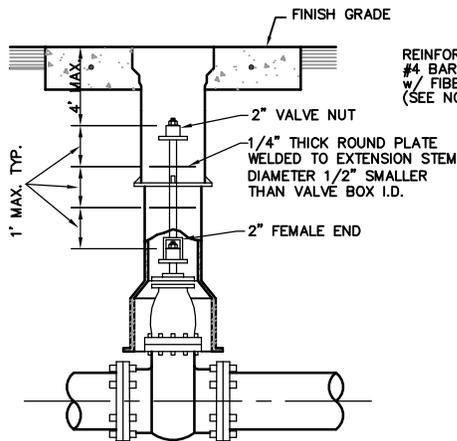


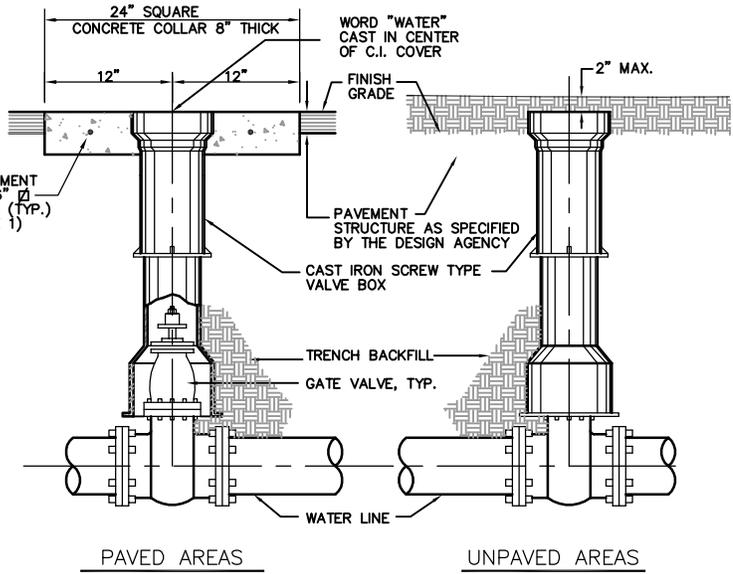
NOTES:

- 1- TOP OF VALVE BOX AND CONCRETE COLLAR TO BE 1/4" BELOW FINAL STREET GRADE.
- 2- IF TOP OF VALVE NUT IS MORE THAN 4' DEEP THEN VALVE STEM EXTENSION IS REQUIRED PER DETAIL.



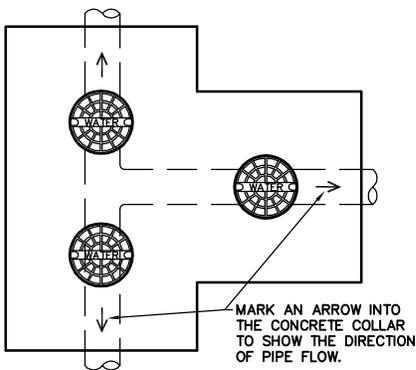
**VALVE EXTENSION
DETAIL**

N.T.S.

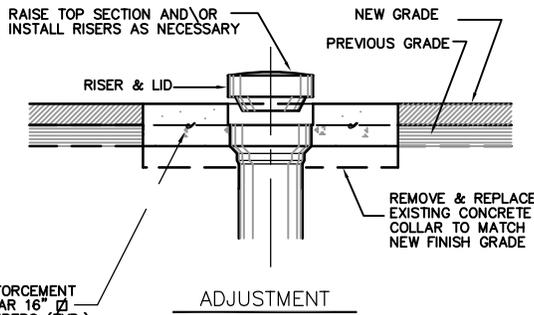


WATER VALVE BOX DETAIL

N.T.S.



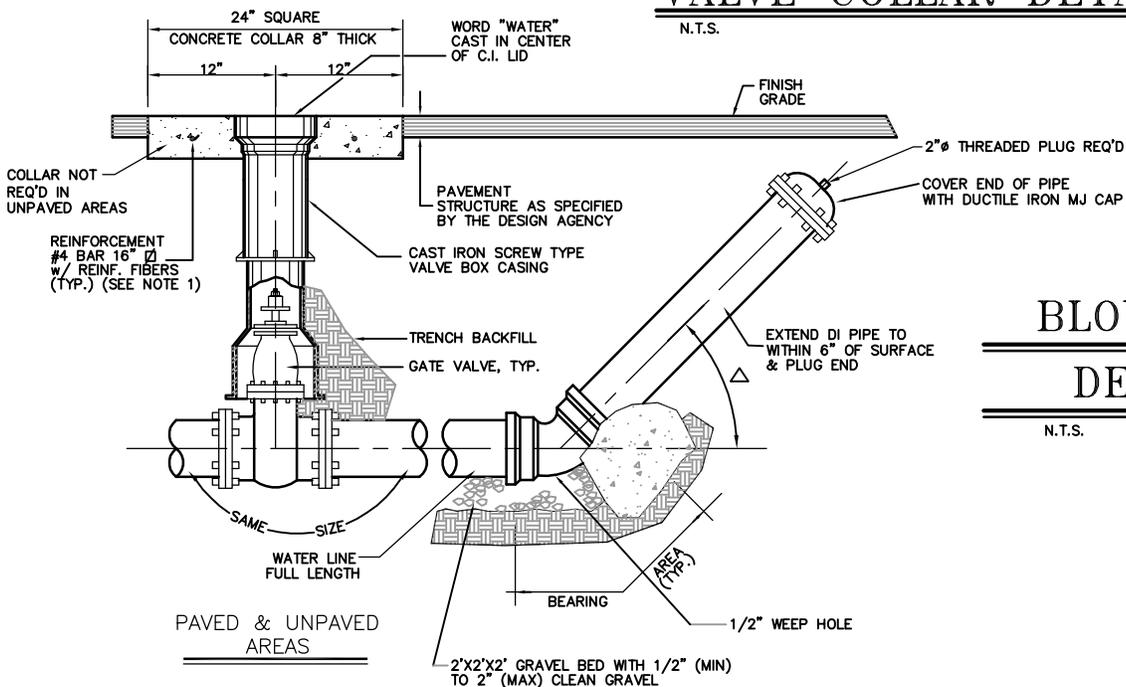
MARK AN ARROW INTO THE CONCRETE COLLAR TO SHOW THE DIRECTION OF PIPE FLOW.



REINFORCEMENT #4 BAR 16" (TYP.) w/ FIBERS (TYP.) (SEE NOTE 1)

VALVE COLLAR DETAIL

N.T.S.



**BLOW-OFF
DETAIL**

N.T.S.

SHEET NO.

W1

FILE: W01

**WATER VALVE BOX AND
BLOW-OFF**

CEDAR CITY
10 NORTH MAIN STREET
CEDAR CITY, UTAH 84720
PH. (435) 586-2963

SCALE: N.T.S.

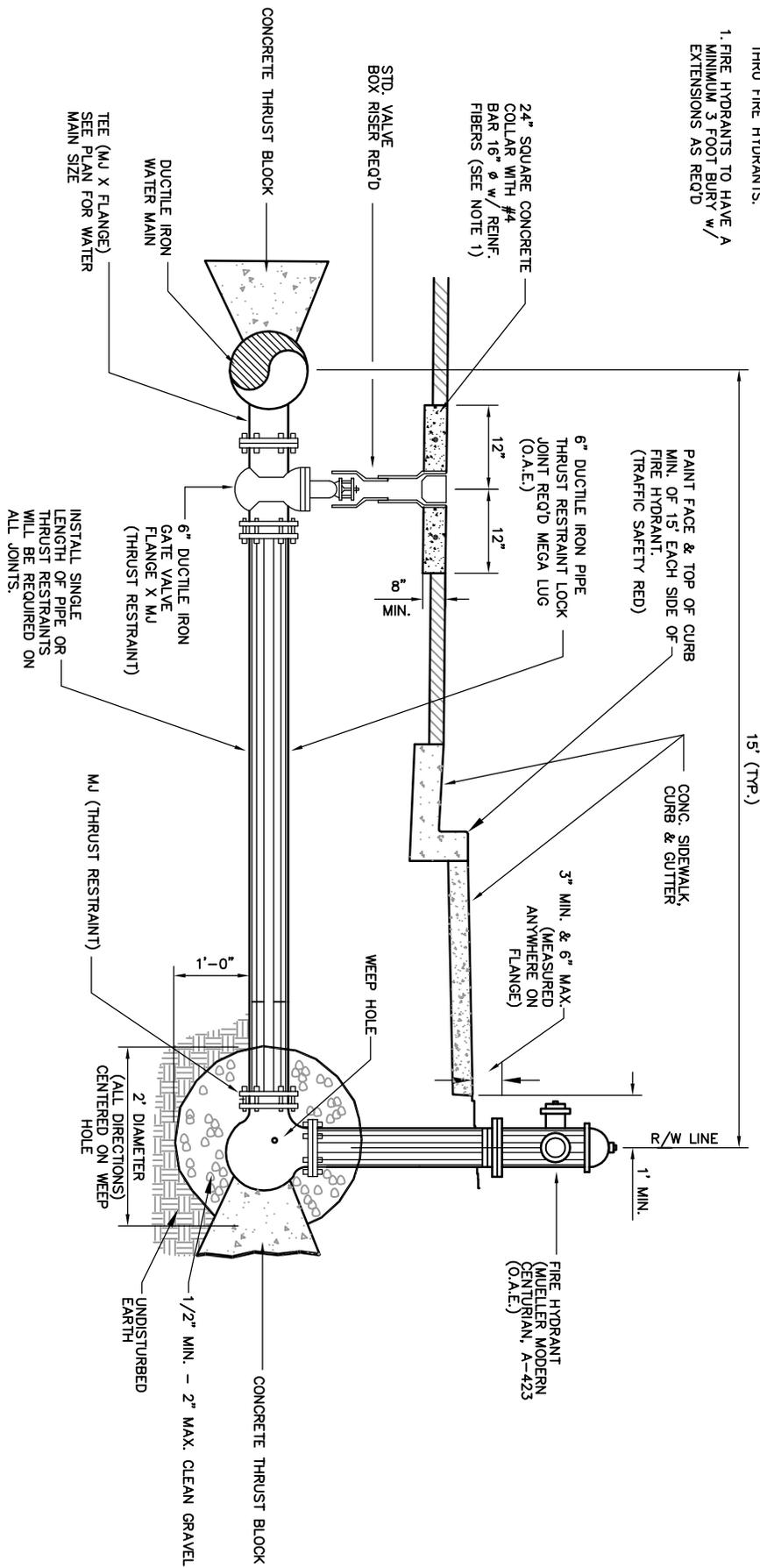
DATE: 8/2016

DRAWN: T.B.M.

CHECKED: K.C.W.

NOTES:

1. TOP OF VALVE BOX AND CONCRETE COLLAR TO BE 1/4" BELOW FINAL STREET GRADE.
2. DO NOT BLOW OFF WATER LINES THRU FIRE HYDRANTS.
1. FIRE HYDRANTS TO HAVE A MINIMUM 3 FOOT BURY W/ EXTENSIONS AS REQ'D



SHEET NO.

W2

FILE: W02

FIRE HYDRANT

CEDAR CITY

10 NORTH MAIN STREET
CEDAR CITY, UTAH 84720
PH. (435) 566-2963

SCALE: N.T.S.

DATE: 8/2016

DRAWN: T.B.M.

CHECKED: K.C.W.

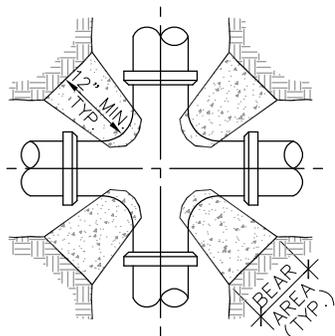


FIGURE 1
CROSS

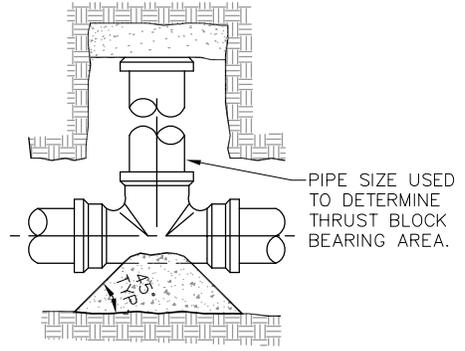


FIGURE 2
TEE, PLUG OR CAP

NOTE: (ONLY REQ'D IF ANY LEG IS LESS THAN 60 FT. LONG)

MECHANICAL JOINTS AT ALL FITTINGS IE: BENDS, TEES, CROSSES, AND VALVES SHALL HAVE THRUST BLOCKS AND THRUST RESTRAINT. (MEGA-LUG OR APPROVED EQUAL).

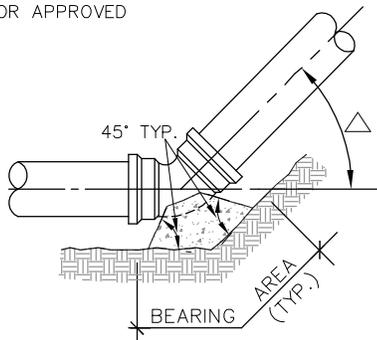


FIGURE 3
HORIZONTAL OR UPWARD VERTICAL BEND

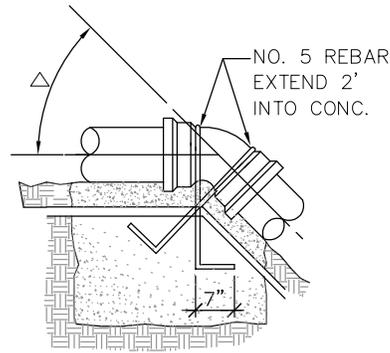
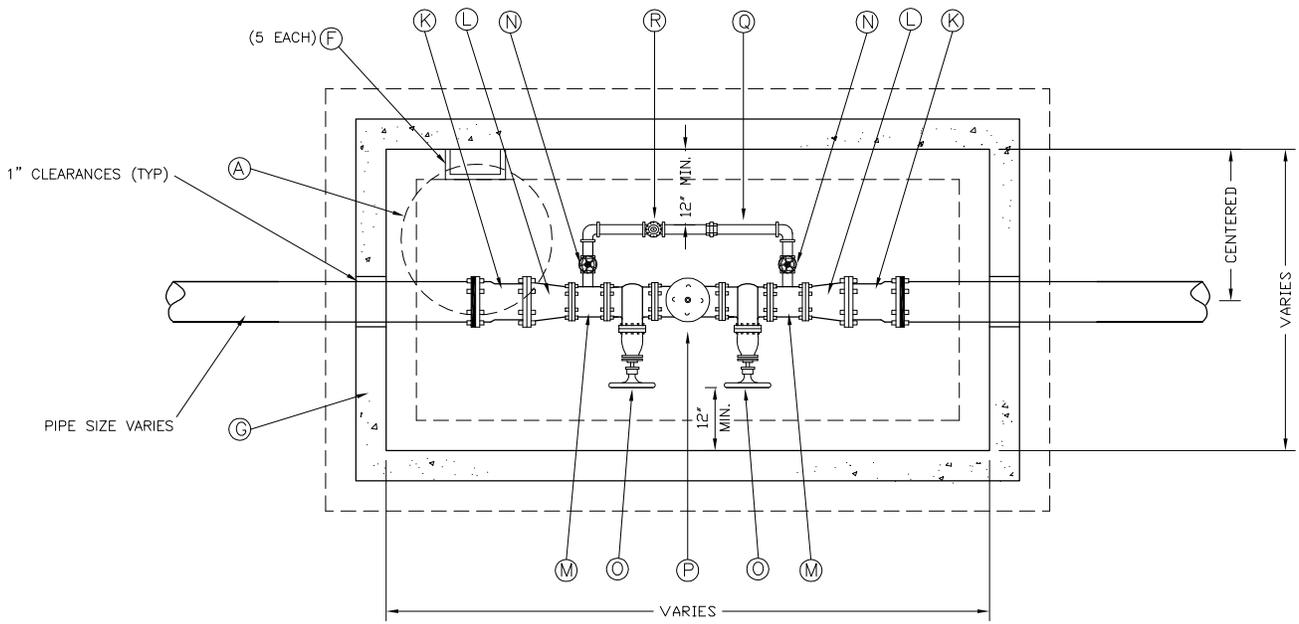


FIGURE 4
DOWNWARD VERTICAL BEND

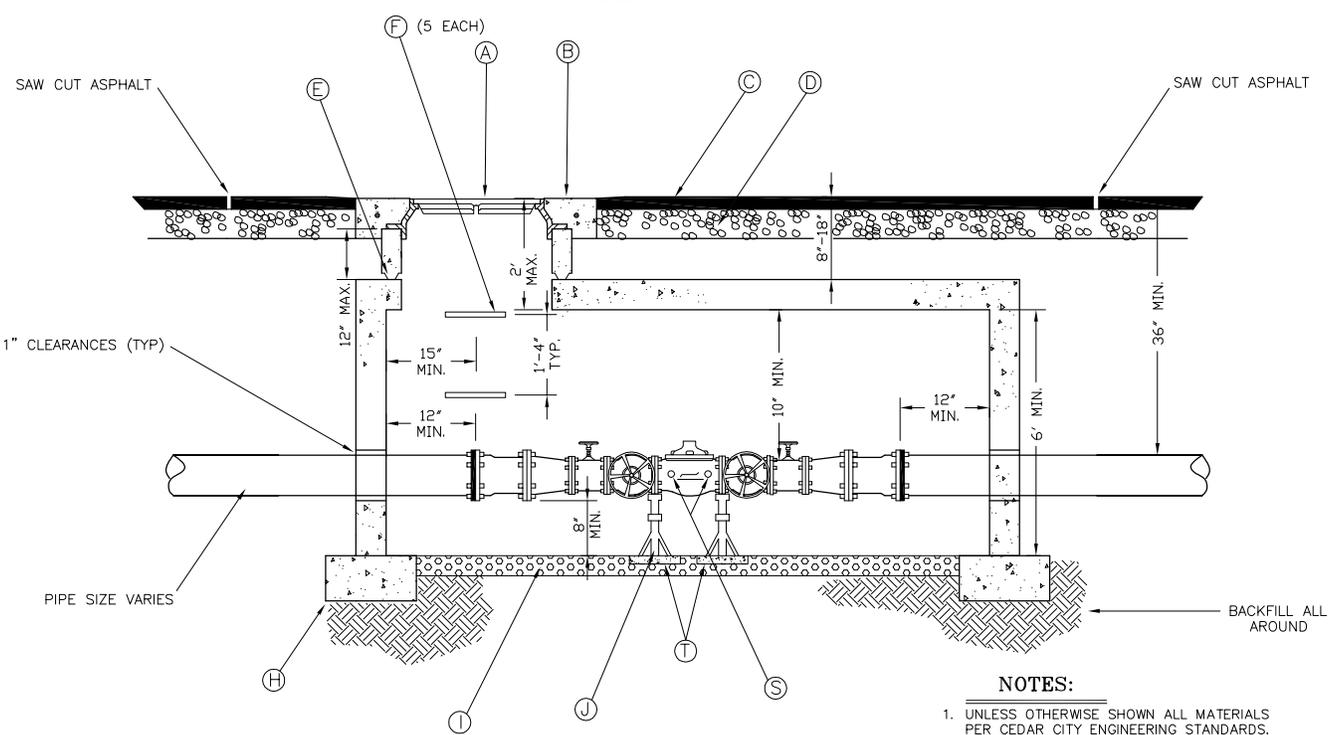
GENERAL NOTES:

1. ALL FITTINGS & EXPOSED REBAR TO BE WRAPPED W/ TWO LAYERS OF 6 MIL. POLYETHYLENE WHERE COVERED WITH CONCRETE.
2. ALL CONCRETE SHALL BE CLASS C 3000 P.S.I. MINIMUM 28 DAYS COMPRESSIVE STRENGTH.
3. PLACE CONCRETE AGAINST UNDISTURBED EARTH.
4. TABLE DENOTES MINIMUM BEARING AREA OR VOLUME OF THRUST BLOCK. SPECIAL DESIGN FOR EACH INSTALLATION IS REQUIRED IF ALLOWABLE SOIL BEARING CAPACITY IS LESS THAN 3000 P.S.F.
5. VERTICAL SURFACES NOT BEARING AGAINST UNDISTURBED EARTH SHALL BE FORMED.
6. KEEP CONCRETE AWAY FROM FLANGE BOLTS AND FITTINGS.
7. 90° ELBOWS IN WATER MAINS ARE ONLY ALLOWED AS APPROVED BY THE WATER SUPERINTENDENT.
8. THRUST BLOCK BEARING AREA BASED ON LARGEST PIPE I.D. THAT THRUST BLOCK IS SUPPORTING.

PIPE I.D.	BEARING AREA, SQUARE FEET						VOLUME OF CONC. CU.YD		
	FIGURE 1	FIGURE 2	FIGURE 3, Δ			FIGURE 4, Δ			
			90°	45°	22-1/2°	11-1/4°	45°	22-1/2°	11-1/4°
4"	2	2	2	1	1	1	1.0	.5	.5
6"	2	3	3	2	1	1	1.5	1.0	.5
8"	2	5	6	3	2	1	2.0	1.0	.5
10"	3	7	10	5	3	1	4.0	2.0	1.0
12"	3	10	14	8	4	2			
14"	4	14	20	10	5	3			
16"	4	20	24	12	7	4			
18"	5	24	30	16	10	5			
20"	5	28	40	20	12	6			



PLAN
N.T.S.



ELEVATION
N.T.S.

NOTES:

1. UNLESS OTHERWISE SHOWN ALL MATERIALS PER CEDAR CITY ENGINEERING STANDARDS.
2. CONCRETE VAULT LENGTH AND WIDTH SHALL BE SUFFICIENT TO CONTAIN ALL FITTINGS AND MAINTAIN INDICATED CLEARANCE FROM WALLS.
3. VAULTS ARE DESIGNED TO MEET ASTM C858 WITH AASHTO HS-20 LOADING.

LEGEND

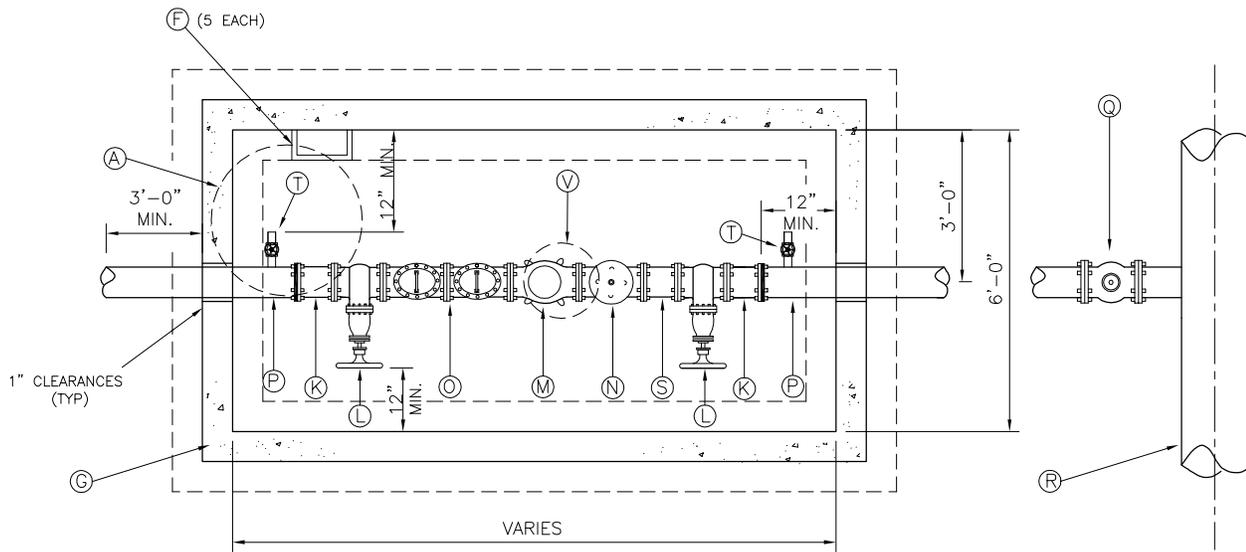
NO.	ITEM	DESCRIPTION	NO.	ITEM	DESCRIPTION
(A)	MANHOLE RING AND COVER (RIBLESS)	D&L A-1180 O.A.E.	(L)	x" x 6" FLANGED REDUCER (IF REQ'D)	CEMENT LINED
(B)	4' Ø x 8" THICK CONCRETE COLLAR	W/ 40" Ø #4 BARS & FIBERS	(M)	6" FLANGED STEEL SPOOL WITH 2" OUTLET	EPOXY COATED AND LINED
(C)	3" ASPHALT MAT		(N)	2" GATE VALVE WITH HANDWHEEL	
(D)	8" COMPACTED UNTREATED BASE		(O)	6" GATE VALVE WITH HANDWHEEL	NON-RISING STEM
(E)	GRADE RING(S)	MUST BE SEALED	(P)	6" PRESSURE REDUCING VALVE	WATTS ACV 115/6115 O.A.E.
(F)	MANHOLE STEP	(M.A. INDUSTRIES INC. O.A.E.)	(Q)	2" K-COPPER PIPE AND FITTINGS AS SHOWN	
(G)	CONCRETE VAULT TOP	AMCOR UV6127T O.A.E.	(R)	2" PRESSURE REDUCING VALVE	WATTS ACV 115/6115 O.A.E.
(H)	9" x 18" FOOTING W/ 3-#4 BARS		(S)	3/4" TAPS w/ PRESSURE GAUGE	2 1/2", 0-300 PSI, GLYCERIN FILLED
(I)	4" THICK DRAIN GRAVEL		(T)	12" x 12" x 2" CONCRETE BLOCK	
(J)	(2) LEVELING JACKS (LENGTH VARIES)	SLIDEWINDER PART #23535 BY BARKER MANUF. CO.			
(K)	x" M.J. X FLANGE ADAPTOR	CEMENT LINED			

SHEET NO.
W4
FILE: WO4

**6" PRESSURE REDUCING VALVE
W/ 2" BYPASS**

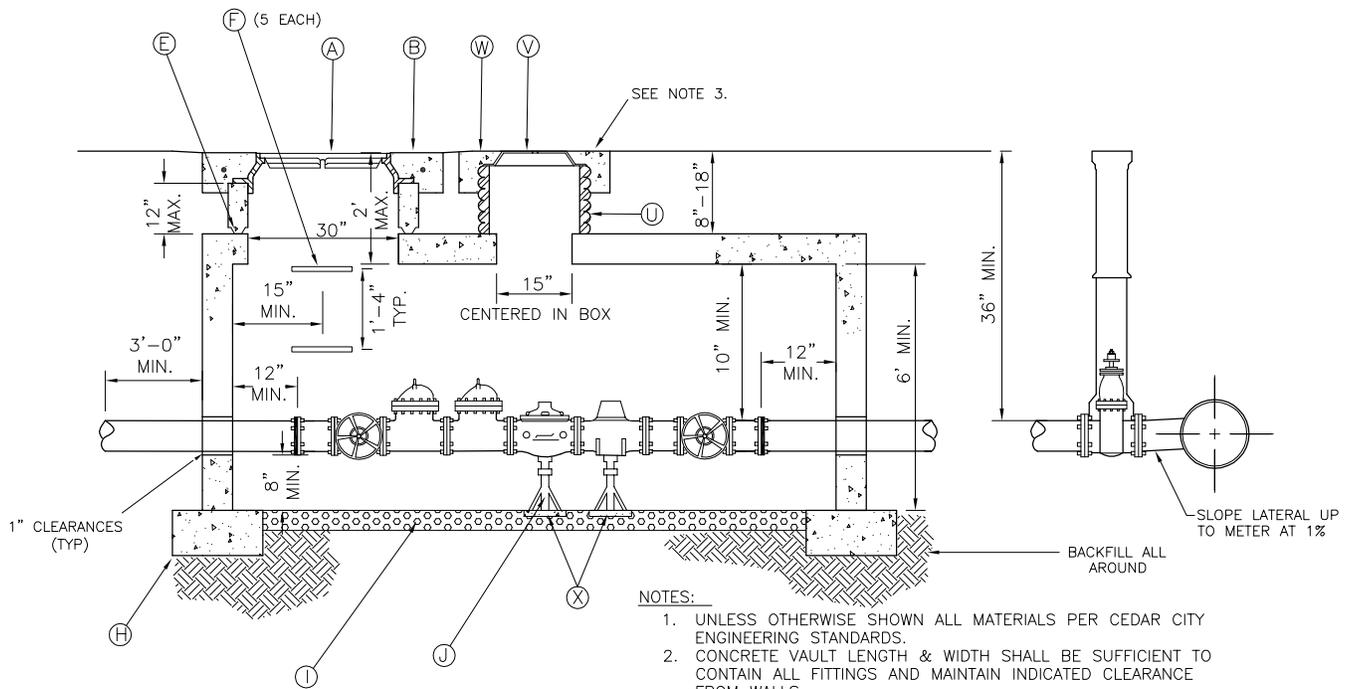
CEDAR CITY
10 NORTH MAIN STREET
CEDAR CITY, UTAH 84720
PH. (435) 586-2963

SCALE: N.T.S.	DATE: 8/2016
DRAWN: T.B.M.	CHECKED: K.C.W.



PLAN

N.T.S.



ELEVATION

N.T.S.

NOTES:

1. UNLESS OTHERWISE SHOWN ALL MATERIALS PER CEDAR CITY ENGINEERING STANDARDS.
2. CONCRETE VAULT LENGTH & WIDTH SHALL BE SUFFICIENT TO CONTAIN ALL FITTINGS AND MAINTAIN INDICATED CLEARANCE FROM WALLS.
3. WATER METER LIDS & COVERS SHALL ONLY BE INSTALLED IN LANDSCAPED AREAS UNLESS APPROVED BY WATER SUPERINTENDENT.
4. NOT ALLOWED ON PRIVATE SYSTEMS WITH FIRE HYDRANTS.
5. VAULTS ARE DESIGNED TO MEET ASTM C858 WITH AASHTO HS-20 LOADING.

LEGEND

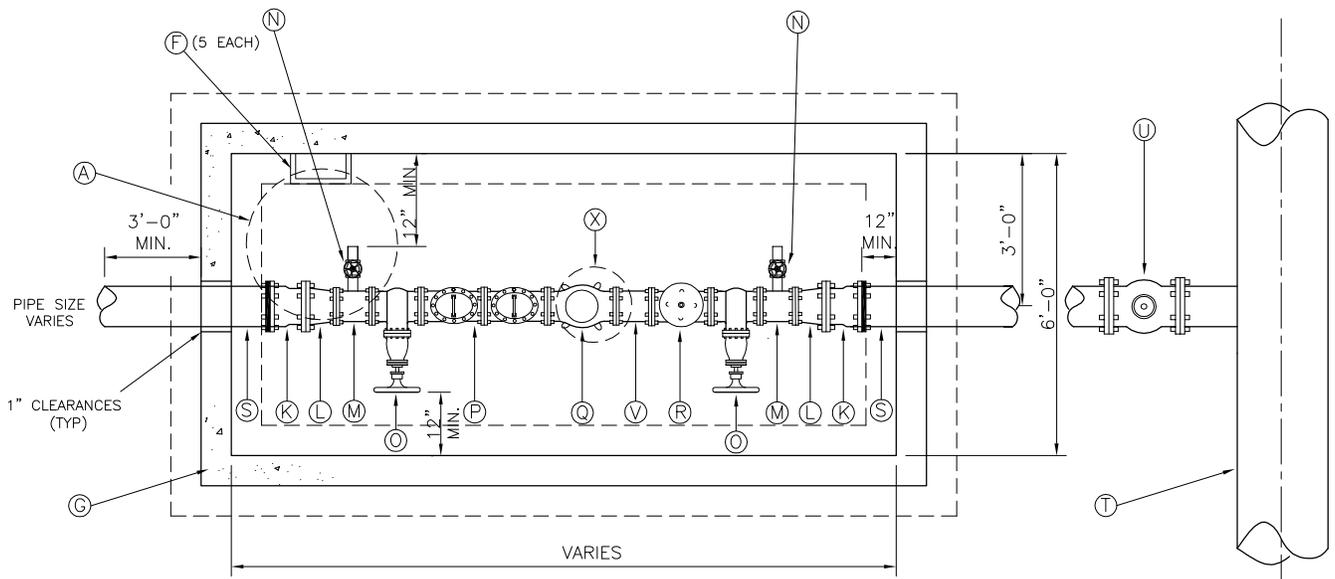
NO.	ITEM	DESCRIPTION	NO.	ITEM	DESCRIPTION
(A)	MANHOLE RING AND COVER (RIBLESS)	D&L A-1180 O.A.E.	(P)	DUCTILE IRON PIPE (TO OUTSIDE OF VAULT)	CEMENT LINED
(B)	4" X 8" THICK CONCRETE COLLAR	W/ 40# #4 BARS & FIBERS	(Q)	GATE VALVE WITH BOX	SEE W1
(C)	NOT USED		(R)	FIRE LOOP OR CITY WATER MAIN	
(D)	NOT USED		(S)	FLANGED SPOOL 12" LONG	
(E)	GRADE RING(S)	MUST BE SEALED	(T)	1 1/2" PIPE TAP WITH GATE VALVE AND 4" NIPPLE	
(F)	MANHOLE STEP	(M.A. INDUSTRIES INC. O.A.E.)	(U)	18" DIA. HDPE PIPE	PER PIPE SPEC
(G)	CONCRETE VAULT TOP	AMCOR UV6127T O.A.E.	(V)	RING & LID w/ 2" PUNCHOUT	D&L-2241 O.A.E.
(H)	9" X 18" FOOTING W/ 3-#4 BARS		(W)	30"x30"x8" THICK CONCRETE COLLAR	
(I)	4" THICK DRAIN GRAVEL		(X)	12" x 12" x 2" CONCRETE BLOCK	
(J)	(2) LEVELING JACKS (LENGTH VARIES)	SLIDEWINDER PART #23535 BY BARKER MANUF. CO.			
(K)	6" MIN. FLANGE ADAPTOR	CEMENT LINED			
(L)	GATE VALVE WITH HANDWHEEL	NON-RISING STEM			
(M)	COMPOUND FLOW METER (PURCHASED FROM CITY)	METRON SPECTRUM			
(N)	PRESSURE REDUCING VALVE (IF REQ'D)				
(O)	BACKFLOW PREVENTER (IF REQ'D)				

SHEET NO.
W6
FILE: W06

3"-4" WATER METER
(COMBINED CULINARY & FIRE SPRINKLER FLOWS)

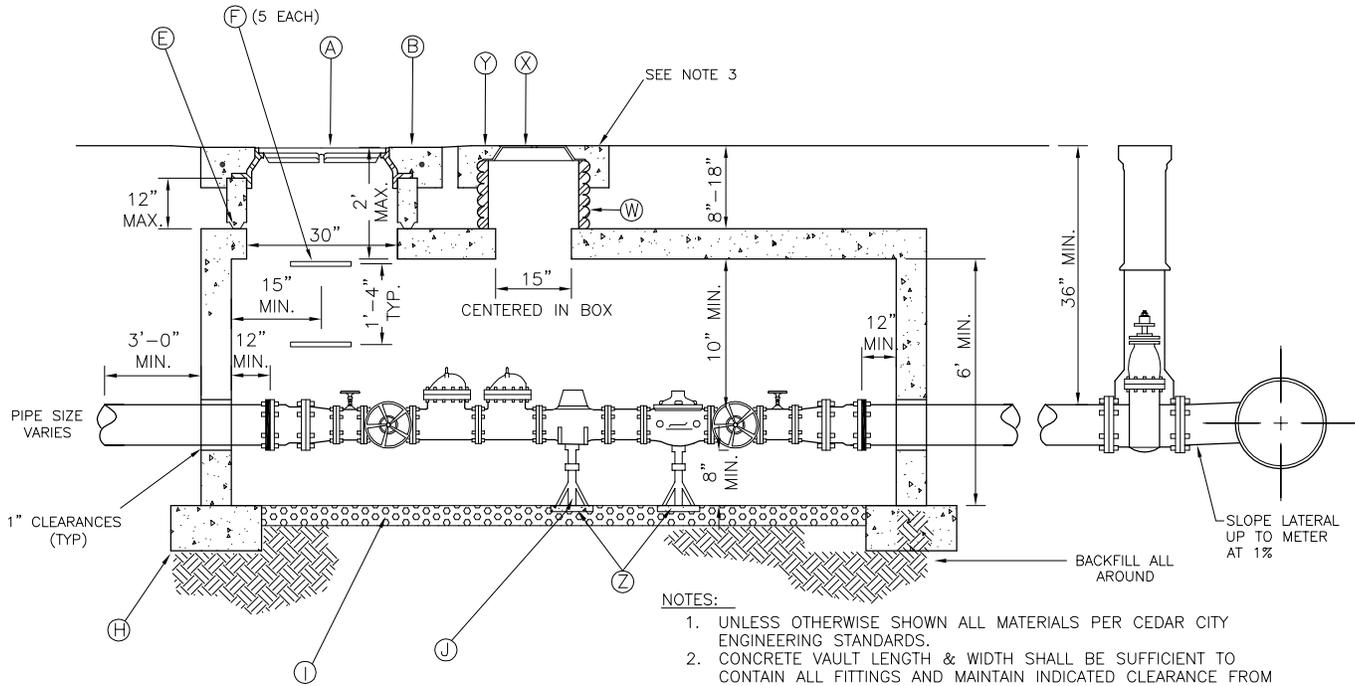
CEDAR CITY
10 NORTH MAIN STREET
CEDAR CITY, UTAH 84720
PH. (435) 586-2963

SCALE: N.T.S. DATE: 8/2016
DRAWN: T.B.M. CHECKED: K.C.W.



PLAN

N.T.S.



ELEVATION

N.T.S.

NOTES:

1. UNLESS OTHERWISE SHOWN ALL MATERIALS PER CEDAR CITY ENGINEERING STANDARDS.
2. CONCRETE VAULT LENGTH & WIDTH SHALL BE SUFFICIENT TO CONTAIN ALL FITTINGS AND MAINTAIN INDICATED CLEARANCE FROM WALLS.
3. WATER METER LIDS & COVERS SHALL ONLY BE INSTALLED IN LANDSCAPED AREAS UNLESS APPROVED BY WATER SUPERINTENDENT.
4. REQUIRED ON PRIVATE WATER SYSTEMS WITH FIRE HYDRANTS.
5. VAULTS ARE DESIGNED TO MEET ASTM C858 WITH AASHTO HS-20 LOADING.

LEGEND

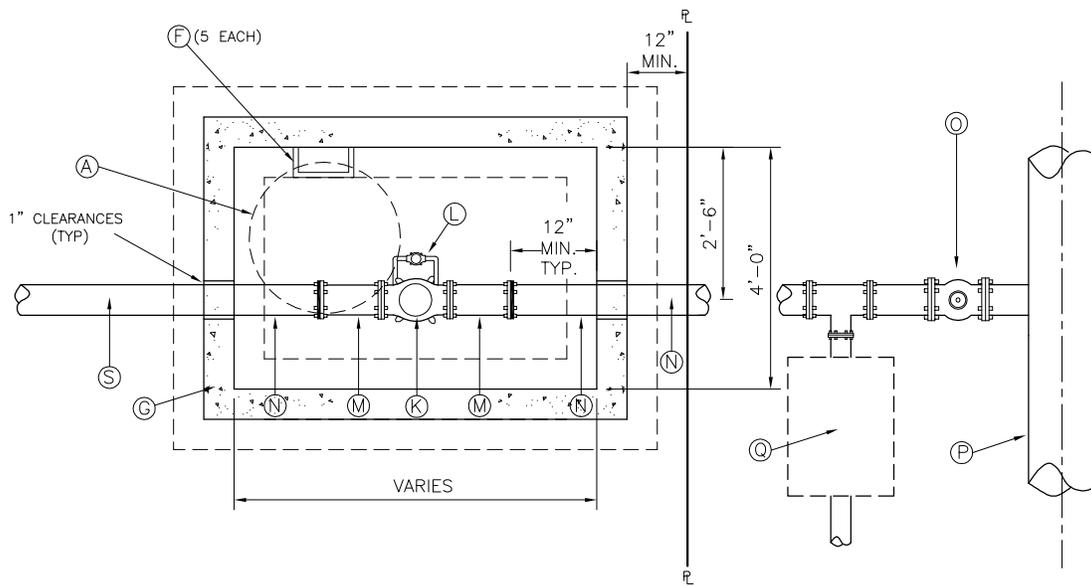
NO.	ITEM	DESCRIPTION	NO.	ITEM	DESCRIPTION
(A)	MANHOLE RING AND COVER (RIBLESS)	D&L A-1180 O.A.E.	(P)	6" DOUBLE CHECK DETECTOR VALVE (DCDA)	WATTS SERIES 709 DCA w/ METERED BYPASS
(B)	4" x 8" THICK CONCRETE COLLAR	W/ 40" x #4 BARS & FIBERS	(Q)	6" COMPOUND FLOW METER (PURCHASED FROM CITY)	COMPOUND w/ STRAINER
(C)	NOT USED		(R)	6" PRESSURE REDUCING VALVE (IF REQ'D)	
(D)	NOT USED		(S)	6" MIN. D.I. PIPE (TO OUTSIDE OF VAULT)	CEMENT LINED
(E)	GRADE RING(S)	MUST BE SEALED	(T)	CITY WATER MAIN	
(F)	MANHOLE STEP	(M.A. INDUSTRIES INC. O.A.E.)	(U)	GATE VALVE WITH BOX	SEE W1
(G)	CONCRETE VAULT TOP	AMCOR UV6127T O.A.E.	(V)	6" FLANGED SPOOL 12" LONG	CEMENT LINED
(H)	9" x 18" FOOTING W/ 3-#4 BARS		(W)	18" DIA. HDPE PIPE	PER PIPE SPEC.
(I)	4" THICK DRAIN GRAVEL		(X)	RING & LID w/ 2" PUNCHOUT	D&L-2241 O.A.E.
(J)	(2) LEVELING JACKS (LENGTH VARIES)	SLIDEWINDER PART #23535 BY BARKER MANUF. CO.	(Y)	30"x30"x8" THICK CONCRETE COLLAR	
(K)	6" MIN. FLANGE ADAPTOR	CEMENT LINED	(Z)	12" x 12" x 2" CONCRETE BLOCK	
(L)	x" x 6" FLANGED REDUCER (IF REQ'D)	CEMENT LINED			
(M)	6" FLANGED STEEL SPOOL WITH 2" OUTLET	EPOXY COATED AND LINED			
(N)	2" GATE VALVE WITH 4" NIPPLE				
(O)	6" GATE VALVE WITH HANDWHEEL	NON-RISING STEM			

SHEET NO.
W7
FILE: W07

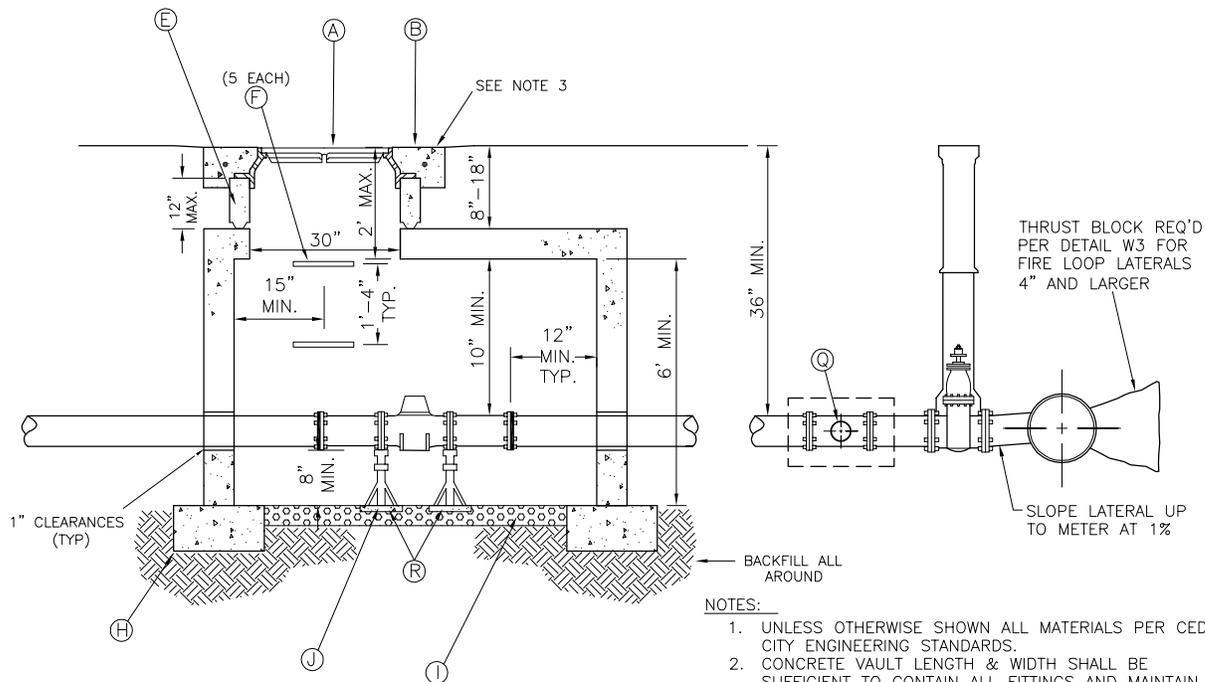
**WATER METER WITH FIRE FLOW
(COMBINED CULINARY & PRIVATE FIRE
HYDRANT FLOWS)**

CEDAR CITY
10 NORTH MAIN STREET
CEDAR CITY, UTAH 84720
PH. (435) 586-2963

SCALE: N.T.S. DATE: 8/2016
DRAWN: T.B.M. CHECKED: K.C.W.



PLAN
N.T.S.



NOTE: ALL VALVES AND FITTINGS TO BE SAME SIZE AS PIPE.

ELEVATION
N.T.S.

NOTES:

1. UNLESS OTHERWISE SHOWN ALL MATERIALS PER CEDAR CITY ENGINEERING STANDARDS.
2. CONCRETE VAULT LENGTH & WIDTH SHALL BE SUFFICIENT TO CONTAIN ALL FITTINGS AND MAINTAIN INDICATED CLEARANCE FROM WALLS.
3. WATER METER LIDS & COVERS SHALL ONLY BE INSTALLED IN LANDSCAPED AREAS UNLESS APPROVED BY WATER SUPERINTENDENT.
4. VAULTS ARE DESIGNED TO MEET ASTM C858 WITH AASHTO HS-20 LOADING.

LEGEND

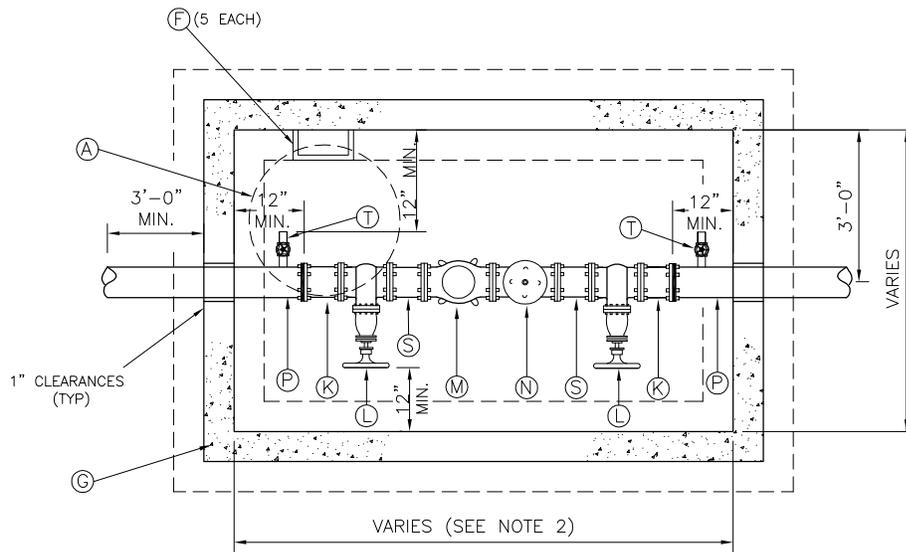
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(A)		MANHOLE RING AND COVER (RIBLESS)	D&L A-1180 O.A.E.	(P)		CITY WATER MAIN	
(B)		4" X 8" THICK CONCRETE COLLAR	W/ 40" X #4 BARS & FIBERS	(Q)		METER PER DETAIL W5 OR W6	
(C)		NOT USED		(R)		12" X 12" X 2" CONCRETE BLOCK	
(D)		NOT USED		(S)		PIPE MATERIAL TO BUILDING PER PLUMBING CODE	
(E)		GRADE RING(S)	MUST BE SEALED				
(F)		MANHOLE STEP	(M.A. INDUSTRIES INC. O.A.E.)				
(G)		CONCRETE VAULT TOP (4' X 6')	AMCOR UV46T O.A.E.				
(H)		9" X 18" FOOTING W/ 3-#4 BARS					
(I)		4" THICK DRAIN GRAVEL					
(J)		(2) LEVELING JACKS (LENGTH VARIES)	SLIDEWINDER PART #23535 BY BARKER MANUF. CO.				
(K)		SINGLE LEAK DETECTOR CHECK	WATTS SERIES SS07F O.A.E.				
(L)		3/4-INCH BY-PASS KIT	WITH METER AND VALVES				
(M)		FLANGE ADAPTER	CEMENT LINED				
(N)		DUCTILE IRON PIPE	CEMENT LINED				
(O)		GATE VALVE WITH BOX					

SHEET NO.
W8
FILE: W08

FIRE LOOP
DETECTOR CHECK VALVE
(FIRE FLOWS ONLY)

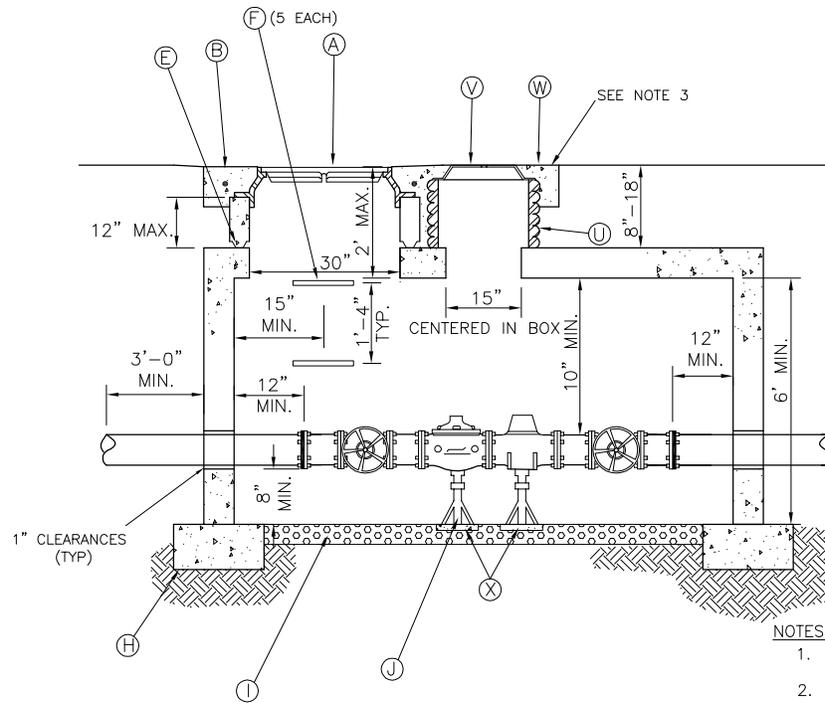
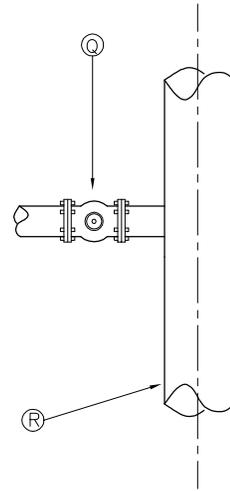
CEDAR CITY
10 NORTH MAIN STREET
CEDAR CITY, UTAH 84720
PH. (435) 586-2963

SCALE: N.T.S. DATE: 8/2016
DRAWN: T.B.M. CHECKED: K.C.W.



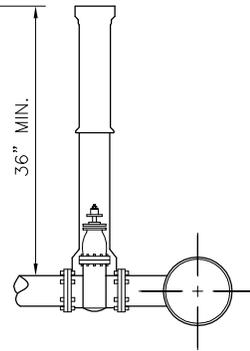
PLAN

N.T.S.



ELEVATION

N.T.S.



BACKFILL ALL AROUND

NOTES:

1. UNLESS OTHERWISE SHOWN ALL MATERIALS PER CEDAR CITY ENGINEERING STANDARDS.
2. CONCRETE VAULT LENGTH & WIDTH SHALL BE SUFFICIENT TO CONTAIN ALL FITTINGS AND MAINTAIN INDICATED CLEARANCE FROM WALLS.
3. WATER METER LIDS & COVERS SHALL ONLY BE INSTALLED IN LANDSCAPED AREAS UNLESS APPROVED BY WATER SUPERINTENDENT.
4. VAULTS ARE DESIGNED TO MEET ASTM C858 WITH AASHTO HS-20 LOADING.

LEGEND

NO.	ITEM	DESCRIPTION	NO.	ITEM	DESCRIPTION
(A)	MANHOLE RING AND COVER (RIBLESS)	D&L A-1180 O.A.E.	(P)	DUCTILE IRON PIPE (TO OUTSIDE OF VAULT)	CEMENT LINED
(B)	4" x 8" THICK CONCRETE COLLAR	W/ 40" x #4 BARS & FIBERS	(Q)	GATE VALVE WITH BOX	SEE W1
(C)	NOT USED		(R)	IRRIGATION MAIN	
(D)	NOT USED		(S)	FLANGED SPOOL 12" LONG	
(E)	GRADE RING(S)	MUST BE SEALED	(T)	PIPE TAP (SIZE VARIES) WITH GATE VALVE AND 4" NIPPLE	
(F)	MANHOLE STEP	(M.A. INDUSTRIES INC. O.A.E.)	(U)	18" DIA. HDPE PIPE	PER PIPE SPEC.
(G)	CONCRETE VAULT TOP	AMCOR OR APPROVED EQUAL	(V)	RING & LID w/ 2" PUNCHOUT	D&L-2241 O.A.E.
(H)	9" x 18" FOOTING W/ 3-#4 BARS		(W)	30"x30"x8" THICK CONCRETE COLLAR	
(I)	4" THICK DRAIN GRAVEL		(X)	12" x 12" x 2" CONCRETE BLOCK	
(J)	(2) LEVELING JACKS (LENGTH VARIES)	SLIDEWINDER PART #23535 BY BARKER MANUF. CO.			
(K)	FLANGE ADAPTOR	CEMENT LINED			
(L)	GATE VALVE WITH HANDWHEEL	NON-RISING STEM			
(M)	FLOW METER (PURCHASED FROM CITY)	METRON SPECTRUM			
(N)	PRESSURE REDUCING VALVE (IF REQ'D)				

SHEET NO.

W9

FILE: W09

IRRIGATION METER

CEDAR CITY

10 NORTH MAIN STREET
CEDAR CITY, UTAH 84720
PH. (435) 588-2963

SCALE:

N.T.S.

DATE:

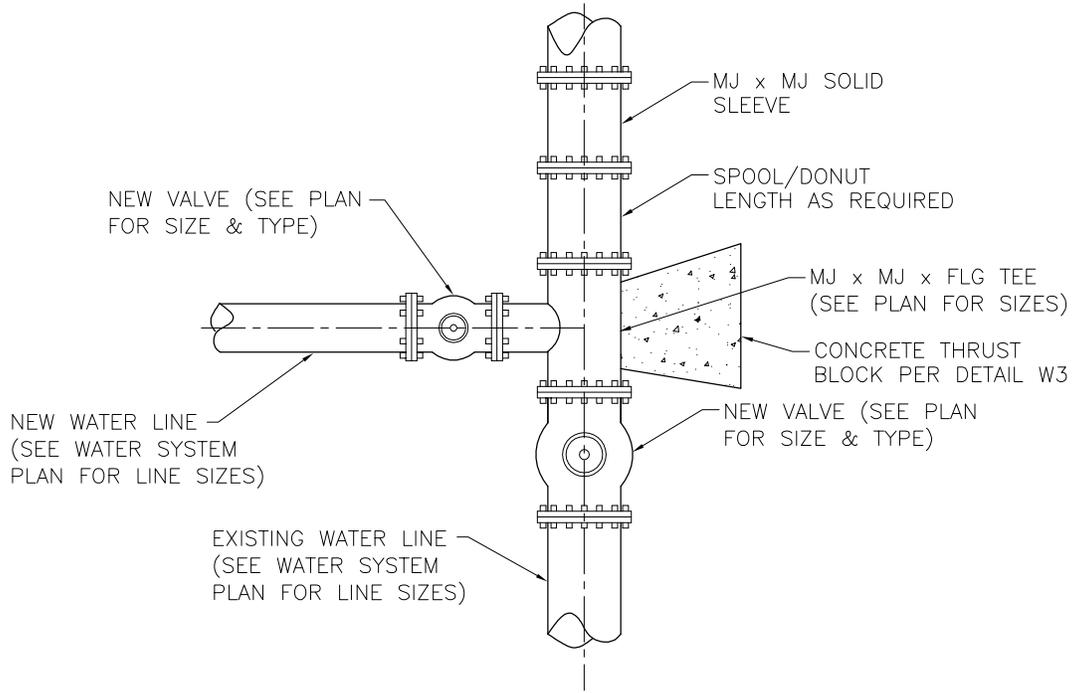
8/2016

DRAWN:

T.B.M.

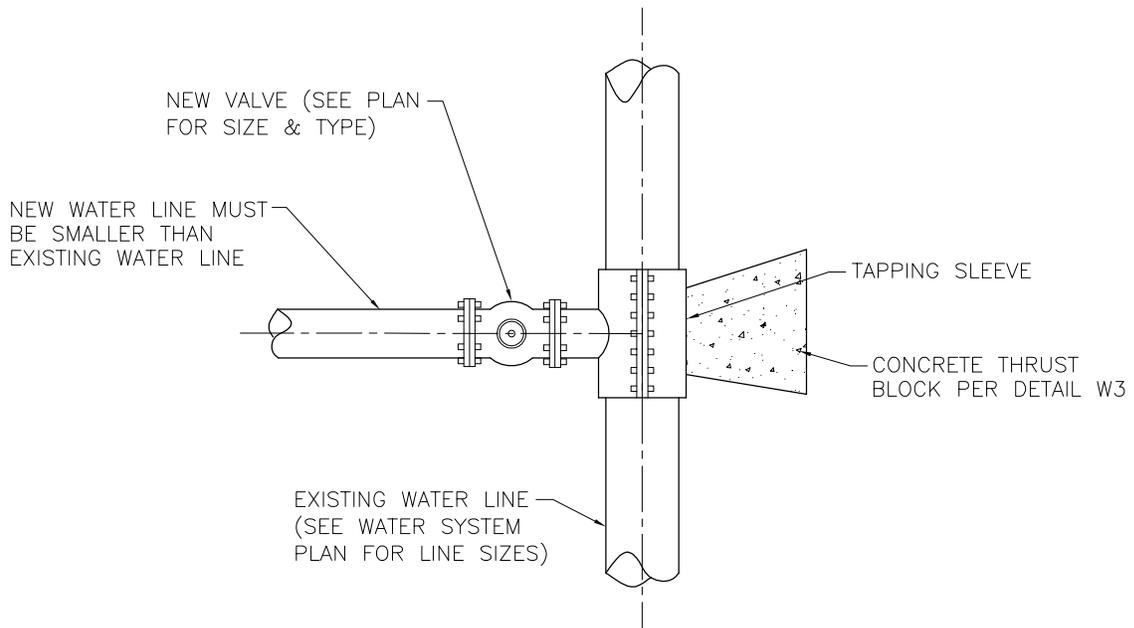
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K.C.W.



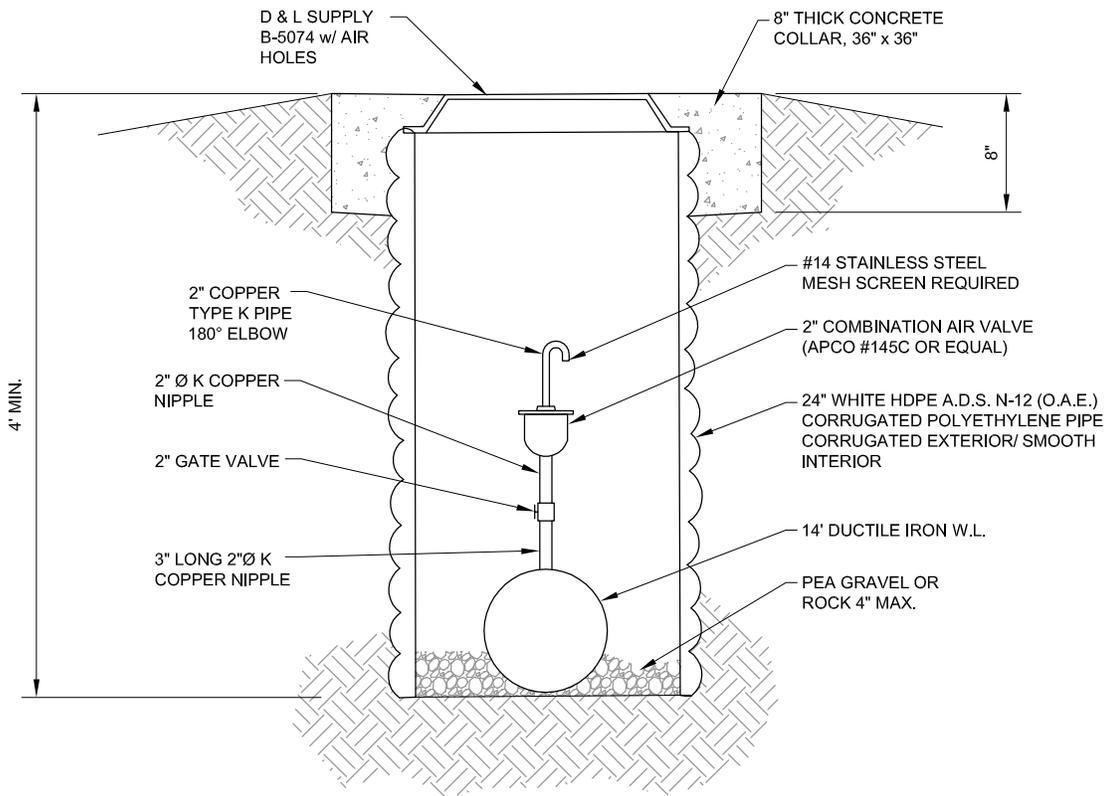
CUT-IN TEE CONNECTION

N.T.S.



TAPPED CONNECTION

N.T.S.



COMBINATION AIR VALVE DETAIL

N.T.S.

SHEET NO.
W11
FILE: W11

COMBINATION AIR VALVE DETAIL

CEDAR CITY
10 NORTH MAIN STREET
CEDAR CITY, UTAH 84720
PH. (435) 586-2963

SCALE:
N.T.S.

DATE:
8/2016

DRAWN:
T.B.M.

CHECKED:
K.C.W.