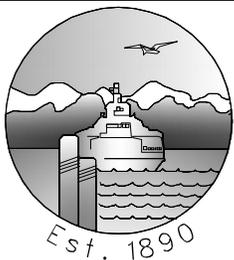


NOTES:

1. HYDRANTS AND ALL MATERIALS TO BE IN ACCORDANCE WITH CITY OF EDMONDS APPROVED MATERIAL MODIFICATIONS LISTINGS.
2. CONSTRUCT 3' X 3' X 3.5" THICK CONCRETE PAD AROUND HYDRANT PIPE. HYDRANTS SET IN CONCRETE REQUIRES AN EXPANSION STRIP AROUND HYDRANT BARREL. IN ADDITION, THE INSTALLATION OF THE HYDRANT ON PRIVATE PROPERTY SHALL EQUAL OR EXCEED STANDARDS SET FORTH FOR THE INSTALLATION OF PUBLIC FIRE HYDRANTS IN THE CITY OF EDMONDS.
3. ALL HYDRANTS SHALL HAVE A 6" MECHANICAL JOINT (MJ) BASE. TRAFFIC MODEL PROVIDED WITH (2) 2-1/2" HOSE NOZZLES AND (1) 4-1/2" NATIONAL STANDARD THREAD (NST) PUMPER NOZZLE WITH 4" STORZ QUICK COUPLING ADAPTER.
4. PUMPER PORT SHALL FACE THE STREET OR ROADWAY FOR FIRE ENGINE ACCESS.
5. THREE FOOT MINIMUM LEVEL CLEARANCE SHALL BE MAINTAINED AROUND HYDRANT WHEN PLACING LANDSCAPING.
6. FIRE HYDRANTS SHALL BE PAINTED SAFETY YELLOW BRAND: KELLY MOORE (1700-63 SUNBURST YELLOW) OR APPROVED EQUAL.
7. RAISED PAVEMENT MARKER TO BE PLACED 4" FROM PAVEMENT C/L OR PAINTED LINE ON HYDRANT SIDE OF ROAD.
8. FIRE HYDRANT LOCATION SHALL BE SHOWN ON THE PLANS AT A LOCATION APPROVED BY THE CITY ENGINEER.



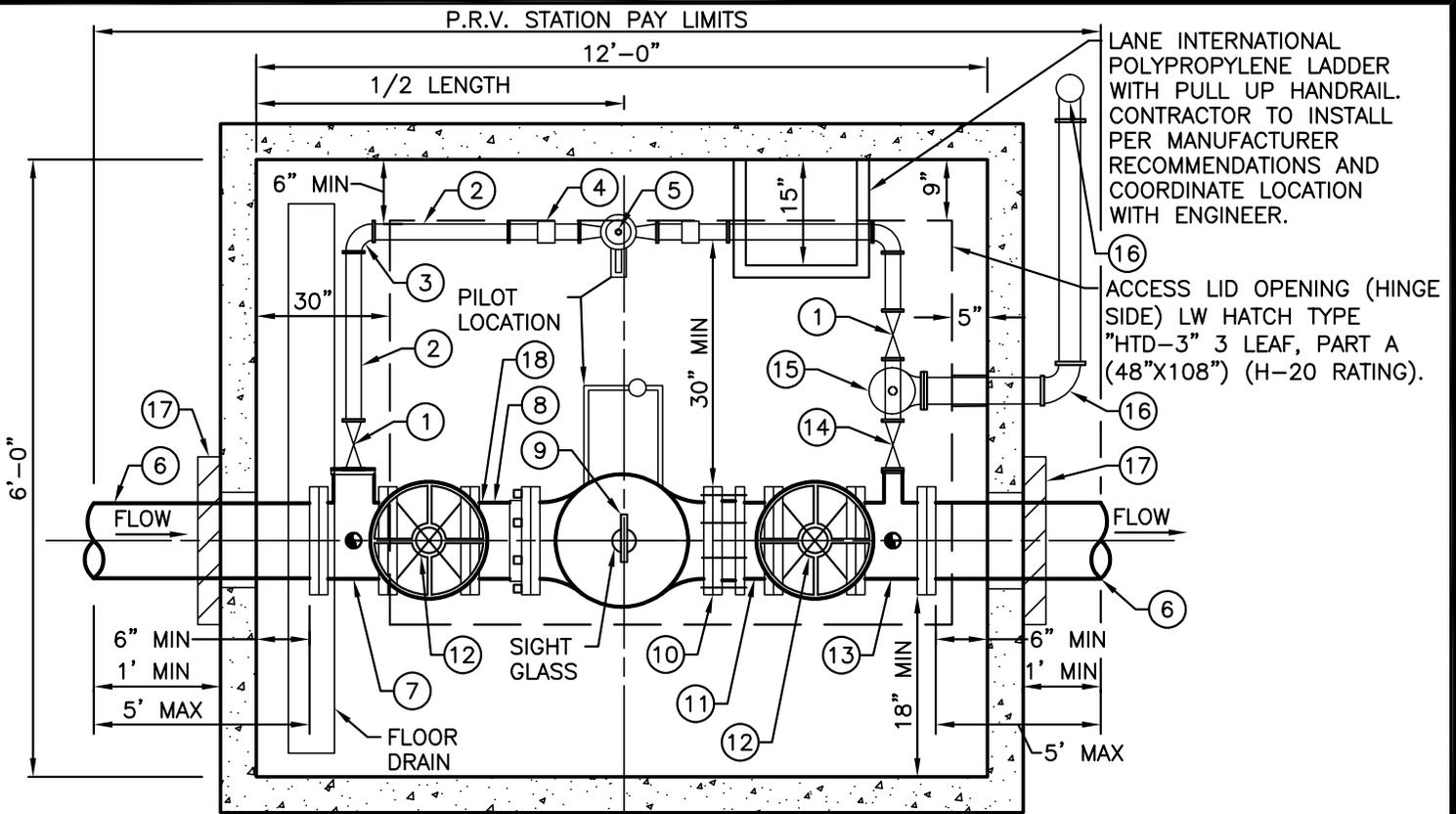
CITY OF EDMONDS
 PUBLIC WORKS
 DEPARTMENT

FIRE HYDRANT ASSEMBLY

APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

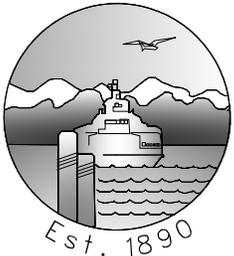
STANDARD
 DETAIL
WA-100



NOTES:

1. VAULT SHALL BE UTILITY VAULT 612-LA WITH TOP SECTION MODIFIED TO ALLOW INSTALLATION OF LW HATCH TYPE "HTD-3" 3 LEAF, PART A (48"X108")
2. VALVE INCLUDES:
 - ISOLATION COCKS
 - OPEN/CLOSE SPEED CONTROLS
 - "H" STRAINER
 - RESTRICTION FITTING
 - CRD PILOT
 - EPOXY COATING
2. INSIDE VAULT HEIGHT: 6.5' MIN
3. ACCESS LID BY LW. GUTTER DRAIN SHALL BE CONNECTED TO STRUCTURE SUMP.
4. VAULT HATCH OPENING LOCATION SHALL BE COORDINATED WITH ENGINEER PRIOR TO CONSTRUCTION TO ENSURE THAT ANY SITE SPECIFIC ACCESS ISSUES ARE ADDRESSED
5. ALL 3" STEEL PIPE FOR THE PRESSURE RELIEF DISCHARGE LINE SHALL BE SCHEDULE 40, SANDBLASTED, EPOXY LINED AND COATED

- ① 2" BRASS BALL VALVE
- ② 2" THREADED BRASS PIPE
- ③ 2" BRASS 90° BEND
- ④ 3 PIECE UNION
- ⑤ 2" THREADED CLA-VAL 90G-01BCSYKC W/VALVE POSITION INDICATOR
- ⑥ 6" DI SPOOL WITH FL X PE LENGTH TO FIT. (5' LENGTH MAXIMUM.)
- ⑦ 6" DI FL TEE WITH 2" TAPPED BLIND FLANGE SEE COE STD DTL WA-185 FOR APPURTENANCES SHOWN IN SECTION VIEW
- ⑧ 6" FL STRAINER CLA-VAL MODEL X43H
- ⑨ 6" CLA-VAL 90G-01BCSYKC W/VALVE POSITION INDICATOR (SEE NOTE #2) EPOXY LINING
- ⑩ 6" FLANGE COUPLING ADAPTER
- ⑪ 6" DI FL SPOOL. LENGTH TO FIT
- ⑫ 6" FL RSGV WITH HAND WHEEL
- ⑬ 6"x3" DI FL TEE SEE COE STD DTL WA-110B FOR APPURTENANCES SHOWN IN SECTION VIEW
- ⑭ 3" FL RSGV WITH HAND WHEEL
- ⑮ 3"x3"x2" REDUCING RUN TEE WITH 3" CLA-VAL 50-01 & SIGHT GLASS SEE COE STD DTL WA-110B FOR APPURTENANCES SHOWN IN SECTION VIEW
- ⑯ 3" STEEL DISCHARGE PIPE & 90° BEND, FIELD LOCATE PER ENGINEER
- ⑰ MEGA-LUG MID SPAN RESTRAINT AND THRUST BLOCK AND VAULT SEAL SEE COE STD DTL WA-111
- ⑱ MIPxFIP 1-1/4" BALL VALVE @ BOTTOM OF STRAINER



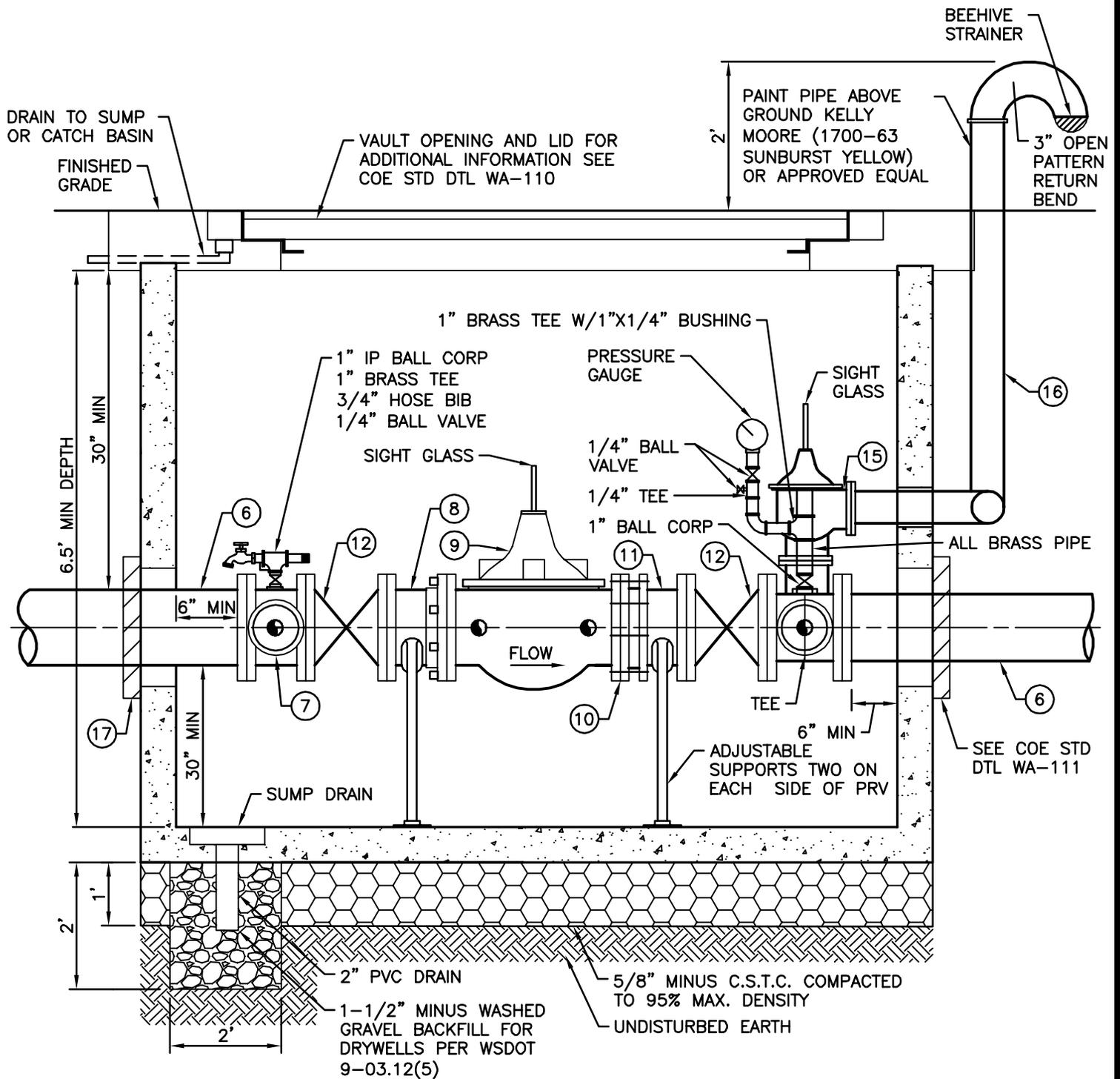
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

P.R.V. (PLAN VIEW)

APPROVED BY: R. ENGLISH

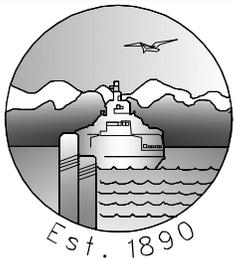
REVISION DATE
MAY 2018

STANDARD
DETAIL
WA-110A



NOTE:

SEE COE STD DTL WA-110A FOR NOTE CALL OUTS.



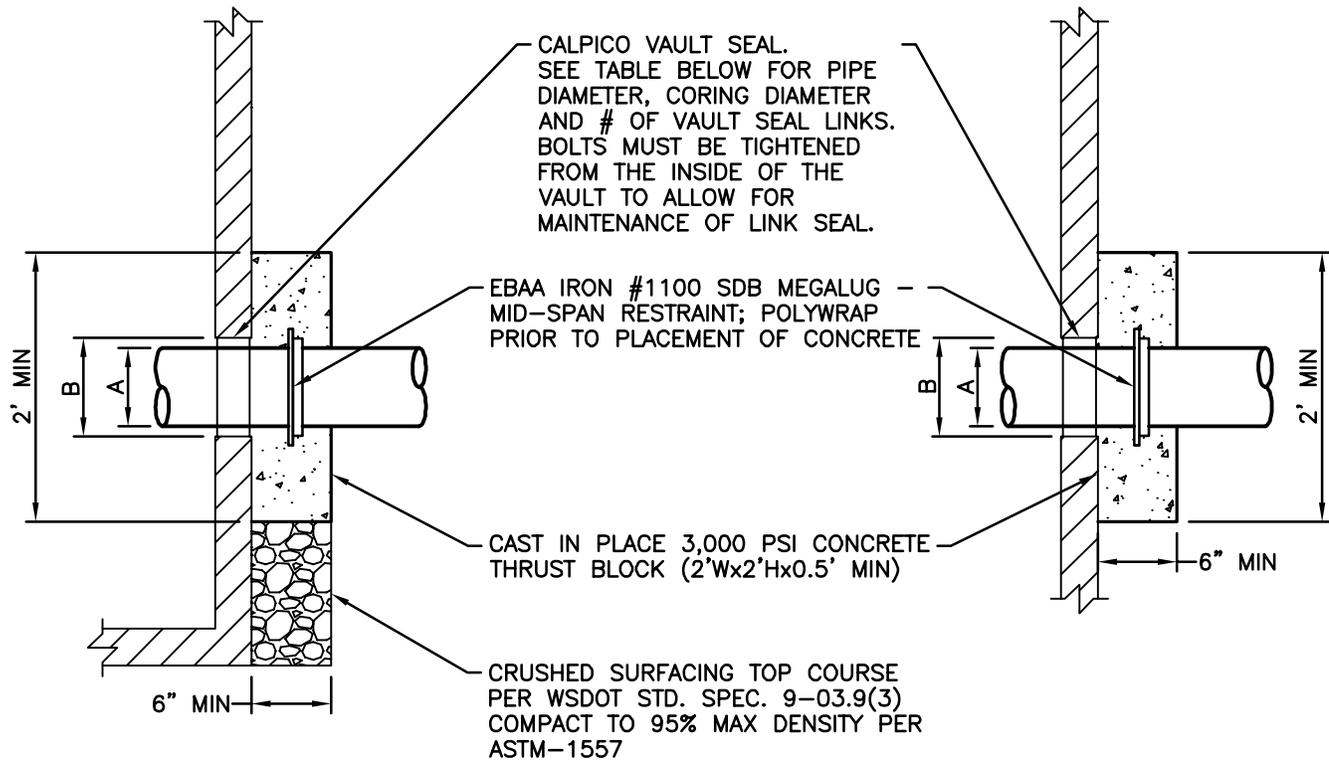
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

P.R.V. (PROFILE VIEW)

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REVISION DATE
FEBRUARY 2018

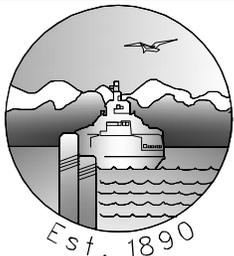
STANDARD
DETAIL
WA-110B



PROFILE VIEW

PLAN VIEW

PIPE DIAMETER A	CORE DRILL DIAMETER B	CALPICO CSL#	QTY OF CALPICO CSL
3"	6"	32	5
4"	8"	40	5
6"	10"	40	7
8"	12"	40	9



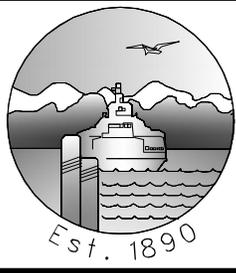
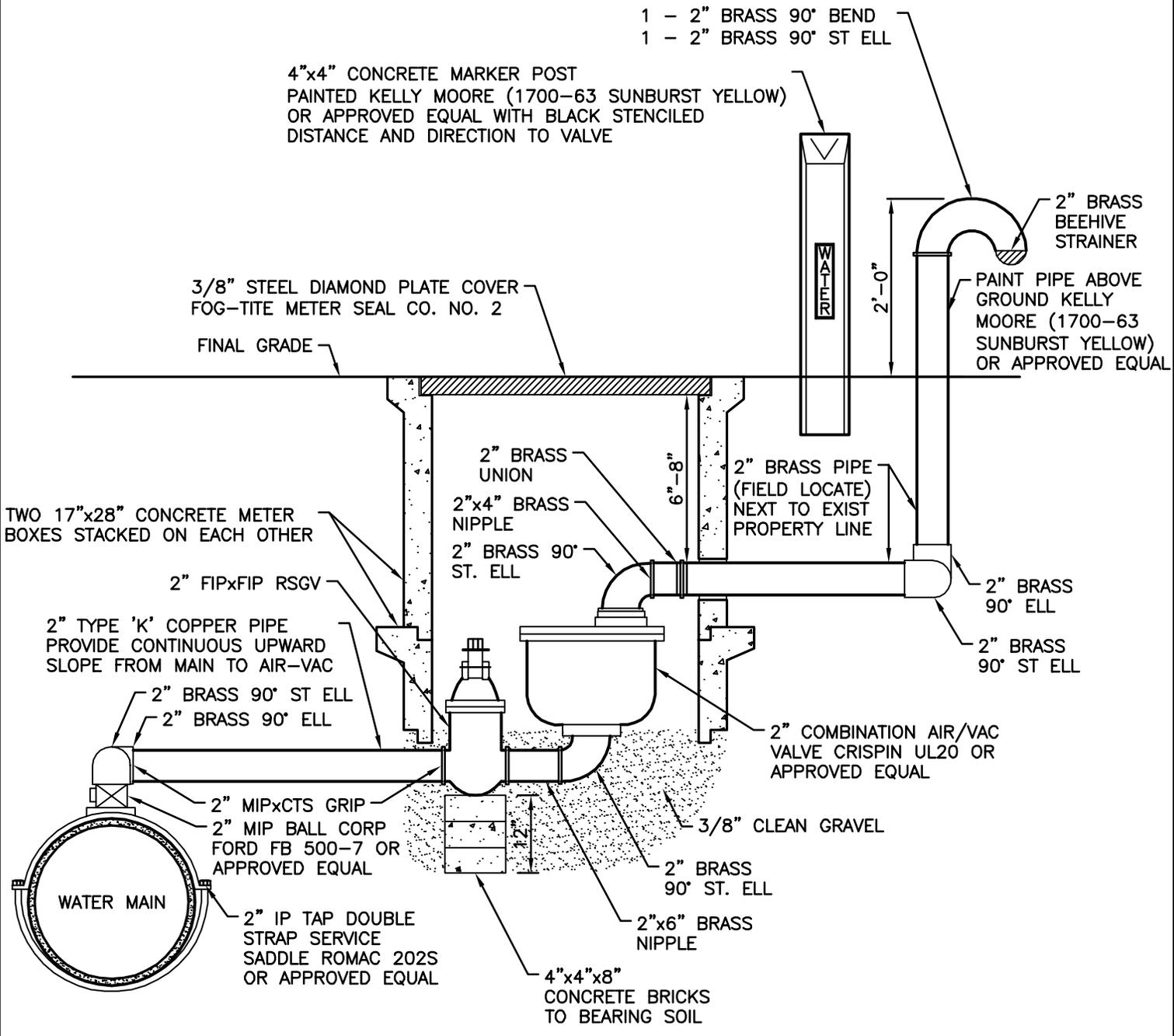
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**VAULT THRUST BLOCK
& VAULT SEAL**

APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

STANDARD
DETAIL
WA-111



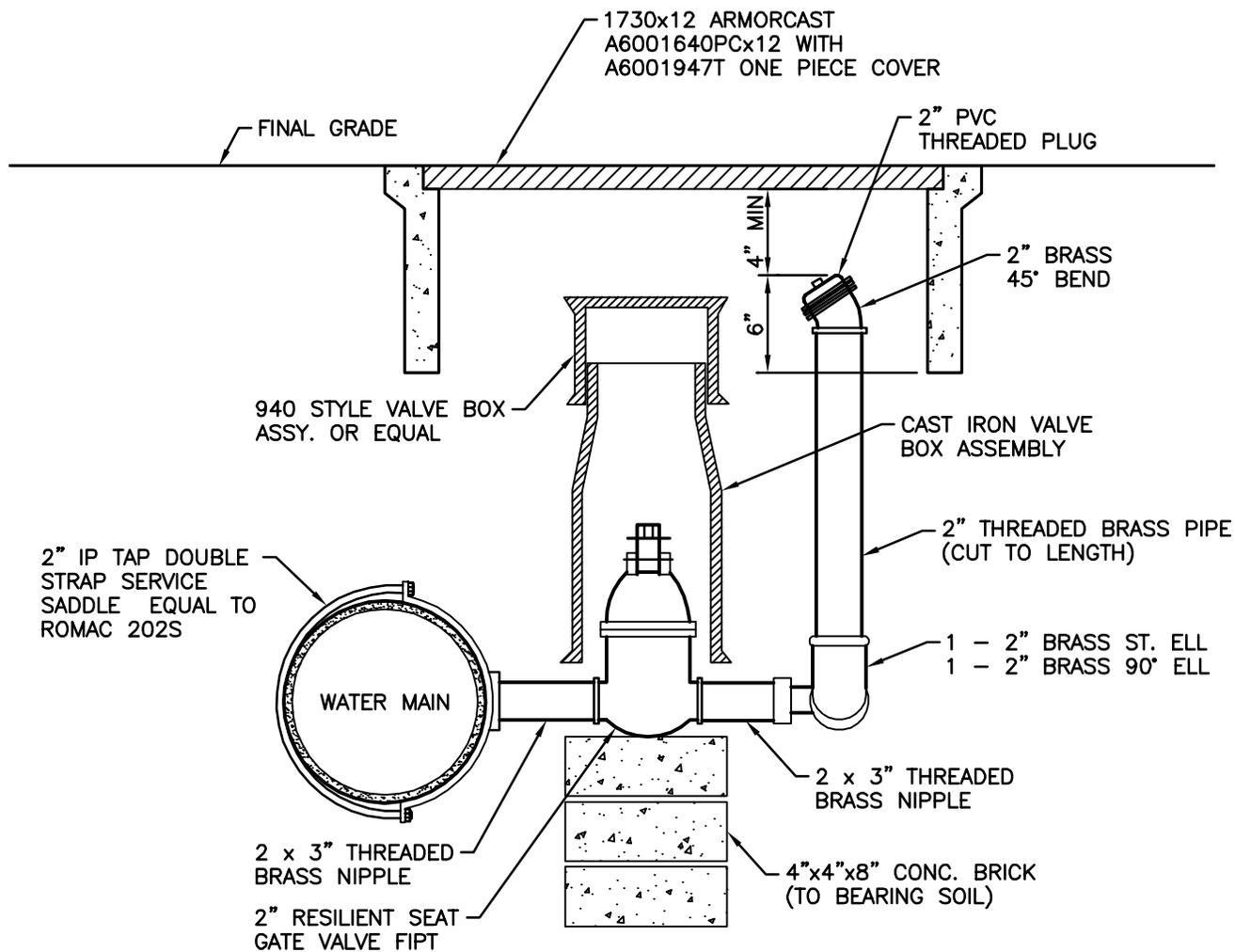
CITY OF EDMONDS
 PUBLIC WORKS
 DEPARTMENT

ARV ASSEMBLY

APPROVED BY: **R. ENGLISH**

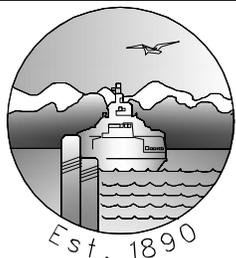
REVISION DATE
JANUARY 2018

STANDARD
 DETAIL
WA-120



NOTE:

PLACE BLOW-OFF ASSY. WITHIN 3' OF END OF MAIN



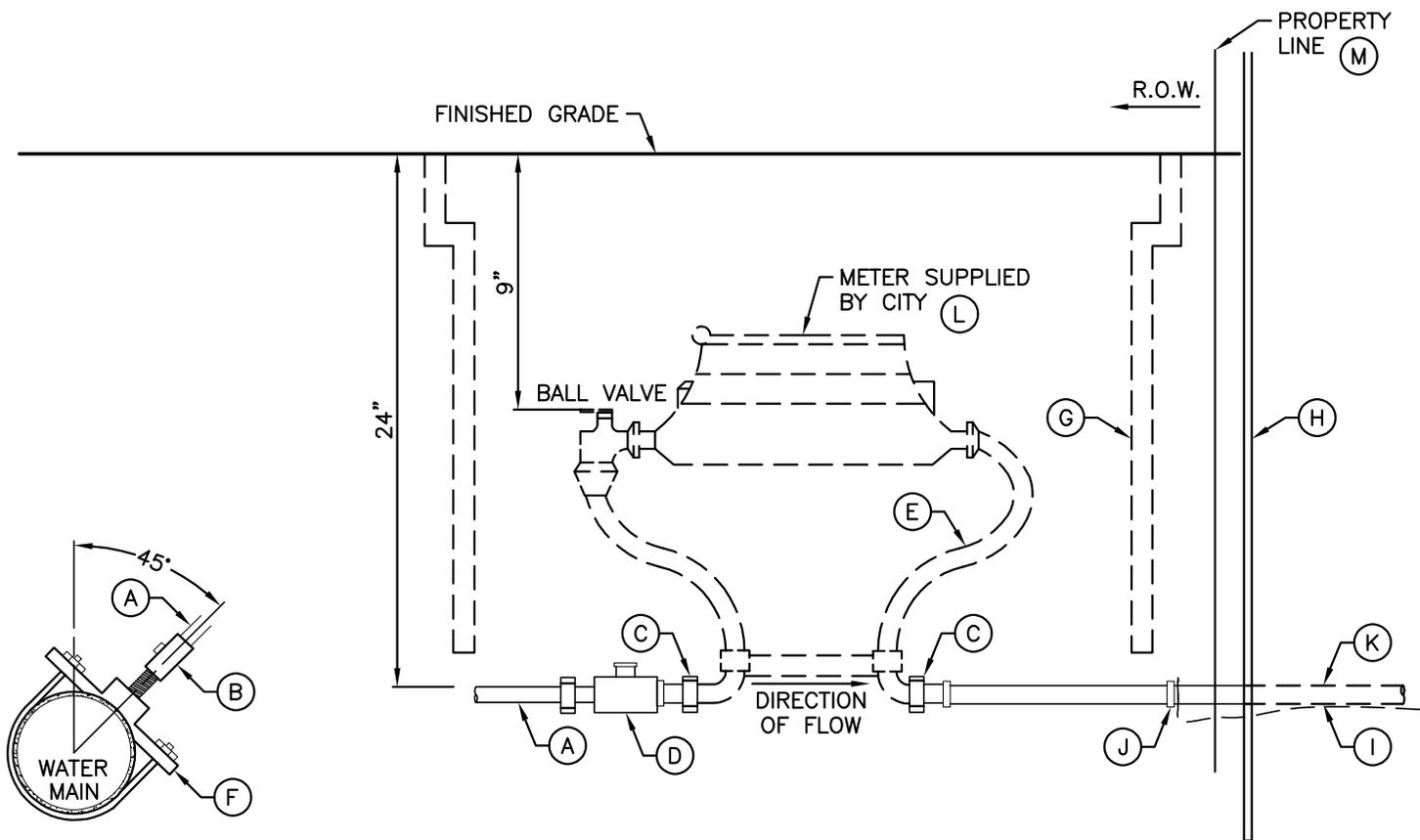
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**BLOW-OFF
ASSEMBLY**

APPROVED BY: R. ENGLISH

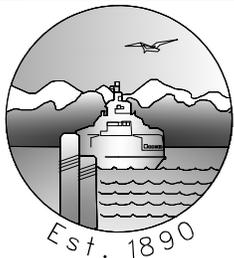
REVISION DATE
JANUARY 2018

STANDARD
DETAIL
WA-121



MATERIAL LIST:

- (A) ALL 1" SERVICES TO BE TYPE "K" SOFT COPPER TUBING
- (B) 1" BALL CORP. STOP WITH CC THREAD INLET AND COPPER (CTS) GRIP OUTLET (FORD OR MUELLER)
- (C) DUAL PURPOSE UNION
- (D) MIPT X CTS COMPRESSION FITTING BALL VALVE CURB STOP EQUAL TO FORD B84-444Q FOR 1"
- (E) **WHEN REPLACING EXISTING SERVICES:** 1" METER SETTER WITH ANGLE BALL METER VALVE 15" HIGH WITH DUAL PURPOSE UNIONS ON INLET AND OUTLET, HORIZONTAL IN HORIZONTAL, OUTLET EQUAL TO FORD VB74-15W-11-44
WHEN PLACING NEW SERVICES: USE SAME AS ABOVE AND ADD A SINGLE CHECK, EQUAL TO FORD VBH74-15W-11-44
- (F) 1" CC TAP SERVICE SADDLE EQUAL TO ROMAC 101S
- (G) IN UNPAVED AREAS: CARSON 1324 MSBCF WITH DUCTILE IRON COVER AND CAST IRON READER DOOR;
 IN PAVED AREAS: ARMOR CAST A6001946PCX12 BOX W/ A600196969 RCI LID
- (H) FOR VACANT LOT (FUTURE USE) LOCATION MARKED WITH PAINTED 2" X 4" STAKE WITH "WATER" STENCILED ON IT
- (I) 14 GA. VINYL COATED WIRE TRACER (TAPED TO PLASTIC PIPE EVERY 10') TO BE GROUNDED AT METER AND HOUSE
- (J) SCHEDULE 40 3/4" OR 1" PLUG, REMOVE WHEN CONNECTION IS MADE TO CUSTOMER LINE WITH COMPRESSION FITTING
- (K) WATER SERVICE TO HOUSE, INSTALLED BY OWNER/CONTRACTOR (PER PLUMBING CODE)
- (L) PROPERTY OWNER RESPONSIBLE FOR PURCHASING 3/4" OR 1" METER THROUGH THE CITY AT DEVELOPMENT SERVICES DEPARTMENT; CITY WILL SUPPLY AND INSTALL METER AFTER PURCHASE; IF USING 3/4" METER, CONTRACTOR WILL PROVIDE REDUCERS
- (M) BACK SIDE OF METER BOX SHALL BE SET AT THE PROPERTY LINE UNLESS APPROVED BY THE CITY ENGINEER. METER BOXES SHALL NOT BE SET IN DRIVEWAY AREAS UNLESS TRAFFIC RATED BOX IS APPROVED BY CITY ENGINEER.



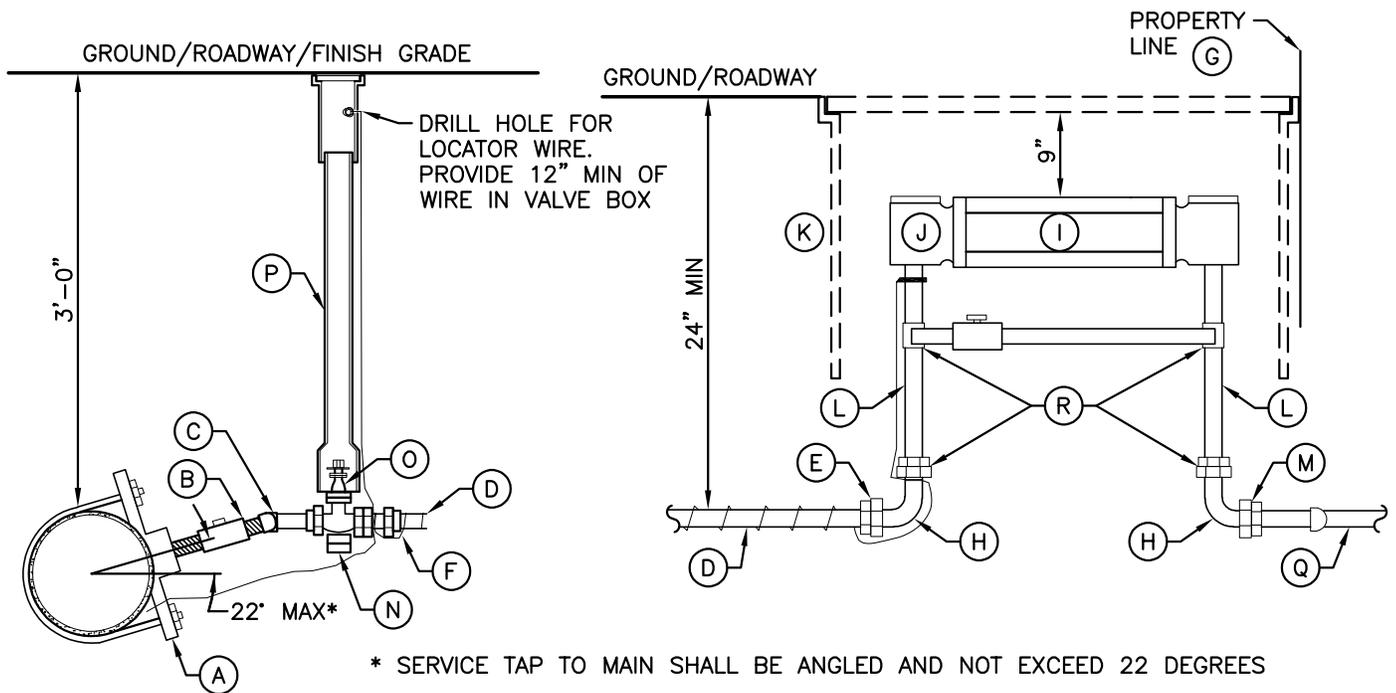
CITY OF EDMONDS
 PUBLIC WORKS
 DEPARTMENT

**3/4" - 1"
 WATER SERVICE
 INSTALLATION**

APPROVED BY: R. ENGLISH

REVISION DATE
 AUGUST 2019

STANDARD
 DETAIL
WA-130



* SERVICE TAP TO MAIN SHALL BE ANGLED AND NOT EXCEED 22 DEGREES

MATERIAL LIST:

- (A) 2" (IP TAP) DOUBLE STRAP SADDLE EQUAL TO ROMAC STYLE 202'S
- (B) 2" BRASS IP BALL CORP
- (C) 2 - 2" BRASS STREET ELLS FOR SWING JOINT
- (D) REHAU MUNICIPEX PIPE (2") WITH STAINLESS STEEL INSERT
- (E) 2" MIPT X CTS GRIP FITTING
- (F) TRACER WIRE: #12 AWG, SOLID COPPER CLAD STEEL, HDPE COATED. CONNECTION AT THE METER SETTER SHALL BE MADE WITH AN ALL STAINLESS STEEL HOSE CLAMP. CONNECTION AT MAIN LINE WIRE SHALL BE MADE WITH A SPLIT-BOLT CONNECTOR. STRIP COATING PRIOR TO CONNECTION. WRAP WIRE AROUND PIPE.
- (G) BACK SIDE OF METER BOX SHALL BE SET AT THE PROPERTY LINE UNLESS APPROVED BY THE CITY ENGINEER. METER BOXES SHALL NOT BE SET IN DRIVEWAY AREAS UNLESS LOCATION AND TRAFFIC RATED BOX IS APPROVED BY CITY ENGINEER.
- (H) 2" BRASS ELL
- (I) METER SPACER TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR. SPACER MUST HAVE A MINIMUM OF 8 - 1/4" HOLES DRILLED IN SPACER BODY. NOTE: PROPERTY OWNER RESPONSIBLE FOR PURCHASING 1-1/2" OR 2" METER THROUGH THE CITY DEVELOPMENT SERVICES DEPARTMENT. THE CITY WILL SUPPLY METER AFTER PURCHASE FOR CONTRACTOR INSTALL. IF 1-1/2" METER IS USED CONTRACTOR WILL SUPPLY REDUCERS TO CONNECT METER.
- (J) WHEN REPLACING EXISTING SERVICES: EQUAL TO FORD VBB87-12HB-1177
WHEN PLACING NEW SERVICES (HIGH BYPASS): EQUAL TO FORD VBH87-12HB-1177
- (K) METER BOX ARMORCAST A6001640PCX18, WITH ARMORCAST LID A6001947TRCI-H7 OR APPROVED EQUAL STRAIGHT WALL POLYMER BOX (NO MOUSEHOLES) WITH 20K COVER WITH HINGED CI READER
- (L) 2" BRASS PIPE (L.T.F)
- (M) SCHEDULE 40 2" PVC CAP OR PLUG REMOVED WHEN CONNECTION MADE TO CUSTOMER
- (N) 4"x4"x8" CONCRETE BLOCK SUPPORTS
- (O) 2" RESILIENT WEDGE GATE VALVE (FIP x FIP) WITH 2" AWWA OPERATING NUT
- (P) 2 PIECE VALVE BOX - TOP SECTION TO BE RICH 940 STYLE 18" WITH REGULAR BASE SECTION LENGTH TO FIT
- (Q) WATER SERVICE TO BUILDING INSTALLED AND CONNECTED AT METER SETTER BY OWNER/CONTRACTOR VIA COMPRESSION FITTING
- (R) 2" MIPT X I.P. COMPRESSION FITTING



CITY OF EDMONDS
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**1-1/2" & 2"
WATER SERVICE
INSTALLATION**

APPROVED BY: R. ENGLISH

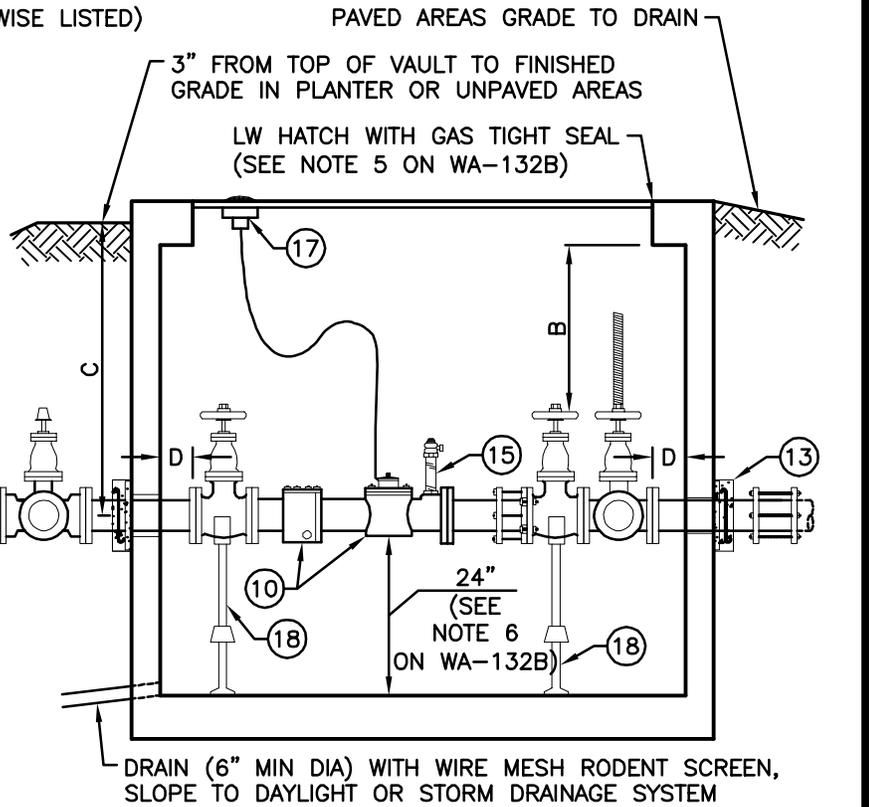
REVISION DATE
NOVEMBER 2018

STANDARD
DETAIL
WA-131

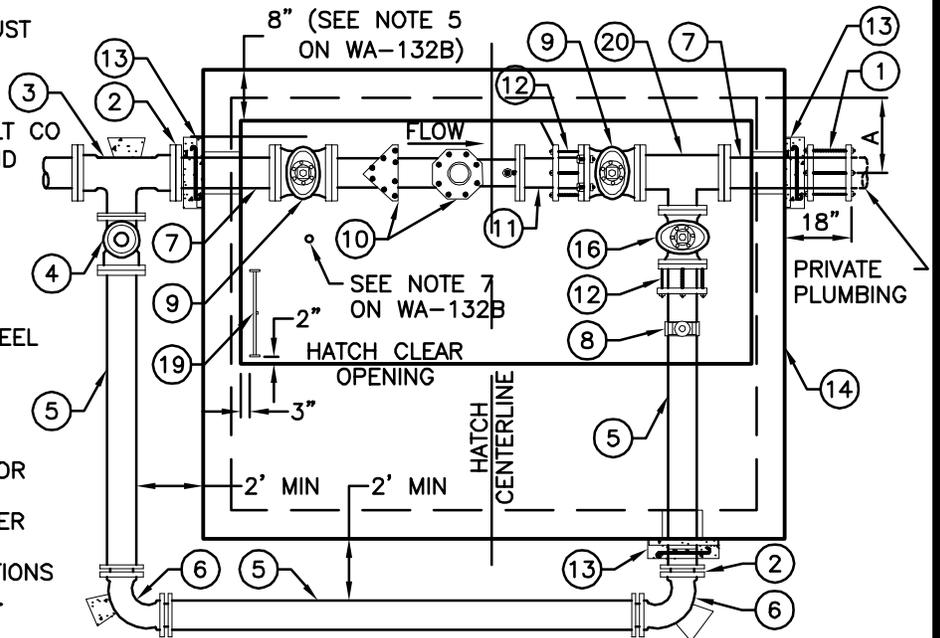
MATERIAL LIST

(ALL SIZES ARE SAME AS METER UNLESS OTHERWISE LISTED)

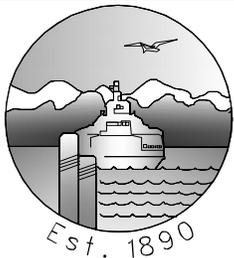
- ① 1-MECHANICAL LONG BODY CPLG
- ② 2-4"x3" REDUCER, MJ & 3' SPOOL FOR 3" SERVICE ONLY
- ③ 1-TEE, MJxFL
- ④ 1-GATE VALVE, FLxMJ (W/VALVE BOX & COVER)
- ⑤ 3-DI PIPE, PE, LENGTH TO FIT
- ⑥ 2-90° BEND, MJ
- ⑦ 2-DI PIPE, PExFL LENGTH TO FIT
- ⑧ 1-EPOXY COATED SERVICE SADDLE, FORD FS202 (TAP POINTED UP AT 12-O'CLOCK) OR EQUAL, 1-CORP STOP, MIPT, FORD FB500-7 OR APPROVED EQUAL, WITH 2" FIPTx2" MNST ADAPTER AND CAP (2-1/2" FNST)
- ⑨ 2-GATE VALVES, FL WITH HAND WHEEL
- ⑩ SENSUS OMNI C2 METER W/INTERNAL STRAINER, W/ELECTRONIC RESOLUTION (100'S OF CUBIC FEET FOR 3" METER, 500 CUBIC FEET FOR 4-6" METER)
- ⑪ 1-DI ADAPTER FL.xPE, LENGTH TO FIT
- ⑫ 2-FLANGED COUPLING ADAPTER, EQUAL TO ROMAC FCG
- ⑬ MEGA-LUG MID-SPAN RESTRAINT AND THRUST BLOCK & VAULT SEAL. SEE COE STD DTL WA-111
- ⑭ PRECAST CONCRETE VAULT BY UTILITY VAULT CO (SEE TABLE FOR MODEL #) W/TWO DIAMOND PLATE DOORS RATED FOR HS-30 LOADING
- ⑮ 1-FORD MIPT BALL CORP WITH THREADED END CAP SIZED TO FIT OMNI C2 TESTPORT SEE TABLE**
- ⑯ 1-OS & Y GATE VALVE, FL WITH HAND WHEEL
- ⑰ TR/PL SENSOR (TO MOUNT IN VAULT ACCESS DOOR)
- ⑱ 2-ADJUSTABLE STANCHION BOLTED TO FLOOR
- ⑲ LANE INTERNATIONAL POLYPROPYLENE LADDER WITH PULL UP HANDRAIL. CONTRACTOR TO INSTALL PER MANUFACTURER RECOMMENDATIONS AND COORDINATE LOCATION WITH ENGINEER.
- ⑳ 1-TEE, FL



ELEVATION VIEW



PLAN VIEW



CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**3", 4" & 6"
WATER SERVICE
& METER**

APPROVED BY: **R. ENGLISH**

REVISION DATE
FEBRUARY 2018

STANDARD
DETAIL
WA-132A

NOTES:

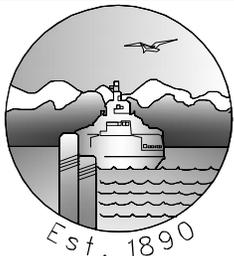
1. ALL MATERIALS, INCLUDING METER SHALL BE FURNISHED BY THE CONTRACTOR.
2. ALL PIPE & FITTINGS 3" & LARGER SHALL BE CEMENT LINED D.I.P. CL 52.
3. TEE WITH (3) GATE VALVES IS REQUIRED AT DISTRIBUTION MAIN.
4. VAULTS SHALL NOT BE INSTALLED IN AREAS SUBJECT TO VEHICULAR TRAFFIC.
5. VAULT COVER SHALL INCLUDE TWO LOCKING ALUMINUM LW TYPE HATCH DOORS (PART NO. HDD-1D (36"x72") DOORS SHALL HAVE SLIP RESISTANT TREATMENT. DOORS SHALL BE CAST IN COVER WITH 8" SPECIAL OFFSET FROM VAULT WALL, AS SHOWN. COVER TO READ "WATER".
6. PROVIDE 24" CLEARANCE BETWEEN VAULT FLOOR & BOTTOM OF COMPOUND METER. WHERE ELEVATION OF VAULT FLOOR IS TOO LOW TO DRAIN TO DAYLIGHT OR TO STORM SYSTEM, THIS CLEARANCE CAN BE REDUCED TO A MINIMUM OF 12". SUBSTITUTION OF A SHORTER VAULT TO ALLOW FLOOR TO DRAIN BY GRAVITY SHALL BE SUBJECT TO APPROVAL OF THE CITY ENGINEER. SUBSTITUTE VAULTS ARE AS FOLLOWS:
 3" 575-LA WITH 57TL-2-332P COVER (WITH SPECIAL OFFSET+LW ALUMINUM HATCH).
 4" 675-WA WITH 675-TW-2-332P COVER (WITH SPECIAL OFFSET+LW ALUMINUM HATCH).
7. PROVIDE 2-1/4" DIAMETER OPENING IN ALUMINUM DOOR FOR TR/PL SENSOR.
8. ALL FITTINGS OUTSIDE VAULT SHALL INCLUDE THRUST BLOCKING AND JOINT RESTRAINT DEVICES (MEGALUGS OR APPROVED EQUAL).
9. PIPE, FITTINGS, AND VALVES OUTSIDE VAULT SHALL BE 4" FOR 3" SERVICE INSTALLATIONS.
10. A MINIMUM 2 FEET OF LEVEL UNOBSTRUCTED AREA IS REQUIRED AROUND HATCHES.
11. PROPERTY OWNER RESPONSIBLE FOR PURCHASING METER THROUGH THE CITY DEVELOPMENT SERVICES DEPARTMENT.

METER SIZE***	MAIN SIZE OUT OF VAULT	BYPASS	CORP STOP FOR FLUSH PORT SIZE	MIN. CLEARANCES				VAULT MODEL	VAULT COVER * (W/SPECIAL OFFSET)	M.I.P.T. BALL CORP**
				A	B	C	D			
3"	4"D.I.	4" D.I.	2"	10"	16"	2'-8"	6"	577-LA	57TL-2-332P	FB500-4
4"	4"D.I.	4" D.I.	2"	12"	16"	2'-8"	6"	676-WA	676-TW-2-332P	FB500-6
6"	6"D.I.	6" D.I.	2"	12"	16"	3'-2"	6"	4484-LA	4484-TL2-332P	FB500-6

* COVER MODIFIED PER NOTE 5

** MIPT CORP PER KEYED NOTE (15)

*** VALVE, PIPE & FITTINGS INSIDE VAULT SHALL MATCH METER SIZE



CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

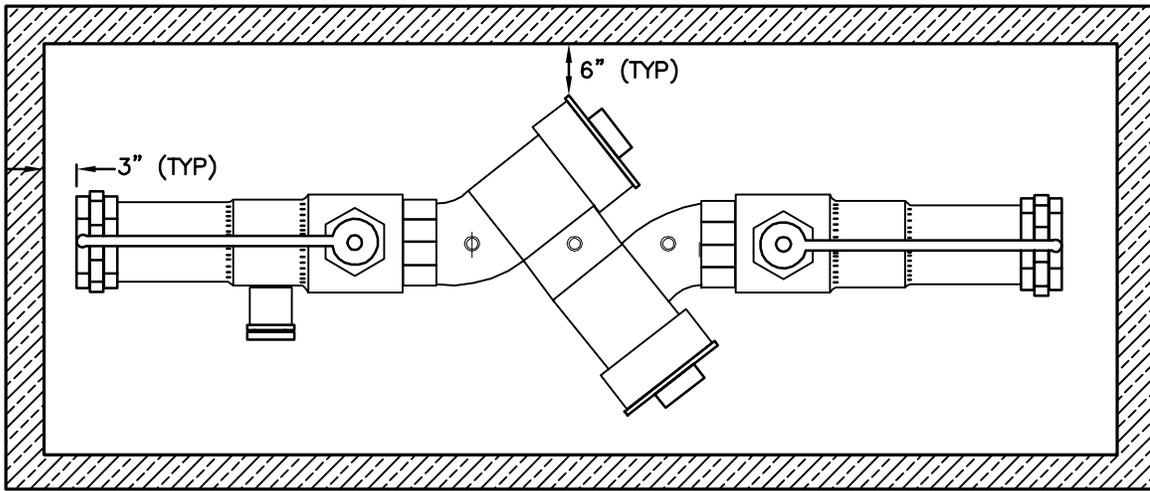
**3", 4" & 6"
WATER SERVICE
& METER NOTES**

APPROVED BY: **R. ENGLISH**

REVISION DATE
FEBRUARY 2018

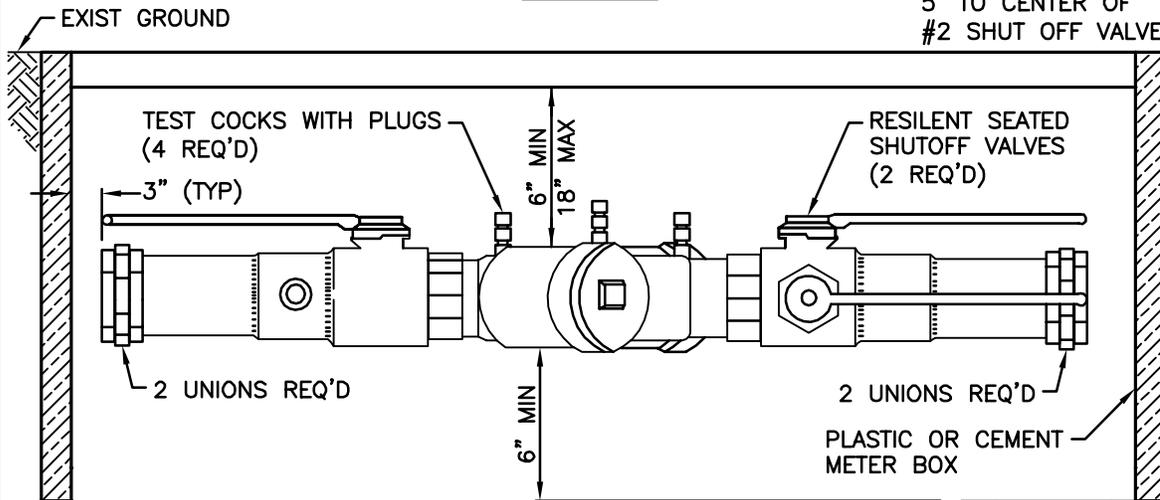
STANDARD
DETAIL
WA-132B

**VERTICAL
INSTALLATION**

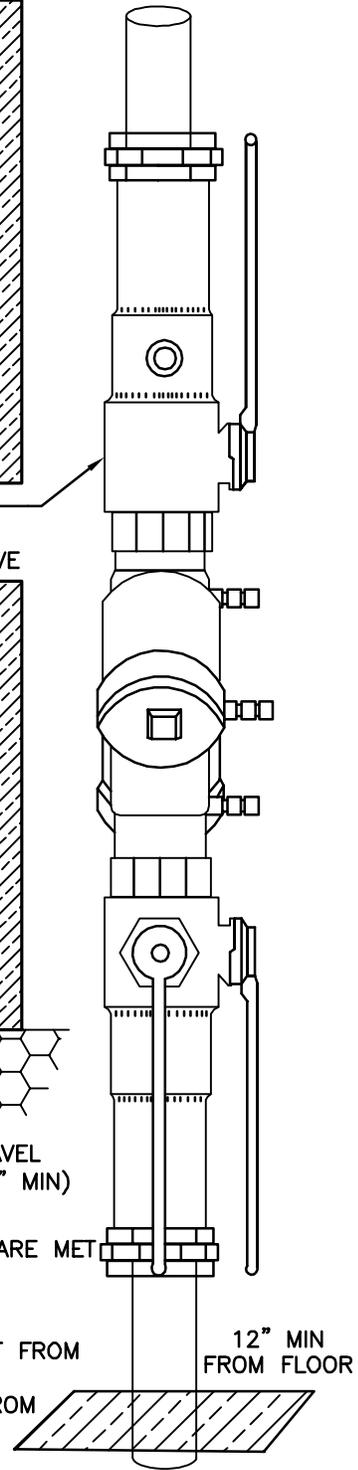


TOP VIEW

NO HIGHER THAN
5' TO CENTER OF
#2 SHUT OFF VALVE



SIDE VIEW

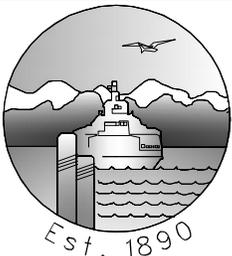


12" MIN
FROM FLOOR

NOTES:

1. APPROVED DOUBLE CHECK VALVE ASSEMBLY TO LAY HORIZONTAL WITH GROUND
 2. DESIGNED FOR BACK SIPHONAGE AND BACK PRESSURE
 3. TEST COCKS TO EITHER FACE OUTWARDS OR UPWARDS FROM ASSEMBLY
 4. ALL TEST COCKS MUST BE PROVIDED WITH PVC PLUGS
 5. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACK FLOW PREVENTER
 6. THE DCVA CAN BE INSTALLED ABOVE OR BELOW THE GROUND PROVIDED ALL CLEARANCES ARE MET
 7. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING
 8. MUST BE PROTECTED FROM FREEZING CONDITIONS
 9. THE BACK FLOW PREVENTION ASSEMBLY MUST BE A WASHINGTON STATE APPROVED MODEL
 10. IF INSTALLED INSIDE A BUILDING THE DCVA SHALL BE INSTALLED NO HIGHER THAN 5 FEET FROM FLOOR TO C/L OF ASSY AND A MIN OF 12 INCHES FROM FLOOR TO BOTTOM OF ASSY IF INSTALLED IN A VERTICAL CONFIGURATION, ASSY MUST BE A MINIMUM OF 12 INCHES FROM FLOOR, AND NO HIGHER THAN 5 FEET FROM FLOOR TO C/L OF #2 SHUT OFF VALVE
- *ONLY ASSY WITH APPROVAL FROM WADOH

MUST BE TESTED AFTER INSTALLATION AND YEARLY THEREAFTER BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. THE TEST REPORT MUST BE SENT TO THE CITY OF EDMONDS WATER DIVISION



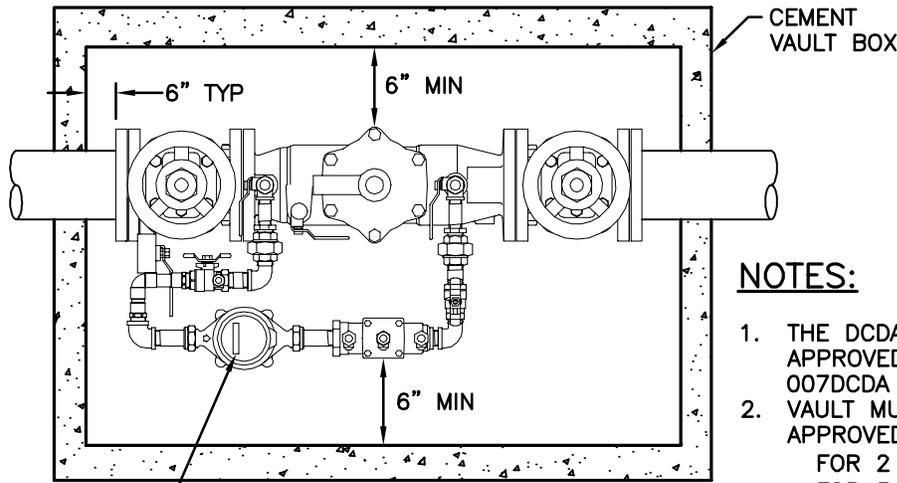
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**RESIDENTIAL DOUBLE
CHECK VALVE ASSEMBLY**
(STANDARD DCVA 2" & SMALLER)

APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

STANDARD
DETAIL
WA-140



PLAN VIEW

NOTES:

1. THE DCDA SHALL BE A WASHINGTON STATE APPROVED – MODEL SHALL BE WATTS 007DCDA OR APPROVED EQUAL.
2. VAULT MUST BE UTILITY VAULT MODEL OR APPROVED EQUAL.
FOR 2 INCH DCDA: UTILITY VAULT #644-LA
FOR 3 INCH DCDA: UTILITY VAULT #675-LA
3. LIDS FOR VAULT SHALL BE LW HATCH – WATERTIGHT WITH GUTTER AND SIDE DRAIN. SIZE SHALL BE 3' WIDE x 6' LONG.
4. APPROVED DOUBLE CHECK DETECTOR ASSEMBLY TO LAY HORIZONTAL WITH THE GROUND.
5. TEST COCKS TO EITHER FACE OUTWARDS OR UPWARDS FROM ASSEMBLY.
6. ALL TEST COCKS MUST BE PROVIDED WITH PVC PLUGS.
7. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF ASSEMBLY.
8. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.
9. MUST BE PROTECTED FROM FREEZING CONDITIONS.
10. IF SOIL CONDITIONS OR PRESENCE OF GROUND WATER DO NOT ALLOW DRAINAGE TO SUMP, DRAIN SHALL BE DIRECTED TO ONSITE DRAINAGE SYSTEM.

SENSOR SR2 W/TRPL
REMOTE READ, TRPL
SHALL BE INSTALLED
ON HATCH CLOSE TO
HINGE

H-20 DOUBLE LEAF TRAFFIC
BEARING LID FOR ALL AREAS
EXCEPT IN HIGH TRAFFIC AREAS
USE H-30 DOUBLE LEAF
TRAFFIC RATED LID IN HIGH
TRAFFIC AREAS (IE: DRIVEWAY
ENTRANCES)

EXISTING
GROUND

36"–48" *
18"–25" **

6" MIN
SIDE DRAIN
DRAIN TO GRAVEL SUMP
OR TO CATCH BASIN

6" TYP

12" MIN

GRINNEL
SADDLE

CONNECT TO EXISTING
SERVICE LINE
PROVIDE BENDS &
CONNECTIONS AS REQUIRED

5/8" MINUS C.S.T.C.
GRAVEL (12" MIN)
COMPACTED TO 95%
MAX DENSITY

FLOOR DRAIN

2" PVC

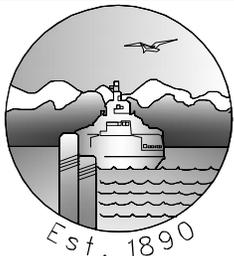
WASHED ROCK DRAIN SUMP (SIZED PER DESIGN)
(SEE NOTE 10)

SIDE VIEW

* SIZE OF PIPE USED DICTATES MINIMUM DEPTH OF BOX INCLUDING REQUIRED CLEARANCES.

** HEIGHT TO TOP OF STEM BASED ON THE SIZE OF PIPE USED.

MUST BE TESTED AFTER INSTALLATION AND YEARLY THEREAFTER BY A WASHINGTON STATE CERTIFIED DCDA ASSEMBLY TESTER. THE TEST REPORT MUST BE SENT TO THE CITY OF EDMONDS WATER DIVISION.



CITY OF EDMONDS
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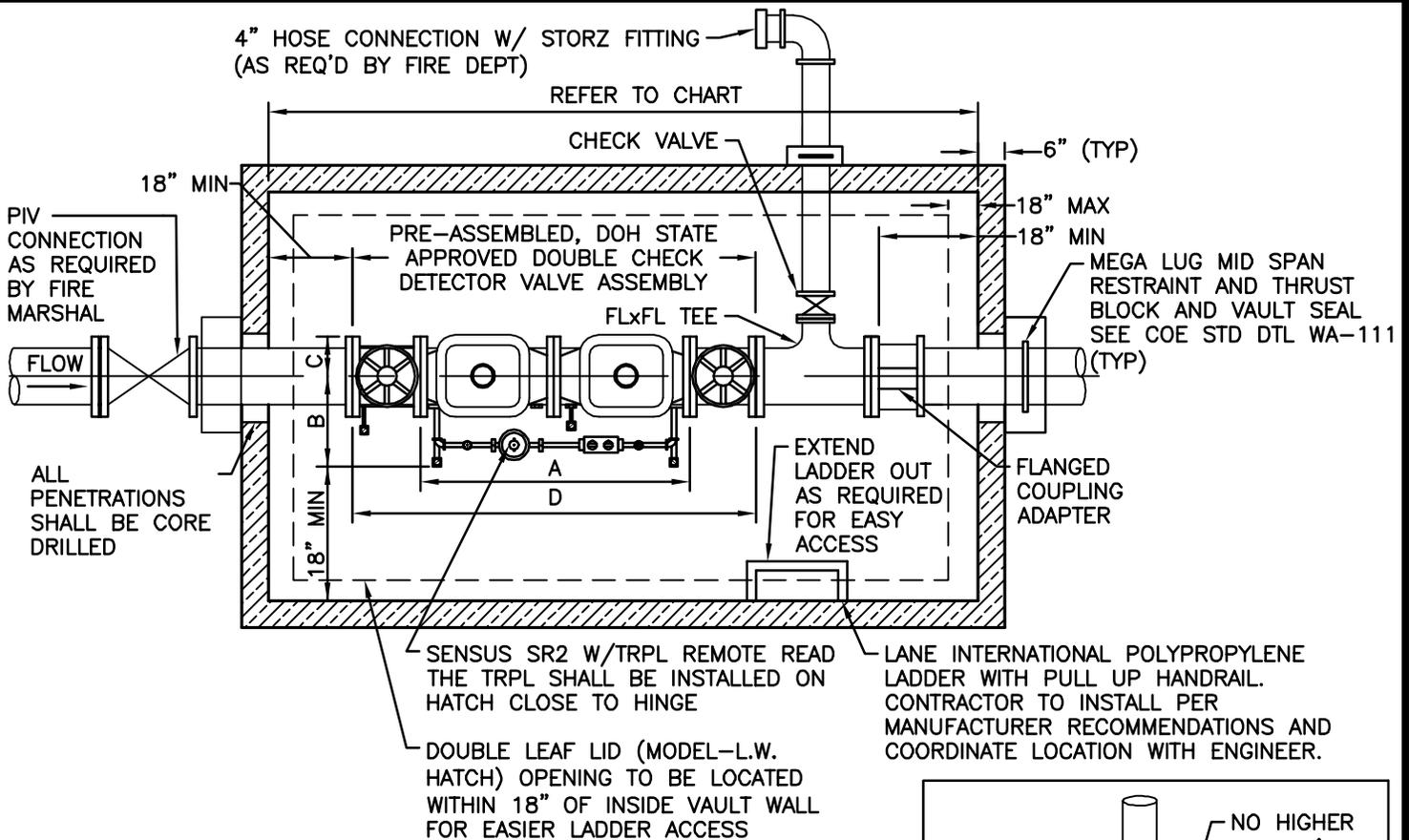
**2"–3" DOUBLE CHECK
DETECTOR ASSEMBLY
(DCDA) (NEW)**

APPROVED BY: R. ENGLISH

REVISION DATE
JANUARY 2018

STANDARD
DETAIL

WA-141



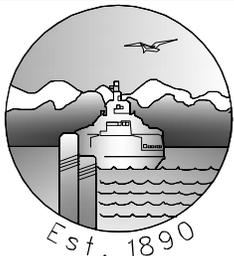
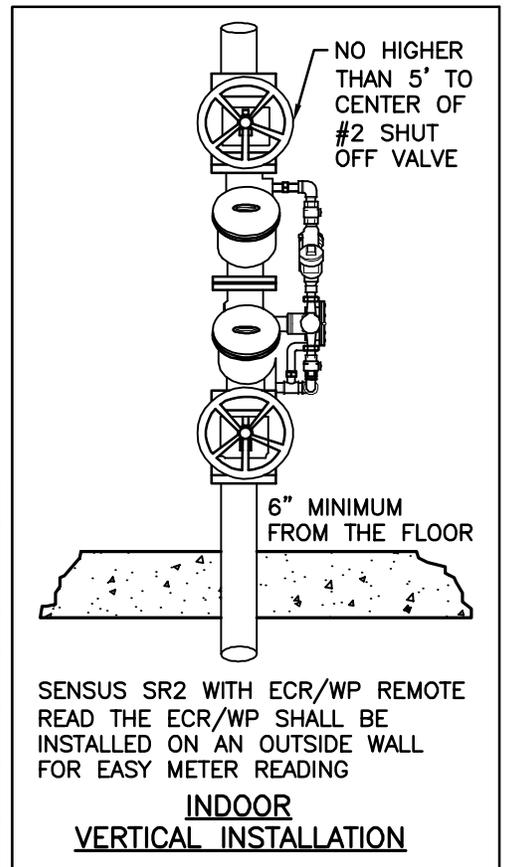
NOTES:

EXTERIOR PLAN VIEW

1. ACCESSES BY L.W. HATCH: TYPE "D" (HD-10 PEDESTRIAN LOAD; H-30 TRAFFIC LOAD) WITH SIDE OUTLET GUTTER DRAIN.
2. DCDA MUST BE TESTED BY A CERTIFIED BACKFLOW ASSEMBLY TESTER.
3. ALL TEST COCKS MUST BE PROVIDED WITH PCV PLUGS.
4. A CITY APPROVED VALVE IS REQUIRED BETWEEN THE SUPPLY MAIN AND THE VAULT.
5. SEE COE STD DTLS WA-183 AND WA-184 FOR DCDA LOCATION AND CONNECTION REQUIREMENTS.
6. ASSEMBLY MUST BE TESTED AFTER INSTALLATION AND YEARLY THEREAFTER BY A WASHINGTON STATE CERTIFIED DCDA ASSEMBLY TESTER. REPORT MUST BE SENT TO THE CITY OF EDMONDS WATER DIVISION.
7. SEE COE STD DTL WA-142B FOR PROFILE VEIW.

VAULT SIZES

METER SIZE AND TYPE	APPROXIMATE EQUIPMENT DIMENSIONS				MINIMUM INSIDE VAULT DIMENSIONS (EXCLUDES SIAMESE CONNECTION)		
	A	B	C	D	LENGTH	WIDTH	HEIGHT
4" x 3/4"	2'-9"	1'-1"	0'-6"	4'-3"	10'-0"	5'-0"	6'-6"
6" x 3/4"	3'-9"	1'-2"	0'-8"	5'-6"	11'-0"	6'-0"	6'-6"
8" x 3/4"	4'-5"	1'-4"	0'-9"	6'-4"	12'-0"	6'-0"	6'-6"
10" x 1"	6'-0"	1'-8"	0'-11"	8'-6"	14'-6"	7'-0"	6'-6"



CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

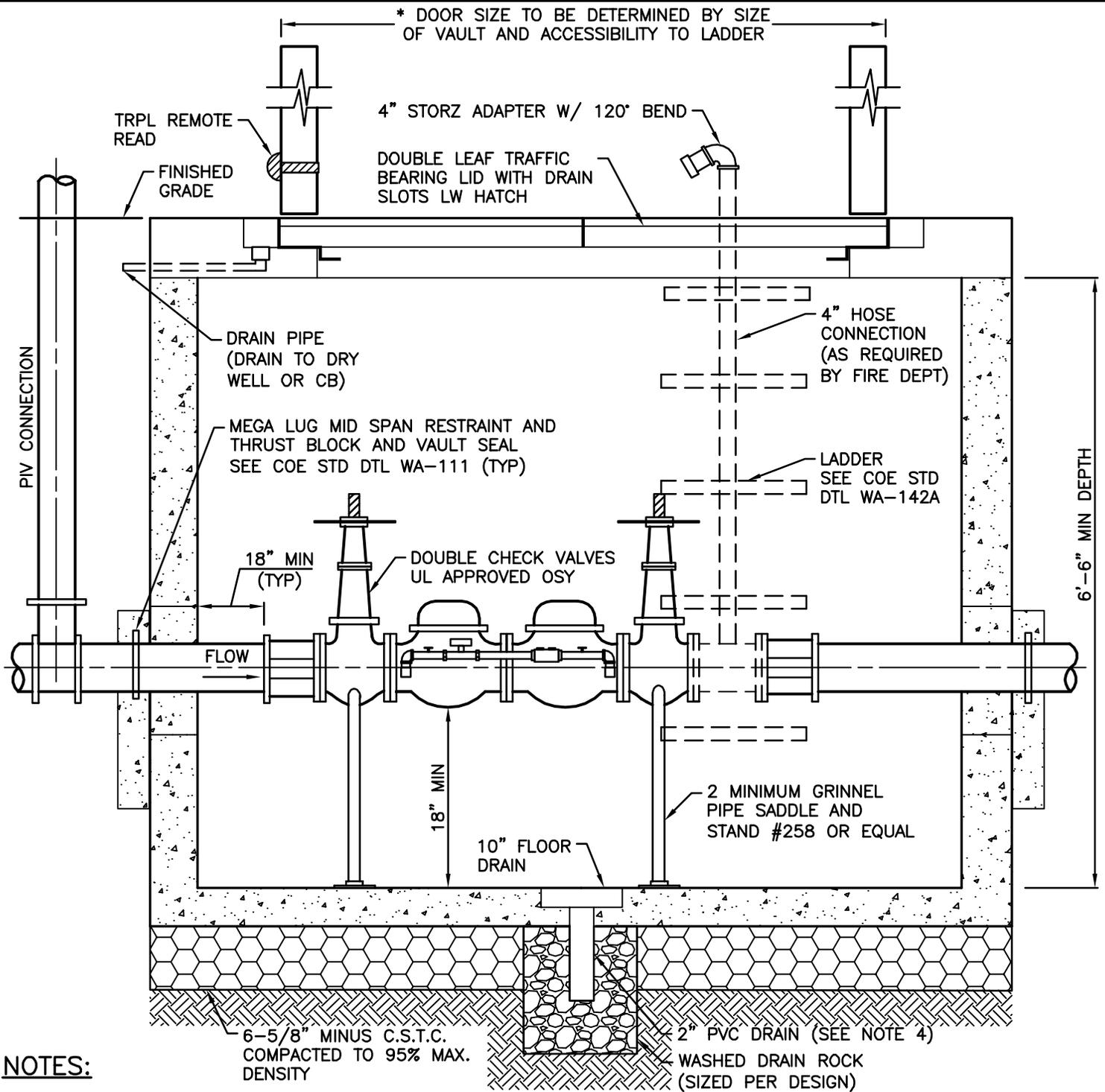
**COMMERCIAL MULTI-FAMILY
DOUBLE CHECK
DETECTOR ASSEMBLY (PLAN)**

APPROVED BY: R. ENGLISH

REVISION DATE
APRIL 2018

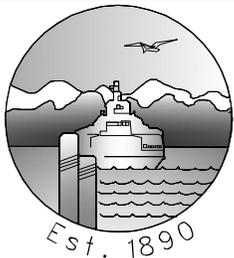
STANDARD
DETAIL

WA-142A



NOTES:

1. ACCESSES BY LW HATCH: TYPE "D" (HD-10 PEDESTRIAN LOAD; H-30 TRAFFIC LOAD) WITH SIDE OUTLET GUTTER DRAIN.
2. VAULT COVER GUTTER DRAIN SHALL CONNECT TO A DRY WELL OR CATCH BASIN.
3. SEE COE STD DTLS WA-183 AND WA-184 FOR DCDA LOCATION AND CONNECTION REQUIREMENTS.
4. IF SOIL CONDITIONS OR PRESENCE OF GROUNDWATER DO NOT ALLOW DRAINAGE OF SUMP, DRAINAGE SHALL BE DIRECTED TO ONSITE DRAINAGE SYSTEM.
5. SEE COE STD DTL WA-142A FOR PLAN VIEW.



CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

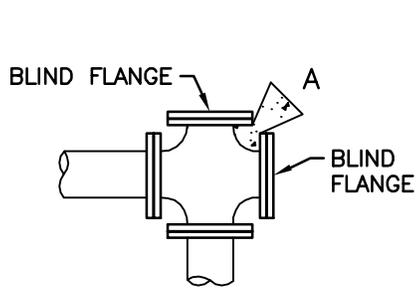
**COMMERCIAL MULTI-FAMILY
DOUBLE CHECK DETECTOR
ASSEMBLY (PROFILE)**

APPROVED BY: R. ENGLISH

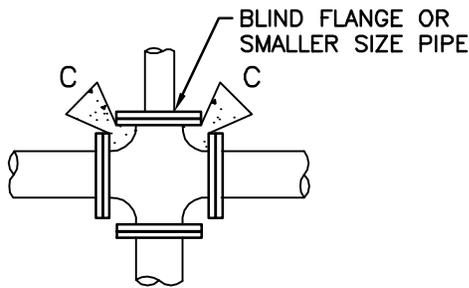
REVISION DATE
MARCH 2018

STANDARD
DETAIL

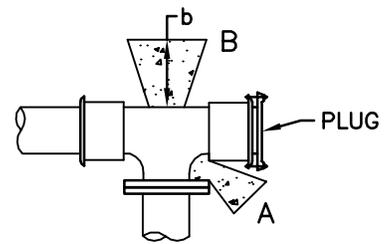
WA-142B



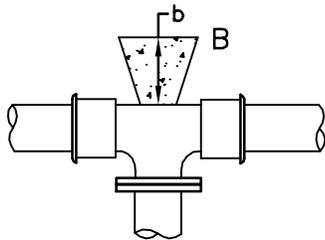
CAPPED CROSS



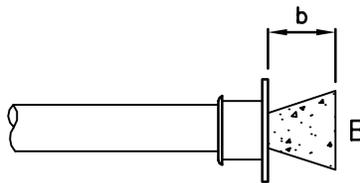
CROSS



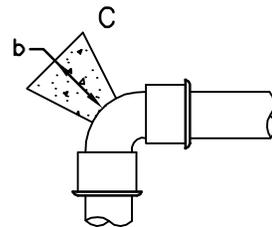
TEE W/ PLUG



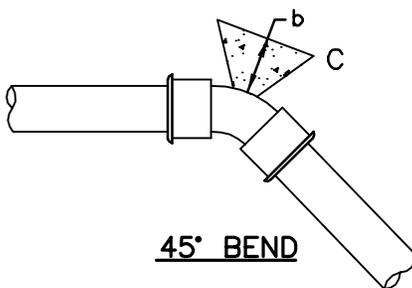
TEE



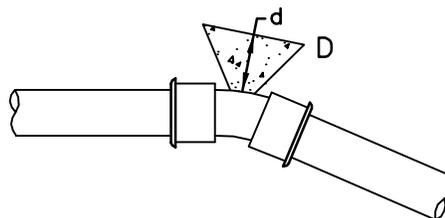
CAP



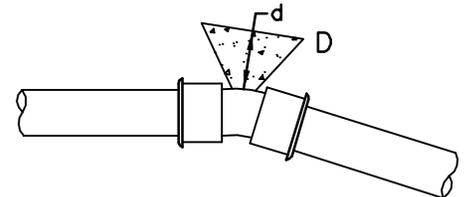
90° BEND



45° BEND



22-1/2° BEND

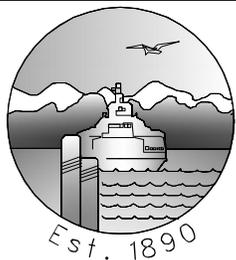


11-1/4° BEND

NOTES:

1. BEARING AREA OF CONCRETE THRUST BASED ON 200 PSI PRESSURE AND SAFE SOIL. BEARING LOAD OF 2,000 POUNDS PER SQUARE FOOT.
2. AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZES, PRESSURES, AND SOIL CONDITIONS.
3. CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE A MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.
4. THRUST BLOCK SHALL BEAR AGAINST FITTINGS AND UNDISTURBED SOIL. FITTING SHALL BE WRAPPED IN POLYETHYLENE FILM BEFORE PLACING CONCRETE.
5. CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATIONAL PRESSURE UNDER ALL CONDITIONS OF SERVICE.
6. BLOCKING MAY BE REDUCED WITH USE OF RESTRAINED JOINTS ADJACENT TO FITTINGS.
7. CONCRETE SHALL NOT COVER FITTING BOLT AND NUTS.

THRUST BLOCK TABLE MIN BEARING AREA AGAINST UNDISTURBED SOIL							
PIPE SIZE	SQUARE FEET					MIN DIST (IN FEET)	
	A	B	C	D	E	b	d
4"	3	1	1	1	1	1	0.5
6"	4	4	2	1	1	1	0.5
8"	7	6	4	2	1	1.3	0.7
10"	11	10	6	3	2	1.6	0.9
12"	16	14	9	5	3	1.9	1.1
16"	29	25	16	8	4	2.6	1.4



CITY OF EDMONDS
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**CONCRETE THRUST
BLOCKING**

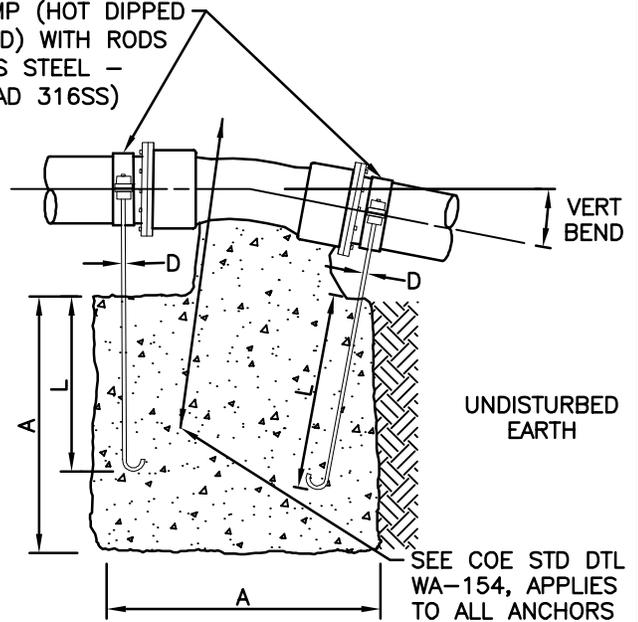
APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

STANDARD
DETAIL
WA-150

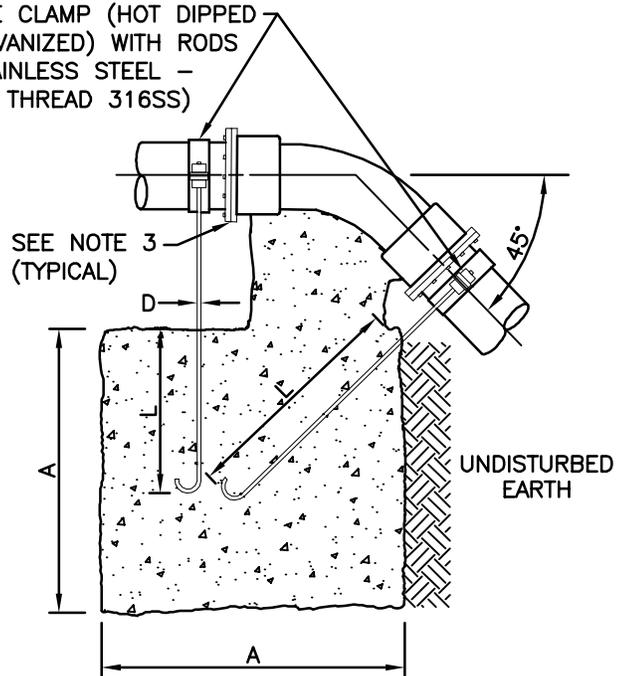
VERTICAL BLOCKING FOR 11 1/4"-22 1/2"-30° BENDS							
PIPE SIZE	V B	CU FT	A	D	L		
4"	11 1/4°	8	2.0'	3/4"	1.5'		
	22 1/2°	11	2.2'		2.0'		
	30°	17	2.6'				
6"	11 1/4°	11	2.2'	3/4"	2.0'		
	22 1/2°	25	2.9'				
	30°	41	3.5'				
8"	11 1/4°	16	2.5'	3/4"	2.0'		
	22 1/2°	47	3.6'				
	30°	70	4.1'			3/4"	2.5'
12"	11 1/4°	32	3.2'	3/4"	2.0'		
	22 1/2°	88	4.5'			7/8"	3.0'
	30°	132	5.1'				
16"	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"	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"	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 5/8"	5.5'
VERTICAL BLOCKING FOR 45° BENDS							
4"	45°	30	3.1'	3/4"	2.0'		
6"		68	4.1'				
8"		123	5.0'				
12"		232	6.1'	3/4"	2.5'		
16"		478	7.8'	1 1/8"	4.0'		
20"		560	8.2'	1 1/4"			
24"		820	9.4'	1 3/8"	4.5'		

PIPE CLAMP (HOT DIPPED GALVANIZED) WITH RODS (STAINLESS STEEL - ALL THREAD 316SS)



VERTICAL BLOCKING
FOR 11 1/4", 22 1/2", & 30° BENDS

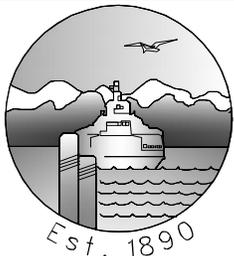
PIPE CLAMP (HOT DIPPED GALVANIZED) WITH RODS (STAINLESS STEEL - ALL THREAD 316SS)



VERTICAL BLOCKING
FOR 45° BENDS

NOTES:

1. CONCRETE BLOCKING BASED ON 200 PSI PRESSURE AND 2500 PSI CONCRETE.
2. LEAVE BLOCK OPEN OR SHEETED 24 HOURS MINIMUM.
3. MEGA-LUG FITTINGS.



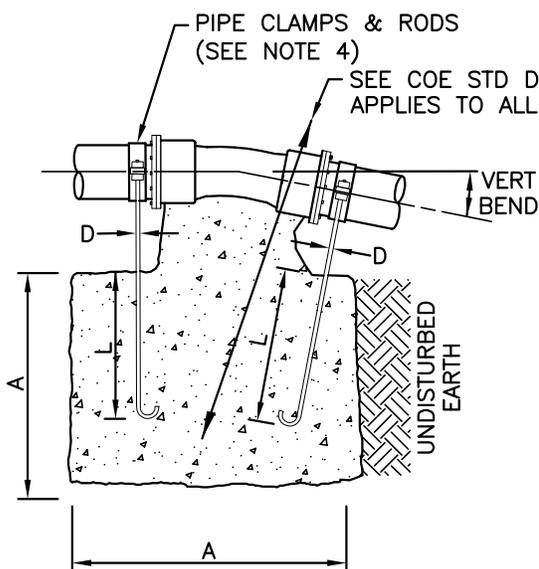
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**VERTICAL BLOCKING
FOR CONNECTION TO
EXISTING MAIN**

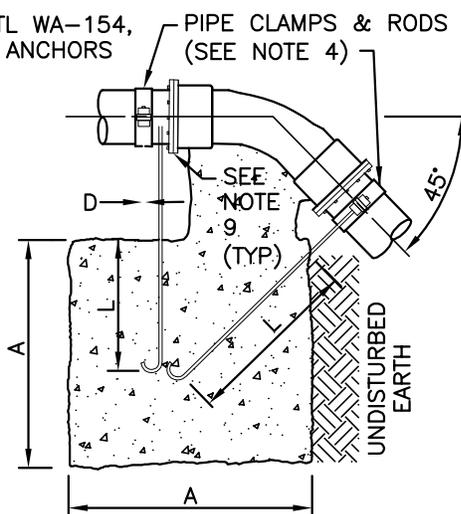
APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

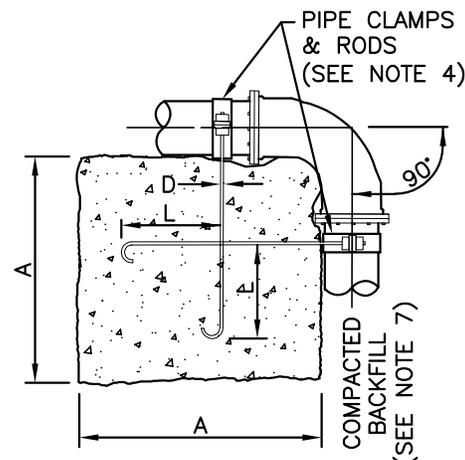
STANDARD
DETAIL
WA-151



VERTICAL BLOCKING FOR 11 1/4" & 22 1/2"



VERTICAL BLOCKING FOR 45° BENDS



VERTICAL BLOCKING FOR 90° BENDS
(SEE NOTE 6)

NOTES:

- NO CHANGE IN PIPE DIRECTION OR DIAMETER SHALL OCCUR WITHIN 36 FEET OF THE VERTICAL BEND. BENDS, TEES, REDUCERS, ETC. BEYOND THE 36 FOOT LIMIT SHALL BE RESTRAINED BY STANDARD CONCRETE BLOCKING PER COE STD DTLs WA-150 & WA-151.
- CONCRETE BLOCKING SIZES BASED ON:
 - 36 FEET OF PIPE RESTRAINED EACH SIDE OF BEND.
 - THRUST BLOCK AREAS BASED ON SAFE BEARING LOAD OF 1,000 PSF.
 - 2,500 PSI CONCRETE.
 - MINIMUM 3 FEET OF COVER.
 - PIPE THRUST BASED ON 200 PSI PRESSURE.
 - PIPE ENCASED IN POLYETHYLENE.
 - VERTICAL BLOCK SIZE BASED ON CONCRETE WEIGHT OF 150 POUNDS PER CUBIC FOOT.
 - TRENCH CONDITIONS BASED ON TYPE 2, FLAT BOTTOM TRENCH WITH LIGHTLY CONSOLIDATED BACKFILL, PER ANSI/AWWA C150/A21.50.
 - FACTOR OF SAFETY IS 1.5.
 - SOIL FRICTIONAL RESISTANCE BASED ON COHESIVE GRANULAR SOIL TYPE (GC+SC). SAND, GRAVEL, CLAY MIXTURE.
- BLOCKING DESIGN MUST BE ADJUSTED FOR OTHER SIZE PIPE, PRESSURES AND SOIL CONDITIONS.
- PIPE CLAMP (HOT DIPPED GALVANIZED). RODS (STAINLESS STEEL ALL-THREAD 316SS)
- LINE SHALL NOT BE PRESSURIZED UNTIL ALL TRENCHING WITHIN 100 FEET OF VERTICAL BEND IS BACKFILLED AND COMPACTED TO MINIMUM COVER OF 3 FEET OVER PIPE.
- 90° VERTICAL BENDS SHALL ONLY BE INSTALLED WHERE GIVEN PRIOR APPROVAL BY THE UTILITY.
- BACKFILL TRENCH BEYOND 90° VERTICAL BLOCK WITH CRUSHED SURFACING TOP COURSE MATERIAL COMPACTED TO 95% MAXIMUM DENSITY. CRUSHED BACKFILL SHALL EXTEND 20 FEET BEYOND BLOCK OR TO FIRM BEARING TRENCH WALL, WHICHEVER IS LESS.
- LEAVE BLOCK OPEN OR SHEETED 24 HOURS MINIMUM.
- MEGA-LUG FITTINGS.

VERTICAL BLOCKING SIZE W/RESTRAINED JOINTS SOIL TYPE = COHESIVE GRANULAR [GC+SC] SAND, GRAVEL, CLAY MIXTURE					
PIPE SIZE	V B	CU FT	A	D	L
4"	11 1/4'	*			
	22 1/2'	*			
	45°	*			
	90°	16	2.5'	3/4"	2.0'
6"	11 1/4'	*			
	22 1/2'	*			
	45°	13	2.3'	3/4"	2.0'
8"	11 1/4'	*			
	22 1/2'	*			
	45°	33	3.2'	3/4"	2.0'
10"	11 1/4'	*			
	22 1/2'	13	2.3'	3/4"	2.0'
	45°	64	4.0'	3/4"	2.0'
12"	11 1/4'	*			
	22 1/2'	20	2.7'	3/4"	2.0'
	45°	111	4.8'	3/4"	2.0'
	90°	206	5.9'	1 1/8"	4.0'

* BLOCKING NOT REQUIRED IF 36 FEET OF PIPE IS RESTRAINED ON EACH SIDE OF BEND



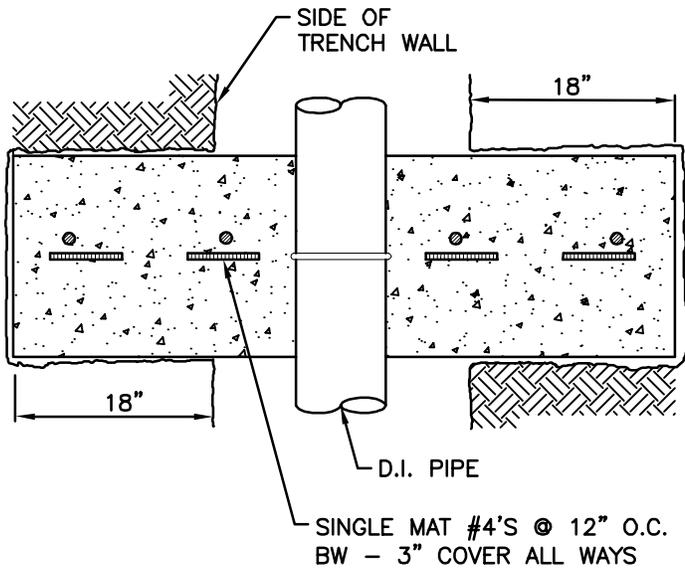
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

VERTICAL BLOCKING WITH RESTRAINED JOINTS FOR NEW LINES

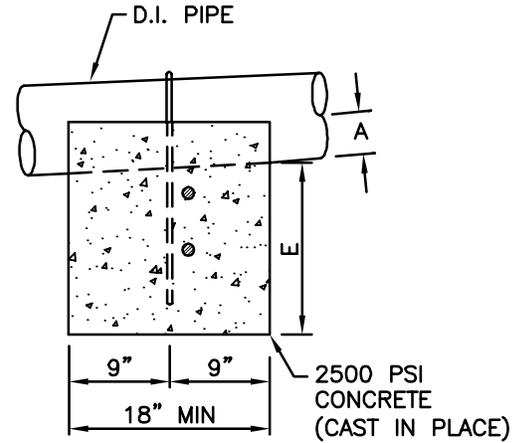
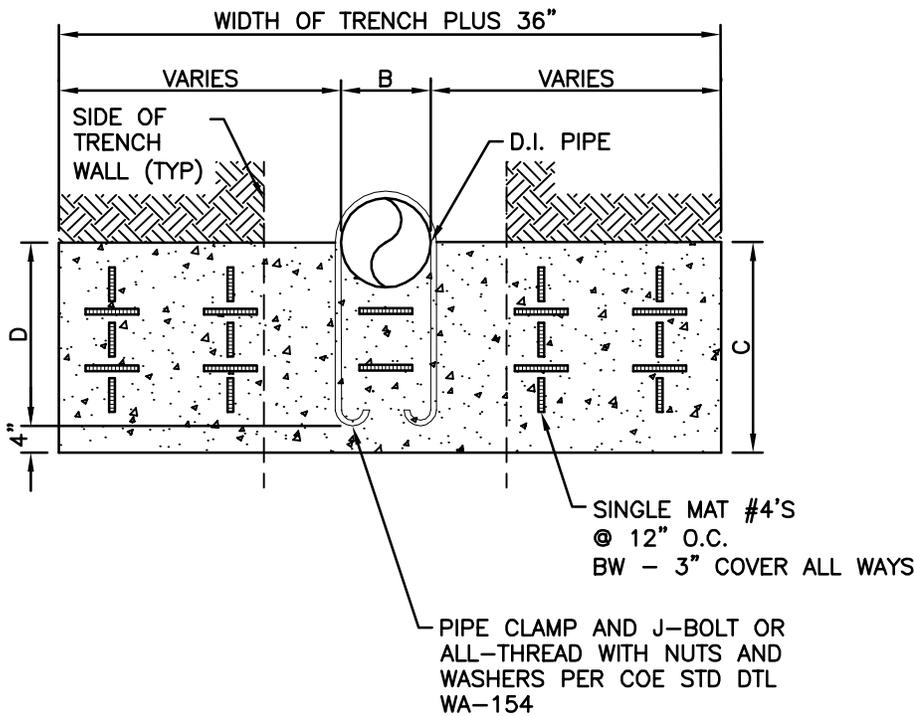
APPROVED BY: R. ENGLISH

REVISION DATE
MAY 2018

STANDARD
DETAIL
WA-152

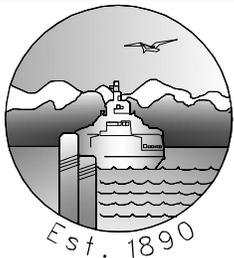


PIPE SIZE	DIMENSIONS (IN)				
	A	B	C	D	E
4"	2.4	4.8	17	13	14.6
6"	3.5	6.9	18	14	14.5
8"	4.5	9.1	19	15	14.5
10"	5.6	11.1	20	16	14.4
12"	6.6	13.2	21	17	14.4
14"	7.7	15.3	22	18	14.3
16"	8.7	17.4	23	19	14.3
18"	9.8	19.5	24	20	14.2



NOTES:

SLOPES > 20% - PROVIDE CONCRETE SLOPE ANCHORS (20' TO 25' ON CENTER)



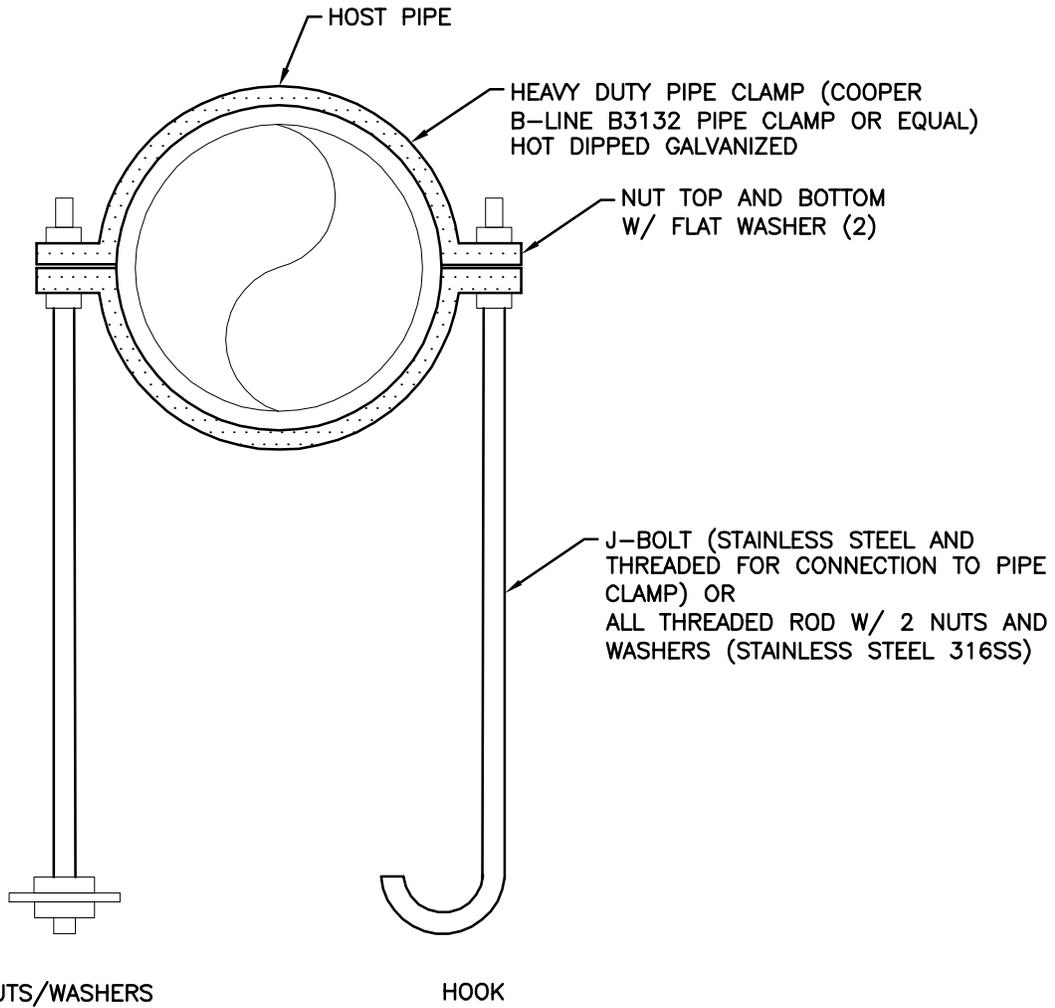
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

CONCRETE SLOPE ANCHOR

APPROVED BY: R. ENGLISH

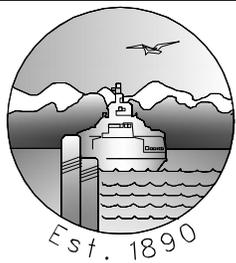
REVISION DATE
JANUARY 2018

STANDARD
DETAIL
WA-153



NOTES:

1. J-BOLT DIAMETER:
 - PIPE DIAMETER LESS THAN OR EQUAL TO 6": 7/8", 6" & 8" PIPE: 1", 10" = 1-1/4"
 - PIPE DIAMETER GREATER THAN 12": 1-1/2"
2. TIGHTEN TOP NUTS TO TENSION BOLTS
3. TIGHTEN LOWER NUTS TO COMPRESS CLAMP SNUG



CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

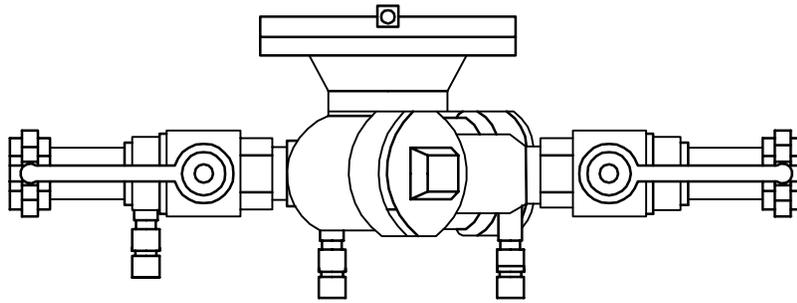
**PIPE CLAMP AND ANCHOR
RODS FOR CONCRETE
BLOCKING**

APPROVED BY: **R. ENGLISH**

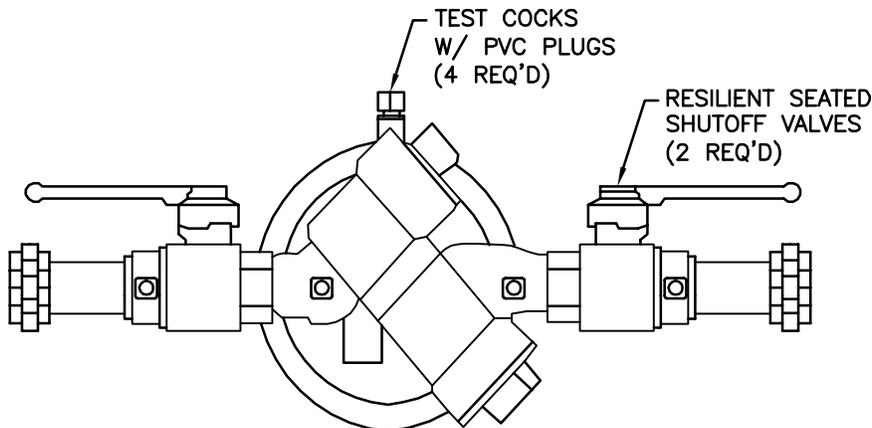
REVISION DATE
JANUARY 2017

STANDARD
DETAIL

WA-154



TOP VIEW



MIN 12" CLEARANCES AROUND
BACKFLOW PREVENTER –
ALL SIDES, TOP AND BOTTOM

12" MIN
5' MAX

ADEQUATE GRAVITY DRAINAGE
SYSTEM REQUIRED
W/ APPROVED AIR GAP

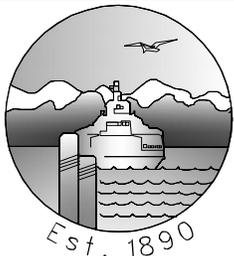
GROUND/FLOOR

NOTES:

SIDE VIEW

1. APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY TO LAY HORIZONTAL ONLY.
2. DESIGNED FOR BACK SIPHONAGE AND BACK PRESSURE.
3. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER.
4. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.
5. MUST BE ACCESSIBLE.
6. MUST BE PROTECTED FROM FREEZING CONDITIONS.
7. THE BACKFLOW ASSEMBLY SHALL BE A STATE APPROVED MODEL.
8. A PLUMBING PERMIT IS REQUIRED – PLEASE CONTACT DEVELOPMENT SERVICES DEPARTMENT.
9. MUST BE TESTED AFTER INSTALLATION AND YEARLY THEREAFTER BY WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS MUST BE SENT TO THE CITY OF EDMONDS WATER DIVISION.

(ABOVE GROUND INSTALLATION ONLY)



CITY OF EDMONDS
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DEPARTMENT

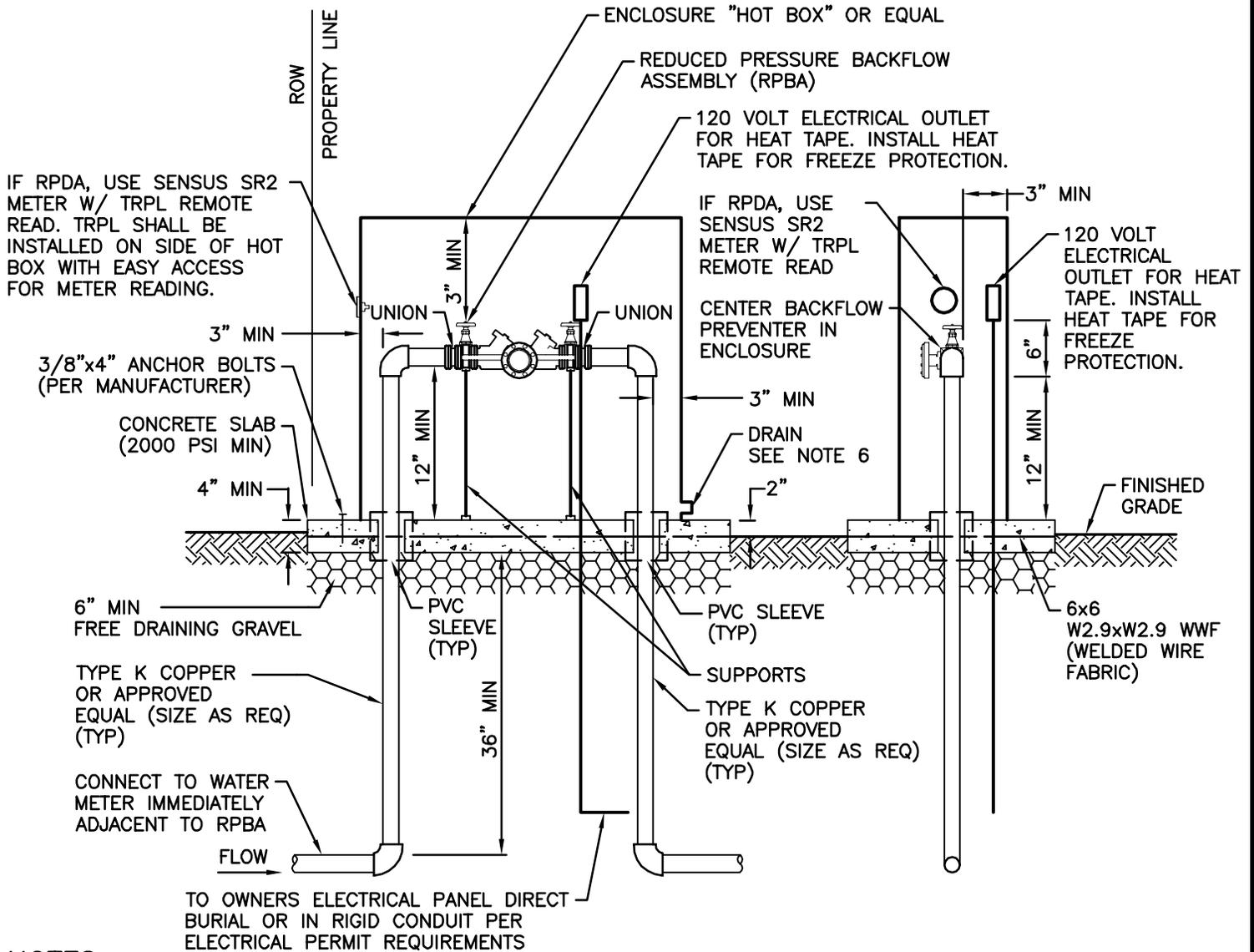
**REDUCED PRESSURE
BACKFLOW ASSEMBLY 2"
AND SMALLER (RPBA)**

APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

STANDARD
DETAIL

WA-160A

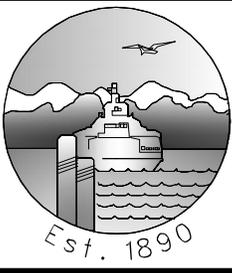


NOTES:

SIDE VIEW

FRONT VIEW (METER SIDE)

1. PROVIDE CITY APPROVED SUPPORT FOR DEVICES LARGER THAN 1" DIAMETER.
2. OWNER SHALL FURNISH, INSTALL AND MAINTAIN THE RPBA OR RPDA AND ALL PIPING AND APPURTENANCES SHOWN ON THIS PLAN.
3. MUST BE TESTED AFTER INSTALLATION AND YEARLY BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS MUST BE SENT TO THE CITY OF EDMONDS WATER DIVISION.
4. REDUCED PRESSURE BACKFLOW ASSEMBLIES SHALL BE STATE APPROVED DEVICES.
5. ANNUAL TESTING OF RPBA AND RPDA REQUIRED BY OWNER. TEST RESULTS SHALL BE SENT TO THE CITY OF EDMONDS PUBLIC WORKS.
6. DRAIN SHALL BE SIZED IN ACCORDANCE WITH AWWA CROSS CONNECTION CONTROL FIGURE 6-8 (SEE COE STD DTL WA-160C).
7. ENCLOSURES SHALL BE LOCATED ON PRIVATE PROPERTY.
8. SLEEVE SHALL BE ONE NOMINAL SIZE DIAMETER LARGER THAN PIPE BEING SLEEVED.



CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**HOT BOX ASSEMBLY FOR
REDUCED PRESSURE BACKFLOW
ASSEMBLY (RPBA AND RPDA)**

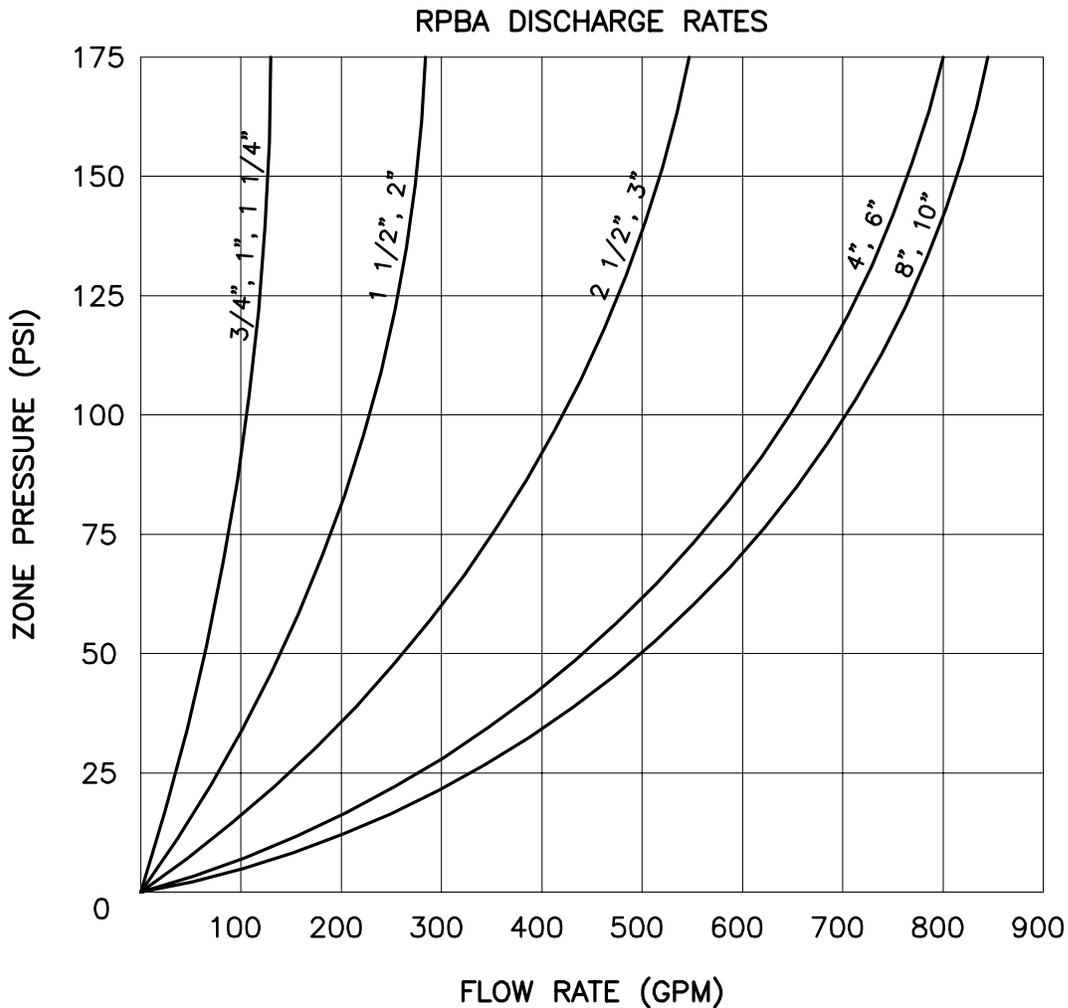
APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

STANDARD
DETAIL

WA-160B

**AWWA CROSS CONNECTION
CONTROL MANUAL**

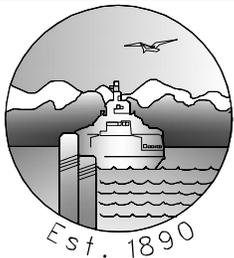


**FIGURE 6.8
APPROXIMATE RELIEF VALVE DISCHARGE RATES
FOR REDUCED PRESSURE BACKFLOW ASSEMBLIES**

CARE SHOULD BE TAKEN TO ENSURE THAT THE ENTIRE DRAINAGE SYSTEM HAS ADEQUATE CAPACITY TO CARRY THE CONTINUOUS DISCHARGE RATES SHOWN ABOVE. THE FOLLOWING ARE TYPICAL FLOW RATES AS SIZED BY ONE FLOOR DRAIN MANUFACTURER AND REPRESENT ONLY THE FLOOR DRAIN CAPACITY:

SIZE:	2"	3"	4"	6"	8"
CAPACITY (GPM):	55	112	170	450	760

FOR PARALLEL ASSEMBLIES, THE DRAINAGE SYSTEM SHOULD BE DESIGNED FOR THE DISCHARGE FROM BOTH ASSEMBLIES.



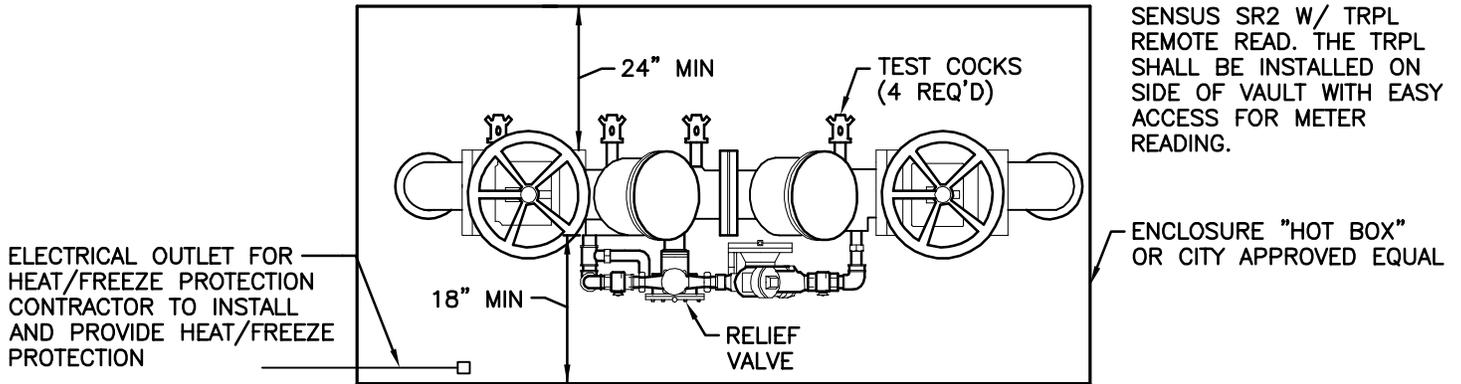
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**RPBA DISCHARGE RATES
(FIGURE 6.8)**

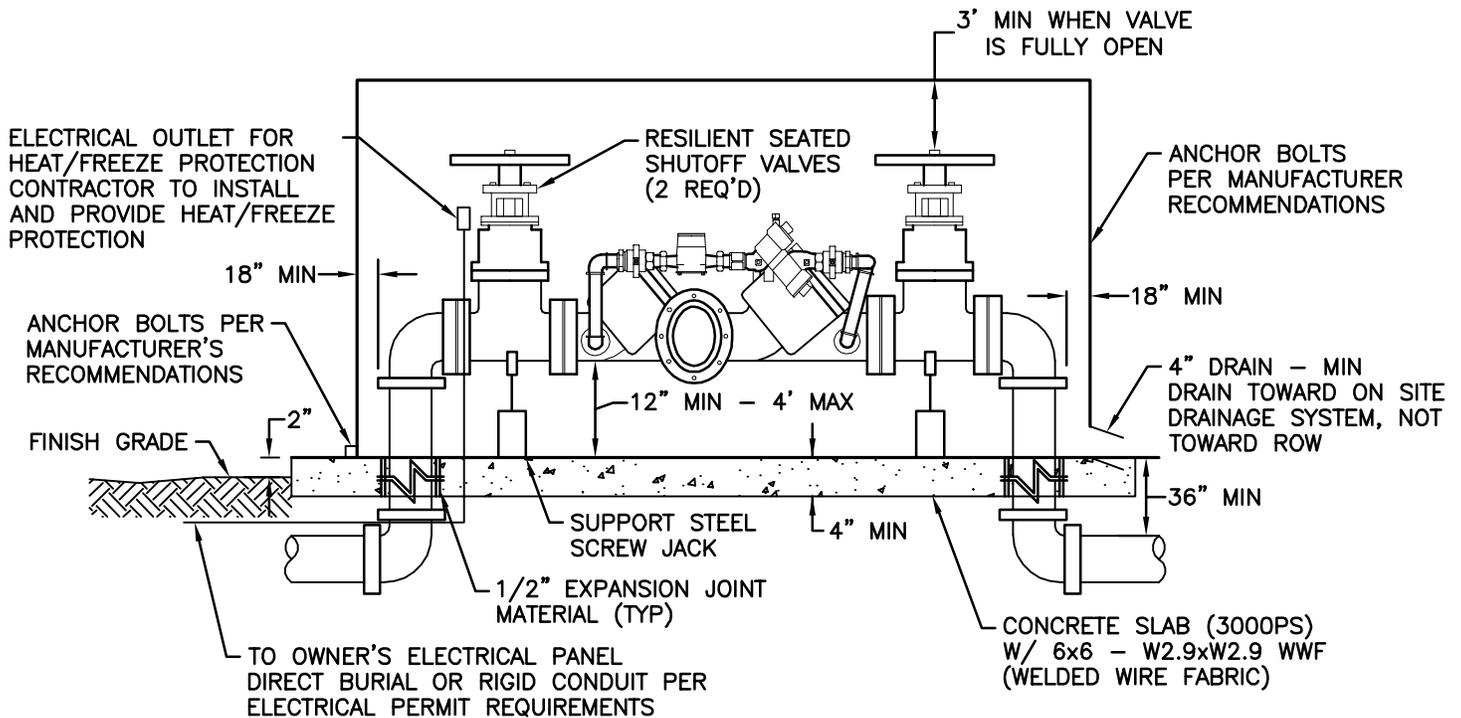
APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

STANDARD
DETAIL
WA-160C



PLAN VIEW

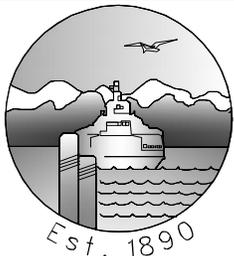


SIDE VIEW

NOTES:

1. APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY TO LAY HORIZONTAL ONLY.
2. DESIGNED FOR BACK SIPHONAGE AND BACK PRESSURE.
3. THE WATER LINE SHALL BE DISINFECTED, FLUSHED, AND PRESSURE TESTED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY. THE BACKFLOW ASSEMBLY SHALL BE PROTECTED FROM FREEZING AND FLOODING.
4. ALL PIPE, VALVES, AND FITTING JOINTS, FROM SUPPLY MAIN, SHALL BE FLANGED AND RESTRAINED.
5. A CITY APPROVED VALVE IS REQUIRED BETWEEN THE SUPPLY MAIN AND THE VAULT.
6. HOT BOX SHALL BE INSTALLED AT PROPERTY LINE OR EASEMENT LINE.
7. HOT BOX SHALL HAVE A MINIMUM OF 3' CLEARANCE FROM ALL STRUCTURES.
8. THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION PRIOR TO ACCEPTANCE AND ALSO YEARLY THEREAFTER BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS MUST BE SENT TO THE CITY OF EDMONDS WASHINGTON STATE WATER DIVISION.
9. MECHANICALLY RESTRAIN ALL FITTINGS AND JOINTS BETWEEN CITY MAIN AND ASSEMBLY.

(ABOVE GROUND INSTALLATION ONLY)



CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

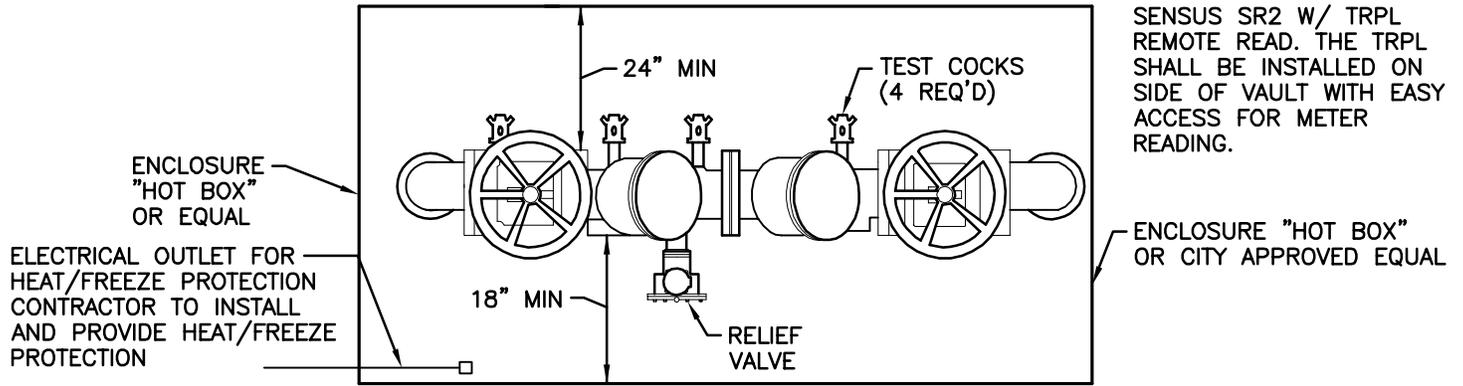
**REDUCED PRESSURE
DETECTOR ASSEMBLY
(RPDA) 2.5" AND LARGER**

APPROVED BY: **R. ENGLISH**

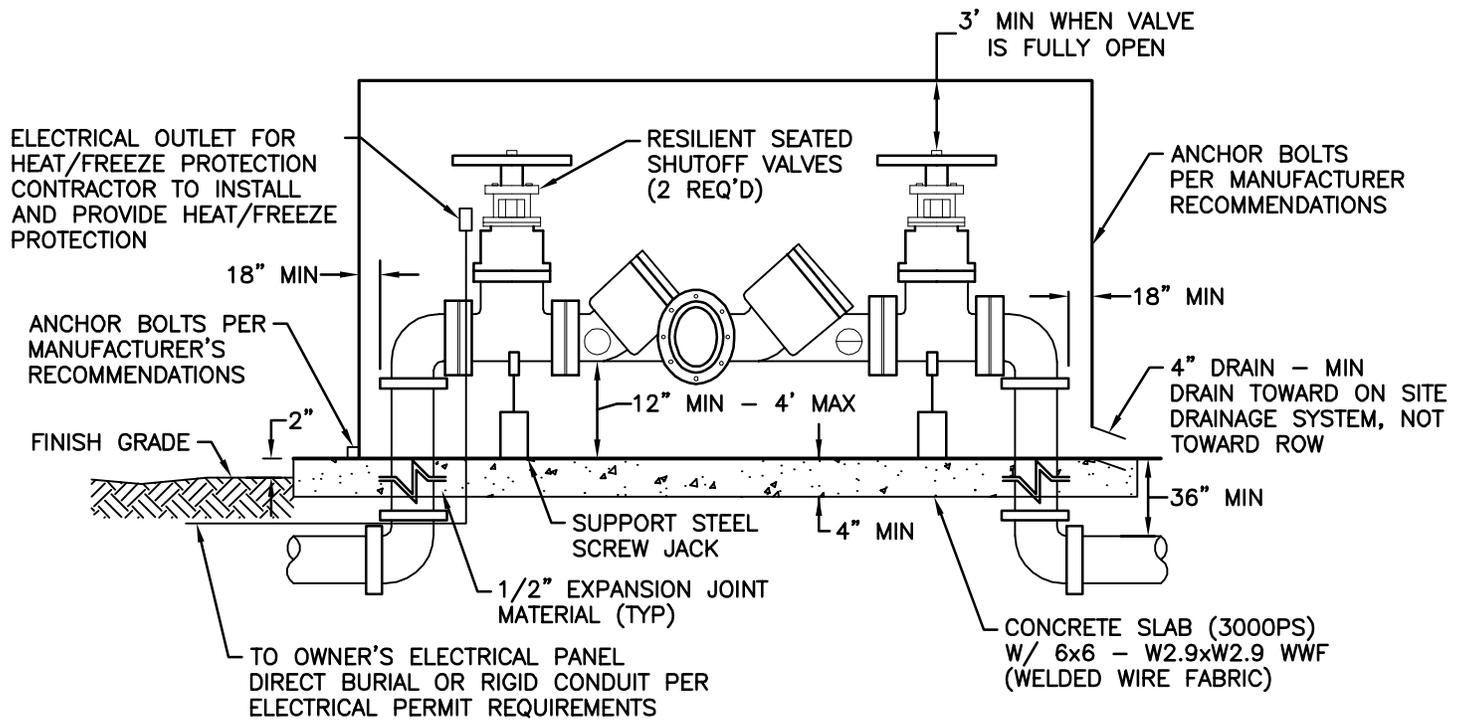
REVISION DATE
JANUARY 2018

STANDARD
DETAIL

WA-161



PLAN VIEW

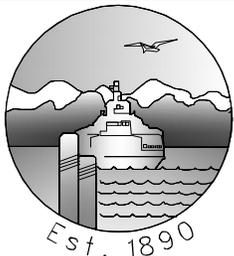


SIDE VIEW

NOTES:

1. APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY TO LAY HORIZONTAL ONLY.
2. DESIGNED FOR BACK SIPHONAGE AND BACK PRESSURE.
3. THE WATER LINE SHALL BE DISINFECTED, FLUSHED, AND PRESSURE TESTED PRIOR TO INSTALLING THE BACKFLOW ASSEMBLY. THE BACKFLOW ASSEMBLY SHALL BE PROTECTED FROM FREEZING AND FLOODING.
4. ALL PIPE, VALVES, AND FITTING JOINTS, FROM SUPPLY MAIN, SHALL BE FLANGED AND RESTRAINED.
5. A CITY APPROVED VALVE IS REQUIRED BETWEEN THE SUPPLY MAIN AND THE VAULT.
6. HOT BOX SHALL BE INSTALLED AT PROPERTY LINE OR EASEMENT LINE.
7. HOT BOX SHALL HAVE A MINIMUM OF 3' CLEARANCE FROM ALL STRUCTURES.
8. THE BACKFLOW ASSEMBLY SHALL BE TESTED AFTER INSTALLATION PRIOR TO ACCEPTANCE AND ALSO YEARLY THEREAFTER BY A CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS MUST BE SENT TO THE CITY OF EDMONDS WASHINGTON STATE WATER DIVISION.
9. MECHANICALLY RESTRAIN ALL FITTINGS AND JOINTS BETWEEN CITY MAIN AND ASSEMBLY.

(ABOVE GROUND INSTALLATION ONLY)



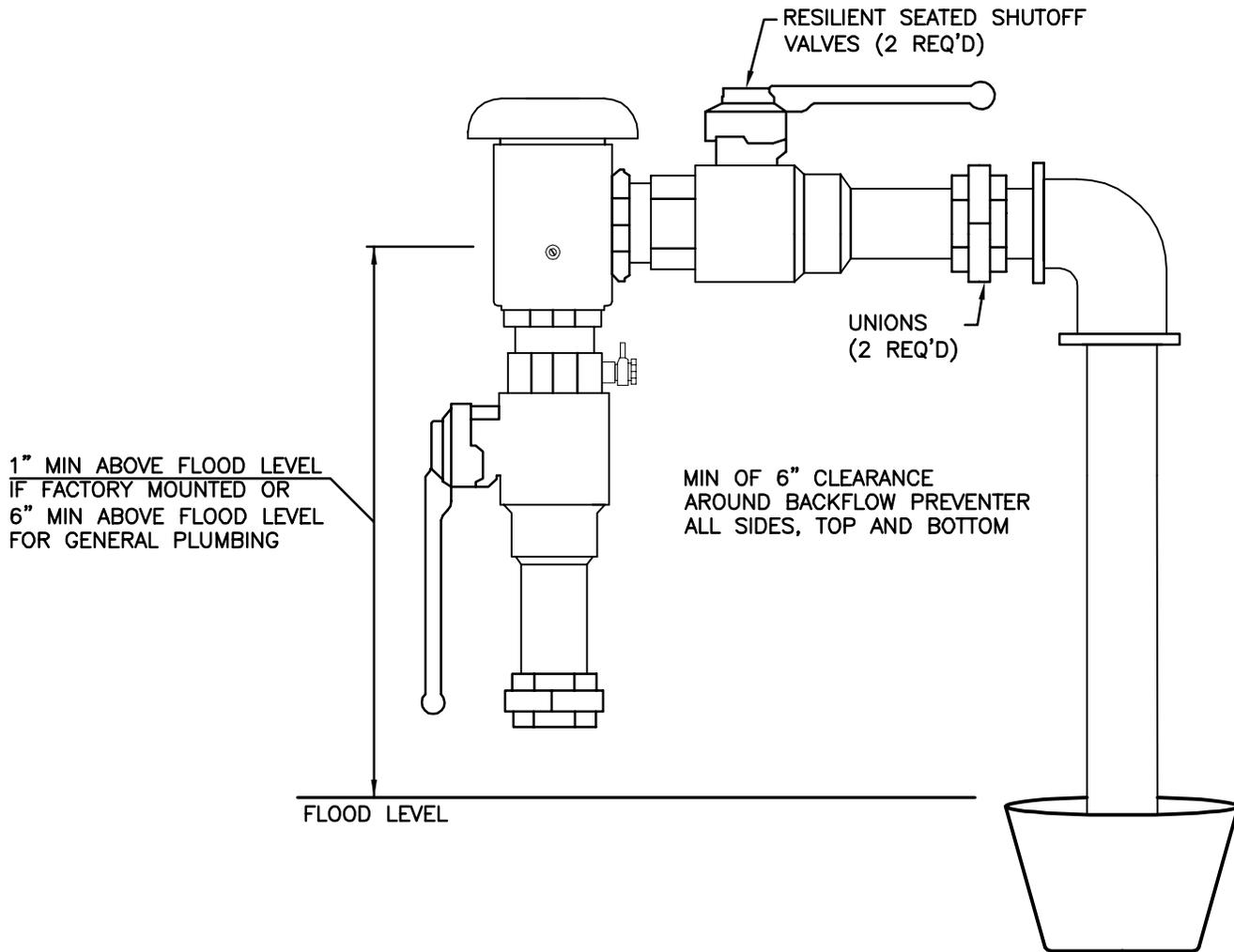
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**REDUCED PRESSURE
BACKFLOW ASSEMBLY
(RPBA) 2.5" AND LARGER**

APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

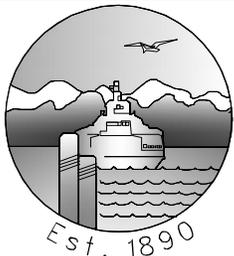
STANDARD
DETAIL
WA-162



NOTES:

1. APPROVED PRESSURE VACUUM BREAKER ASSEMBLY MUST BE INSTALLED VERTICALLY, 1" MIN ABOVE FLOOD LEVEL IF FACTORY MOUNTED OR 6" MIN ABOVE FLOOD LEVEL FOR GENERAL PLUMBING
2. DESIGNED FOR BACK SIPHONAGE ONLY, NOT FOR BACK PRESSURE
3. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER
4. IF A SVBA IS INSTALLED INDOORS, CONSIDERATION MUST BE GIVEN TO WATER LEAKAGE IF THE BACKFLOW PREVENTER FAILS (EXCESSIVE WATER SPILLAGE)
5. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING
6. MUST BE PROTECTED FROM FREEZING CONDITIONS
7. THE BACKFLOW ASSEMBLY SHALL BE A STATE APPROVED MODEL
8. A PLUMBING PERMIT IS REQUIRED- PLEASE CONTACT LOCAL PLUMBING PERMIT CENTER
9. MUST BE TESTED AFTER INSTALLATION AND YEARLY THEREAFTER BY WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER
TEST RESULTS SHALL BE SENT TO THE CITY OF EDMONDS WATER DIVISION

(ABOVE GROUND INSTALLATION ONLY)



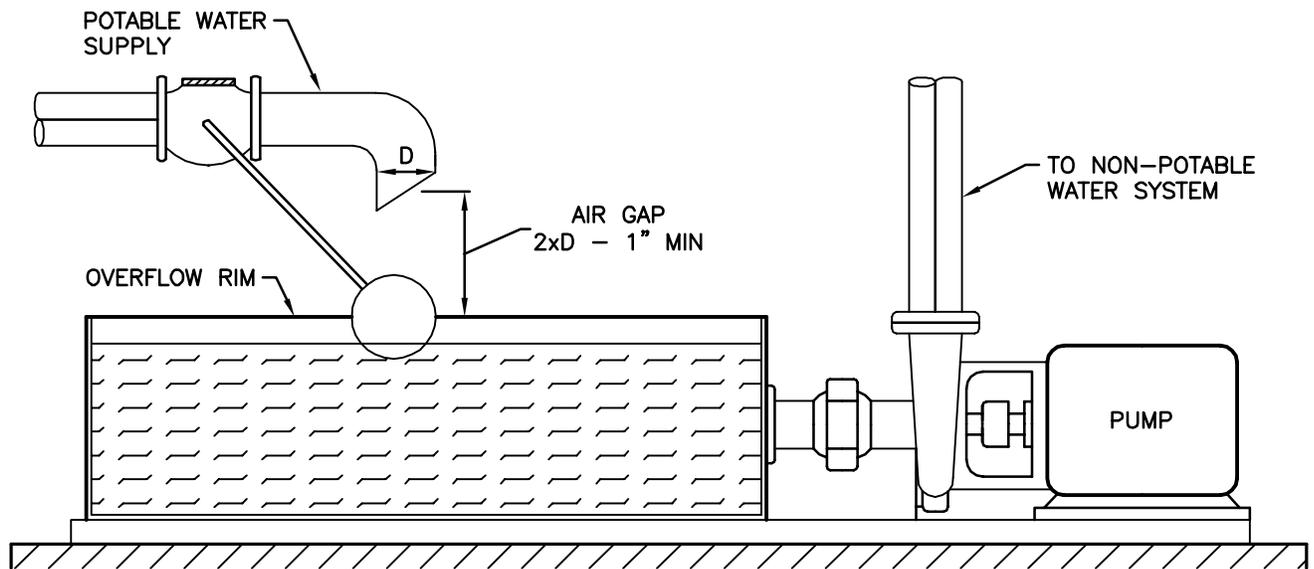
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**SPILL RESISTANT PRESSURE
VACUUM BREAKER (SVBA)**

APPROVED BY: **R. ENGLISH**

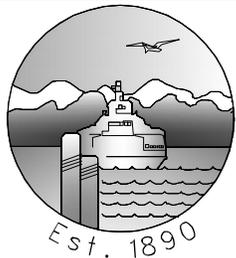
REVISION DATE
JANUARY 2018

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DETAIL
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APPROVED AIR GAP SEPARATION:

AN APPROVED AIR GAP IS A PHYSICAL SEPARATION BETWEEN THE FREE FLOWING DISCHARGE END OF A POTABLE WATER SUPPLY PIPELINE AND THE OVERFLOW RIM OF AN OPEN OR NON-PRESSURE RECEIVING VESSEL. THESE VERTICAL, PHYSICAL SEPARATIONS MUST BE AT LEAST TWICE THE DIAMETER OF THE INLET PIPE BUT NEVER LESS THAN ONE INCH. IF SPLASHING IS A PROBLEM, TUBULAR SCREENS MAY BE ATTACHED OR THE SUPPLY LINE OUTLET MAY BE CUT AT A 45 DEGREE ANGLE. IF SUPPLY LINE IS CUT AT A 45 DEGREE ANGLE THE AIR GAP DISTANCE IS MEASURED FROM THE CENTER OF THE ANGLE. HOSES ARE NOT ALLOWED. BYPASSES ARE NOT ALLOWED. THE INSPECTION OF AIR GAPS SHALL BE INCLUDED IN THE YEARLY TESTING PROGRAM FOR BACKFLOW DEVICES. TEST RESULTS MUST BE SENT TO THE CITY OF EDMONDS WATER DIVISION.



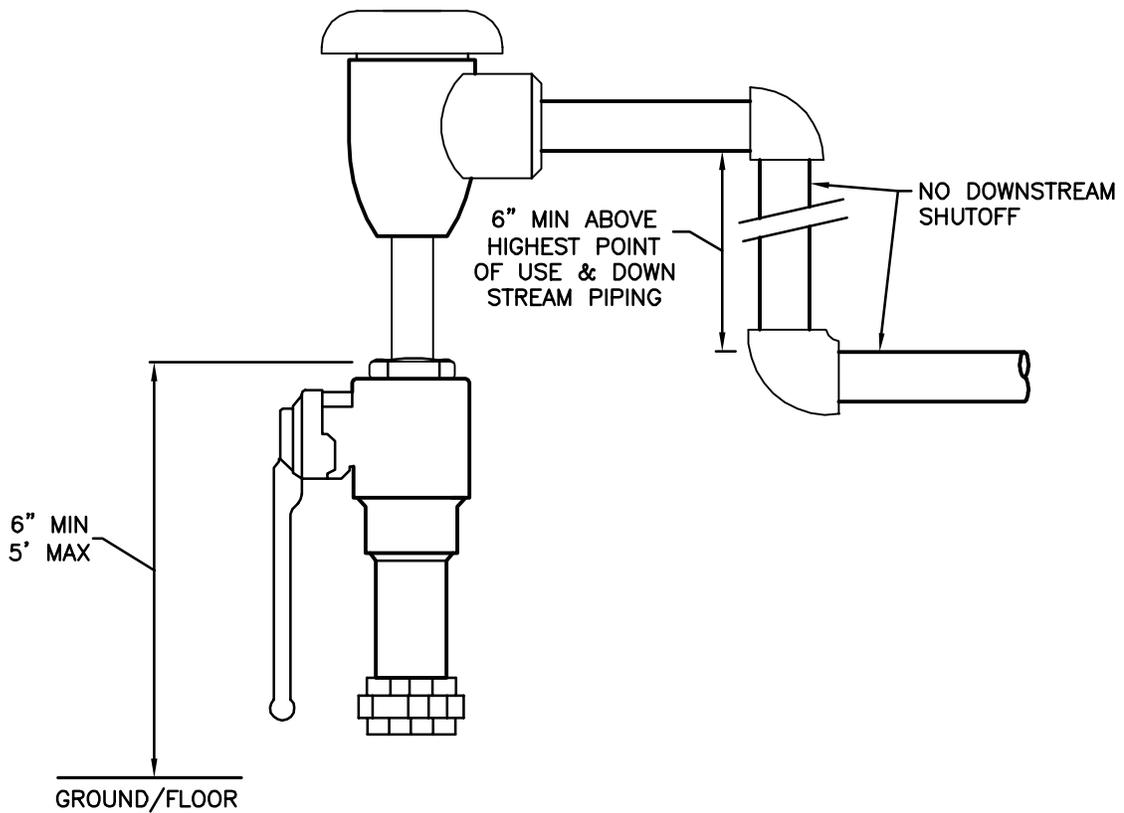
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**AIR GAP FOR
MAKEUP TANK (AG)**

APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

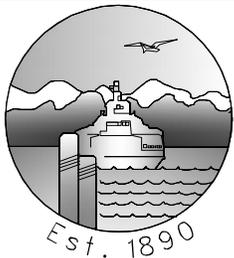
STANDARD
DETAIL
WA-164



NOTES:

1. APPROVED PRESSURE VACUUM BREAKER ASSEMBLY MUST BE INSTALLED VERTICALLY, 6" MIN ABOVE THE HIGHEST POINT OF USE AND ALL DOWN STREAM PIPING
2. 6" MIN ABOVE FLOOD LEVEL FOR GENERAL PLUMBING
3. DESIGNED FOR BACK SIPHONAGE ONLY, NOT FOR BACK PRESSURE
4. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER
5. IF AVB IS INSTALLED INDOORS, CONSIDERATION MUST BE GIVEN TO WATER LEAKAGE IF THE BACKFLOW PREVENTER FAILS (EXCESSIVE WATER SPILLAGE)
6. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING
7. MUST BE PROTECTED FROM FREEZING CONDITIONS
8. THE BACKFLOW ASSEMBLY SHALL BE A STATE APPROVED MODEL
9. A PLUMBING PERMIT IS REQUIRED- OBTAIN PERMIT FROM CITY OF EDMONDS DEVELOPMENT SERVICES
10. NO DOWNSTREAM VALVES ARE ALLOWED
11. THIS DEVICE DOES NOT REQUIRE TESTING BY A BACKFLOW ASSEMBLY TESTER

(ABOVE GROUND INSTALLATION ONLY)



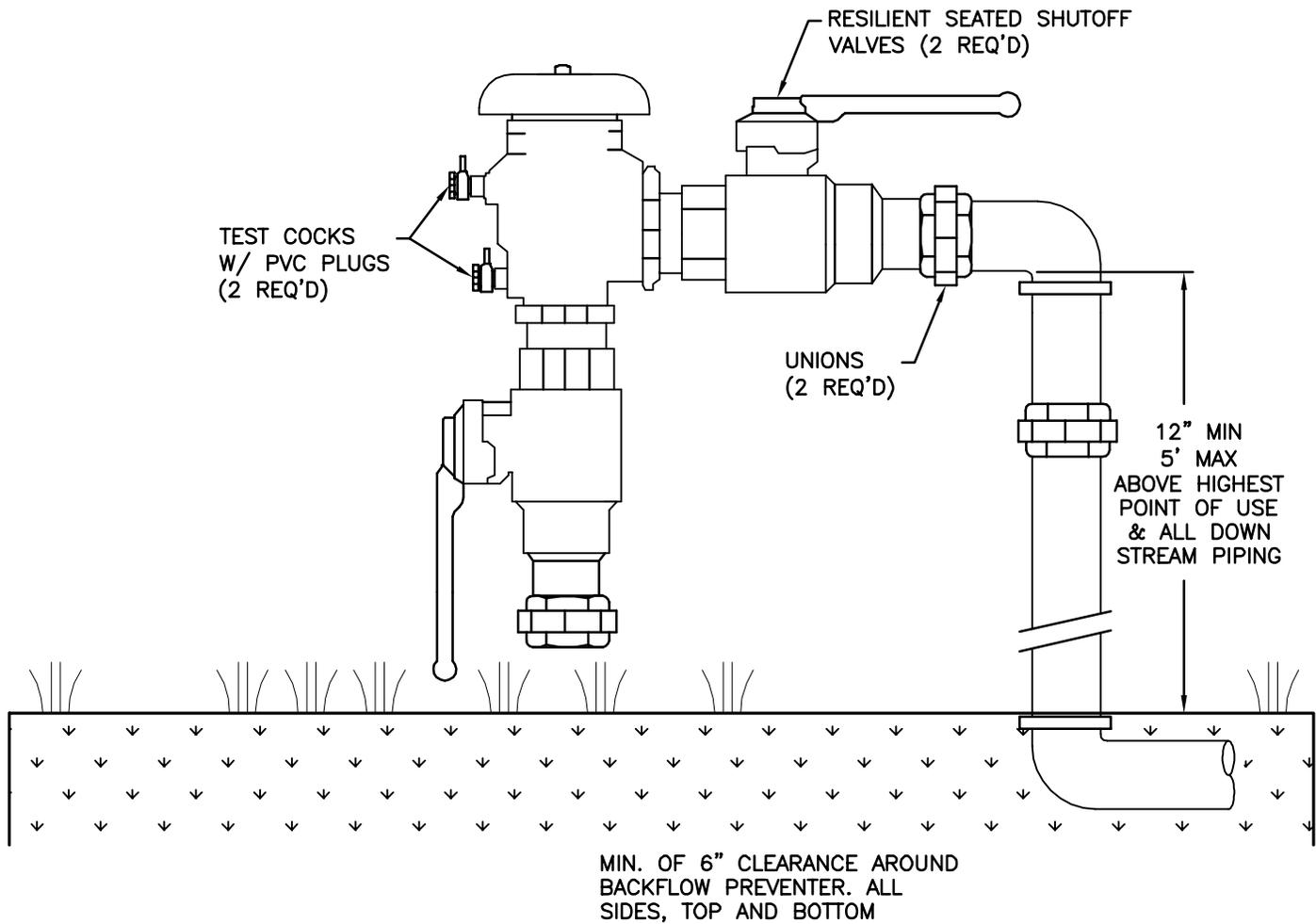
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**ATMOSPHERIC/ANTI-SIPHON
VACUUM BREAKER ASSEMBLY
(AVB) 2" AND SMALLER**

APPROVED BY: R. ENGLISH

REVISION DATE
JANUARY 2018

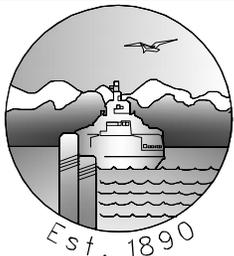
STANDARD
DETAIL
WA-165



NOTES:

1. APPROVED PRESSURE VACUUM BREAKER ASSEMBLY MUST BE INSTALLED VERTICALLY, 12" MIN. – 5' MAX ABOVE THE HIGHEST POINT OF USE AND ALL DOWN STREAM PIPING.
2. DESIGNED FOR BACK SIPHONAGE ONLY, NOT FOR BACK PRESSURE.
3. THOROUGHLY FLUSH LINES PRIOR TO INSTALLATION OF BACKFLOW PREVENTER.
4. IF A PVBA IS INSTALLED INDOORS, CONSIDERATION MUST BE GIVEN TO WATER LEAKAGE IF THE BACKFLOW PREVENTER FAILS (EXCESSIVE WATER SPILLAGE).
5. DO NOT INSTALL IN AN AREA SUBJECT TO FLOODING.
6. MUST BE PROTECTED FROM FREEZING CONDITIONS.
7. THE BACKFLOW ASSEMBLY SHALL BE A STATE APPROVED MODEL.
8. A PLUMBING PERMIT IS REQUIRED – PLEASE OBTAIN PERMIT FROM CITY OF EDMONDS DEVELOPMENT SERVICES DEPARTMENT.
9. MUST BE TESTED AFTER INSTALLATION AND YEARLY THEREAFTER BY WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER. TEST RESULTS SHALL BE SENT TO THE CITY OF EDMONDS WATER DIVISION.

(ABOVE GROUND INSTALLATION ONLY)



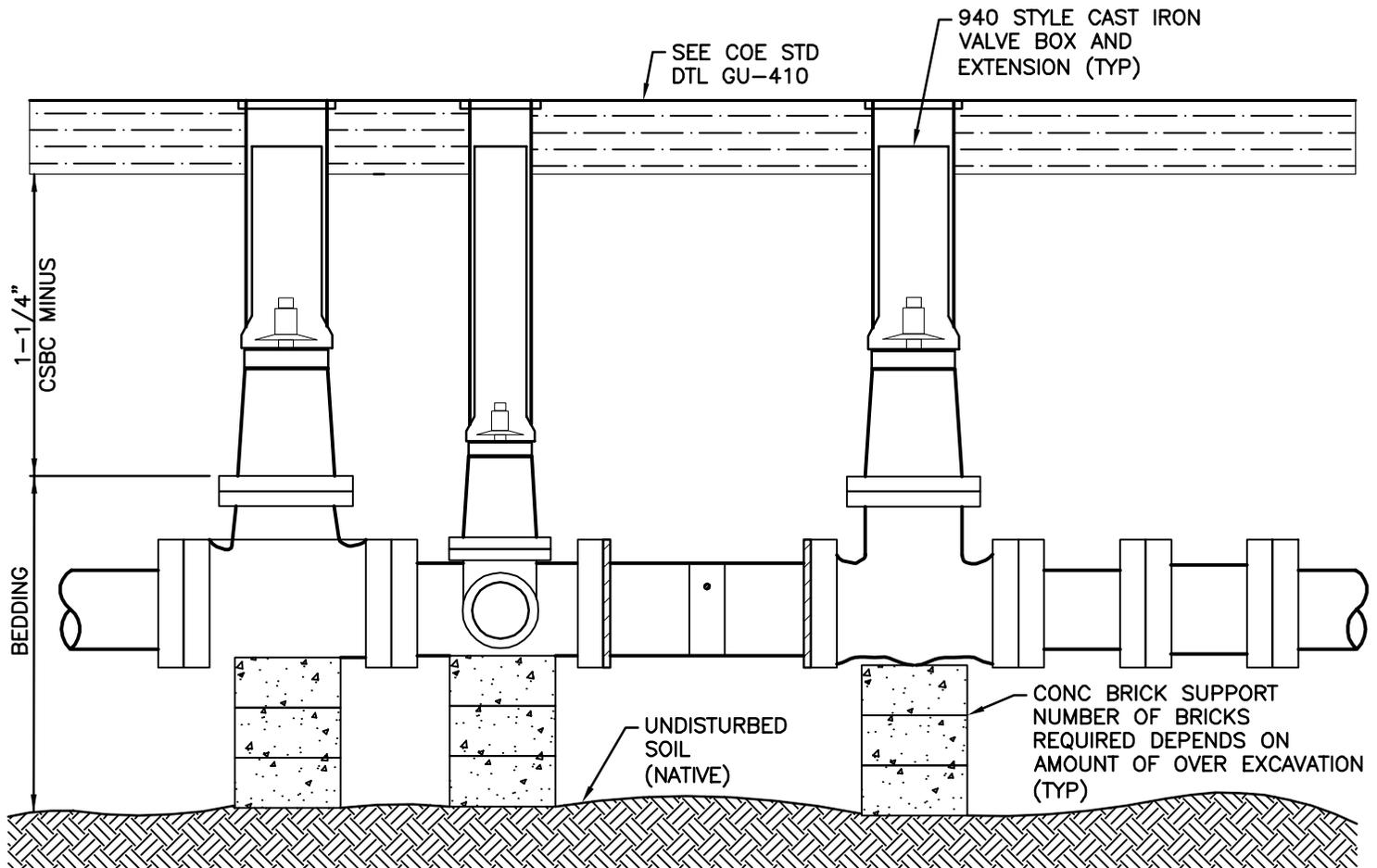
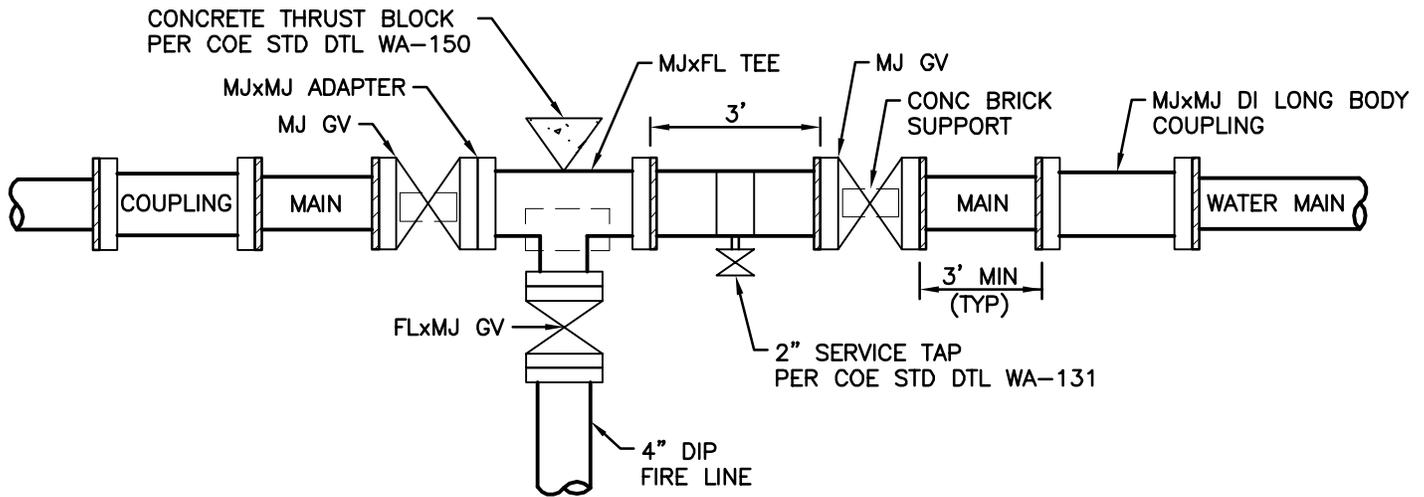
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**PRESSURE VACUUM
BREAKER ASSEMBLY (PVBA)
2" AND SMALLER**

APPROVED BY: R. ENGLISH

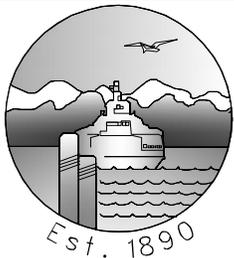
REVISION DATE
JANUARY 2018

STANDARD
DETAIL
WA-166



NOTES:

1. BACKFILL SHALL BE PER COE STD DTL GU-400.
2. ALL FITTINGS AND PIPE JOINTS MUST BE MECHANICALLY RESTRAINED.



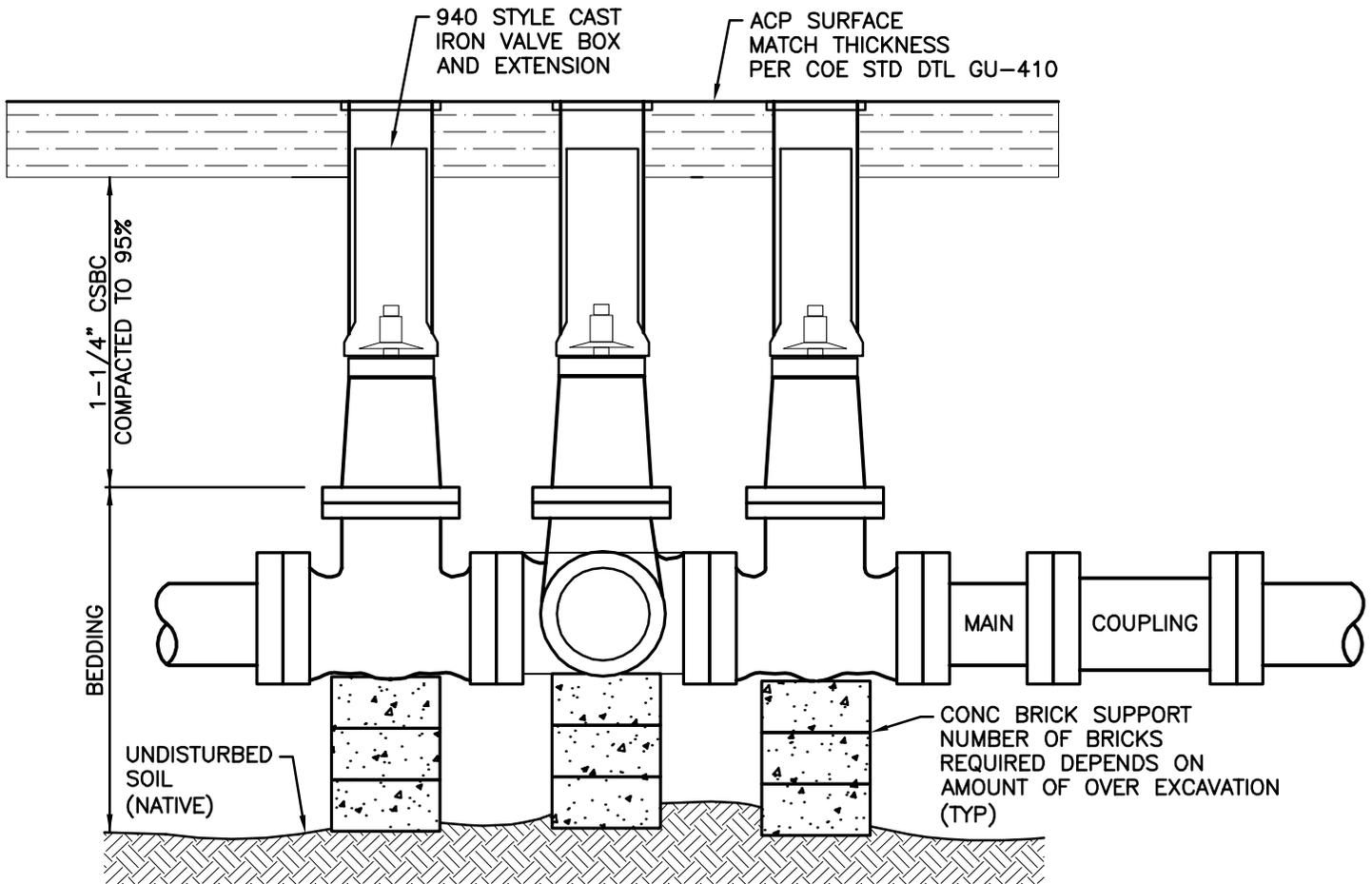
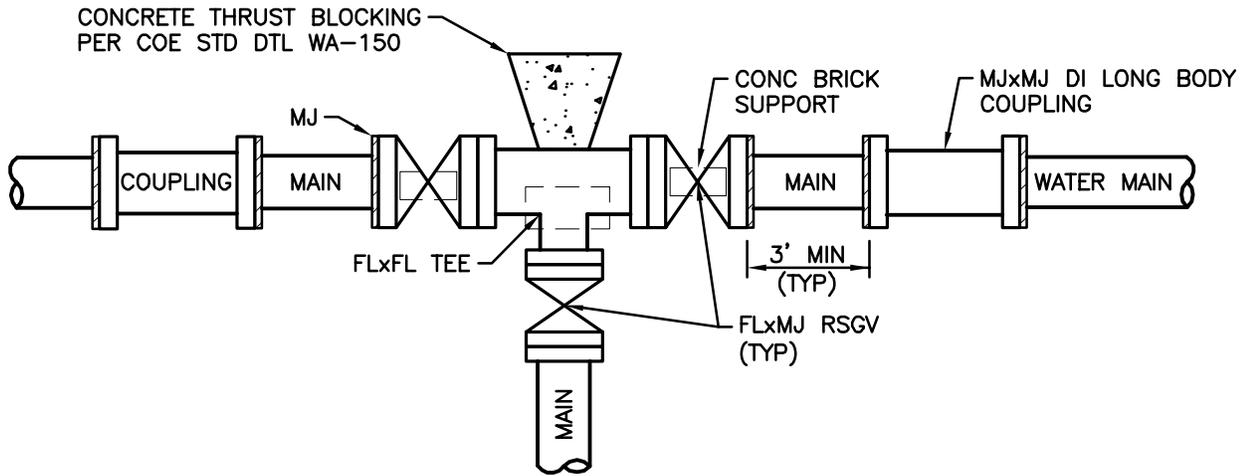
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**FIRE LINE
AND 2" DOMESTIC
SERVICE CONNECTIONS**

APPROVED BY: R. ENGLISH

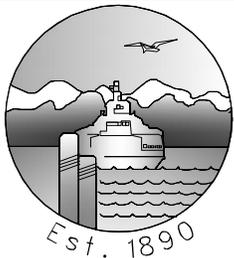
REVISION DATE
JANUARY 2018

STANDARD
DETAIL
WA-180



NOTES:

1. BACKFILL SHALL BE PER COE STD DTL GU-400.
2. ALL FITTINGS AND PIPE JOINTS MUST BE MECHANICALLY RESTRAINED.



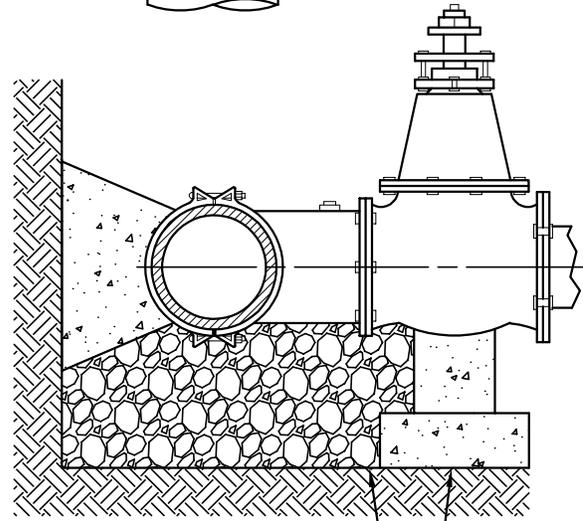
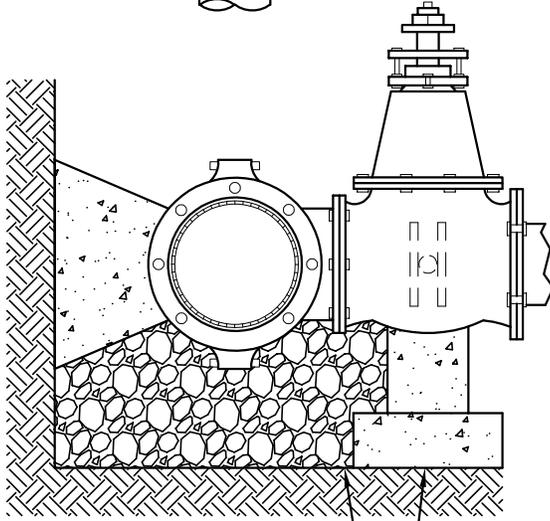
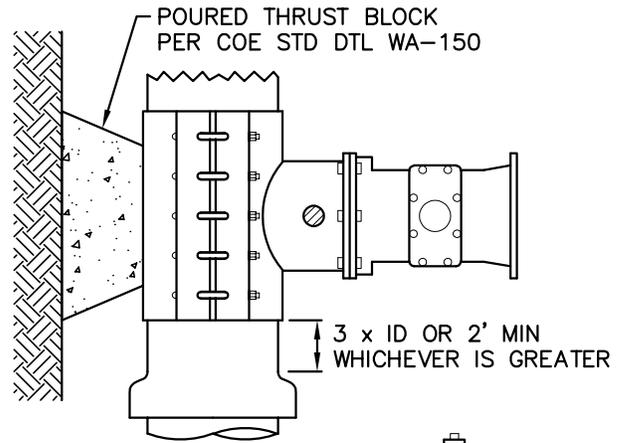
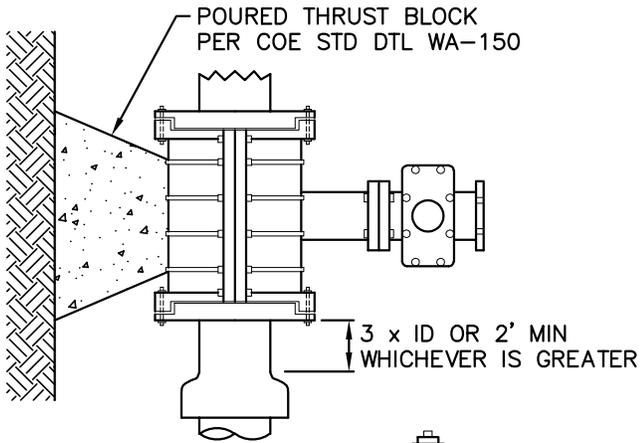
CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**TYPICAL WATER VALVE
CLUSTER CONNECTION**

APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

STANDARD
DETAIL
WA-181



COMPACTED BEDDING GRAVEL PER SECTION 9-03.12(3) OF THE WSDOT STANDARD SPECIFICATIONS

COMPACTED BEDDING GRAVEL PER SECTION 9-03.12(3) OF THE WSDOT STANDARD SPECIFICATIONS

CONCRETE SUPPORT BRICKS
NUMBER OF BRICKS REQUIRED
DEPENDS ON AMOUNT OF OVER
EXCAVATION (TYP)

CONCRETE SUPPORT BRICKS
NUMBER OF BRICKS REQUIRED
DEPENDS ON AMOUNT OF OVER
EXCAVATION (TYP)

**DUCTILE IRON TAPPING TEE
MECHANICAL JOINT SLEEVE**

INSTALLED ON CAST IRON
PIPE AND DUCTILE IRON PIPE

STAINLESS STEEL TAPPING TEE

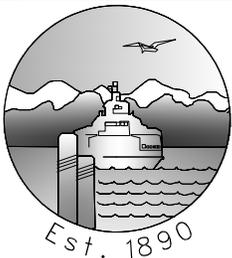
INSTALLED ON CAST IRON PIPE AND
DUCTILE IRON PIPE

STEEL TAPPING TEE

INSTALLED ON DUCTILE IRON PIPE ONLY

NOTES:

1. STAINLESS STEEL TAPPING TEES SHALL HAVE FULL CIRCLE SEAL. BOLTS AND NUTS SHALL BE STAINLESS STEEL.
2. STEEL TAPPING TEES SHALL BE EPOXY COATED. BOLTS AND NUTS SHALL BE COR-TEN, OR STAINLESS STEEL.
3. ALL TEES AND VALVES TO BE WATER TESTED BEFORE TAP.
4. TAPPING TEE MAY NOT BE SIZE ON SIZE. TAP SHALL BE AT LEAST 2" SMALLER DIAMETER THAN THE EXISTING MAIN.



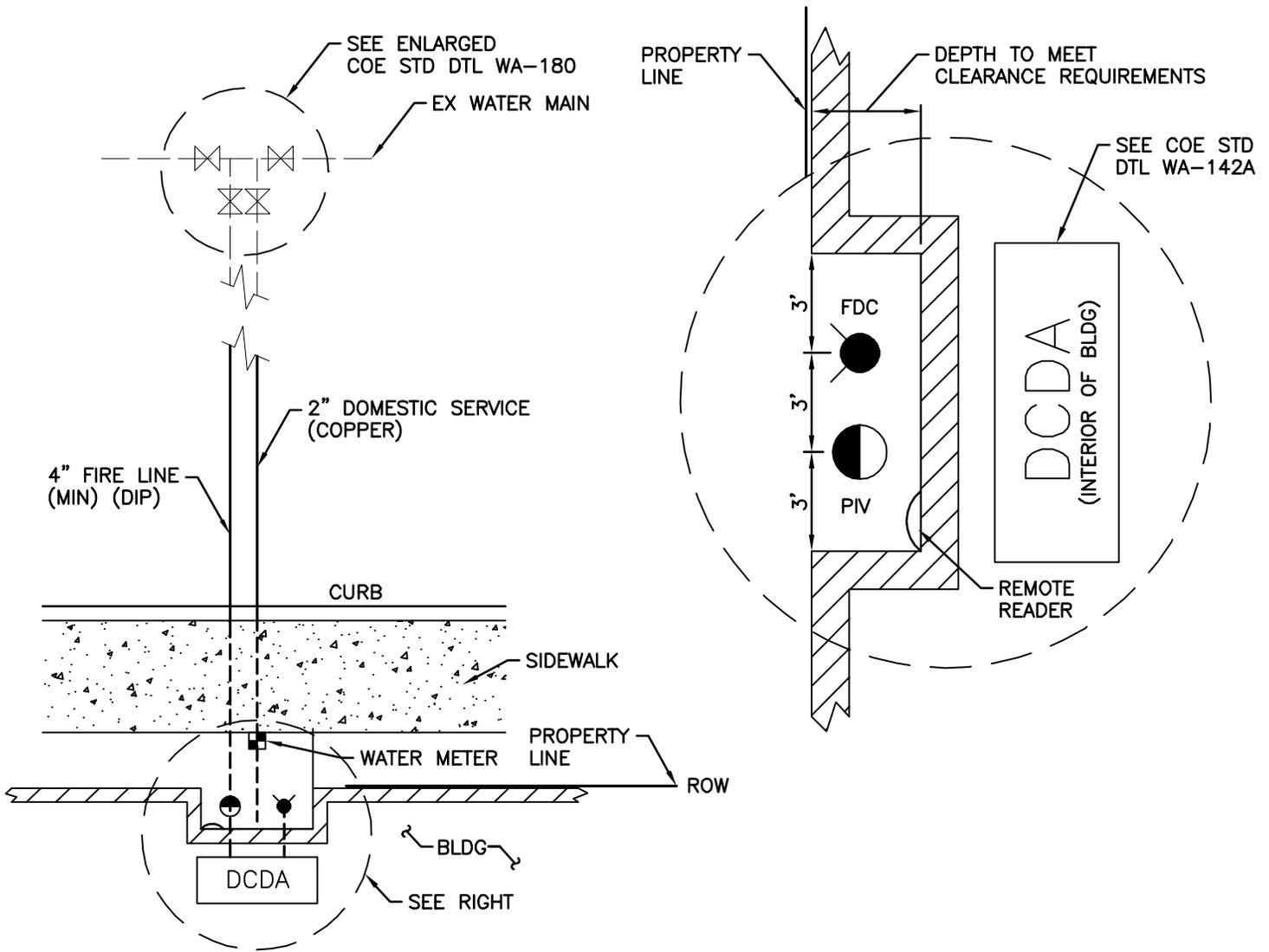
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PUBLIC WORKS
DEPARTMENT

TAPPING TEES

APPROVED BY: R. ENGLISH

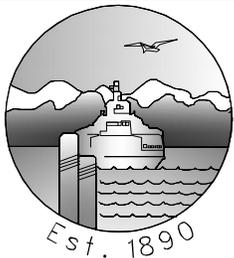
REVISION DATE
MAY 2018

STANDARD
DETAIL
WA-182



NOTES (BLDGS WITHOUT SETBACKS):

1. THE PIV AND FDC SHALL BE LOCATED ON THE EXTERIOR WALL OF THE BUILDING OR IN A LANDSCAPED AREA. AT NO TIME SHALL THE PIV OR FDC BE LOCATED IN THE PUBLIC SIDEWALK.
2. THE DCDA SHALL BE LOCATED ON THE INTERIOR WALL OR IN A ROOM ADJACENT TO THE RIGHT-OF-WAY WHERE THE FIRELINE TIES INTO THE CITY MAIN.
3. THE PIV AND FDC SHALL HAVE A 3' MINIMUM CLEARANCE BETWEEN AND AROUND THEM.
4. THE SENSUS ECR/WP REMOTE READER SHALL BE PLACED ON THE EXTERIOR WALL OF THE BUILDING 4' ABOVE FINISHED GRADE.
5. THE FDC SHALL BE 4" PIPE AND HAVE A 22' BEND WITH 4" STORZ ADAPTER ON THE END.
6. THE WATER METER SHALL BE LOCATED AT THE PROPERTY LINE WHENEVER POSSIBLE. LOCATION OTHER THAN THE PROPERTY LINE, SHALL BE DETERMINED BY THE CITY INSPECTOR.



CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**FIRE LINE & 2" DOMESTIC
SERVICE CONNECTIONS (PLAN VIEW)**

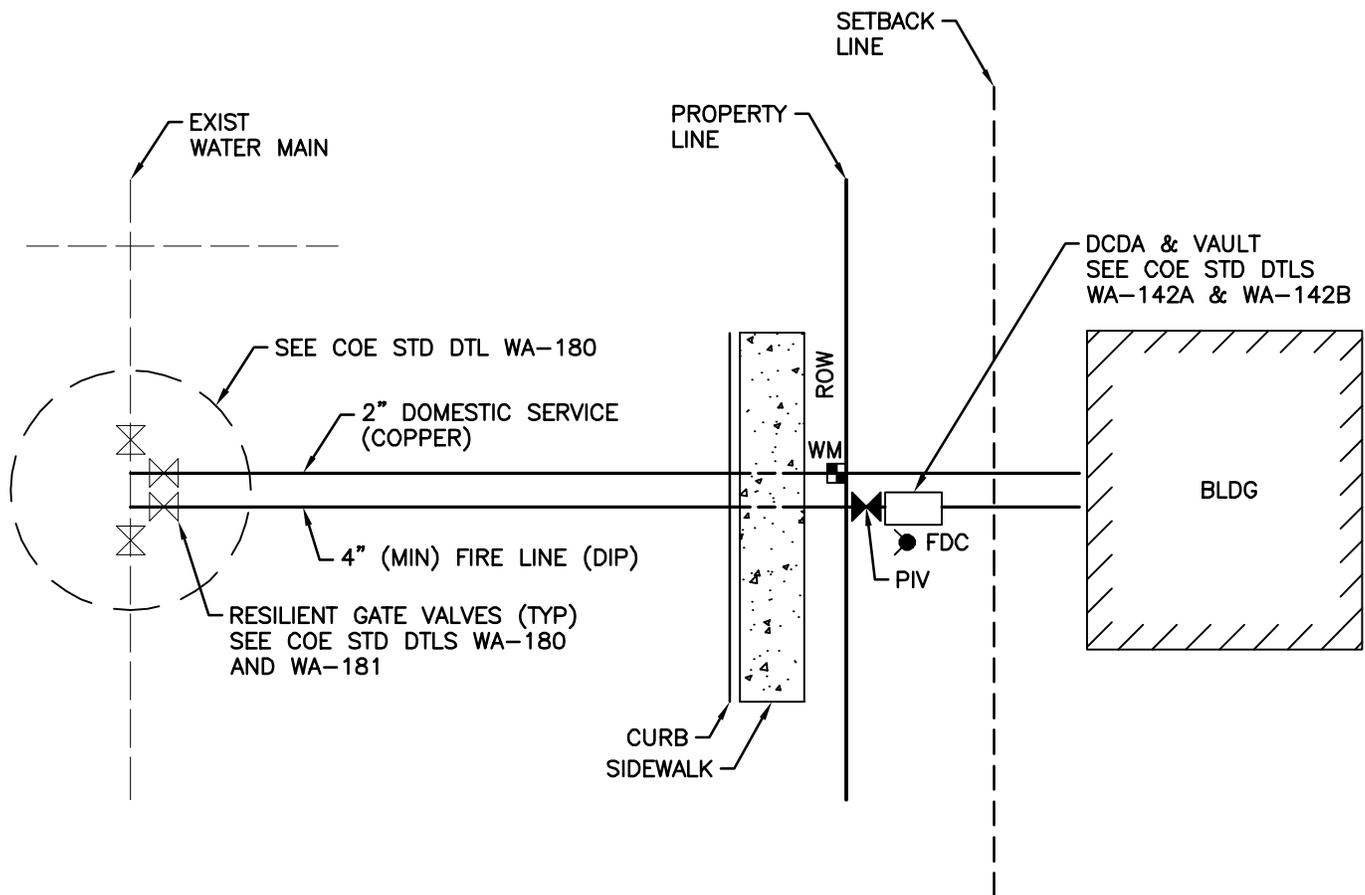
ZERO-SETBACK
BUSINESS/COMMERCIAL ZONES

APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

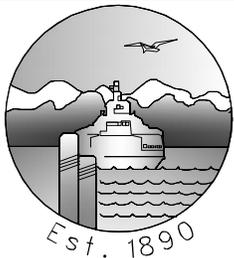
STANDARD
DETAIL

WA-183



NOTES (BLDGS WITH SETBACKS):

1. THE DCDA AND VAULT SHALL BE LOCATED ON PRIVATE PROPERTY AND ADJACENT TO THE RIGHT-OF-WAY LINE.
2. THE PIV AND FDC SHALL BE LOCATED ON PRIVATE PROPERTY AND SHALL BE NEAR THE DCDA.
3. THE PIV AND FDC SHALL HAVE A 3' MINIMUM CLEARANCE BETWEEN AND AROUND THEM.
4. THE FDC SHALL HAVE A 22° BEND WITH 4" STORZ ADAPTER ON THE END.



CITY OF EDMONDS
PUBLIC WORKS
DEPARTMENT

**FIRE LINE AND 2" DOMESTIC
SERVICE CONNECTIONS (PLAN VIEW)**

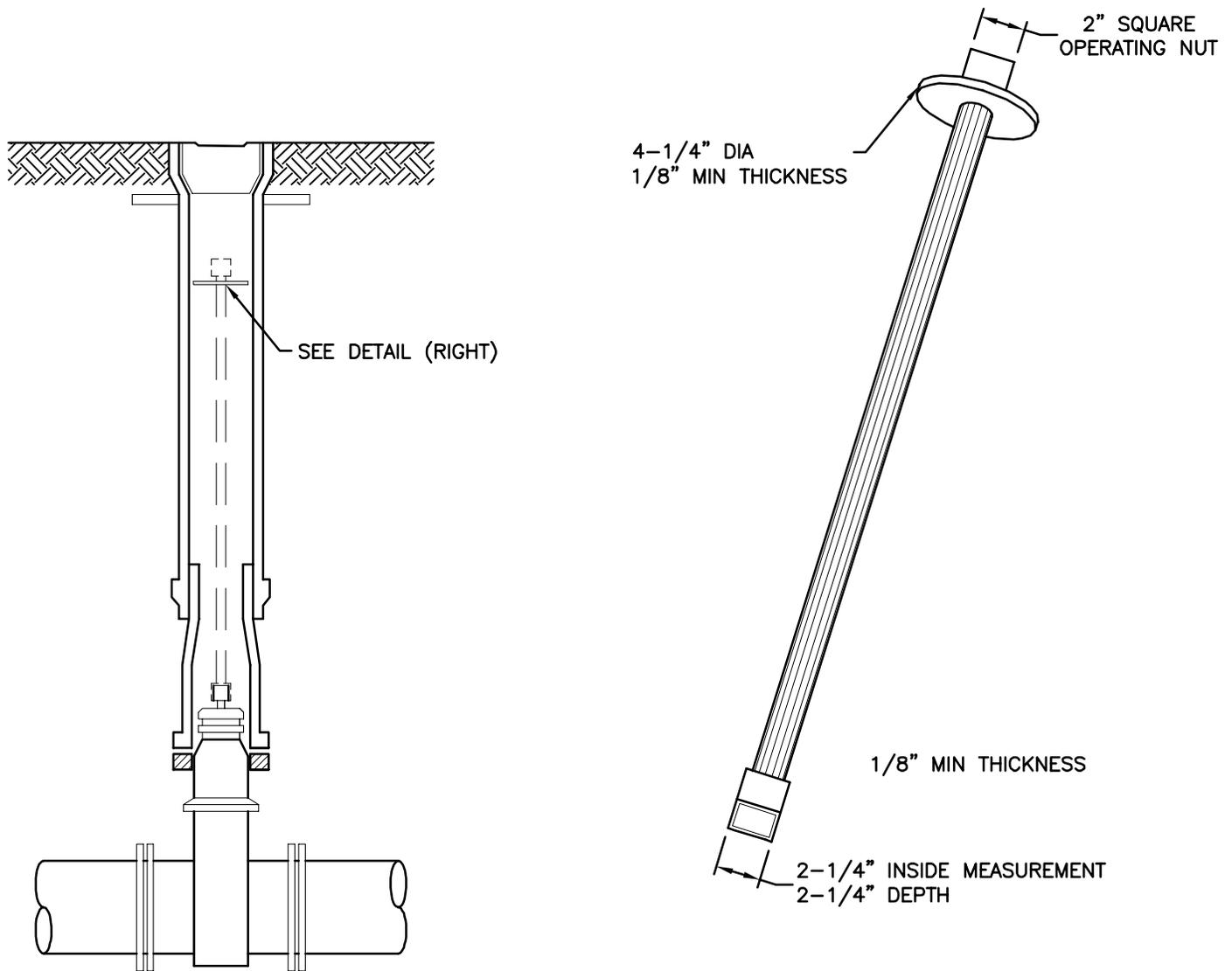
ALL ZONES EXCEPT ZERO-SETBACK
BUSINESS/COMMERCIAL

APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

STANDARD
DETAIL

WA-184

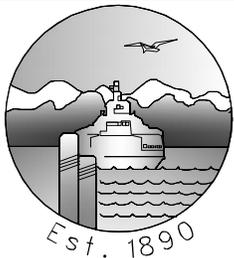


VALVE NUT EXTENSION

EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS MORE THAN THREE (3) FEET BELOW FINISHED GRADE.
 EXTENSIONS ARE TO BE A MINIMUM OF ONE (1) FOOT LONG. ONLY ONE EXTENSION TO BE USED PER VALVE.

NOTES:

1. ALL EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED, AND HOT DIPPED GALVANIZED.
2. INSTALL EXTENSIONS PERPENDICULAR TO THE WATER LINE VERTICAL ALIGNMENT.



CITY OF EDMONDS
 PUBLIC WORKS
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VALVE NUT EXTENSION

APPROVED BY: **R. ENGLISH**

REVISION DATE
JANUARY 2018

STANDARD
 DETAIL
WA-185