

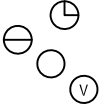







# ROADWAY SYMBOLS

SYMBOLS		DEFINITIONS	
	CENTER LINE		CURB & GUTTER
	CONSTRUCTION CENTER LINE		SIDEWALK
	PROPERTY OR R/W LINE		RAILROAD TRACKS
	EASEMENT LINE		GUARD RAIL
	MONUMENT LINE		OPEN DITCH, CANAL
	FENCE		CULVERT
	CONTOUR LINE		SECTION CORNER
	CONTOUR ELEVATION		SOIL BORING
	BANK SLOPES		MONUMENT
	STORM DRAIN LINE		BENCH MARK
	WATER LINE		SIGN
	GAS LINE		POWER POLE
	TELEPHONE CABLE		TELEPHONE POLE
	ELECTRIC CABLE		DECIDUOUS TREE
	SANITARY SEWER LINE		CONIFEROUS TREE
	ASPHALT PAVING		P.I.
	FIRE HYDRANT		P.C. OR P.T.
	WATER VALVE		
	WATER METER		
	MANHOLE		
	CATCH BASIN		
	CLEAN OUT BOX		
	POLE & ANCHOR		
	STREET LIGHT		
	UNDISTURBED EARTH		
	STRUCTURE		

NOTES:

1. MAKE ALL LETTERING A MINIMUM OF 4.0mm OR 0.157 INCHES OR 140 LEROY HIGH
2. EXISTING IMPROVEMENTS ARE SHOWN BY DASHED LINES, NEW IMPROVEMENTS BY SOLID LINES

# IRRIGATION SYMBOLS

<u>SYMBOL</u>	<u>DEFINITIONS</u>
	90° STD NOZZLE ON 180° POP-UP BODY 360° VARIABLE
	ROTOR POP UP
	REMOTE CONTROL VALVE MANUAL DRAIN
	QUICK COUPLER
	BACKFLOW PREVENTOR
	CONTROLLER
	IRRIGATION LATERAL
	IRRIGATION MAIN

## NOTES:

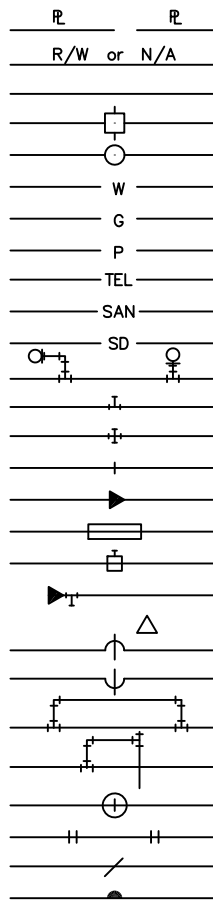
1. MAKE ALL LETTERING A MINIMUM OF 4.0mm OR 0.157 INCHES OR 140 LEROY HIGH
2. EXISTING IMPROVEMENTS ARE SHOWN BY DASHED LINES, NEW IMPROVEMENTS BY SOLID LINES
3. MAKE SURE SYSTEM PROVIDES FULL COVERAGE OF IRRIGATION AREA. DRAWINGS ARE SCHEMATIC. GALLONS PER MINUTE FOR EACH CIRCUIT ARE INDICATED TO FACILITATE CHANGES AS FIELD CONDITIONS MAY DICTATE
4. USE SCHEDULE 80 PVC PIPE IF THREADED JOINTS ARE PROVIDED. APPLY TEFLON TAPE AROUND ALL THREADED AREAS
5. INSTALL DRAINS AT 45° ANGLE IN ALL LOW POINTS IN CIRCUIT PIPE 6. ATTACHED DIRECT BURIAL WIRE ON UNDERSIDE OF BURIED PIPE. TAPE EVERY 20 LINEAL FEET MAXIMUM.

# STORM DRAIN, SEWER, WATER

## ABBREVIATIONS

A.C. = ASBESTOS CEMENT (TRANSITE)  
 C.I.P. = CAST IRON PIPE  
 (BEFORE 1940 PIT CAST)  
 D.I.P. = DUCTILE IRON PIPE  
 PVC = POLYVINYL CHLORIDE  
 MJ = MECHANICAL JOINT  
 T.J. = TYTON JOINT  
 O.B. = OPEN BELL  
 L.B. = LARGE BELL  
 WOV = WASH OUT VALVE  
 VAL. = VALVE  
 HYD. = HYDRANT  
 REG. = REGULATOR  
 BD. = BEND  
 EXT. = EXTEND  
 RED. = REDUCER  
 FLG. = FLANGED  
 ASSY. = ASSEMBLY  
 M.W. = MANWAY  
 MH = MANHOLE  
 SPIG. = SPIGOT  
 ADPT. = ADAPTOR  
 TBC = TOP BACK OF CURB  
 F.C. = FACE OF CURB  
 P.C.C.P. = PRESTRESSED CONCRETE  
 CYLINDER PIPE  
 C.M.P. CAS. = CORRIGATED METAL  
 PIPE CASING  
 A.A.R.V. = AUTOMATIC AIR RELEASE  
 VALVE  
 A.A.V.V. = AUTOMATIC AIR VACUUM  
 VALVE  
 A.C.A.R.V. = AUTOMATIC COMBINATION  
 AIR RELEASE VALVE  
 KEN. = KENNEDY  
 P.S. = PACIFIC STATES  
 GRNBRG. = GREENBERG  
 HOWE. = HOWELL  
 WAT. = WATROUS  
 ASPH. = ASPHALT  
 A.C. = ASPHALTIC CONCRETE  
 CONC. = CONCRETE  
 GALV. = GALVANIZED IRON  
 COP. = COPPER

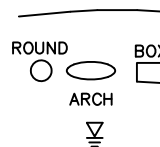
## SYMBOLS



## DEFINITIONS

PROPERTY LINES (100' MAP, DESIGN DWGS)  
 RIGHT-OF-WAY, NON-ACCESS LINE  
 MONUMENT LINE  
 MONUMENT  
 POINT OF INTERSECTION  
 WATER MAIN  
 GAS MAIN  
 POWER LINE (BURIED)  
 TELEPHONE LINE (BURIED)  
 SANITARY SEWER  
 STORM DRAIN  
 FIRE HYDRANT WITH VALVE  
 WATER MAIN TEE  
 WATER MAIN CROSS  
 WATER MAIN VALVE  
 REDUCER  
 REGULATOR  
 TAPPING SLEEVE AND VALVE  
 PLUG AND CLAMP  
 CONCRETE THRUST BLOCK  
 PIPE OVER  
 PIPE UNDER  
 BYPASS  
 RUN-AROUND  
 CIRCLED VALVE - (SYSTEM NORMALLY CLOSED)  
 OFFSET OR VERTICAL BENDS  
 CHECK VALVE  
 METER

## PROFILE



GROUND PROFILE  
 CULVERT  
 GROUNDWATER ELEVATION

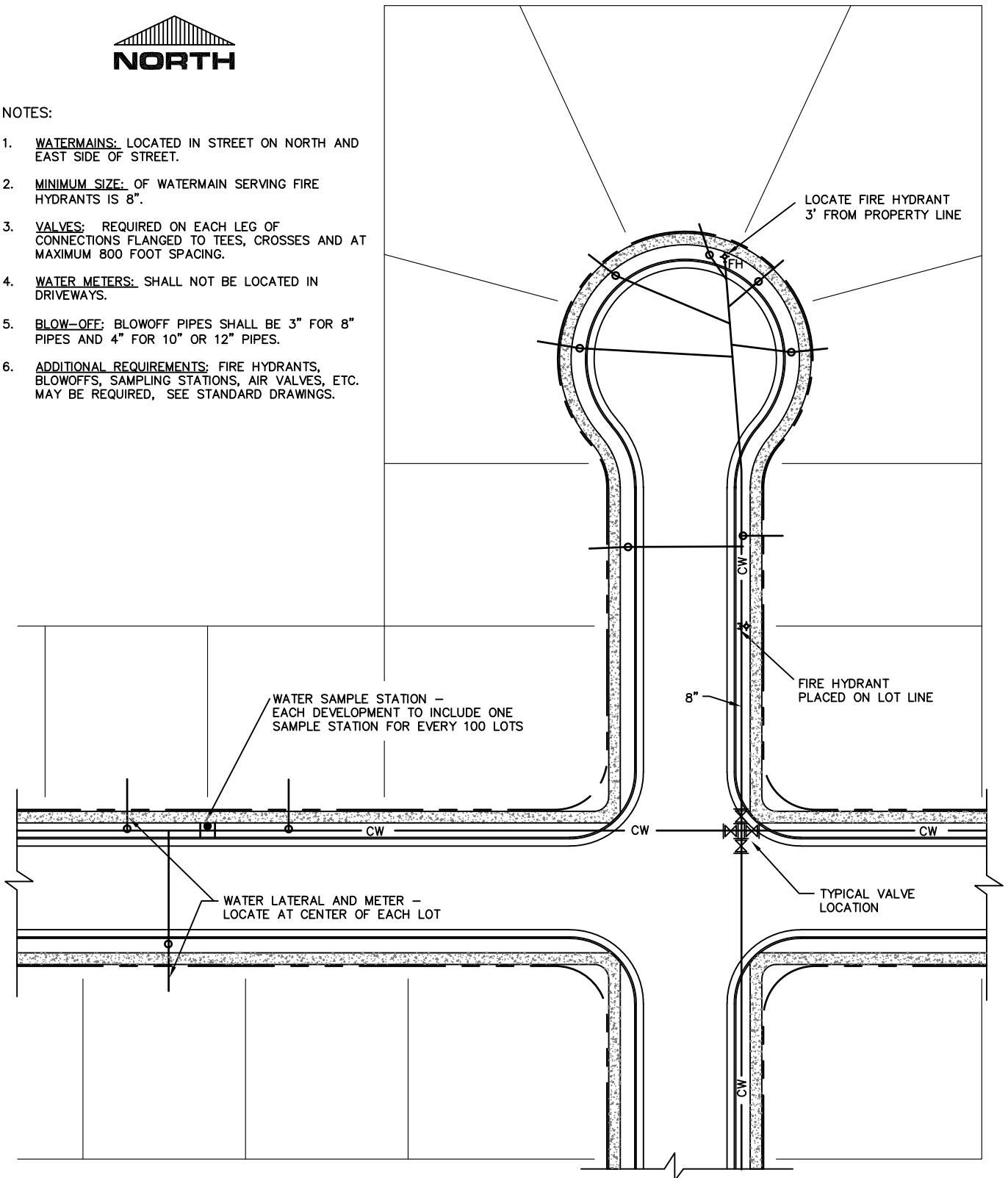
## NOTES:

1. MAKE ALL LETTERING A MINIMUM OF 4.0mm OR 0.157 INCHES OR 140 LEROY HIGH
2. EXISTING IMPROVEMENTS ARE SHOWN BY DASHED LINES, NEW IMPROVEMENTS BY SOLID LINES.



NOTES:

1. WATERMAINS: LOCATED IN STREET ON NORTH AND EAST SIDE OF STREET.
2. MINIMUM SIZE: OF WATERMAIN SERVING FIRE HYDRANTS IS 8".
3. VALVES: REQUIRED ON EACH LEG OF CONNECTIONS FLANGED TO TEES, CROSSES AND AT MAXIMUM 800 FOOT SPACING.
4. WATER METERS: SHALL NOT BE LOCATED IN DRIVEWAYS.
5. BLOW-OFF: BLOWOFF PIPES SHALL BE 3" FOR 8" PIPES AND 4" FOR 10" OR 12" PIPES.
6. ADDITIONAL REQUIREMENTS: FIRE HYDRANTS, BLOWOFFS, SAMPLING STATIONS, AIR VALVES, ETC. MAY BE REQUIRED, SEE STANDARD DRAWINGS.



DRAWING UPDATED JANUARY 2019

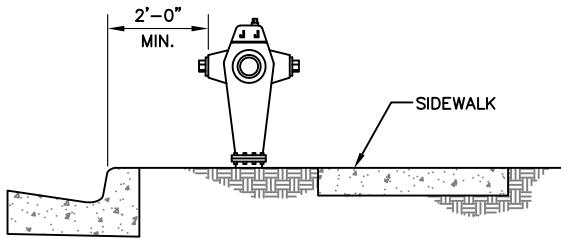
City of West Jordan, Utah



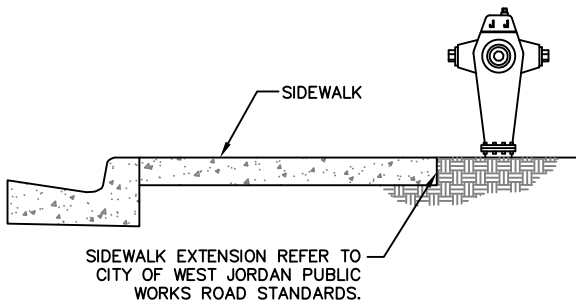
# CULINARY WATER RESIDENTIAL INSTALLATION

PLAN  
CW-015

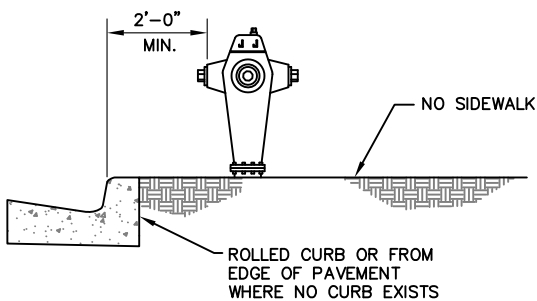
## FIRE HYDRANTS



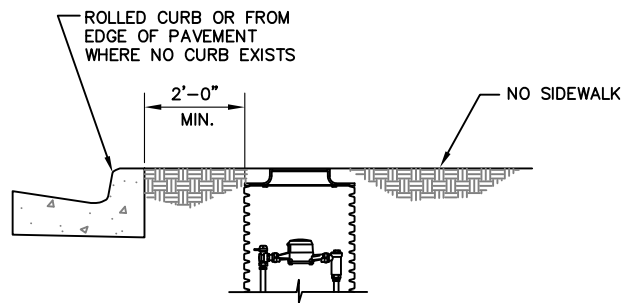
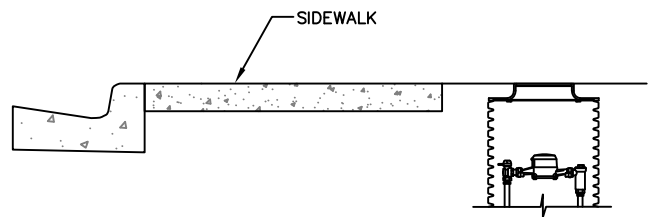
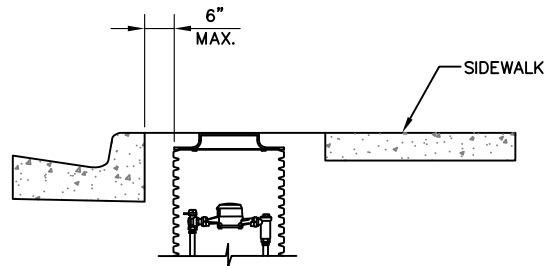
CASE 1



CASE 2



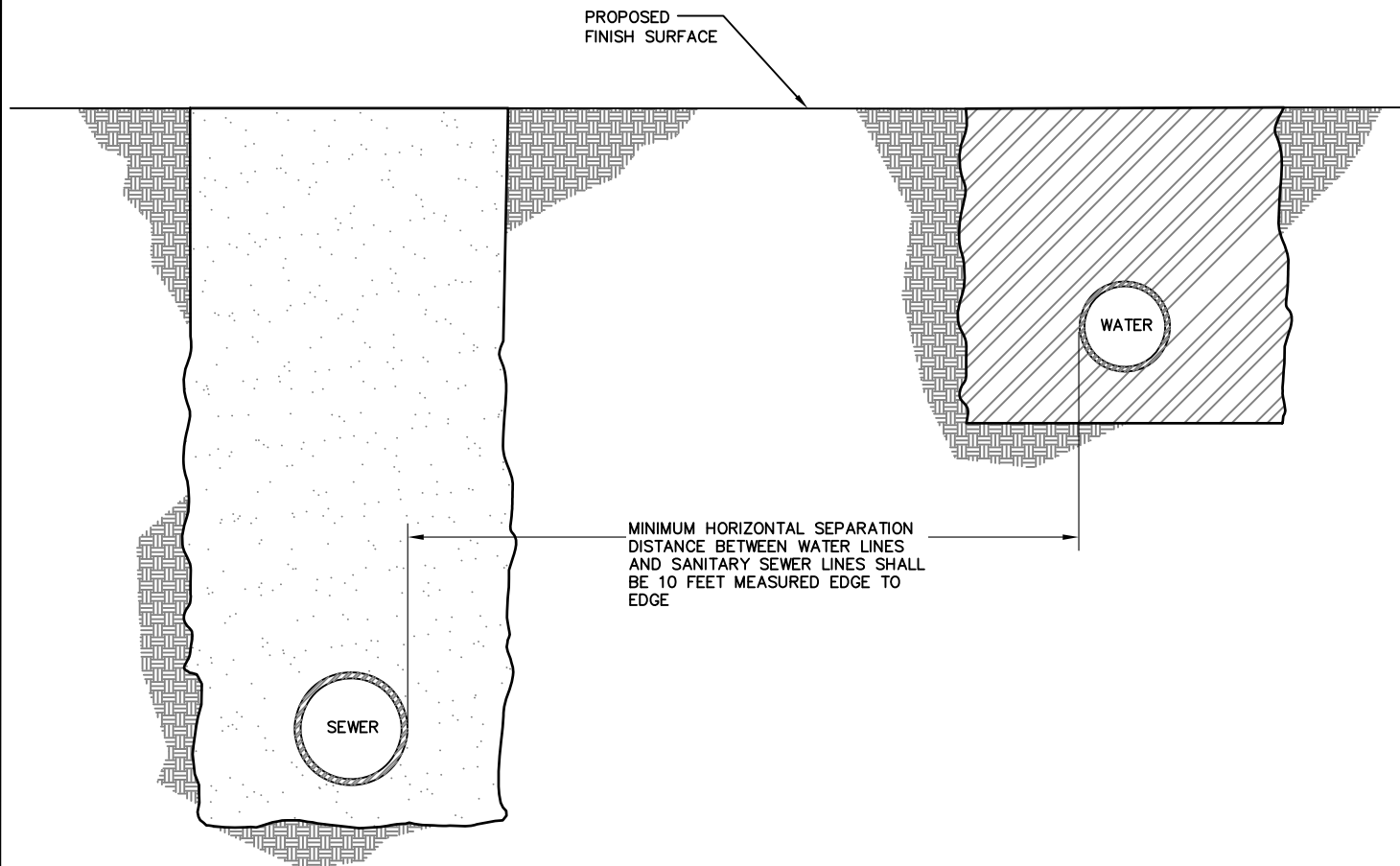
## WATER METER AND BLOW-OFF INSTALLATIONS



CASE 3

### NOTES:

1. METER BOXES SHALL BE LOCATED WITHIN 6-INCHES FROM THE BACK OF CURB. LONGITUDINAL AXIS PERPENDICULAR TO AND DIRECTLY BEHIND CURB.
2. METER BOXES SHALL NOT BE LOCATED IN DRIVEWAYS.
3. PREFERABLY, ABOVE GROUND UTILITIES SHALL BE LOCATED ON PROPERTY LINES SEPARATING LOTS.
4. COMBINATION AIR RELEASE AND VACUUM VALVE ASSEMBLIES SHALL BE LOCATED BEHIND THE SIDEWALK..
5. LOCATE METERS AT THE CENTER OF LOTS.



CONSTRUCTION NOTES:

1. THE HORIZONTAL DISTANCE BETWEEN WATER LINES AND SANITARY SEWER LINES SHALL BE AT LEAST 10 FEET.
2. WHERE A WATER MAIN AND A SEWER LINE MUST CROSS, THE WATER MAIN SHALL BE AT LEAST 18 INCHES ABOVE THE SEWER LINE.
3. SEPARATION DISTANCES SHALL BE MEASURED EDGE-TO-EDGE.
4. WATER MAINS AND SEWER LINES SHALL NOT BE INSTALLED IN THE SAME TRENCH.
5. SEWER FORCE MAINS SHALL BE ENCLOSED IN A CONTINUOUS SLEEVE FOR 10- FEET WHEN CROSSING UNDER AN EXISTING WATER MAIN.
6. WATER MAINS SHALL BE CONSTRUCTED OF PIPE MATERIALS WITH A MINIMUM RATED WORKING PRESSURE OF 200 PSI WHEN CROSSING OVER AN EXISTING SEWER FORCE MAIN.
7. WATER SERVICE LATERALS SHALL CONFORM TO ALL SEPARATION REQUIREMENTS.
8. WHEN 10-FOOT SEPARATION STANDARDS CANNOT BE MET, THE UTAH DIVISION OF DRINKING WATER PLAN REVIEW CHECKLIST SHALL BE SUBMITTED FOR EXCEPTION APPROVAL WITH ADDITIONAL MITIGATION MEASURES TO PROTECT PUBLIC HEALTH IN ACCORDANCE WITH R309-105- 6(2)(B). ADDITIONAL MITIGATION MEASURES MAY INCLUDE:
  - A. INSTALL SEWER MAIN IN A CASING
  - B. INSTALL EXTRA STRENGTH JOINT-LESS SEWER PIPE
  - C. INSTALL EXTRA STRENGTH PLASTIC, DUCTILE, OR CONCRETE PIPE MATERIAL WITH COMPRESSION JOINTS.
  - D. CROSS THE WATER PIPE OVER THE SEWER PIPE WITH NO PIPE JOINTS IN WATER OR SEWER PIPES FOR A MINIMUM OF 10- FEET HORIZONTALLY FROM EACH SIDE OF THE CROSSING.
  - E. PLACE THE SEWER PIPE IN A CONTINUOUS CASING FOR A MINIMUM OF 10- FEET HORIZONTALLY FROM EACH SIDE OF THE CROSSING.
  - F. USE JOINT-LESS PIPING.

DRAWING UPDATED JANUARY 2019

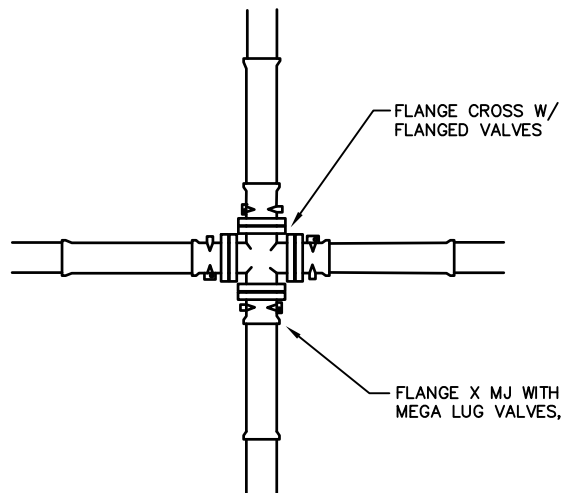
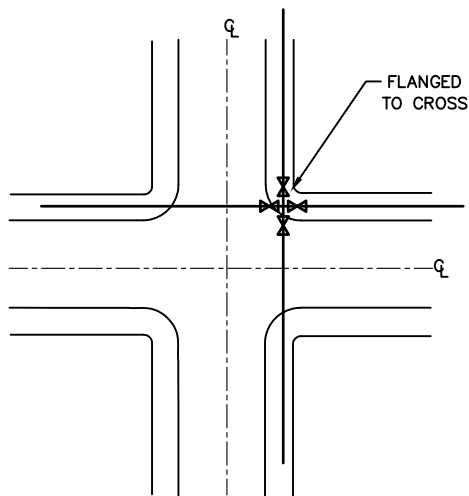
City of West Jordan, Utah



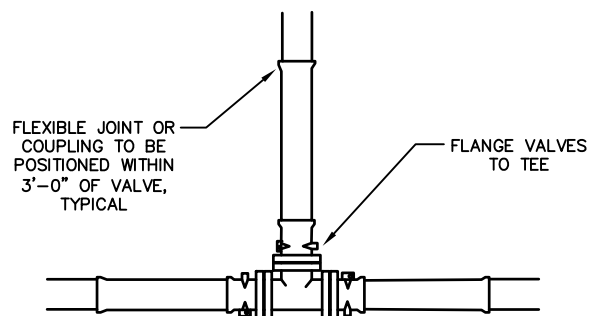
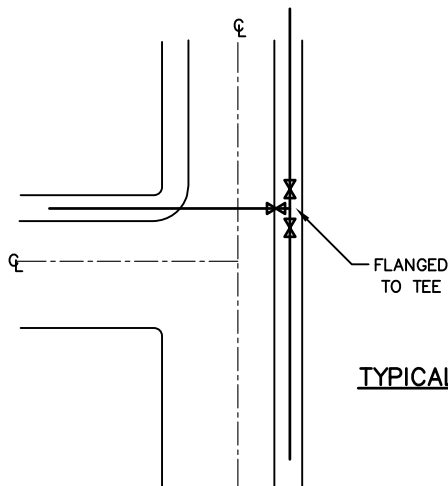
# SEPARATION REQUIREMENTS FOR WATER AND WASTEWATER LINES

PLAN  
CW-021

1. EXCAVATION: TRENCH EXCAVATION AND SIDE SLOPES SHALL BE ACCORDANCE WITH OSHA AND UOSH SAFETY STANDARDS AND WITH APWA 31-23-16 AND ALL STATE AND FEDERAL LAWS FOR TRENCH SAFETY.
2. BACKFILL: BACKFILL OPERATIONS SHALL COMPLY WITH APWA 33-05-20 "BACKFILLING TRENCHES". BACKFILL MATERIALS SHALL COMPLY WITH APWA 31-05-13 "COMMON FILL" AND 32-11-23 "AGGREGATE BASE" WITH MATERIAL SELECTION AS FOLLOWS:



### CROSS-TYPICAL CONNECTIONS

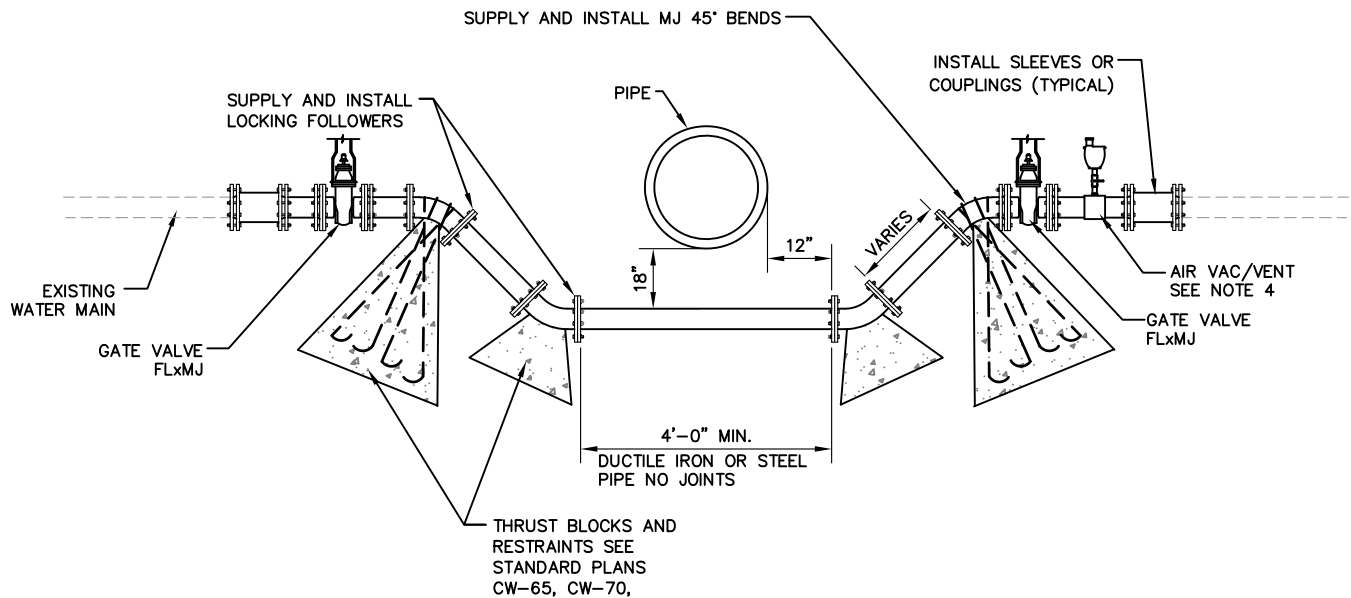


### TYPICAL CONNECTIONS - TEE

#### NOTES:

1. VALVES SHALL BE FLANGED ON EACH BRANCH OF WATER MAIN INTERSECTIONS. MEGA-LUG REINFORCEMENT REQUIRED ON ALL FITTINGS AND VALVES.
2. IN LINE VALVES ARE REQUIRED AT INTERVALS NOT TO EXCEED 800 FEET FOR 8 LINES AND 600 FEET FOR LINES 10 INCH OR LARGER.
3. SEE CW-155 FOR STANDARD BURIED VALVE BOX DETAILS.
4. MECHANICAL JOINT FITTINGS: PROVIDE DUCTILE IRON FITTINGS MEETING THE REQUIREMENTS OF AWWA C110. ALL FITTINGS SHALL BE RATED FOR 250 PSI.
5. FLANGES, BOLTS AND GASKETS: FLANGES SHALL BE FLAT-FACED AND MEET THE REQUIREMENTS OF AWWA C207 AND SHOULD BE AWWA STANDARD STEEL HUB FLANGES, CLASS E (275 PSI). BOLTS AND NUTS SHALL BE PROVIDED AS INDICATED IN CITY STANDARDS. GASKETS SHALL BE OF THE DROP-IN GASKET TYPE, 1/8 INCH THICK. CONTRACTOR TO TIGHTEN BOLTS ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
7. WRAPPING OF CONNECTIONS: 8 MIL THICK POLYETHYLENE FILM WRAP SHALL BE USED AROUND ALL BURIED VALVES, BOLTED FLANGES AND OTHER FITTINGS. WRAP SHALL BE SECURED WITH 2 INCH WIDE ADHESIVE TAPE AS SPECIFIED IN THE STANDARDS.
8. THRUST BLOCKS SHALL BE PROVIDED AS SHOWN IN STANDARD DRAWING CW-65, CW-70, CW-80, CW-85. ANCHOR BLOCKS SHALL BE PROVIDED AS SHOWN IN CW-75 AND CW-85.





### ELEVATION

#### NOTES:

1. EXCAVATION: TRENCH EXCAVATION AND SIDE SLOPES SHALL BE ACCORDANCE WITH OSHA AND UOSH SAFETY STANDARDS AND WITH APWA 31-23-16 AND ALL STATE AND FEDERAL LAWS FOR TRENCH SAFETY.
2. BACKFILL: BACKFILL OPERATIONS SHALL COMPLY WITH APWA 33-05-20 "BACKFILLING TRENCHES". BACKFILL MATERIALS SHALL COMPLY WITH APWA 31-05-13 "COMMON FILL" AND 32-11-23 "AGGREGATE BASE" WITH MATERIAL SELECTION AS SPECIFIED IN CW-035.
3. INSPECTION: PRIOR TO BACKFILLING EXCAVATION SECURE INSPECTION OF INSTALLATION BY ENGINEERING INSPECTOR.
4. FITTINGS: PROVIDE DUCTILE IRON FITTINGS AND SPOOLS. DO NOT USE GALVANIZED MATERIALS. ALL BENDS ARE TO BE FLANGED OR WELDED.
5. AIR VAC: AIR VAC / VENT VALVE TO BE LOCATED ON THE LOW SIDE OF THE LOOP. SEE CW-180.

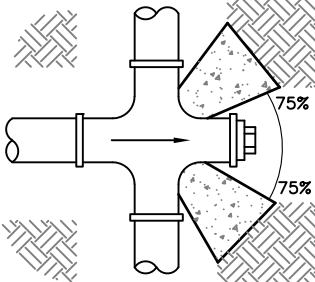
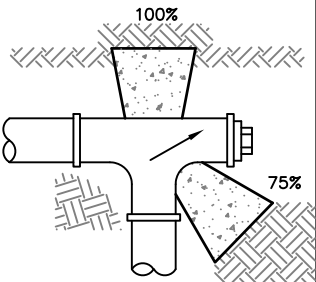
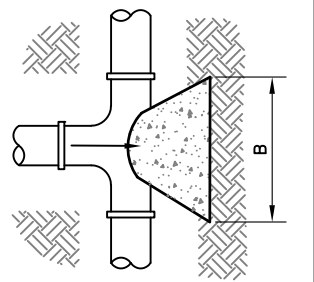
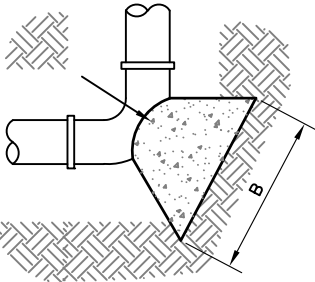
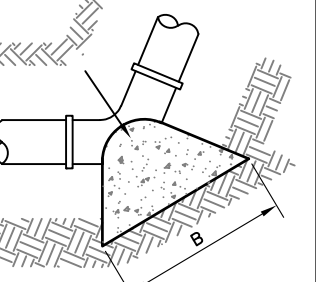
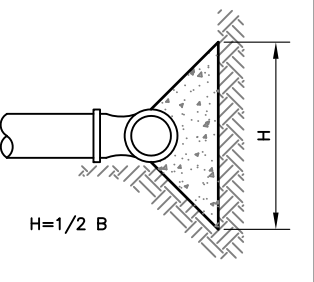
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



## TYPICAL WATERLINE LOOP

PLAN  
CW-060

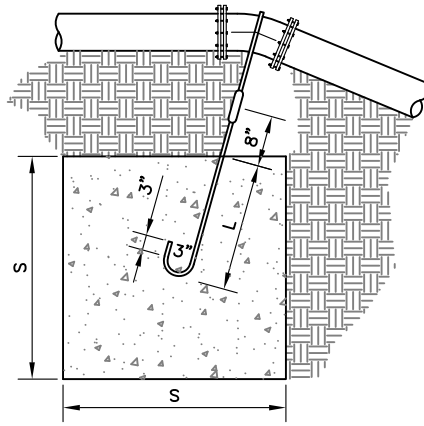
TYPE OF FITTING	CROSS W/PLUG	TEE W/PLUG	TEE OR DEAD END
TYPICAL INSTALLATION			
TYPE OF FITTING	90° BEND	45° THRU 11 1/4" BEND	SECTION
TYPICAL INSTALLATION			

THRUST BLOCK BEARING AREA (SQ. FT.)

TYPE OF FITTING		90° BEND	45° BEND	11 1/4" OR 22 1/2" BEND	TEE OR DEAD END
SIZE OF PIPE	4"	3	2	2	2
	6"	4	3	2	3
	8"	8	4	2	5
	10"	12	6	3	8
	12"	16	9	5	12
	14"	22	12	6	16
	16"	29	16	8	21
	18"	36	20	10	26

**NOTES:**

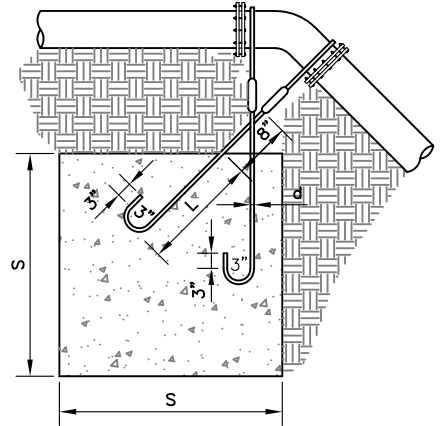
- INSPECTION: PRIOR TO BACKFILLING AROUND THRUST BLOCK, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
- BACKFILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
- CONCRETE: CLASS 2,000 MINIMUM PER APWA SECTION 03-30-04. POUR CONCRETE AGAINST UNDISTURBED SOIL.
- PIPE JOINTS: DO NOT COVER WITH CONCRETE. LEAVE COMPLETELY ACCESSIBLE.
- GREASE: APPLY POLY-FM GREASE TO ALL BURIED METAL SURFACES. WRAP WITH 8 MIL THICK POLYETHYLENE SHEET AND TAPE WRAP.
- SPECIAL CONSTRUCTION REQUIREMENTS:
  - THRUST DESIGN FOR PIPE SIZES OR CONFIGURATIONS NOT SHOWN REQUIRE SPECIAL DESIGN.
  - BEARING AREAS, VOLUMES, AND SPECIAL THRUST BLOCKING DETAILS SHOWN ON CONSTRUCTION DRAWINGS TAKE PRECEDENCE OVER THIS PLAN.
  - PIPES 20" AND LARGER MUST BE DESIGNED AND APPROVED BY ENGINEER.



UNDISTURBED SOIL

**TYPE A BLOCKING**  
FOR 11 1/4° – 22 1/2°  
VERTICAL BENDS

TYPE A BLOCKING FOR 11 1/4° – 22 1/2° VERT. BENDS					
	VB		S	d	L
PIPE SIZE NOMIN. DIAMETER – INCH	VERTICAL BEND DEGREES	NO. OF CU FT. OF CONC. BLOCKING	SIDE OF CUBE FEET	DIAMETER OF SHACK OR REBAR RODS – INCH	DEPTH OF RODS IN CONCRETE FT.
4"	11 1/4°	8	2.0	5/8"	1.5
	22 1/2°	15.6	2.5	#4	2.0
6"	11 1/4°	15.6	2.5	#4	2.0
	22 1/2°	34.3	3.25	#4	
8"	11 1/4°	27	3.0	#4	2.0
	22 1/2°	64	4.0	#4	
12"	11 1/4°	64	4.0	#4	2.0
	22 1/2°	125	5.0	#4	3.0
16"	11 1/4°	107	4.25	#5	3.0
	22 1/2°	216	6.0	#5	4.0
20"	11 1/4°	138	5.17	#5	3.5
	22 1/2°	334	6.94	#5	4.0
24"	11 1/4°	240	6.22	#5	4.0
	22 1/2°	476	7.81	#5	4.0
30"	11 1/4°	369	7.17	#5	4.0
	22 1/2°	733	9.02	#5	4.0



UNDISTURBED SOIL

**TYPE B BLOCKING**  
FOR 45° VERTICAL BENDS

TYPE B BLOCKING FOR 45° VERTICAL BENDS					
	VB		S	d	L
PIPE SIZE NOMIN. DIAMETER – INCH	VERTICAL BEND DEGREES	NO. OF CU C.Y. OF CONC. BLOCKING	SIDE OF CUBE FEET	DIAMETER OF SHACK OR REBAR RODS – INCH	DEPTH OF RODS IN CONCRETE FT.
4"	45°	1	3.0	5/8" #4	2.0
6"		2.37	4.0	5/8" #4	2.5
8"		3.97	4.75	5/8" #4	2.0
12"		9.04	6.25	5/8" #4	4.0
16"		17.24	7.75	#5	4.0
20"		26.52	5.17	#5	4.0
24"		37.82	10.07	#5	4.0
30"		58.26	11.63	#5	4.0

**NOTES:**

- ALL WORK MUST BE INSPECTED AND APPROVED BY INSPECTOR PRIOR TO BACK FILLING
- THRUST BLOCKS OR RESTRAINTS MUST BE POURED AGAINST UNDISTURBED SOIL
- CONCRETE MUST HAVE A MINIMUM OF 4,000 P.S.I. COMPRESSIVE STRENGTH IN 28 DAYS
- CONCRETE MUST BE ALLOWED TO CURE FOR 3 DAYS PRIOR TO PRESSURIZING WATER LINES OR HAVE ADDITIONAL APPROVED THRUST RESTRAINTS INSTALLED PRIOR TO PRESSURIZATION OF THE WATER LINE
- ALL PIPE JOINTS TO BE LEFT ACCESSIBLE.
- REINFORCING STEEL BARS TO BE EPOXY COATED A MINIMUM OF 15 MILS THICK
- ALL EXPOSED METAL SURFACES TO BE COATED WITH GREASE AND WRAPPED WITH AT LEAST 8 MIL THICK POLYETHYLENE SHEETING OR TUBING
- THRUST DESIGN FOR PIPE SIZES OR CONFIGURATIONS NOT SHOWN REQUIRE SPECIAL DESIGN
- BEARING AREAS, VOLUMES, AND SPECIAL THRUST BLOCKING OR RESTRAINING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER THIS STANDARD
- RESTRAINT SIZING ASSUMES A MAXIMUM OPERATING PRESSURE OF 150 PSI TEST PRESSURES OF 200 P.S.I., AND A MINIMUM 2,000 POUND SOIL BEARING STRESS. OPERATING PRESSURES IN EXCESS OF 150 PSI. OR SOILS WITH LESS THAN 2,000 POUNDS BEARING STRESS WILL REQUIRE A SPECIAL DESIGN
- MINIMUM YIELD STRENGTH OF STEEL TIE DOWNS TO BE 70,000 PSI.
- INSTALL APPROPRIATE SIZED THRUST BLOCKING ON ALL BLIND FLANGES, MJ PLUGS, AND CAPS
- LOCKING RESTRAINT DEVICES MAY BE USED IN CONJUNCTION WITH CONCRETE THRUST BLOCKING. (AT OPTION OF ENGINEER).

DRAWING UPDATED JANUARY 2019

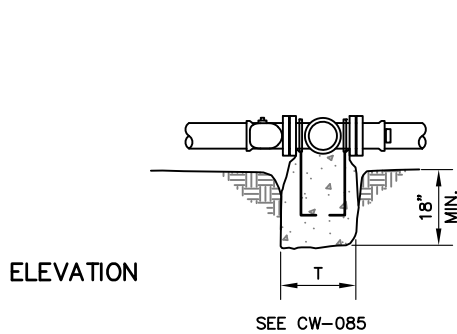
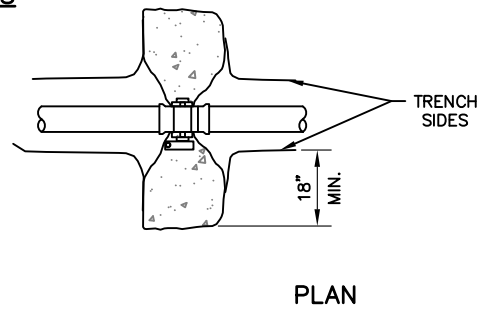
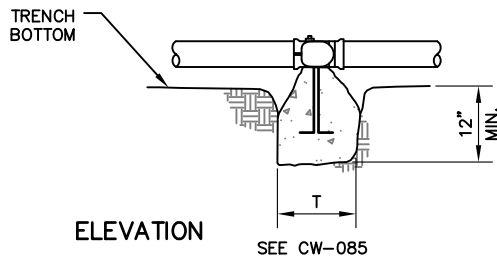
City of West Jordan, Utah



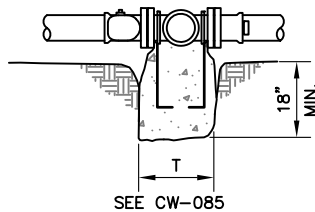
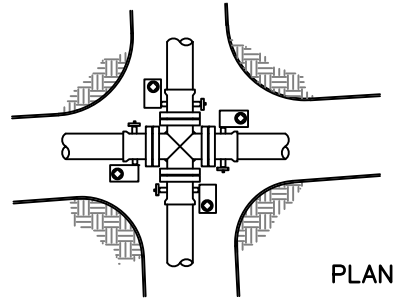
# TIE DOWN THRUST RESTRAINTS

PLAN  
CW-070

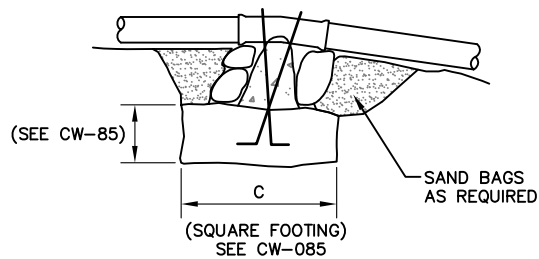
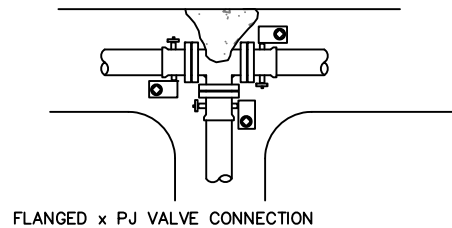
## IN-LINE VALVES



## CROSS



## TEE



## ELBOWS

### NOTES:

1. THRUST BLOCKS SHALL BEAR ON UNDISTURBED EARTH.
2. FOR SIZES OF THRUST BLOCKS SEE CW 085.
3. SPECIAL DESIGN REQUIRED FOR VERTICAL ANGLES GREATER THAN 22 1/2.
4. CONCRETE TO EXTEND MIN. 12' ABOVE AND 6" BELOW PIPE INTO UNDISTURBED EARTH.

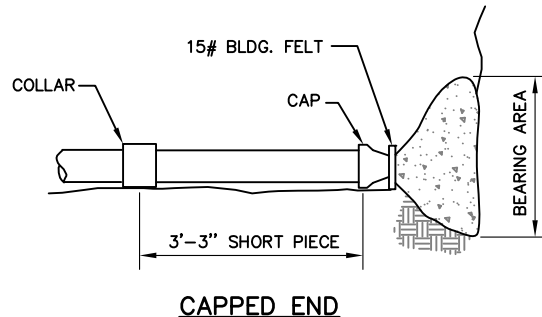
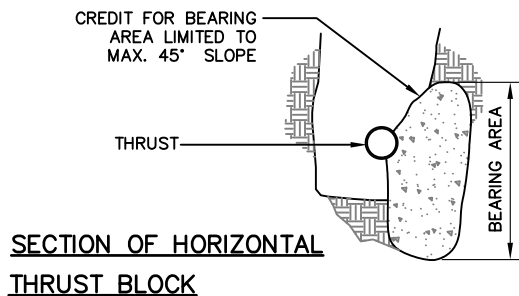
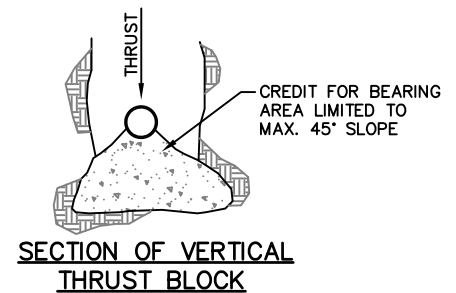
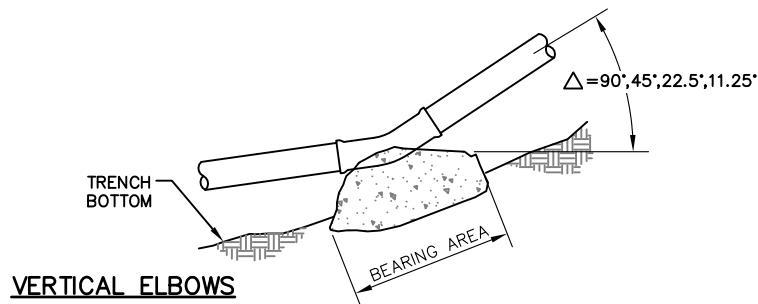
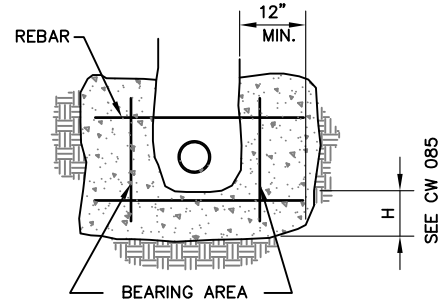
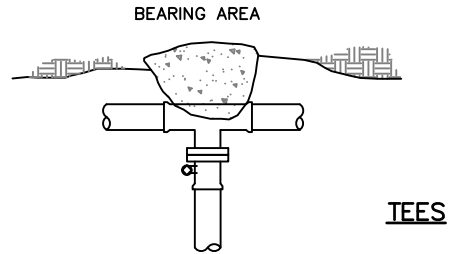
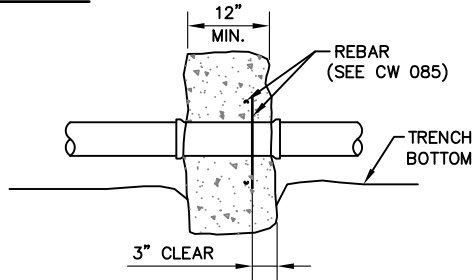
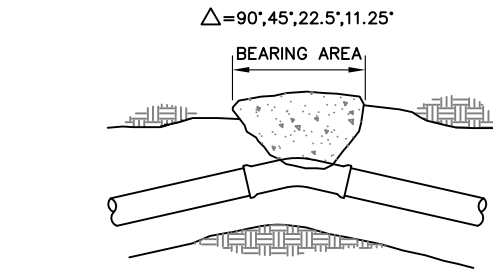
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# ANCHOR BLOCK FOR PUSH JOINT CONNECTION

PLAN  
CW-075



**NOTES:**

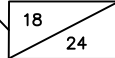
1. THRUST BLOCKS SHALL BEAR ON UNDISTURBED EARTH.
2. FOR SIZES OF THRUST BLOCKS SEE CW 085
3. SPECIAL DESIGN REQUIRES FOR VERTICAL ANGLES GREATER THAN 45 DEGREES.
4. CONCRETE TO EXTEND MIN. 12' ABOVE AND 6" BELOW PIPE INTO UNDISTURBED EARTH.

**THRUST BLOCK SIZES**  
(MINIMUM BEARING IN SQUARE FEET)

**LOCATIONS**

PIPE SIZE	ELBOWS				CAPPED END OR TEE	REDUCER H	REBAR
	90°	45°	22 1/2°	11 1/4°			
6	9 11	5 6	3 3	3 3	6 8	2'-0" 2'-0"	NO. 4
8	14 19	8 11	4 6	4 6	10 14	2'-0" 2'-6"	NO. 4
10	23 31	13 17	7 9	7 9	17 22	2'-6" 3'-0"	NO. 5
12	33 44	18 24	9 12	9 12	23 31	3'-0" 3'-0"	NO. 5

FOR CLASS  
150 PIPE



FOR CLASS  
200 PIPE

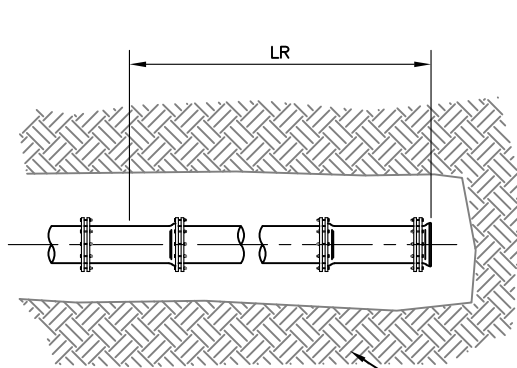
**ANCHOR BLOCK SIZES**  
(DIMENSIONS LOCATIONS)

**FLANGED VALVES**

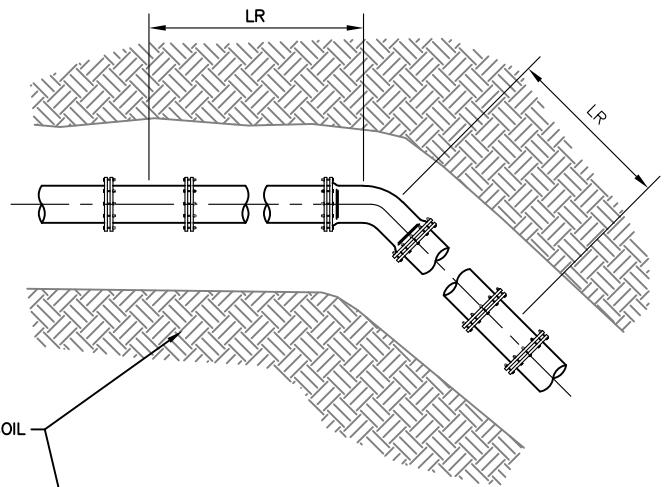
PIPE SIZE	IN LINE VALVE		CONNECTIONS		ELBOWS H		REBAR
	T	REBAR	T	REBAR			
6	12"	NO. 5	12"	NO. 5	3'-0"	12"	NO. 5
8	18"	NO. 5	18"	NO. 5	3'-6"	18"	NO. 5
10	24"	NO. 6	24"	NO. 6	4'-6"	24"	NO. 6
12	24"	NO. 6	24"	NO. 6	5'-6"	24"	NO. 6

**NOTES:**

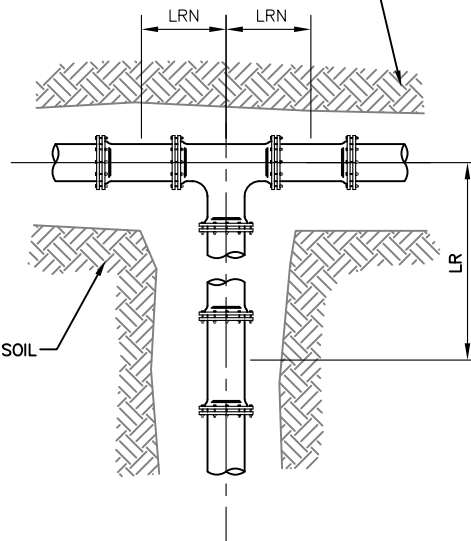
1. SIZES BASED ON 1500 PSF BEARING SOIL. SPECIAL DESIGN REQUIRED FOR SOILS OF LOWER BEARING STRENGTH



**DEAD ENDS**



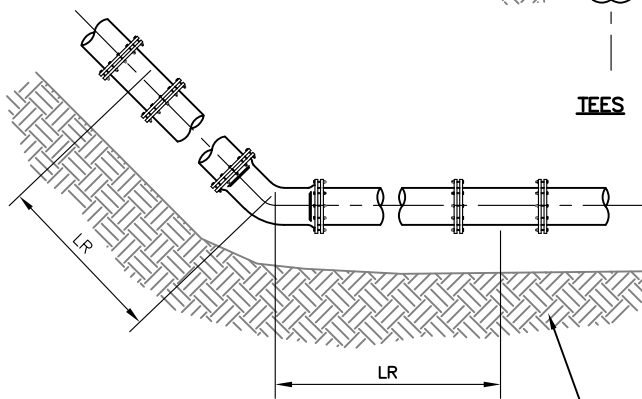
**HORIZONTAL BEND**



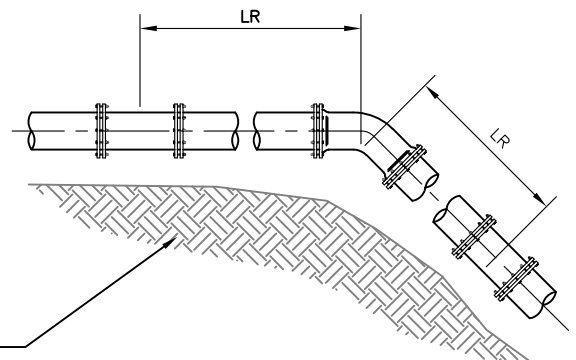
UNDISTURBED SOIL

LRN = SHORTEST LENGTH  
OF PIPE RETRAINED TO THE  
RUN OF THE TEE FITTING  
(BOTH SIDES OF TEE).

**TEES**



**VERTICAL UP END**



**VERTICAL DOWN END**

### RESTRAINED LENGTHS, LR, FOR DUCTILE IRON PIPE

NOMINAL PIPE SIZE INCHES	HORIZONTAL BENDS			TEES		VERTICAL OFFSETS						DEAD ENDS
						90° BEND FITTINGS		45° BEND FITTINGS		22-1/2° BEND FITTINGS		
	90°	45°	22-1/2°	LRN=0'	LRN=10'	DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND	
4	18	7	4	30	8	31	18	13	7	6	3	31
6	25	10	5	43	20	44	25	18	10	9	5	44
8	32	13	6	56	34	58	32	24	13	11	6	58
10	38	16	8	68	45	69	38	29	16	14	8	69
12	45	19	9	80	57	81	45	34	19	16	9	81
14	51	21	10	91	68	92	51	38	21	18	10	92
16	57	24	11	103	79	104	57	43	24	21	11	104
18	62	26	12	113	90	115	62	48	26	23	12	115
20	68	28	14	125	100	126	68	52	28	25	14	126
24	79	33	16	145	121	147	79	61	33	29	16	147

### RESTRAINED LENGTHS, LR, FOR DUCTILE IRON PIPE WITH POLYETHYLENE WRAP

NOMINAL PIPE SIZE INCHES	HORIZONTAL BENDS			TEES		VERTICAL OFFSETS						DEAD ENDS
						90° BEND FITTINGS		45° BEND FITTINGS		22-1/2° BEND FITTINGS		
	90°	45°	22-1/2°	LRN=0'	LRN=10'	DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND	
4	26	11	5	69	18	72	26	30	11	14	5	72
6	36	15	7	99	47	102	36	42	15	20	7	102
8	47	19	9	130	78	133	47	55	19	26	9	133
10	56	23	11	157	103	159	6	66	23	32	11	159
12	65	27	13	185	131	187	65	77	27	37	13	187
14	74	31	15	211	156	214	74	89	31	42	15	214
16	82	34	16	238	183	241	82	100	34	48	16	241
18	90	37	18	263	207	266	90	110	38	53	18	266
20	98	41	20	289	233	292	98	121	41	58	20	292
24	113	47	22	337	280	340	113	141	47	68	22	340

**NOTES:**

1. ALL JOINTS WITHIN THE SPECIFIED LENGTH LR MUST BE RESTRAINED.  
ALL LENGTHS ARE GIVEN IN FEET.
2. THE MAXIMUM TEST PRESSURE SHALL NOT EXCEED 200 PSI.
3. THE MINIMUM DEPTH OF BURY SHALL BE 3' TO TOP OF PIPE.
4. RESTRAINED LENGTHS MAY BE REDUCED WHEN SUPPORTED BY ENGINEERING CALCULATIONS.

DRAWING UPDATED JANUARY 2019

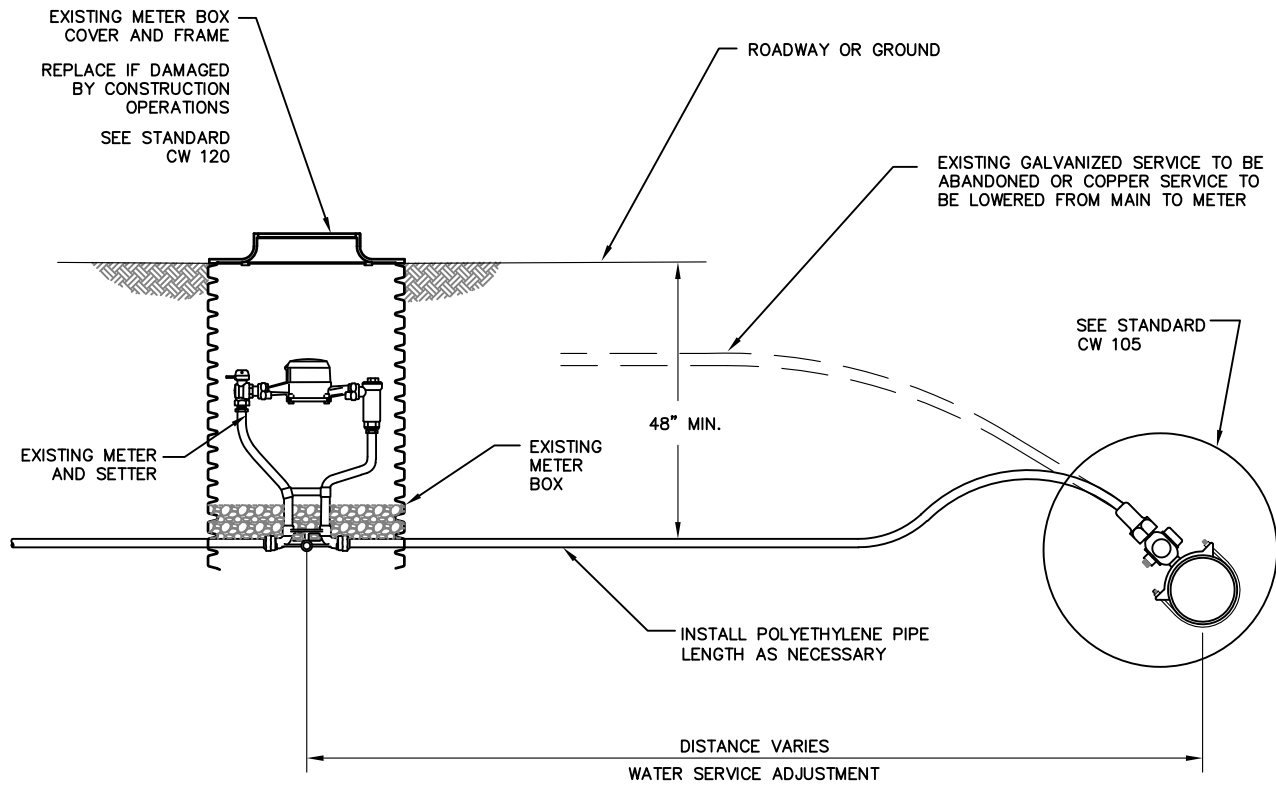
City of West Jordan, Utah



## DUCTILE IRON PIPE THRUST RESTRAINT

PLAN  
**CW-095**





NOTES:

1. INSPECTION: PRIOR TO BACK FILLING TRENCH EXCAVATION, SECURE INSPECTION OF INSTALLATION BY INSPECTOR.
2. BACK FILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. FITTINGS: PROVIDE BRASS FITTINGS AND NIPPLE. DO NOT USE GALVANIZED MATERIALS

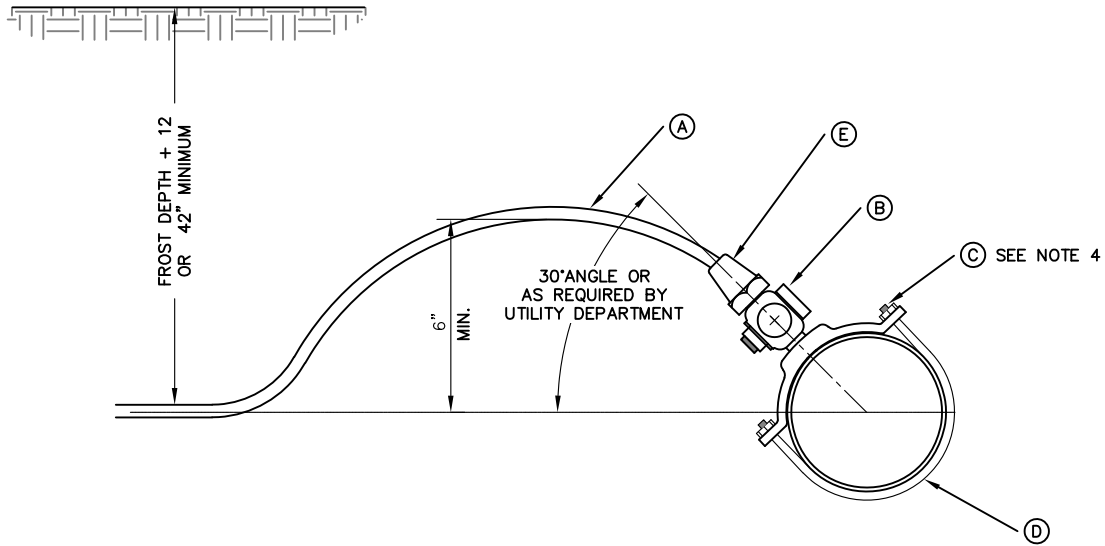
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# WATER SERVICE ADJUSTMENT

PLAN  
CW-100



**TYPE A – SADDLE CLAMP TAP**

No.	ITEM	LEGEND	
		DESCRIPTION 3/4"	DESCRIPTION 1"
(A)	SERVICE PIPE	POLYETHYLENE IPS-ID 200 PSI SIDR-7 "BLUE" NSF APPROVED	POLYETHYLENE IPS-ID 200 PSI SIDR-7 "BLUE" NSF APPROVED
(B)	CORPORATION STOP	BRASS	BRASS
		FORD FB 500-3	FORD FB 500-4
(C)	SERVICE SADDLE CLAMP	BRASS DOUBLE STRAP	
		MUELLER: H 16109 FOR 8" FORD: 202B-962-IP3	MUELLER: H 16109 FOR 8" FORD: 202B-962-IP4
		MUELLER: H 16113 FOR 10" FORD: 202B-1212-IP3	MUELLER: H 16113 FOR 10" FORD: 202B-1212-IP4
		MUELLER: H 16116 FOR 12" FORD: 202B-1438-IP3	MUELLER: H 16116 FOR 12" FORD: 202B-1438-IP4
(D)	WATER MAIN PIPE	PVC or D I PIPE	
(E)	CONNECTIN FITTING FROM PIPE TO CORPORATION STOP	MUELLER INSTA-TITE H-15456 FIPS NON-FLARED x INSTA-TITE	MUELLER INSTA-TITE H-15456 FIPS NON-FLARED x INSTA-TITE

**NOTES:**

1. INSPECTION: PRIOR TO BACKFILLING AROUND TAPS, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
2. BACKFILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. TAPPING: PLACE TAPS A MINIMUM OF 24 INCHES APART. USE A TAPPING TOOL WHICH IS SIZED CORRESPONDING TO THE SIZE OF THE SERVICE LINE TO BE INSTALLED. NO TAPS WITHIN 24 INCHES OF THE END OF THE PIPE.
4. SERVICE SADDLE: A SERVICE SADDLE CLAMP IS REQUIRED ON ALL PIPE TAPS.
5. TEFLON TAPE: TEFLON TAPE IS REQUIRED ON ALL TAPS.

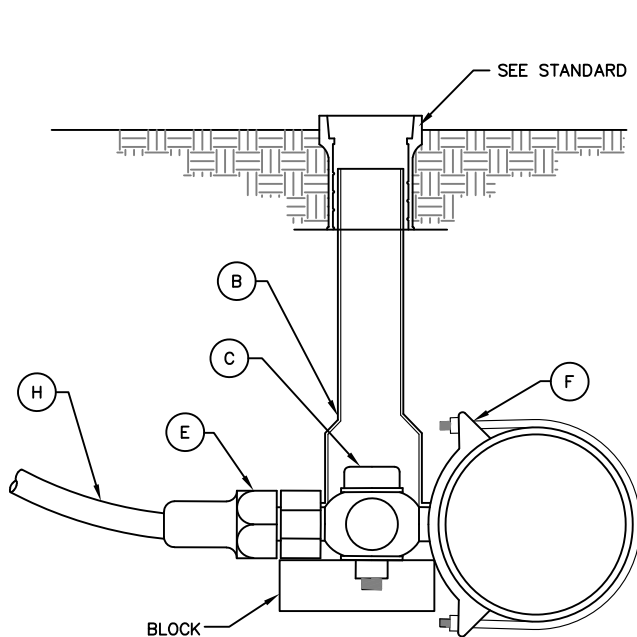
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah

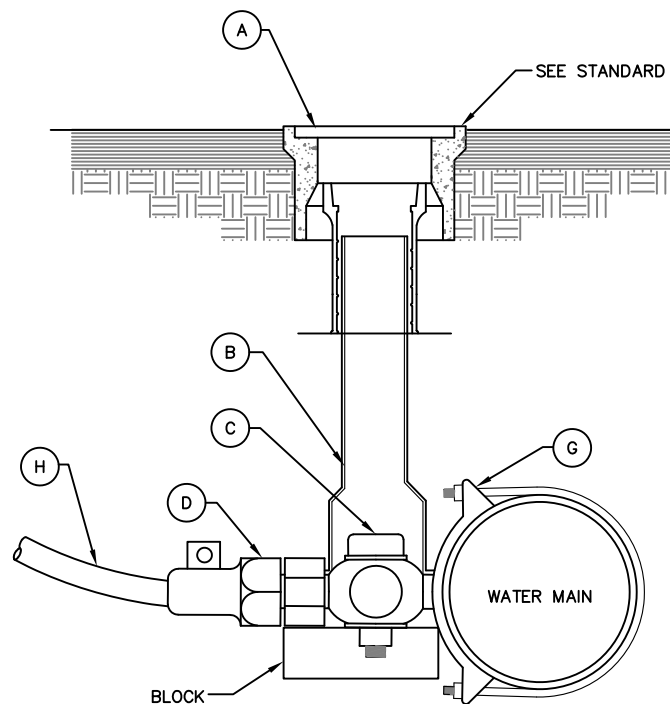


# SERVICE TAPS FOR 3/4 " AND 1" LATERALS

PLAN  
CW-105



**STOP IN PARK STRIP**



**STOP IN ROADWAY**

LEGEND			
No.		ITEM	DESCRIPTION
(A)		CONCRETE TRAFFIC BOX	
(B)		2-PC. CAST IRON VALVE BOX WITH LID	
(C)		CORPORATION STOP	FEMALE BRASS COPPER TUBE SIZE COMPRESSION W/S.S. INSERT
(D)		COPPER ADAPTER	
(E)		FLARE COPPER ADAPTER	
(F)		SERVICE SADDLE CLAMP	
(G)		SERVICE SADDLE CLAMP	
(H)		POLYETHYLENE PIPE	

\*\* F & G ARE REQUIRED ON D.I.P. WATER MAIN

**NOTES:**

1. INSPECTION: PRIOR TO BACK FILLING AROUND TAPS, SECURE INSPECTION OF INSTALLATION BY ENGINEER
2. BACK FILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. TAPPING: PLACE TAPS A MINIMUM OF 24-INCH APART. USE A TAPPING MACHINE APPROVED BY ENGINEER. NO TAPS WITHIN 24-INCHES OF END OF PIPE.
4. TAPE: TEFLON TAPE IS REQUIRED ON ALL TAPS
5. DEPTH OF SERVICE LINE: 12-INCH BELOW FROST LINE OR 48" MINIMUM.
6. BLOCKS: CONCRETE OR BRICK REQUIRED UNDER VALVE BOX TO ASSURE A 1" SPACE BEFORE BEARING ON A CORPORATION STOP.
7. SADDLE CLAMP: CLAMP IS REQUIRED ON ALL TAPS

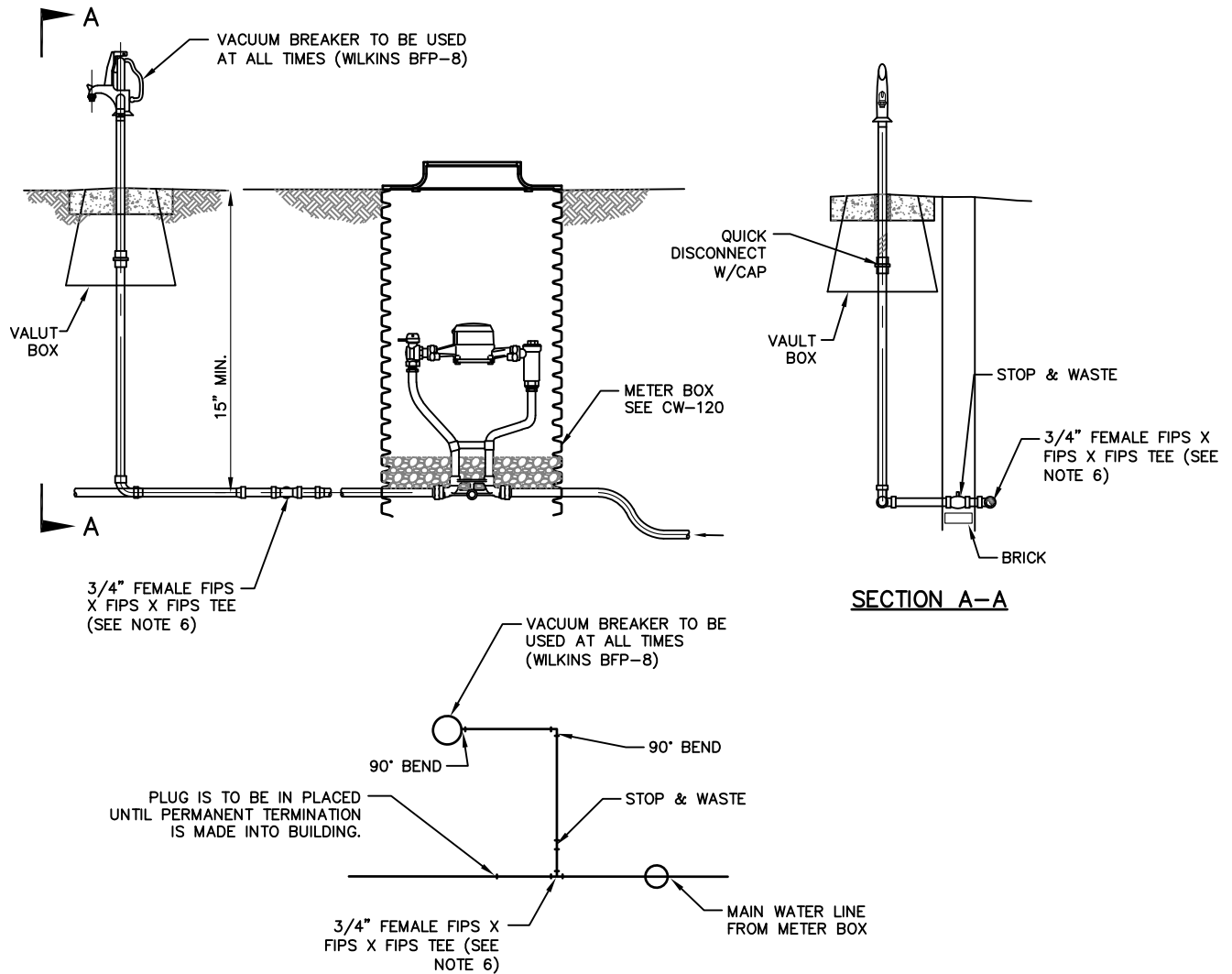
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# 2" SERVICE TAP

PLAN  
CW-110



**NOTES:**

1. INSPECTION: PRIOR TO BACKFILLING AROUND THE METER BOX, SECURE INSPECTION OF INSTALLATION BY INSPECTOR.
2. BACKFILLING: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. METER: CONTRACTOR WILL SET THE 3/4" OR 1" METER UPON INSPECTOR APPROVAL.
4. PIPE: INSTALL TYPE IPS POLYETHYLENE PIPE 15' PAST PROPERTY LINE.
5. PLACEMENT:
  - A. DO NOT INSTALL METERS UNDER DRIVE APPROACHES, SIDEWALKS, OR CURB AND GUTTER.
  - B. ALL METERS ARE TO BE INSTALLED IN THE PARKSTRIP OR WITHIN 7 FEET OF THE PROPERTY LINE (STREET SIDE).
6. TEE: TEE WILL INCLUDE A MALE MUELLER BRAND INSTA-TITE THAT WILL ATTACHED ON EACH SIDE OF TEE.

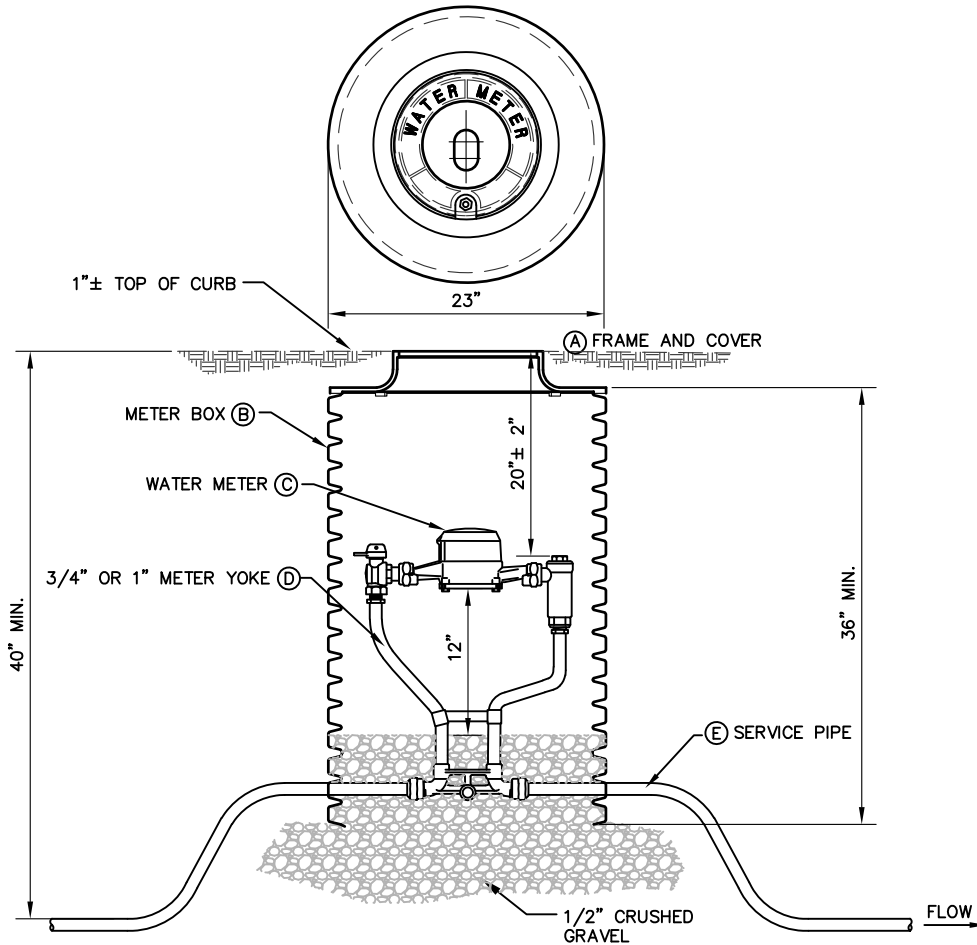
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# TEMPORARY CONSTRUCTION WATER HYDRANT AND 3/4 " & 1" METER DETAIL

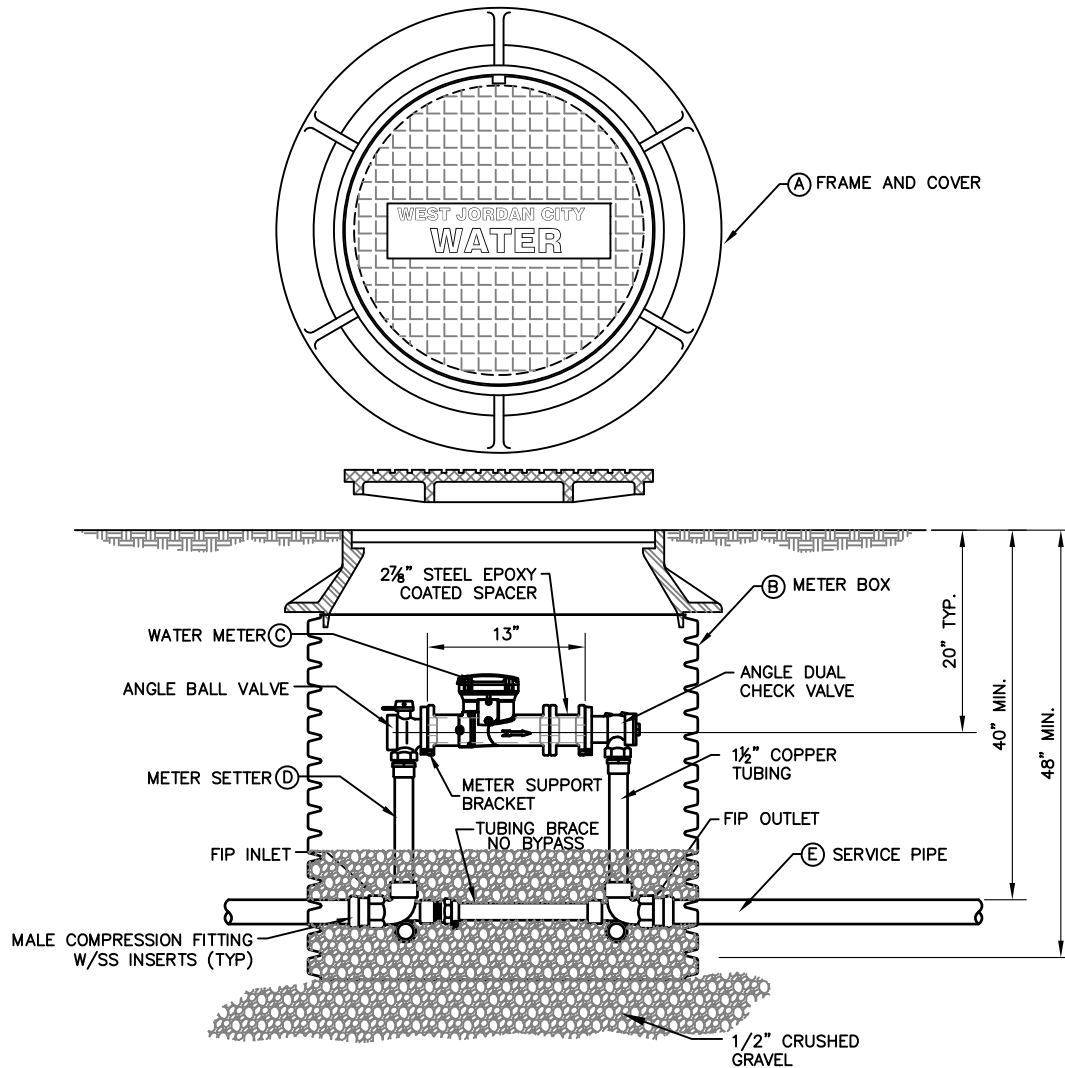
PLAN  
CW-115



NO.	ITEM	DESCRIPTION 3/4" METER	DESCRIPTION 1" METER
(A)	FRAME AND COVER LABELED "WATER METER"	D&L SUPPLY L-2240-UNVI, L-2244 OLYMPIC MTU-9000-9021	D&L SUPPLY L-2240-UNVI, L-2244 OLYMPIC MTU-9000-9021
(B)	METER BOX	21" DIA. HANCOR METER PIT	21" DIA. HANCOR METER PIT
(C)	WATER METER FURNISHED & INSTALLED BY CITY	3/4" RESIDENTIAL MASTER METER BOTTOM LOAD MULTI-JET METERS	1" RESIDENTIAL MASTER METER BOTTOM LOAD MULTI-JET METERS
(D)	3/4" OR 1" METER YOKE	70 SERIES 3/4" COPPERSETTER VBHC72-21W-11-33-NL	1" COPPERSETTER 70 SERIES VBHC72-21W-11-44-NL
(E)	SERVICE PIPE	3/4" POLYETHYLENE IPS-ID-200 PSI SIDR-7 "BLUE" NSF APPROVED	1" POLYETHYLENE IPS-ID-200 PSI SIDR-7 "BLUE" NSF APPROVED

**NOTES:**

1. INSPECTION: PRIOR TO BACK FILLING AROUND METER BOX, SECURE APPROVAL OF INSTALLATION BY INSPECTOR.
2. BACK FILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. ALL METER SETTERS MUST HAVE BACK FLOW PREVENTERS.
4. PIPE: INSTALL SERVICE PIPE TO PROPERTY LINE.
5. PLACEMENT: ALL METERS ARE TO BE INSTALLED IN THE PARK STRIP, (ALL EXCEPTIONS REQUIRE INSPECTOR APPROVAL), AND MUST BE PLACED IN THE CENTER OF THE LOT AND MUST BE LOCATED 1' AWAY FROM DRIVEWAY.
6. METER BOX SHALL BE CLEANED AND FREE OF DIRT, TRASH, AND DEBRIS PRIOR TO FINAL INSPECTION.



NOTES:

1. INSPECTION: PRIOR TO BACK FILLING AROUND METER BOX, SECURE APPROVAL OF INSTALLATION BY INSPECTOR
2. BACK FILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. ALL METER SETTERS MUST HAVE BACK FLOW PREVENTERS
4. PIPE: INSTALL SERVICE PIPE TO PROPERTY LINE.
5. PLACEMENT: ALL METERS ARE TO BE INSTALLED IN THE PARK STRIP, (ALL EXCEPTIONS REQUIRE INSPECTOR APPROVAL), AND MUST BE PLACED IN THE CENTER OF THE LOT AND MUST BE LOCATED 1' AWAY FROM DRIVEWAY.

NO.	ITEM	DESCRIPTION	SPECIFICATIONS
(A)	FRAME & COVER	30" MANHOLE RING & COVER LABELED "WEST JORDAN CITY WATER"	D&L SUPPLY A-1180
(B)	METER BOX	30" DIA. HDPE CORRUGATED PIPE SECTION	ADS - WHITE OR EQUAL
(C)	WATER METER AND SPACER FURNISHED BY CITY	1 1/2" OCTAVE ULTRASONIC METER	MASTER METER OCTAVE GPM #139-125-09
(D)	METER SETTER	1 1/2" METER SETTER W/CHECK VALVE	FORD VBHH76-18-11-66 NL
(E)	SERVICE PIPE	1 1/2" POLYETHYLENE TUBE NSE APPROVED	CTS-10-200 PSI SIDR-7 "BLUE"

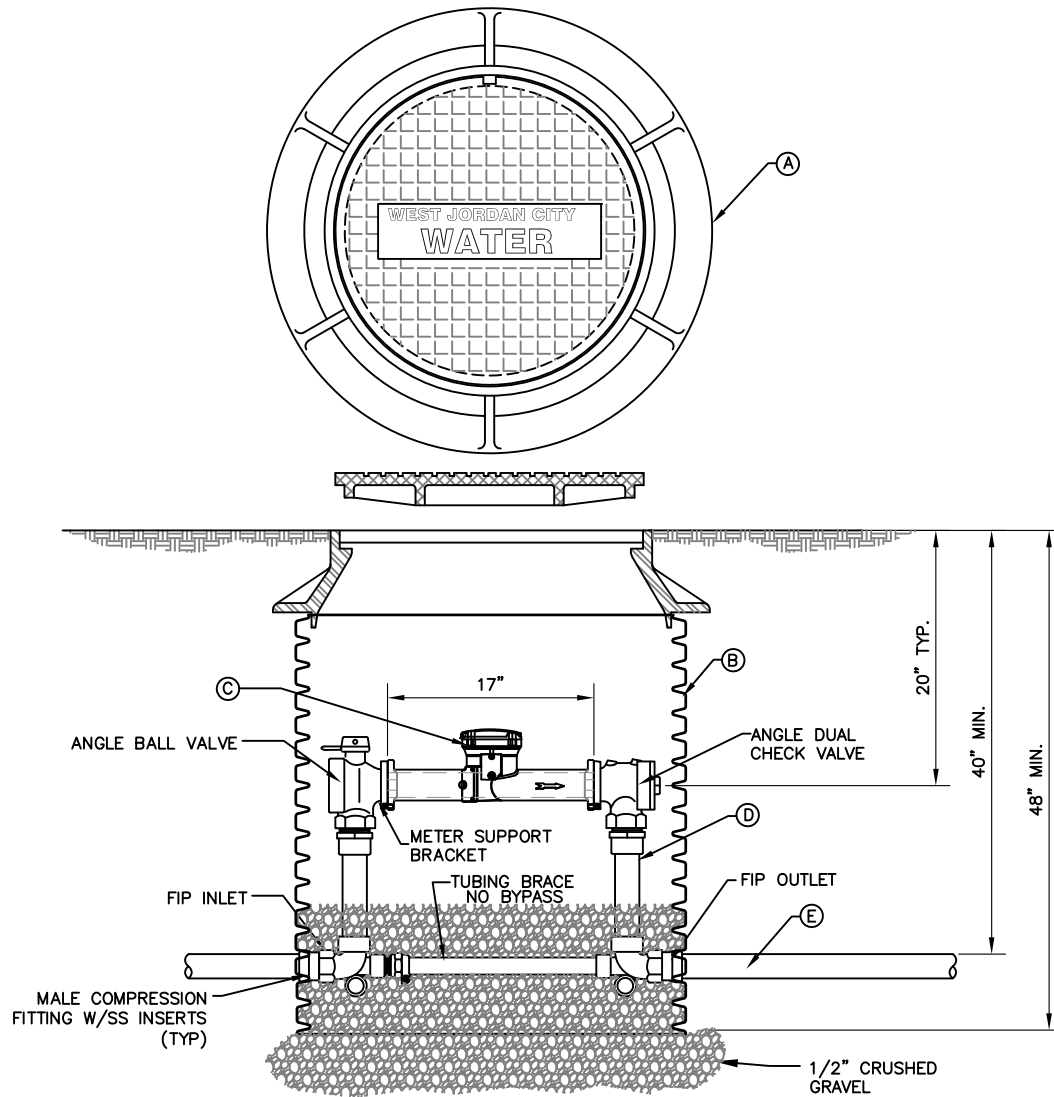
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



1-1/2" METER

PLAN  
CW-121



NOTES:

1. INSPECTION: PRIOR TO BACK FILLING AROUND METER BOX, SECURE APPROVAL OF INSTALLATION BY INSPECTOR
2. BACK FILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. ALL METER SETTERS MUST HAVE BACK FLOW PREVENTERS
4. PIPE: INSTALL SERVICE PIPE TO PROPERTY LINE.
5. PLACEMENT: ALL METERS ARE TO BE INSTALLED IN THE PARK STRIP, (ALL EXCEPTIONS REQUIRE INSPECTOR APPROVAL), AND MUST BE PLACED IN THE CENTER OF THE LOT AND MUST BE LOCATED 1' AWAY FROM DRIVEWAY.

NO.	ITEM	DESCRIPTION	SPECIFICATIONS
(A)	FRAME AND COVER	30" MANHOLE RING & COVER LABELED "WEST JORDAN CITY WATER"	D&L SUPPLY A-1180
(B)	METER BOX	30" DIA. HDPE CORRUGATED PIPE SECTION	-
(C)	WATER METER FURNISHED BY CITY	2" OCTAVE ULTRASONIC METER	MASTER METER OCTAVE GPM #139-125-09
(D)	METER SETTER	2" METER SETTER W/CHECK VALVE	FORD VBHH76-18-11-66 NL
(E)	SERVICE PIPE	1½" POLYETHYLENE TUBE NSE APPROVED	CTS-10-200 PSI SIDR-7 "BLUE"

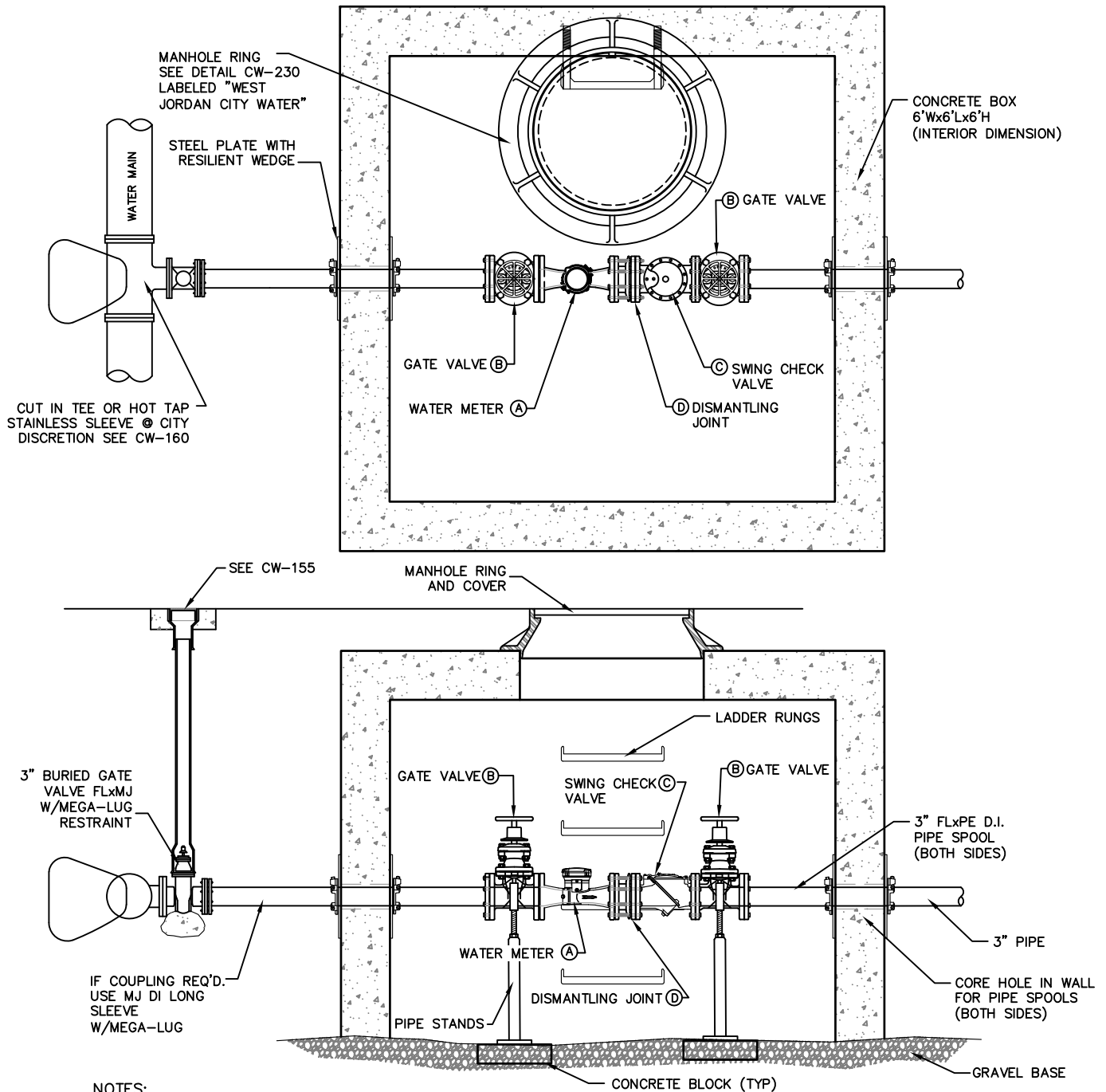
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



## 2" METER DETAIL

PLAN  
CW-130



NOTES:

1. INSPECTION: PRIOR TO BACK FILLING AROUND METER BOX, SECURE APPROVAL OF INSTALLATION BY INSPECTOR
2. BACK FILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. CONCRETE BOX: PRECAST OR CAST-IN-PLACE BOX, FOR PRECAST BOX: ALLOW 1 INCH CLEARANCE AROUND WATERLINE WHERE LINE PASSES THROUGH THE WALL. SEAL OPENING AROUND PIPE, IN HIGH WATER AREAS SEAL W/LINK SEAL.

NO.	ITEM	DESCRIPTION	SPECIFICATIONS
(A)	WATER METER FURNISHED BY CITY	3" OCTAVE ULTRASONIC METER	MASTER METER 3" OCTAVE GPM #139-325-09
(B)	GATE VALVE	3" FL GATE VALVE W/HANDWHEEL	RESILIENT WEDGE, AWWA C509
(C)	CHECK VALVE	3" FL SWING CHECK	VAL MATIC VM-503A-M
(D)	DISMANTLING JOINT	3" FL DISMANTLING JOINT W/RESTRAIN	ROMAC DJ 400

DRAWING UPDATED JANUARY 2019

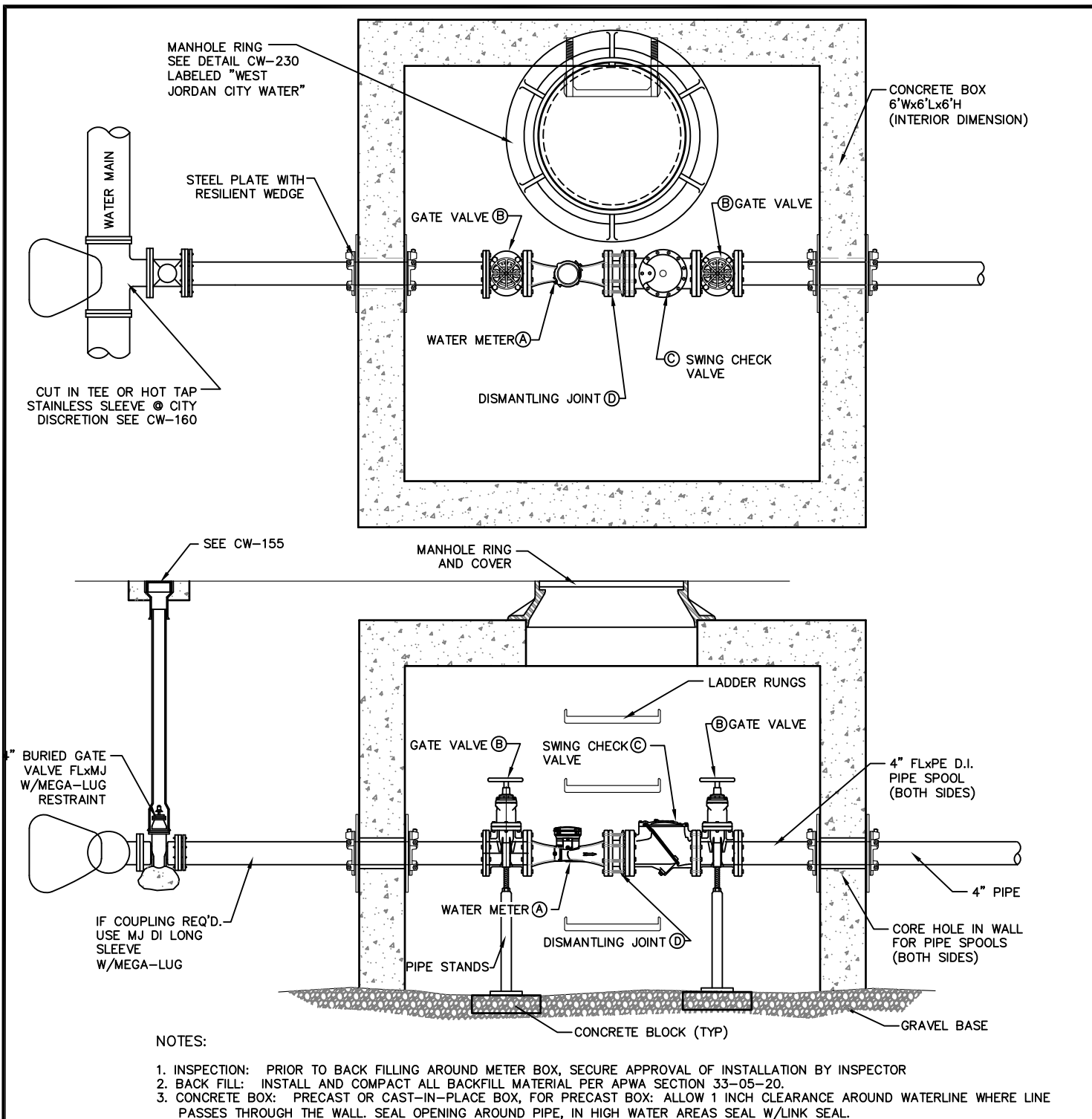
City of West Jordan, Utah



3" METER

PLAN  
CW-135





NO.	ITEM	DESCRIPTION	SPECIFICATIONS
(A)	WATER METER FURNISHED BY CITY	4" OCTAVE ULTRASONIC METER	MASTER METER 4" OCTAVE GPM
(B)	GATE VALVE	4" FL GATE VALVE W/HANDWHEEL	WEDGE RESILIENT, AWWA C509
(C)	CHECK VALVE	4" FL SWING CHECK	VAL MATIC VM-504A-M
(D)	DISMANTLING JOINT	4" FL DISMANTLING JOINT W/RESTRAIN	ROMAC DJ 400

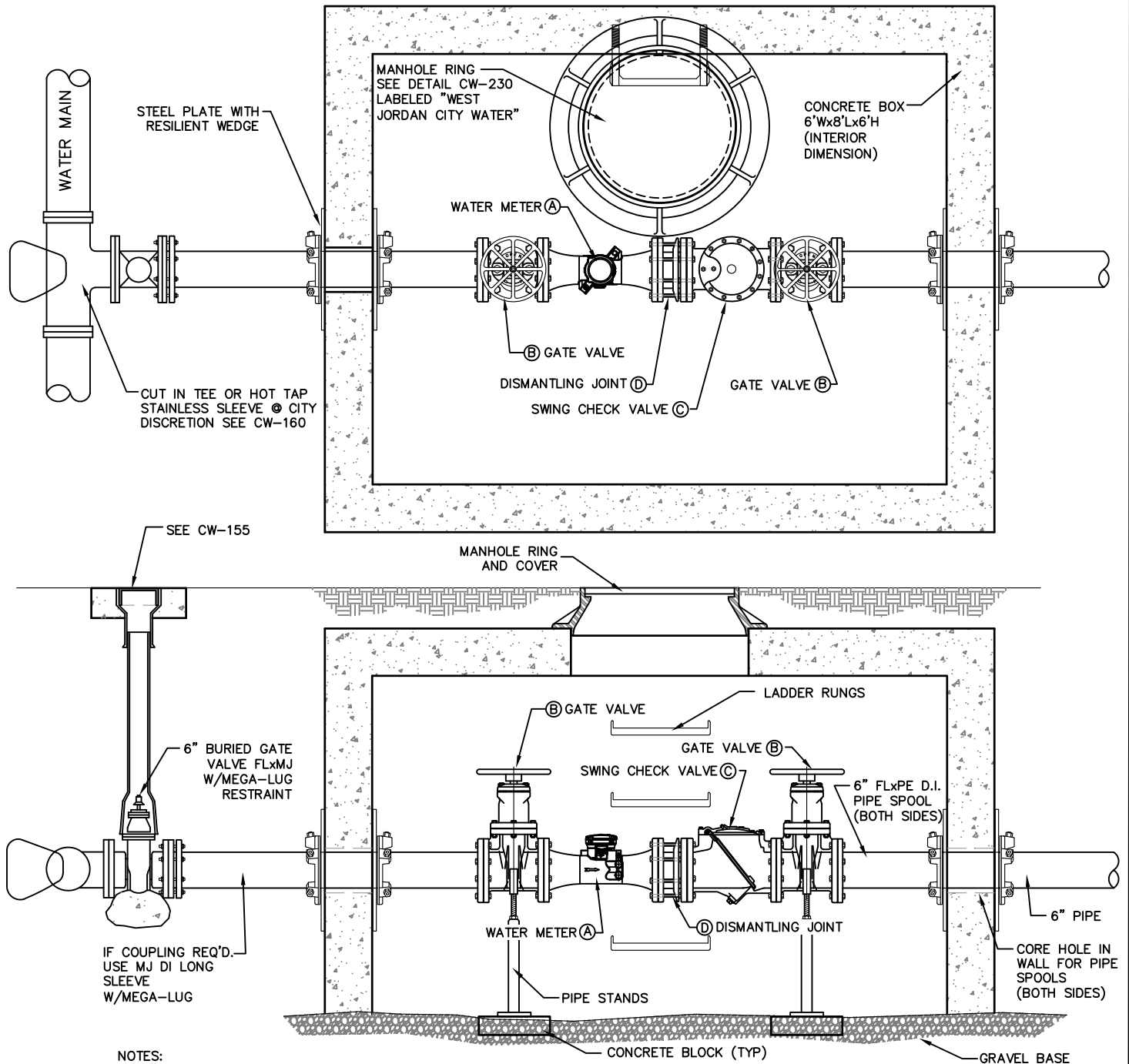
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



4" METER

PLAN  
CW-140



**NOTES:**

1. INSPECTION: PRIOR TO BACK FILLING AROUND METER BOX, SECURE APPROVAL OF INSTALLATION BY INSPECTOR
2. BACK FILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. CONCRETE BOX: PRECAST OR CAST-IN-PLACE BOX, FOR PRECAST BOX: ALLOW 1 INCH CLEARANCE AROUND WATERLINE WHERE LINE PASSES THROUGH THE WALL. SEAL OPENING AROUND PIPE, IN HIGH WATER AREAS SEAL W/LINK SEAL.

NO.	ITEM	DESCRIPTION	SPECIFICATIONS
(A)	WATER METER FURNISHED BY CITY	6" OCTAVE ULTRASONIC METER	MASTER METER 6" OCTAVE GPM
(B)	GATE VALVE	6" FL GATE VALVE W/HANDWHEEL	RESILIENT WEDGE, AWWA C-509
(C)	CHECK VALVE	6" FL SWING CHECK	VAL MATIC VM-506A-M
(D)	DISMANTLING JOINT	6" FL DISMANTLING JOINT W/RESTRAIN	ROMAC DJ 400

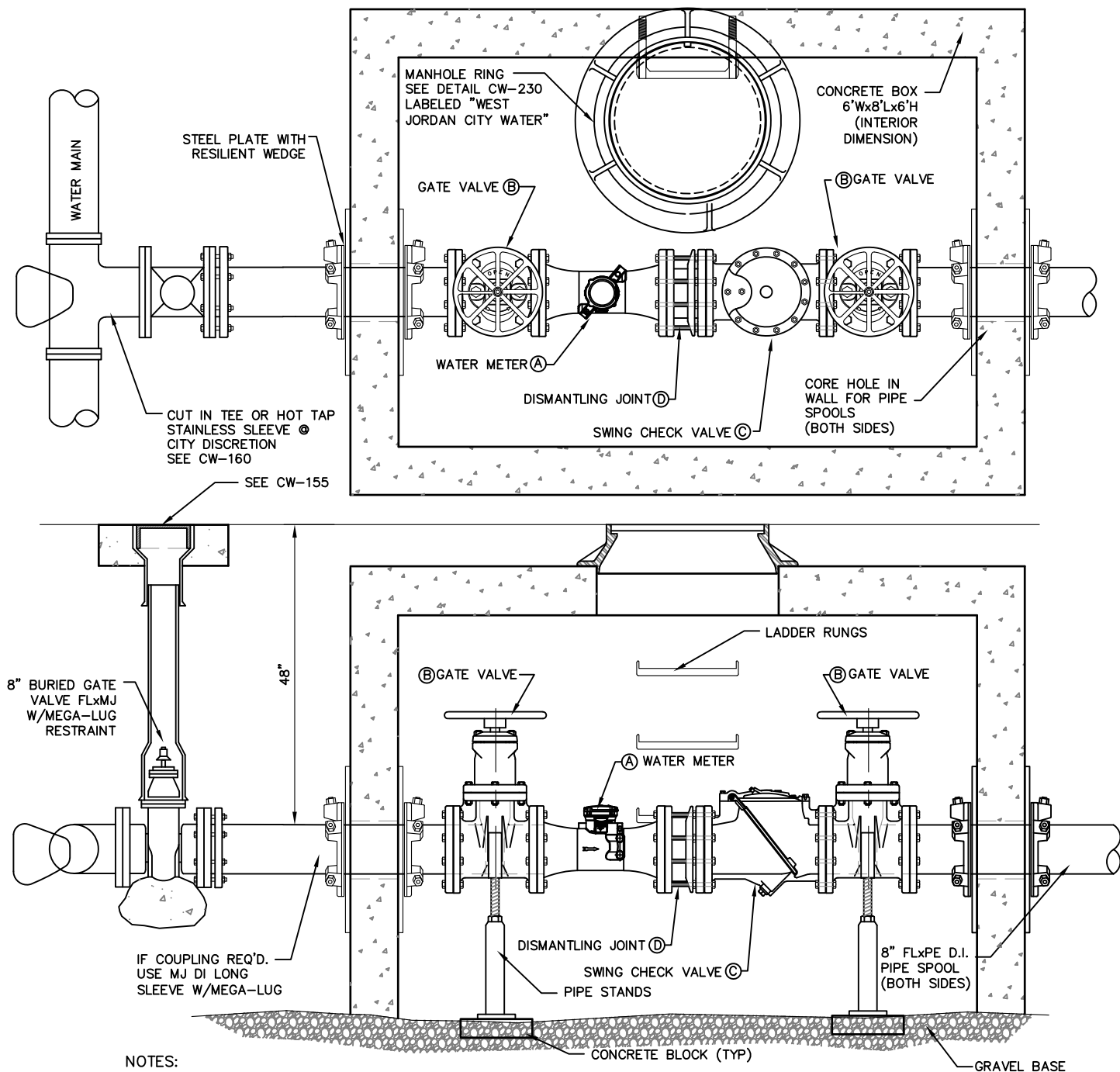
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



**6" METER**

PLAN  
**CW-145**



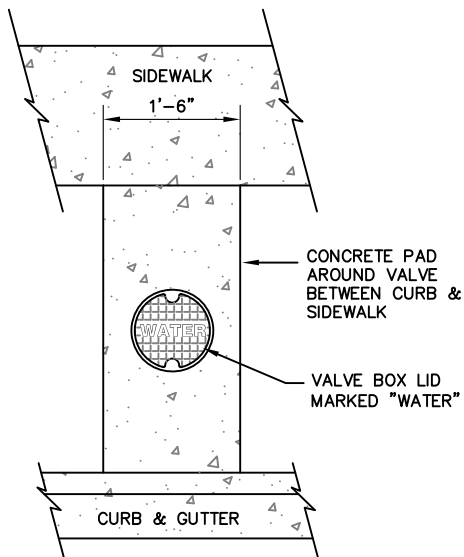
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah

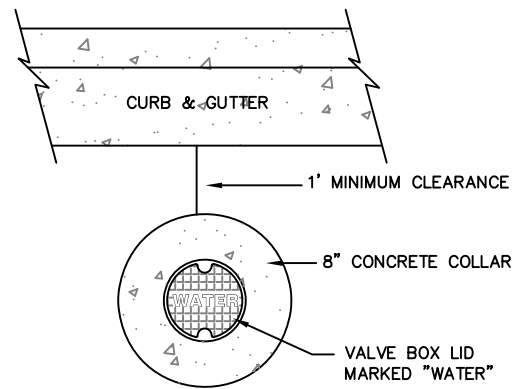


8" METER

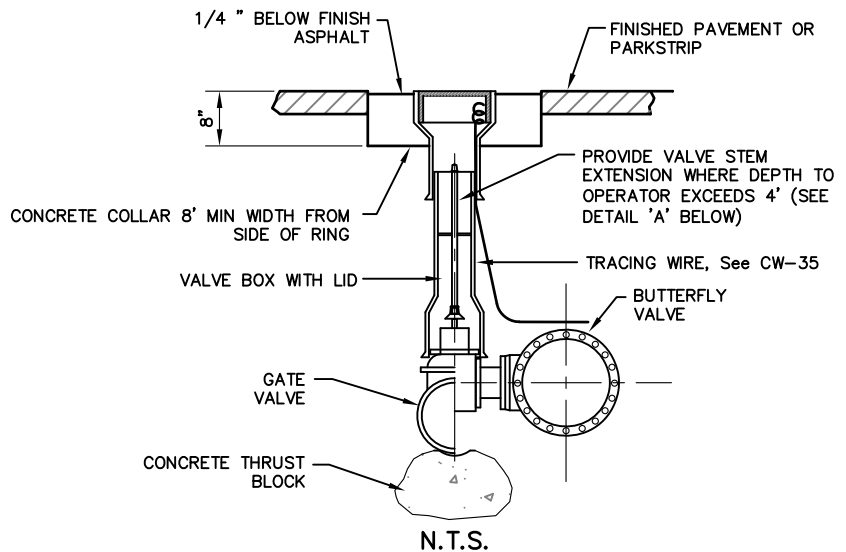
PLAN  
CW-150



**COLLAR FOR VALVES  
LOCATED IN PARKSTRIP  
N.T.S.**

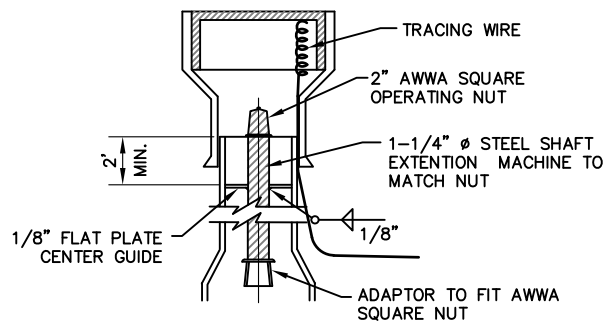


**COLLAR FOR VALVES  
LOCATED IN ROADWAY  
N.T.S.**

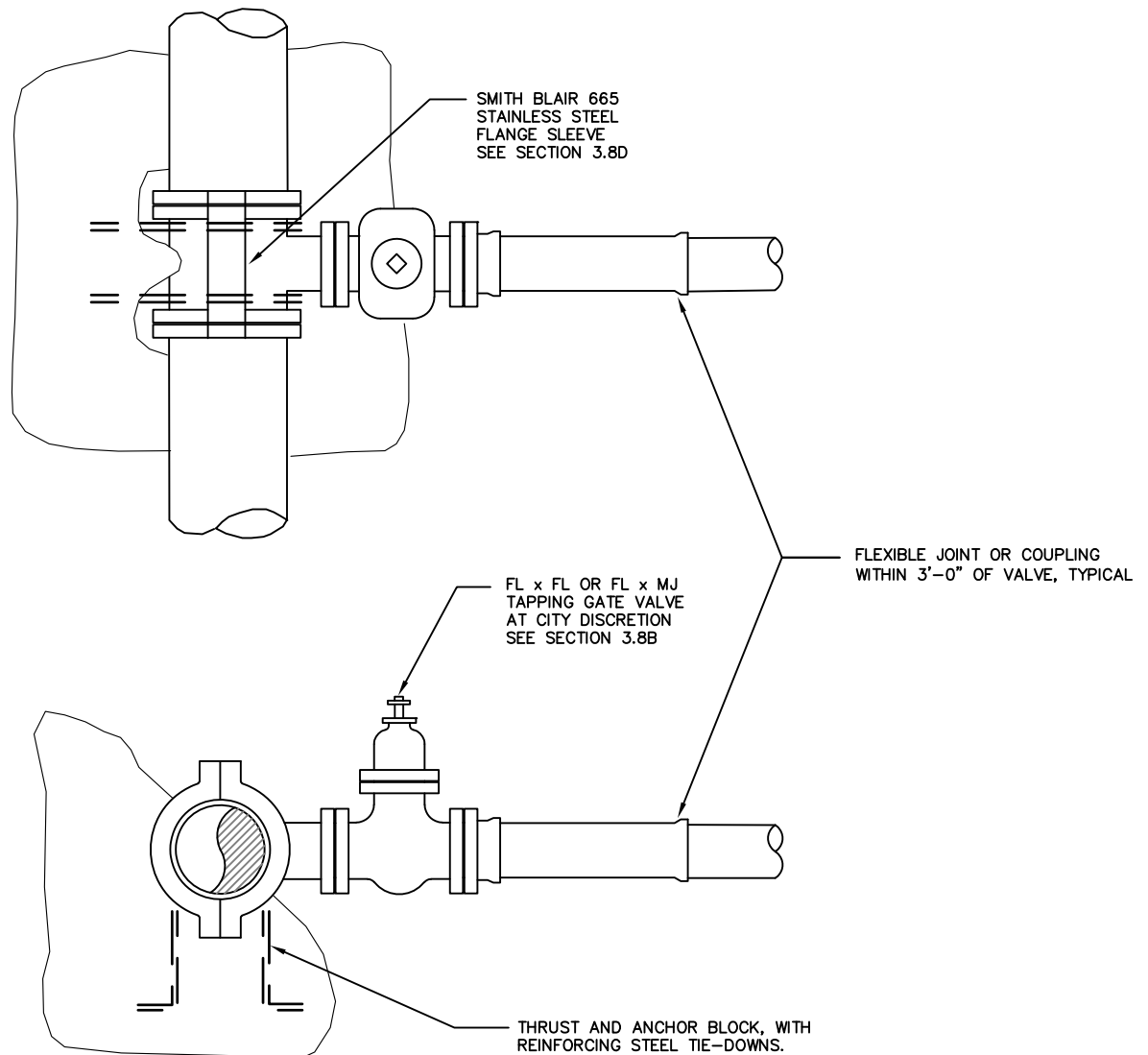


**NOTES:**

1. **INSPECTION:** PRIOR TO BACKFILLING AROUND THRUST LOCK, SECURE INSPECTION OF INSTALLATION BY CITY INSPECTOR.
2. **BACKFILL:** INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. **CONCRETE FOR THRUST BLOCKS:** CLASS 2,000 MINIMUM PER APWA SECTION 03-30-04. POUR CONCRETE AGAINST UNDISTURBED SOIL.



**DETAIL 'A'  
N.T.S.**



**NOTES:**

1. REFER TO SECTION 3.8 'MAIN LINE VALVES' FOR TAPPING SLEEVE AND VALVE REQUIREMENTS, AND SECTION 7.9 'HOT TAPPING' FOR INSTALLATION INSTRUCTIONS INTERSECTIONS MAY BE OMITTED.
2. SEE SECTION 3.4 'MAIN LINE FITTING' AND SECTION 7.11 'INSTALLATION OF VALVES AND FITTINGS' FOR INSTALLATION AND WRAPPING FOR BOLTED CONNECTIONS THRUST BLOCK DETAILS.

RECOMMENDED MATERIALS – TAPPING SLEEVE

MANUFACTURER TO BE AWWA APPROVED.

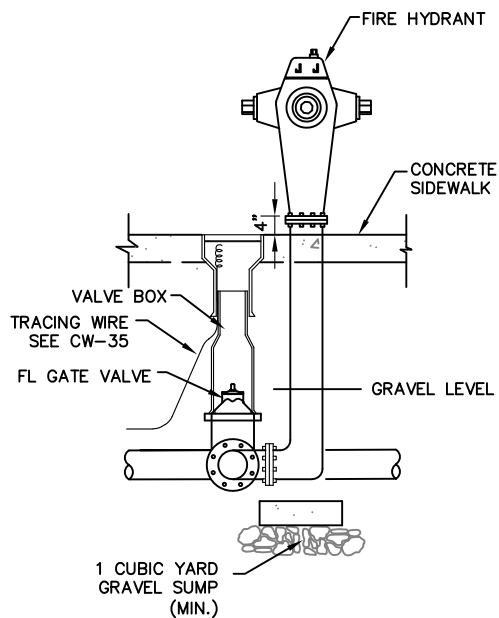
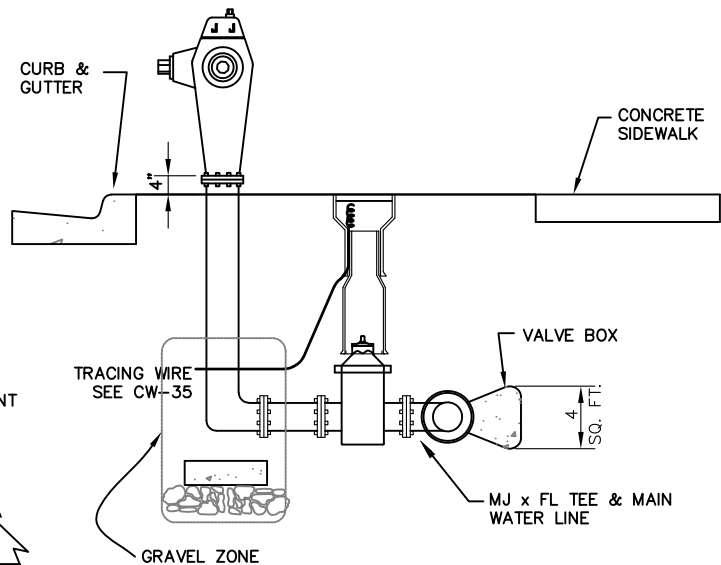
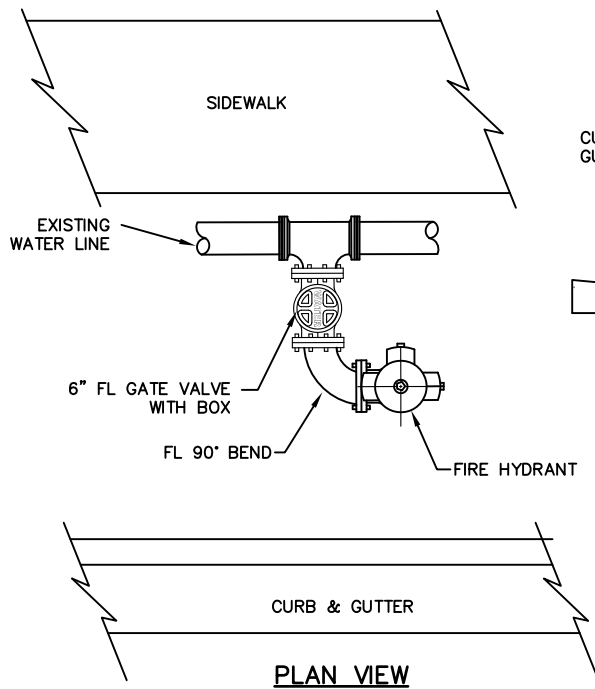
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# HOT TAPS STAINLESS FLANGE TURNOUT TAPPING SLEEVE

PLAN  
CW-160



#### NOTES:

1. **INSPECTION:** INSPECTION REQUIRED PRIOR TO BACKFILLING.
2. **BACKFILL:** INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA 33-05-20.
3. **HYDRANT:** DRY BARREL FIRE HYDRANT PER AWWA C505, SEE DEVELOPMENT STANDARDS FOR APPROVED MODEL TYPES. ADDITIONAL REQUIREMENTS ARE SPECIFIED IN APWA SECTION 33-12-19.
  - A. PROVIDE GRAVEL SUMP (SEWER ROCK, APWA 31-05-13) AROUND DRAIN HOLE AT BASE OF HYDRANT. COVER ROCK WITH FILTER FABRIC OF TAR PAPER TO PREVENT SILTING.
  - B. PAINT FIRE HYDRANT TO WEST JORDAN CITY FIRE HYDRANT PAINT CODE STANDARD.
  - C. APPLY POLY-FM GREASE TO ALL BURIED METAL SURFACES. WRAP WITH 8 MIL THICK POLYETHYLENE SHEET AND TAPE WRAP.
  - D.
  - E. NOTIFY FIRE DEPARTMENT WHEN HYDRANT IS OPERATIONAL.
4. **THRUST BLOCKS:** PRIOR TO POURING CONCRETE BLOCKS, WRAP PIPE WITH 8 MIL THICK PLASTIC SHEET TO PREVENT BONDING OF CONCRETE TO PIPE SYSTEM. THRUST BLOCKS NOT REQUIRED FOR FLANGED OR WELDED PIPE FITTINGS.

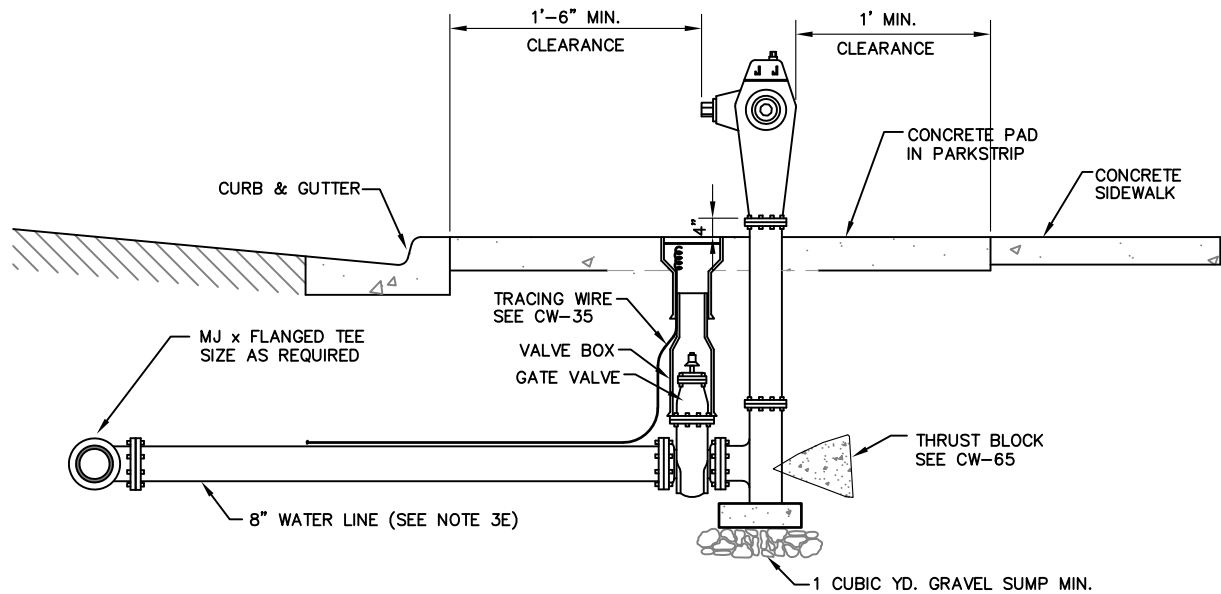
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah

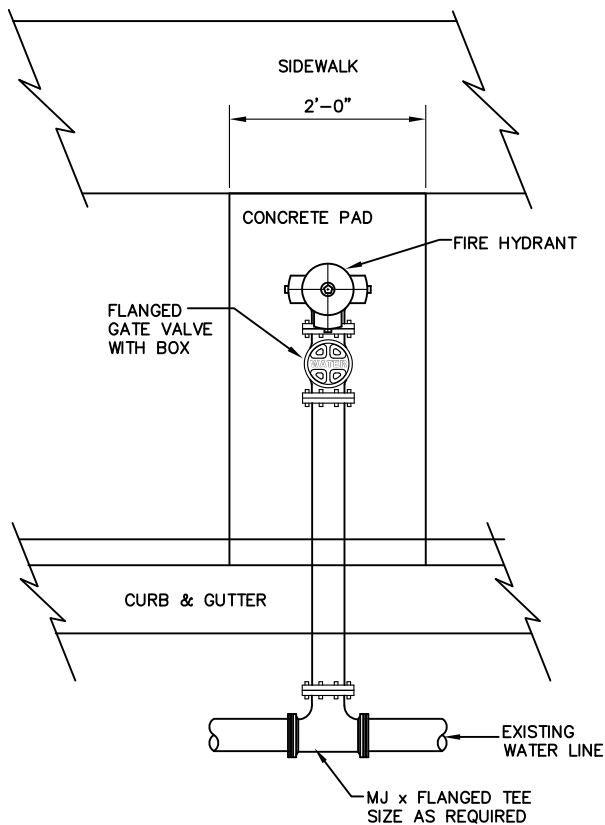


# FIRE HYDRANT WATER MAIN IN PARK STRIP

PLAN  
CW-165



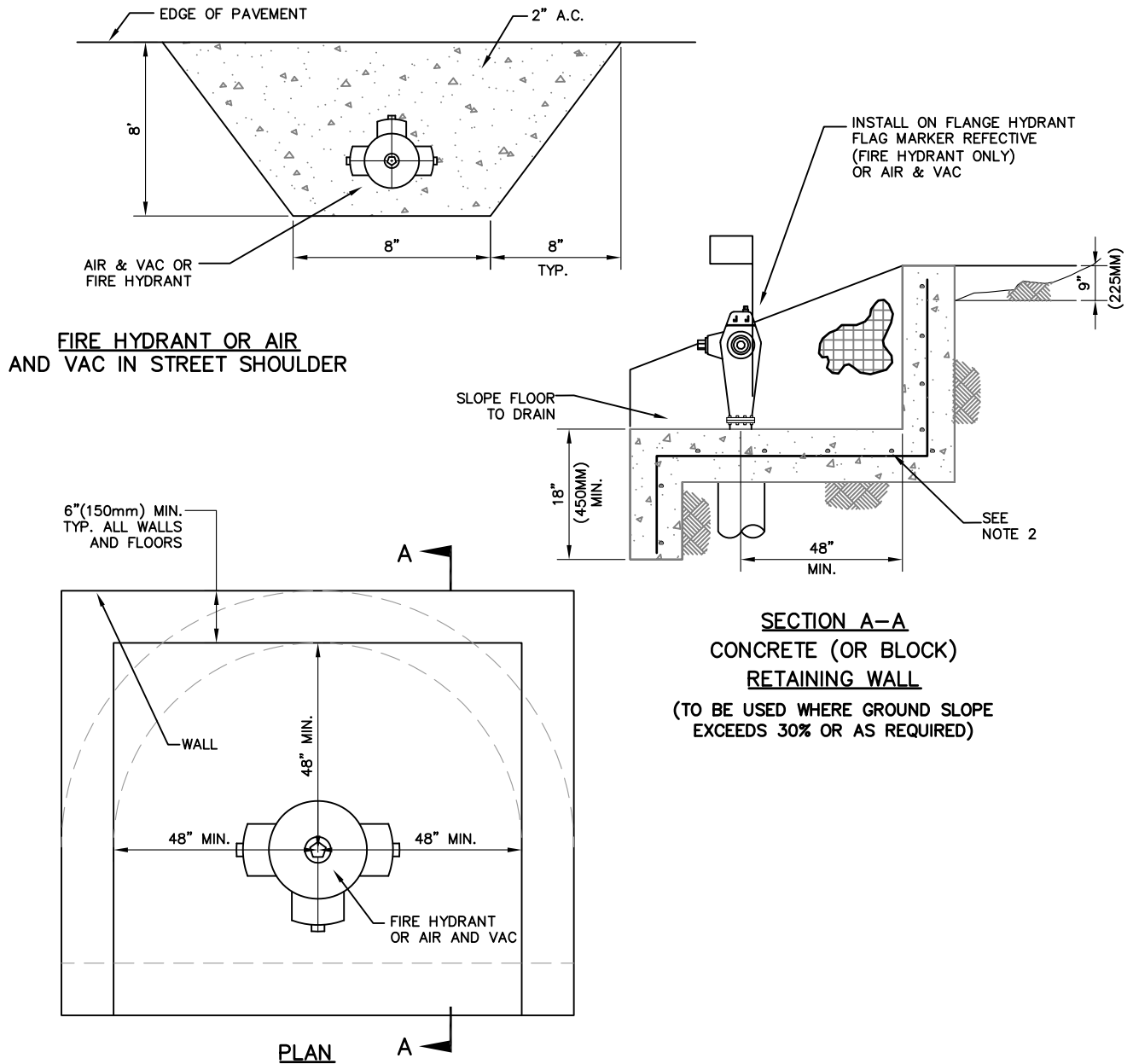
**TYPICAL PROFILE**



**PLAN VIEW**

**NOTES:**

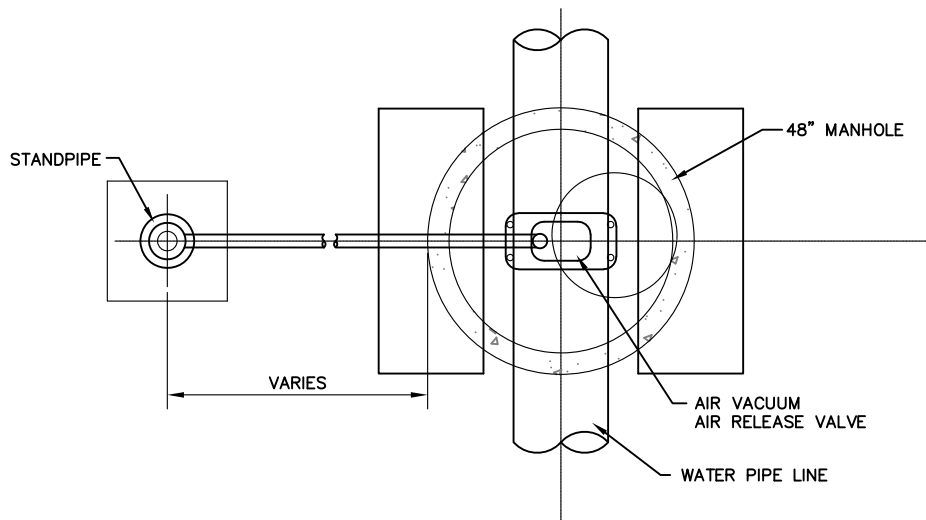
1. **INSPECTION:** INSPECTION REQUIRED PRIOR TO BACKFILLING.
2. **BACKFILL:** INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. **HYDRANT:** DRY BARREL FIRE HYDRANT PER AWWA C505. SEE DEVELOPMENT STANDARDS FOR APPROVED MODEL TYPES. ADDITIONAL REQUIREMENTS ARE SPECIFIED IN APWA SECTION 33-12-19.
  - A. PROVIDE 1 CUBIC YARD GRAVEL SUMP (SEWER ROCK, APWA SECTION 31-05-13) AROUND DRAIN HOLE AT BASE OF HYDRANT. COVER ROCK WITH FILTER FABRIC OF TAR PAPER TO PREVENT SILTING.
  - B. PAINT FIRE HYDRANT TO WEST JORDAN CITY FIRE HYDRANT PAINT CODE STANDARD.
  - C. APPLY POLY-FM GREASE TO ALL BURIED METAL SURFACES. WRAP WITH 8 MIL THICK POLYETHYLENE SHEET AND TAPE WRAP.
  - D. NOTIFY FIRE DEPARTMENT WHEN HYDRANT IS OPERATIONAL.
  - E. IF PIPE RUN IS LONGER THAN 40 FEET INSTALL GATE VALVE AT SOURCE PIPE.
4. **THRUST BLOCKS:** PRIOR TO POURING CONCRETE BLOCKS, WRAP PIPE WITH 8 MIL THICK PLASTIC SHEET TO PREVENT BONDING OF CONCRETE TO PIPE SYSTEM. THRUST BLOCKS NOT REQUIRED FOR FLANGED OR WELDED PIPE FITTINGS.



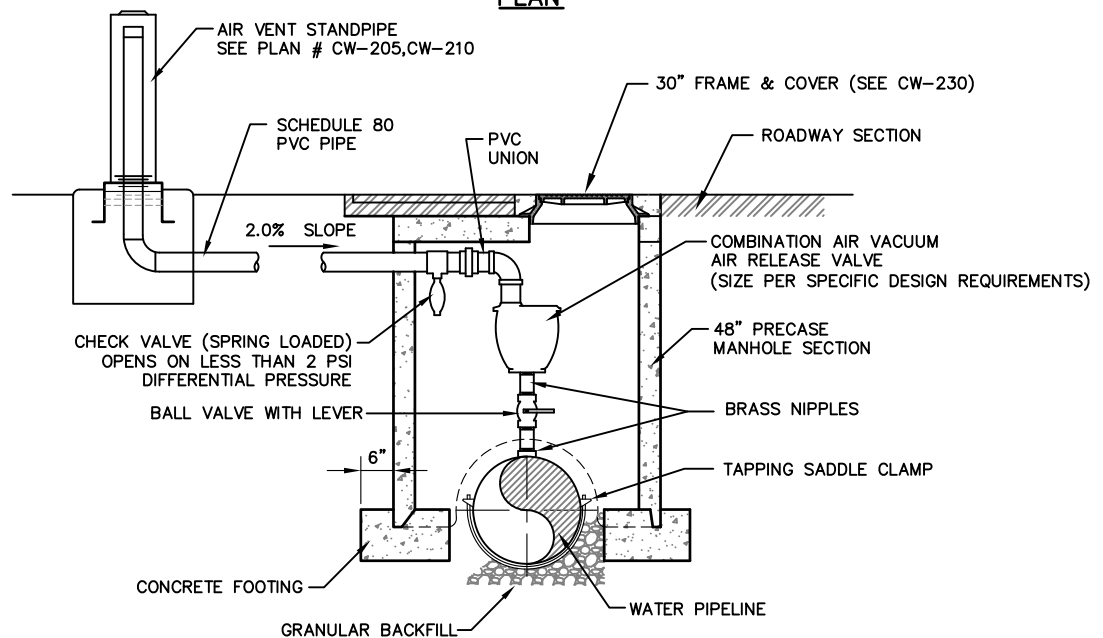
**NOTES:**

1. PLANNED DEVELOPMENT (i.e. RPD, HPD, DP, etc.) PROJECTS MAY REQUIRE USE OF SPECIAL COLOR AND TEXTURE OF MATERIALS.
2. ALL REBAR #4 ON 12" CENTER.
3. CONCRETE BLOCK MAY BE SUBSTITUTED FOR WALL SECTIONS.
4. ALL WALLS EXCEEDING 30" IN HEIGHT REQUIRE BUILDING DEPT. PERMIT.
5. THREE (3) FEET MINIMUM CLEAR SPACE AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS SHALL BE MAINTAINED.



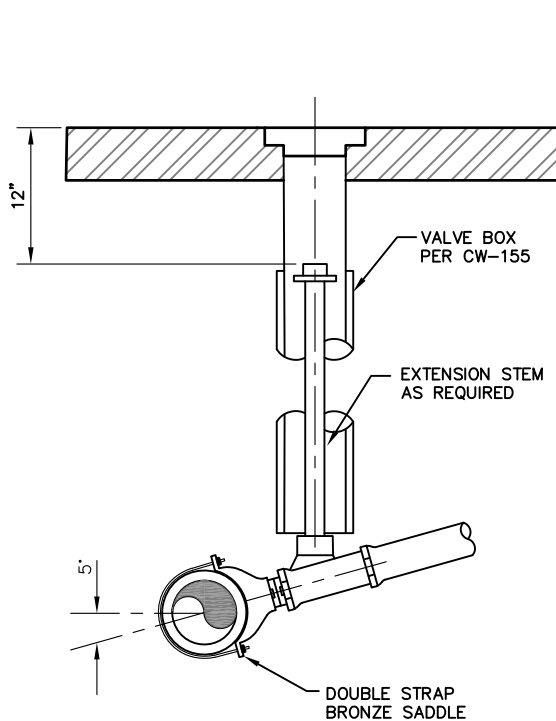
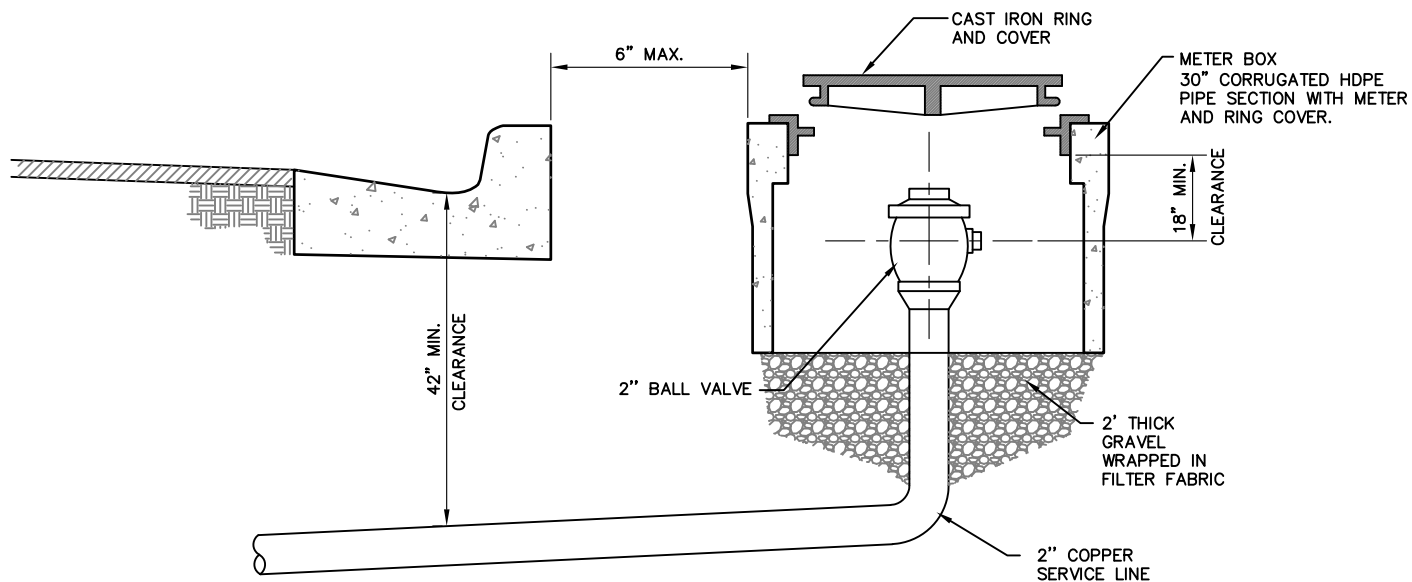


**PLAN**

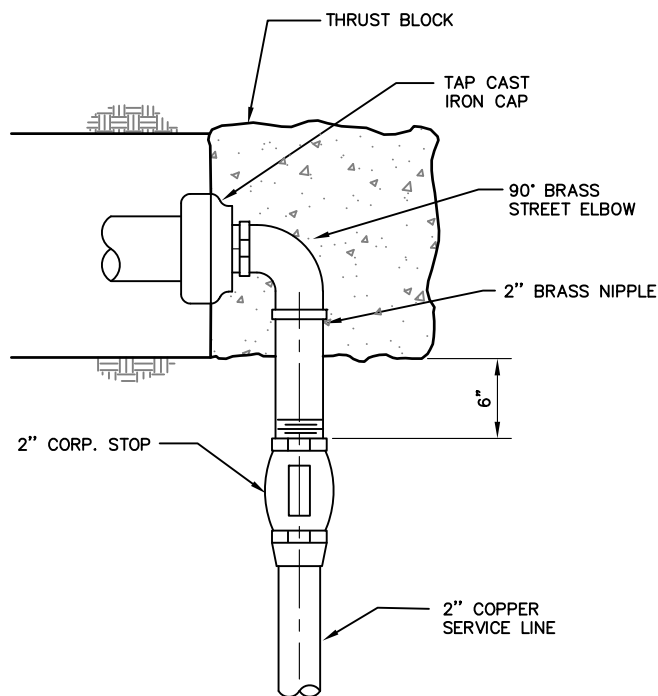


**PROFILE**

1. AIR VALVE STRUCTURE: PLACE APCO OR VALMATIC AIR VALVE STRUCTURE AT HIGH POINTS IN WATER DISTRIBUTION SYSTEM AND AT THE LOW SIDE OF A LOOPED WATER LINE CROSSING. SIZE ACCORDING TO SYSTEM PRESSURE.
2. AIR VENT STAND PIPE: LOCATE STAND PIPE BEHIND CURB OR OUTSIDE OF ROADWAY PAVEMENT AS SHOWN OR DIRECTED.
3. INSPECTION: PRIOR TO BACKFILLING AROUND THE ASSEMBLY, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
4. BACKFILL: INSTALL AND COMPACT BACKFILL MATERIAL PER APWA SECTION 31-23-23.



ON-MAIN CONNECTION



END-OF-MAIN CONNECTION

RECOMMENDED MATERIALS		MANUFACTURER
CORPORATION STOP	2"	JONES 1959
BALL VALVE	2"	JONES 1900 OR FORD B11-777
METER BOX	30"	CORRUGATED HDPE PIPE SECTION

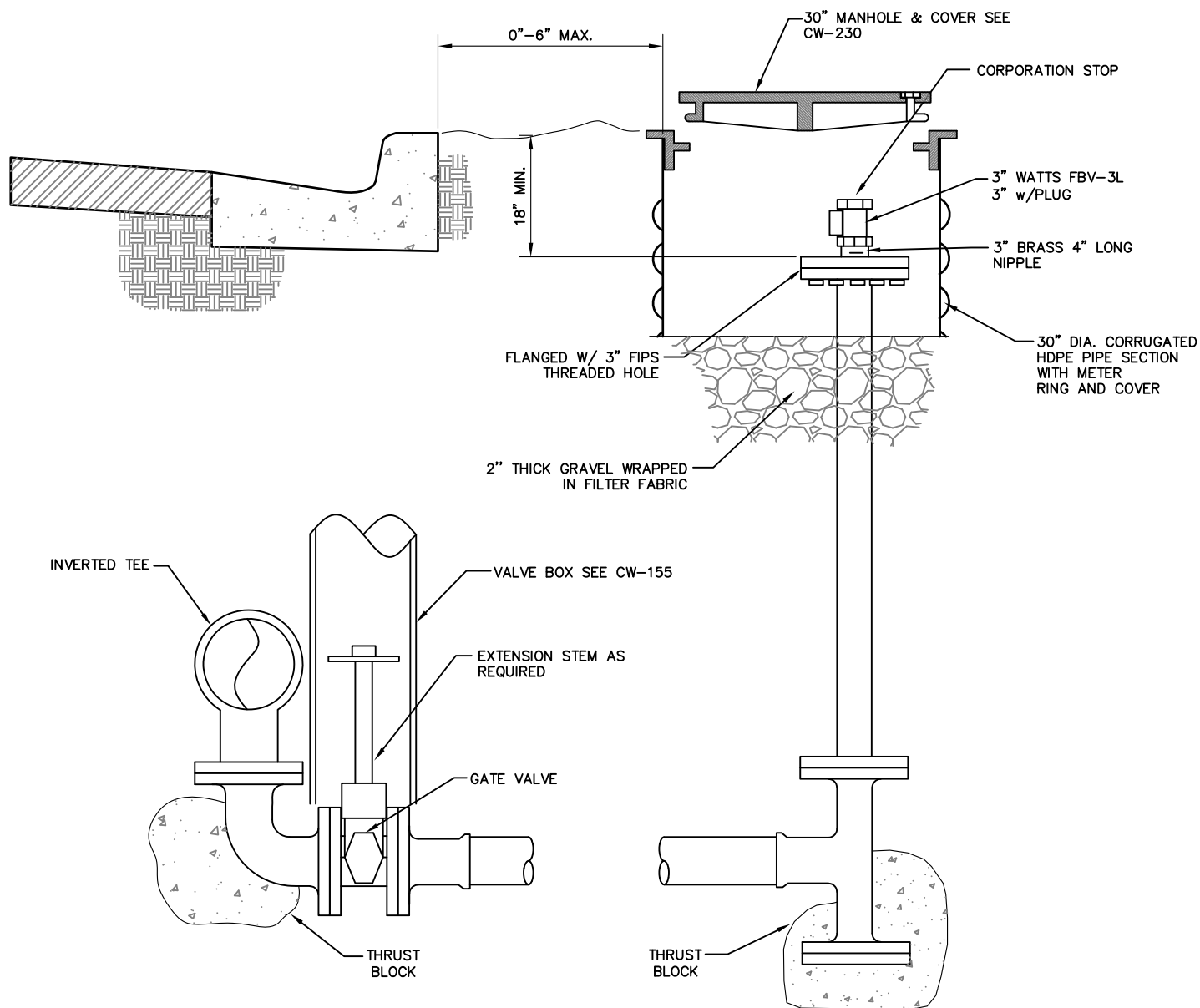
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# MISCELLANEOUS DETAILS FIRE HYDRANT AND AIR & VAC

PLAN  
CW-185



**NOTES:**

1. POSITION BLOWOFF ASSEMBLIES IN CENTER OF PIPE
2. REFER TO SECTION 3.8 OR 3.4 "MAIN LINE FITTINGS" AND SECTION 7.11 "INSTALLATION OF VALVES AND FITTINGS" FOR INFORMATION CONCERNING THE INSTALLATION AND PROTECTION OF BOLTED CONNECTIONS.

RECOMMENDED MATERIALS		MANUFACTURER
GATE BALL VALVE	3"	CLOW, OR MULLER WATTS FBV-3L3"
PIPE VAULT	30" DIA HDPE PIPE	

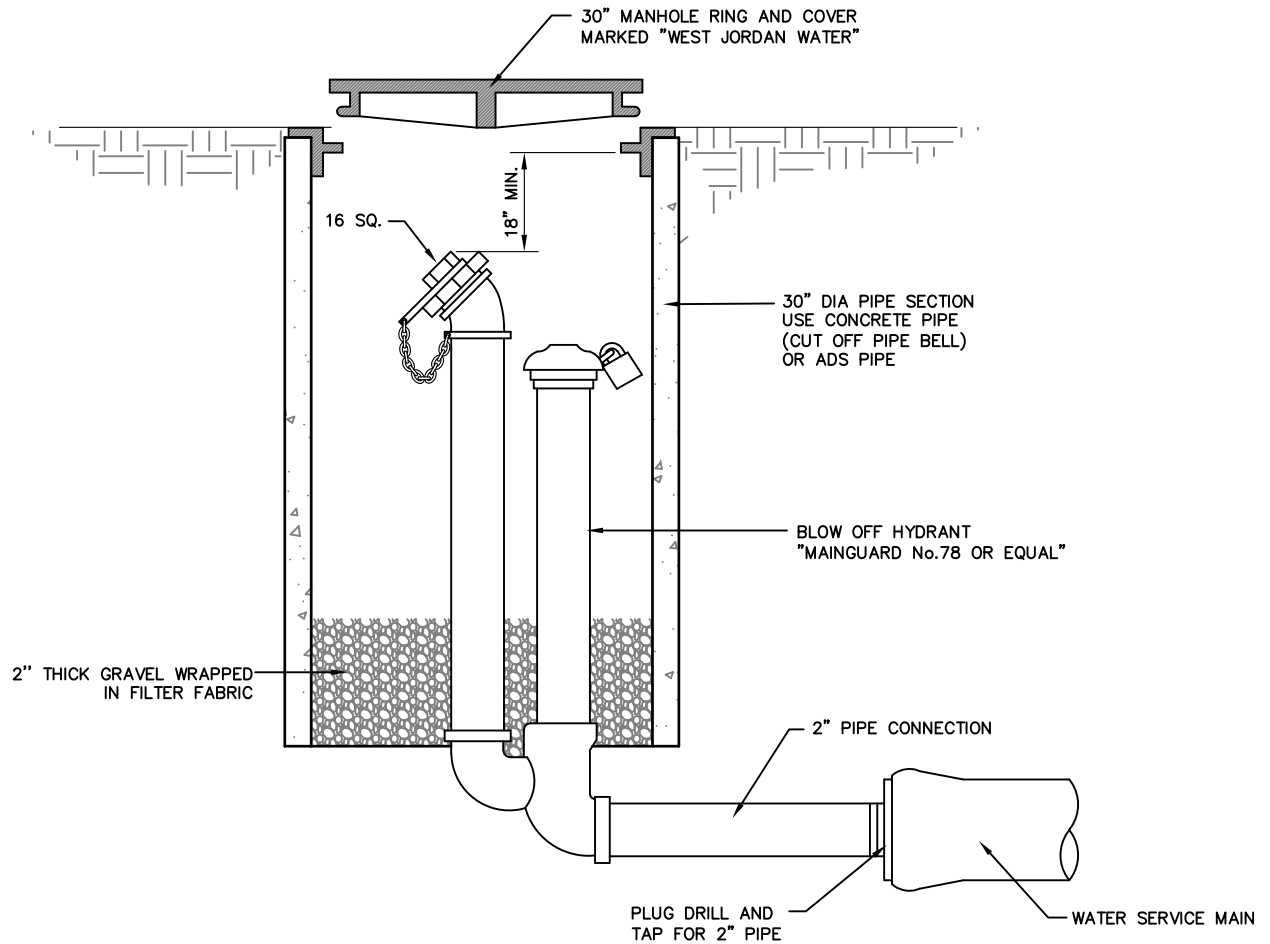
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



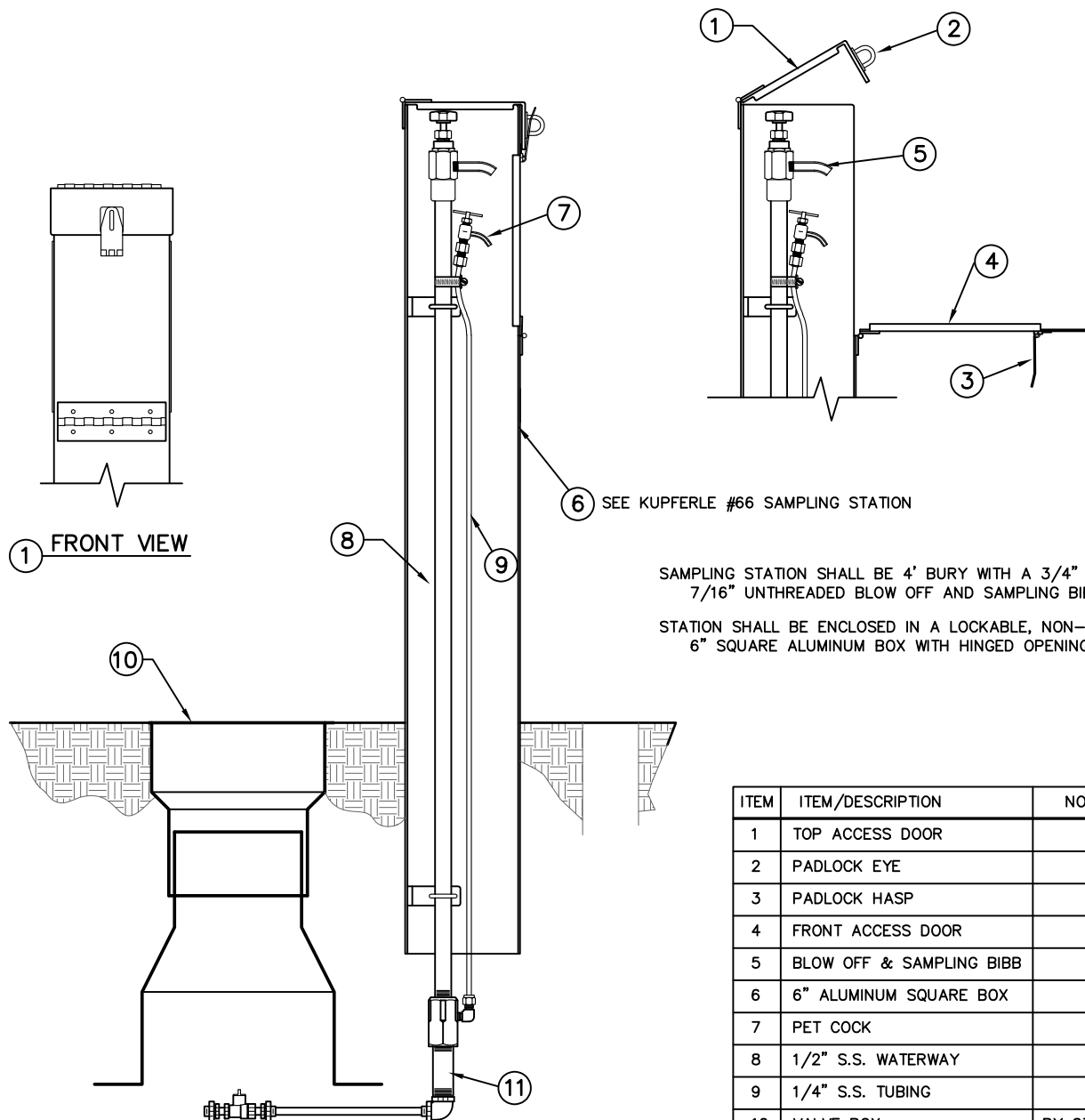
# 4 AND 6-INCH BLOW-OFF INSTALLATION

PLAN  
CW-190



**NOTES:**

1. **INSPECTION:** PRIOR TO BACKFILLING AROUND THE ASSEMBLY, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
2. **BACKFILL:** INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. **WORKING PARTS:** ALL WORKING PARTS SHALL BE BRONZE-TO-BRONZE DESIGN, AND BE SERVICEABLE FROM ABOVE GROUND WITH NO DIGGING.
4. **POST HYDRANTS:** SHALL BE NON-FREEZING, SELF DRAINING TYPE WITH A 36" BURY. HYDRANTS WILL BE FURNISHED WITH A 2" FIP INLET, A NON-TURNING OPERATING ROD, AND SHALL OPEN TO THE LEFT.
5. **LOCKING:** HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE AS MANUFACTURED BY KUPFERLE FOUNDRY CO., ST. LOUIS, MO., OR APPROVED EQUAL.



**NOTES:**

ONE SAMPLE STATION REQUIRED IN EACH RESIDENTIAL DEVELOPMENT AND A MINIMUM OF ONE SAMPLING STATION PER 100 LOTS.

1. LOCATION: SAMPLE STATION TO BE LOCATED ON A LOT LINE, IN THE PARKSTRIPS BETWEEN CURB AND SIDEWALK AS SHOWN ON PLAN OR AS DIRECTED.
2. INSPECTION: PRIOR TO BACKFILLING AROUND THE ASSEMBLY, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
3. SMALL FITTINGS: PROVIDE BRASS FITTINGS AND NIPPLES IF NOT SPECIFIED OTHERWISE.

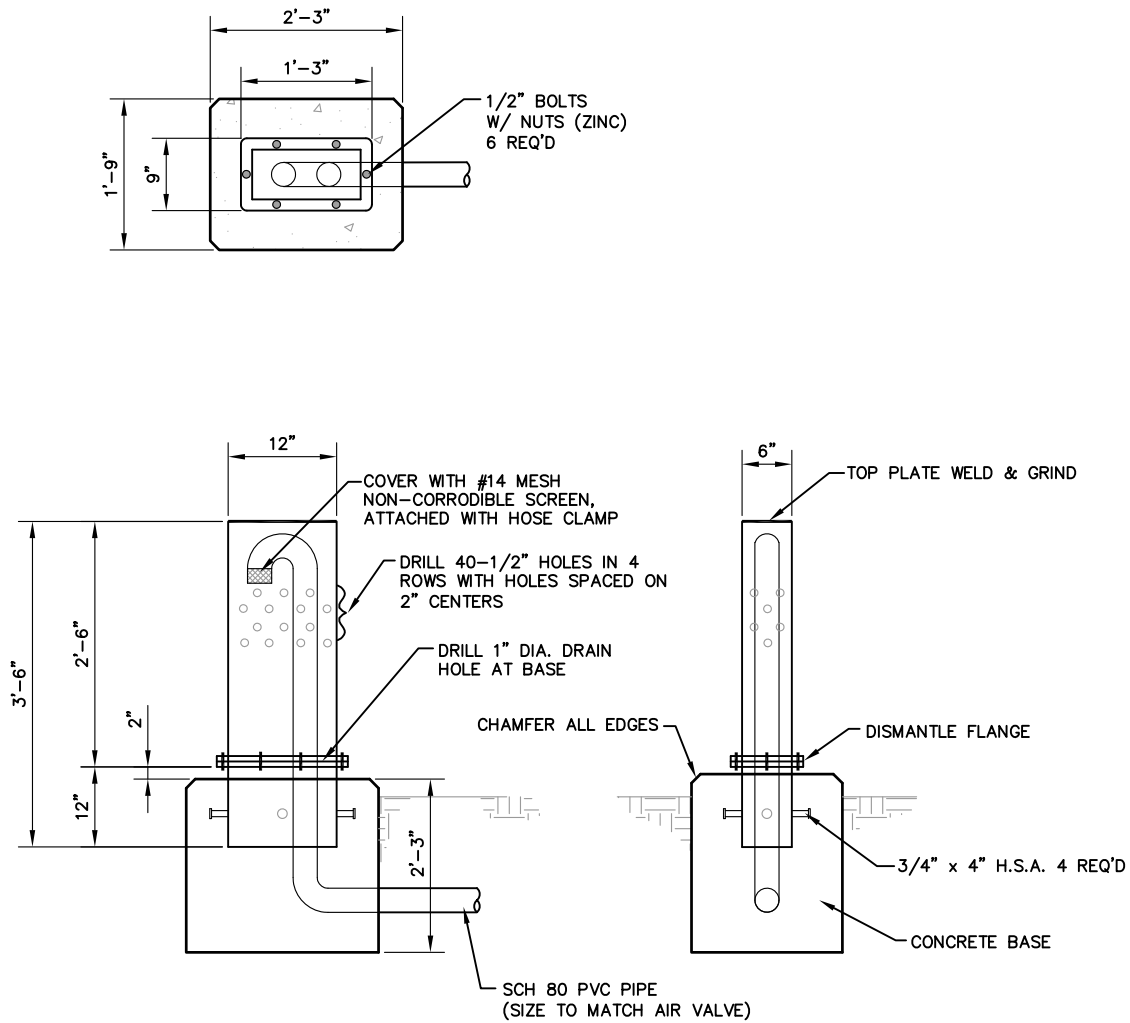
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



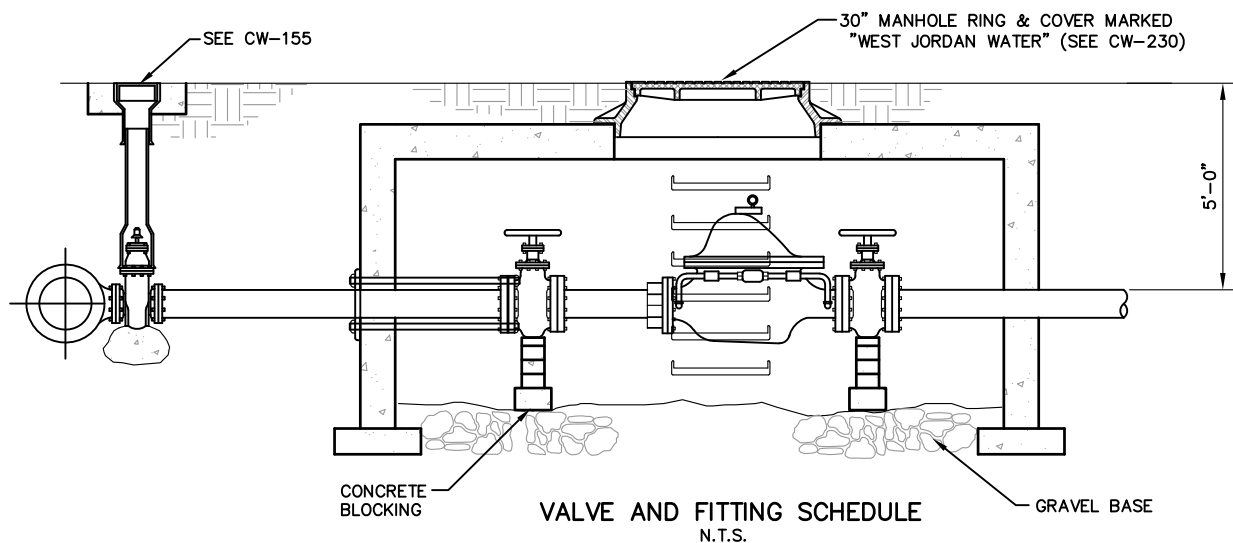
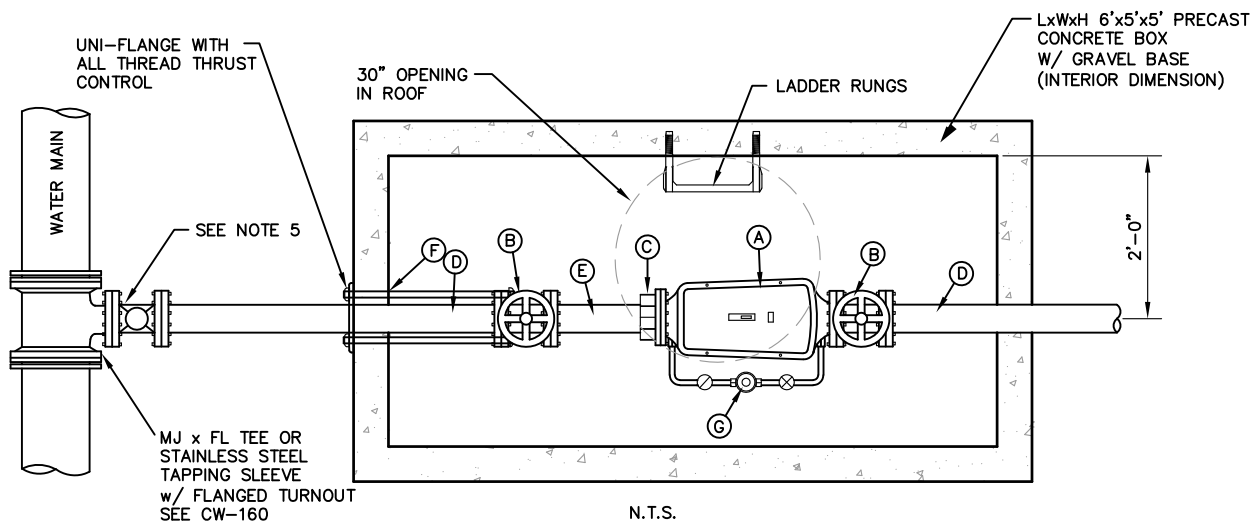
# WATER SAMPLING STATION

PLAN  
CW-200



**NOTES:**

1. **LOCATION:** LOCATE STANDPIPE BEHIND CURB OR OUTSIDE OF ROADWAY AS SHOWN ON PLANS OR AS DIRECTED.
2. **INSPECTION:** PRIOR TO BOLTING VENT CAP OVER ASSEMBLY, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
3. **FABRICATION:** FABRICATE FROM 1/4" STEEL PLATE.
4. **GALVANIZE:** HOT DIP GALVANIZE AFTER FABRICATION.



VALVE AND FITTING SCHEDULE  
N.T.S.

ITEM	DESCRIPTION	COMMENTS
(A)	DETECTOR CHECK VALVE	SEE NOTE 4
(B)	GATE VALVE w/ HANDWHEEL	FL x MJ SEE SECTION 2.7
(C)	FLANGED COUPLING ADAPTER SIZED TO MAIN SIZE	SMITH BLAIR 912-9 DUCTILE OD W/STAINLESS BOLTS
(D)	SPOOL	FL x PE
(E)	SPOOL	FL x PE
(F)	LOCKING RESTRAINT	
(G)	METER OPENING (5/8" & 3/4" METER REQUIRES 8" OPENING) (1" METER REQUIRES 11" OPENING)	INSTALL BYPASS PIPING FOR METER

**NOTES:**

- INSPECTOR:** PRIOR TO BACKFILLING MATERIAL AROUND THE METER BOX, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
- BACKFILL:** INSTALL AND COMPACT BACKFILL MATERIAL PER APWA 33-05-20
- CONCRETE BOX:** PRECAST OR CAST IN PLACE BOX, FOR PRECAST BOX: ALLOW 1 INCH CLEARANCE AROUND WATERLINE WHERE LINE PASSES THROUGH THE WALL. SEAL OPENING WITH COMPRESSIBLE SEAL. PROVIDE LOCKING RESTRAINTS AT WALL.
- DETECTOR CHECK VALVE:** SHALL BE HERSEY MODEL EDG & EDC II OR MUELLER CAT. A2130-6 OR A-2131-6. WITH BYPASS WITHOUT METER. METER IS TO BE PROVIDED SEPARATELY.
- ISOLATION VALVE:** WITH VALVE BOX INSTALLED ADJACENT TO CITY WATERMAIN.

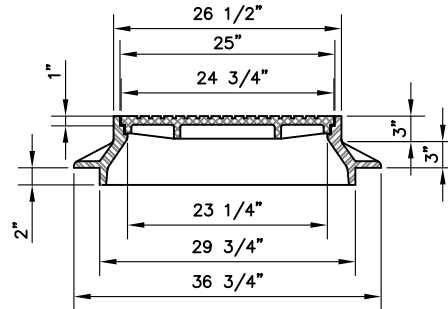
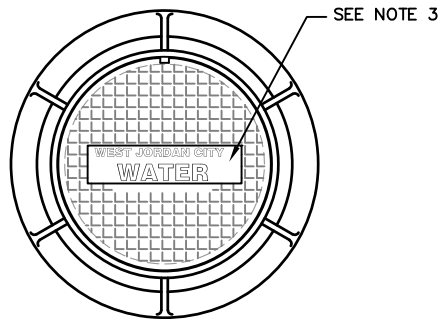
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah

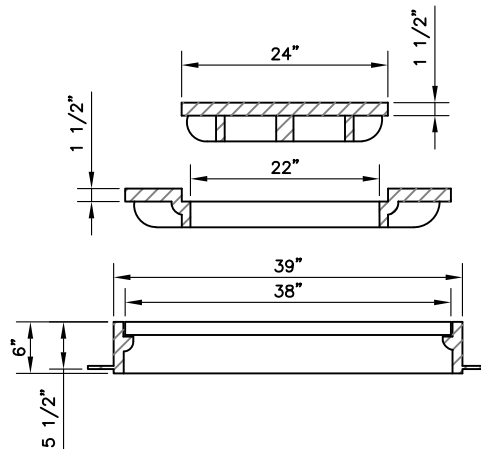
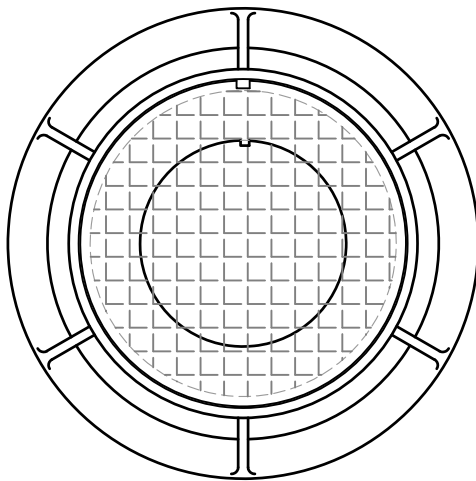


# DETECTOR CHECK VALVE

PLAN  
CW-225



TYPE "A" MANHOLE RIM AND COVER

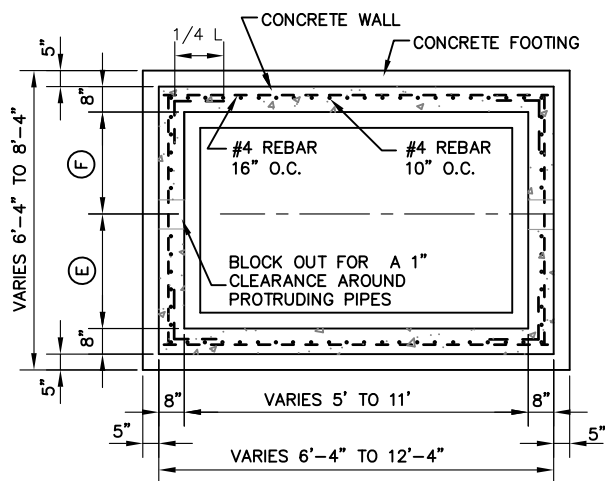


TYPE "B" MANHOLE RIM AND COVER

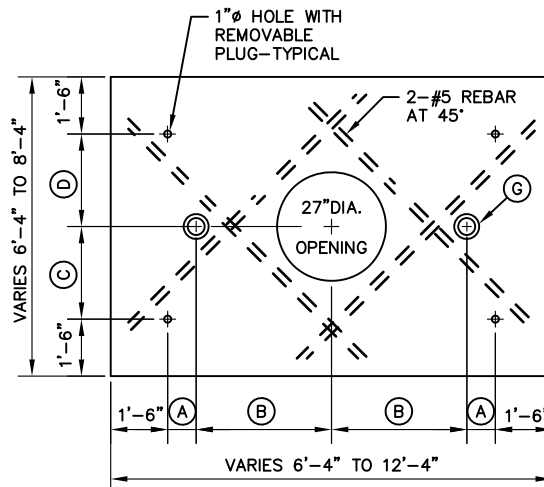
**NOTES:**

1. **CASTINGS:** GRAY IRON CLASS 30 MINIMUM PER ASTM A 48.
2. **COATINGS:** EXCEPT MACHINED SURFACES, COAT ALL METAL PARTS WITH ASPHALTUM PAINT.
3. **INSCRIPTIONS:** CAST THE WORDS "WEST JORDAN CITY" AT 3/4" HEIGHT AND "WATER" AT 1 1/2" HEIGHT ON THE COVER FLUSH WITH THE SURFACE FINISH.
4. **HEAT NUMBER:** PLACE FOUNDRY AND HEAT NUMBER ON THE INSIDE OF THE FRAME AND ON THE BOTTOM OF THE COVER.
5. **FIT:** GIVE THE FRAME AND COVER A MACHINE FINISH SO THE COVER WILL NOT ROCK.
6. **MODEL #'S:** TYPE A D&L. A-1180 OR B-5343 OR OLY. MHU-1061,  
TYPE B D&L. A-1426 OR OLY. MHU-1105,

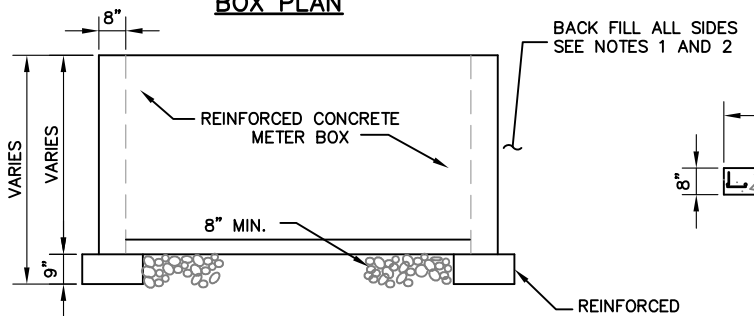




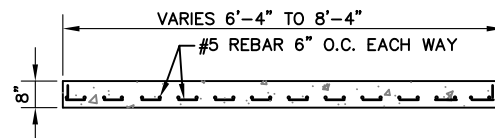
**BOX PLAN**



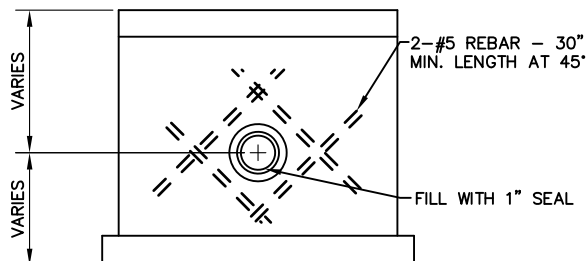
**LID PLAN**



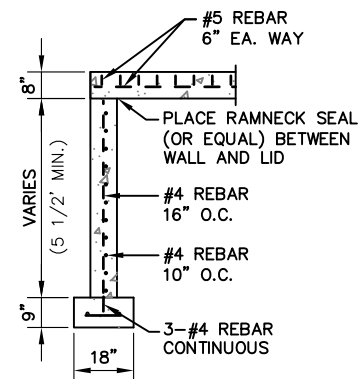
**BOX FRONT ELEVATION**



**LID SECTION**



**BOX SIDE ELEVATION**



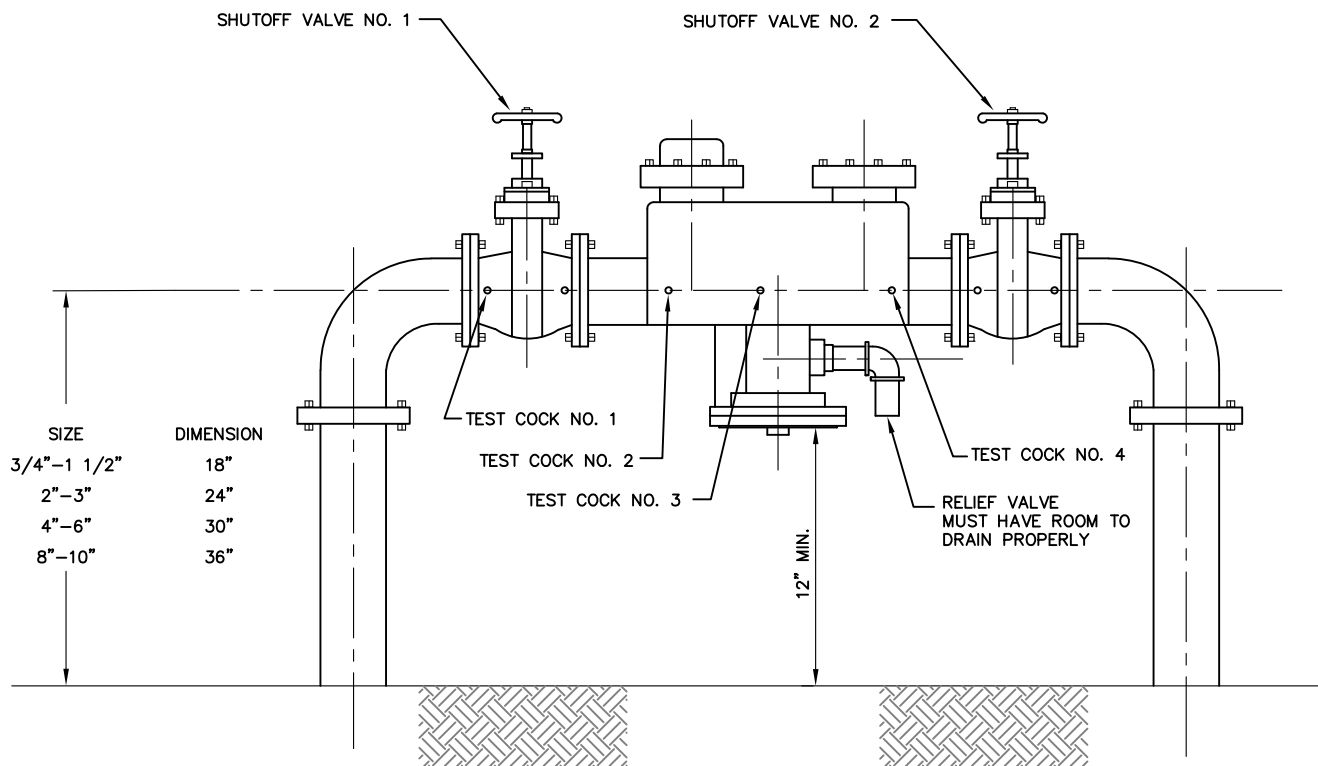
**BOX SECTION**

LEGEND					
ITEM	TURBO METER SIZES ONLY				COMMENTS
	8"	6"	4"	1 1/2" & 2"	
(A)	1'-11 3/4"	2'-4 1/4"	1'-11 5/8"	CENTER	4" METER MAY VARY
(B)	2'-8 1/4"	2'-3 3/4"	1'-8 3/8"	CENTER	NO VALVE BOX FOR 1 1/2", 2"
(C)	2'-8"	2'-8"	1'-2"	CENTER	
(D)	2'-8"	2'-8"	2'-2"	CENTER	* ON BYPASS SIDE
(E)	3'-6"	3'-6"	2'-0"	2'-6"	
(F)	3'-6"	3'-6"	3'-0"	2'-6"	* ON BYPASS SIDE
(G)	TOP SECTION OF VALVE BOX				

SEE NOTES ON CW-235 SHEET 2 OF 2 FOR CLARIFICATION

NOTES:

1. INSPECTION: PRIOR TO BACK FILLING AROUND CONCRETE BOX, SECURE INSPECTION OF INSTALLATION BY ENGINEER
2. BACK FILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33-05-20.
3. REINFORCEMENT: ASTM A 615, GRADE 60, DEFORMED STEEL ROD. PLACE STEEL PER CRSI MANUAL OF STANDARD PRACTICE
4. CONCRETE: USE CLASS 4,000 PORTLAND CEMENT CONCRETE.
5. OPENINGS: FILL OPENINGS AROUND PIPELINES WITH WATERPROOF SEALER
6. LIDS: PLACE ALL LIDS DIRECTLY OVER VALVES OR METERS
7. DIMENSIONS: FOR VALVE TO VALVE DIMENSIONS FOR TURBO METERS SEE APPLICABLE STANDARD DRAWINGS



**NOTES:**

1. THE ABOVE INSTALLATION IS SHOWN FOR ILLUSTRATION AND PARTICULAR DEVICES.
2. PIPE LINE SHALL BE FLUSHED BEFORE INSTALLATION.
3. MOUNT UNIT IN HORIZONTAL POSITION.
4. ALLOW CLEARANCE AROUND UNIT TO CONDUCT TESTING AND REPAIRS. MIN. 12" ALL AROUND.
5. NEW INSTALLATION SHALL BE INSPECTED AND TESTED BY THE CROSS CONNECTION CONTROL OFFICER OR AGENCY.
6. QUESTIONS CONCERNING INSTALLATION SHOULD BE DIRECTED TO CROSS CONNECTION CONTROL OFFICER OR AGENCY.
7. SHUTOFF VALVES ARE SUPPLIED BY THE MANUFACTURER AS PART OF THE UNIT.

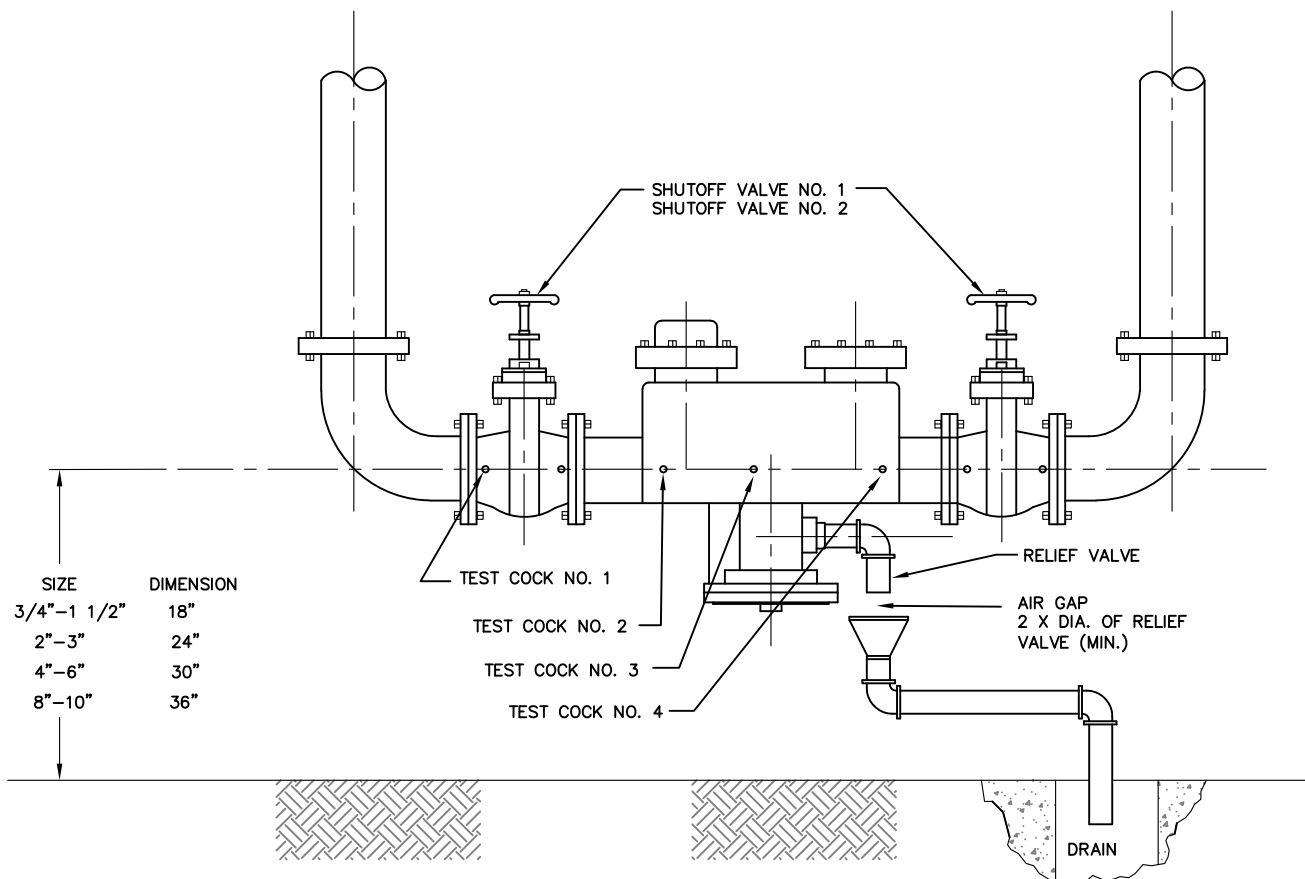
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# **REDUCED PRESSURE BACK FLOW PREVENTION ASSEMBLY (GROUND SUPPORTED INTALLATION)**

PLAN  
**CW-240**



**NOTES:**

1. PIPE LINE SHALL BE FLUSHED BEFORE INSTALLATION.
2. MOUNT UNIT IN HORIZONTAL POSITION.
3. ALLOW CLEARANCE AROUND UNIT TO CONDUCT TESTING AND REPAIRS. MIN. 12" ALL AROUND.
4. NEW INSTALLATION SHALL BE INSPECTED AND TESTED BY THE CROSS CONNECTION CONTROL OFFICER OR AGENCY.
5. WHEN IN DOUBT ABOUT PROPER INSTALLATION, CONTACT CROSS CONNECTION CONTROL OFFICER AT 801-569-5700 UTILITIES DEPARTMENT.

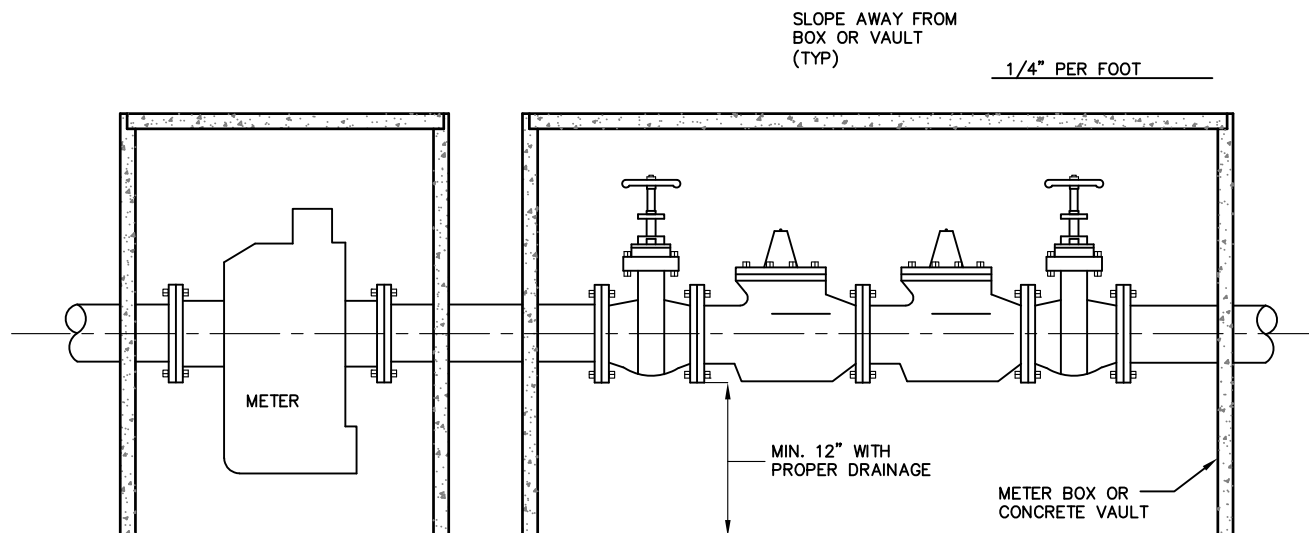
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# **REDUCED PRESSURE BACK FLOW PREVENTION ASSEMBLY** (SUSPENDED INSTALLATION)

PLAN  
**CW-245**



**NOTES:**

1. PIPE LINE SHALL BE FLUSHED BEFORE UNIT IS INSTALLED.
2. MOUNT UNIT IN UPRIGHT POSITION IN A HORIZONTAL RUN OF PIPE.
3. ALLOW CLEARANCE AROUND UNIT TO CONDUCT TESTS AND REPAIRS. MIN. 12" ALL AROUND.
4. MAY BE INSTALLED IN A PIT OR ABOVE GROUND.
5. NEW INSTALLATION SHALL BE INSPECTED AND TESTED BY THE CROSS CONNECTION CONTROL OFFICER OR AGENCY.
6. WHEN IN DOUBT ABOUT PROPER INSTALLATION, PLEASE CONTACT CROSS CONNECTION CONTROL OFFICER AT THE CITY.
7. SHUTOFF VALVES ARE SUPPLIED BY THE MANUFACTURER AS PART OF THE UNIT.

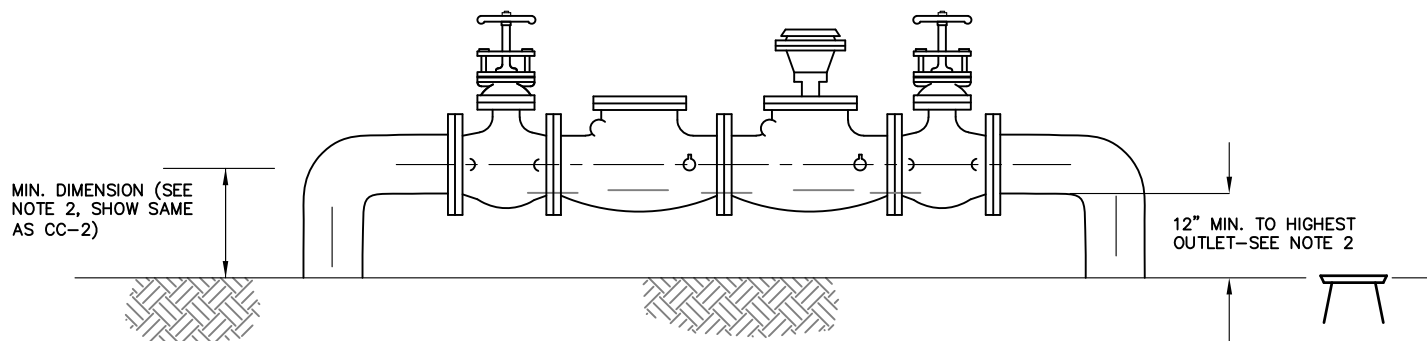
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# **DOUBLE CHECK BACK FLOW PREVENTION ASSEMBLY (BELOW GROUND INSTALLATION)**

PLAN  
**CW-255**



**NOTES:**

1. PIPE LINES SHALL BE FLUSHED BEFORE INSTALLATION.
2. BOTTOM OF DEVICE TO BE 12" HIGHER THAN THE HIGHEST OUTLET.
3. ALLOW CLEARANCE AROUND UNIT FOR TESTING AND REPAIR. MIN. 12" ALL AROUND.
4. NEVER TO BE INSTALLED IN A PIT.
5. NEW INSTALLATIONS SHALL BE INSPECTED AND TESTED BY THE CROSS CONNECTION CONTROL OFFICER OR AGENCY.
6. WHEN IN DOUBT ABOUT PROPER INSTALLATION, CONTACT CROSS CONNECTION CONTROL OFFICER AT THE CITY.
7. SHUTOFF VALVE ARE SUPPLIED BY THE MANUFACTURER AS A PART OF THE UNIT.

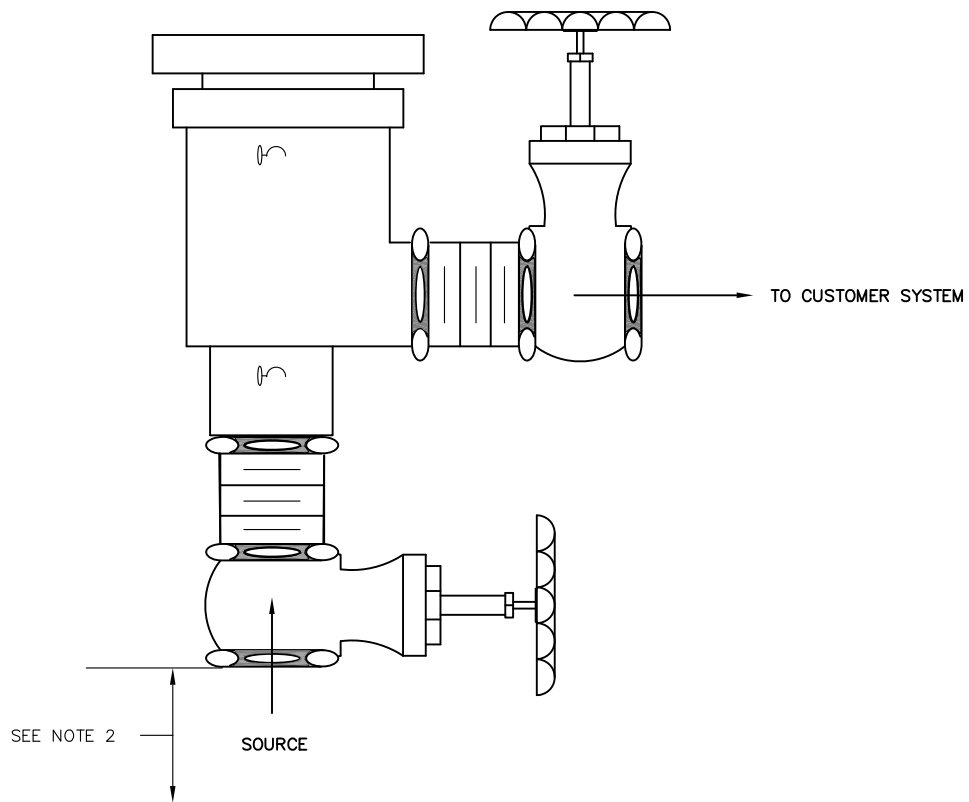
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# **PRESSURE VACUUM BREAKER INSTALLATION (2-INCH LARGER)**

PLAN  
**CW-260**



**NOTES:**

1. PIPE LINES SHALL BE FLUSHED BEFORE INSTALLATION.
2. BOTTOM OF ASSEMBLY TO BE 12" HIGHER THAN THE HIGHEST OUTLET.
3. ALLOW CLEARANCE AROUND UNIT FOR TESTING AND REPAIR. MIN. 12" ALL AROUND.
4. NEVER TO BE INSTALLED IN A PIT.
5. NEW INSTALLATIONS SHALL BE INSPECTED AND TESTED BY THE CROSS CONNECTION CONTROL OFFICER OR AGENCY.
6. WHEN IN DOUBT ABOUT PROPER INSTALLATION, CONTACT CROSS CONNECTION CONTROL OFFICER AT THE CITY.
7. SHUTOFF VALVE ARE SUPPLIED BY THE MANUFACTURER AS A PART OF THE UNIT.

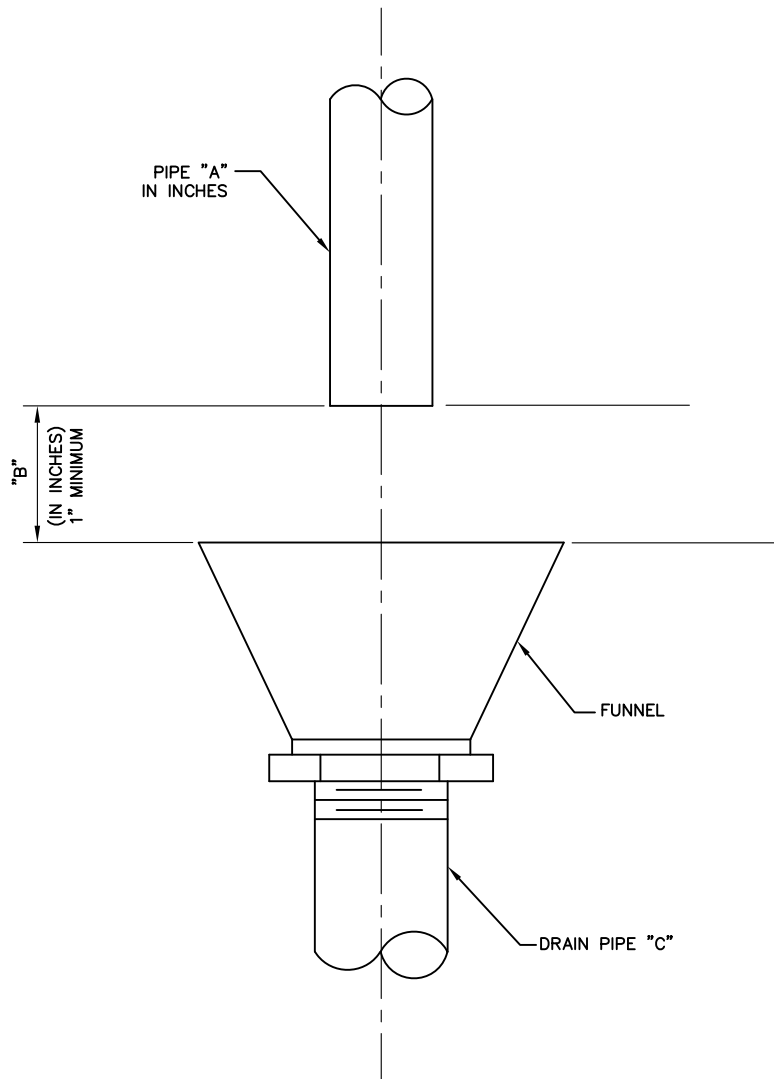
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# **PRESSURE VACUUM BREAKER INSTALLATION (UP TO 2-INCH)**

PLAN  
**CW-265**

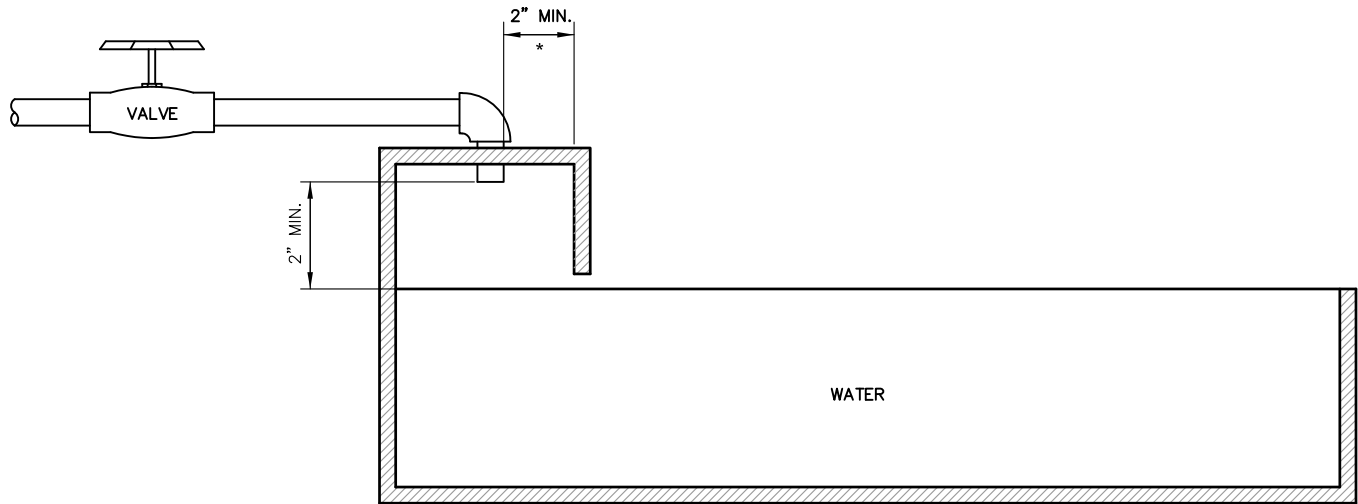


"A"	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/2"	2"
"B"	1	1	1	1	1-1/2	2	3	4
"C"	1	1	1	1	1-1/2	1-1/2	2	3

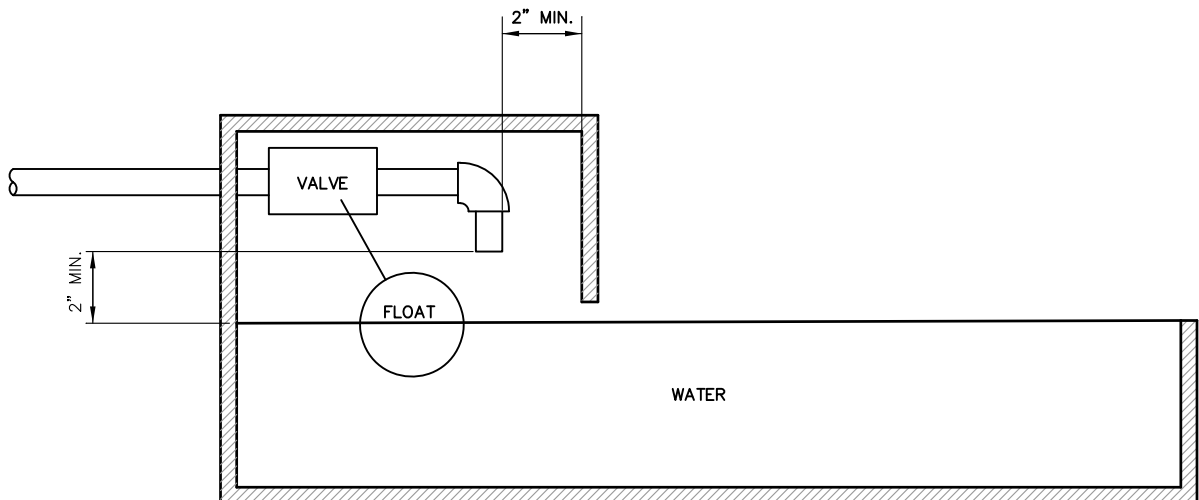
**NOTES:**

1. QUESTIONS CONCERNING INSTALLATION SHOULD BE DIRECTED TO CROSS CONNECTION CONTROL OFFICER AT THE CITY.





\* DEPENDENT ON LINE SIZE



NOTES:

1. TYPICAL USES ARE EVAPORATING COOLERS, MAKE-UP WATER SYSTEMS, ETC.
2. QUESTIONS CONCERNING INSTALLATION SHOULD BE DIRECTED TO CROSS CONNECTION CONTROL OFFICER AT THE CITY.
3. THESE INSTALLATIONS CAN BE USED FOR HORSE TROUGHS.

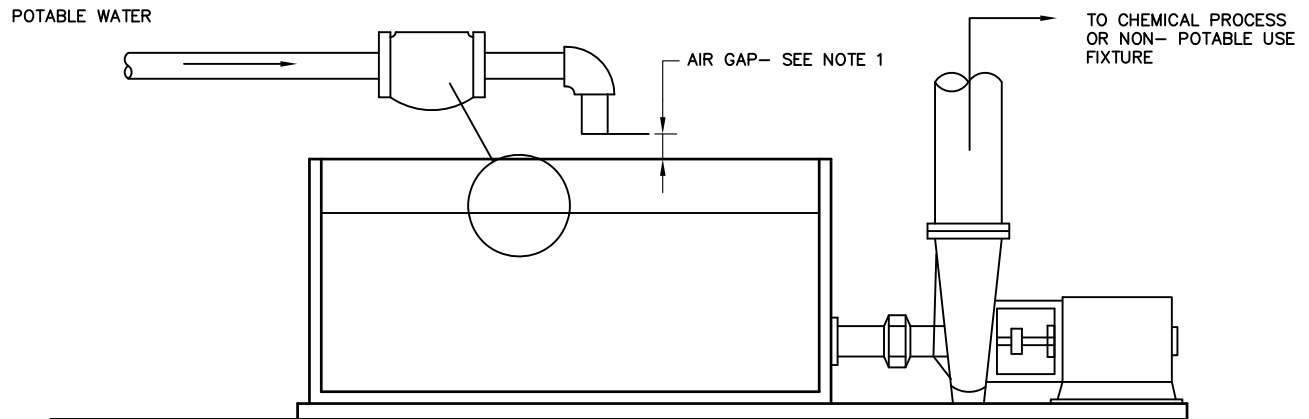
DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



# TYPICAL INSTALLATION OF WATER TROUGH

PLAN  
CW-275



NOTES:

1. AIR GAP MUST BE 2 X DIAMETER OF INLET PIPE ABOVE THE HIGHEST OVERFLOW RIM, NOT LESS THAN 1' FROM SIDE OF WALL.
2. PIPE LINE BETWEEN METER AND AIR GAP IS TO BE EXPOSED WHEN POSSIBLE, NO CONNECTION OR TEES BETWEEN METER AND AIR GAP.
3. QUESTIONS CONCERNING INSTALLATION SHOULD BE DIRECTED TO THE CROSS CONNECTION CONTROL OFFICER AT THE CITY.

# WARNING

## BURIED WATER TRANSMISSION PIPELINE



### BEFORE EXCAVATION CALL:



WEST JORDAN  
CITY UTILITIES  
(801)569-5700

Know what's **below.**



**Call 811** before you dig.

**BLUE STAKES OF UTAH**  
UTILITY NOTIFICATION CENTER, INC.  
[www.bluestakes.org](http://www.bluestakes.org)  
1-800-662-4111

DRAWING UPDATED JANUARY 2019

City of West Jordan, Utah



**WARNING SIGN DETAIL**  
(UNDERGROUND BURIED WATER TRANSMISSION PIPELINE)

PLAN  
**CW-285**