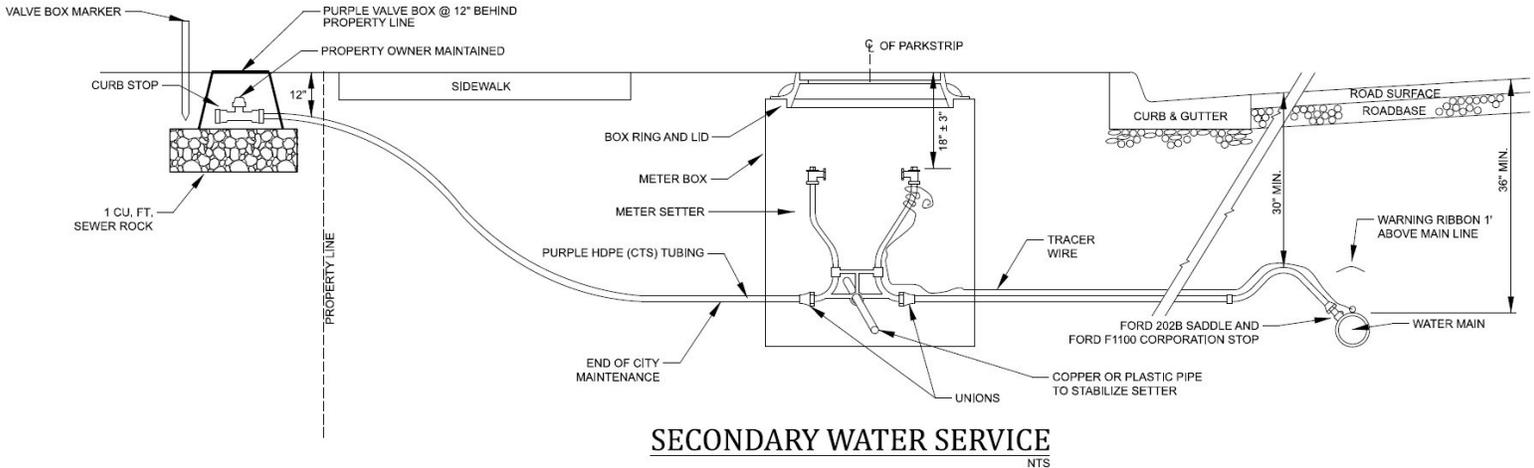


**4-6" METER SIDE VIEW**  
NTS



# Installation

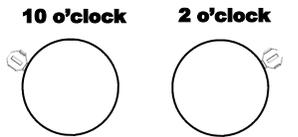
## Irrigation Water Service Installation



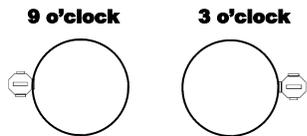
### SECONDARY WATER SYSTEM NOTES:

1. SECONDARY WATER MAIN LINES SHALL BE PURPLE PVC C900/905 (CLASS 150 - DR18). DUCTILE IRON PIPE MAY BE USED IF APPROVED BY CITY ENGINEER AND IF COVERED IN PURPLE POLYETHYLENE WRAP
2. SECONDARY WATER MAIN LINES SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF 36"
3. ALL MECHANICAL JOINT FITTINGS SHALL BE TORQUED AS RECOMMENDED BY MANUFACTURER
4. ALL BEVELED EDGES SHALL BE CUT OFF BEFORE BEING CONNECTED TO A MECHANICAL JOINT FITTING
5. ALL SINGLE SECONDARY METER BOX LIDS SHALL HAVE A 2" DIAMETER HOLE IN THEM. WHEN INSTALLED IN PAIRS, ONE LID SHALL HAVE A 2" DIAMETER HOLE AND THE BOXES SHALL BE CONNECTED BY A 2" CONDUIT, AS SHOWN ON THE DETAIL THIS SHEET
6. ALL POLYETHYLENE LATERALS MUST HAVE A STAINLESS STEEL INSERT STIFFENER AT ALL CONNECTIONS
7. TRACER WIRE TO BE INSTALLED FOR ALL WATER LINES CONNECTED TO THE SYSTEM OR IN CITY R.O.W.
8. ALL SPLICES ON TRACER WIRE TO BE CONNECTED WITH 3M DBR (DIRECT BURIAL) CONNECTOR OR EQUIVALENT
9. SECONDARY METER BOXES SHALL NOT BE INSTALLED IN DRIVEWAY APPROACH
10. SECONDARY WATER METERS TO BE SUPPLIED AND INSTALLED BY NSL CITY
11. METALLIC WARNING TAPE SHALL BE INSTALLED 1' ABOVE MAIN LINE
12. ALL METER SETTERS SHALL HAVE THE CORRECT SIZE PIPE INSTALLED IN BOTTOM OF EYELET TO PREVENT SETTER FROM TIPPING OR RESTING AGAINST METER BOX.

### 3/4" & 1" Corporation Stop

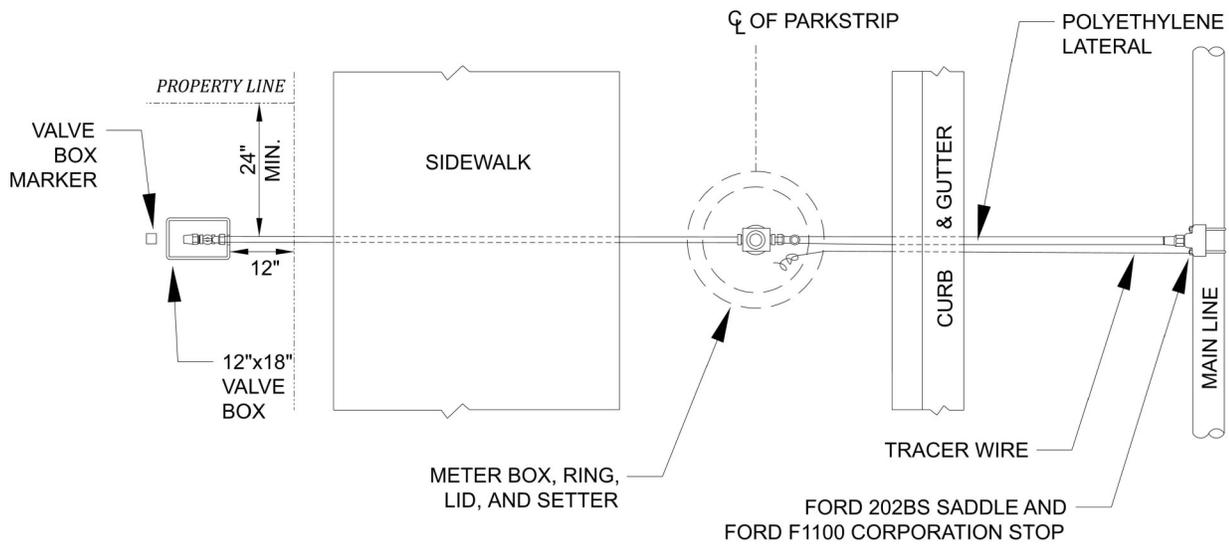


### 1 1/2" & 2" Corporation Stop



### Plan View of Corporation Stop Installation





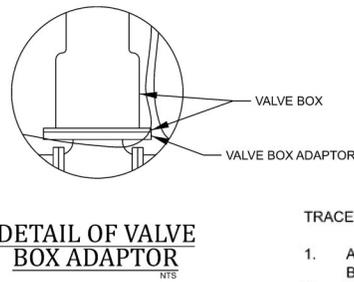
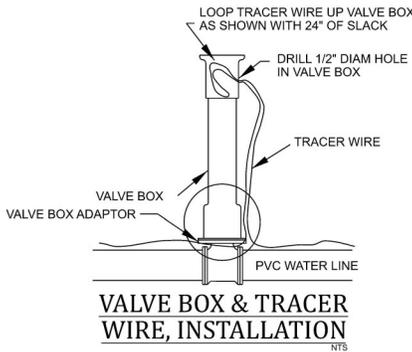
PLAN - SINGLE SERVICE



# Installation

## Valve Installation

1. All valves shall be set perpendicular to the road surface.
2. All nuts and bolts shall be given a heavy coat of FM food quality grease.
3. Valves should be wrapped with polyethylene with only the operating nut exposed. The valve should be taped using 2" wide 20 mill tape in a way to not infringe on the operation of the valve.
4. North Salt Lake City may request that a concrete block be placed underneath each valve and wedged tightly to support the weight and prevent slippage.
5. Valve boxes of the sliding adjustable type must be centered over the nut or the valve so that a valve key can access the nut and open and close it smoothly. The contractor is also responsible to make sure all valve boxes are clear of dirt and debris, open and ready for operation.
6. All valves are required to have a concrete collar with minimum 24" diameter collar with 6" deep concrete with #4 bar in hoop (See drawing below).



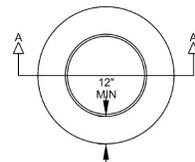
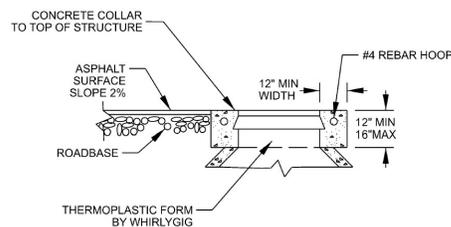
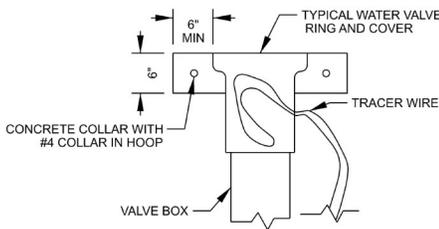
### NOTES

1. VALVE BOX ADAPTOR SHOULD BE PLACED BETWEEN THE VALVE BOX AND VALVE
2. VALVE BOX ADAPTOR II OR EQUAL.

### TRACER WIRE NOTES:

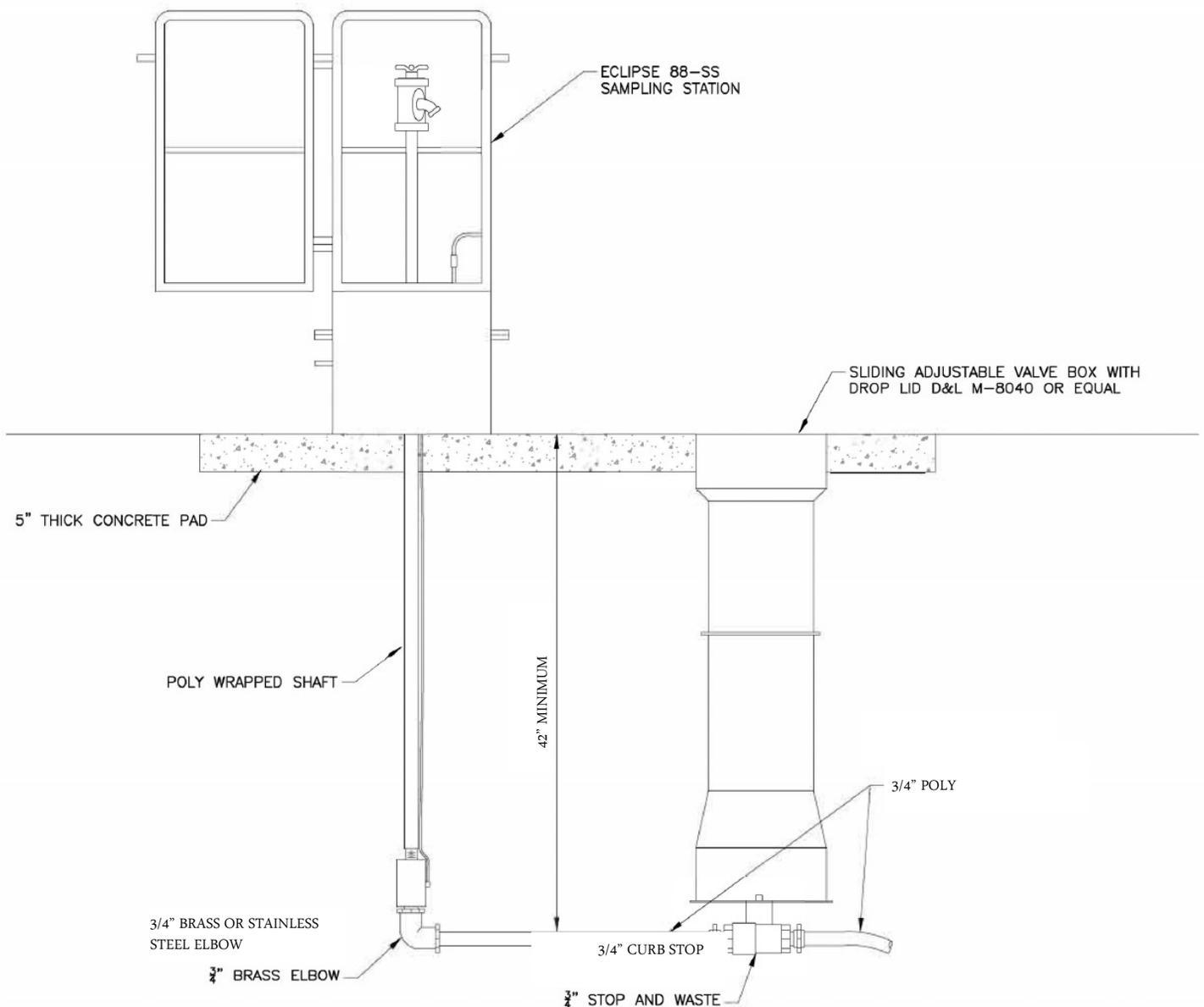
1. ALL TRACER WIRE SHALL HAVE HDPE INSULATION INTENDED FOR DIRECT BURY, COLOR-CODED PER APWA STANDARDS FOR SPECIFIC UTILITY BEING MARKED
2. OPEN TRENCH TRACER WIRE SHALL BE #12 AWG COPPER CLAD STEEL, HIGH STRENGTH WITH MINIMUM BREAK LOAD OF 450 LB WITH MINIMUM 30 MIL HDPE INSULATION THICKNESS
3. DIRECTIONAL DRILLING / BORING TRACER WIRE SHALL BE #12 AWG COPPER CLAD STEEL, EXTRA HIGH STRENGTH WITH MINIMUM 1,150 LB BREAK LOAD WITH MINIMUM 30 MIL HDPE INSULATION THICKNESS
4. PIPE BURSTING / SLIP LINING TRACER WIRE SHALL BE 7x7 STRANDED COPPER CLAD STEEL, EXTREME STRENGTH WITH 4,700 LB BREAK LOAD, WITH A MINIMUM 50 MIL HDPE INSULATION THICKNESS
5. ALL MAINLINE TRACER WIRES MUST BE INTERCONNECTED IN INTERSECTIONS, AT MAINLINE TEES, AND MAINLINE CROSSES.
  - A. AT TEES, THE THREE WIRES SHALL BE JOINED USING A SINGLE 3-WAY LOCKABLE CONNECTOR
  - B. AT CROSSES, THE FOUR WIRES SHALL BE JOINED USING A 4-WAY CONNECTOR. USE OF TWO 3-WAY CONNECTORS WITH A SHORT JUMPER WIRE BETWEEN THEM IS AN ACCEPTABLE ALTERNATIVE
6. DIRECT BURY WIRE CONNECTORS SHALL INCLUDE 3-WAY LOCKABLE CONNECTORS AND MAINLINE-TO-LATERAL LUG CONNECTORS SPECIFICALLY MANUFACTURED FOR USE IN UNDERGROUND TRACER WIRE INSTALLATION. CONNECTORS SHALL BE DIELECTRIC SILICON FILLED TO SEAL OUT MOISTURE AND CORROSION, AND SHALL BE INSTALLED IN A MANNER SO AS TO PREVENT ANY UNINSULATED WIRE EXPOSURE
7. NON-LOCKING FRICTION FIT, TWIST ON, OR TAPED CONNECTORS ARE PROHIBITED

## Collar Installation



## Sampling Station Installation

1. 3/4" tap shall be installed using the same methods as a typical water service.
2. Blue HDPE (CTS) tubing must be installed from the water main to the sampling station.
3. All connections shall be lead free brass or stainless steel.
4. All work must be inspected by North Salt Lake City personnel prior to being backfilled.
5. Bottom of sampling station enclosure needs to be wrapped in 20 mill tape and set in concrete pad for support using the same criteria as a fire hydrant concrete pad.



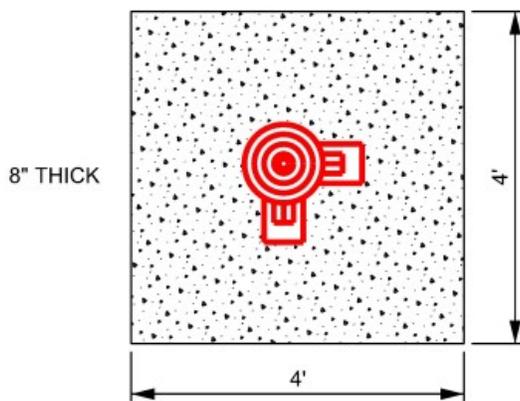


# Installation

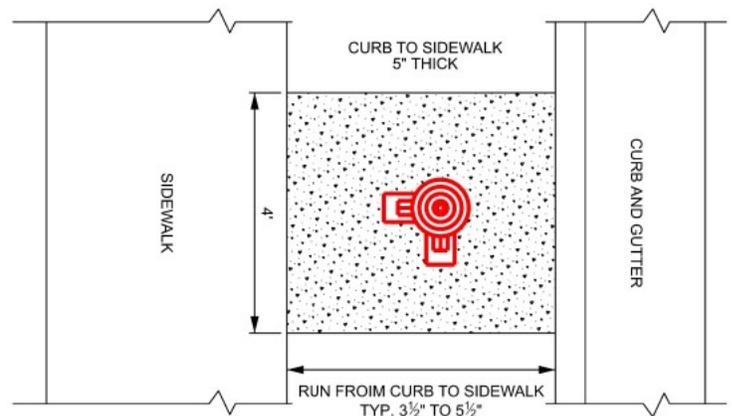
## Hydrant Installation

1. Hydrants shall be set at the location shown and bedded on a firm foundation. Each hydrant shall be set in true vertical alignment. All nuts and bolts below the finished grade shall be given a heavy coat of FM food quality grease. Every thing below the finished grade shall be wrapped completely with polyethylene and tapping appropriately. Polyethylene shall be cut at the bottom to allow drainage from the drain ports.
2. Hydrants shall be set a minimum of 1 foot from the back of the curb.
3. Concrete thrust blocks shall be placed between the rear of the hydrant inlet and undisturbed soil at the end of the trench. Special care shall be taken so that concrete does not plug the drain port. 6 1/2 Bag Class 3000 is the minimum requirement for concrete.
4. When there is a bell between an auxiliary valve and a hydrant there must be a locking gasket and blocking installed. The bell shall be located near the auxiliary valve. Anytime the distance between the auxiliary valve and hydrant is under 17' a solid length of pipe must be installed.
5. During backfill pea gravel should be placed around the rear of the hydrant to a point 12 inches above the drain port.
6. No hydrant shall be backfilled until directed by a North Salt Lake City inspector.
7. All hydrant bonnets must be painted by the contractor to coincide with the size of the water main serving the hydrant, specifically the larger main in the street not the 6" auxiliary line between the main and the hydrant (See color code on page 22). Must be painted with Sherwin Williams B-54Z Industrial Enamel or equal.
8. Concrete pads must be installed around the completed hydrant, in an open area they are to be 4' X 4' and in a park strip area it should be 4' wide and run from curb to sidewalk (See drawing below). The concrete should be 6 1/2 Bag Class 3000, concrete will be 5" thick on a curb to sidewalk application and 8" thick in a open area installation. If the bolts on the hydrant are touching or are in the concrete a hydrant riser must be installed. Curb to sidewalk installation will have four rebar #4 dowels connected to the curb and/or sidewalk.
9. Concrete finish grade shall be to bury line depth.

## Hydrant Concrete Pads



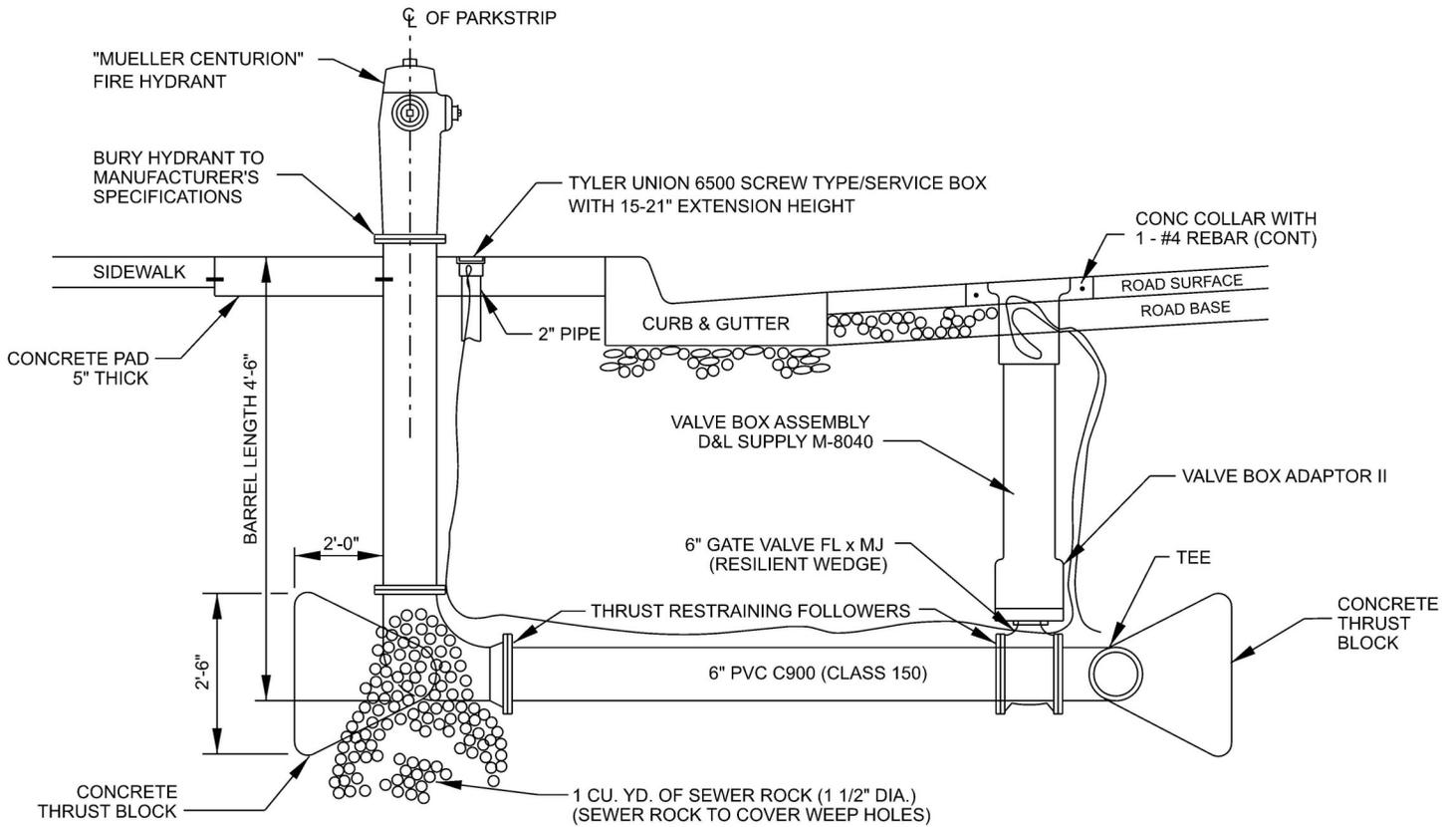
OPEN AREA DETAIL



CURB TO SIDEWALK DETAIL

## Hydrant Section

NOTE: All fire hydrant valves shall be FL x MJ, located at the tee on the main line. (connected to flanged tee).



## FIRE HYDRANT CONNECTION

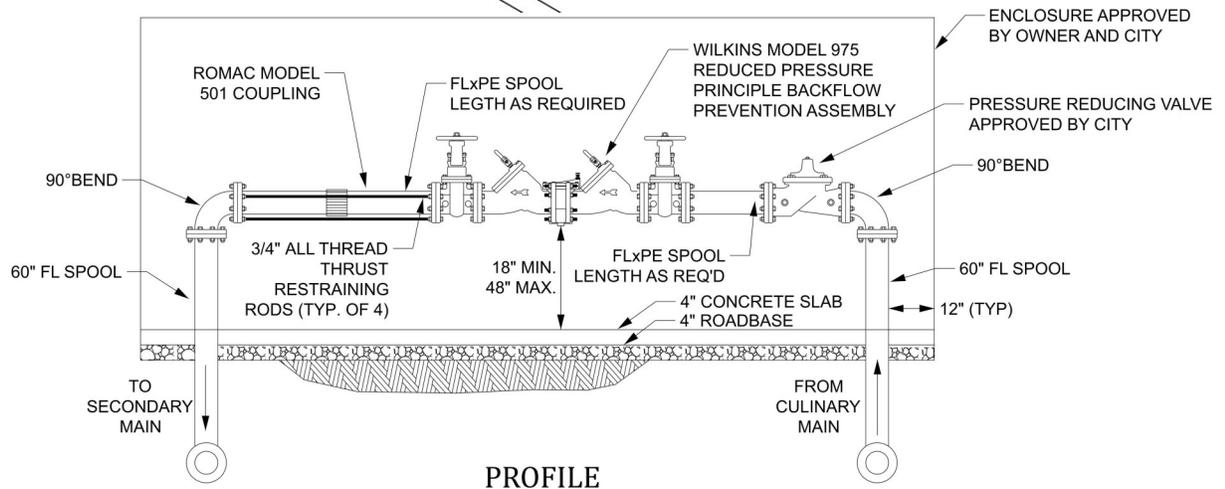
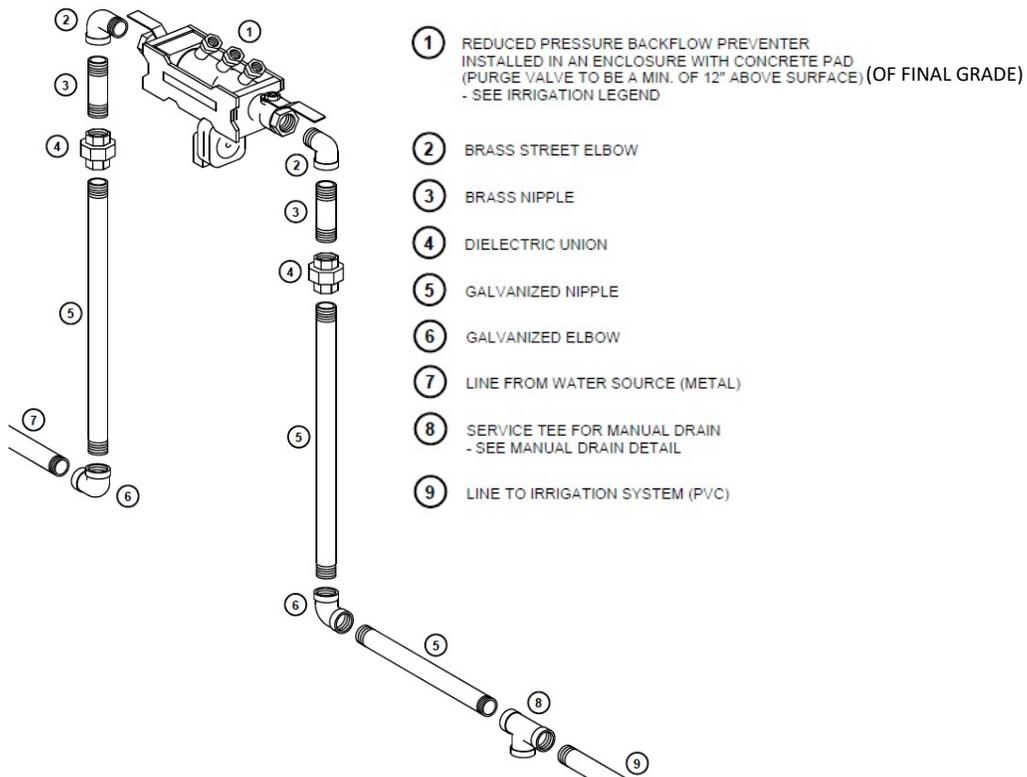
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# Installation

## Backflow Prevention Requirements

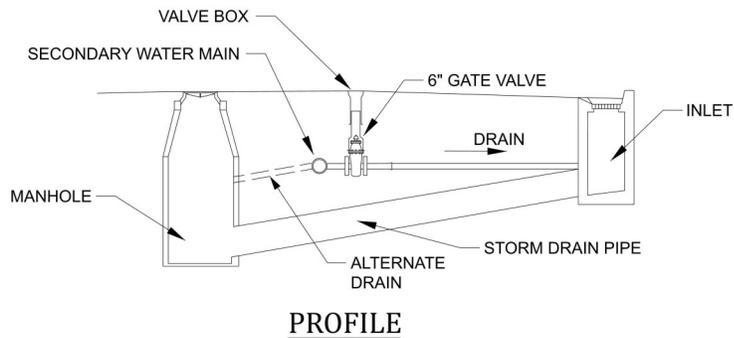
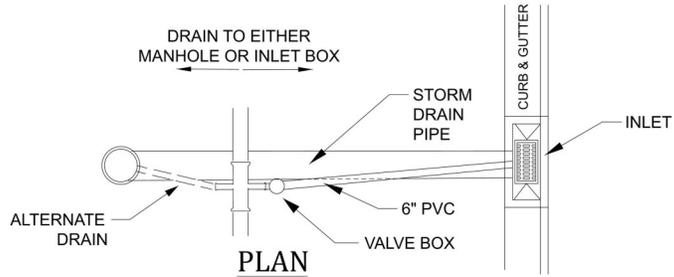
- Whenever North Salt Lake Public Works Department deems a service connection's water usage contributes a sufficient hazard to the water supply, an approved backflow prevention assembly shall be installed on the service line of the identified consumer's water system, at or near the property line, or immediately inside the building being served; but, in all cases, before the first branch line leading off the service line.
- Backflow device must be tested within ten days of being placed in service.
- Device must be tested annually by a Certified Backflow Tester with results sent to "Backflow" through standard mail, email or fax referencing "Backflow" in the subject line.
- All assemblies shall be installed as required by International Plumbing Code, Utah State amendments and City Code
- Must be minimum of 12" above final grade



## Secondary Water Drain

**SECONDARY DRAIN NOTES:**

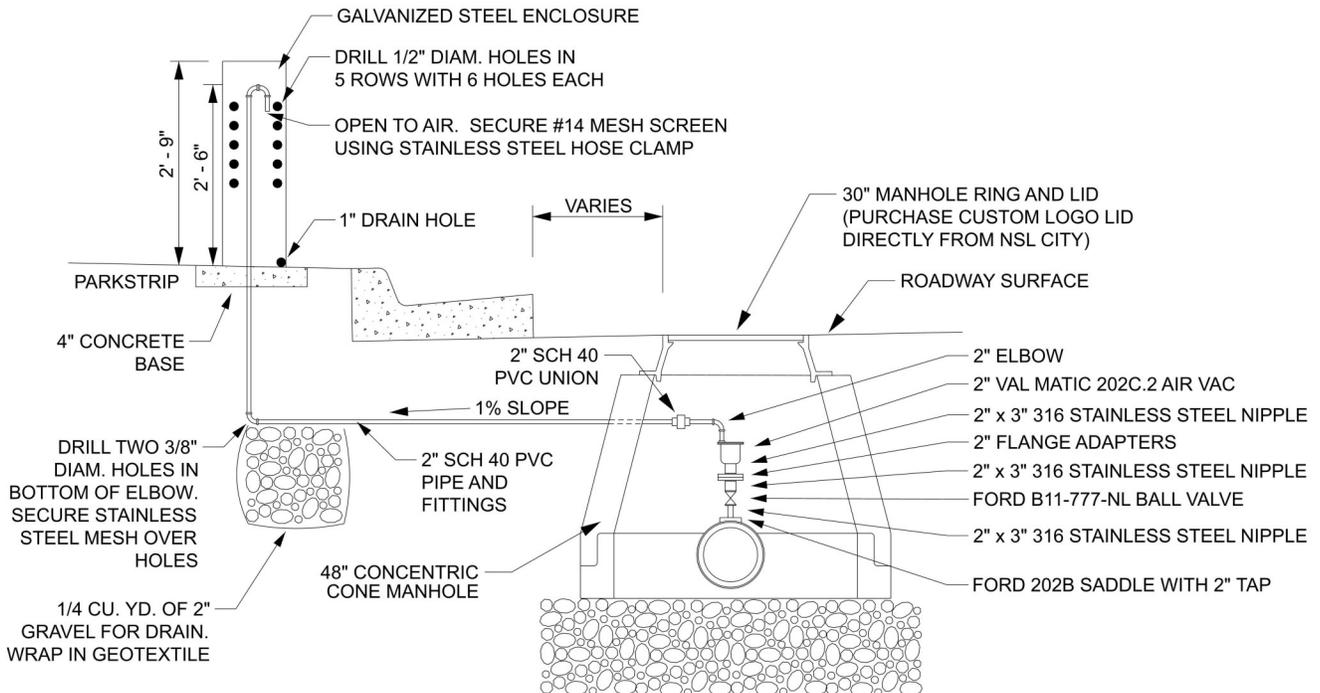
1. DRAIN POINTS ON THE SECONDARY WATER MAIN SHALL BE INSTALLED AT LOW POINTS AND SHALL BE PIPED TO EITHER THE STORM WATER COLLECTION SYSTEM OR SEWER MANHOLE (WHERE SPECIFICALLY APPROVED BY SOUTH DAVIS SEWER DISTRICT).
2. DRAIN VALVE BOX LIDS SHALL BE MARKED "DRAIN"



## SECONDARY WATER MAIN DRAIN

NTS

## Air Vac Requirements

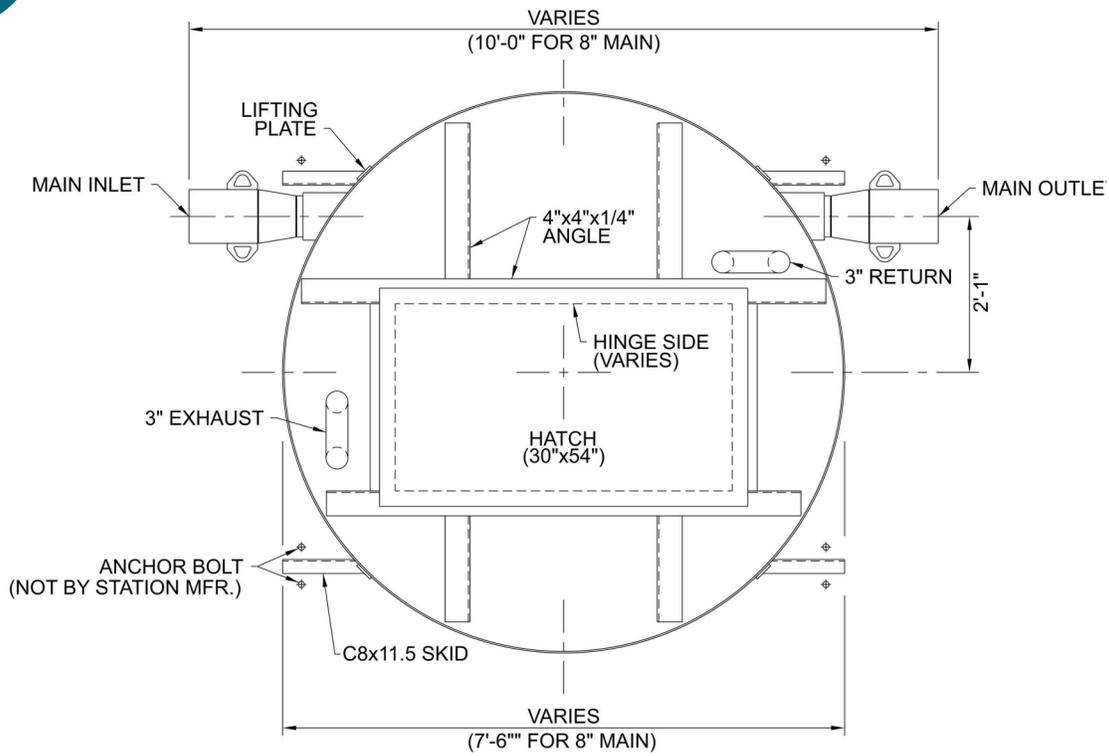


## AIR VAC

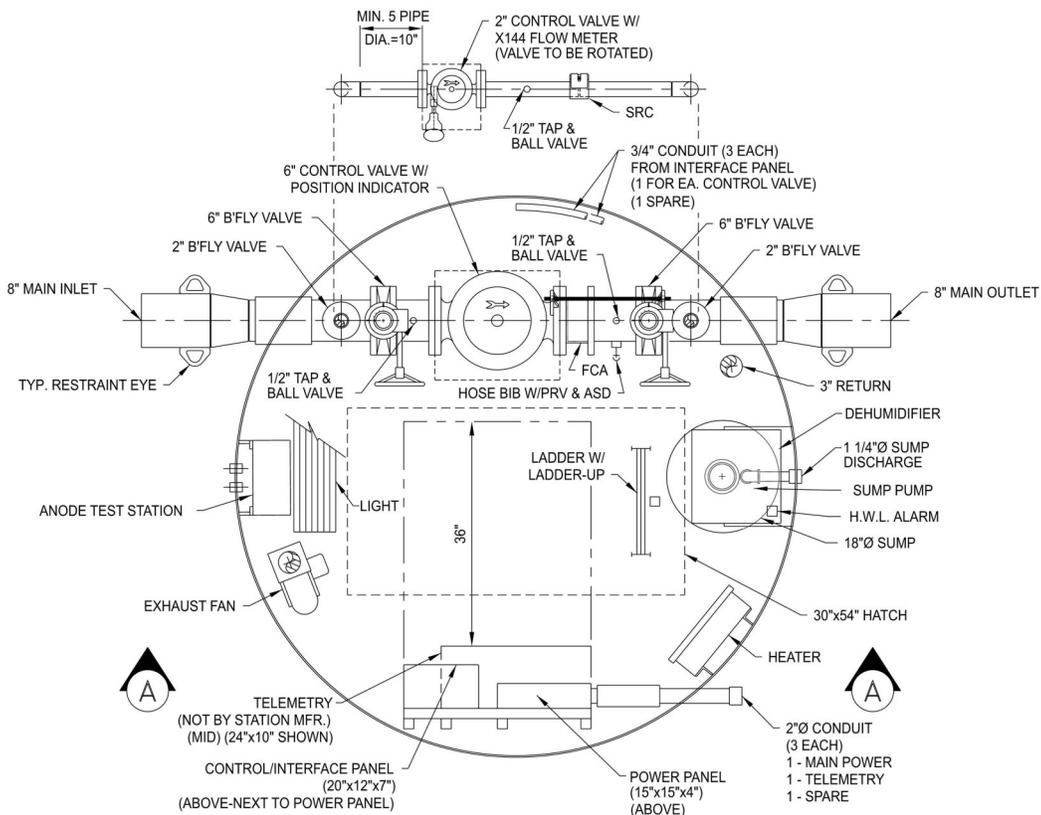
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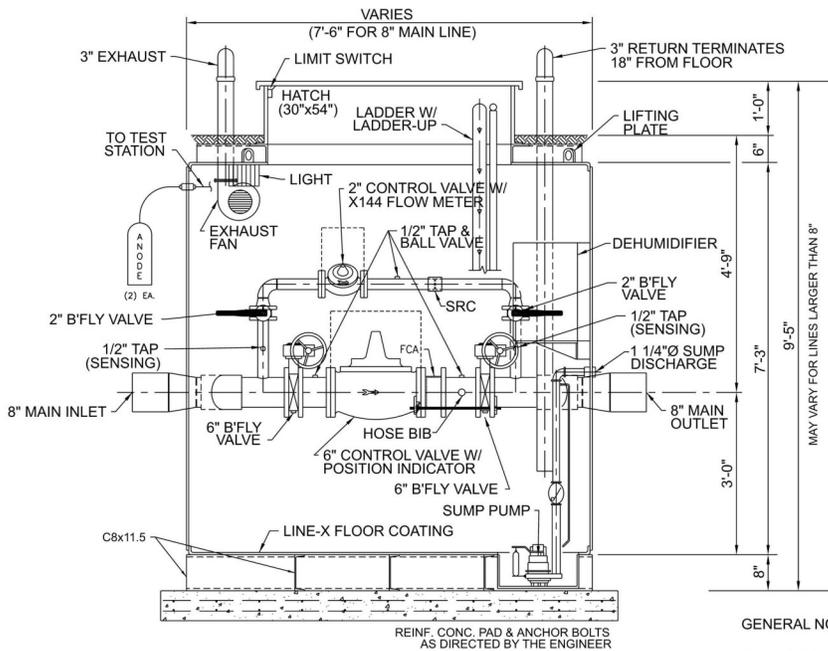
# PRV Station Requirements



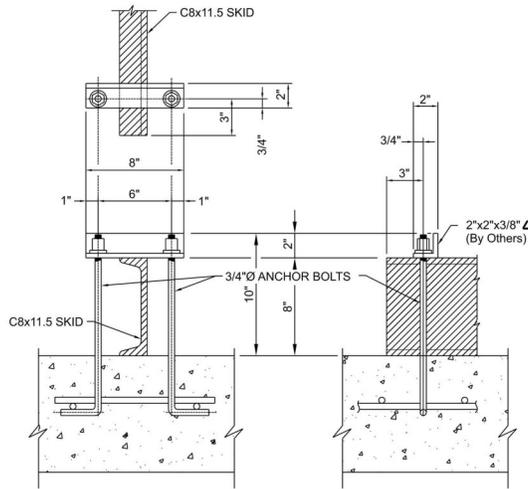
**EXTERIOR PLAN**



**INTERIOR PLAN**



**SECTION A-A**  
INTERIOR PIPING SIZES ARE PROVIDED FOR 8" MAIN LINE



**TYPICAL ANCHOR DETAIL**

NOTE: ANCHOR CLIPS, ANCHOR BOLTS & NUTS BY INSTALLER

**GENERAL NOTES:**

1. THE ACTUAL SIZE OF THE CONTROL VALVES, PIPES, AND BUTTERFLY VALVES WILL VARY DEPENDING ON FLOW REQUIREMENTS OF THE STATION.
2. THE MAIN PRV WILL BE 2" SMALLER THAN THE WATERLINE, THE DRAWING IS BASED ON AN 8" MAIN LINE, BUT ALL PRV'S SHALL BE DESIGNED AND APPROVED BASED ON ACTUAL LINE SIZES.
3. THE BYPASS LINE SHALL BE 2" UNLESS THE MAIN LINE IS 14" DIAMETER OR MORE, IN WHICH CASE THE BYPASS LINE AND ITS CORRESPONDING FITTINGS, VALVES, ETC. SHALL BE UP-SIZED TO 4" DIAMETER.
4. FITTINGS, VALVES, SPOOLS, REDUCERS, ETC. ARE REPEATED ON THE DOWNSTREAM SIDE OF THE PRESSURE REDUCING VALVES.
5. ALL FLANGED CONNECTIONS SHALL BE MADE USING 316 STAINLESS STEEL BOLTS.
6. ALL PIPING AND EQUIPMENT SHALL BE ADEQUATELY SUPPORTED AND BRACED.
7. CAPSULE AND STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36.
8. SCHEDULE 40 STEEL PIPE.
9. MANUFACTURER REQUIRES A 3-4 MONTH LEAD TIME PRIOR TO DELIVERY OF PRV.
10. PLATE AND STRUCTURAL STEEL: ASTM A3-36.
11. ALL PILOTING SHALL BE STAINLESS STEEL COMPRESSION FITTINGS, NO FLARED FITTINGS.
12. ALL VENT AND INTAKE PIPES SHALL REQUIRE ENCLOSURE AS PER DETAIL ON SHEET 15 (SHOWN FOR AIR VAC).
13. ALL PRV'S SHALL BE EPOXY COATED INSIDE AND OUT, INCLUDING ALL INTERNAL PARTS.
14. TWO ANODES WITH TEST METER ARE REQUIRED.
15. THE PRV STATION SHALL HAVE ALL TUBING AND EQUIPMENT NECESSARY TO ACCEPT INSTALLATION OF TELEMETRY WIRING AND PLC, INCLUDING PRESSURE TRANSMITTERS AND CLA-VAL FLOW MEASURING SYSTEM X133. ALL TELEMETRY SHALL BE DONE BY OTHERS.
16. HATCH SHALL BE INSTALLED IN PARK STRIP, WITH HINGE TOWARDS CURB (OPENING TOWARDS THE SIDEWALK). IN THE EVENT OF A REPLACEMENT PRV WHERE IT IS NOT FEASIBLE TO INSTALL PRV STATION BENEATH CURB AND PARK STRIP AREA, THE PRV STATION SHALL BE ORDERED FROM MANUFACTURER WITH A HINGED, WATER-TIGHT, TRAFFIC RATED ROUND HATCH (ONLY IF APPROVED BY CITY ENGINEER IN ADVANCE).

**CONTRACTOR NOTES:**

1. CONTRACTOR SHALL PROVIDE FULL METER ENCLOSURE (STRONGBOX NEMA TYPE 3R MPE-SERIES STAINLESS STEEL) FOR METER BASE. CONTRACTOR SHALL RUN POWER TO METER BASE. PRV STATION SHALL BE A FULLY FUNCTIONING STATION.
2. INSTALL PRV STATION SLOPING TO THE SUMP (LOCATION MAY VARY FROM PLAN VIEW AS PER SITE CONDITIONS). STATION MUST BE ORDERED WITH CORRECT SUMP LOCATION.
3. SUMP PUMP AND DEHUMIDIFIER MUST BE POWERED UP AND TURNED ON IMMEDIATELY AFTER THE STATION IS SET IN PLACE.
4. DO NOT SHIM STATION. IT IS INTENDED THAT THE MAIN FLOOR MEMBERS BE IN CONTINUOUS CONTACT WITH THE CONCRETE PAD. MUST HAVE MINIMUM 2" GRADE.
5. WATERLINE SHALL BE INSTALLED TO PREVENT THE NEED FOR AN AIR VAC WHEREVER FEASIBLE. THIS SHALL REQUIRE THE WATERLINE TO BE GRADUALLY DEEPENED ON THE DOWNHILL SIDE OF THE PRV STATION FOR WHATEVER DISTANCE IS NECESSARY TO REACH THE REQUIRED DEPTH OF THE INFLOW/OUTFLOW LINES.
6. SUMP DISCHARGE LINE SHALL BE CONNECTED TO NEAREST STORM DRAIN MANHOLE. IN THE EVENT THAT THERE IS NO STORM DRAIN IN THE STREET, CITY ENGINEER SHALL PROVIDE ALTERNATE DISCHARGE PLAN.

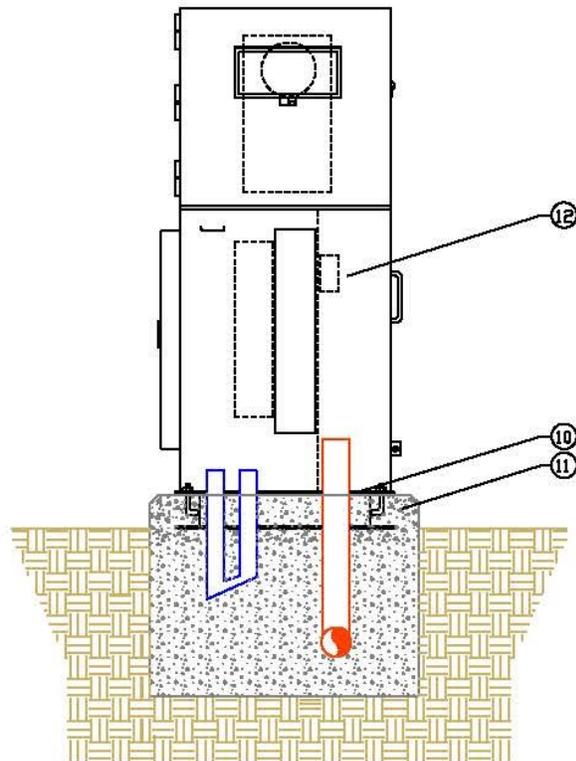
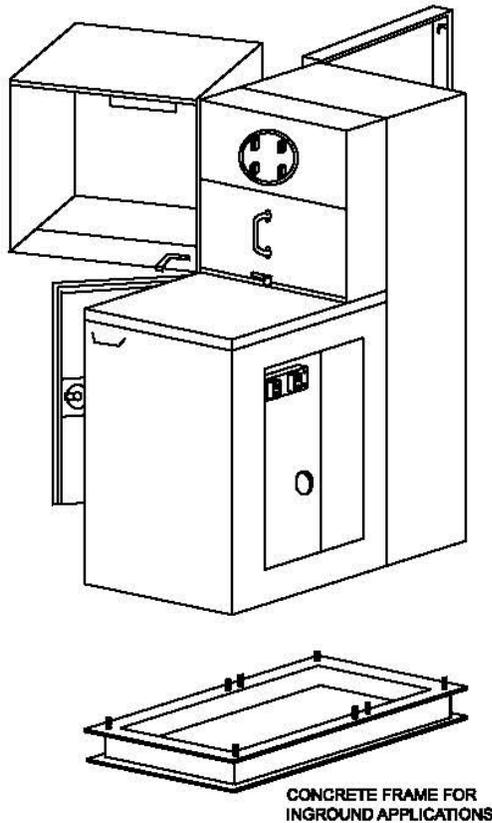
ALL SPECIFIC PIPE SIZES PROVIDED ARE FOR AN 8" MAIN LINE PIPE. FOR OTHER WATERLINE SIZES, DIMENSIONS AND INTERIOR PIPE SIZES WILL VARY.

PRESSURE REDUCING STATION MANUFACTURED BY:  **ENGINEERED FLUID, INC.**  
P.O. DRAWER 723 • CENTRALIA, ILLINOIS 62801 • 618-533-1351



# Service Pedestal for PRV

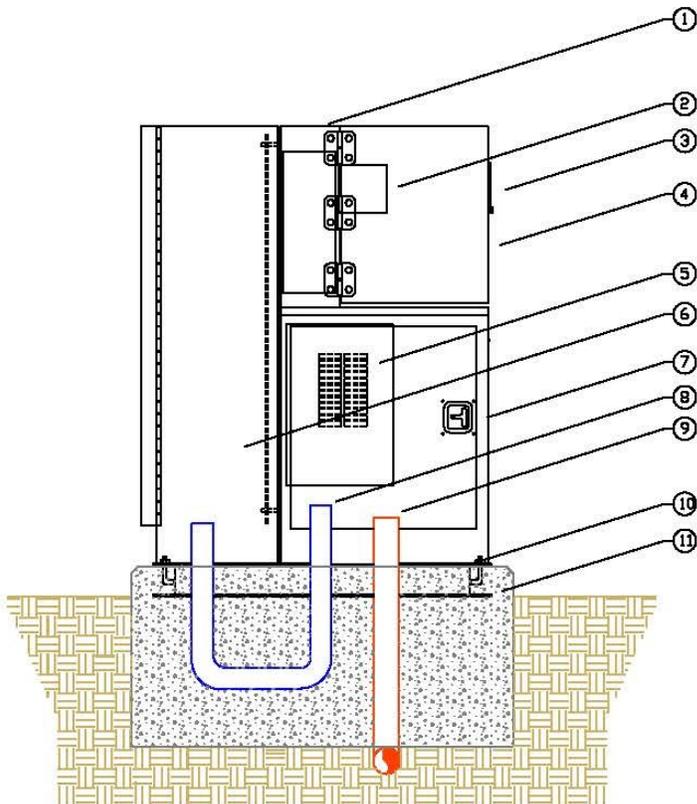
MPE-SERIES WITH ENCLOSURE  
INSTALLED ON CONCRETE PAD



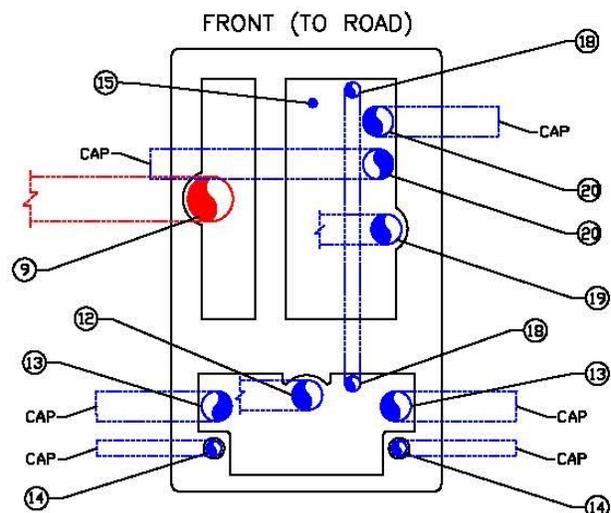
## LEGEND

1. STRONGBOX METER ENCLOSURE STAINLESS STEEL NEMA TYPE 3R MPE-SERIES 0-200AMP SERVICE
2. COMMERCIAL METER SOCKET 100A OR 200A WITH TEST BLOCKS
3. SERVICE METER VIEWING WINDOW
4. SIDE HINGED REMOVABLE FRONT LID
5. LOAD CENTER WITH MAIN BREAKER
6. STRONGBOX CONTROL ENCLOSURE FULL LENGTH FRONT DOOR, PADLOCKABLE, PART NO. SB-1852SS 18" x 52" x 12".
7. LOAD CENTER COMPARTMENT, GASKETED DOOR WITH T-HANDLE, PADLOCKABLE.
8. LOAD CONDUIT FROM LOAD CENTER SECTION INTO CUSTOMER ENCLOSURE SB-1852SS.
9. SERVICE LINE CONDUIT FROM UTILITY. CONDUIT SHALL BE 3" IN DIAMETER AND INSTALLED AS PER ROCKY MOUNTAIN POWER SPECIFICATIONS. IF REQ'D TO SUPPLY WIRE BY POWER UTILITY, SIZE WIRE PER NEC STANDARDS FOR AMPERAGE LOAD.
10. STAINLESS ANCHOR BASE INSTALLED DURING CONCRETE POUR AND CONDUIT PLACEMENT
11. POURED CONCRETE BASE - 18" MIN. THICKNESS - EXTEND CONCRETE 3" BEYOND OUTSIDE DIMENSION OF ENCLOSURE WITH 3/4" CHAMFERED EDGE. FINISH TOP OF BASE TO BE 4" ABOVE FINAL GRADE.
12. SCADA CONDUIT 2" FROM PRV VAULT CONNECT TO CONDUIT LABELED SCADA ON VAULT.
13. CONECT TO CONDUIT LABELED SPARE ON VAULT UNUSED 2" CONDUIT FOR FUTURE USE CAP BOTH OPEN ENDS WITH RUBBER PIPE CAP.

MPE-SERIES WITH ENCLOSURE  
INSTALLED ON CONCRETE PAD



CONCRETE FRAME FOR  
INGROUND APPLICATION



ORIENT CONDUIT TO PRV  
VAULT LOCATION AS REQ'D

14. CONDUIT, 1", EXTEND 12" BEYOND EDGE OF PEDESTAL AND CAP WITH A PVC GLUED CAP. ORIENT PARALLEL TO CURB.
15. 5/8" X 96" GROUND ROD AT LEAST 3" ABOVE CONCRETE
16. PVC BELL END BUSHING ON EVERY CONDUIT REQUIRED. ALL CONDUIT SHALL BE 3" ABOVE TOP OF CONCRETE. NO GLUE ON PVC BELL END BUSHINGS.
17. CITY WILL CALL ROCKY MOUNTAIN POWER TO START THE WORK ORDER PROCESS AS THIS METER WILL BE BILLED CITY ACCOUNT.
18. 1" POWER CONDUIT FOR SCADA ENCLOSURE.
19. 2" POWER CONDUIT FOR PRV VAULT. CONNECT TO CONDUIT LABELED "POWER" ON VAULT.
20. SPARE 2" POWER CONDUIT - ORIENT PARALLEL TO CURB.



# Testing Requirements

## Disinfection & Hydrostatic Testing Requirements PVC & Ductile Iron Pipe

The City of North Salt Lake recognizes the American Water Works Association (AWWA) standard C651-92 is widely accepted and recognized within the water industry as the guide to use for main water line disinfection. However, North Salt Lake City has found additional safety measures must be observed to protect the water quality within newly constructed water mains.

For the purpose of main water line disinfection, we recommend using one of the methods described in the AWWA standard C651-92. For ease and safety purposes we recommend using a granular type of hypochlorite. However, any of the disinfection methods given would be adequate.

Once a section of pipe has been completed and is ready to be filled the testing process can begin. At this point the following steps should be taken.

1. North Salt Lake City personnel will slowly fill the section of pipe that is to be tested. Contractors are not to operate valves at any time.
2. Once the line has been filled, North Salt Lake City personnel will take a chlorine residual sample at two different locations. There must be a free chlorine residual greater than 100mg/L to proceed to step 3. If the chlorine residual is less than 100mg/L then steps must be taken to chlorinate the line again before testing can proceed.
3. The line must remain static for a minimum of 24 hours to allow the disinfection process to take place.
4. After the minimum 24 hour period North Salt Lake City personnel will again take two chlorine residual samples to verify that the free chlorine residual is greater than 100mg/L. If the residual is still greater than 100mg/L then testing can proceed and the main can be flushed. While disposing of chlorinated water care must be taken not to pollute the environment in any way and in compliance with UPDES regulations.
5. After flushing has been completed North Salt Lake City personnel will take a chlorine residual test to make sure the waterline is free from chlorine. If chlorine is present more flushing will be needed. Once the line is chlorine free testing can proceed.
6. North Salt Lake City personnel will take the first bacteriological samples. One sample is required for every 800 feet of being put into service. Sample results take a minimum of 24 hours to receive and sometimes longer based on when the sample is received by the lab. If the sample results are negative you may proceed to step 8, if the sample results are positive then additional flushing will be required along with repeat samples, all repeat samples will be at the expense of the contractor.
7. Hydrostatic testing shall comply with AWWA Standard C600-10. However, North Salt Lake City requires that a pressure of 200 psi be maintained for two hours. Special care must be taken during the pressure test not to contaminate the water in the main. All components of the pressure test must be supplied by the contractor.
8. A second set of bacteriological samples will now be taken from the previous sample points used in step 7. If the sample results return negative the water main will be accepted and put into service. Positive results will result in further testing at the contractors' expense as well as a charges for the water used. Also the contractor will be required to pump in chlorine bleach (T-Chlor, Sodium Hypochlorite) to disinfect the line also at their expense.

## Fire Flow Testing

Fire flow testing is the determination of actual flow conditions within a water system. North Salt Lake City does not perform the actual fire flow test but requires North Salt Lake City and South Davis Metro Fire personnel be present during the testing and requires that all results be submitted to North Salt Lake City.

- Fire flow test should be arranged in advance with North Salt Lake City personnel.
- Hydrant fire flow shall be performed by a certified contractor and paid for by the developer.
- North Salt Lake City personnel will open and close all hydrants slowly and fully to prevent a pressure surge. It is unlawful for anyone besides North Salt Lake City personnel to operate a fire hydrant.
- Special care should be taken to make sure that water from the flow test does not impact traffic or do damage to property. North Salt Lake City reserves the right to stop the testing process at anytime if personnel believes the test is creating a negative environment in any way.
- All results of the fire flow test must be submitted to North Salt Lake City Water Department and South Davis Metro Fire through standard mail, email or fax.



North Salt Lake Water	
Mail	c/o John Lovato 642 North 400 West North Salt Lake, Utah 84054
Email	johnl@nslcity.gov
Fax	801.335.8727



South Davis Metro Fire	
Mail	c/o Cole Fessler 255 South 100 West P.O. Box 1547 Bountiful, Utah 84011
Email	cfessler@sdmetrofire.org
Fax	801.677.0166



# HDPE Testing

## Disinfection tests

1. All water pipe and fittings shall be thoroughly disinfected prior to being placed in service. Disinfection shall follow the applicable provisions of the procedure established for the disinfection of water mains as set forth in AWWA C651. Bacteriological testing on the water main shall be scheduled, completed and sent for water analysis (lab testing.) The results of the lab testing shall be sent to the Owner. No pipeline shall be placed into service until it is properly disinfected and water analysis proves it is disinfected.
2. Temporary blow-offs shall be installed for the purpose of cleaning the water main. Temporary blow-offs shall be removed and plugged after the main is cleared. The main shall be flushed prior to disinfection.
3. The new water main shall be connected to the existing water main at one point only for flushing purposes. The new main **MUST** have a blow off on the end as required. After the new main is thoroughly flushed, the open end shall be sealed and restrained and the main shall be thoroughly disinfected.

## Pressure and Leakage tests

1. Conduct hydrostatic pressure testing of installed polyethylene pipe in accordance with ASTM F2164.
2. For HDPE mains, fill the main slowly ensuring fill rate does not exceed capacity of air release devices. Once air has been expelled from the system, gradually raise the pressure to 160 psi. Add makeup water as necessary to maintain this pressure as necessary for 4 hours. After the 4 hour period, reduce main pressure to the 150 psi test pressure and monitor for 1 hour. Do not increase pressure or add makeup water during this one hour period. The test is passed and considered acceptable if the main pressure does not drop more than 5% (7.5 psi) during the one hour period.
3. If any defects or leaks are revealed, they should be corrected and the pipeline retested after a minimum 24 hour recuperation period between tests. Total testing conducted on a section of pipeline shall not exceed 8 hours within a 24 hour period.

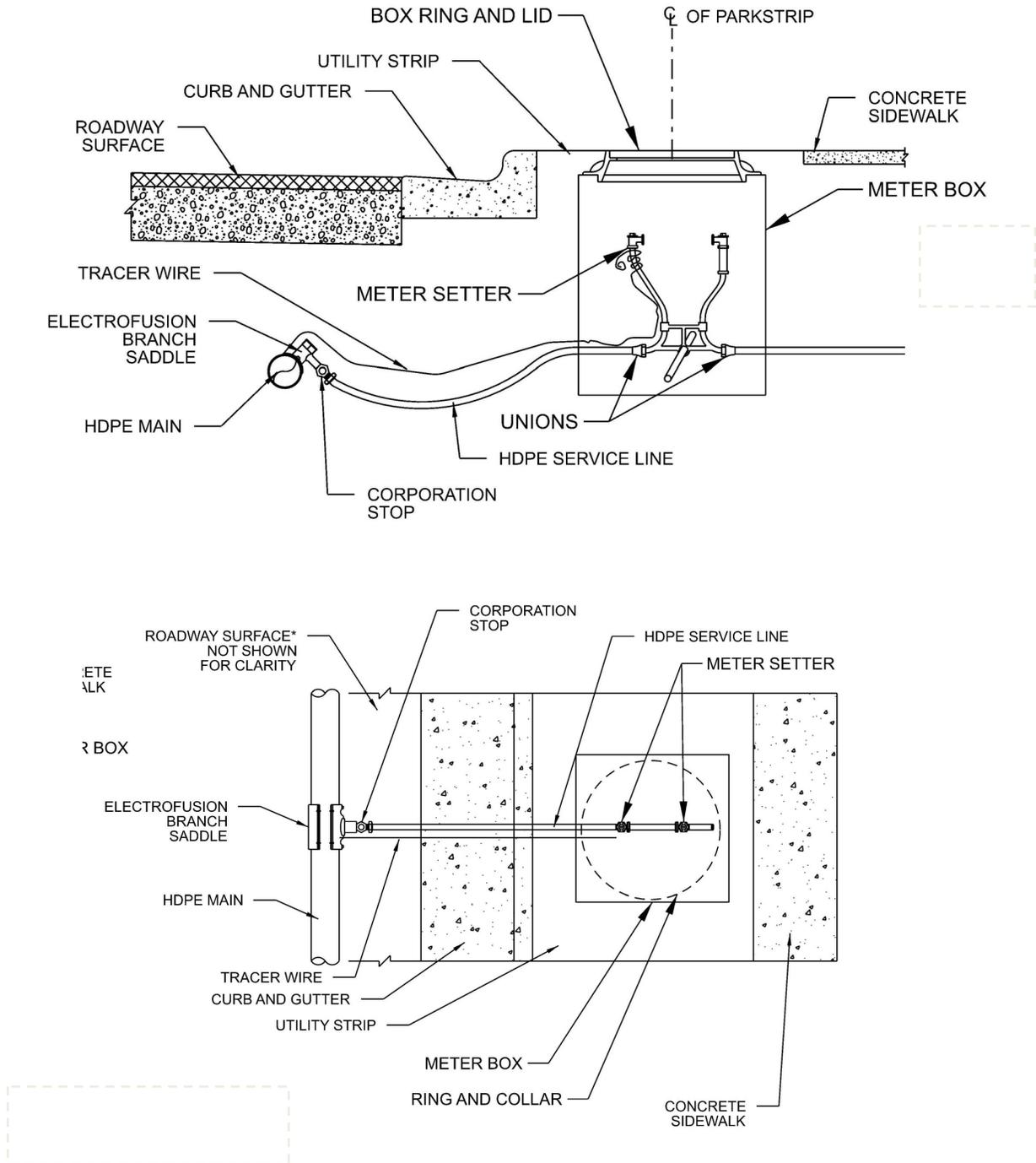
## Disposal of Surplus Fluids

1. All drill fluid excess shall be contained in entry and/or exit pits and pumped as needed into additional on-site storage tanks, tanker trucks, vacuum trucks, etc. Dispose of excess drill fluid offsite as allowed by local rules and regulations.
2. Dispose of all material not needed or not suitable for backfilling over or around the entry and receiving pits. The disposal shall be subject to local codes and regulations.

## Additional Notes:

1. Blue or purple line is required on all HDPE pipe. Pipe shall be installed such that line is visible on top of pipe.
2. Fittings must be HDPE fused fittings for all HDPE pipe. Ductile iron fittings are not permitted within main-lines runs. Connections for dissimilar pipe materials must be done via flanged fittings.

## HDPE Saddle Detail

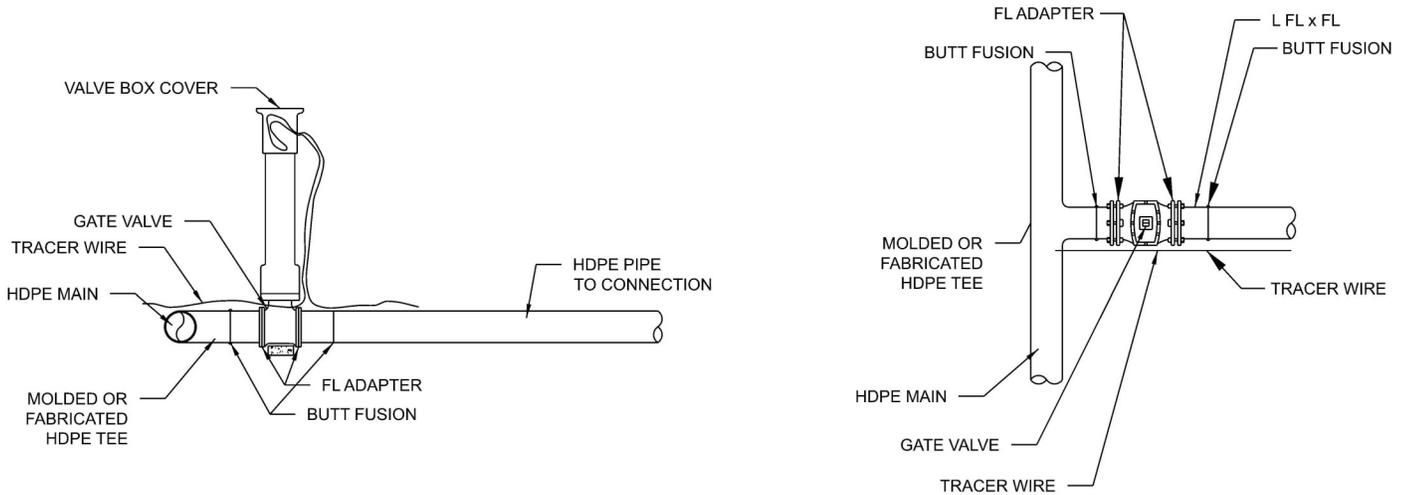


**ELECTROFUSION SADDLE**  
NTS



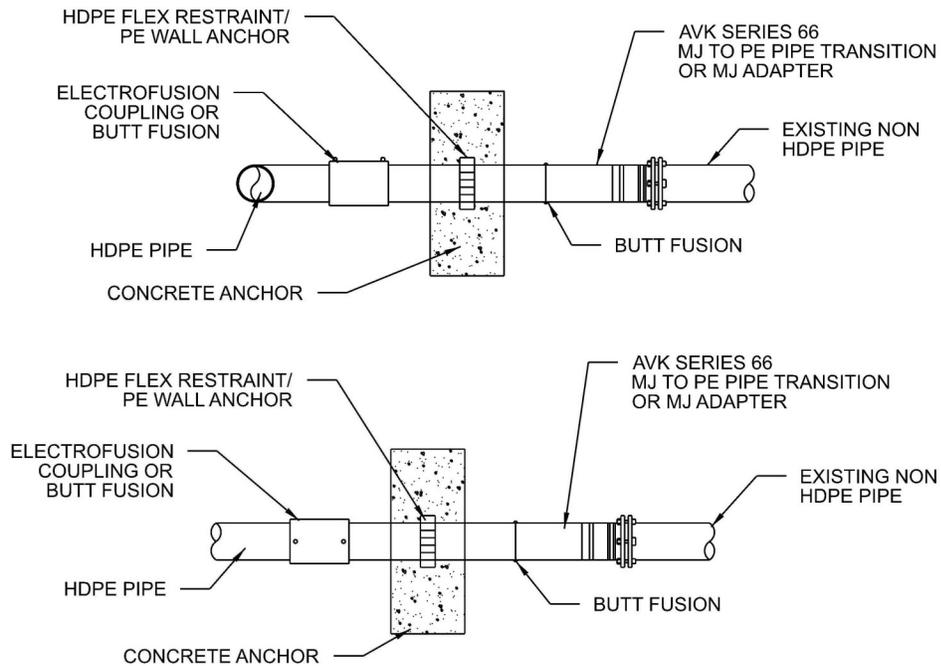
# HDPE Details

## HDPE Details



### FLANGED CONNECTION TO GATE VALVE

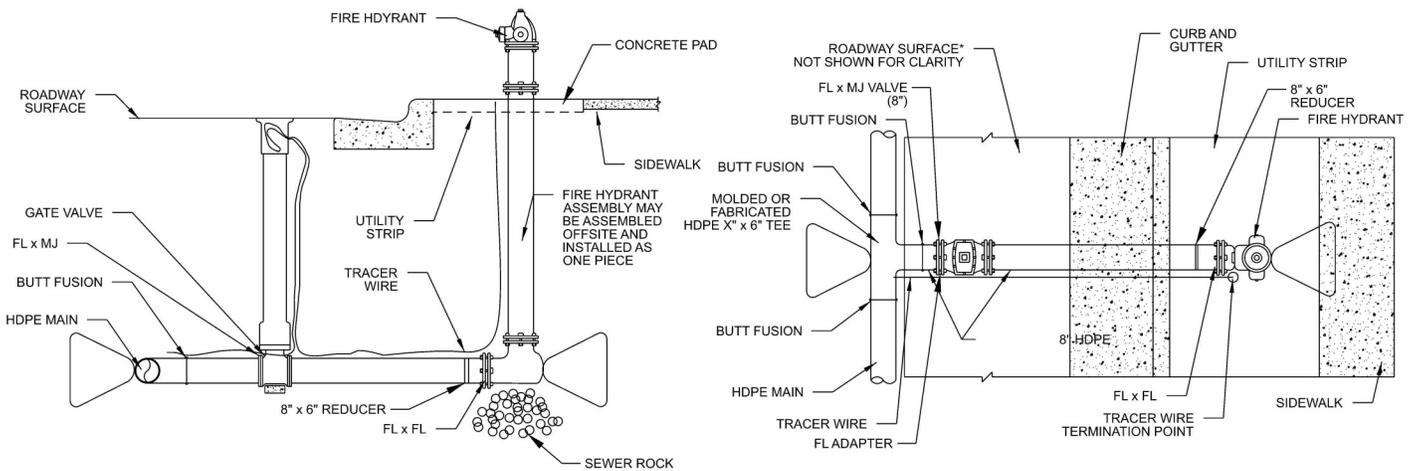
NTS



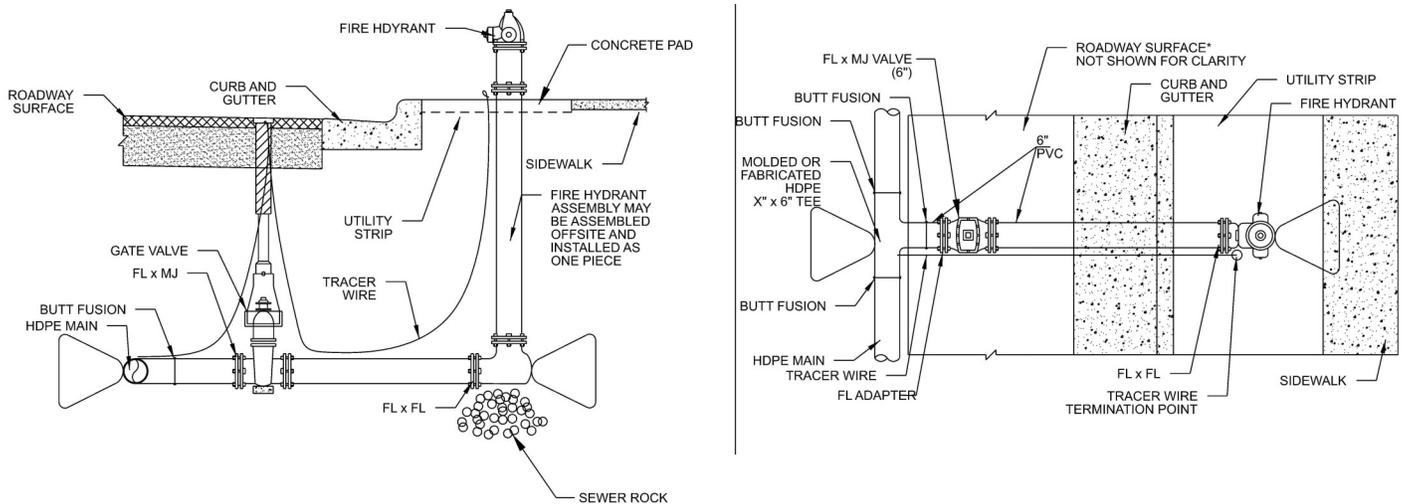
### HDPE CONNECTION TO ALTERNATE PIPE MATERIAL

NTS

## HDPE Mainline Fire Hydrants



**FIRE HYDRANT ASSEMBLY WITH HDPE PIPE**



**FIRE HYDRANT ASSEMBLY WITH PVC PIPE**



**City of North Salt Lake**  
10 East Center Street  
North Salt Lake, Utah 84054  
Phone 801.335.8700  
[www.nslcity.gov](http://www.nslcity.gov)



# PUBLIC WORKS

