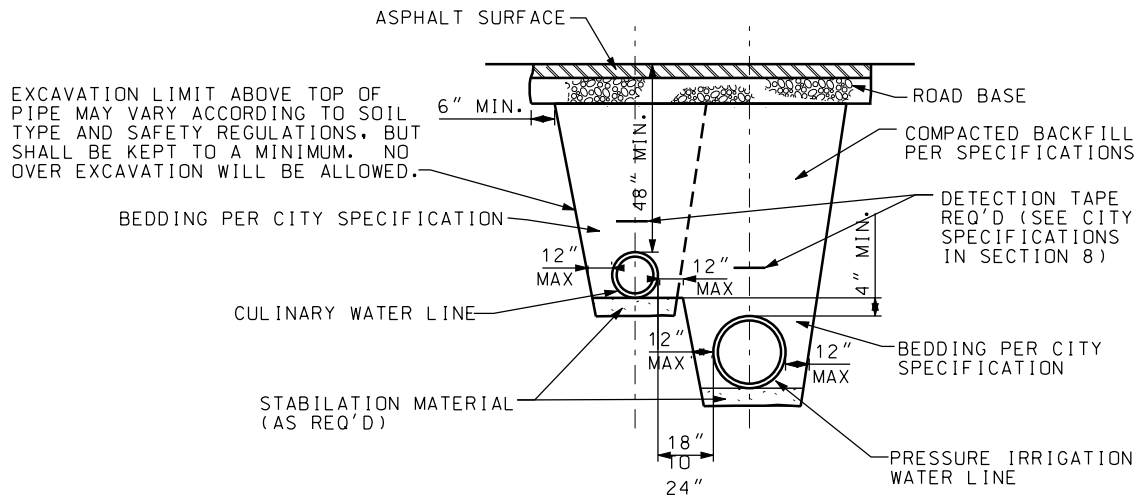
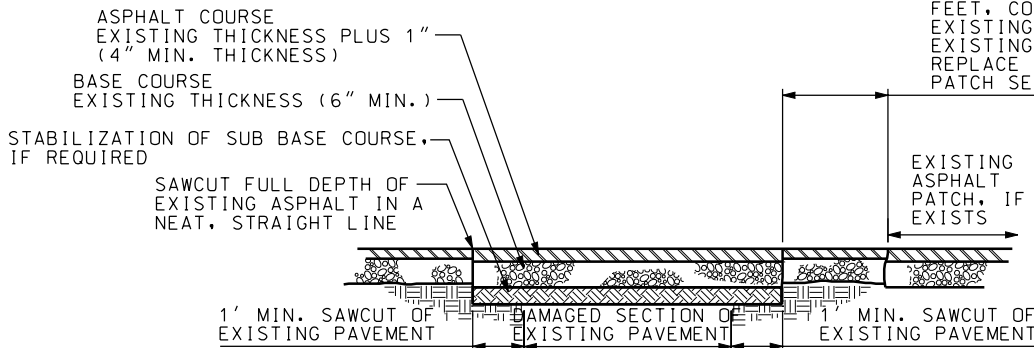


UTILITY INSTALLATION AND ROAD REPAIR



TYPICAL DUAL PIPE INSTALLATION (IRR. AND CUL)

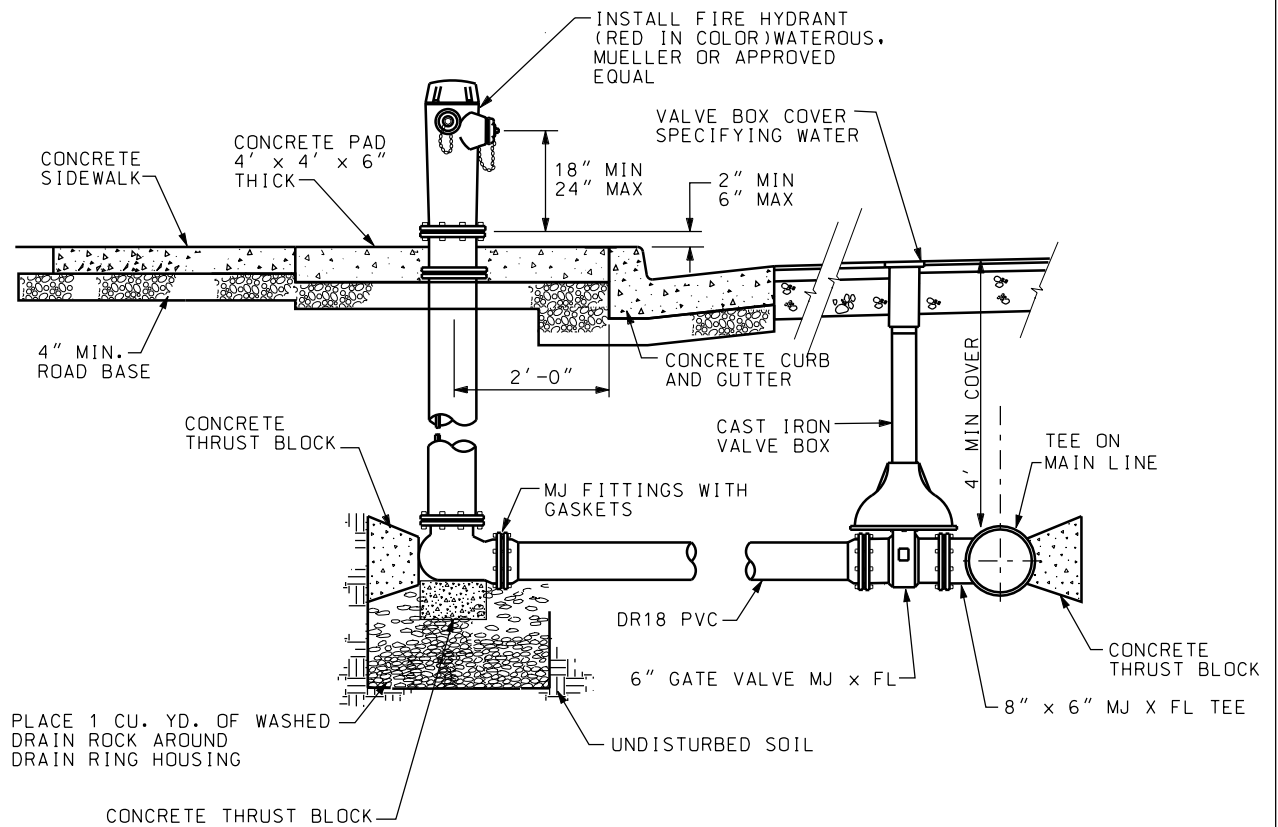


IF DISTANCE FROM EDGE OF NEW ASPHALT PATCH TO EXISTING ASPHALT PATCH LINE IS LESS THAN THREE (3) FEET, CONTRACTOR SHALL SAWCUT EXISTING PAVEMENT AT EDGE OF EXISTING PATCH AND REMOVE AND REPLACE PAVEMENT BETWEEN TWO PATCH SECTIONS

TYPICAL ASPHALT PATCH DETAIL



STANDARD DETAIL
UTILITY TRENCHING



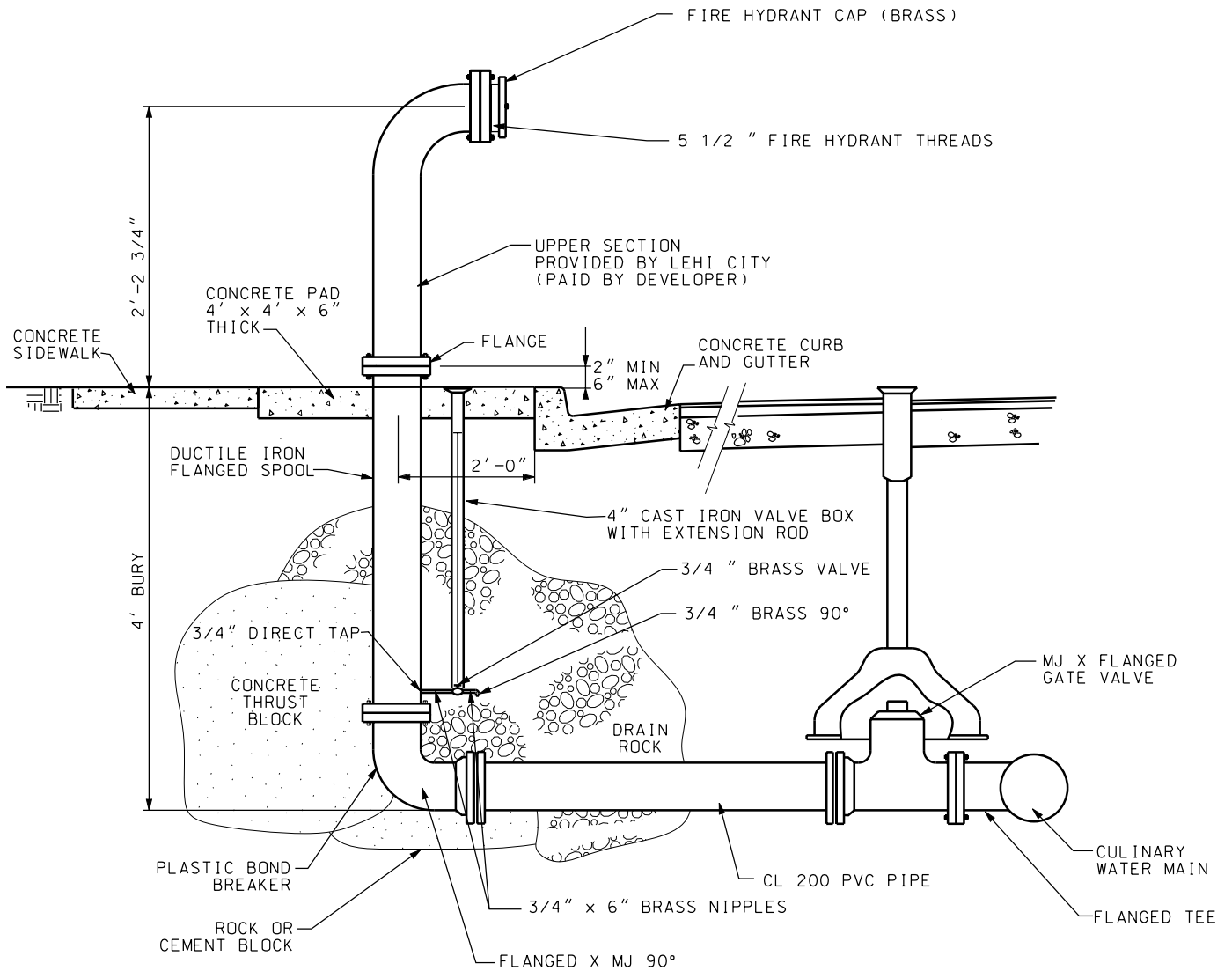
FIRE HYDRANT WITH VALVE

NOTES:

1. ALL BOLTS SHALL BE FREE FROM CONCRETE AND FULLY ACCESSIBLE.
2. HYDRANT SHALL BE INSTALLED 2' BEHIND THE WALK WITH CONCRETE PAD WHEN THERE IS NO PLANTER.
3. WHEN INSTALLING CONCRETE PAD AROUND FIRE HYDRANT, CONTRACTOR SHALL PLACE CRACK CONTROL JOINTS DIAGONALLY FROM THE HYDRANT TO THE CORNERS OF SAID PAD.
4. A THREE (3) FOOT HORIZONTAL CLEARANCE MUST BE MAINTAINED AROUND THE OUTSIDE OF ALL FIRE HYDRANTS.



STANDARD DETAIL
FIRE HYDRANT

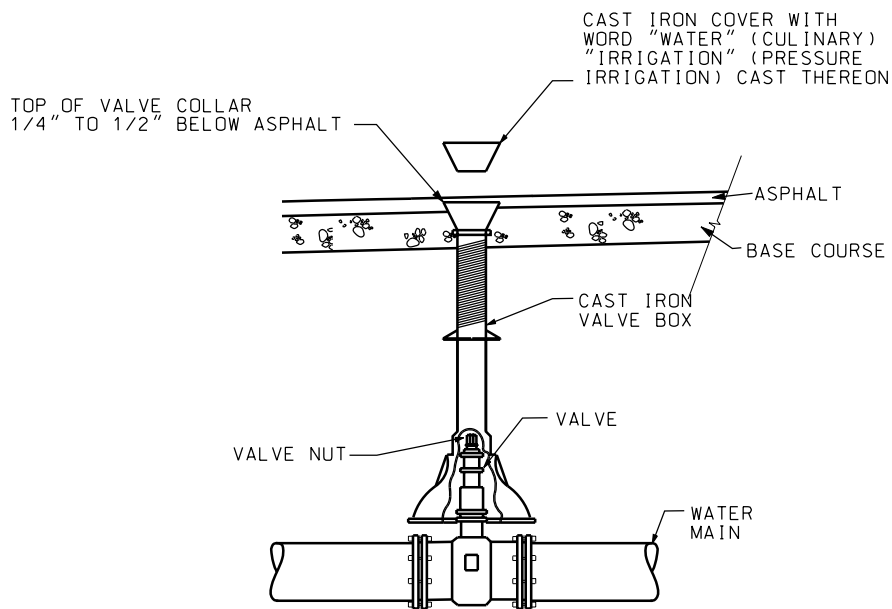


NOTE:

1. 4" SIZE FOR 8" OR SMALLER LINES
6" SIZE FOR 10" OR LARGER LINES
OTHER SIZES AS DIRECTED BY THE
WATER SUPERINTENDENT
2. BLOWOFF SHALL BE INSTALLED 2' BEHIND
THE WALK WITH CONCRETE PAD WHEN THERE
IS NO PLANTER
3. WHEN INSTALLING CONCRETE PAD AROUND
BLOW-OFF, CONTRACTOR SHALL PLACE
CRACK CONTROL JOINTS DIAGONALLY FROM
THE BLOW-OFF TO THE CORNERS OF SAID PAD.
4. A THREE (3) FOOT HORIZONTAL CLEARANCE
MUST BE MAINTAINED AROUND THE OUTSIDE
OF ALL BLOW-OFFS.



STANDARD DETAIL
BLOW-OFF

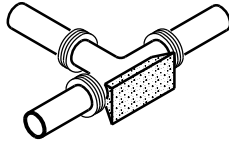


NOTES:

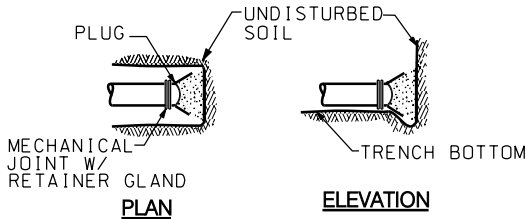
1. TOP OF VALVE COLLAR SHALL BE SET TO FINAL GRADE PRIOR TO PAVING. CONCRETE COLLARS MAY BE ALLOWED ONLY AFTER PRIOR APPROVAL OF LEHI CITY STREET DEPARTMENT. IF APPROVED, VALVE COLLARS SHALL BE 12" MIN. WIDE (FROM EDGE OF COLLAR), 12" THICK AND 1/4" TO 1/2" BELOW ASPHALT.
2. IN NON PAVED AND PLANTER STRIP AREAS, A 4' x 4' x 12" THICK CONCRETE PAD MUST BE PROVIDED FLUSH WITH THE TOP OF THE VALVE BOX.



STANDARD DETAIL
VALVE BOX



THRUST BLOCK TYPICAL



PLUG DETAIL

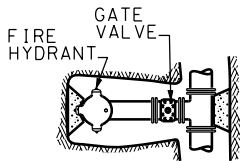
SIZE	BENDS				TEES *	GATE VALVES	DEAD ENDS	CROSS W/ 1 BRANCH PLUGGED	CROSS W/ 2 BRANCH PLUGGED
	30°	45°	22 1/2°	11 1/4°					
3	1.0	0.6	0.3	0	0.7	0.5	0.7	0.7	0.7
4	1.8	1.0	0.5	0	1.3	0.5	1.3	1.3	1.3
6	4.0	2.2	1.1	0	2.8	0.7	2.8	2.8	2.8
8	7.1	3.8	2.0	1.0	5.0	2.4	5.0	5.0	5.0
10	11.1	6.0	3.0	1.5	7.8	4.5	7.8	7.8	7.8
12	16.0	8.6	4.4	2.2	11.3	7.3	11.3	11.3	11.3
14	21.7	11.8	6.0	3.0	15.4	11.0	15.4	15.4	15.4
15	25.0	13.5	7.0	3.5	17.6		17.6	17.6	17.6
16	28.4	15.3	8.0	4.0	20.0		20.0	20.0	20.0
18	36.0	19.4	10.0	5.0	25.4		25.4	25.4	25.4
20	44.2	24.0	12.2	6.1	31.4		31.4	31.4	31.4
21	49.0	26.5	13.5	6.8	34.6		34.6	34.6	34.6
22	54.0	29.0	14.8	7.4	38.0		38.0	38.0	38.0
24	64.0	34.5	17.7	8.8	45.0		45.0	45.0	45.0
30	100.0	54.0	27.6	13.8	71.0		71.0	71.0	71.0
36	144.0	78.0	40.0	20	102.0		102.0	102.0	102.0

* SIZE IS BRANCH SIZE

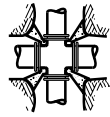
AREAS GIVEN IN TABLE ARE BASED UPON AN INTERNAL STATIC PRESSURE OF 100 P.S.I. AND A SOIL BEARING CAPACITY OF 1000 LBS. PER SQ. FT. BEARING AREAS FOR ANY PRESSURE AND SOIL BEARING CAPACITY MAY BE OBTAINED BY MULTIPLYING THE TABULATED VALUES BY A CORRECTION FACTOR "F".

$$F = \frac{\text{ACTUAL SPECIFIED TEST PRESSURE IN HUNDREDS OF LBS/SQ. IN.}}{\text{ACTUAL SOIL BEARING CAPACITY IN THOUSANDS OF LBS.}}$$

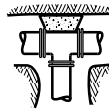
TABLE OF BEARING AREAS IN SQ. FT. FOR CONCRETE THRUST BLOCKING



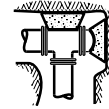
FIRE HYDRANT



CROSS



TEE

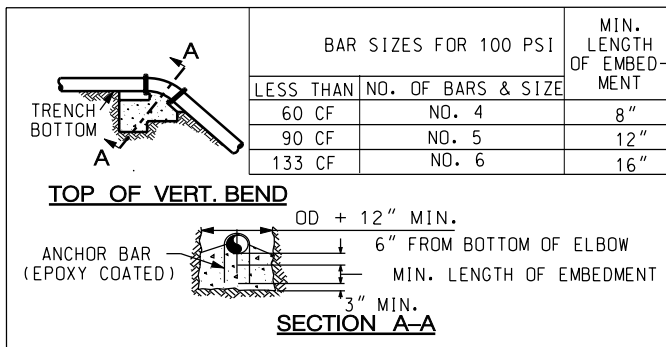


TEE (PLUGGED)



ELBOW

FOR 100 P.S.I. INTERNAL STATIC PRESSURE AND 1000 LBS. PER SQ. FT. SOIL BEARING CAPACITY.



SIZE	BENDS		
	45°	22 1/2°	11 1/2°
3	3.7	1.9	1.4
4	6.5	3.3	1.7
6	14.6	7.5	3.7
8	26.0	13.2	6.6
10	40.5	20.7	10.3
12	58.5	30.0	14.8
14	79.5	40.7	20.2
15	91.0	46.6	23.2
16	104.0	53.0	26.5
18		67.3	33.4
20		83.0	41.0
21			45.5
22			50.0
24			59.5
30			
36			

REQ'D FOR VERT. BEND ANCHOR BLOCKS FOR 100 P.S.I. PRESSURE ADJUST VOLUMES BY MULTIPLYING TABULATED VALUES BY A CORRECTION FACTOR "F".

$$F = \frac{\text{ACTUAL SPECIFIED TEST PRESSURE}}{100}$$

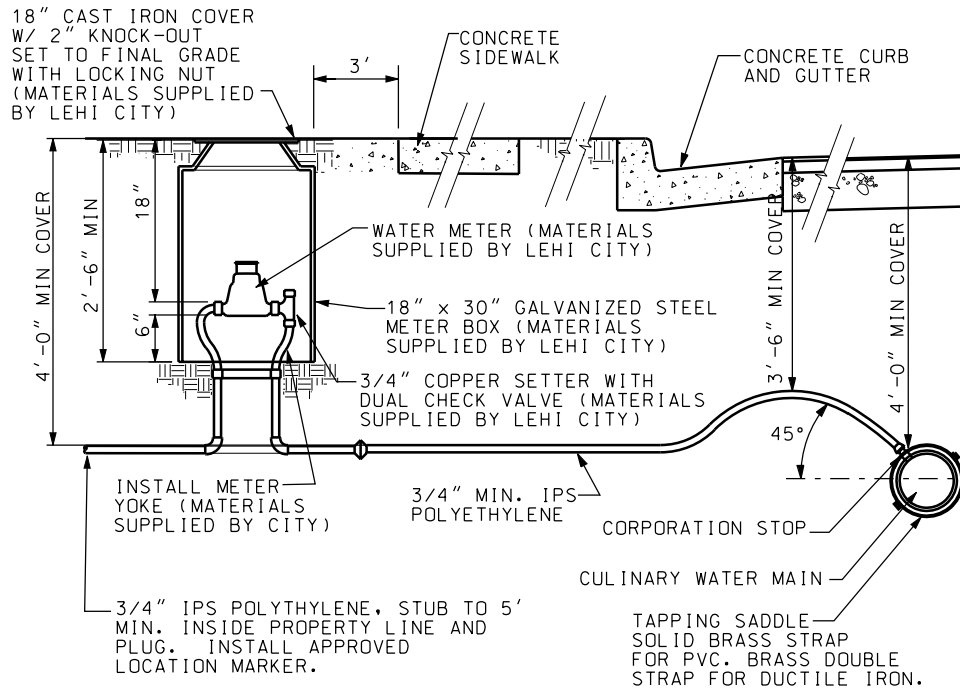
TABLE OF VOLUMES OF CONCRETE (IN CU. FT.)

NOTES:

1. ALL FITTINGS SHALL BE COVERED WITH PLASTIC OR OTHER APPROVED MATERIAL PRIOR TO POURING THE THRUST BLOCK
2. FM GRADE GREASE SHALL BE USED FOR ALL BOLTED FITTINGS.
3. ALL TRUST BLOCKS AGAINST NON-NATIVE MATERIALS SHALL BE UPSIZED UNLESS A BEARING PRESSURE OF 1000 LBS. PER SQ.FT. IS PROVIDED.



STANDARD DETAIL THRUST BLOCKING



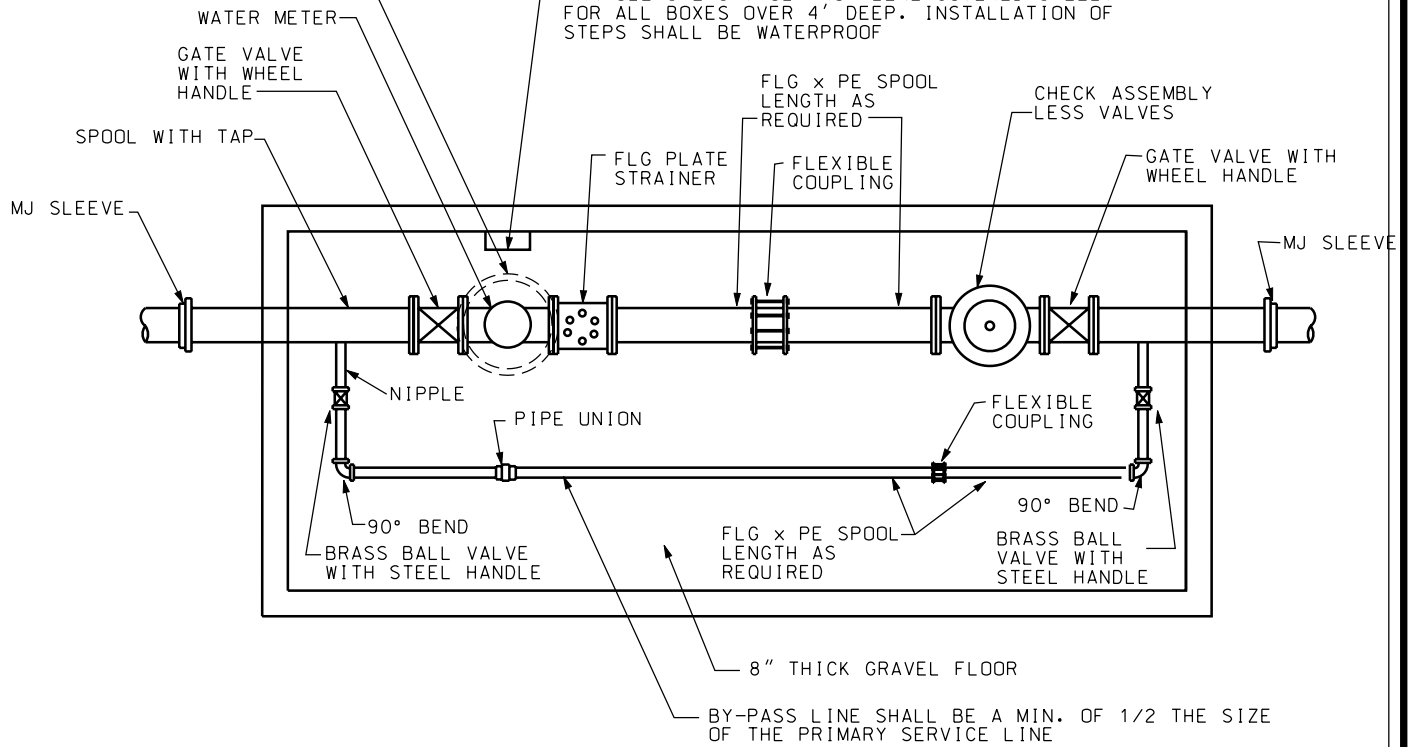
GENERAL NOTES:

1. 10'-0" EDGE TO EDGE HORIZONTAL CLEARANCE IS REQUIRED BETWEEN WATER AND SEWER LATERAL SERVICE LINES.
2. WHERE WATER AND SEWER LATERALS MUST CROSS, WATER LATERAL SHALL BE 18" ABOVE THE SEWER LATERAL AS MEASURED FROM THE BOTTOM OF THE WATER LATERAL TO THE TOP OF THE SEWER LATERAL. THIS SEPARATION SHALL BE MAINTAINED FOR A MINIMUM OF 10'-0" EITHER SIDE OF THE CROSSING POINT.
3. ALL CULINARY WATER METERS SHALL BE CONSTRUCTED BEHIND PROPOSED SIDEWALK, AND SHALL BE SERVICABLE FROM THE STREET, REGARDLESS OF WHETHER OR NOT THE TYPICAL STREET CROSS SECTION CONTAINS A PLANTER STRIP.
4. COORDINATE PLACEMENT OF WATER METER WITH LEHI WATER DEPARTMENT.
5. TEFLON TAPE REQUIRED ON ALL THREADED CONNECTIONS.
6. CULINARY WATER METERS SHALL NOT BE PLACED WITHIN DRIVABLE AREAS UNLESS OTHERWISE APPROVED BY WATER DEPARTMENT.



STANDARD DETAIL
CULINARY SERVICE
CONNECTION

INSTALL 30" MANHOLE RING,
FRAME & COVER MARKED WATER

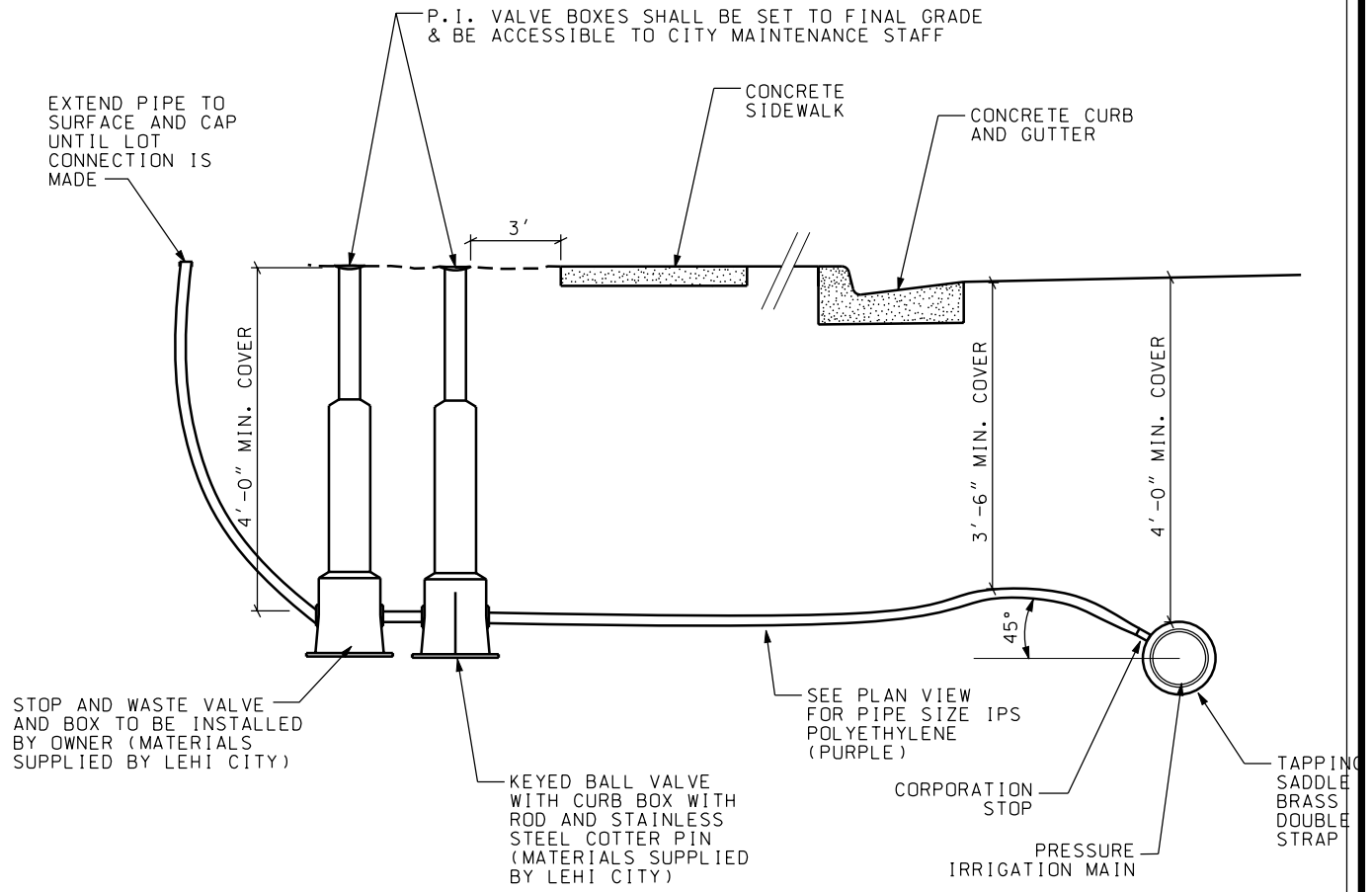


NOTES

1. AN ENGINEERED PRECAST BOX MAY BE ALLOWED AS APPROVED BY THE CITY.
2. STRUCTURAL DESIGN (REINFORCING AND CONCRETE THICKNESS FOR WALLS, FOOTINGS, AND ROOF) WILL DEPEND ON FINAL BOX SIZE.
3. COORDINATE METER BOX PLACEMENT AND OVERALL METER DIMENSIONS WITH LEHI WATER METERING DEPARTMENTS PRIOR TO INSTALLATION.
4. CHANGES DUE TO PIPE SIZE SHALL BE AS APPROVED BY THE CITY WATER SUPERINTENDENT.



STANDARD DETAIL
CONCRETE
METER BOX

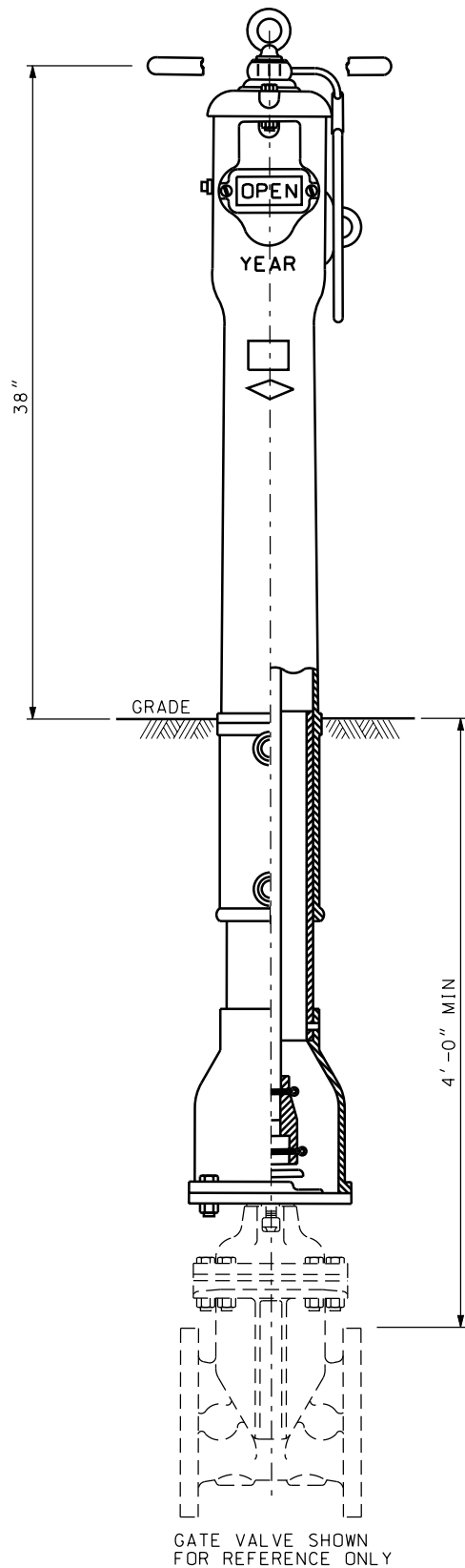


NOTES

1. ALL P.I. SERVICE CONNECTIONS SHALL BE CONSTRUCTED BEHIND THE PROPOSED SIDEWALK, AND SHALL BE SERVICABLE FROM THE STREET, REGARDLESS OF WHETHER OR NOT THE TYPICAL STREET CROSS SECTION CONTAINS A PLANTER STRIP.
2. COORDINATE PLACEMENT OF SERVICE CONNECTIONS WITH LEHI WATER DEPARTMENT.
3. P.I. SERVICE CONNECTIONS SHALL NOT BE PLACED WITHIN DRIVEABLE AREAS.



STANDARD DETAIL
P.I. SERVICE
CONNECTION

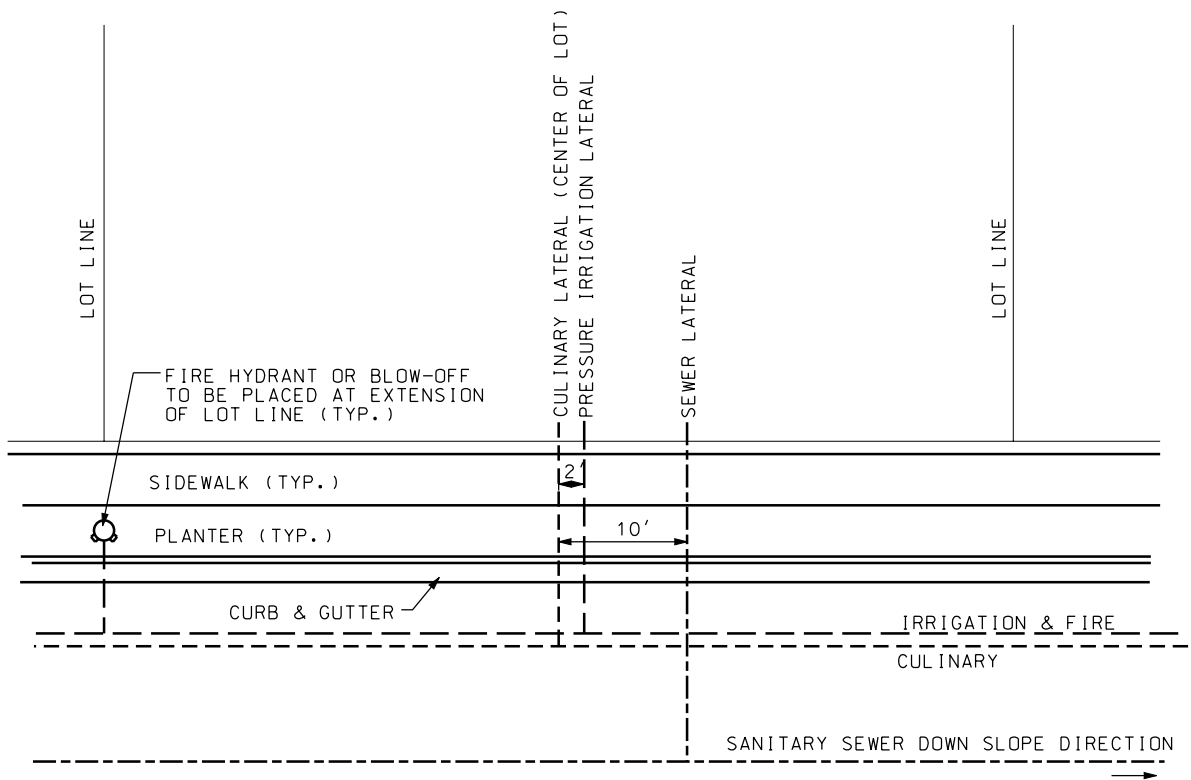


NOTES:

1. MUST BE PLACED IN LINE WITH FDC (FIRE DEPARTMENT CONNECTION), IN PLAIN SITE AND BE READABLE FROM THE STREET.
2. FINAL PLACEMENT SHALL BE AS APPROVED BY THE FIRE MARSHAL
3. POST INDICATOR VALVE SHALL BE UL LISTED AND FM APPROVED.
4. POST INDICATOR VALVE SHALL BE A MINIMUM DIAMETER OF 4".
5. A THREE (3) FOOT HORIZONTAL CLEARANCE MUST BE MAINTAINED AROUND THE OUTSIDE OF ALL POST INDICATOR VALVES.
6. THERE SHALL BE NO OTHER VALVES BETWEEN THE POST INDICATOR AND THE FIRE SPRINKLER RISER.



STANDARD DETAIL
POST INDICATOR
VALVE



NOTES

1. EACH SUBDIVISION LOT SHALL RECEIVE ONLY ONE (1) OF EACH SERVICE TYPE (WATER, P.I., SEWER OR SUB-DRAIN) UNLESS SPECIFICALLY AUTHORIZED BY THE CITY COUNCIL, CITY ENGINEER AND THE WATER SUPERINTENDANT.
2. ALL REMOVALS OR CHANGES TO EXISTING LATERAL LOCATIONS SHALL BE PERFORMED AT THE DEVELOPERS EXPENSE AND BE INSPECTED BY LEHI CITY STAFF.
3. CULINARY & PRESSURIZED IRRIGATION LATERALS WITHIN CUL-DE-SACS (OR LOTS WITH LESS THAN 50 FEET OF FRONTAGE) SHOULD BE PLACED AT A 5 FOOT OFFSET FROM THE PROPERTY LINE.
4. LOCATION CHANGES DUE TO LOT SIZE & PHYSICAL CONDITIONS SHALL BE APPROVED BY THE WATER SUPERINTENDANT.



STANDARD DETAIL
TYPICAL SERVICE,
HYDRANT & BLOW-OFF
LOCATIONS

ANNULAR SPACE
(1" FOR 4" PIPE SIZES,
2" FOR PIPE 6" AND LARGER)

FINISHED
FLOOR ELEVATION

4" MIN. DUCTILE IRON PIPE
WITH 2-3/4" TIE RODS

CONCRETE
THRUST BLOCK

18" MIN.

6" MIN.

5'

BUILDING PERIMETER

ROMAC STYLE 501
TRANSITION COUPLING
(OR APPROVED EQUAL) AT
5' OUTSIDE OF BUILDING

4" MIN. DUCTILE IRON
LINE TO 5' OUTSIDE OF
BUILDING

4" MIN.
PVC FIRE LINE

FIRE RISER DETAIL (DUCTILE IRON)

FINISHED
FLOOR ELEVATION

ANNULAR SPACE
(1" FOR 4" PIPE SIZES,
2" FOR PIPE 6" AND LARGER)

SERIES 300 STAINLESS STEEL
RISER PIPE (4" MIN. DIA.)

CONCRETE
THRUST BLOCK

72" MIN.

18" MIN.

5' MIN

BUILDING PERIMETER

CIPS COUPLING
(TRANSITION GASKET
REQUIRED TO ADAPT TO
SDR 200 PVC PIPE)

4" MIN. SDR-21
CLASS 200 PVC
FIRE LINE

TIE-ROD
BRACKET

4" MIN.
90° ELBOW
MJxMJ

AMES SERIES 300
STAINLESS STEEL
RISER PIPE (4"
MIN. DIA.)

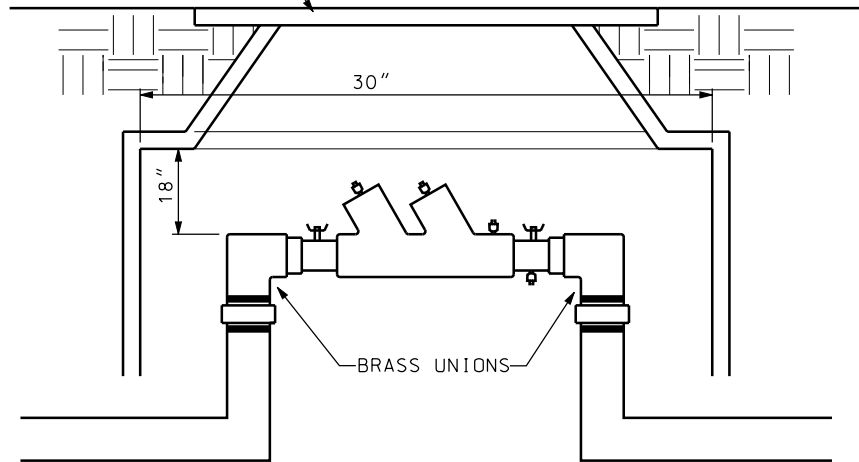
FIRE RISER DETAIL (STAINLESS STEEL)

LEHI



PIONEERING UTAH'S FUTURE
STANDARD DETAIL
TYPICAL
FIRE RISER
DETAILS

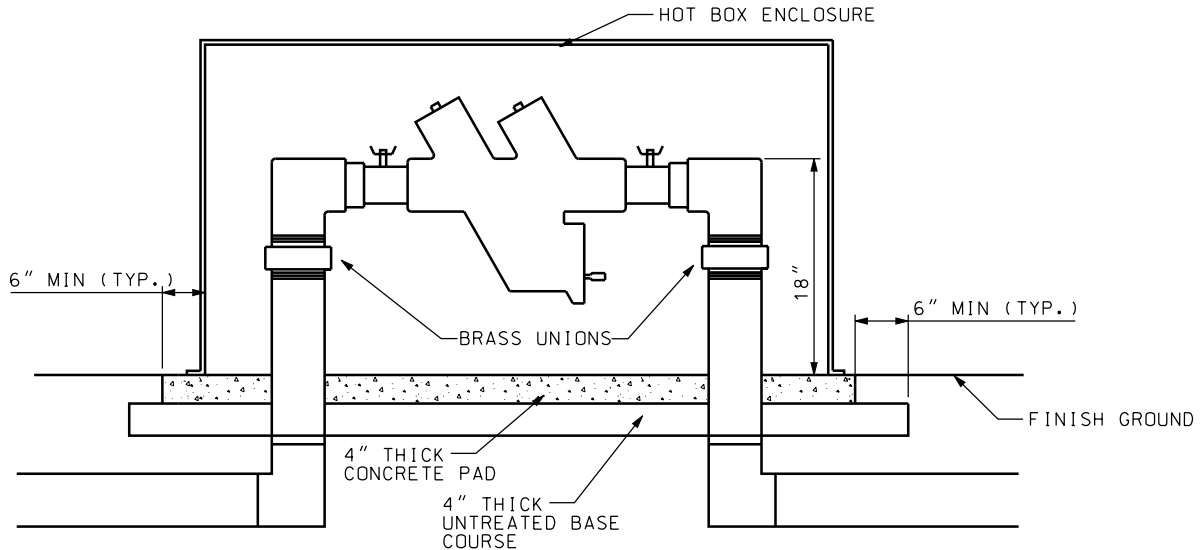
18" CAST IRON COVER W/ 2" KNOCK-OUT
SET TO FINAL GRADE WITH LOCKING NUT
(MATERIALS SUPPLIED BY LEHI CITY)



DOUBLE CHECK BACKFLOW PREVENTER

NOTES:

1. MUST BE INSTALLED IN A 30" METER BOX.
2. PIPEWORK MUST BE BRASS OR RIDGED COPPER (ONLY).
3. AFTER INSTALLATION, BACKFLOW PREVENTER MUST BE TESTED WITHIN 10 DAYS AND RESULTS GIVEN TO LEHI CITY WATER DEPARTMENT.
4. DOUBLE CHECK BACKFLOW PREVENTOR INSTALLED IN A VAULT MUST BE TESTABLE AND MAINTAINABLE FROM THE TOP POSITION.



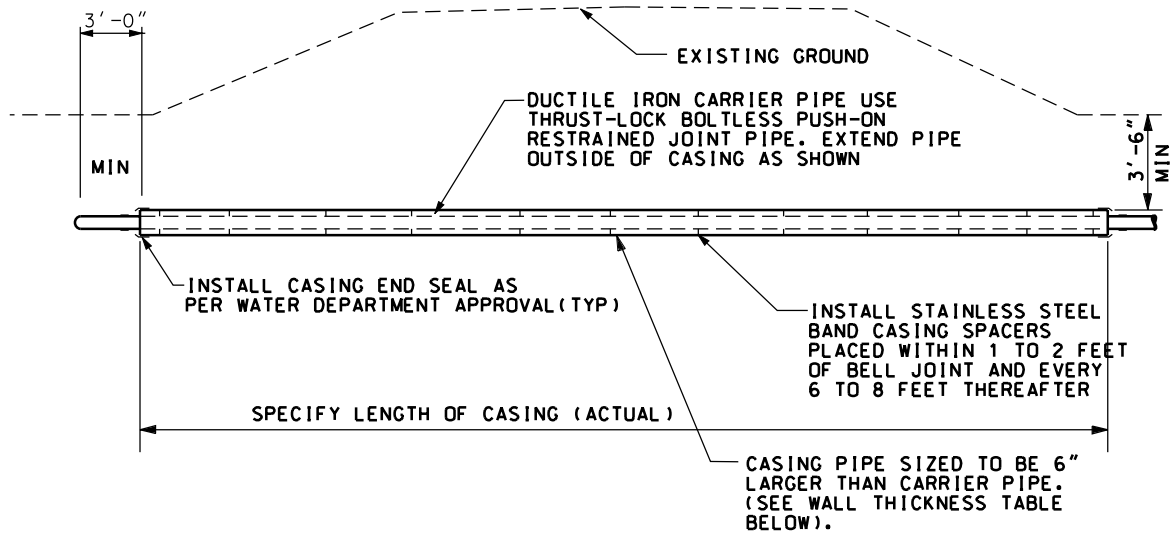
REDUCED PRESSURE BACKFLOW PREVENTER

NOTES:

1. PIPEWORK MUST BE BRASS OR RIDGED COPPER (ONLY).
2. HEAT SOURCE DESIGNED TO PROTECT BACKFLOW PREVENT TO -30° F MUST BE INSTALLED WITHIN HOT BOX.
3. HOT BOX MUST BE INSTALLED AND ANCHORED TO PAD.
4. AFTER INSTALLATION, BACKFLOW PREVENTER MUST BE TESTED WITHIN 10 DAYS AND RESULTS GIVEN TO LEHI CITY WATER DEPARTMENT.



STANDARD DETAIL
BACKFLOW
PREVENTION



STEEL CASING PIPE WALL THICKNESS TABLE	
MINIMUM THICKNESS	DIAMETER OF CASING PIPE
3/8"	22" & SMALLER
1/2"	24" - 32"
9/16"	34" - 42"
3/4"	44" - 60"

* THIS CHART IS ONLY FOR SMOOTH STEEL CASING PIPES WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI.

* CASING PIPES LARGER THAN 60" OR WITH ANY PORTION DEEPER THAN 20 FEET SHALL REQUIRE STAMPED STRUCTURAL CALCULATIONS PRIOR TO APPROVAL

