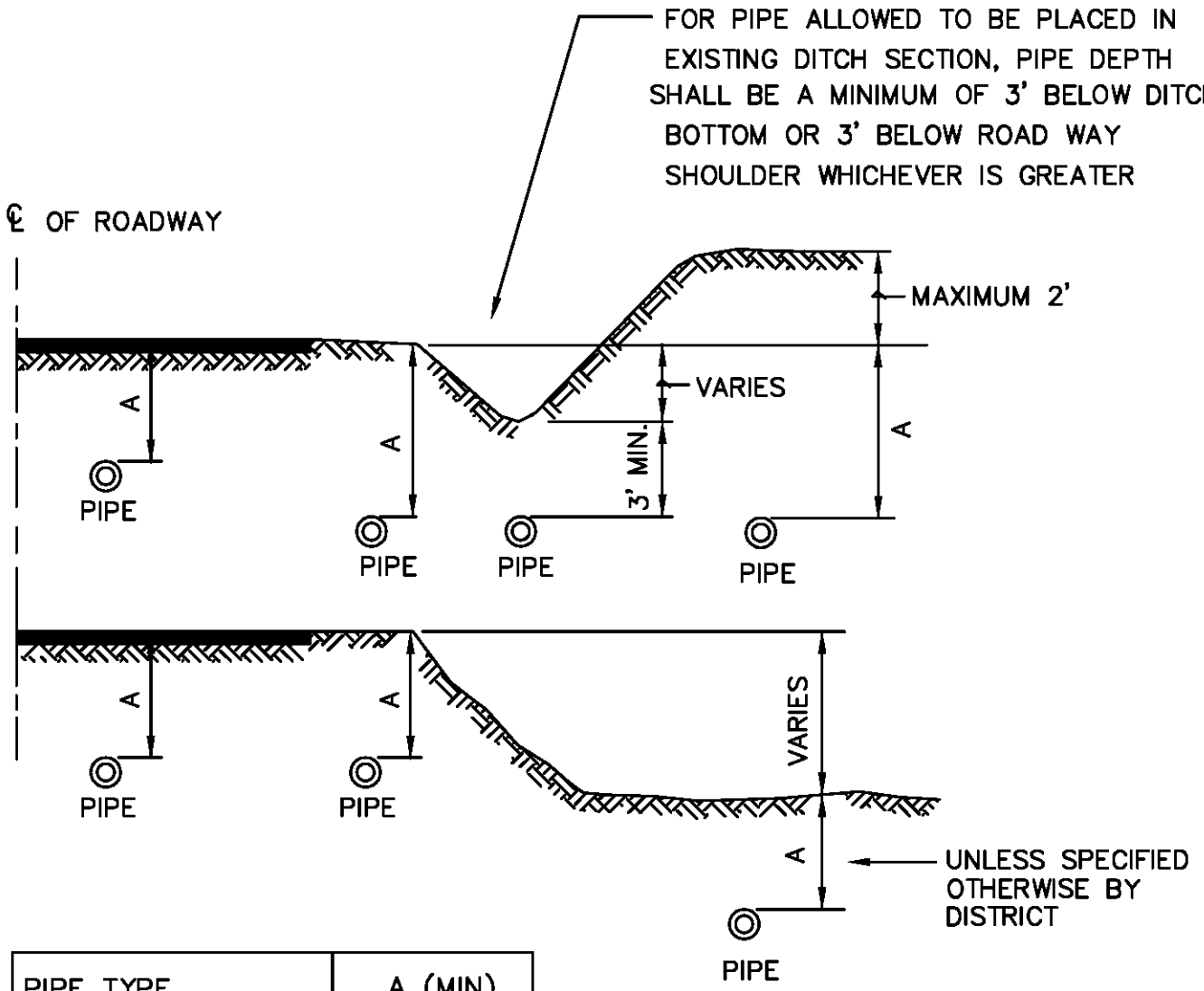

PIPE TYPE	A (MIN)
12" OR LARGER	42"
10" OR SMALLER	36"

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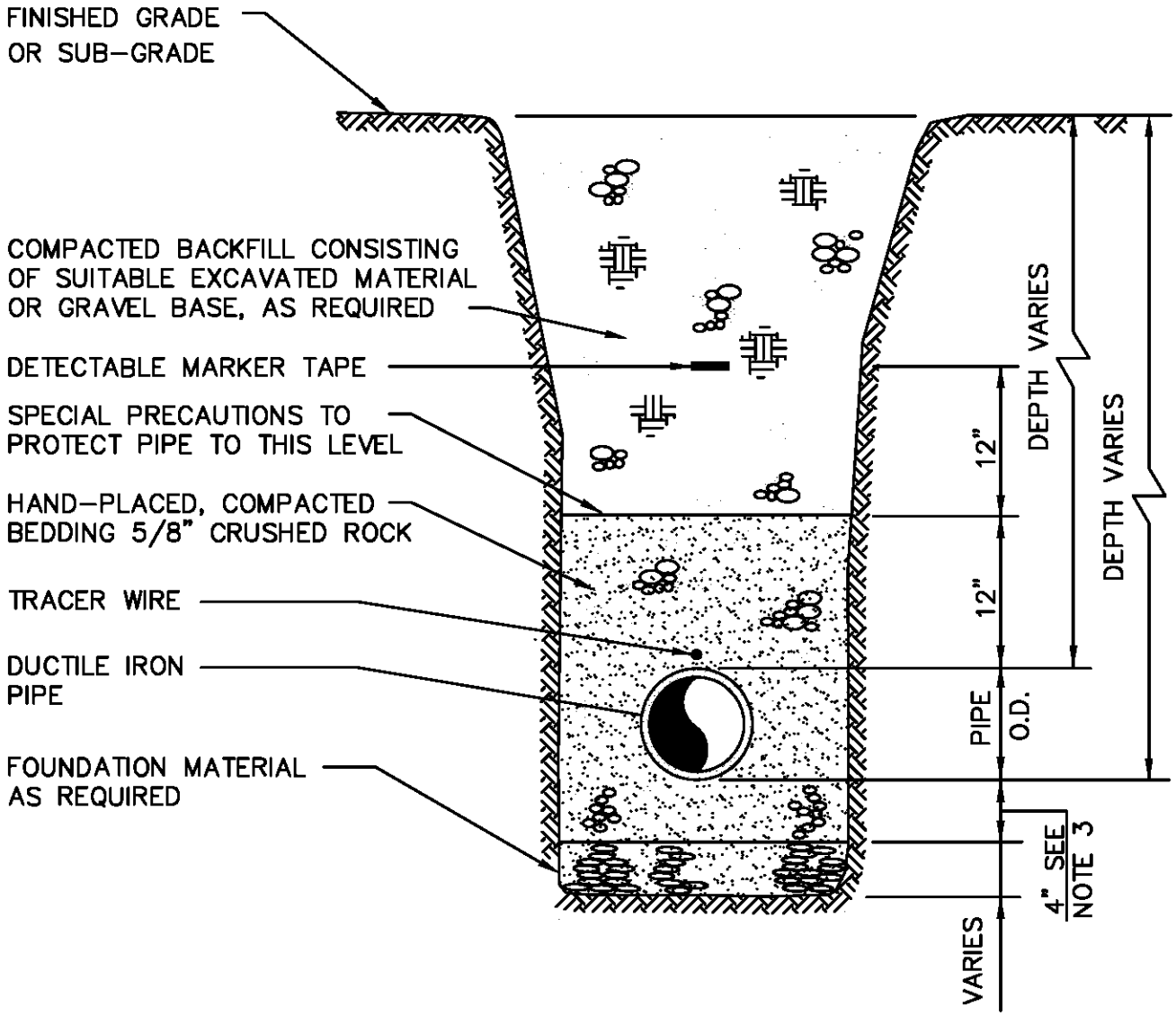
WATER MAIN DEPTH REQUIREMENTS

WATER STANDARD DETAIL NO. 01

NOVEMBER 2005

VALLEY WATER DISTRICT



NOTES:

1. BACKFILL MATERIAL AND COMPACTION SHALL BE IN CONFORMANCE WITH DISTRICT STANDARDS AND OR THE PIERCE COUNTY PERMIT REQUIREMENTS, AS MAY BE APPLICABLE.

2. BEDDING MATERIAL SHALL BE 5/8" CRUSHED ROCK. NATIVE MATERIAL MAY NOT BE USED IN BEDDING ZONE.

3. PLACE MINIMUM 6" BEDDING MATERIAL UNDER BELL OF PIPE FOR ALL PIPE GREATER THAN 18" DIAMETER OR WHERE ROCK IS EXCAVATED; OTHERWISE 4" BEDDING MATERIAL REQUIRED.

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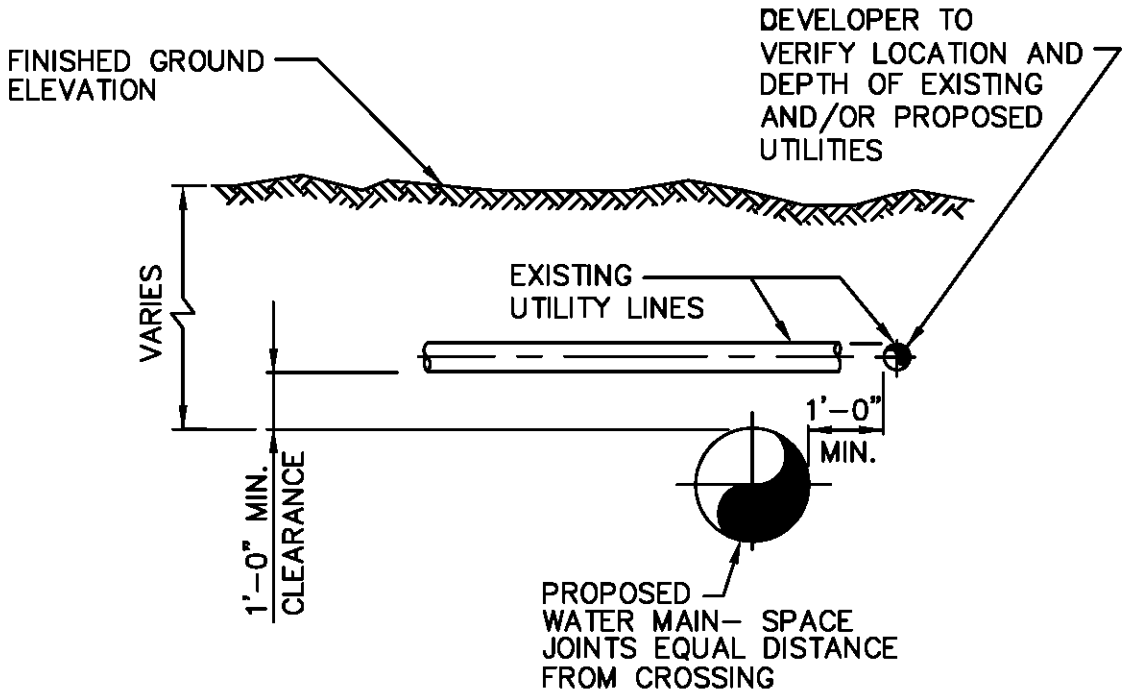
WATER MAIN TRENCH SECTION

WATER STANDARD DETAIL NO. 02

DECEMBER 2007

VALLEY WATER DISTRICT



NOTE: CONCRETE ENCASEMENT (BEDDING) SHALL BE UTILIZED, IF APPROVED BY THE DISTRICT, AT LOCALIZED UTILITY CROSSING IF MINIMUM PIPE SEPERATION (ELEVATION) CANNOT BE MAINTAINED / ACHIEVED.

PACE
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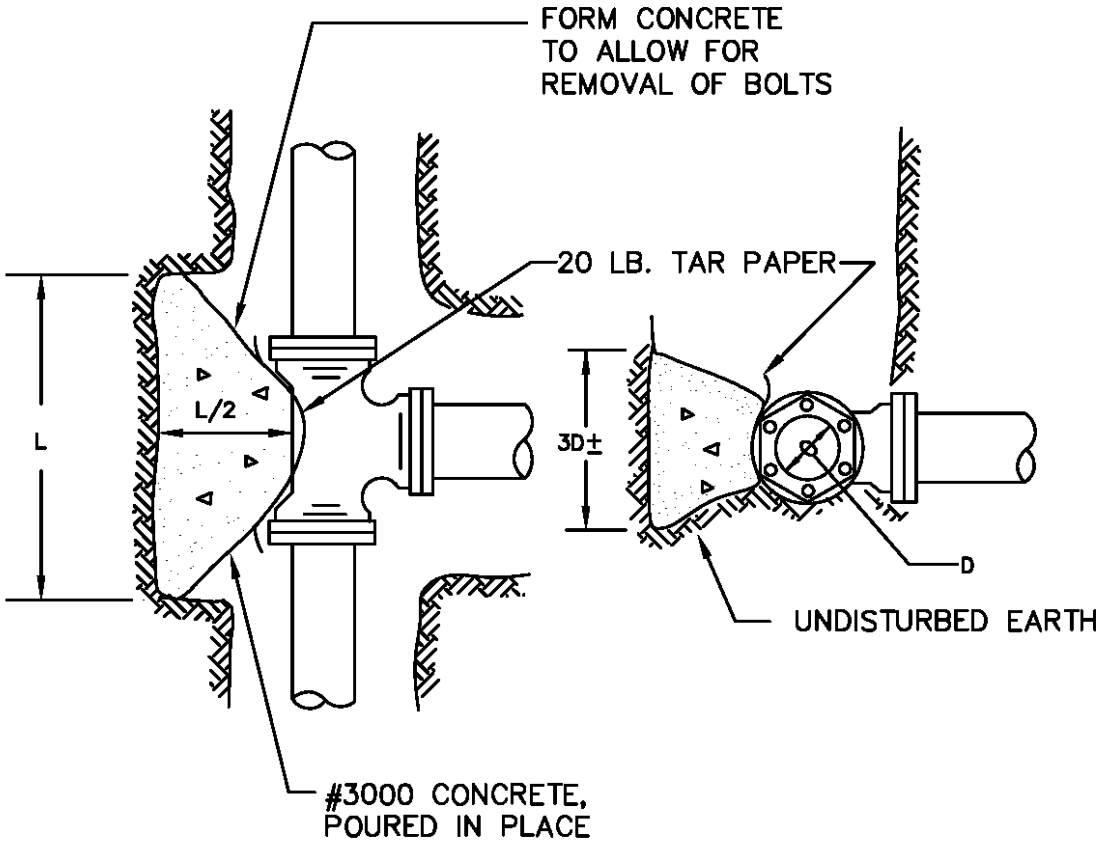
TYPICAL UTILITY CROSSING

WATER STANDARD DETAIL NO. 03

NOVEMBER 2005

VALLEY WATER DISTRICT

MINIMUM BEARING AREA TABLE					
FITTING D	TEE	90°	45°	22 1/2°	11 1/4°
6"	4 SQ.FT.	6 SQ.FT.	3 SQ.FT.	2 SQ.FT.	2 SQ.FT.
8"	7 SQ.FT.	10 SQ.FT.	6 SQ.FT.	3 SQ.FT.	2 SQ.FT.
10"	10 SQ.FT.	15 SQ.FT.	9 SQ.FT.	5 SQ.FT.	3 SQ.FT.
12"	14 SQ.FT.	22 SQ.FT.	12 SQ.FT.	6 SQ.FT.	4 SQ.FT.
16"	25 SQ.FT.	38 SQ.FT.	21 SQ.FT.	11 SQ.FT.	7 SQ.FT.
18"	32 SQ.FT.	48 SQ.FT.	27 SQ.FT.	14 SQ.FT.	8 SQ.FT.



PLAN **ELEVATION**

NOTE:
BEARING AREA TABLE BASED ON 250 PSI PRESSURE AND 2000 PSF SOIL BEARING. IF PRESSURE IS GREATER OR SOIL BEARING IS LESS, THE THRUST BLOCK SIZE SHALL BE INCREASED.

THIS TABLE REPRESENTS THE "MINIMUM" CONSTRUCTION STANDARDS. THE DEVELOPER'S ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE APPROPRIATE SIZE OF ALL THRUST BLOCKS BASED ON EXISTING AND LOCAL CONDITIONS.

PACE
An Engineering Services Company

CONCRETE THRUST BLOCK

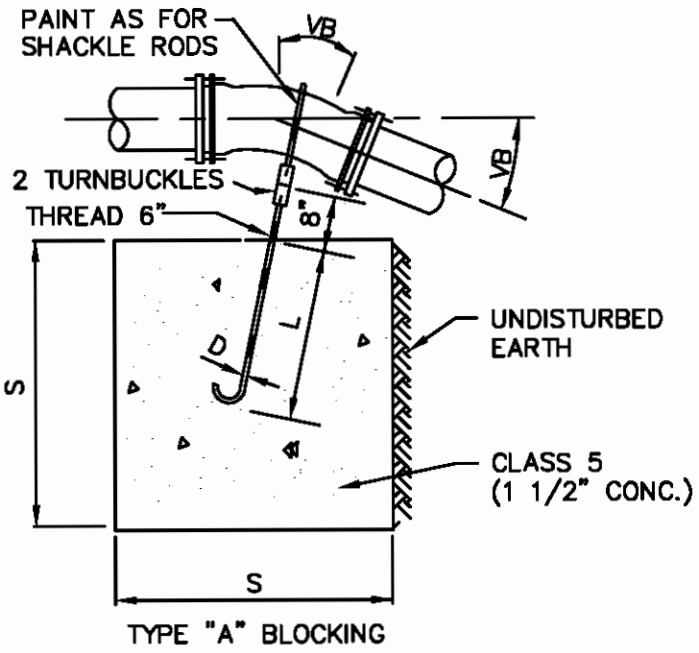
WATER STANDARD DETAIL NO. 04

NOVEMBER 2005

VALLEY WATER DISTRICT

TYPE "A" BLOCKING
FOR 11 1/4°–22 1/2°–30° VERTICAL BENDS

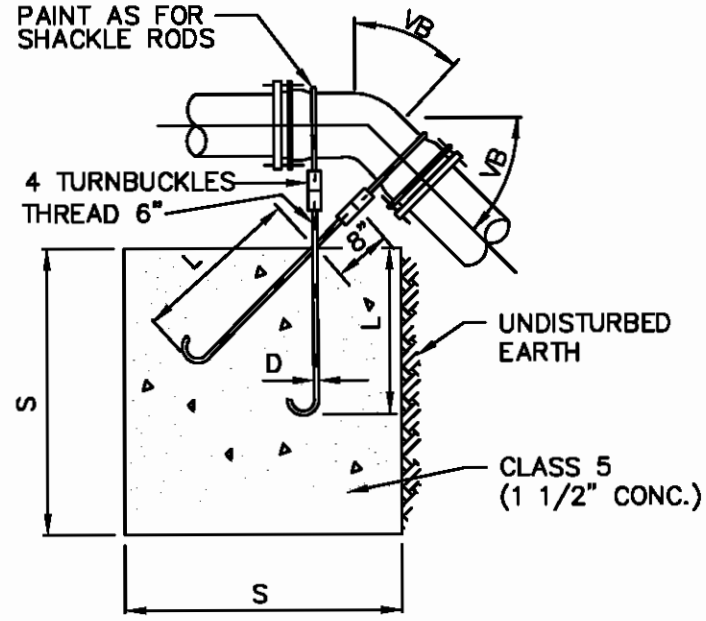
PIPE SIZE NOMINAL DIAMETER– INCHES	TEST PRESSURE PSI	VB VERTICAL BEND DEGREES	No. OF CU. FT. OF CONC. BLOCKING	S SIDE OF CUBE LIN. FT.	D DIAM. OF SHACKLE RODS (2) INCHES	L DEPTH OF RODS IN CONCRETE LIN. FT.
4"	300	11 1/4	8	2	5/8"	1.5
		22 1/2	11	2.2		2.0
		30	17	2.6		
6"	300	11 1/4	11	2.2	5/8"	2.0
		22 1/2	25	2.9		
		30	41	3.5		
8"	300	11 1/4	16	2.5	5/8"	2.0
		22 1/2	47	3.6		
		30	70	4.1	3/4"	2.5
12"	250	11 1/4	32	3.2	5/8"	2.0
		22 1/2	88	4.5	7/8"	3.0
		30	132	5.1		
16"	225	11 1/4	70	4.1	7/8"	3.0
		22 1/2	184	5.7	1 1/8"	4.0
		30	275	6.5	1 1/4"	
20"	200	11 1/4	91	4.5	7/8"	3.0
		22 1/2	225	6.1	1 1/4"	4.0
		30	330	6.9	1 3/8"	4.5
24"	200	11 1/4	128	5.0	1"	3.5
		22 1/2	320	6.8	1 3/8"	4.5
		30	480	7.9	1 7/8"	5.5



TYPE "A" BLOCKING

TYPE "B" BLOCKING
FOR – 45° VERTICAL BENDS

		VB		S	D	L
4"	300	45	30	3.1	5/8"	2.0
6"			68	4.1		
8"			123	5.0		
12"	250		232	6.1	3/4"	2.5
16"	225		478	7.8	1 1/8"	4.0
20"	200		560	8.2	1 1/4"	
24"			820	9.4	1 3/8"	4.5



TYPE "B" BLOCKING

THIS TABLE REPRESENTS THE "MINIMUM' CONSTRUCTION STANDARD. THE DEVELOPER'S ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE APPROPRIATE SIZE OF ALL ANCHOR BLOCKS BASED ON EXISTING AND LOCAL CONDITIONS.

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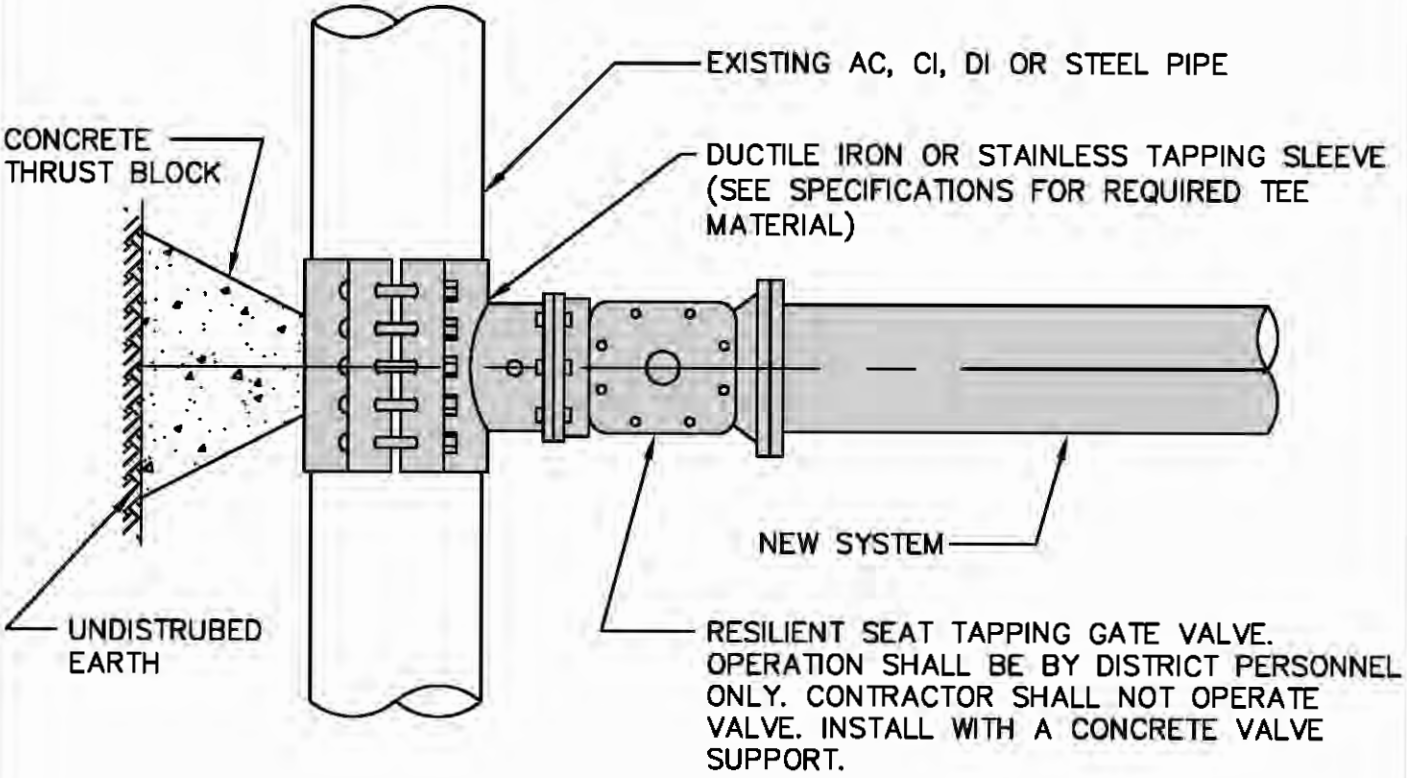
VERTICAL ANCHOR BLOCK

WATER STANDARD DETAIL NO. 05

NOVEMBER 2005

VALLEY WATER DISTRICT



NOTE:

1. O.D. STEEL PIPE SHALL USE S.S. SLEEVE (FUSION COATED)

2. STAINLESS STEEL SLEEVE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY

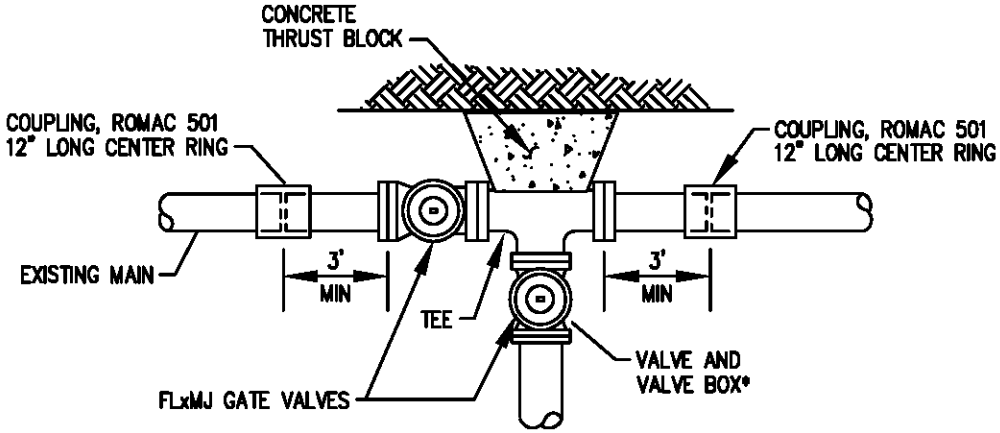
PACE
An Engineering Services Company

WET TAP CONNECTION

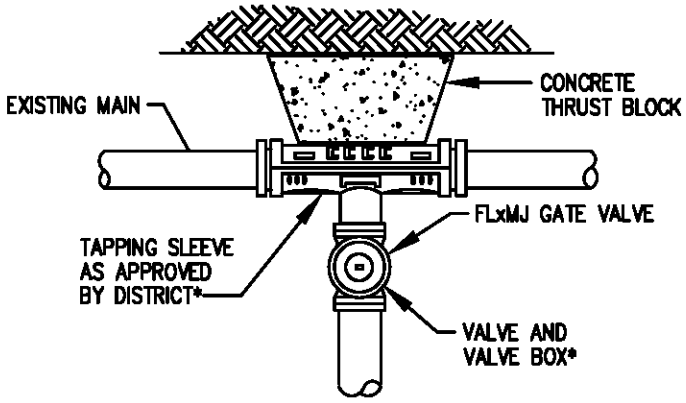
WATER STANDARD DETAIL NO. 06

NOVEMBER 2005

VALLEY WATER DISTRICT



NON-PRESSURIZED



PRESSURIZED

*NOTE:

1. SPLIT MJ CAST IRON SLEEVE FOR A.C. PIPE
2. DUCTILE IRON SLEEVE FOR DUCTILE IRON AND PLASITC PIPE
3. VALVES TO BE CONFIGURED AS SHOWN ON APPROVED PLANS

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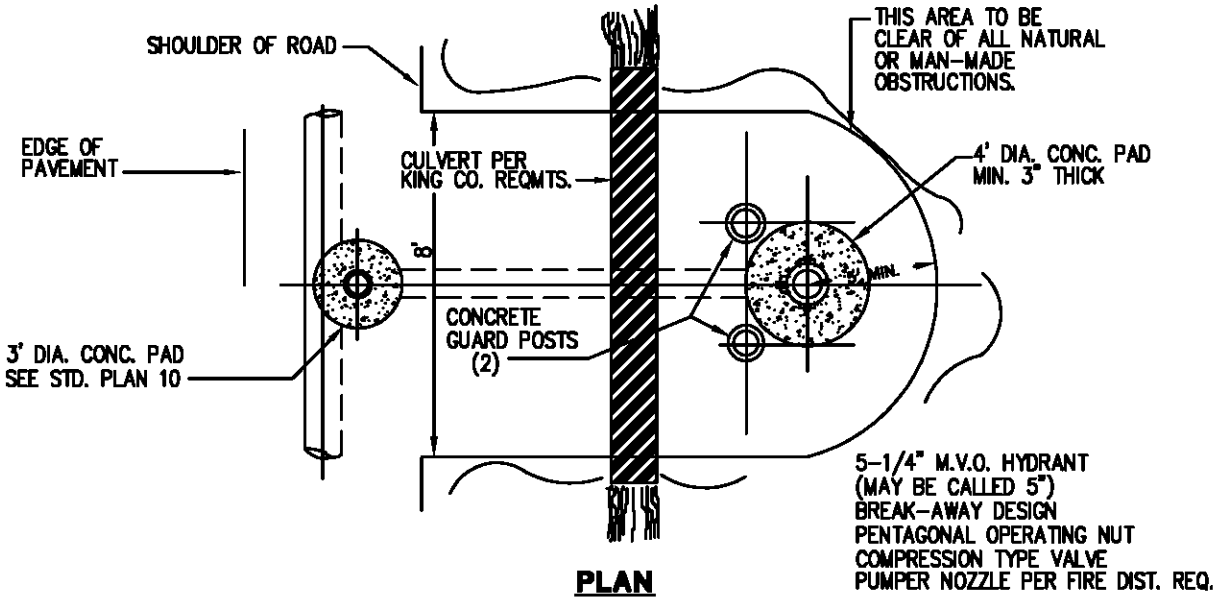
CUT IN CONNECTION

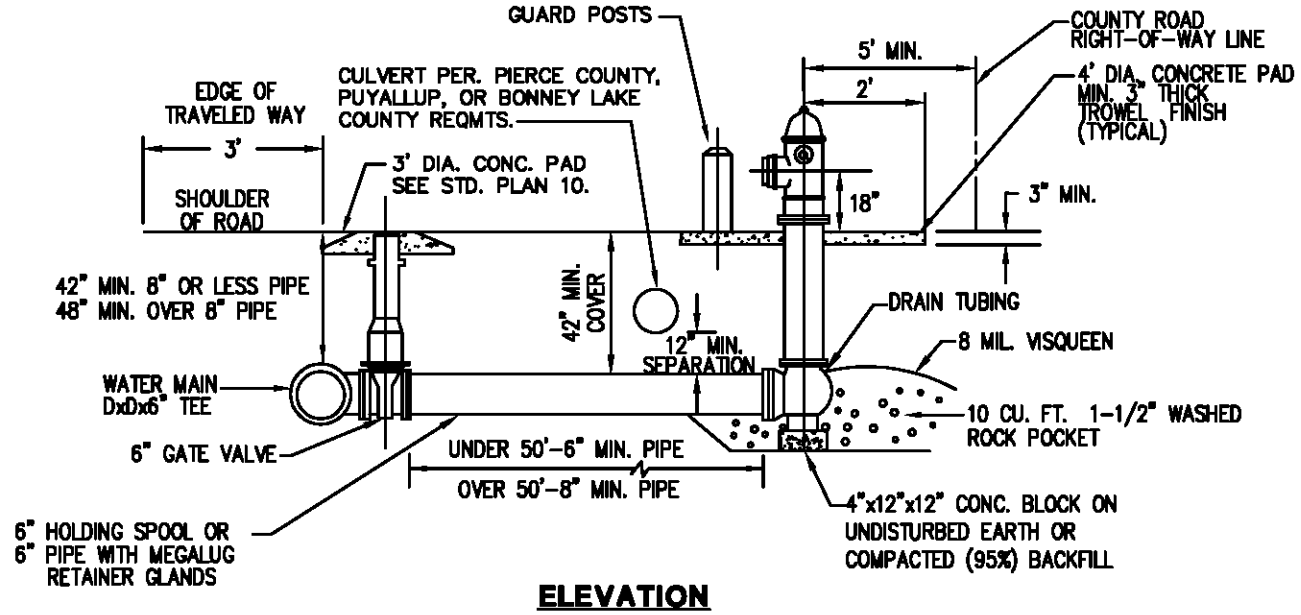
WATER STANDARD DETAIL NO. 07

DECEMBER 2007

VALLEY WATER DISTRICT



PLAN



ELEVATION

NOTES:

1. USE RESTRAINED JOINTS (MEGALUG RETAINER GLANDS, OR "FIELD LOK" GASKETS) AT ALL JOINTS WITHIN HYDRANT LATERAL. IF FIELD LOK GASKETS ARE USED, BELLS TO BE PAINTED BLUE.
2. AN OPERATING NUT EXTENSION SHALL BE INSTALLED WHEN THE GROUND SURFACE IS MORE THAN 36" ABOVE THE VALVE OPERATING NUT.
3. HYDRANT SHALL BE PRIME-COATED WITH A RUST-INHIBITIVE PRIMER, AS APPROVED BY THE DISTRICT. TOP COATS SHALL BE ACID AND OIL RESISTANT ENAMEL, AS APPROVED BY THE DISTRICT, COLOR: AS SPECIFIED BY DISTRICT.
4. STENCIL ON FACE OF HYDRANT BARREL WITH 2" CONTRASTING LETTERS, THE DISTANCE FROM THE HYDRANT TO THE GATE VALVE IN FEET, ROUNDED TO THE NEAREST FOOT.
5. FINISH ALL EXPOSED METAL PER SPECIFICATIONS.
6. GUARD POSTS TO BE USED ONLY AS DIRECTED BY DISTRICT INSPECTOR.
7. HYDRANT BURY DEPTHS ARE TO CORRESPOND WITH WATERMAIN DEPTH AT ALL HYDRANT INSTALLATION LOCATIONS. DUE TO THE VARYING DEPTH OF WATERMAIN, HYDRANT BURY DEPTHS MAY NEED TO BE ADJUSTED (THERE IS NO STANDARD BURY FOR FIRE HYDRANTS). SUCH HYDRANT BURY ADJUSTMENTS SHALL BE INCIDENTAL TO THE UNIT PRICE BID(S), AND NO REQUESTS FOR ADDITIONAL COMPENSATION WILL BE CONSIDERED.

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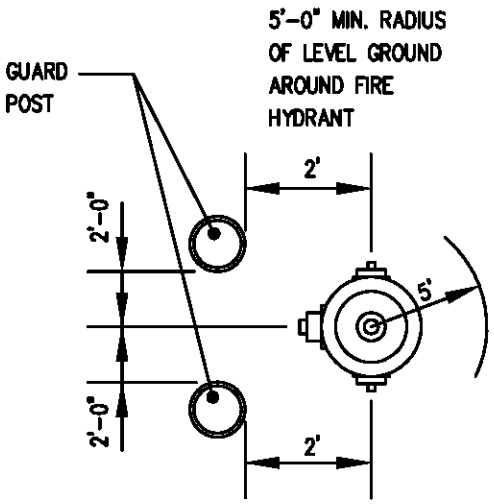
FIRE HYDRANT INSTALLATION

WATER STANDARD DETAIL NO. 8A

DECEMBER 2007

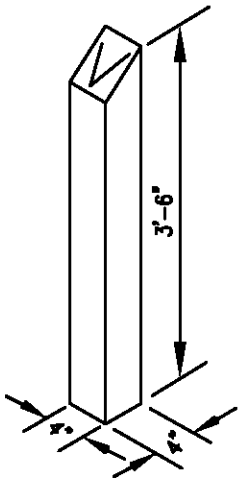
VALLEY WATER DISTRICT



PLAN

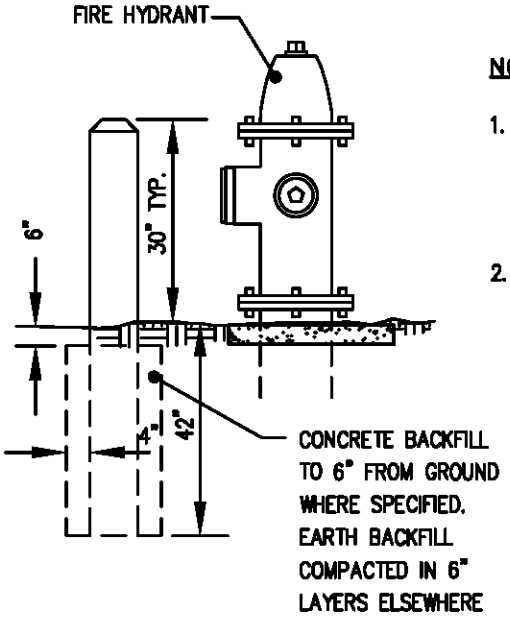
FIRE HYDRANT GUARD POST

GUARD POST WILL NOT BE ALLOWED IN THE STREET CLEAR ZONE AS PER PIERCE COUNTY REQUIREMENTS



VALVE

MARKER POST



ELEVATION

NOTES:

1. GUARD POST SHALL BE 8" DIAMETER X 6' LONG PRECAST CONCRETE POSTS AS PER TECHNICAL SPECIFICATIONS. PAINT WITH 1 COAT PRIMER, AS APPROVED BY THE DISTRICT, AND TWO (2) COATS OF ACID AND OIL RESISTANT ENAMEL, COLOR WHITE.
2. VALVE MARKER POST AS SPECIFIED. PAINT AS SPECIFIED FOR HYDRANT GUARD POST. STENCIL ON FACE OF HYDRANT BARREL WITH 2" CONTRASTING LETTERS, THE DISTANCE FROM THE HYDRANT TO THE GATE VALVE IN FEET (ROUNDED TO THE NEAREST FOOT).

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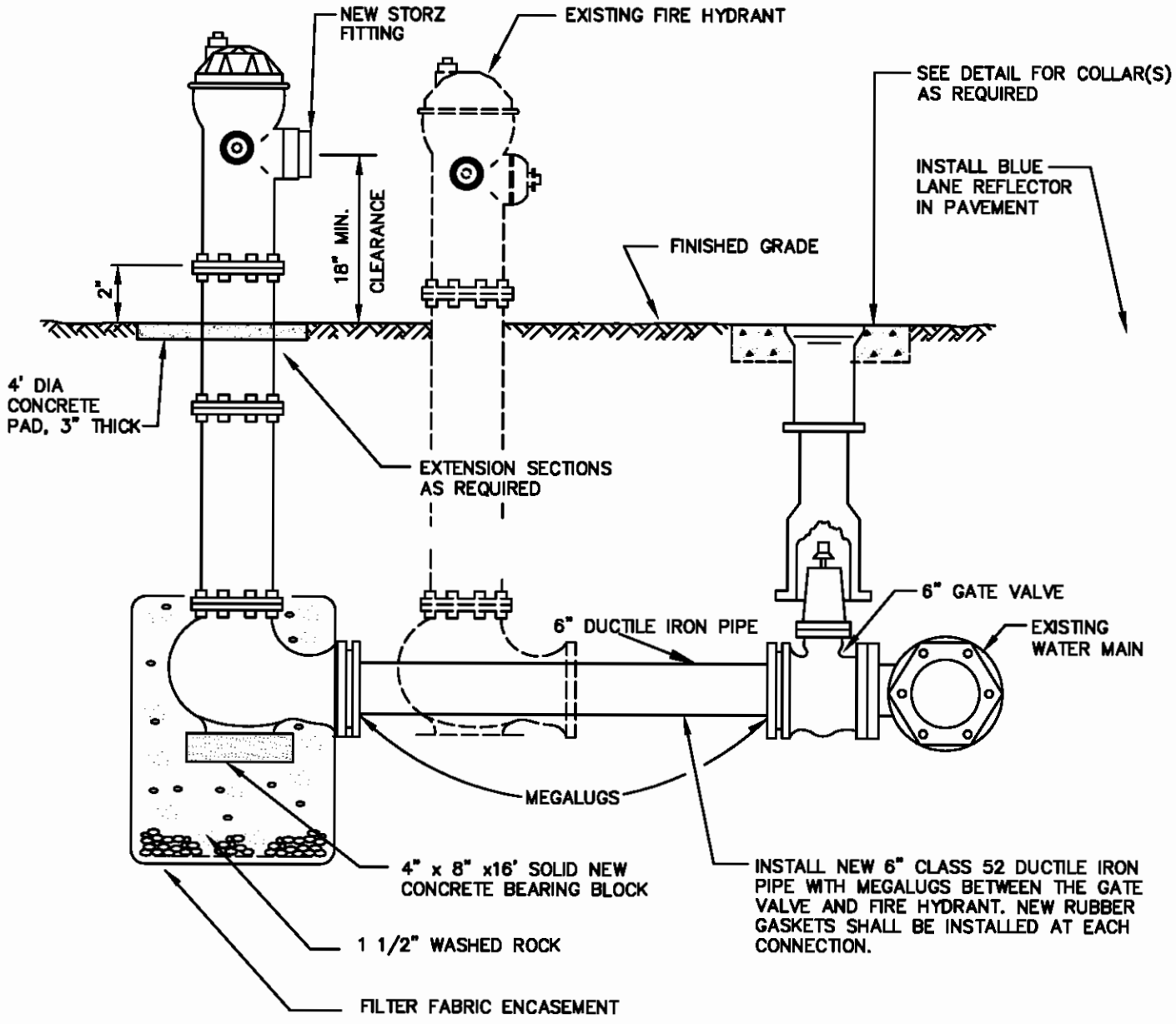
FIRE HYDRANT INSTALLATION

WATER STANDARD DETAIL NO. 8B

DECEMBER 2007

VALLEY WATER DISTRICT



NOTES :

① ALL RELOCATED FIRE HYDRANTS SHALL HAVE 4 1/2" PUMPER PORTS WITH STORZ ADAPTOR (DEVELOPER PROVIDE)

② PROVIDE 15' OF 12" (MIN.) STORM PIPE IN ANY ADJACENT DITCH SECTION. RIP–RAP ENDS AND FILL ABANDONED DITCH SECTION

③ PROVIDE MIN. 5' – 0" CLEARANCE AND LEVEL AREA AROUND RELOCATED HYDRANT

④ REPAINT FIRE HYDRANT COLOR AS SPECIFIED BY DISTRICT

PACE
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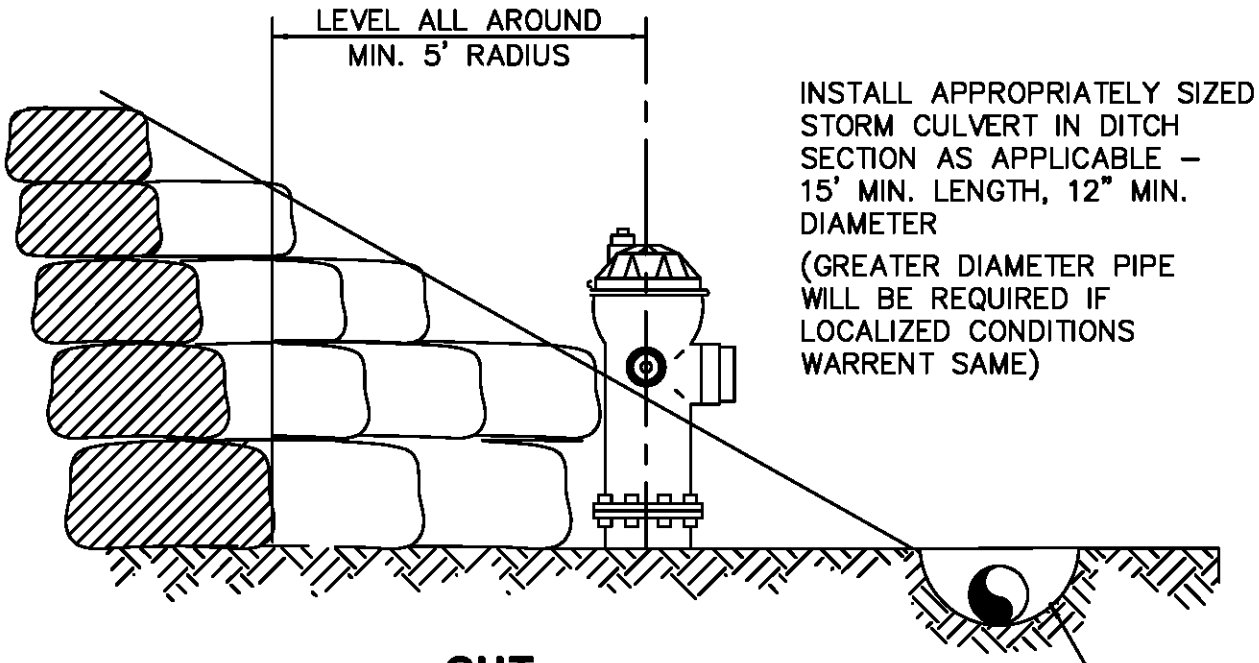
FIRE HYDRANT RELOCATION

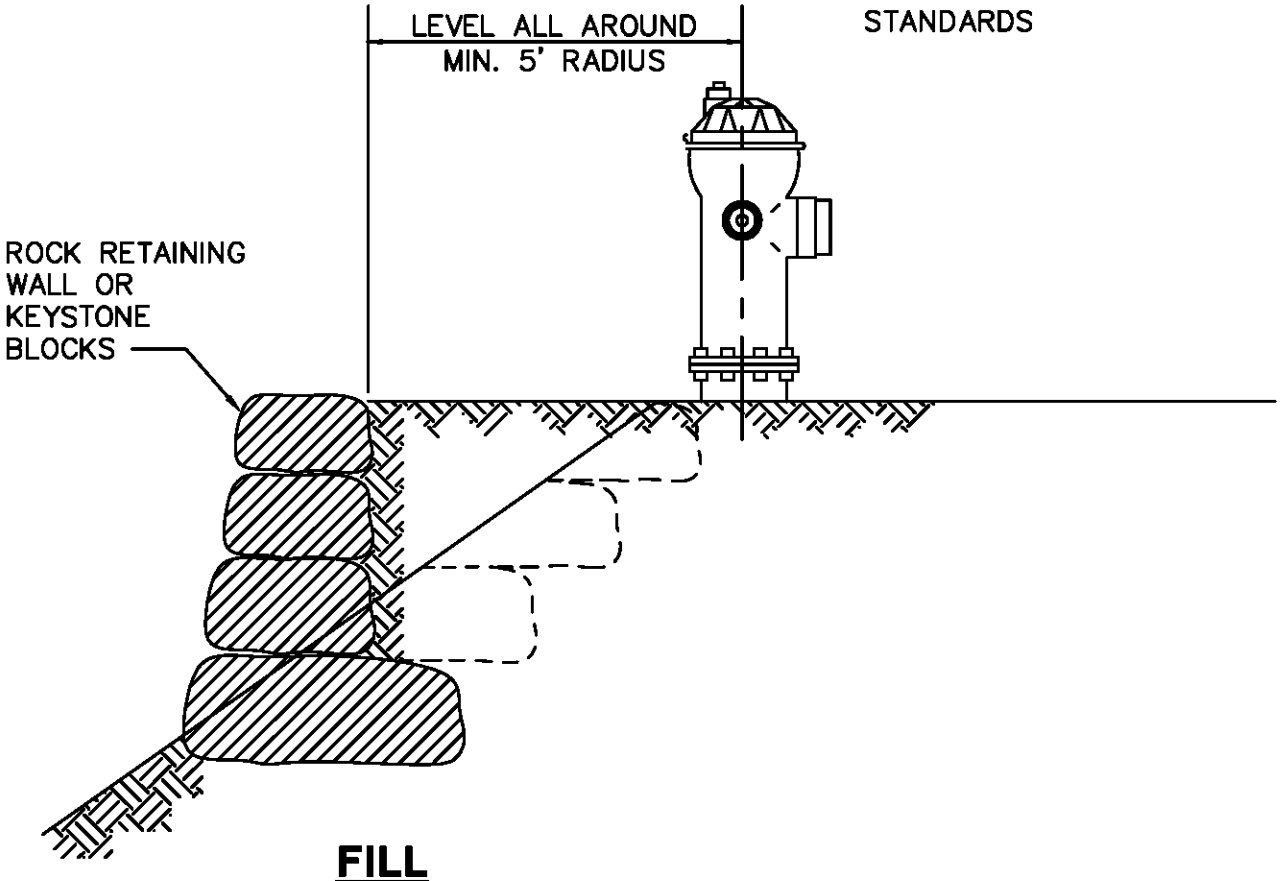
WATER STANDARD DETAIL NO. 09

DECEMBER 2007

VALLEY WATER DISTRICT



CUT



FILL

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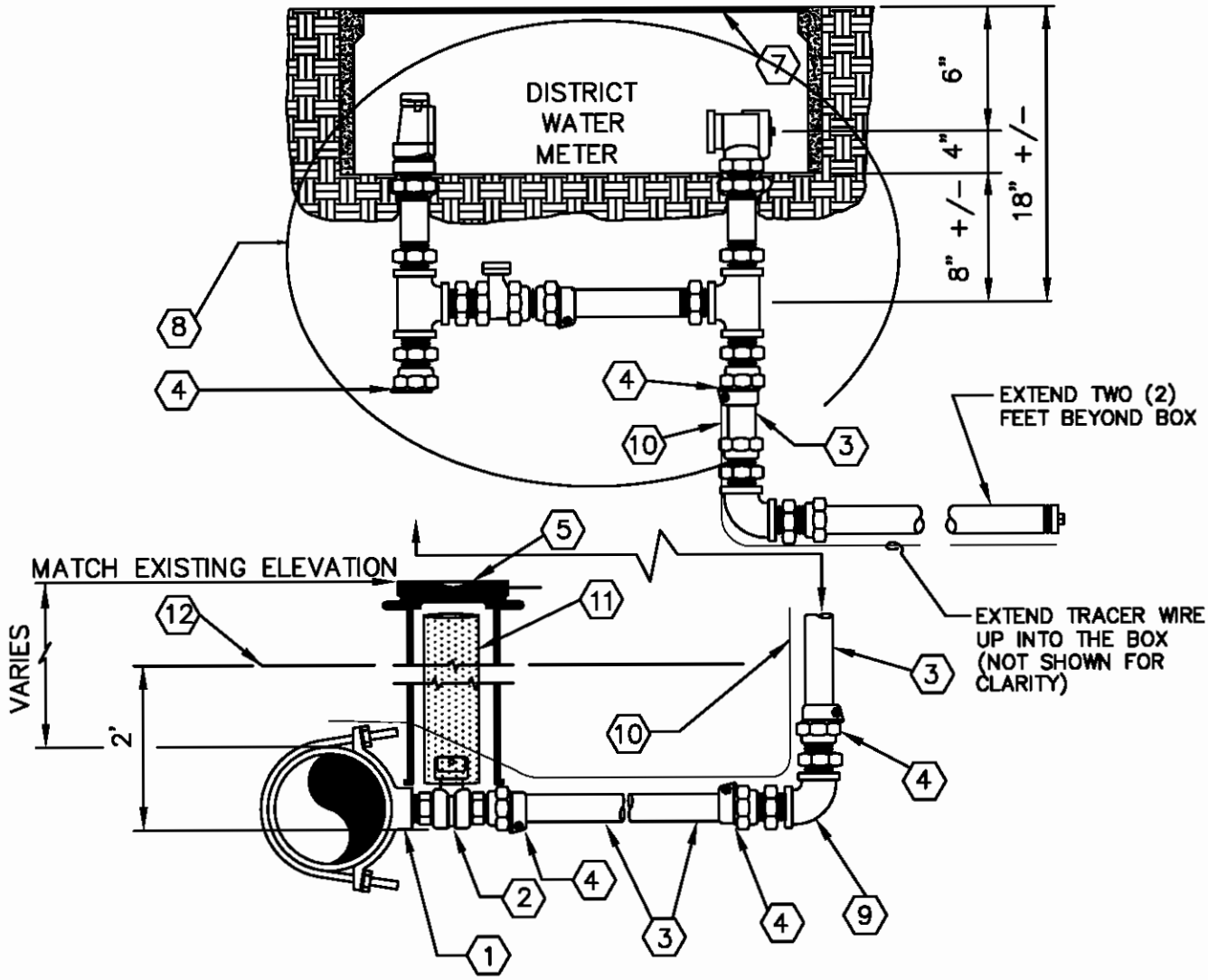
FIRE HYDRANT LOCATION IN CUT OR FILL

WATER STANDARD DETAIL NO. 10

DECEMBER 2007

VALLEY WATER DISTRICT



DESCRIPTION	MAKER OR RATING	1-1/2"	2"
1. DOUBLE STRAP SADDLE	ROMAC, FORD OR MUELLER	202 IPT	202 IPT
2. GATE OR BALL VALVE W/ 2" OPERATING NUT	FORD OR MUELLER	BALL VALVE	RESILIENT SEAT
3. PIPE – HIGH MOLECULAR POLYETHYLENE PIPE (I.P.S.)	SDR7(200PSI)	B11-666 W/QT67	GATE
4. COUPLING MALE	FORD OR MUELLER	C84-66	C84-77
5. VALVE BOX	RICH OR EQUAL		
6. NIPPLE BRASS		1-1/2" X 6"	2" X 6"
7. METER BOX	FOGTITE #2W/H20 LOAD		
8. METER SETTER	FORD OR MUELLER	VBH 86-12 B	VBH 87-12 B
		11-66	11-77
9. BRASS 90° ELBOW		1-1/2"	2"
10. TRACER WIRE	14 GAUGE COPPER WIRE	SOLID	SOLID
11. PVC SLEEVE BENEATH PAVEMENT	PVC-SCH.80	4" DIA.	4" DIA.
12. DETECTABLE MARKER TAPE	PE, BLUE	3" MIN. WIDTH	3" MIN. WIDTH

NOTE: TEMPORARILY INSTALL "SPACER" IN METER SETTER UNTIL METER IS INSTALLED

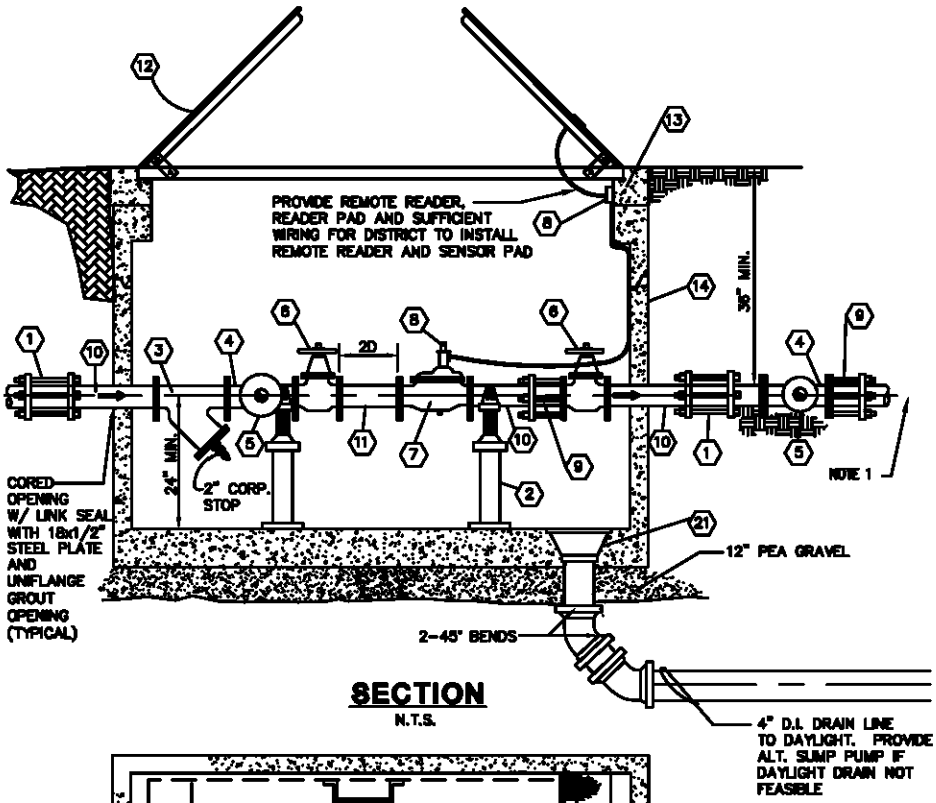
PACE
An Engineering Services Company

1-1/2" & 2" WATER SERVICE

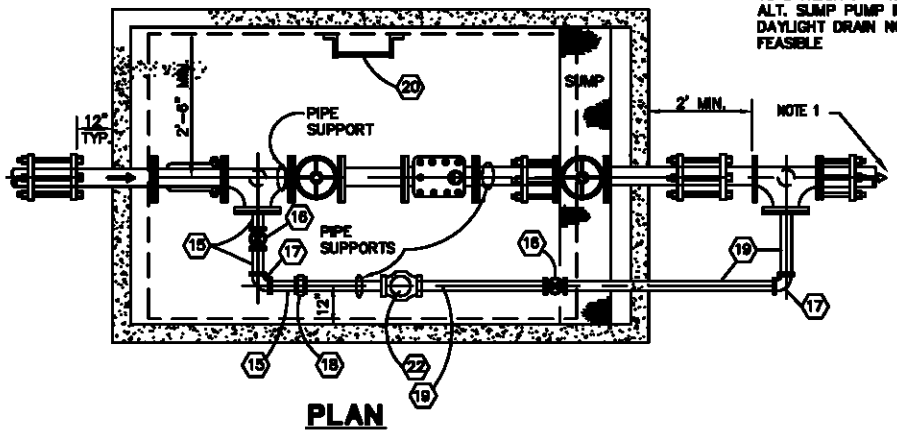
WATER STANDARD DETAIL NO. 12

DECEMBER 2007

VALLEY WATER DISTRICT



SECTION
N.T.S.



PLAN
N.T.S.

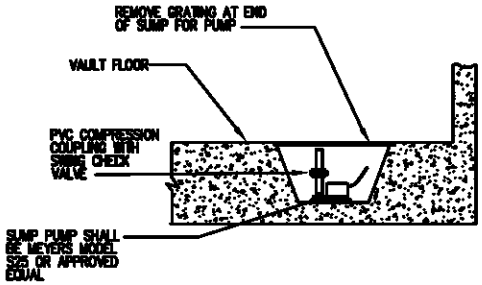
MATERIAL LIST FOR 3" AND LARGER ASSEMBLIES	
ITEM	DESCRIPTION
1	DI SLEEVE OR APPROVED EQUAL
2	ADJUSTABLE PIPE SUPPORTS. GRINNEL #264 OR APPROVED EQUAL
3	STRAINER, MUELLER, 751 "Y" TYPE OR APPROVED EQUAL, FL. BY FL.
4	TEE, FLANGE BY FLANGE
5	BLIND FLANGE, TAPPED FOR BY-PASS LINE
6	R.S. GATE VALVE, FLANGE BY FLANGE W/HANDWHEEL
7	WATER METER, SENSUS OR APPROVED EQUAL
8	SELF GENERATING REMOTE READOUT, SENSUS OR APPROVED EQUAL
9	COUPLING ADAPTER, FLxMJ
10	DUCTILE IRON PIPE, PLAIN END BY FLANGE
11	DUCTILE IRON PIPE, FLANGE BY FLANGE
12	48"x72" ALUMINUM HATCH, LW PRODUCTS COMPANY, RATED FOR H-20 LOADING
13	6" EXTENSION RING
14	PRECAST VAULT, UTILITY VAULT CO. (SEE BELOW FOR CALL OUTS)
15	2" BRASS NIPPLE, THREADED, LENGTH AS REQUIRED
16	2" CI RS GATE VALVE, SCREWED END W/ HANDWHEEL
17	2" BRASS 90° ELBOW
18	BRASS UNION
19	2" BRASS PIPE, LENGTH AS REQUIRED
20	FREE STANDING ALUMINUM LADDER WITH LADDER UP ACCESSORY ATTACHED TO SIDE OF HATCH AND FLOOR
21	4" FLOOR DRAIN, ZURN NO. 591 W/GRATING ON INLET
22	2" BYPASS METER

NOTES:

1. FOR PREMISE ISOLATION, INSTALL AN APPROVED BACKFLOW PREVENTION DEVICE IN ACCORDANCE WITH DEPT. OF HEALTH REGULATIONS.
2. ALL PIPE AND FITTINGS TO BE DUCTILE OR CAST IRON.
3. ALL TEST COCKS SHALL BE PLUGGED.
4. ALL VAULT PENETRATIONS SHALL BE CORED, WITH LINK-SEAL OR APPROVED EQUAL INSTALLED AROUND PIPE.
5. EXTERIOR VAULT TO BE COATED WITH 2 COATS OF BLACK BITUMASTIC SOLUTION. VAULT TO BE DRY PRIOR TO APPLICATION.
6. VAULTS TO BE SOLID WALL WITH NO KNOCKOUTS
7. IF SUMP PUMP IS REQUIRED, DEVELOPER SHALL SUPPLY POWER TO THE VAULT IN CONFORMANCE WITH ALL LOCAL AND STATE CODES.
8. ALL CONSTRUCTION SHALL CONFORM TO THE VALLEY WATER DISTRICT STANDARD SPECIFICATIONS.
9. METER AND METER PERMIT SHALL BE PURCHASED AND OBTAINED FROM VALLEY WATER DISTRICT.
10. LID DRAINS SHALL BE INCORPORATED INTO THE HATCH FRAME.

	METER VAULT REQUIREMENTS			
METER SIZE	MAINLINE	BY-PASS	METER VAULT (UTILITY VAULT)	METER TYPE
3"	3" D.I.	2"	687-LA	TURBINE W/GEN. REMOTE
4"	4" D.I.	2"	5108-LA	TURBINE W/GEN. REMOTE
6"	6" D.I.	3"	612-LA	DISTRICT DISCRETION

NOTE: ALL VAULTS SHALL BE SOLID WALL (NO KNOCKOUTS)



SUMP AND SUMP PUMP NOTES:

1. SUMP PUMP MAY BE SUBSTITUTED FOR FLOOR DRAIN IF DRAIN LINE CANNOT BE DAYLIGHTED. DETERMINATION TO BE MADE BY DISTRICT.
2. PROVIDE RECESSED DOOR HANDLE BOX IN ACCESS HATCH FOR PADLOCK W/BOLT-DOWN COVER OVER LOCK, BOX LARGE ENOUGH FOR "MASTER LOCK".

SUMP PUMP DETAIL
NO SCALE

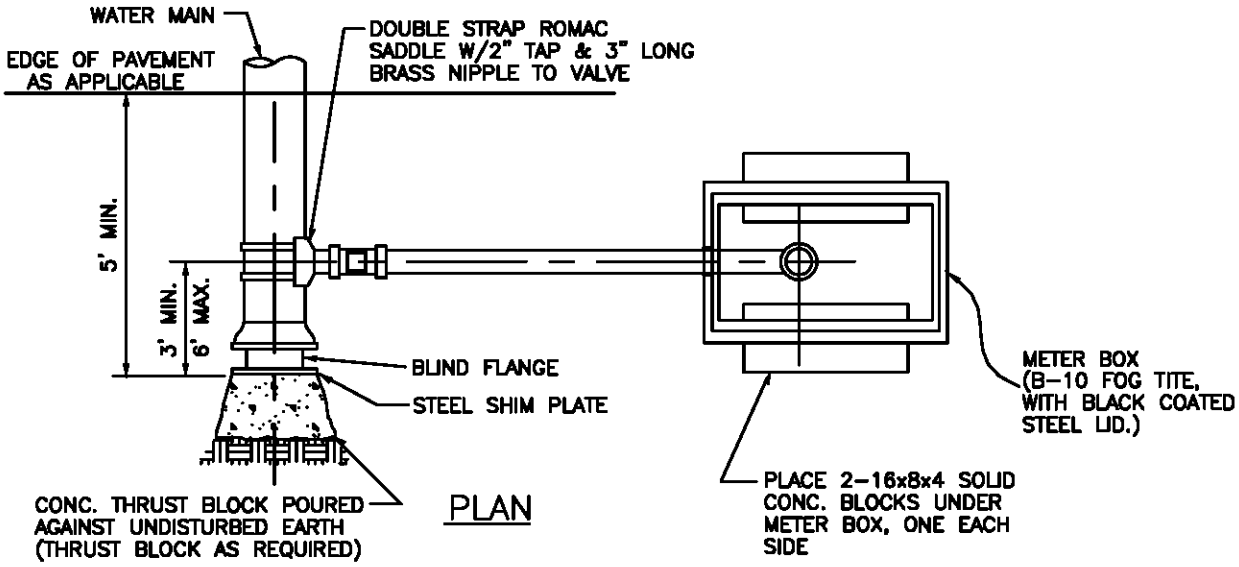
PACE
An Engineering Services Company

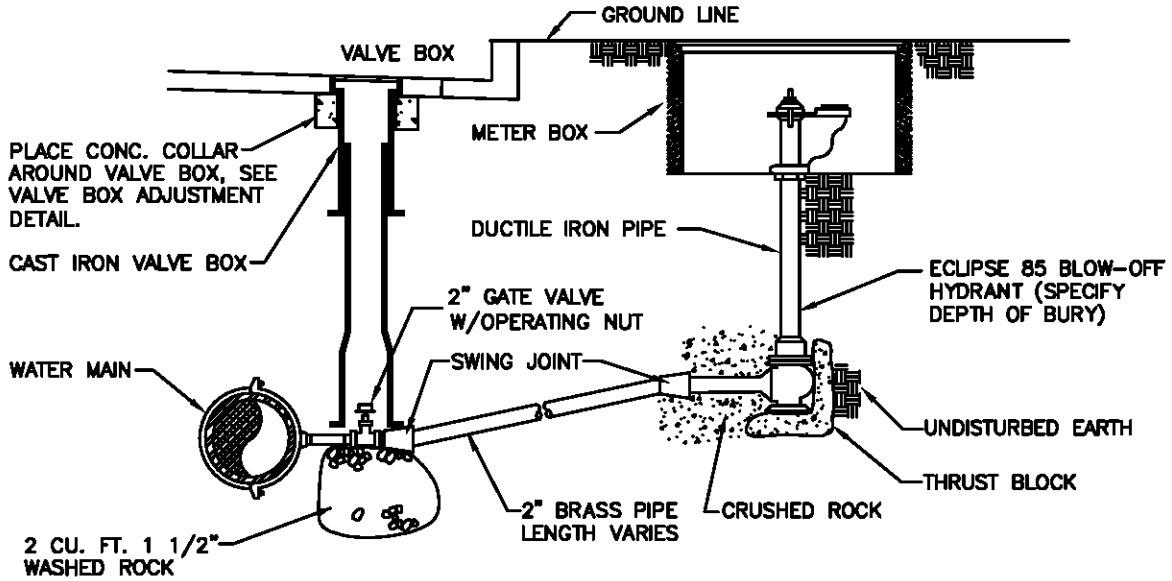
METER AND METER VAULT ASSEMBLY 3" THROUGH 10"

WATER STANDARD DETAIL NO. 13

DECEMBER 2007

VALLEY WATER DISTRICT





ELEVATION

BLOW-OFF HYDRANTS SHALL BE NON-FREEZING, SELF-DRAINING TYPE.

1. SET UNDERGROUND IN DISTRICT APPROVED METER BOX, THESE HYDRANTS SHALL BE FURNISHED WITH A 2" FIP INLET, A NON-TURNING OPERATING ROD, AND SHALL OPEN TO THE DESIGN, AND BE SERVICEABLE FROM ABOVE GRADE WITH NO DIGGING.
2. THE OUTLET SHALL BE BRONZE AND BE 2-1/2" NST.
3. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE.

(SPECIFY OVERALL LENGTH 6" SHORTER THAN NORMAL DEPTH OF BURY. MINIMUM OPENING IN METER BOX SHALL BE 10".)

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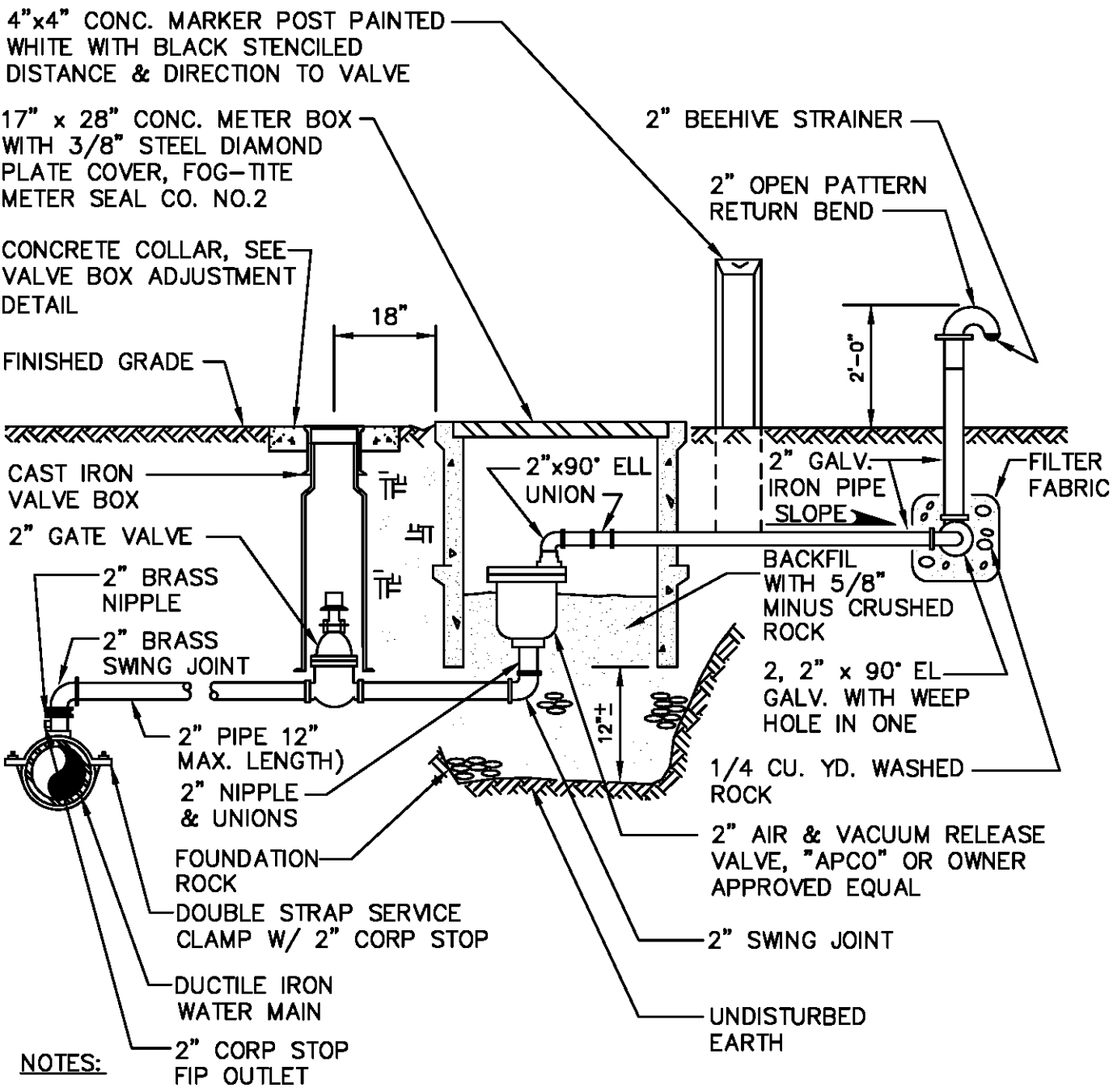
2" BLOW-OFF ASSEMBLY

WATER STANDARD DETAIL NO. 14

NOVEMBER 2005

VALLEY WATER DISTRICT



NOTES:

1. GATE VALVE: AWWA RESILIENT SEAL, THRD x THRD WITH OPERATING NUT
2. ALL PIPING BETWEEN DOUBLE STRAP SADDLE AND INLET SIDE OF COMBINATION AIR & VAC ASSEMBLY SHALL BE BRASS
3. TAP MAIN AT SYSTEM HIGH POINT. LOCATION TO BE APPROVED BY THE DISTRICT

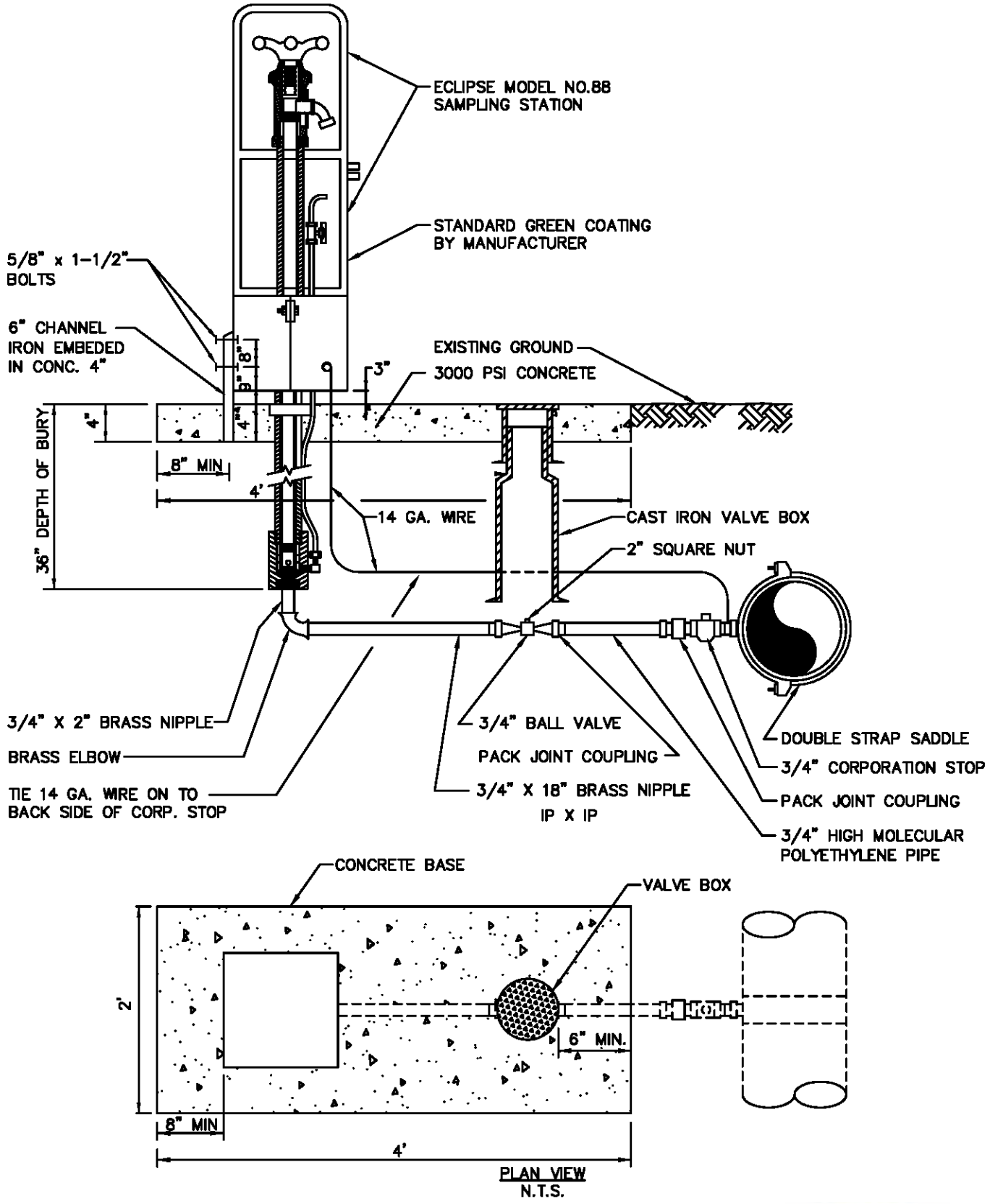
PACE
An Engineering Services Company

AIR & VACUUM RELEASE ASSEMBLY

WATER STANDARD DETAIL NO. 15

DECEMBER 2007

VALLEY WATER DISTRICT



PACE
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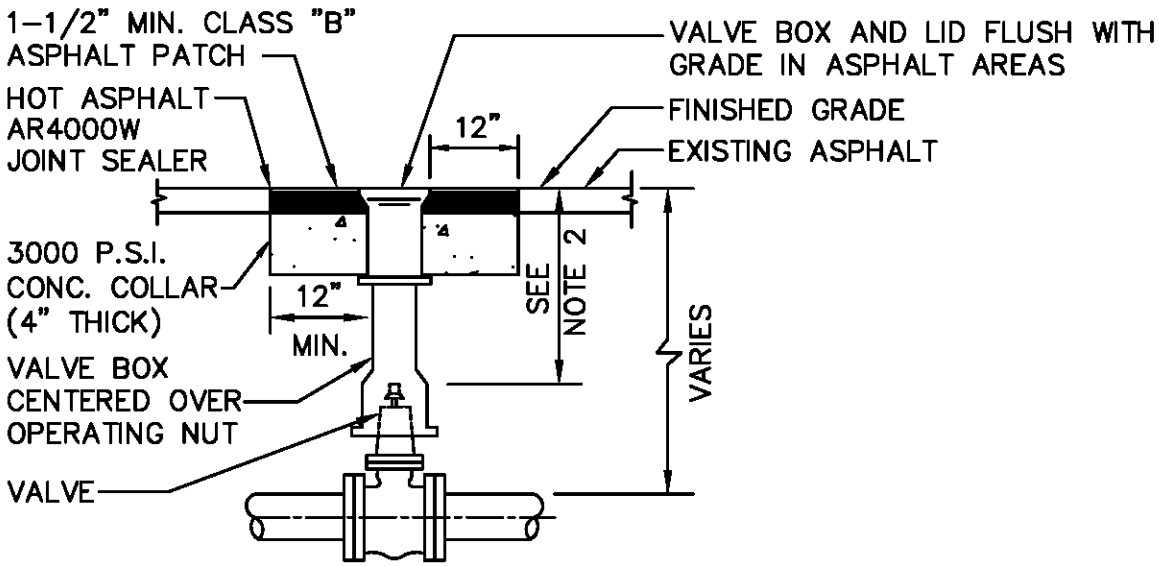
WATER SAMPLING STATION

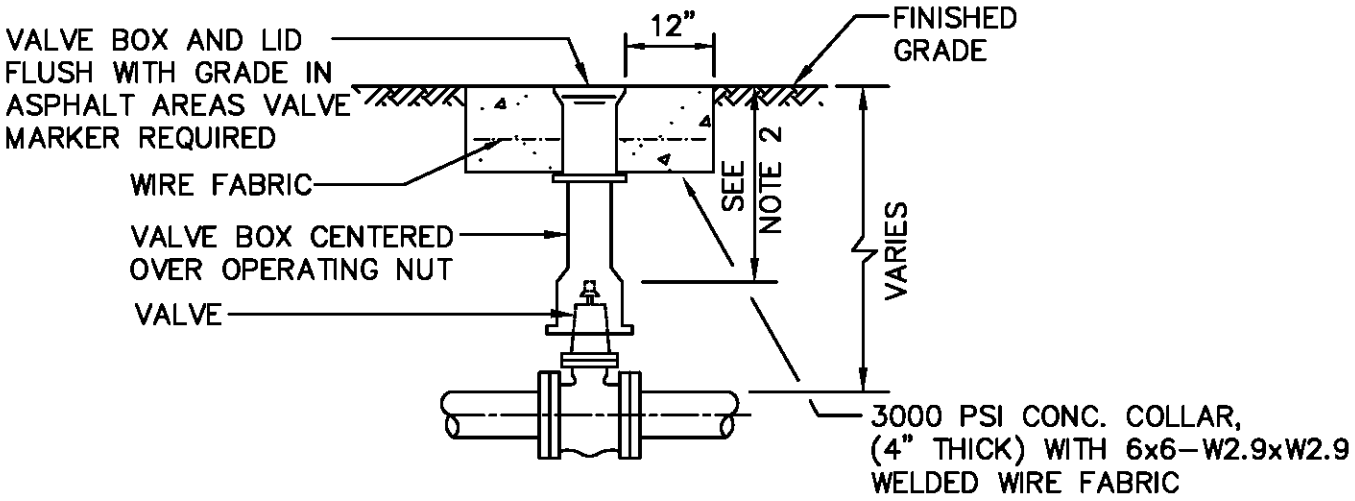
WATER STANDARD DETAIL NO. 16

DECEMBER 2007

VALLEY WATER DISTRICT



VALVE BOX IN ASPHALT AREA



VALVE BOX IN UNIMPROVED AREA

NOTES:

1. EACH VALVE SHALL BE PROVIDED WITH AN ADJUSTABLE CAST IRON VALVE BOX OF 5 INCHES (5") INSIDE DIAMETER. VALVE BOXES SHALL HAVE A TOP SECTION WITH AN EIGHTEEN INCH (18") MIN. LENGTH, AND 24 INCH BASE. THE VALVE BOX SHALL BE RICH No. 940 OR APPROVED EQUAL. VALVE BOX EARS SHALL BE PLACED IN LINE WITH PIPE IT SERVES.

2. 15" MINIMUM, 36" MAXIMUM FOR OPERATOR NUT. EXTENSION MAY BE REQUIRED.

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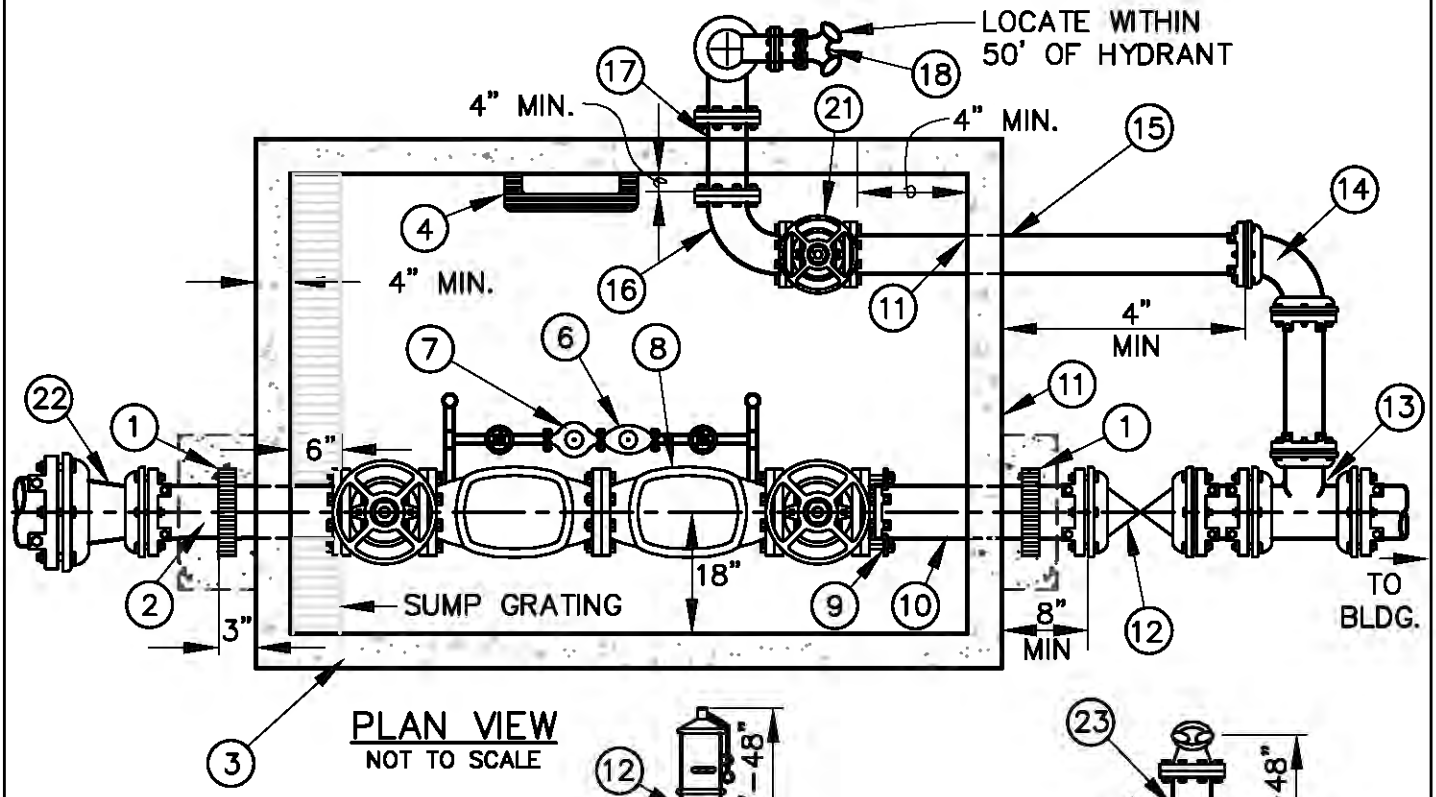
VALVE BOX ADJUSTMENT

WATER STANDARD DETAIL NO. 17

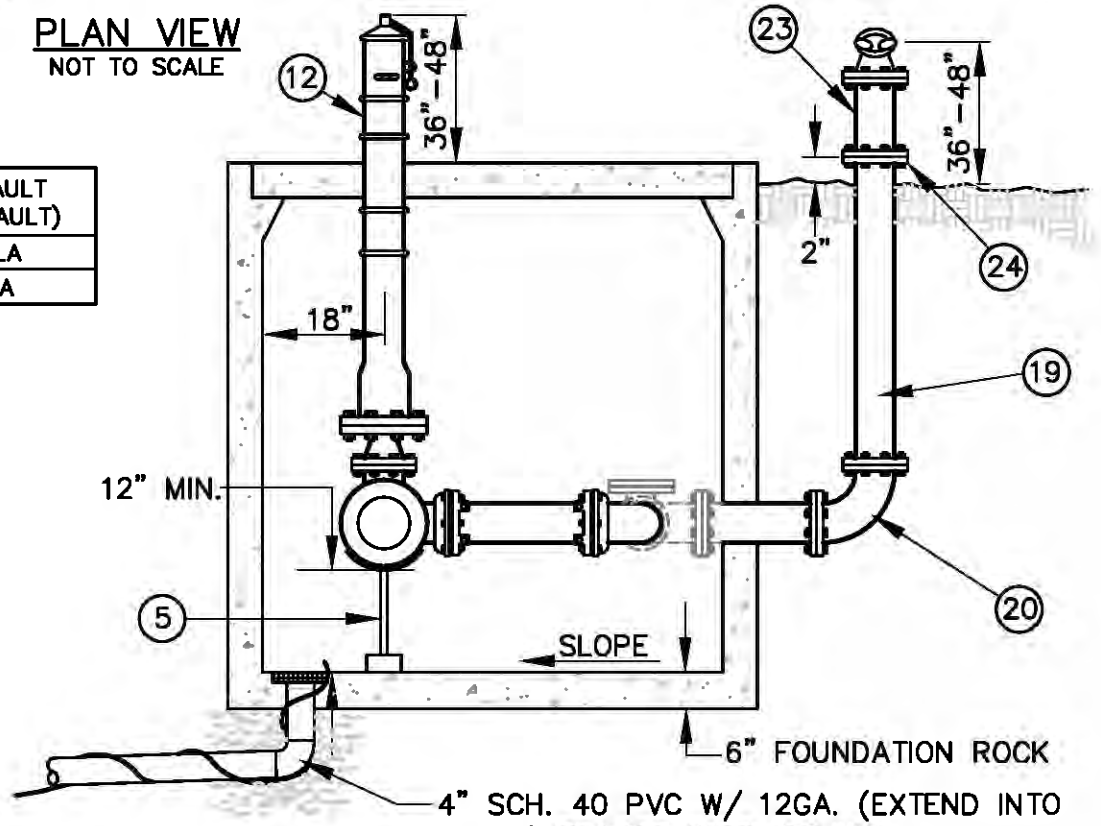
DECEMBER 2007

VALLEY WATER DISTRICT



PLAN VIEW
NOT TO SCALE

DCVC SIZE	METER VAULT (UTILITY VAULT)
4"	5106–LA
6"–10"	612–LA



END VIEW
NOT TO SCALE

NOTES:

1) DESIGN FOR 4" THRU 10" DOUBLE DETECTOR CHECK VALVE
2) SEE ATTACHED NOTES FOR MATERIAL LISTING

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DOUBLE - CHECK DETECTOR WITH FIRE CONNECTION

WATER STANDARD DETAIL NO. 18B

DECEMBER 2007

VALLEY WATER DISTRICT

MATERIAL LISTING

1. 2' X 2' X 8" THICK FORMED CONCRETE BLOCKING WITH LOCKING FOLLOWER RING.
2. CL 53 SPOOL, PE X FL
3. PRECAST CONCRETE VAULT WITH DOUBLE HINGED STEEL PLATE DOORS, DIMENSION TO VARY WITH SIZE OF ASSEMBLY. SEE TABLE, STANDARD DETAIL 18A.
4. O.S.H.A. APPROVED LADDER USE STAINLESS STEEL FASTENERS AT 3' MAX. SPACING.
5. PIPE SUPPORT STANDS UNDER DCDA. (MIN 3 REQ'D)
6. COPPER OR BRASS BYPASS WITH AN APPROVED DCVA. PLUMB TO INSIDE OF VAULT.
7. 3/4" METER SUPPLIED W/ DCDA UNIT.
8. WASHINGTON STATE DEPARTMENT OF HEALTH DCDA IN MAIN LINE WITH TWO O.S. & Y. RESILIENT SEATED SHUTOFF VALVES AND TEST COCKS. SEE SPECIFICATIONS FOR APPROVED GATE VALVES.
9. EBAA IRON SERIES 2100 MEG-A-FLANGE.
10. CLASS 52 PIPE LENGTH TO FIT.
11. GROUT INTERIOR AND EXTERIOR ALL AROUND PIPE AND ALL WALL PENETRATIONS USING NON-SHRINK GROUT. ALL WALL PENETRATIONS SHALL ALSO HAVE LINK SEAL
12. GATE VALVE MJ X MJ WITH POST INDICATOR VALVE (PIV).
13. MJ TEE ASSEMBLY SIZED ACCORDINGLY.
14. 90° BEND, (MJ).
15. CL 53 SPOOL, PE X FL.
16. 90° BEND, FL.
17. CL 53 SPOOL, FL X FL.
18. UL LISTED F.D. CONNECTION AND UL LISTED BREAKAWAY CAPS.
19. D.I. CL 53 SPOOL, LENGTH AS REQUIRED FL X FL.
20. 90° BEND FL.
21. SWING TYPE GRAVITY OPERATED CHECK VALVE WITH BALL DRIP VALVE TO BE INSTALLED HORIZONTALLY.
22. REDUCER (IF REQUIRED) OUTSIDE OF VAULT.
23. GALV. OR STAINLESS STEEL PIPE. SIZE PER FIRE JURISDICTION.
24. DUCTILE IRON FLANGE (ADAPT. TO GALV. OR S.S. PIPE).

DOUBLE DETECTOR CHECK AND VAULT ASSEMBLY NOTES:

1) OWNER SHALL FURNISH, AND INSTALL THE DCDA AND ALL PIPING AND APPURTENANCES SHOWN ON THIS PLAN.
2) BACK FLOW PREVENTORS SHALL BE FEBCO OR STATE APPROVED EQUAL. (SUBMITTAL REQUIRED)
3) OWNER SHALL PROVIDE INSPECTION AND INITIAL TEST OF THE DCDA PRIOR TO ESTABLISHMENT OF WATER SERVICE. SUBSEQUENT ANNUAL TESTING OF DCDA REQUIRED BY OWNER.
4) ITS SHALL BE THE OWNERS RESPONSIBILITY TO SIZE THE FIRE SPRINKLER SERVICE LINE.
5) ALL PIPING, VALVES & FITTINGS DOWNSTREAM OF THE VAULT ARE SHOWN & CALLED OUT GENERICALLY. A SEPARATE DETAIL PLAN FOR VAULT INSTALLATION AND SPRINKLER LINE MUST BE SUBMITTED AND APPROVED BY THE FIRE MARSHALL PRIOR TO INSTALLATION.
6) LADDERS SHALL BE INSTALLED IN COMPLIANCE TO O.S.H.A. REQUIREMENTS.
7) NO CHEMICALS ARE ALLOWED IN THE FIRE SPRINKLER PIPING SYSTEM.
8) LOCATE VAULT IN PLANTING AREA AND NOT IN PAVING AREA, UNLESS APPROVED BY THE DISTRICT.
9) PIPE SHALL BE CL. 52 AND CEMENT LINED. (EXCEPT AS SHOWN)
10) A SUMP PUMP SHALL BE INSTALLED W/ POWER CONDUIT AT THE OWNERS EXPENSE IF GRAVITY DRAIN IS NOT FEASIBLE.
11) TEMPORARY SUPPORT SHALL BE PROVIDED UNDER VALVES AT THE TIME OF INSTALLATION. AFTER COMPLETE INSTALLATION, INSTALL PERMANENT PIPE SUPPORT STAND.
12) SIZE VAULT BASED ON SIZE OF APPARATUS AND MEETING MINIMUM CLEARANCES. (VAULT SUBMITTAL REQUIRED)
13) MINIMUM APPARATUS SIZE SHALL BE 4".
14) VAULT SHALL BE SEALED TO PREVENT WATER LEAKAGE.
15) ALL MJ JOINTS TO BE RESTRAINED W/ MEG-A-LUG OR EQUAL.
16) PAINT ALL PIPING WITH PARKER PAINT MARINE ENAMEL MARATHON 1065 TAHOE BLUE.

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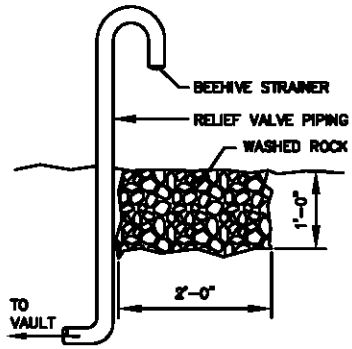
DOUBLE - CHECK DETECTOR WITH FIRE CONNECTION

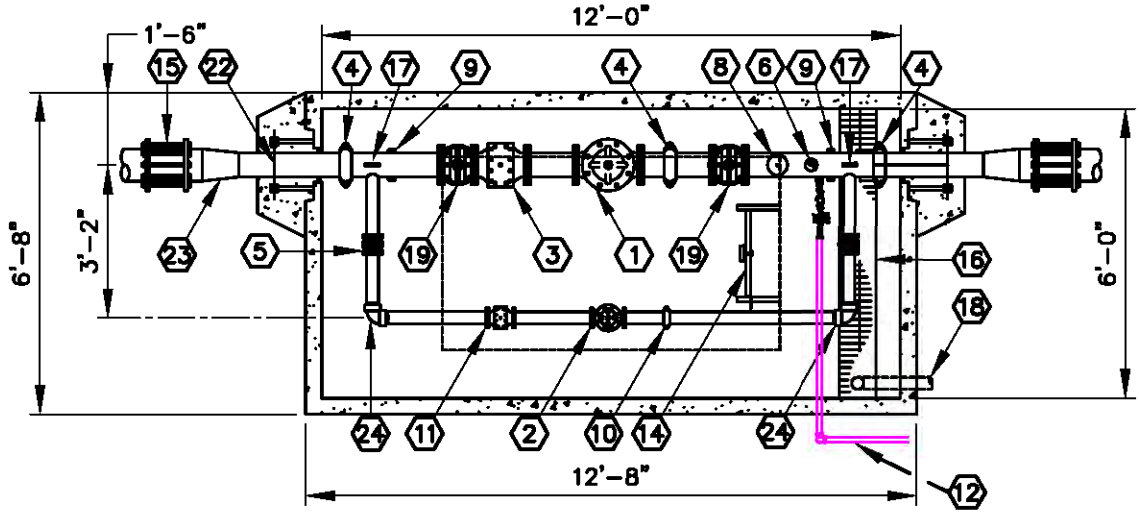
WATER STANDARD DETAIL NO. 18B

DECEMBER 2007

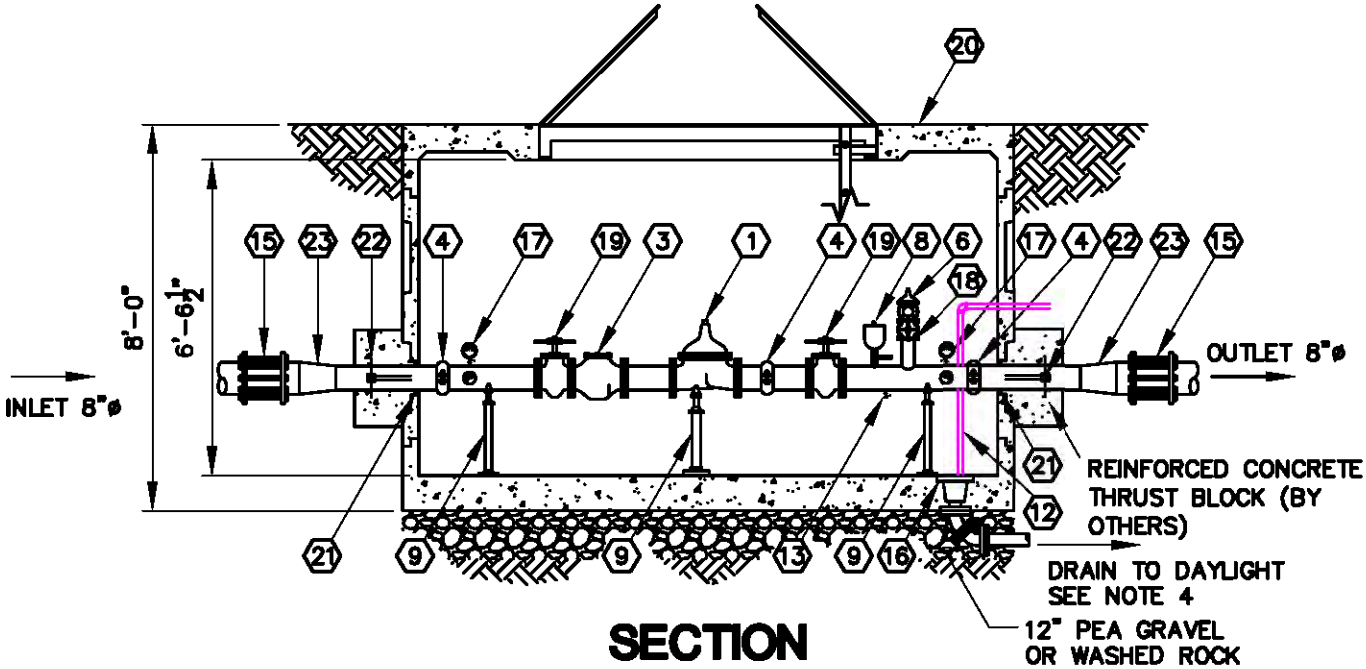
VALLEY WATER DISTRICT



GRAVEL SUMP DETAIL



PLAN



SECTION

PACE
An Engineering Services Company

PRESSURE REDUCING STATION

WATER STANDARD DETAIL NO. 19A

NOVEMBER 2005

VALLEY WATER DISTRICT

KEY NOTES

1. 6" CLA-VAL 92-01 BCSY PRV C/W X101 POSITION INDICATOR, DIBT - #150 (FL) (20-200 PSI)
2. 2" CLA-VAL 92-01 BCSY PRESSURE REDUCING SUSTAINING VALVE C/W X101, DIBT THREADED -CRD (15-75 PSI) CRL (20-200 PSI)
3. 6" CLA-VAL X43H STRAINER C/W BLOWDOWN
4. 6" VICTAULIC #07 COUPLING
5. 2" RESILIENT SEAT GATE VALVE W/ HAND WHEEL (THREADED)
6. 3" CLA-VAL 50A-01B PRESSURE RELIEF VALVE C/W DIBT -150# FLANGED (20-200 PSI)
7. 2" THREADED BRASS PIPE, UNION & FITTINGS (ALL BYPASS PIPING)
8. 1" APCO 143C.1 COMBINATION AIR RELEASE VALVE C/W ISOLATION VALVE
9. ADJUSTABLE PIPE SUPPORT, GRINNEL NO. 264 OR APPROVED EQUAL.
10. 2" VICTAULIC #07 COUPLING
11. 2" CLA-VAL X43H STRAINER C/W BLOWDOWN AND SS COMPANION FLANGES
12. GC SYSTEMS SUMP DRAIN EJECTOR ASSEMBLY MODEL #996633-51-2 (IF DRAIN TO DAYLIGHT NOT POSSIBLE)
13. 3/4" HOSE BIB ASSEMBLY
14. FREESTANDING ALUMINUM LADDER, WITH "LADDER-UP" SAFETY POST, BILCO CO. MODEL 2 OR APPROVED EQUAL. ATTACH TO SIDE OF HATCH AND FLOOR.
15. 8" ST x DI TRANSITION COUPLING (SMITH-BLAIR OR EQUAL)
16. FLOOR SUMP W/ GALVANIZED GRATING
17. 1/2" BRASS BALL VALVE TAPPED INTO PIPE. CONNECT 4" SS GLYCERIN FILLED PRESSURE GAUGE. (0-200 PSI INLET) (0-160 PSI OUTLET) FIGURE INTERVAL AT 2PSI GRADUATION, NOSHOK 40.500 OR EQUAL FLOOR SUMP W/ GALVANIZED GRATING
18. 3" RESILIENT SEAT GATE VALVE W/ HAND WHEEL (FLxFL)
19. 6" RESILIENT SEAT GATE VALVE (FLxFL)
20. UTILITY VAULT 612-LA WITH 36"X72" DOUBLE DOOR HATCH CAST INTO COLLAR, WITH H-20 LOADING.
21. 6" PIPE SEAL ASSEMBLY
22. THRUST-SEAL PLATE W/ STEEL ANCHOR BOLTS
23. 6" X 8" WELDED STEEL REDUCER
24. 2" 90° NPT BRASS BEND

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PRESSURE REDUCING STATION

WATER STANDARD DETAIL NO. 19B

NOVEMBER 2005

VALLEY WATER DISTRICT

GENERAL NOTES

1. PROVIDE RECESSED DOOR HANDLE BOX IN ACCESS HATCH FOR PADLOCK W/ BOLT DOWN COVER OVER LOCK, BOX LARGE ENOUGH FOR "MASTER LOCK"
2. ALL PIPING TO BE PAINTED (BRUSH-ON) WITH TWO COATS OF OSHA SAFETY BLUE ENAMEL, BY GC SYSTEMS.
3. EXTERIOR OF VAULT TO BE COATED WITH 2 COATS OF BLACK BITUMASTIC SOLUTION. VAULT SHALL BE DRY PRIOR TO APPLICATION.
4. VAULT SUMP SHALL DRAIN TO DAYLIGHT IF GRAVITY DRAINAGE NOT FEASIBLE, FURNISH GC SYSTEMS SUMP DRAIN ASSEMBLY MODEL # 996633-S1-2.
5. ACTUAL SIZE OF PRV & BYPASS SHALL BE AS APPROVED BY DISTRICT.

STANDARD FABRICATION & FINISHING SECIFICATION

1. PRESSURE REDUCING VALVE AND VAULT ASSEMBLY SHALL BE DESIGNED AND FURNISHED BY GC SYSTEMS.
2. FABRICATED STEEL PIPE AND FITTINGS TO BE SCHEDULE 40 STEEL PIPE FOR SIZES TO 10" AND 3/8" WALL FOR 12" AND LARGER.
3. ALL 2" AND SMALLER PIPE TO BE THREADED BRASS, ALL 3" AND LARGER PIPE, INSIDE WETTED SURFACES TO BE SAND BLASTED, EPOXY LINED AND COATED TO AWWA C-210 AND NSF-61 SPECIFICATION.

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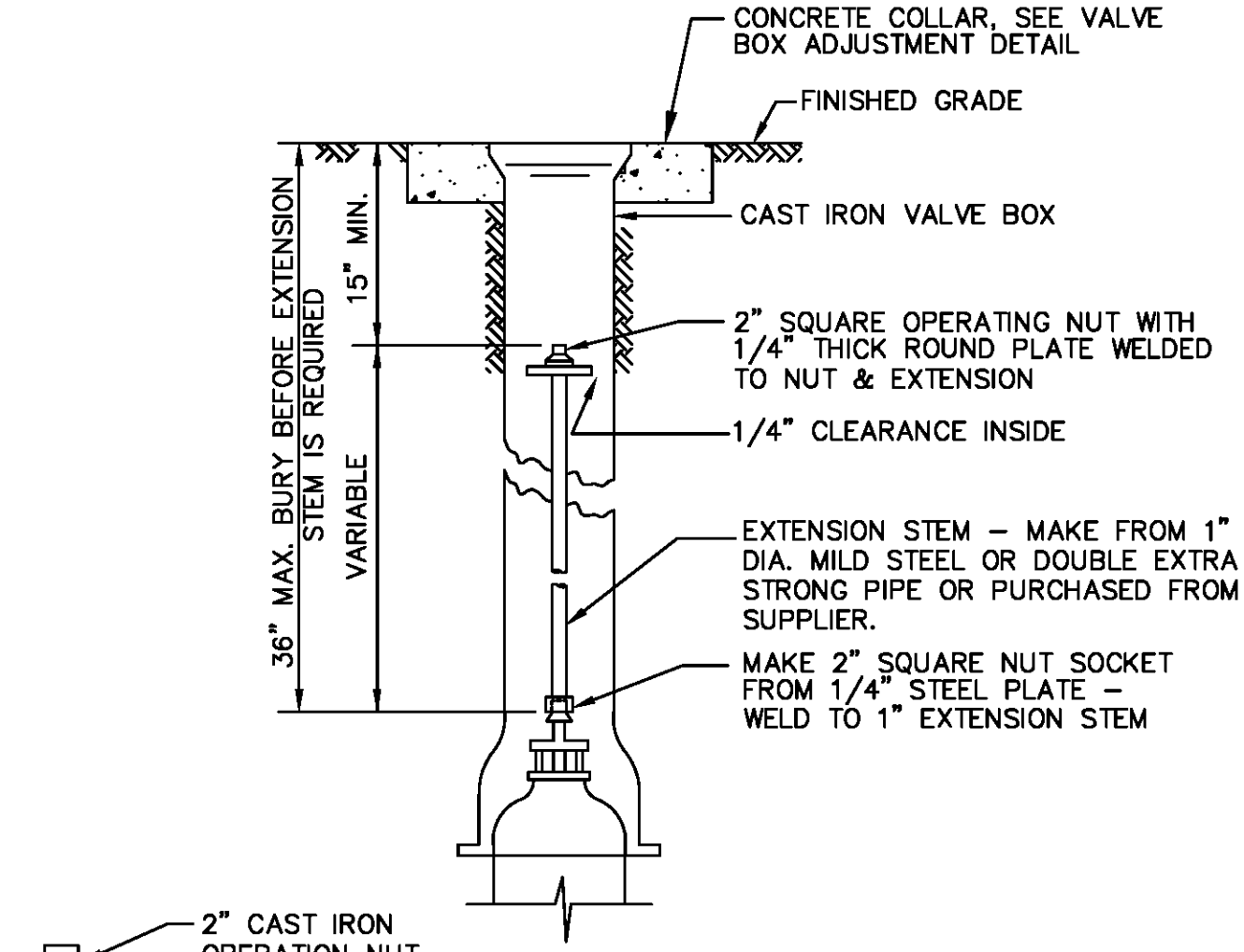
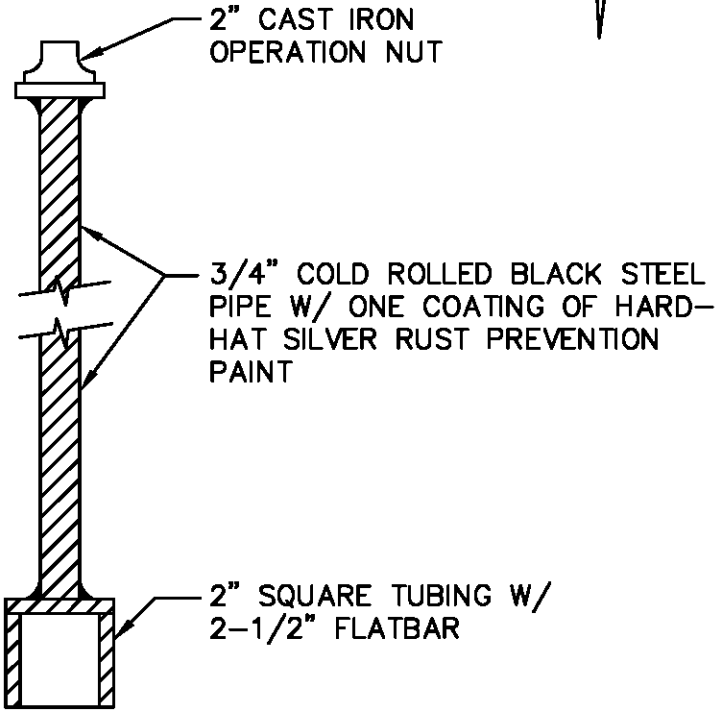
PRESSURE REDUCING STATION

WATER STANDARD DETAIL NO. 19C

NOVEMBER 2005

VALLEY WATER DISTRICT





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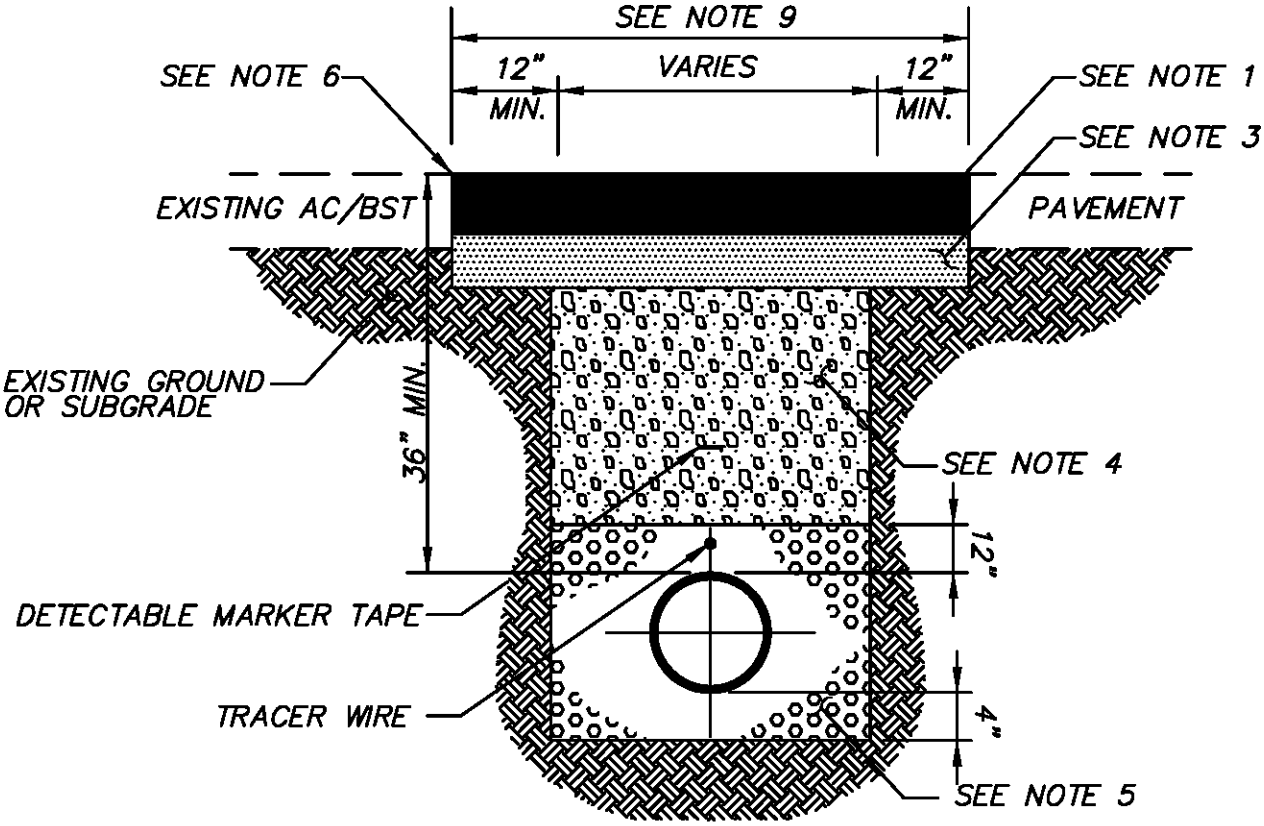
WATER VALVE STEM EXTENSION

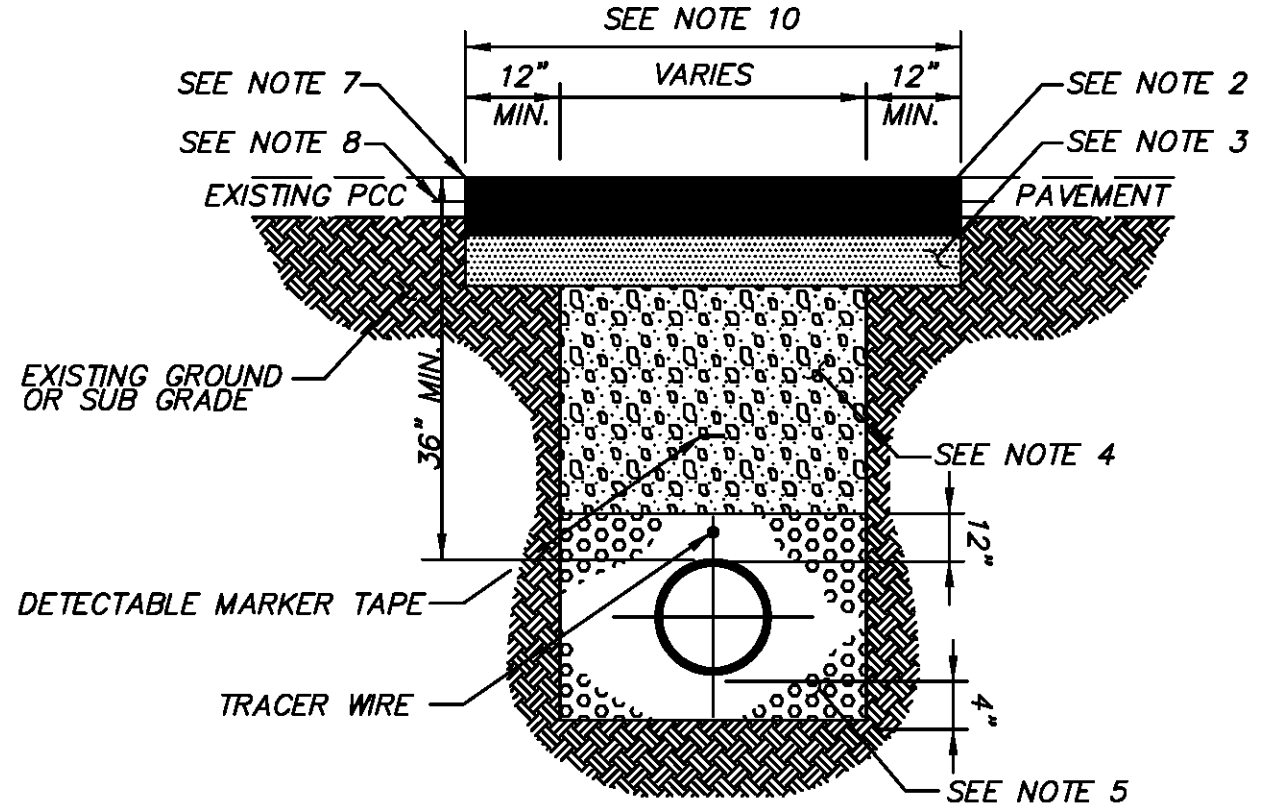
WATER STANDARD DETAIL NO. 20

DECEMBER 2007

VALLEY WATER DISTRICT



DETAIL FOR ASPHALT CONCRETE PAVEMENT AND BST UTILITY ROAD CUTS



DETAIL FOR PORTLAND CEMENT CONCRETTE PAVEMENT UTILITY ROAD CUTS

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UTILITY PATCH

WATER STANDARD DETAIL NO. 21 A

DECEMBER 2007

VALLEY WATER DISTRICT

NOTES:

1) HOT MIX ASPHALT (HMA) CL. 1/2 IN. PG 58-22, WITH MINIMUM COMPACTED DEPTH OF 3" OR EXISTING PAVEMENT DEPTH PLUS 1", WHICHEVER IS GREATER UP TO A MAXIMUM DEPTH 6". PLACE IN LIFTS WITH A MAXIMUM COMPACTED DEPTH OF 3" PER WSDOT STANDARD SPECIFICATIONS 5-04, AND MACHINE ROLL FLUSH WITH EXISTING PAVEMENT.

2) PORTLAND CEMENT CONCRETE PAVEMENT WITH A STANDARD PAVING SECTION EQUAL TO THE EXISTING PAVEMENT DEPTH. PLACE PER WSDOT STANDARD SPECIFICATIONS 5-05. THE ENGINEER MAY SPECIFY THE DESIGN AGE. ANY ASPHALT CONCRETE COVERING THE PORTLAND CEMENT CONCRETE SHALL BE CUT BACK AN ADDITIONAL 4" AND REPLACED WITH HMA CL. 1/2 IN. PG 58-22 COMPACTED TO A DEPTH EQUAL TO THAT OF THE EXISTING ASPHALT CONCRETE PAVEMENT.

3) 5/8" MINUS CRUSHED SURFACING TOP COURSE WITH 2" MINIMUM DEPTH, COMPACTED TO 95% MAXIMUM DENSITY. IF THE EXISTING PAVEMENT DEPTH IS GREATER THAN 8", THE MINIMUM COMPACTED DEPTH OF CRUSHED SURFACING TOP COURSE SHALL BE EQUAL TO THE DEPTH OF THE EXISTING PAVEMENT MINUS 6".

4) IMPORTED OR NATIVE MATERIAL COMPACTED IN MAXIMUM 1' LOOSE LIFTS TO 95% MAXIMUM DENSITY. THE MATERIAL SHALL BE ESSENTIALLY FREE FROM VARIOUS TYPES OF WOOD WASTE OR OTHER EXTRANEOUS OR OBJECTIONABLE MATERIALS. IT SHALL HAVE SUCH CHARACTERISTICS OF SIZE AND SHAPE THAT IT WILL COMPACT READILY AND SHALL MEET THE FOLLOWING TEST REQUIREMENTS:

STABILOMETER "R" VALUE	72 MIN.
SWELL PRESSURE	0.3 PSI MAX.

THE MAXIMUM PARTICLE SIZE SHALL NOT EXCEED 2/3 OF THE DEPTH OF THE LAYER BEING PLACED AND SHALL MEET THE FOLLOWING GRADATION:

SIEVE SIZE	PERCENT PASSING
2-1/2" SQUARE	100
2" SQUARE	75 – 100
U.S. NO. 4	22 – 100
U.S. NO. 200	0-10

DUST RATIO: % PASSING U.S. NO. 200 / % PASSING U.S. NO. 40 2/3 MAX.

SAND EQUIVALENT 30 MIN.

ALL PERCENTAGES ARE BY WEIGHT.
THE MATERIAL RETAINED ON A U.S. NO. 4 SIEVE SHALL CONTAIN NOT MORE THAN 0.20 PERCENT BY WEIGHT OF WOOD WASTE.

ANY NATIVE MATERIAL USED SHALL BE TESTED FOR COMPACTION AND/OR GRADATION AS REQUIRED BY THE ENGINEER.

5) BEDDING MATERIAL COMPACTED TO 95% MAXIMUM DENSITY, SHALL CONSIST OF CRUSHED, PROCESSED, OR NATURALLY OCCURRING GRANULAR MATERIAL. IT SHALL BE FREE FROM VARIOUS TYPES OF WOOD WASTE OR OTHER EXTRANEOUS OR OBJECTIONABLE MATERIALS. IT SHALL HAVE SUCH CHARACTERISTICS OF SIZE AND SHAPE THAT IT WILL COMPACT AND SHALL MEET THE FOLLOWING SPECIFICATIONS FOR GRADING AND QUALITY:

SIEVE SIZE	PERCENT PASSING
1-1/2" SQUARE	100
1" SQUARE	75 – 100
5/8" SQUARE	50-100
US. NO. 4	20 – 80
U.S. NO. 40	3 – 24
U.S. NO. 200	10.0 MAX.
SAND EQUIVALENT	35 MIN.

ALL PERCENTAGES ARE BY WEIGHT.
NO NATIVE MATERIAL SHALL BE PERMITTED IN PIPE BEDDING ZONE.

6) NEAT, UNIFORM AND VERTICAL CUT (TYPICAL BOTH SIDES). CLEAN AND HEAT EDGES AND TACK WITH EMULSIFIED ASPHALT. SEAL JOINT WITH HOT ASPHALT CEMENT.

7) NEAT, UNIFORM AND VERTICAL CUT (TYPICAL BOTH SIDES).

8) DRILL AND GROUT EPOXY-COATED TIE BARS WITH EPOXY RESIN INTO THE EXISTING PAVEMENT (TYPICAL BOTH SIDES).

9) MINIMUM RESTORATION LIMITS UNLESS OTHERWISE DETERMINED BY THE ENGINEER. IF ANY PORTION OF A LONGITUDINAL PAVEMENT CUT AFFECTS A WHEEL TRACK AS DETERMINED BY THE ENGINEER, THE ENTIRE LANE SHALL BE REMOVED AND REPLACED. WHEREVER AN EXISTING PATCH OR CRACK IS IN CLOSE PROXIMITY TO THE NEW CUT, THE ENGINEER MAY REQUIRE REMOVAL OF THE EXISTING PATCH OR CRACK AND ANY INTERVENING PAVEMENT. DEPTH OF REPLACEMENT ASPHALT SHALL BE IN ACCORDANCE WITH NOTE 1.

10) MINIMUM RESTORATION LIMITS UNLESS OTHERWISE DETERMINED BY THE ENGINEER. REMOVE ENTIRE PANEL UNLESS WIDTH OF REMAINING PANEL PORTION IS GREATER THAN 50% OF THE EXISTING PANEL WIDTH. IF ANY PORTION OF A LONGITUDINAL PAVEMENT CUT AFFECTS A WHEEL TRACK AS DETERMINED BY THE ENGINEER, THE ENTIRE LAND SHALL BE REMOVED AND REPLACED. WHEREVER AN EXISTING PATCH OR CRACK IS IN CLOSE PROXIMITY TO THE NEW CUT, THE ENGINEER MAY REQUIRE REMOVAL OF THE EXISTING PATCH OR CRACK AND ANY INTERVENING PAVEMENT. IF THE ENTIRE PANEL IS NOT REMOVED, FOLLOW ASPHALT CONCRETE UTILITY PATCH PROCEDURES WITH AN ASPHALT CONCRETE PAVING DEPTH EQUAL TO THE DEPTH OF THE EXISTING PAVEMENT.

11) ALL PERMANENT FINAL PATCHES SHALL BE RECTANGULAR OR CIRCULAR IN SHAPE AND CONSTRUCTED TO BE PARALLEL AND PERPENDICULAR TO THE ROAD CENTERLINE.

12) CONTROLLED DENSITY FILL (CDF) MAY E REQUIRED ON MAJOR ARTERIAL ROADWAYS AND SHALL BE PLACED IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATIONS 2-09.3(1)E.

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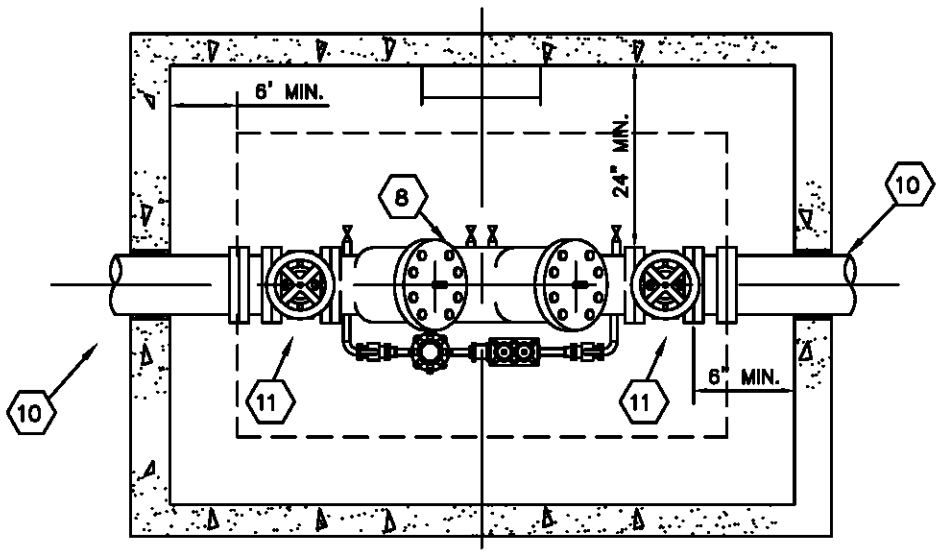
UTILITY PATCH

WATER STANDARD DETAIL NO. 21 B

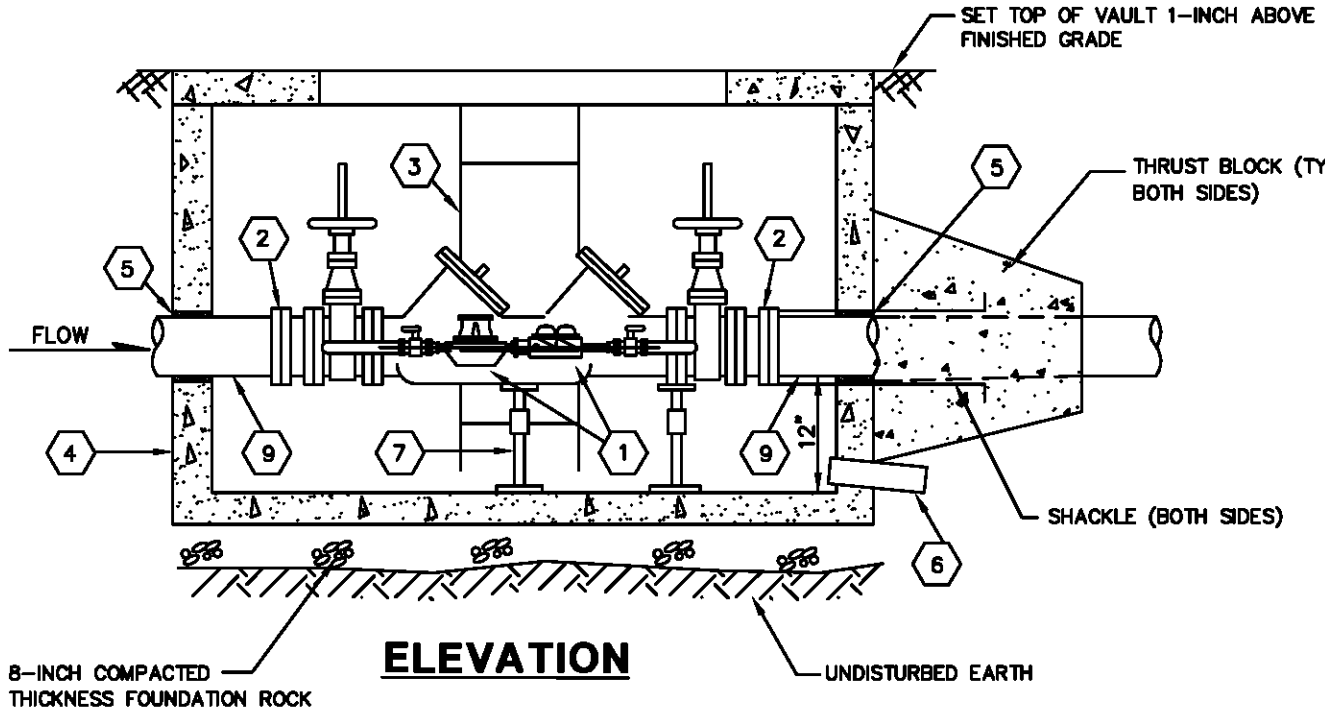
DECEMBER 2007

VALLEY WATER DISTRICT



PLAN

SIZE	MIN. VAULT SIZE (INSIDE) W	L	H	UTIL. VAULT CO. MODEL	UTIL. VAULT CO. COVER
3"	6'-0"	8'-0"	7'-0"	687-LA	687-TL-2-332P
4"	5'-0"	10'-6"	6'-2"	5106-LA	5106-TL-2-332P
6"-10"	6'-0"	12'-0"	6'-6.5"	612-LA	612-2-332P



ELEVATION

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DETECTOR DOUBLE - CHECK VALVE ASSEMBLY

WATER STANDARD DETAIL NO. 22A

DECEMBER 2007

VALLEY WATER DISTRICT

1. DETECTOR DOUBLE CHECK VALVE ASSEMBLY MODEL TO BE PRE APPROVED BY THE DISTRICT, AND SHALL BE ON MOST RECENT WASHINGTON STATE DEPARTMENT OF HEALTH LIST OF APPROVED DEVICES.
2. UNI–FLANGE WITH SET SCREWS
3. TELESCOPIC ALUMINUM LADDER TO BE SECURED TO VAULT WITH STAINLESS STEEL FASTNERS AT 3–FT. MAX. INTERVALS
4. CONCRETE VAULT WITH WATERTIGHT BILCO COVER, H20 LOADING (SEE TABLE FOR VAULT SIZE)
5. WATER–TIGHT GROUT. RESTRAIN INLET/OUTLET PIPE WITH WELDED FLANGE OR SHACKLE TO THRUST BLOCK TO PREVENT. SHACKLE THROUGH VAULT IF CHECK VALVE ASSEMBLY IS REMOVED.
6. 4" DRAIN TO DAYLIGHT (MINIMUM SLOPE 2%) MAY SUBSTITUTE SUMP PUMP OR GC SYSTEMS SUMP DRAIN IF GRAVITY NOT POSSIBLE
7. ADJUSTABLE PIPE STANCHION, GRINELL PIPE SUPPORTS. (SECURE TO FLOOR)
8. VALVE ASSEMBLY TO BE CENTERED IN VAULT
9. CL. 53 D.I., MJ WITH MEGALUGS
10. STAINLESS STEEL SHACKLES AND THRUST BLOCK (3000PSI) AT BOTH ENDS OF VAULT
11. R.S. GATE VALVE WITH HAND WHEEL OPERATION

NOTES:

1. ASSEMBLY SHALL BE MAINTAINED BY PROPERTY OWNER AND ANNUAL CERTIFICATION REQUIRED.
2. FIRELINE SHALL NOT BE PUT INTO SERVICE UNTIL THE THE BACKFLOW PREVENTION DEVICE IS APPROVED BY THE DISTRICT
3. A REDUCED PRESSURE BACKFLOW PREVENTION DEVICE MAY BE REQUIRED IF DEEMED NECESSARY BY THE DISTRICT.
4. PAINT PIPING WITH PARKER PAINT MARINE ENAMEL, MARARTHON 1065, TAHOE BLUE.
5. SIZE OF SYSTEM TO BE APPROVED BY THE DISTRICT.

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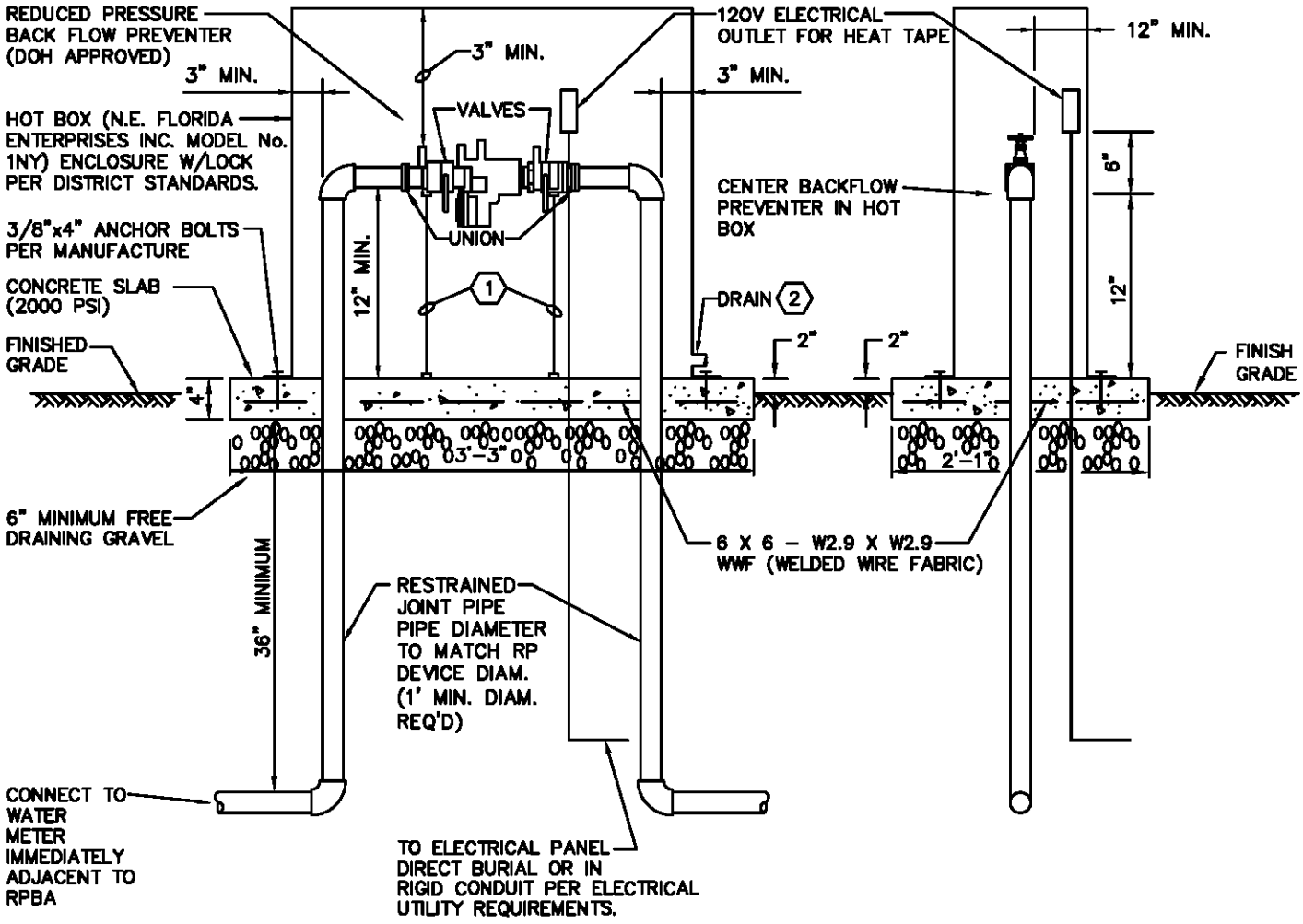
DETECTOR DOUBLE - CHECK VALVE ASSEMBLY

WATER STANDARD DETAIL NO. 22B

DECEMBER 2007

VALLEY WATER DISTRICT



REDUCED PRESSURE BACKFLOW DEVICE

NOT TO SCALE

(1) PROVIDE DISTRICT APPROVED SUPPORT FOR 2 1/2" AND LARGER DEVICES.

(2) DRAIN SHALL BE SIZED IN ACCORDANCE WITH AWWA CROSS CONNECTION CONTROL MANUAL FIGURE 6–8

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REDUCED PRESSURE BACKFLOW DEVICE

WATER STANDARD DETAIL NO. 23

DECEMBER 2007

VALLEY WATER DISTRICT

NOTES:

1. WHERE POSSIBLE, MAINTAIN NATURAL VEGETATION FOR SILT CONTROL.

2. TEMPORARY SILTATION AND DETENTION PONDS SHALL BE CONSTRUCTED BY PLACING STRAW BALES OR FILTER FABRIC FENCES ACROSS SWALES. PONDS SHALL BE CONSTRUCTED TO PROVIDE 2 CUBIC FEET OF SETTLING POND PER 50 SQUARE FEET OF CLEARED AREA TRIBUTARY TO THE POND.

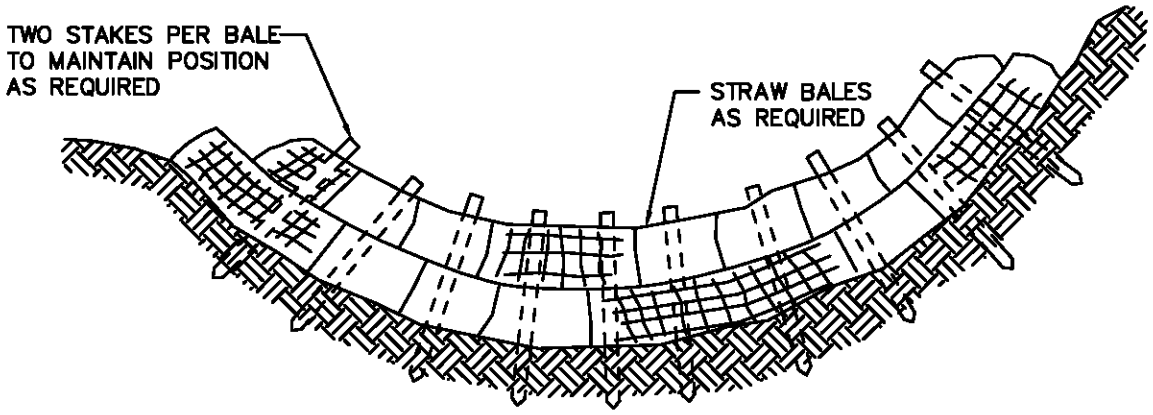
3. FILTER FABRIC FENCES OR STRAW BALES SHALL BE LOCATED AT THE BOTTOM OR TOE OF NEWLY EXCAVATED SLOPES AS INDICATED ON THE PLANS.

4. CONSTRUCT ROCK CHECK DAMS IN OPEN DITCHES AS REQUIRED

5. PROVIDE EROSION CONTROL ON STEEP AND NEWLY GRADED SLOPES, CONTRACTOR SHALL EMPLOY EROSION CONTROL BLANKET OR JUTE MATTING IMEDIATELY AFTER GRADING SLOPES AND THE APPLICATION OF SEEDING. THIS SHALL BE DONE AND IN PLACE BEFORE THE FALL RAINFALL BEGINS.

6. ALL TEMPORARY EROSION CONTROL STRUCTURES SHALL BE MAINTAINED IN SATISFACTORY CONDITION UNTIL CLEARING AND/OR CONSTRUCTION IS COMPLETED AND SURFACE RESTORATION HAS BEEN COMPLETED.

7. RETURN SILTATION CONTROL AREAS TO ORIGINAL GROUND CONDITIONS.



ELEVATION

STRAW BALE DAM

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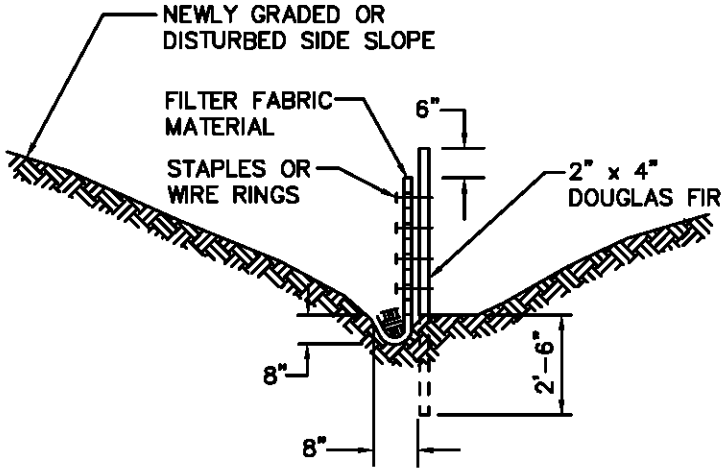
STRAW BALE DAM

WATER STANDARD DETAIL NO. 24

NOVEMBER 2005

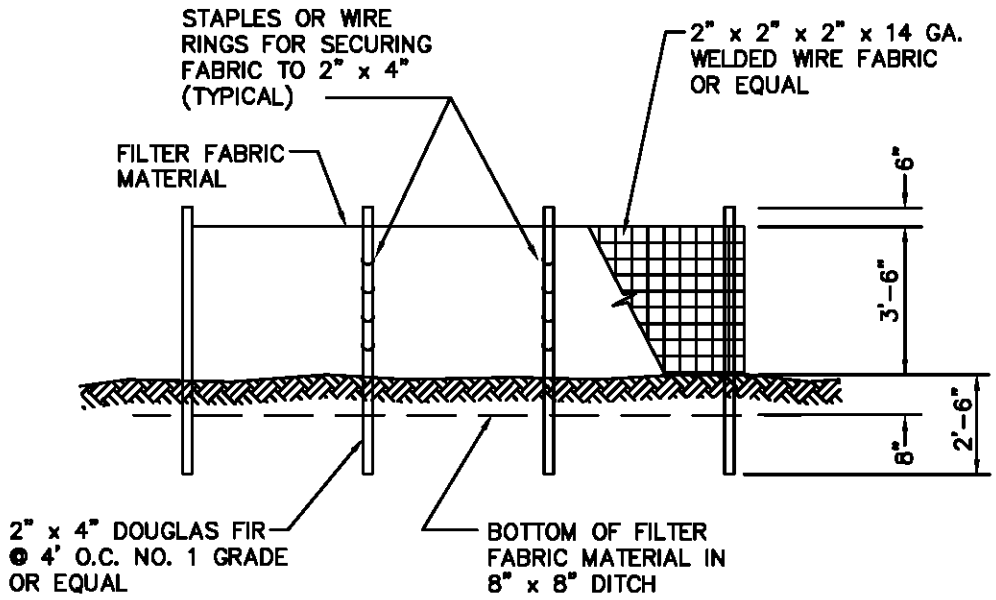
VALLEY WATER DISTRICT



CROSS SECTION

NOTES:

1. WHERE POSSIBLE, MAINTAIN NATURAL VEGETATION FOR SILT CONTROL
2. TEMPORARY SILTATION SHALL BE CONSTRUCTED BY PLACING FILTER FABRIC FENCES ACROSS SWALES UTILIZING FILTER SYSTEM PRIOR TO DISCHARCH
3. ALL TEMPORARY SILTATION SHALL BE MAINTAINED IN A SATISFACTORY CONDITION UNTIL SUCH TIME THAT CLEARING AND/OR CONSTRUCTION IS COMPLETED AND SURFACE RESTORATION HAS BEEN COMPLETED
4. RETURN SILTATION CONTROL AREAS TO ORIGINAL GROUND CONDITIONS.



ELEVATION

SILT FENCE

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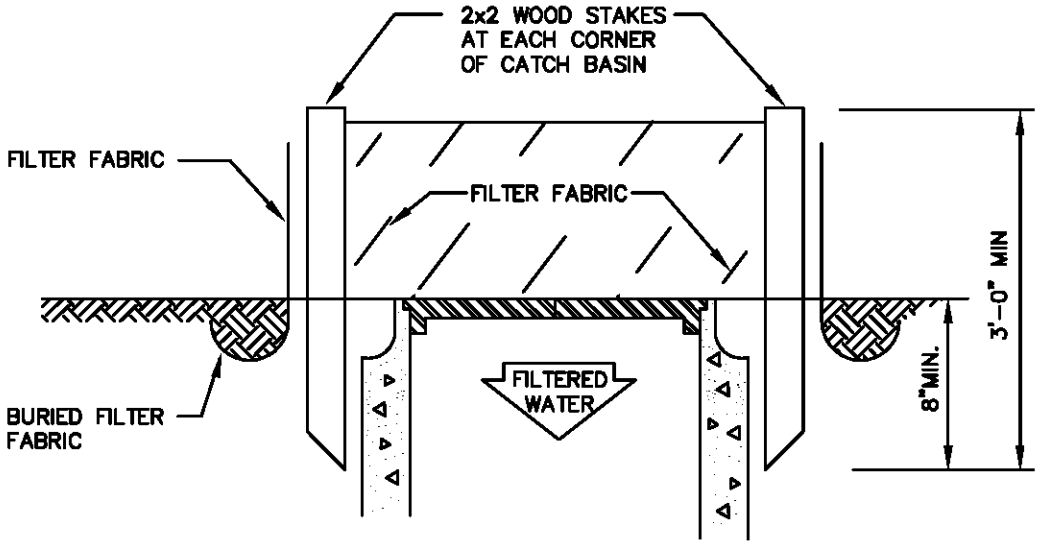
SILT FENCE

WATER STANDARD DETAIL NO. 25

NOVEMBER 2005

VALLEY WATER DISTRICT



NOTE:

WOOD STAKES AROUND PERIMETER OF INLET SHALL BE SPACED A MAXIMUM OF 3 FEET APART

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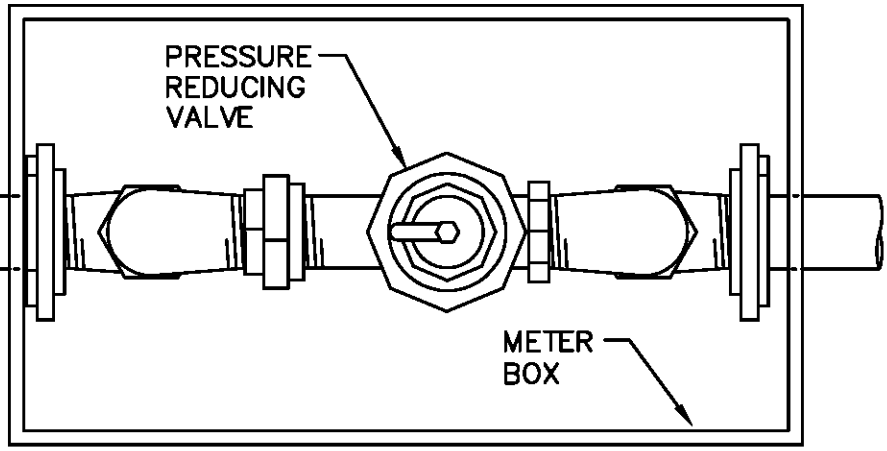
STORM DRAIN INLET PROTECTION

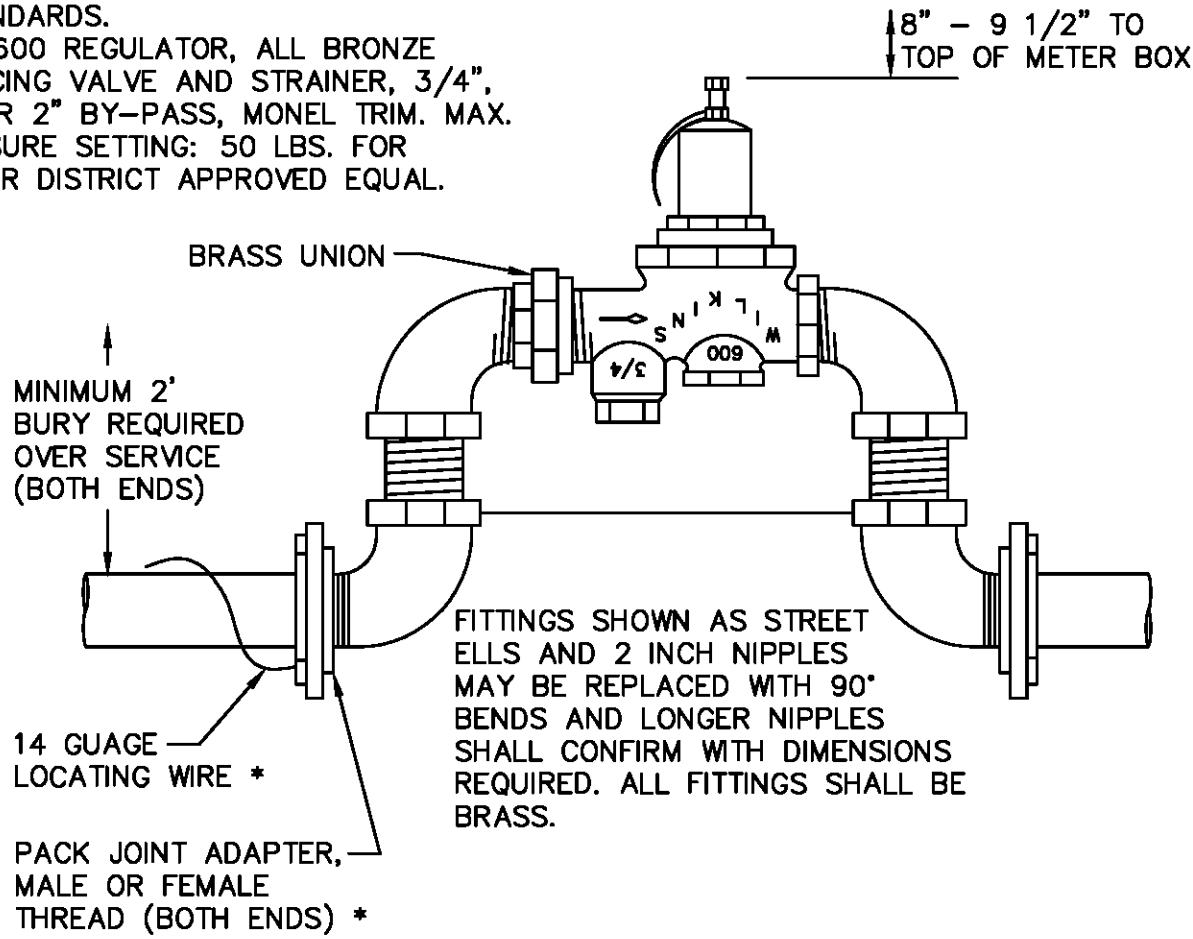
WATER STANDARD DETAIL NO. 26

NOVEMBER 2005

VALLEY WATER DISTRICT



NOTE:
BOX SHALL BE LOCATED BEHIND WATER METER ON PRIVATE PROPERTY AND SHALL BE THE PROPERTY OWNER'S RESPONSIBILITY TO MAINTAIN. METER BOX PER DISTRICT WATER SERVICE STANDARDS.
WILKINS NO. 600 REGULATOR, ALL BRONZE WATER REDUCING VALVE AND STRAINER, 3/4", 1", 1-1/2" OR 2" BY-PASS, MONEL TRIM. MAX. INITIAL PRESSURE SETTING: 50 LBS. FOR WATER-AIR OR DISTRICT APPROVED EQUAL.



* SEE WATER SERVICE DETAIL

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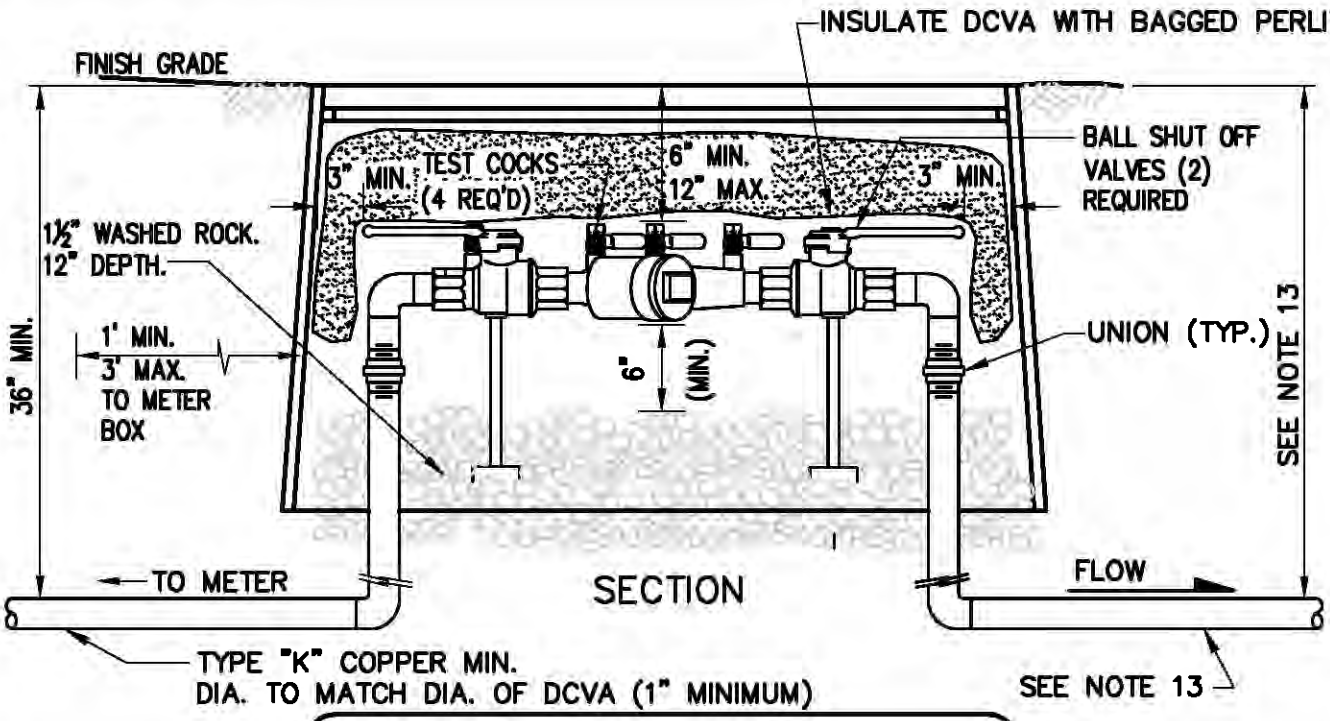
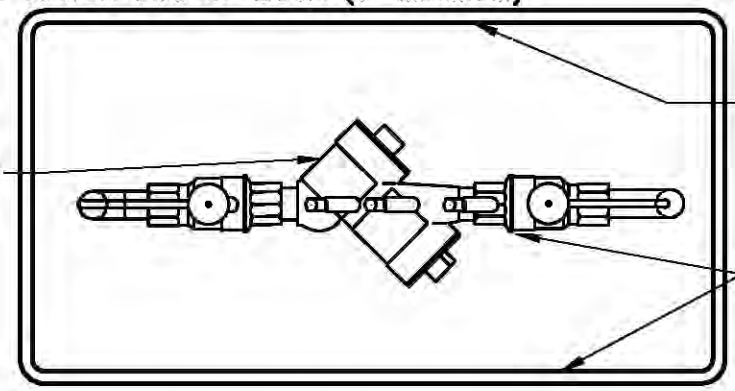
PRESURE REDUCING VALVE WITH BOX FOR 3/4", 1", 1 1/2" OR 2" SERVICE LINES

WATER STANDARD DETAIL NO. 27

NOVEMBER 2005

VALLEY WATER DISTRICT





PLAN

NOTES:

1. APPROVED DOUBLE CHECK VALVE ASSEMBLY TO BE INSTALLED HORIZONTAL WITH GROUND.
2. DESIGNED FOR BACK SIPHONAGE, BACK PRESSURE AND LOW HEALTH HAZARDS.
3. TEST COCKS TO EITHER FACE OUTWARDS OR UPWARDS FROM ASSEMBLY.
4. THE DCVA MAY INSTALLED BELOW GROUND PROVIDED ALL ALL OF THE CLEARANCES ARE MET.
5. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.
6. DCVA MUST BE ACCESSIBLE.
7. DCVA MUST BE PROTECTED FROM FREEZING CONDITIONS.
8. THE BACKFLOW ASSEMBLY MUST BE A WASH. STATE APPROVED MODEL.
9. DCVA MUST BE TESTED AFTER INSTALLATION AND YEARLY THEREAFTER BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER.
10. TEST RESULTS SHALL BE SENT TO VALLEY WATER DISTRICT.
11. FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER.
12. SUPPORTS REQUIRED ON 2" AND LARGER DCVA ASSEMBLIES.
13. COVER & TYPE OF PIPE FOR FIRELINES SHALL BE AS REQUIRED BY THE JURISDICTIONAL FIRE DISTRICT.

WATER BOX REQUIREMENTS			
SIZE	CARSON INDUSTRIES MODEL NO.	APPLICATION	COLOR
1" & 1½"	1324–3B	FIRE	GRAY
1" & 1½"	1324–3B	IRRIGATION	GREEN
2"	1730–3B	FIRE	GRAY
2"	1730 –3B	IRRIGATION	GREEN

NOTES

1. CLEARANCES SHOWN ABOVE MUST BE MET OR BOX WILL NEED TO BE UP–SIZED
2. BOXES & LIDS SHALL BE EQUIPPED WITH THE BOLT DOWN FEATURE. DO NOT INSTALL READER FLAP

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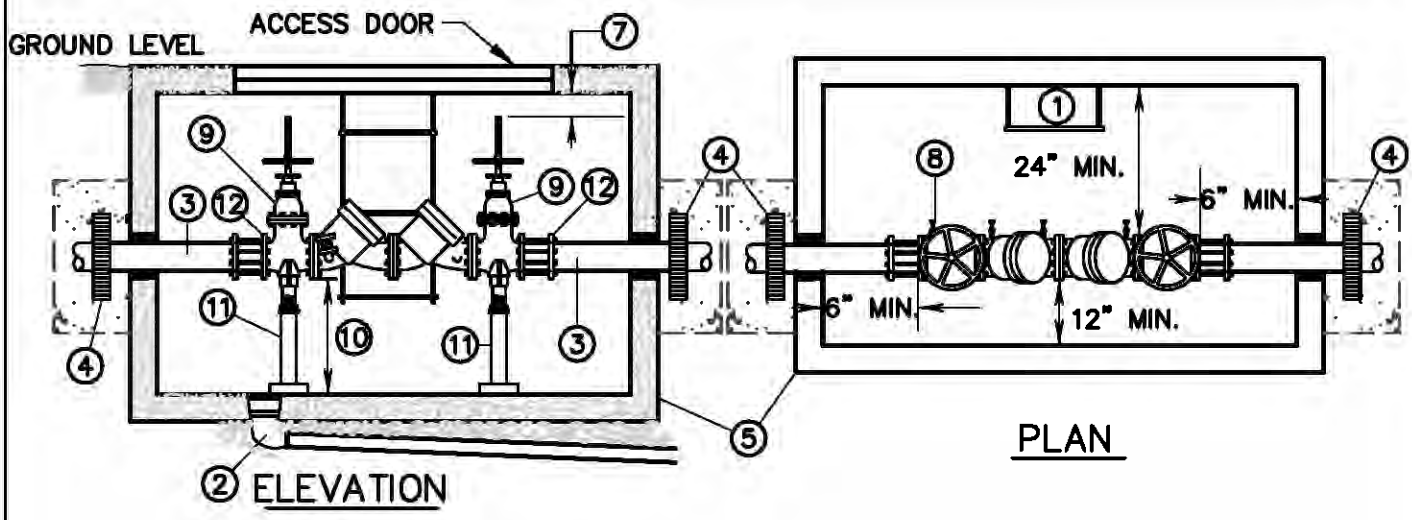
2" AND SMALLER DOUBLE CHECK VALVE ASSEMBLY

WATER STANDARD DETAIL NO. 28

DECEMBER 2007

VALLEY WATER DISTRICT



SIZE	MIN. VAULT SIZE (INSIDE) W	L	H	UTIL. VAULT CO. MODEL	UTIL. VAULT CO. COVER
2.5"–3"	6'–0"	8'–0"	7'–0"	687–LA	687–TL–2–332P
4"	5'–0"	10'–6"	6'–2"	5106–LA	5106–TL–2–332P
6"–10"	6'–0"	12'–0"	6'–6.5"	612–LA	612–2–332P

LEGEND

1. ONE GALVANIZED STEEL LADDER TO BE SECURED TO VAULT.
2. 4" SCHD 40 PVC DRAIN 2% MIN. SLOPE TO STORM BASIN. PROVIDE 12 GAUGE TRACE WIRE. SUMP PUMP REQUIRED IF DRAIN NOT FEASIBLE.
3. CLASS 52 DUCTILE IRON PIPE REQUIRED. SIZE AS REQUIRED (4" DIA. MIN.). FOR 3", PLACE REDUCER OUTSIDE OF VAULT. ALL PIPE AND FITTINGS SHALL BE RESTRAINED.
4. 2' x 2' x 8" THICK FORMED CONCRETE BLOCKING WITH LOCKING FOLLOWER RING.
5. PRECAST CONCRETE VAULT WITH A MINIMUM OF TWO, 3' X 3' DIAMOND PLATE DOORS RATED FOR H20 LOADING. MARKED "WATER". VAULT SHALL BE EQUAL TO UTILITY VAULT CO. MODEL LISTED IN TABLE ABOVE.
6. WATER TIGHT GROUT SHALL BE USED IN ALL VAULT PENETRATIONS.
7. A MINIMUM OF 3" BETWEEN THE UNDERSIDE OF THE LID, OR VAULT, AND THE HIGHEST POINT OF VALVING AND ASSEMBLY IS REQUIRED.
8. THE DEVICE MUST BE EQUIPPED WITH (4) RESILIENT SEATED TEST COCKS WITH PLUGS INSTALLED.
9. THE DEVICE MUST ALSO BE EQUIPPED WITH (2) RESILIENT WEDGE O.S.& Y. SHUT OFF GATE VALVES WITH HAND WHEELS. GATE VALVES SHALL CONFORM TO AWWA C–509 OR C515.
10. A MINIMUM OF A 12" CLEARANCE IS REQUIRED BETWEEN THE LOWEST POINT OF THE DEVICE AND TO THE BOTTOM OF THE VAULT.
11. TWO ADJUSTABLE PIPE STANCHIONS REQUIRED AND SIZED APPROPRIATELY.
12. EBBA IRON SERIES 2100 MEG–A–FLANGE

NOTES:

- VAULT ASSEMBLY TO BE CENTERED IN VAULT. TEE AND GATE VALVE REQUIRED ON CONNECTION TO MAINLINE.
- THE D.C.V.A. CHOSEN MUST BE ON THE MOST RECENT WA. STATE APPROVAL LISTING.
- THE OWNER WILL PROVIDE INSPECTION AND INITIAL TEST OF THE BACKFLOW DEVICE PRIOR TO THE ESTABLISHMENT OF WATER SERVICE. SUBSEQUENT TESTING OF THE BACKFLOW DEVICE REQUIRED BY THE OWNER, ANNUALLY.
- SCHEDULE THOROUGH FLUSH OF THE SERVICE PRIOR TO CONNECTION OF THE BACKFLOW DEVICE.

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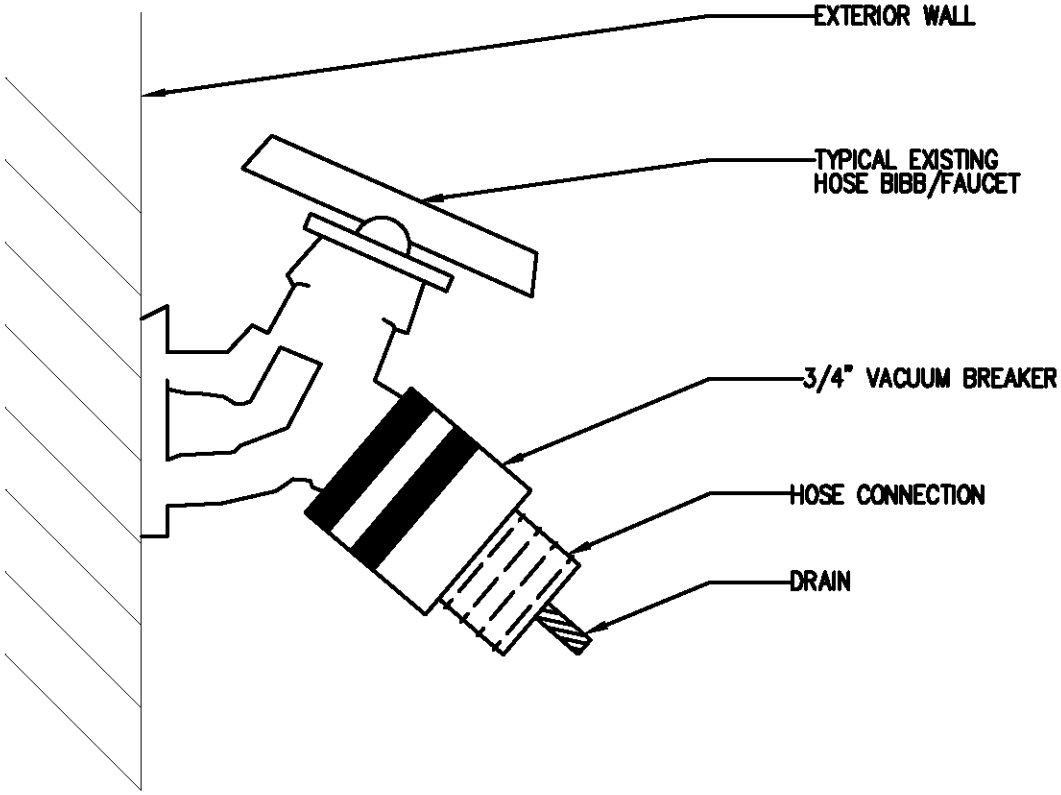
2.5" AND LARGER
DOUBLE CHECK VALVE ASSEMBLY
WATER STANDARD DETAIL NO. 29
DECEMBER 2007

VALLEY WATER DISTRICT



NOTES:

1. HOSE BIBB ATMOSPHERIC VACUUM BREAKER (AVB) SHALL BE SCREW-ON TYPE WITH SET SCREW.
2. INSTALL ATMOSPHERIC VACUUM BREAKER ON FAUCETS WHEN USING GARDEN HOSE TO FILL POOLS, HOT TUBS, AND OTHER WATER STORAGE TANKS.
3. NEVER LEAVE GARDEN HOSE SUBMERGED IN YOUR POOL OR HOT TUB.

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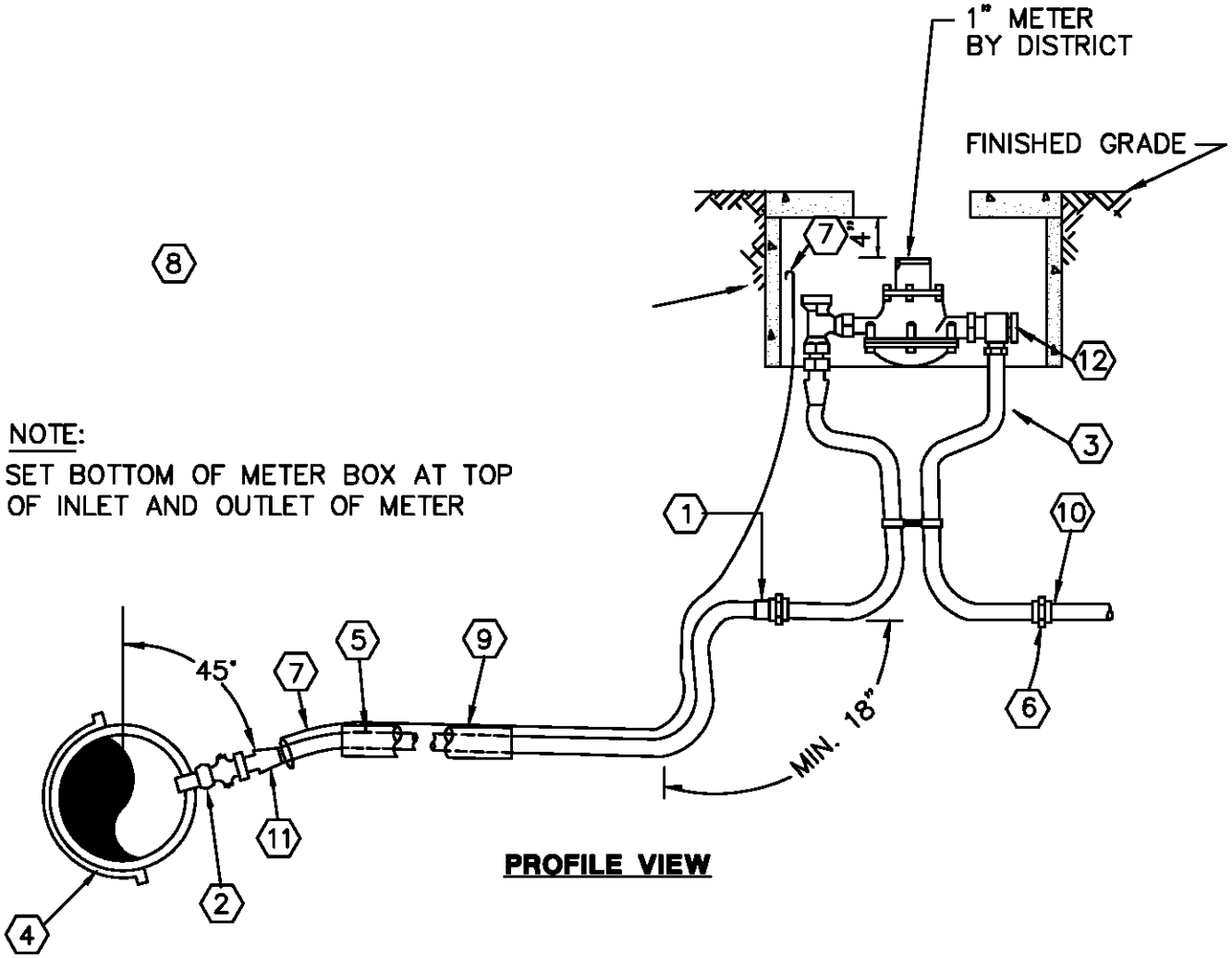
ATMOSPHERIC VACUUM BREAKER
FOR IN-LINE FAUCETS & HOSE BIBBS
WATER STANDARD DETAIL NO. 30
MAY 2008

VALLEY WATER DISTRICT



NOTE:
SET BOTTOM OF METER BOX AT TOP OF INLET AND OUTLET OF METER

PROFILE VIEW

PACE
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SINGLE 1" FIRE SERVICE

WATER STANDARD DETAIL NO. 31A

OCTOBER 2010

VALLEY WATER DISTRICT

SINGLE 1" FIRE SERVICE DETAIL

LEGEND

⟨1⟩ 1" GRIP JOINT FOR PE PIPE

⟨2⟩ 1" MIP X MIP JOINT CORP STOP EQUAL TO FORD FB700

⟨3⟩ COPPER SETTER EQUAL TO VBH74-66-44

⟨4⟩ ROMAC DOUBLE STRAP SADDLE

⟨5⟩ 1" HIGH MOLECULAR (200 PSI, SDR 7) "POLY" PIPE (LENGTH AS REQUIRED)

⟨6⟩ 1" GRIP JOINT FOR PE PIPE

⟨7⟩ 14 GUAGE WIRE FROM MAINLINE TAP TO METER BOX AND EXPOSE 6" MINIMUM IN BOX (RUN INSIDE 2" PVC GUARD CONDUIT WHERE APPLICABLE)

⟨8⟩ METER BOX – CARSON #1220 – 12"x 20"x 12" DEEP, BLACK PLASTIC METER BOX. CARSON #1220 LID – BLACK PLASTIC MARKED "FIRE METER" WITH READER AND TRPL 2" HOLE. (SET FLUSH WITH FINISHED GRADE)

⟨9⟩ INSTALL SERVICE LINE IN 2" PVC GUARD PIPE (SCH-80) WHEN CROSSING ROADWAY (3' MINIMUM BEYOND AND BENEATH PAVEMENT SECTION)

⟨10⟩ PROVIDE APPROVED WATERTIGHT PLUG UNTIL CONNECTION TO PRIVATE SYSTEM IS MADE.

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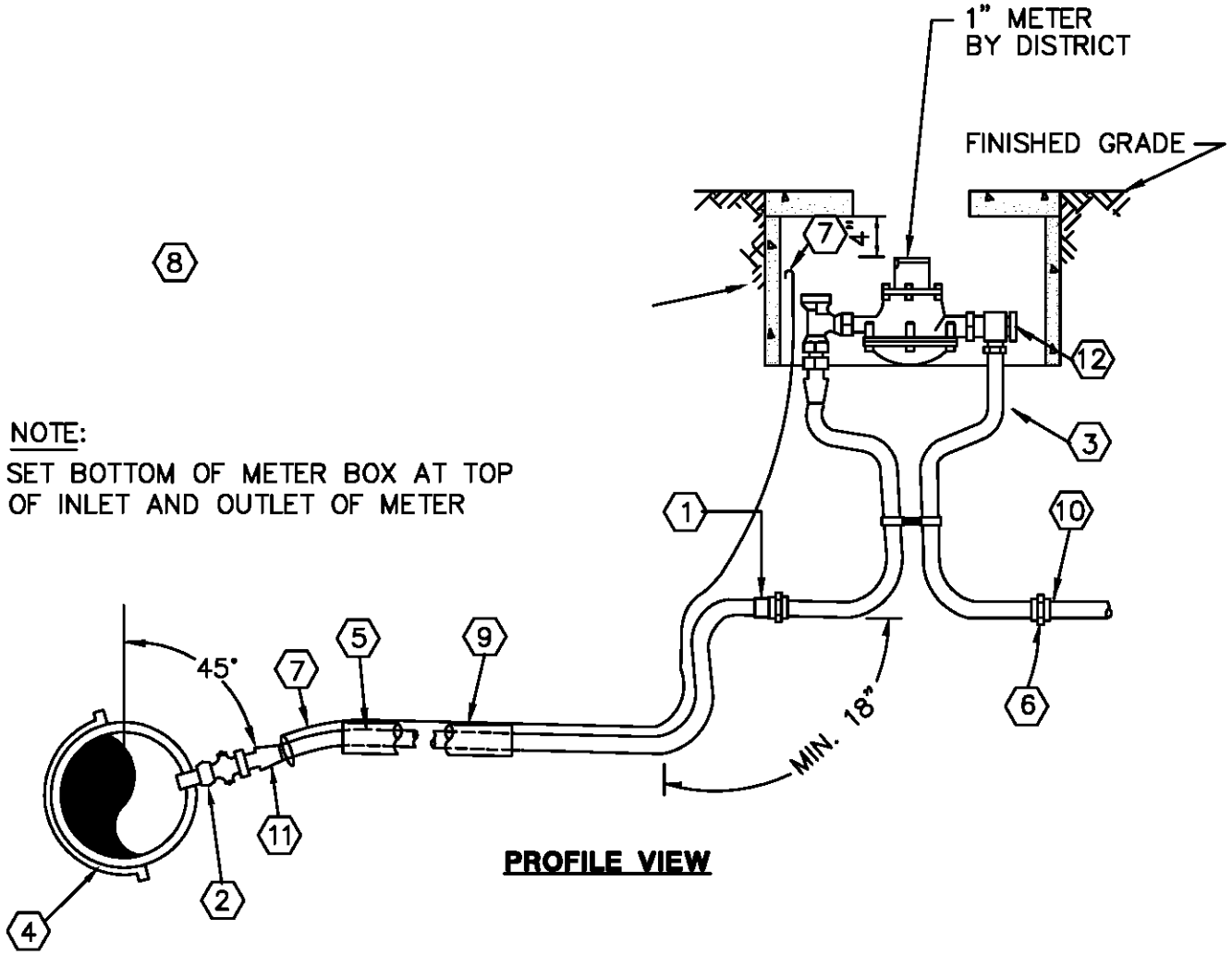
1" AND SMALLER WATER SERVICE

WATER STANDARD DETAIL NO. 31B

OCTOBER 2010

VALLEY WATER DISTRICT



PROFILE VIEW

PACE
An Engineering Services Company

COMBINED DOMESTIC & 1" FIRE SERVICE

WATER STANDARD DETAIL NO. 32A

OCTOBER 2010

VALLEY WATER DISTRICT

LEGEND

1. 1" GRIP JOINT FOR PE PIPE
2. 1" MIP X MIP JOINT CORP STOP EQUAL TO FORD FB700
3. COPPER SETTER EQUAL TO VBH74-66-44
4. ROMAC DOUBLE STRAP SADDLE
5. 1" HIGH MOLECULAR (200 PSI, SDR 7) "POLY" PIPE (LENGTH AS REQUIRED)
6. 1" GRIP JOINT FOR PE PIPE
7. 14 GUAGE WIRE FROM MAINLINE TAP TO METER BOX AND EXPOSE 6" MINIMUM IN BOX (RUN INSIDE 2" PVC GUARD CONDUIT WHERE APPLICABLE)
8. METER BOX – CARSON #1220 – 12"x 20"x 12" DEEP, BLACK PLASTIC METER BOX. CARSON #1220 LID – BLACK PLASTIC MARKED "FIRE METER" WITH READER AND TRPL 2" HOLE. (SET FLUSH WITH FINISHED GRADE)
9. INSTALL SERVICE LINE IN 2" PVC GUARD PIPE (SCH-80) WHEN CROSSING ROADWAY (3' MINIMUM BEYOND AND BENEATH PAVEMENT SECTION)
10. PROVIDE APPROVED WATERTIGHT PLUG UNTIL CONNECTION TO PRIVATE SYSTEM IS MADE.
11. FIPXPEP FITTING
12. FIRE SERVICE SETTER-FORD LTBA443-444W-AWT-Q-NL

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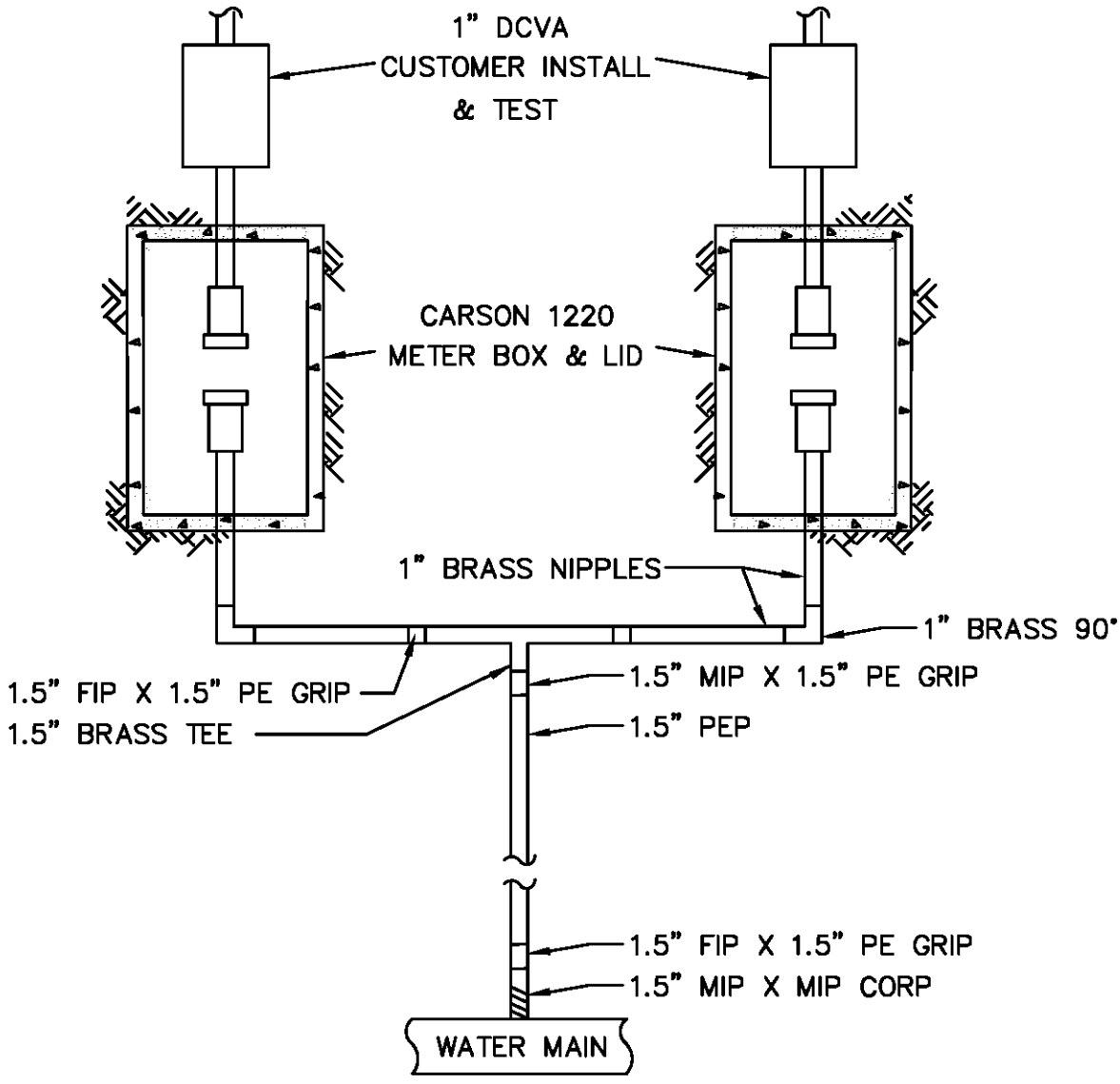
COMBINED DOMESTIC & 1" FIRE SERVICE
WATER STANDARD DETAIL NO. 32B
OCTOBER 2010

VALLEY WATER DISTRICT



PLAN VIEW

PACE
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DOUBLE RESIDENTIAL FIRE SERVICE

WATER STANDARD DETAIL NO. 33

OCTOBER 2010

VALLEY WATER DISTRICT