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LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

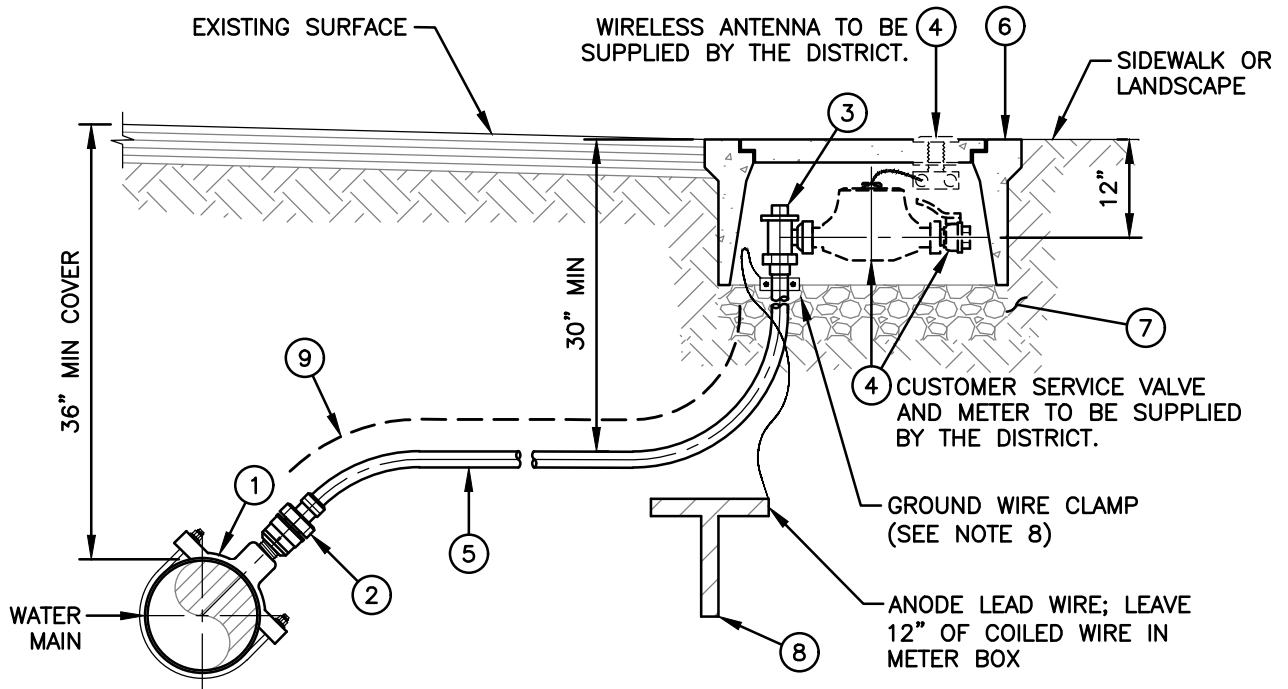
4/19

DAVID YOUNGBLOOD RCE 59742 Date

INDEX OF STANDARD DRAWINGS

W-00

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DRAWING NOT TO SCALE


MATERIALS

- ① 1" DOUBLE-STRAP BRONZE SERVICE SADDLE W/CC THREAD OUTLET. SEE STD DWG NO. W-03
- ② 1" CC THREAD x FLARE BRONZE BALL CORPORATION STOP. SEE STD DWG NO. W-03
- ③ 1" LOCKING FLARE x FLG BRONZE ANGLE METER BALL STOP
- ④ 1" FLG x FNTF BRONZE CUSTOMER SERVICE BALL VALVE, METER AND WIRELESS ANTENNA TO BE SUPPLIED BY DISTRICT
- ⑤ 1" TYPE K COPPER TUBING
- ⑥ METER BOX WITHOUT READING LID
- ⑦ 6" BASE OF 3/4" CRUSHED ROCK
- ⑧ ZINC ANODE (15 lbs.) AND LEAD WIRE (No. 12 COATED SOLID). PLACE ANODE AT LEAST 2' FROM COPPER TUBING
- ⑨ WARNING TAPE

NOTES:

1. DO NOT INSTALL SERVICE SADDLE WITHIN 18" OF VALVE, COUPLING, JOINT OR FITTING. TAPPED COUPLINGS ARE NOT PERMITTED.
2. INSTALL CORPORATION STOP WITH KEY SIDEWAYS IN OPEN POSITION.
3. TAPS SHALL BE HOT-TAPPED WITH A TAPPING MACHINE, 7/8" BIT.
4. EXTEND WATER SERVICE PERPENDICULAR TO STREET CENTERLINE FROM WATER MAIN TO METER STOP.
5. SET METER BOX BEHIND SIDEWALK WHERE SIDEWALK IS ADJACENT TO CURB, OR IN PARKWAY BETWEEN CURB AND SIDEWALK.
6. CLAMP ANODE LEAD WIRE TO COPPER TUBING. CLAMP SHALL BE DIRECT BURIAL TYPE OF RED BRASS WITH BRASS SCREWS AS MANUFACTURED BY DOTTIE, OR ACCEPTED EQUAL.

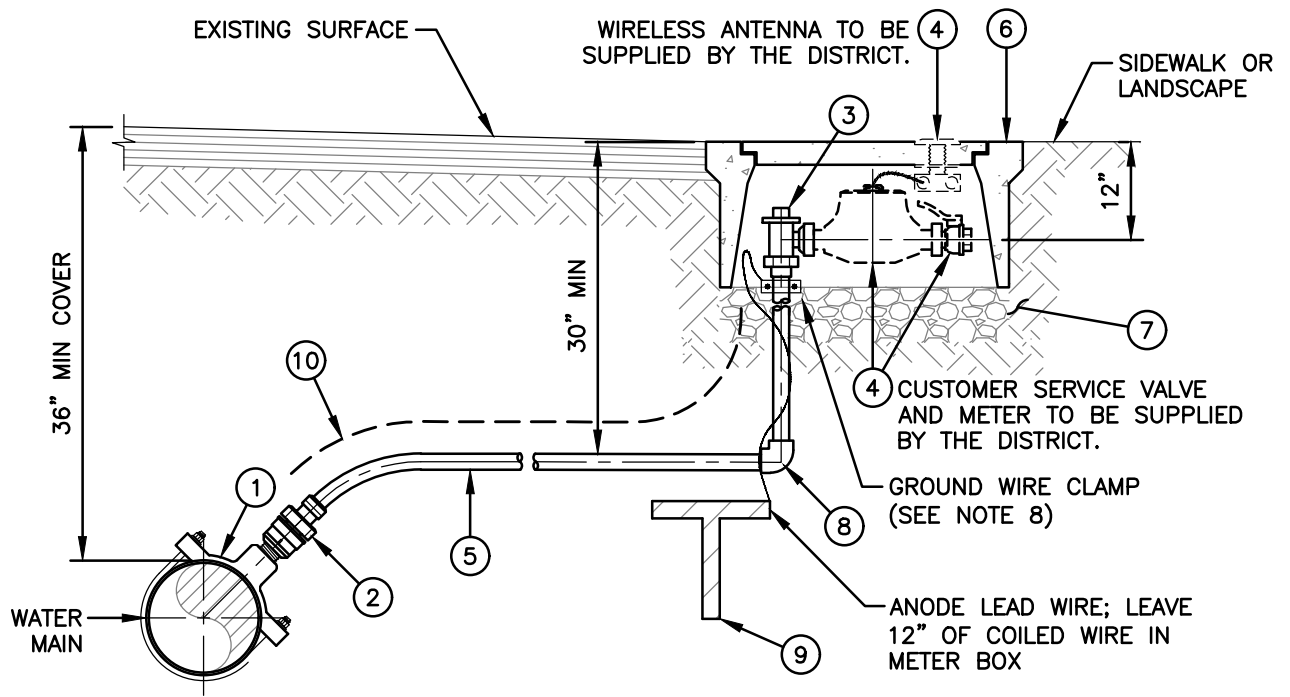
LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

 4/19
 DAVID YOUNGBLOOD RCE 59742 Date

1 INCH WATER SERVICE

STD DWG NO.
W-01

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DRAWING NOT TO SCALE

MATERIALS

- ① 2" DOUBLE-STRAP BRONZE SERVICE SADDLE W/CC THREAD OUTLET
- ② 2" CC THREAD x FLARE BRONZE BALL CORPORATION STOP
- ③ 2" LOCKING FLARE x FLG BRONZE ANGLE METER BALL STOP
- ④ 2" FLG x FNTF BRONZE CUSTOMER SERVICE BALL VALVE, METER AND WIRELESS ANTENNA TO BE SUPPLIED BY DISTRICT
- ⑤ 2" TYPE K COPPER TUBING
- ⑥ METER BOX WITHOUT READING LID
- ⑦ 6" BASE OF 3/4" CRUSHED ROCK
- ⑧ 2" SWEAT x SWEAT COPPER 90° ELL
- ⑨ ZINC ANODE (15 lbs.) AND LEAD WIRE (No. 12 COATED SOLID). PLACE ANODE AT LEAST 2' FROM COPPER TUBING
- ⑩ WARNING TAPE

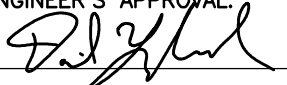
TRENCH WIDTH

METER SIZE	BOLT SIZE
1 1/2"	5/8" x 3"
2"	3/4" x 2 1/2"

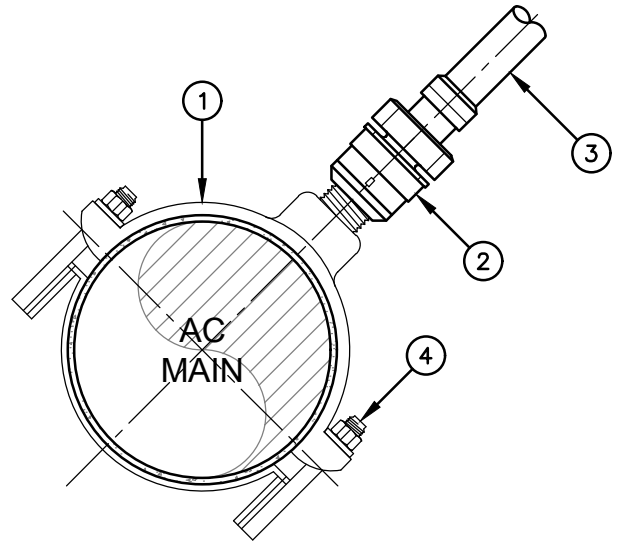
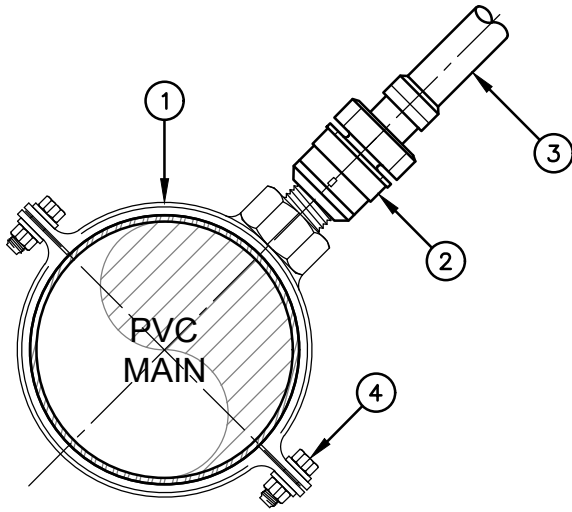
NOTES:

1. DO NOT INSTALL SERVICE SADDLE WITHIN 18" OF VALVE, COUPLING, JOINT OR FITTING. TAPPED COUPLINGS ARE NOT PERMITTED.
2. INSTALL CORPORATION STOP WITH KEY SIDWAYS IN OPEN POSITION.
3. TAPS SHALL BE HOT-TAPPED WITH A TAPPING MACHINE.
4. EXTEND WATER SERVICE PERPENDICULAR TO STREET CENTERLINE FROM WATER MAIN TO METER STOP.
5. SET METER BOX BEHIND SIDEWALK WHERE SIDEWALK IS ADJACENT TO CURB, OR IN PARKWAY BETWEEN CURB AND SIDEWALK.
6. SWEAT JOINTS SHALL BE SILVER SOLDER (EXCEPT AS NOTED).
7. A 2" BYPASS LINE WITH LOCKING CURB STOP MAY BE REQUIRED FOR INSTALLATIONS NEEDING CONTINUOUS SERVICE.
8. FOR END OF LINE SERVICE INSTALLATION SEE STD DWG NO. W-03.
9. CLAMP ANODE LEAD WIRE TO COPPER TUBING. CLAMP SHALL BE DIRECT BURIAL TYPE OF RED BRASS WITH BRASS SCREWS AS MANUFACTURED BY DOTTIE, OR ACCEPTED EQUAL.
10. LBCWD MAY REQUIRE A 2" COMPOUND METER, IF NECESSARY.
11. NO TWO SERVICES SHALL BE IN SAME MOLE-HOLE.

LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:  DAVID YOUNGBLOOD RCE 59742	4/19 Date	1-1/2 & 2 INCH WATER SERVICE	STD DWG NO. W-02
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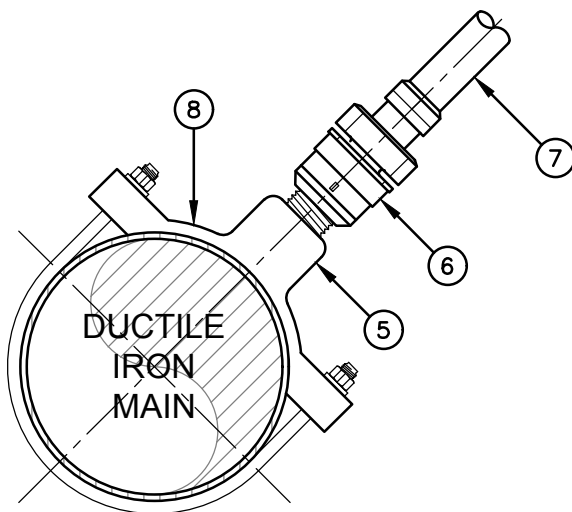


PVC AND AC MATERIALS LIST:

- ① BRONZE SERVICE SADDLE WITH DOUBLE STAINLESS STEEL STRAP AND 1" OR 2" CC OUTLET
- ② 1 OR 2" BRONZE BALL CORPORATION STOP, CC x FLARE
- ③ 1" OR 2" COPPER SERVICE PIPE, TYPE "K" (SOFT)
- ④ 2 EACH-TYPE 316 STAINLESS STEEL SADDLE BOLTS AND NUTS

NOTE:

SADDLE CONNECTION MAY BE USED ON AC PIPE SIZES UP TO AND INCLUDING 16". FOR SIZE GREATER THAN 16", SERVICE CONNECTIONS AND OTHER APPARATUS SHALL BE CONNECTED VIA DUCTILE IRON TEE FITTINGS WITH FLANGED OUTLET.



DIP MATERIALS LIST:

- ⑤ 2" DOUBLE-STRAP BRONZE SERVICE SADDLE W/CC OUTLET
- ⑥ 2" CC THREAD x FLARE INSULATING BRONZE CORPORATION STOP
- ⑦ 2" TYPE K COPPER TUBING
- ⑧ 2 EACH-TYPE BRONZE SADDLE BOLTS AND NUTS

DRAWING NOT TO SCALE

LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

10/18

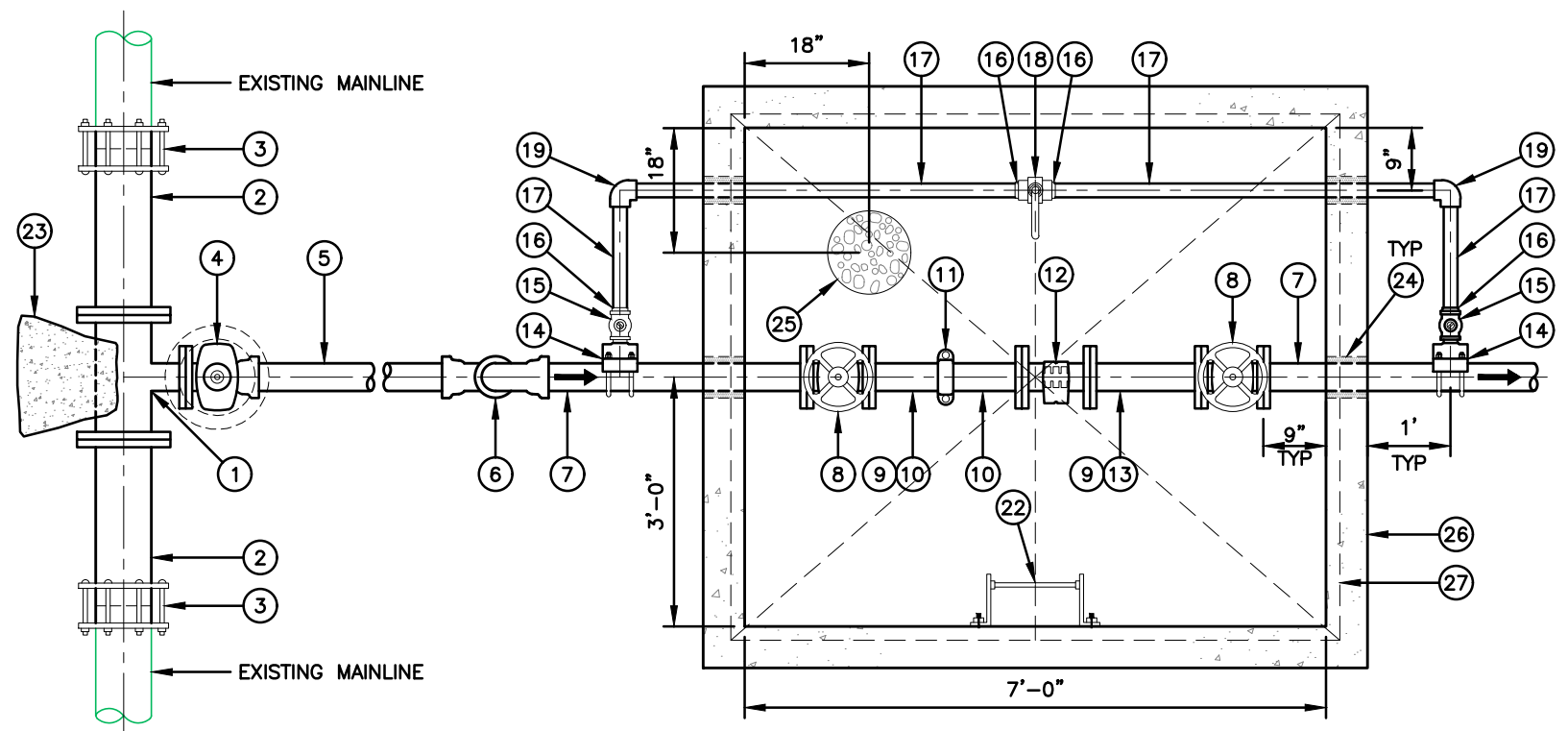
DAVID YOUNGBLOOD RCE 59742 Date

WATER SERVICE CONNECTION TO MAIN

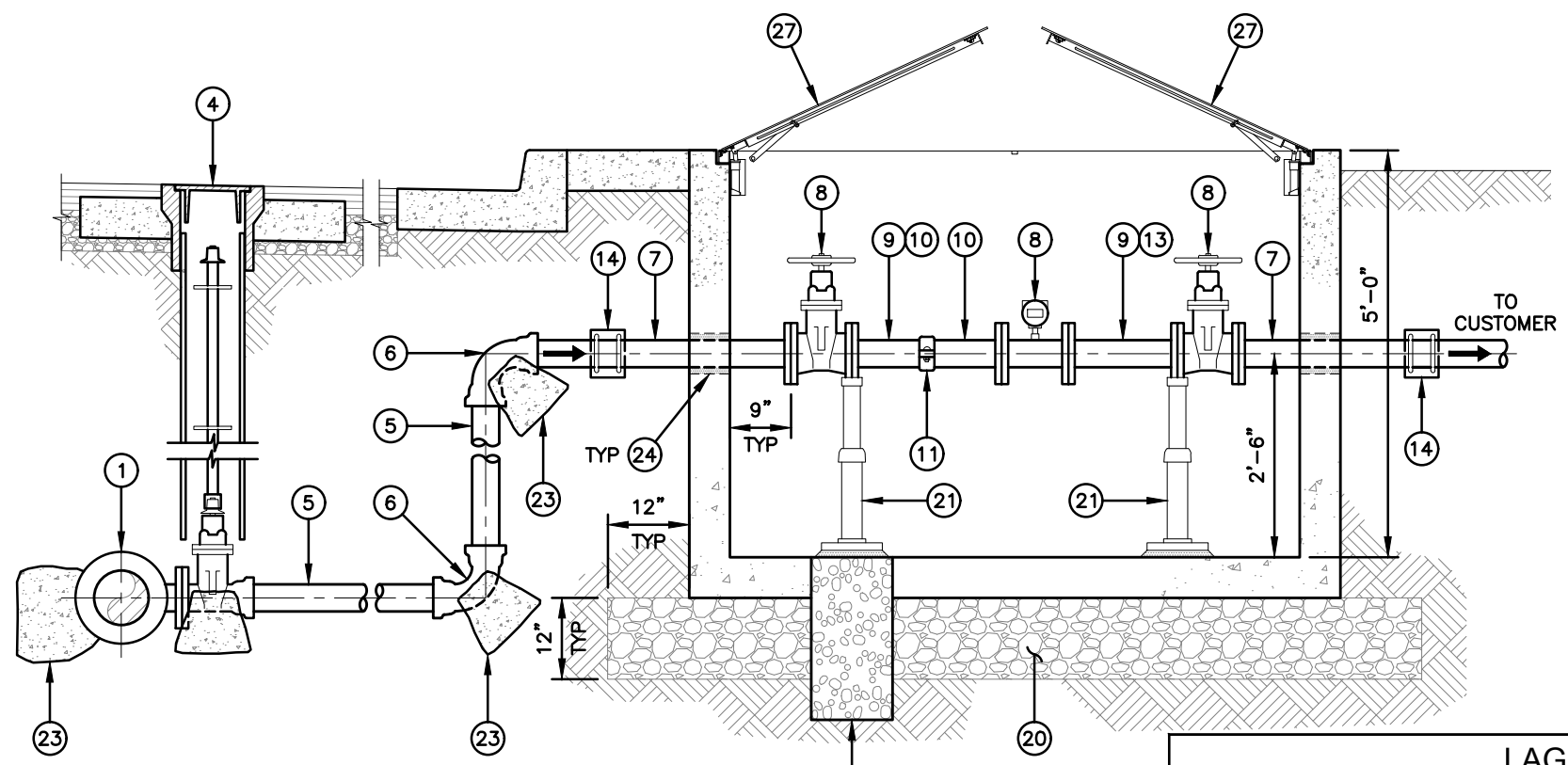
STD DWG NO.

W-03

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PLAN



SECTION

MATERIALS

- ① MAIN SIZE x 6" FLG x FLG x FLG DIP TEE (FOR 6" METER) OR MAIN SIZE x 4" FLG x FLG x FLG DIP TEE (FOR 3" OR 4" METERS)
- ② MAIN SIZE FLG x PE DIP SPOOL (3' MIN)
- ③ MAIN SIZE TRANSITION OR SLEEVE COUPLING
- ④ 4" OR 6" FLG x PO RW GATE VALVE AND VALVE BOX ASSEMBLY PER STD DWG NO. W-08
- ⑤ 4" OR 6" PE x PE DIP SPOOL (LENGTH AS REQUIRED)
4" OR 6" PE x PE PVC SPOOL (LENGTH AS REQUIRED)
- ⑥ 4" OR 6" PO x PO DIP 90° ELL
- ⑦ 4" OR 6" PE x FLG DIP (LENGTH AS REQUIRED)
- ⑧ 4" OR 6" FLG x FLG RW GATE VALVE WITH HANDWHEEL
- ⑨ 4" x 3" FLG x FLG DIP REDUCER (SEE NOTE 5)
- ⑩ 3", 4" OR 6" FLG x GROOVED DIP SPOOL (LENGTH AS REQUIRED)
- ⑪ 3", 4" OR 6" VICTAULIC COUPLING (STYLE 77)
- ⑫ 3", 4" OR 6" FLG x FLG MAGNETIC METER (SEE NOTE 3)
- ⑬ 3", 4" OR 6" FLG x FLG DIP (LENGTH AS REQUIRED)
- ⑭ 2" DOUBLE-STRAP BRONZE SERVICE SADDLE W/CC THREAD OUTLET
- ⑮ 2" CC THREAD x FNTP BRONZE BALL CORPORATION STOP
- ⑯ 2" MNTP x SWEAT ADAPTOR FITTING
- ⑰ 2" TYPE K COPPER TUBING
- ⑱ 2" FNTP x FNTP BRONZE BALL VALVE WITH LOCKING WING
- ⑲ 2" SWEAT x SWEAT COPPER 90° ELL
- ⑳ 3/4" COMPACTED PEA GRAVEL
- ㉑ ADJUSTABLE PIPE SUPPORT.
- ㉒ FIBERGLASS LADDER & TYPE 316 SS ANCHOR BOLTS
- ㉓ THRUST BLOCK SIZED SEE STD DWG NO. W-05 (TYP)
- ㉔ EPDM ANNULAR HYDROSTATIC SEALING DEVICE (LINK SEAL)
- ㉕ 12" DIAMETER x 2' DEEP SUMP FILLED WITH 3/4" CRUSHED ROCK
- ㉖ PRECAST CONCRETE VAULT 6'-0" W x 7'-0" L x 5'-0" H
- ㉗ TORSION-SPRING ASSIST DIAMOND PLATE ALUMINUM COVER AND RECESSED LOCKING HASP.

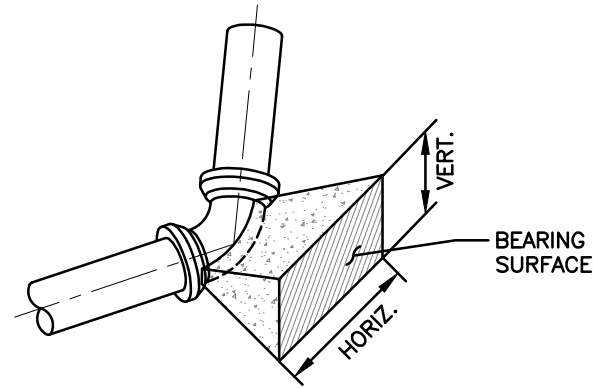
NOTES:

- 1. VAULT SHOWN IS PARKWAY USE ONLY. FOR TRAFFIC LOADING, CONTACT DISTRICT REPRESENTATIVE.
- 2. SET VAULT COVER TO CONFORM TO PARKWAY GRADE.
- 3. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE CLASS 150.
- 4. METER REQUIRES 5 PIPE DIAMETERS CLEAR UNDISTURBED RUN UPSTREAM AND 3 PIPE DIAMETERS CLEAR UNDISTURBED RUN DOWNSTREAM.
- 5. WHEN PROVIDING A 3" METER 4" x 3" FLG DIP REDUCERS NEED TO BE PROVIDED FOR METER BETWEEN RW GATE VALVES.

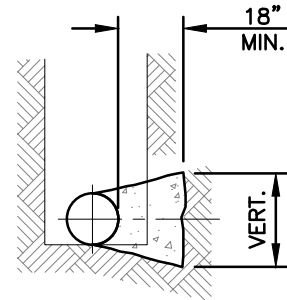
DRAWING SCALE: 1/2" = 1'-0"

LAGUNA BEACH COUNTY WATER DISTRICT		
ENGINEER'S APPROVAL: DAVID YOUNGBLOOD RCE 59742	10/18 Date	3", 4" & 6" COMPOUND AND MAGNETIC METER INSTALLATION
		STD DWG NO. W-04

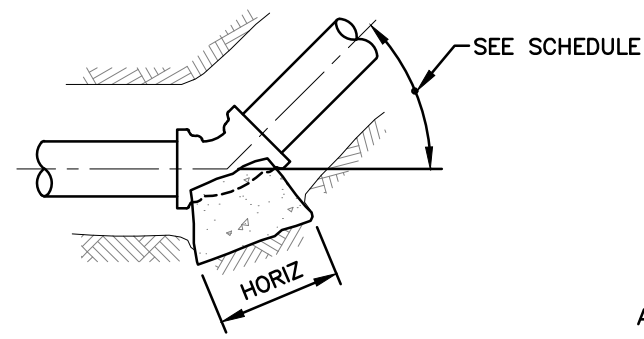
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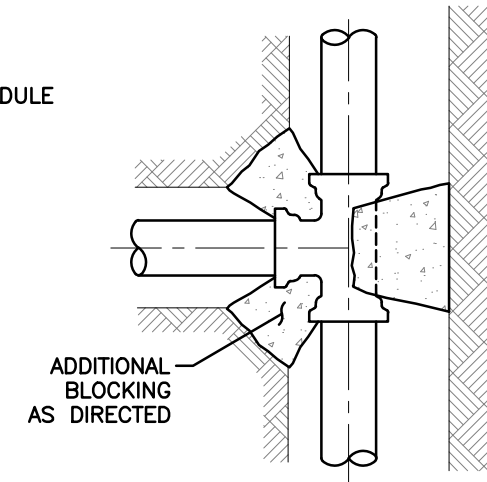
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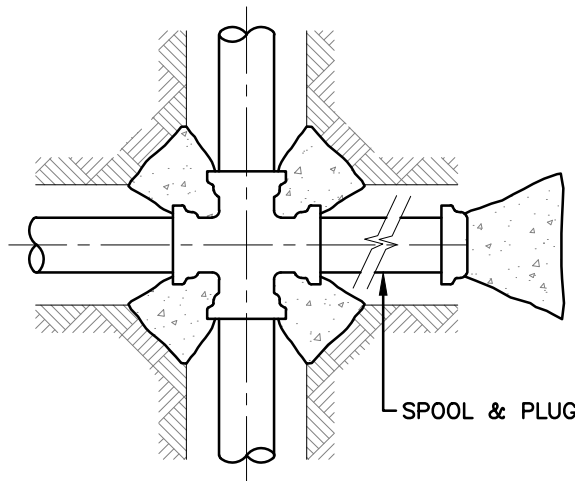
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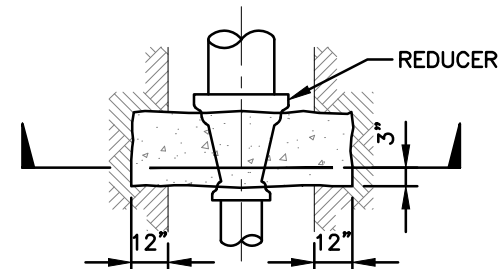
TYPICAL BEND



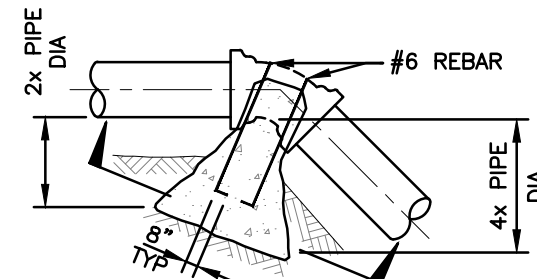
TEE OR VALVE



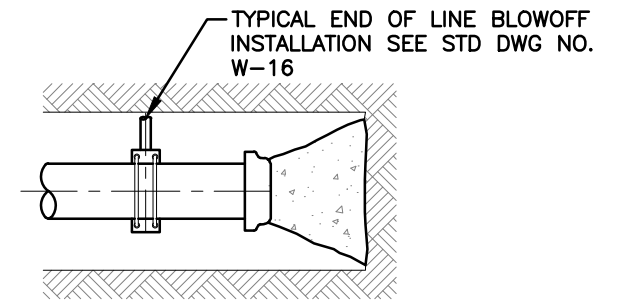
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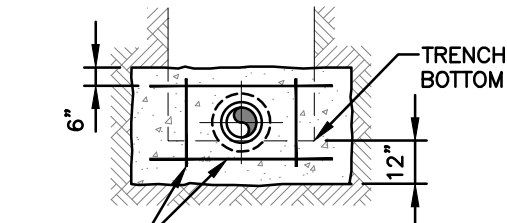
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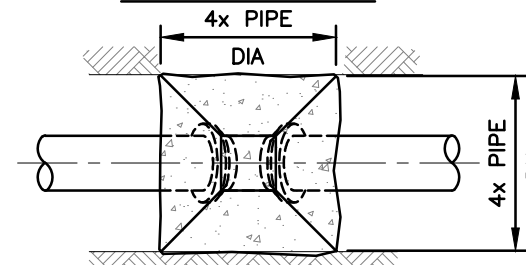
VERTICAL BEND



VERTICAL CAP



SECTION REDUCER



SECTION VERTICAL BEND


NOTES:

1. THRUST BLOCK BEARING AREA BASED ON ALLOWABLE SOIL BEARING VALUE OF 1500 PSF PRESSURE, 225 PSI LINE PRESSURE WITH 3'-0" COVER MINIMUM, AND A MINIMUM SAFETY FACTOR OF 1.2. FOR BEARING = 1000 PSF, 1.5 x AREA SHOWN FOR BEARING = 500 PSF, 3.0 x AREA SHOWN
2. ALL THRUST BLOCKS SHALL BE PORTLAND CEMENT CONCRETE MIX 560-C-3250 AND PLACED AGAINST UNDISTURBED SOIL.
3. THRUST BLOCKS ON REDUCERS SHALL BE KEYED INTO THE TRENCH BOTTOM AS SHOWN.
4. CONCRETE SHALL NOT EXTEND INTO FLANGE OR ADJOINING PIPE.
5. DO NOT COVER FITTING BOLTS WITH CONCRETE.
6. WHEN VALVES ARE FLANGED TO FITTINGS AVOID PLACING CONCRETE ON ANY PART OF THE VALVE BONNET OR VALVE OPERATOR.
7. COAT REBAR WITH 80 MILS OF COLD-APPLIED BITUMASTIC WATER-PROOFING COMPOUND. WRAP EXTERIOR OF VALVE, ACTUATOR AND REBAR WITH 8 MIL POLYETHYLENE SHEETING AND TAPE PER LBCWD SPECIFICATION.
8. MINIMUM CONCRETE COVER OVER REBAR SHALL BE 3".
9. YIELD STRENGTH OF STEEL BARS IS ASSUMED TO BE 36 KSI.

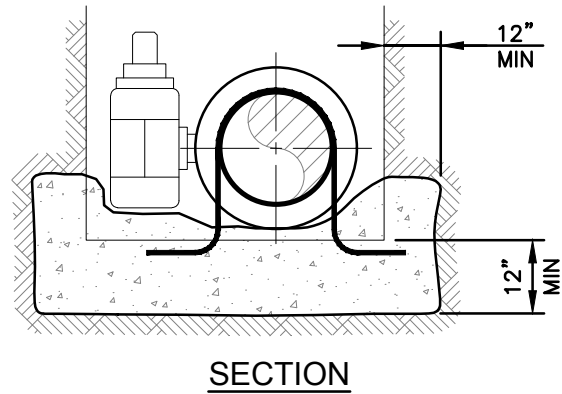
DRAWING NOT TO SCALE

MINIMUM THRUST BLOCK SIZE										
PIPE SIZE	11 1/4° BEND		22 1/2° BEND		45° BEND		90° BEND		CROSS, DEAD ENDS & TEES	
	HORIZ. L ₁ x L ₂	VERT. C.Y.	HORIZ. L ₁ x L ₂	VERT. C.Y.	HORIZ. L ₁ x L ₂	VERT. C.Y.	HORIZ. L x L	VERT. C.Y.	HORIZ. L x L	VERT. C.Y.
4"	1' x 1'	0.3	1.5' x 1'	0.5	2' x 1.5'	0.9	2.5' x 2'	1.6	2' x 1.5'	1.2
6"	1.5' x 1'	0.5	2.5' x 1'	0.9	2.5' x 2'	1.8	3' x 3'	3.3	2.5' x 2.5'	2.4
8"	2' x 1.5'	0.8	2.5' x 2'	1.6	3' x 3'	3.1	4' x 4'	5.6	3.5' x 3'	4.0
10"	2' x 2'	1.2	2.5' x 2.5'	2.4	4' x 3.5'	4.6	5' x 4.5'	8.5	4' x 4'	6.0
12"	2.5' x 2'	1.7	3' x 3'	3.3	4.5' x 4'	6.5	6.5' x 5'	12.0	5' x 4.5'	8.5

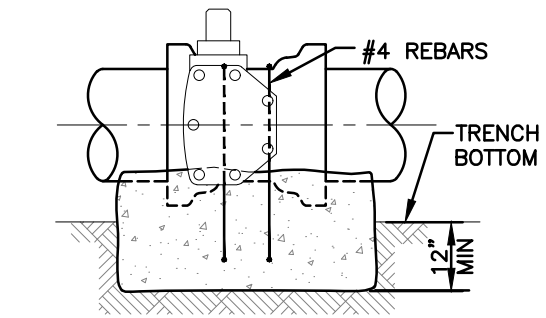
FOR PIPES GREATER THAN 12", TO BE CALCULATED

LAGUNA BEACH COUNTY WATER DISTRICT		
ENGINEER'S APPROVAL:  DAVID YOUNGBLOOD RCE 59742	4/19 Date	THRUST BLOCKS AND THRUST BLOCK TABLES
		STD DWG NO. W-05

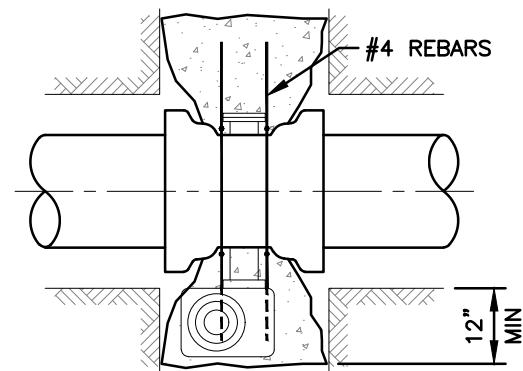
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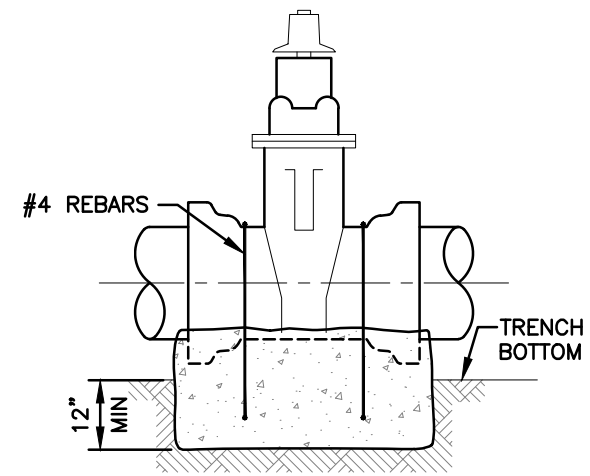
SECTION



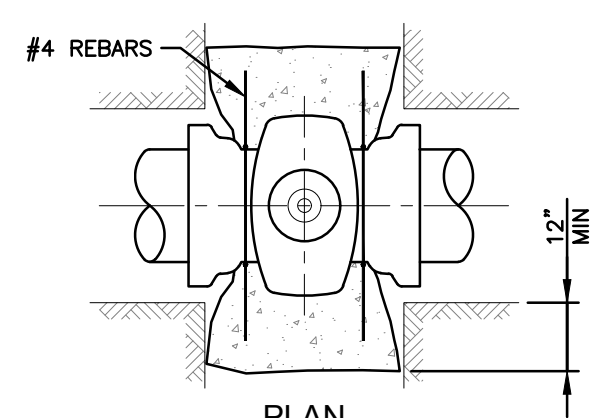
ELEVATION



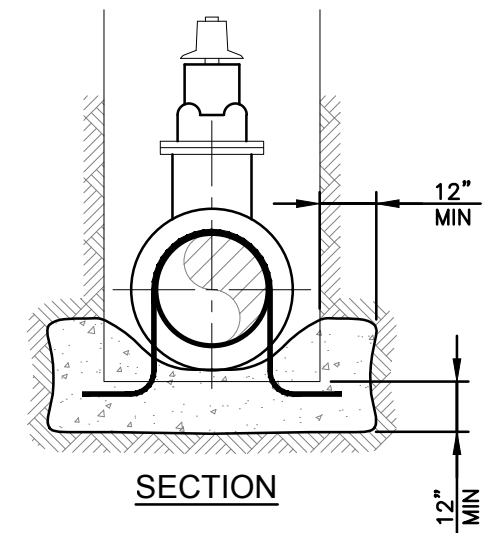
PLAN



ELEVATION



PLAN



SECTION


BUTTERFLY VALVES

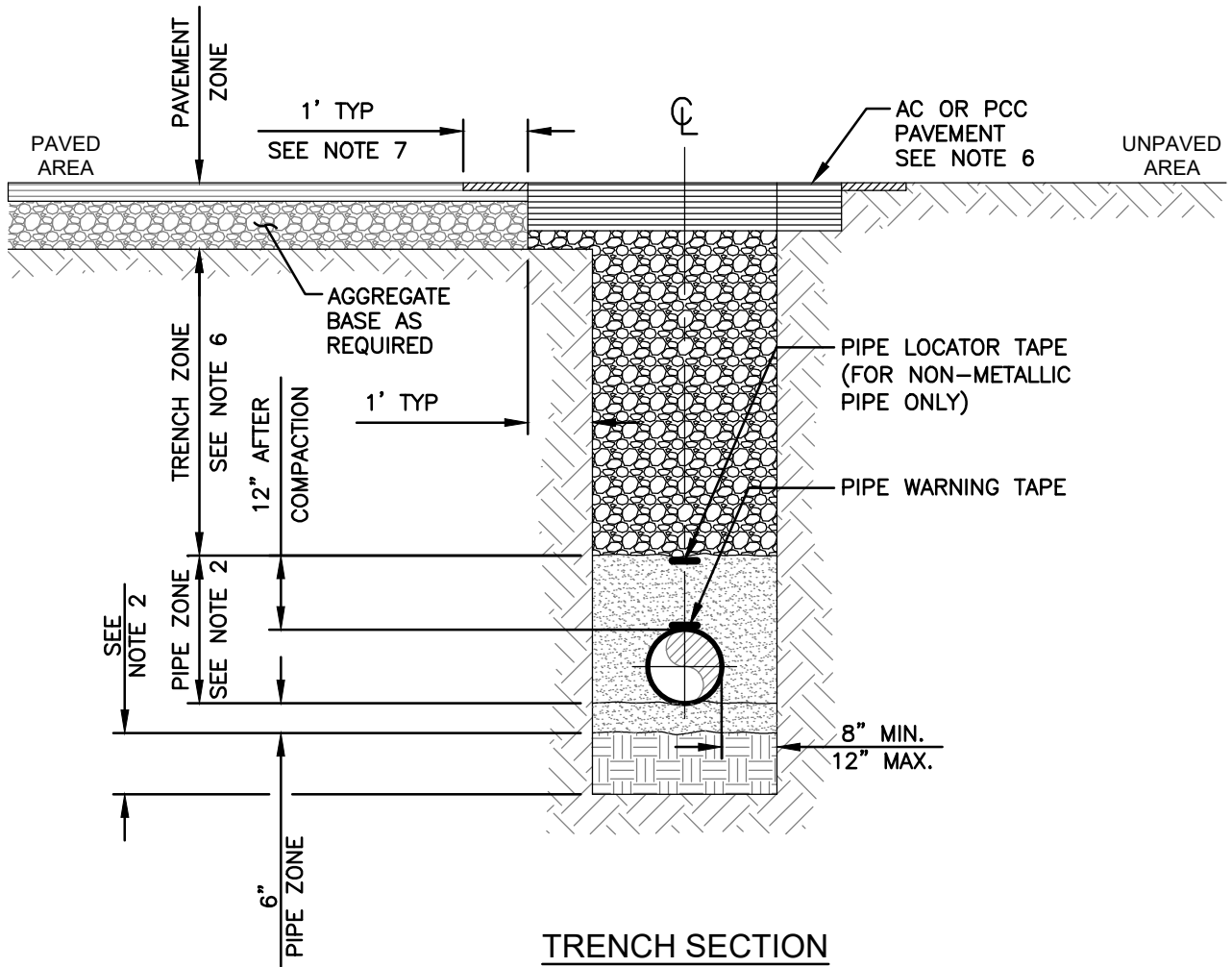
GATE VALVES

NOTES:

1. THRUST BLOCK BEARING AREA BASED ON ALLOWABLE SOIL BEARING VALUE OF 1500 PSF PRESSURE, 225 PSI LINE PRESSURE WITH 3'-0" COVER MINIMUM, AND A MINIMUM SAFETY FACTOR OF 1.2. FOR BEARING = 1000 PSF, 1.5 x AREA SHOWN FOR BEARING = 500 PSF, 3.0 x AREA SHOWN.
2. ALL THRUST BLOCKS SHALL BE PORTLAND CEMENT CONCRETE MIX 560-C-3250 AND PLACED AGAINST UNDISTURBED SOIL.
3. CONCRETE SHALL NOT EXTEND INTO FLANGE OR ADJOINING PIPE.
4. DO NOT COVER FITTING BOLTS WITH CONCRETE.
5. WHEN VALVES ARE FLANGED TO FITTINGS AVOID PLACING CONCRETE ON ANY PART OF THE VALVE BONNET OR VALVE OPERATOR.
6. COAT REBAR WITH 80 MILS OF COLD-APPLIED BITUMASTIC WATER-PROOFING COMPOUND. WRAP EXTERIOR OF VALVE, ACTUATOR AND REBAR WITH 8 MIL POLYETHYLENE SHEETING AND TAPE PER LBCWD SPECIFICATION.
7. MINIMUM CONCRETE COVER OVER REBAR SHALL BE 3".
8. YIELD STRENGTH OF STEEL BARS IS ASSUMED TO BE 36 KSI.
9. LARGER THAN < SUBMIT ENGINEERING CALC'S AND USE WELDS OR MECHANICAL RESTRAINTS FOR CALCULATED LENGTHS.

DRAWING NOT TO SCALE

LAGUNA BEACH COUNTY WATER DISTRICT		
ENGINEER'S APPROVAL:  DAVID YOUNGBLOOD RCE 59742	4/19 Date	THRUST BLOCKS FOR IN-LINE VALVES
		STD DWG NO. W-06



NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH DISTRICT APPROVED SPECS.
2. IMPORTED SAND BACKFILL, SAE 30 SAND COMPACTED TO 90 PERCENT, SHALL BE USED FOR THE PIPE BASE AND AS BACKFILL WITHIN THE PIPE ZONE.
3. VERTICAL TRENCH WALLS:
 - A) SHORING IS NOT REQUIRED FOR EXCAVATIONS THAT ARE LESS THAN 5 IN DEPTH AND EXAMINATION OF THE GROUND BY A COMPETENT PERSON PROVIDES NO INDICATION OF A POTENTIAL CAVE IN.
4. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE WRAPPED IN 8 MIL POLYETHYLENE ENCASEMENT.
5. TRENCH ZONE SHALL BE BACKFILLED WITH AGGREGATE BASE.
6. AC OR PCC PAVEMENT SHALL MATCH EXISTING AC OR PCC + 1".
7. CONTRACTOR SHALL THEN 1/10 GRIND 1' BEYOND AC CUT.

DRAWING NOT TO SCALE

LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

David Youngblood

10/18

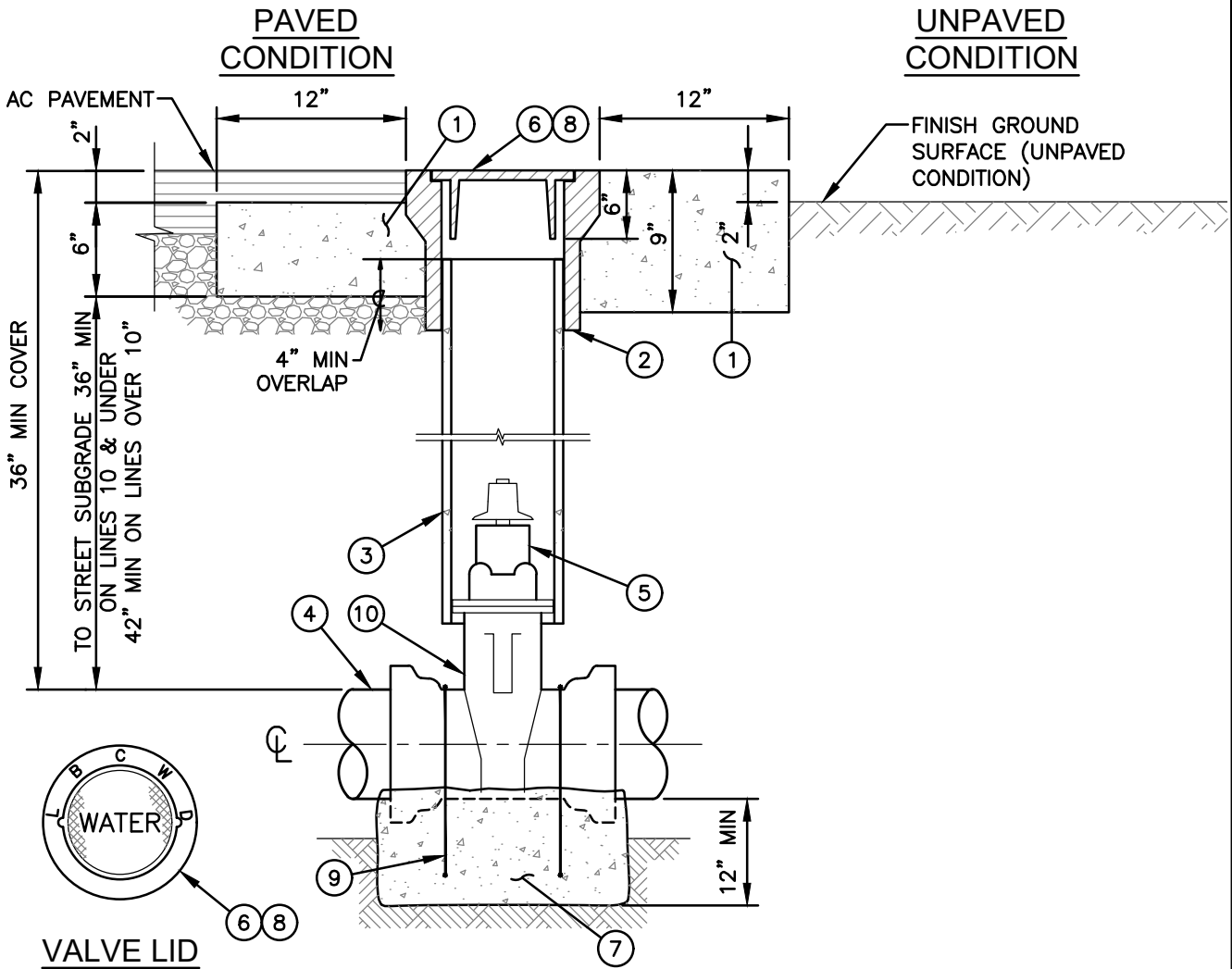
DAVID YOUNGBLOOD RCE 59742

Date

WATER PIPE
TRENCH SECTION

STD DWG NO.

W-07



DRAWING NOT TO SCALE

MATERIALS:

- ① CLASS "B" CONCRETE COLLAR
- ② VALVE BOX AND FRAME PER LBCWD
- ③ ONE PIECE 8" PVC (SDR35) PIPE
- ④ WATER MAIN
- ⑤ VALVE (AS REQUIRED PER PLANS)
- ⑥ VALVE COVER TO BE IRON LETTERS "LBCWD WATER" CAST THEREON.
- ⑦ VALVE ANCHOR BLOCK PER STD DWG W-06
- ⑧ VALVE COVER PER DETAIL HERON. USE 6" LONG-SKIRTED CAST IRON LID FOR ROUND BOXES. (SEE NOTE 5)
- ⑨ #4 STEEL REINFORCING BARS COATED PER 03 2000 (ONLY EXPOSED PART OF REINFORCING BARS)
- ⑩ POLYWRAP VALVE PRIOR TO INSTALLING REBAR

NOTES:

- 1. VALVE COVER AND CAN SHALL BE J&R CONCRETE PRODUCTS No. V3-RT. IN PCH AND HEAVY TRAFFIC ROADS SOUTH BAY FOUNDRY SBF1208N SHALL BE USED.

LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

David Youngblood

4/19

DAVID YOUNGBLOOD RCE 59742

Date

VALVE BOX ASSEMBLY AND
VALVE STEM EXTENSION

STD DWG NO.

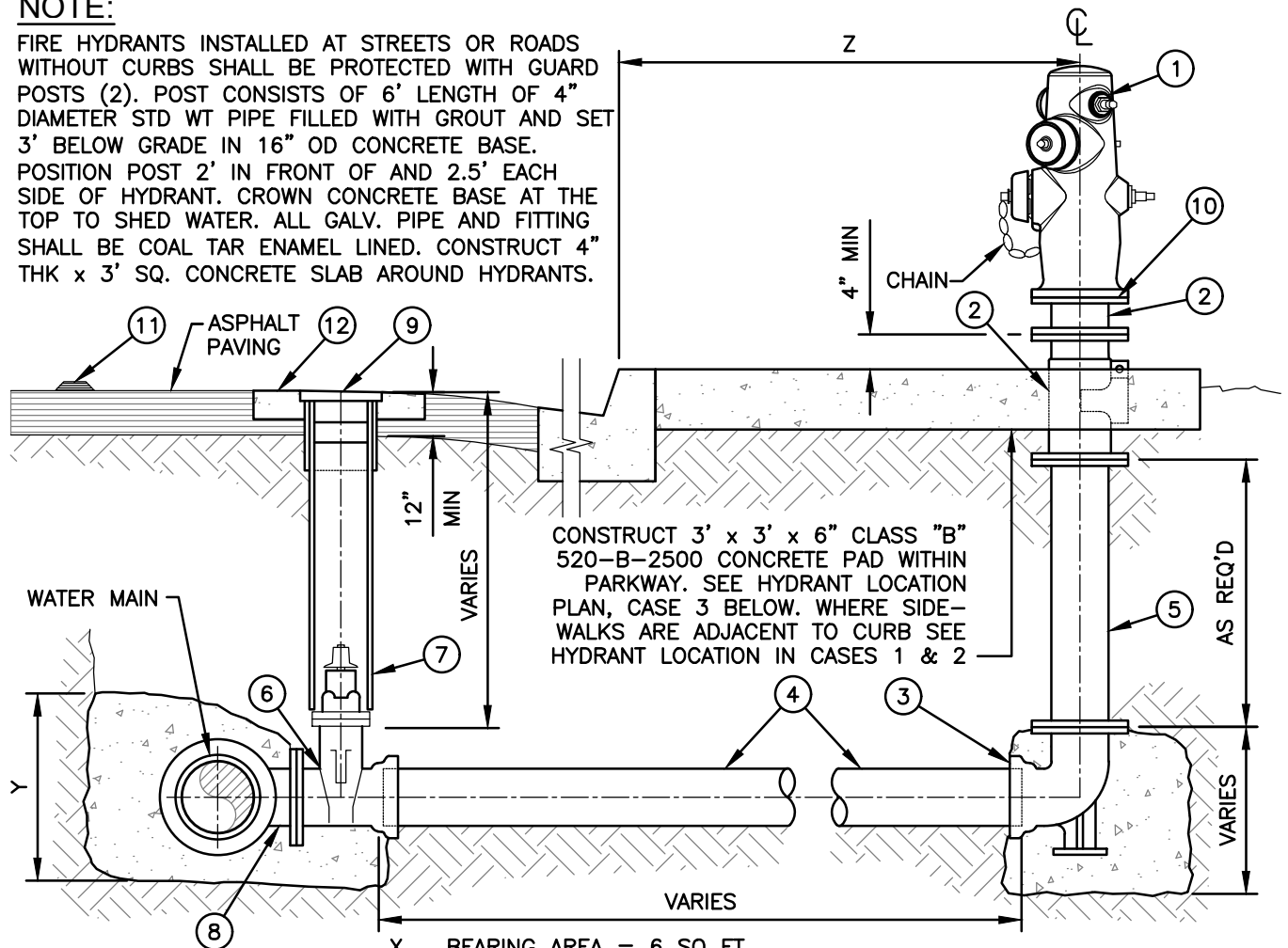
W-08

N:\Standards\LBCWD Standard Update 2016\Standard Drawings 2016\Current Standard Drawings 170410\W-09.dwg 09/17/19 8:35am

DESCRIPTION	BARRELS OUTLETS	TYPE
FIRE HYDRANT	4" x 2 1/2" x 2 1/2"	JONES J-4060 (8 BOLT HOLE PATTERN)

NOTE:

FIRE HYDRANTS INSTALLED AT STREETS OR ROADS WITHOUT CURBS SHALL BE PROTECTED WITH GUARD POSTS (2). POST CONSISTS OF 6' LENGTH OF 4" DIAMETER STD WT PIPE FILLED WITH GROUT AND SET 3' BELOW GRADE IN 16" OD CONCRETE BASE. POSITION POST 2' IN FRONT OF AND 2.5' EACH SIDE OF HYDRANT. CROWN CONCRETE BASE AT THE TOP TO SHED WATER. ALL GALV. PIPE AND FITTING SHALL BE COAL TAR ENAMEL LINED. CONSTRUCT 4" THK x 3' SQ. CONCRETE SLAB AROUND HYDRANTS.



CONSTRUCT 3' x 3' x 6" CLASS "B" 520-B-2500 CONCRETE PAD WITHIN PARKWAY. SEE HYDRANT LOCATION PLAN, CASE 3 BELOW. WHERE SIDE-WALKS ARE ADJACENT TO CURB SEE HYDRANT LOCATION IN CASES 1 & 2

- X. BEARING AREA = 6 SQ FT
- Y. BEARING AREA = 9 SQ FT
- Z. 2' FROM BACK OF SIDEWALK.
2' FACE OF CURB IF NO SIDEWALK EXISTS.

DRAWING NOT TO SCALE

MATERIALS:

- ① 6" FIRE HYDRANT (JONES J-4060, 8 BOLT HOLE PATTERN) 8 BOLTS, SAFETY YELLOW
- ② CLOW BREAKOFF SWING CHECK VALVE WITH RISER, 8 HOLE OR APPROVED EQUAL
- ③ HYDRANT BURY INLET, 6" DUCTILE IRON LENGTH AS REQUIRED FL x MJ
- ④ 6" PVC PIPE C-900 CL 200 CL-150
- ⑤ 6" DUCTILE IRON PIPE CL-150
- ⑥ 6" GATE VALVE FL x MJ W/RESTRAINED GLANDS OR FL x PO PER STANDARD SPECIFICATION (9.04)
- ⑦ 8" PVC PIPE (SDR-35) SEE STANDARD SPECIFICATION
- ⑧ 6" FLANGED OUTLET PER STANDARD SPECIFICATION
- ⑨ 8" CAST IRON VALVE BOX COVER PAINT YELLOW WATER AND LBCWD (9.10)
- ⑩ STAINLESS STEEL BOLTS (AS NEEDED) PER STANDARD SPECIFICATION
- ⑪ REFLECTIVE PAVEMENT MARKER (BLUE) PER FIRE DISTRICT REQUIREMENTS
- ⑫ 18" DIAMETER x 6" CONCRETE RING W/1" AC CAP

LAGUNA BEACH COUNTY WATER DISTRICT

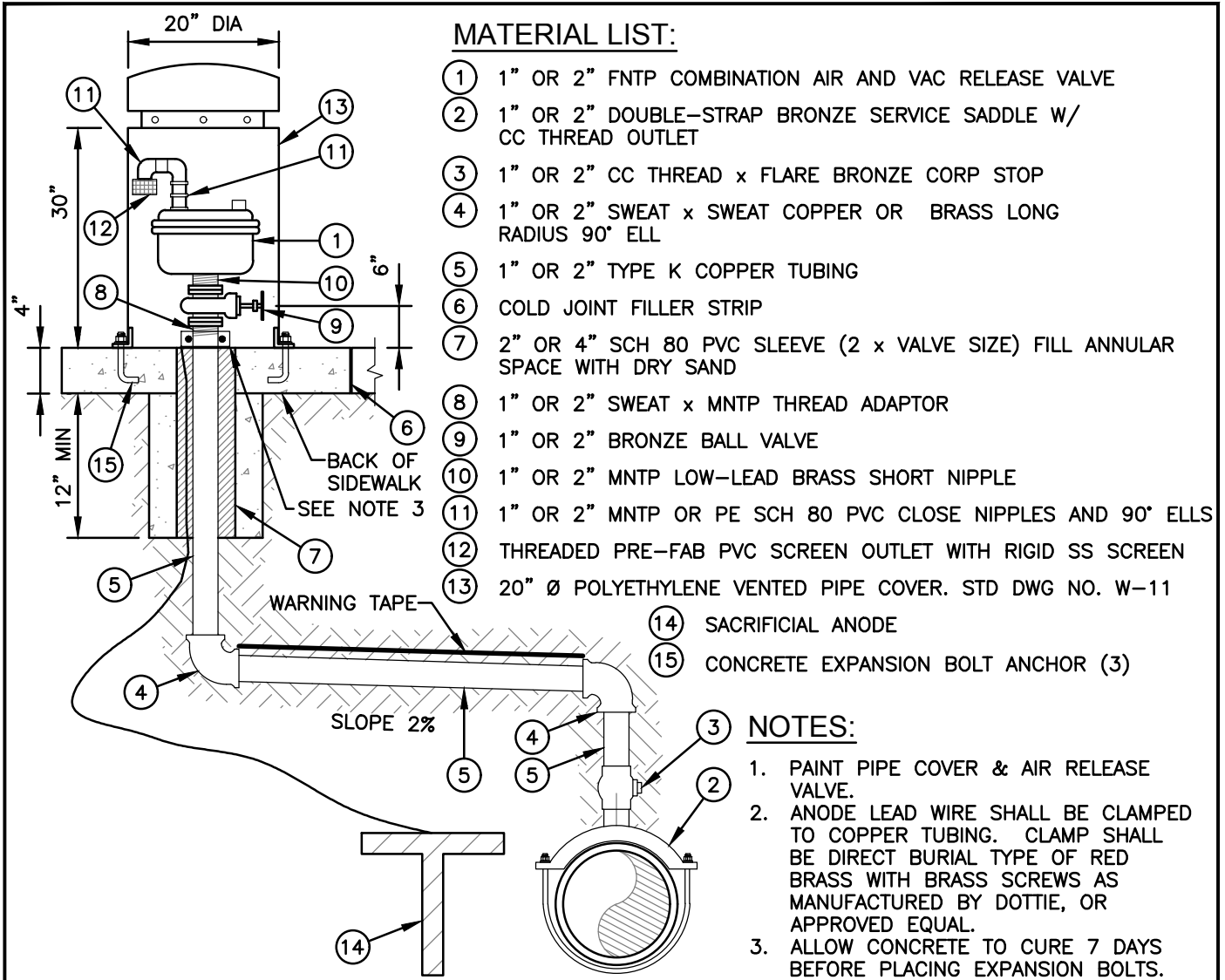
ENGINEER'S APPROVAL:

 DAVID YOUNGBLOOD RCE 59742 Date 10/18

FIRE HYDRANT ASSEMBLY

STD DWG NO.
W-09

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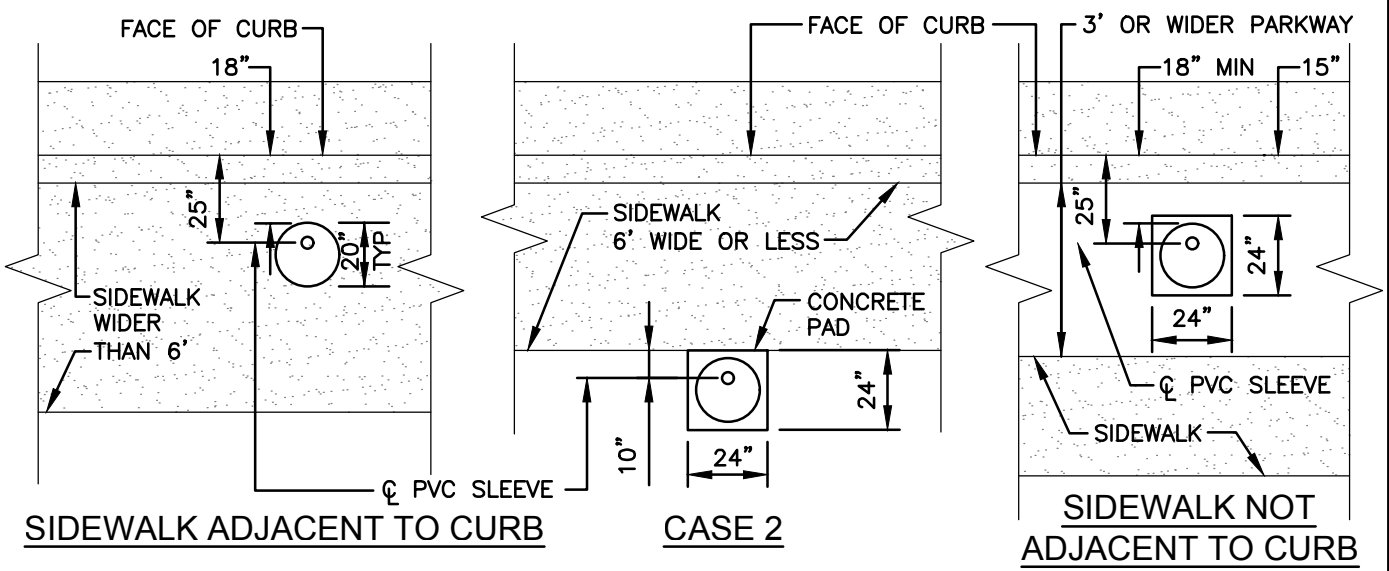
MATERIAL LIST:

- ① 1" OR 2" FNTF COMBINATION AIR AND VAC RELEASE VALVE
- ② 1" OR 2" DOUBLE-STRAP BRONZE SERVICE SADDLE W/ CC THREAD OUTLET
- ③ 1" OR 2" CC THREAD x FLARE BRONZE CORP STOP
- ④ 1" OR 2" SWEAT x SWEAT COPPER OR BRASS LONG RADIUS 90° ELL
- ⑤ 1" OR 2" TYPE K COPPER TUBING
- ⑥ COLD JOINT FILLER STRIP
- ⑦ 2" OR 4" SCH 80 PVC SLEEVE (2 x VALVE SIZE) FILL ANNULAR SPACE WITH DRY SAND
- ⑧ 1" OR 2" SWEAT x MNTF THREAD ADAPTOR
- ⑨ 1" OR 2" BRONZE BALL VALVE
- ⑩ 1" OR 2" MNTF LOW-LEAD BRASS SHORT NIPPLE
- ⑪ 1" OR 2" MNTF OR PE SCH 80 PVC CLOSE NIPPLES AND 90° ELLS
- ⑫ THREADED PRE-FAB PVC SCREEN OUTLET WITH RIGID SS SCREEN
- ⑬ 20" Ø POLYETHYLENE VENTED PIPE COVER. STD DWG NO. W-11
- ⑭ SACRIFICIAL ANODE
- ⑮ CONCRETE EXPANSION BOLT ANCHOR (3)


NOTES:

1. PAINT PIPE COVER & AIR RELEASE VALVE.
2. ANODE LEAD WIRE SHALL BE CLAMPED TO COPPER TUBING. CLAMP SHALL BE DIRECT BURIAL TYPE OF RED BRASS WITH BRASS SCREWS AS MANUFACTURED BY DOTTIE, OR APPROVED EQUAL.
3. ALLOW CONCRETE TO CURE 7 DAYS BEFORE PLACING EXPANSION BOLTS.

DRAWING NOT TO SCALE VALVE ASSEMBLY LOCATION PLANS



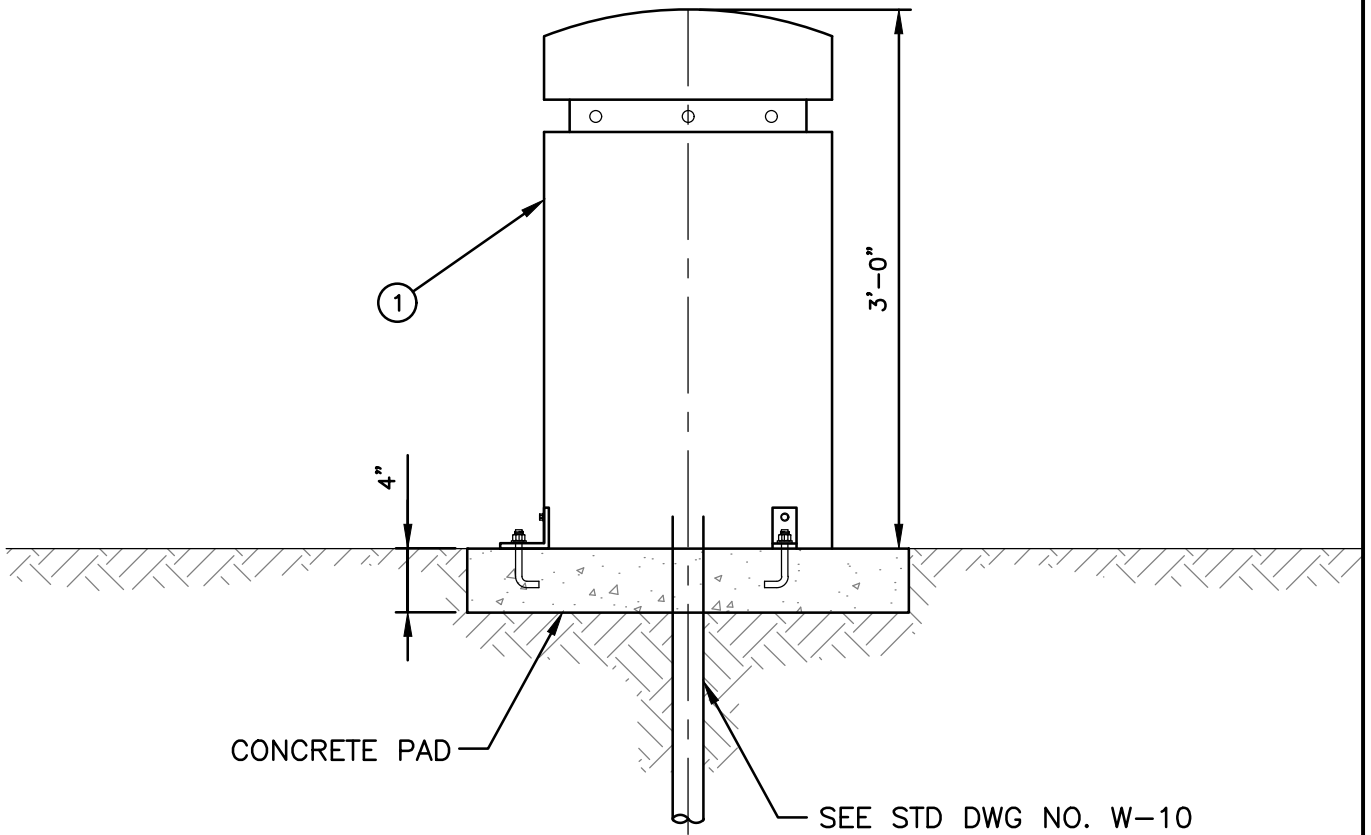
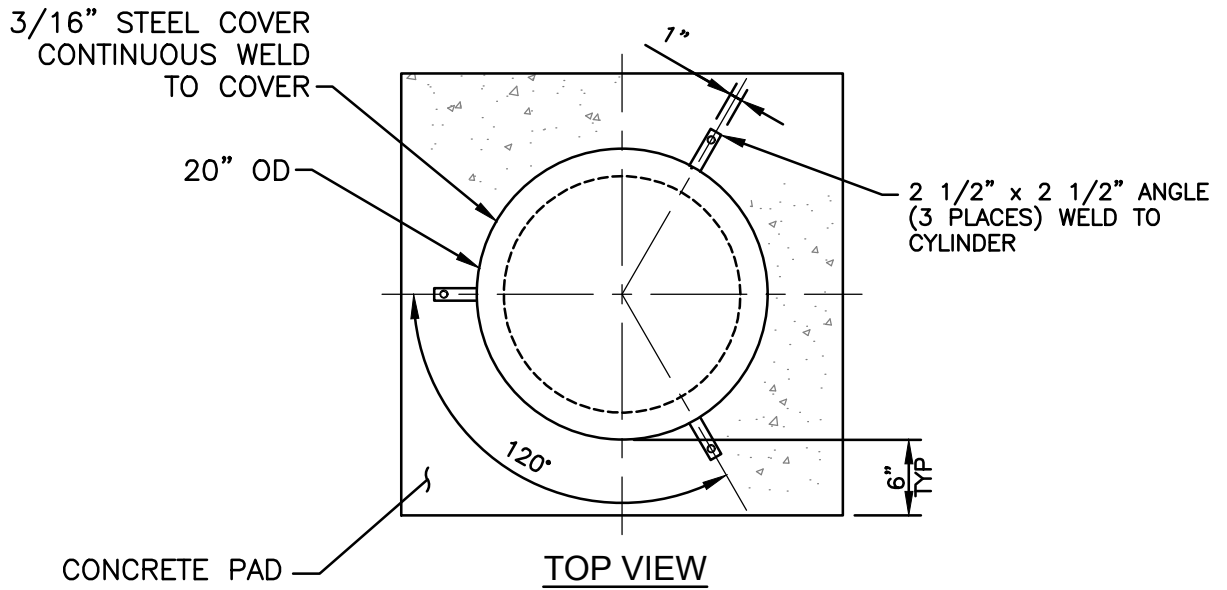
LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

 10/18
 DAVID YOUNGBLOOD RCE 59742 Date

1" AND 2" AIR RELEASE
 VALVE INSTALLATION

STD DWG NO.
W-10

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MATERIAL:

- ① 20" DIAMETER POLYETHYLENE VENTED PIPE COVER COLOR: SANDSTONE

LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

10/18

DAVID YOUNGBLOOD RCE 59742

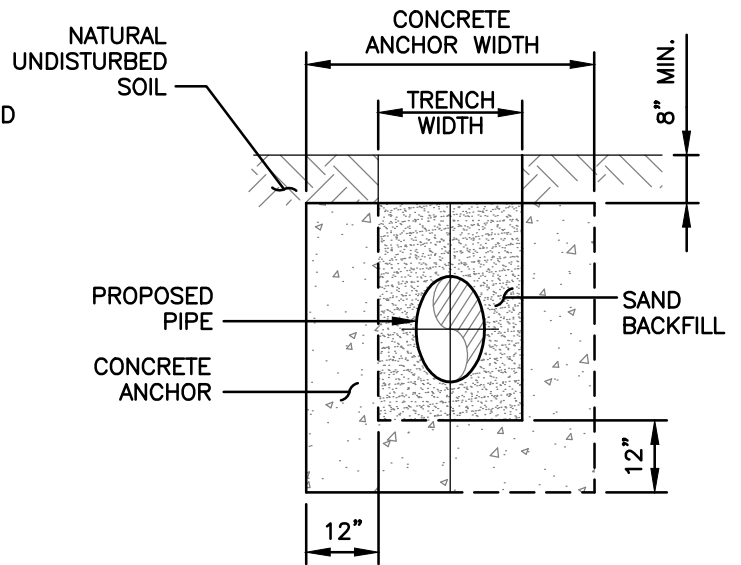
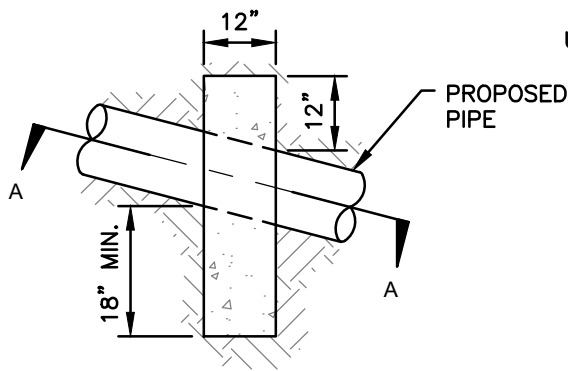
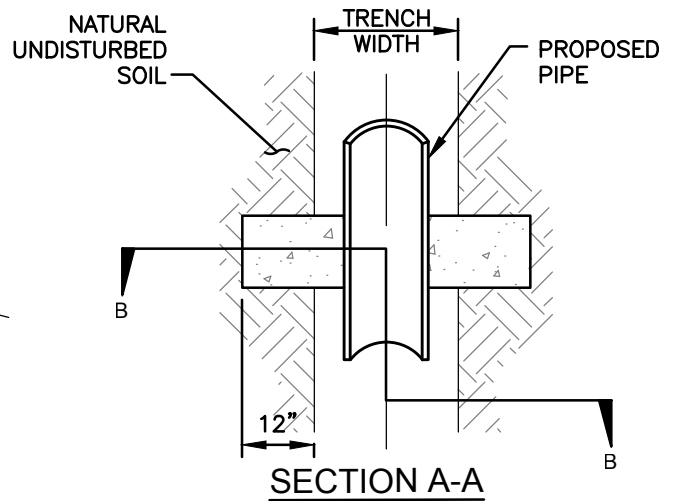
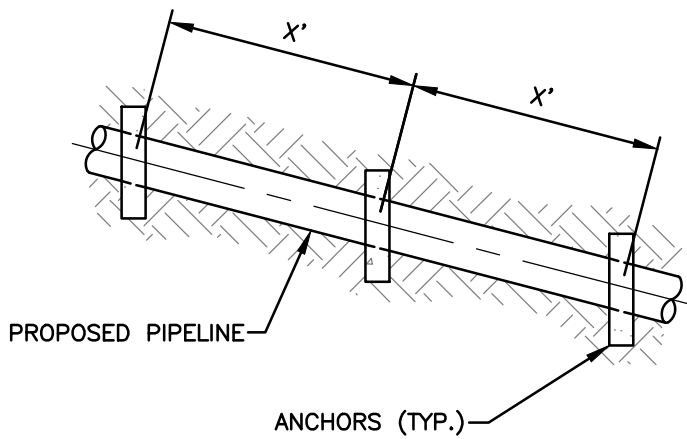
Date

HOUSING FOR AIR RELEASE AND
VACUUM RELIEF VALVE ASSEMBLY

STD DWG NO.

W-11

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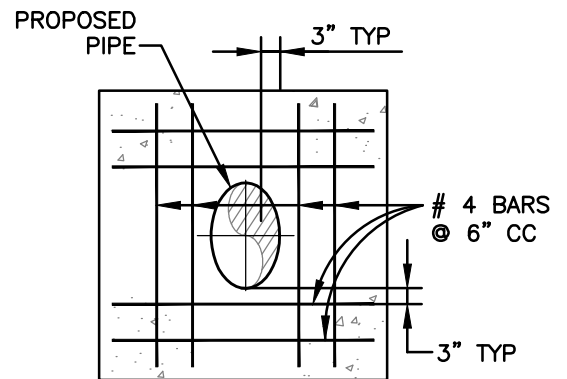


PIPE SLOPE	PIPE SLOPE	X DISTANCE
100%	1:1	12'
66.6%	1-1/2:1	14'
50%	2:1	16'
40%	2-1/2:1	18'
33.3%	3:1	20'

SECTION B-B

NOTES:

1. ANCHOR SHALL EXTEND 12" INTO NATURAL UNDISTURBED SOIL.
2. CONCRETE SHALL BE CLASS "A2" (600-C-2500).
3. ANCHORS FOR TRAPEZOIDAL TRENCH SECTIONS SHALL CONFORM TO TRENCH CROSS SECTION AND EXTEND 12" INTO UNDISTURBED SOIL.



REINFORCED STEEL PATTERN

DRAWING NOT TO SCALE

LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

David Youngblood

10/18

DAVID YOUNGBLOOD RCE 59742 Date

CONCRETE SLOPE ANCHORS

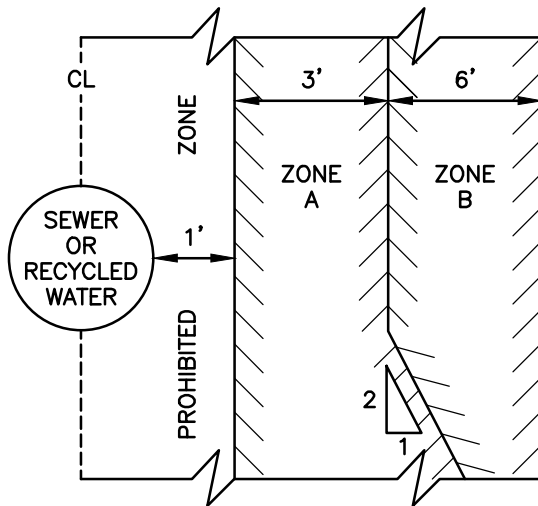
STD DWG NO.

W-12

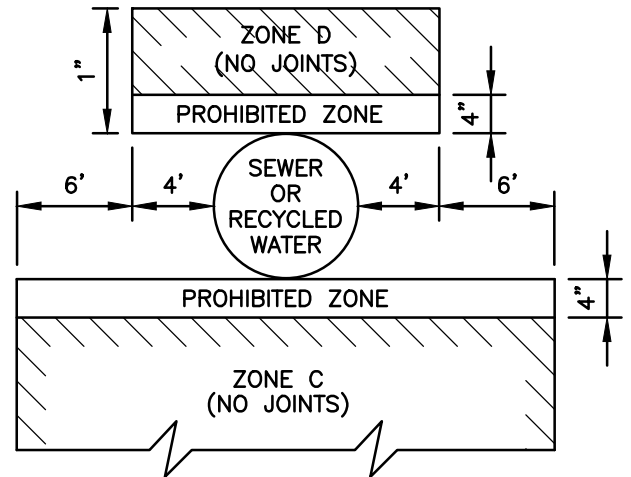
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SITUATION:

LOCATION OF NEW DOMESTIC & RECYCLED WATER LINES TO EXISTING SEWER & RECYCLED WATER LINES



PARALLEL CONSTRUCTION



PERPENDICULAR CROSSING

IF ANY WATER PIPELINES ARE TO BE CONSTRUCTED WITHIN ANY OF THE ABOVE INDICATED ZONES, SPECIAL CONSTRUCTION SHALL BE REQUIRED AS DESCRIBED BELOW.

ZONE DOMESTIC WATER OR RECYCLED WATER

- A. DO NOT LOCATE ANY PARALLEL DOMESTIC WATER MAIN IN THIS AREA WITHOUT STATE AND LOCAL HEALTH DEPARTMENT APPROVAL.
- B. USE DIP OR DR-14 PVC – AWWA C900
- C. USE DIP OR DR-14 PVC – AWWA C900
- D. USE DIP OR DR-14 PVC – AWWA C900

GENERAL NOTES


- NO PIPE JOINTS SHALL BE PERMITTED WITHIN ZONE D. IT IS THE INTENT OF THESE SPECIFICATIONS THAT NO JOINTS SHALL OCCUR WITHIN ZONE C. IF THAT CANNOT BE ACCOMPLISHED, THE NEW PIPELINE SHALL BE ENCASED IN CONCRETE FOR THE FULL LENGTH OF ZONE C.
- 1. ALL DIP MUST HAVE HOT DIP BITUMINOUS COATING AND ALL PVC SHALL BE DR-14.
- 2. SEWER FORCE MAINS SHALL NOT BE PERMITTED IN ZONES A THROUGH D.
- 3. THE CONSTRUCTION CRITERIA APPLY TO HOUSE LATERALS THAT CROSS ABOVE A PRESSURE WATER MAIN BUT NOT TO THOSE HOUSE LATERALS THAT CROSS BELOW A PRESSURE WATER MAIN.

BASIC SEPARATION STANDARDS

- 1. PARALLEL CONSTRUCTION: THE HORIZONTAL DISTANCE BETWEEN PRESSURE DOMESTIC WATER AND RECYCLED WATER MAINS AND SEWER LINES SHALL BE AT LEAST 10 FEET.
- 2. PERPENDICULAR CONSTRUCTION (CROSSING): PRESSURE WATER MAINS SHALL BE AT LEAST ONE FOOT ABOVE SANITARY SEWER AND RECYCLED WATER LINES WHERE THESE LINES MUST CROSS.
- 3. SPECIAL PROVISIONS: ALTERNATIVE CONSTRUCTION CRITERIA WHERE THE BASIC SEPARATION STANDARDS CANNOT BE ATTAINED ARE SHOWN BELOW.

DRAWING NOT TO SCALE

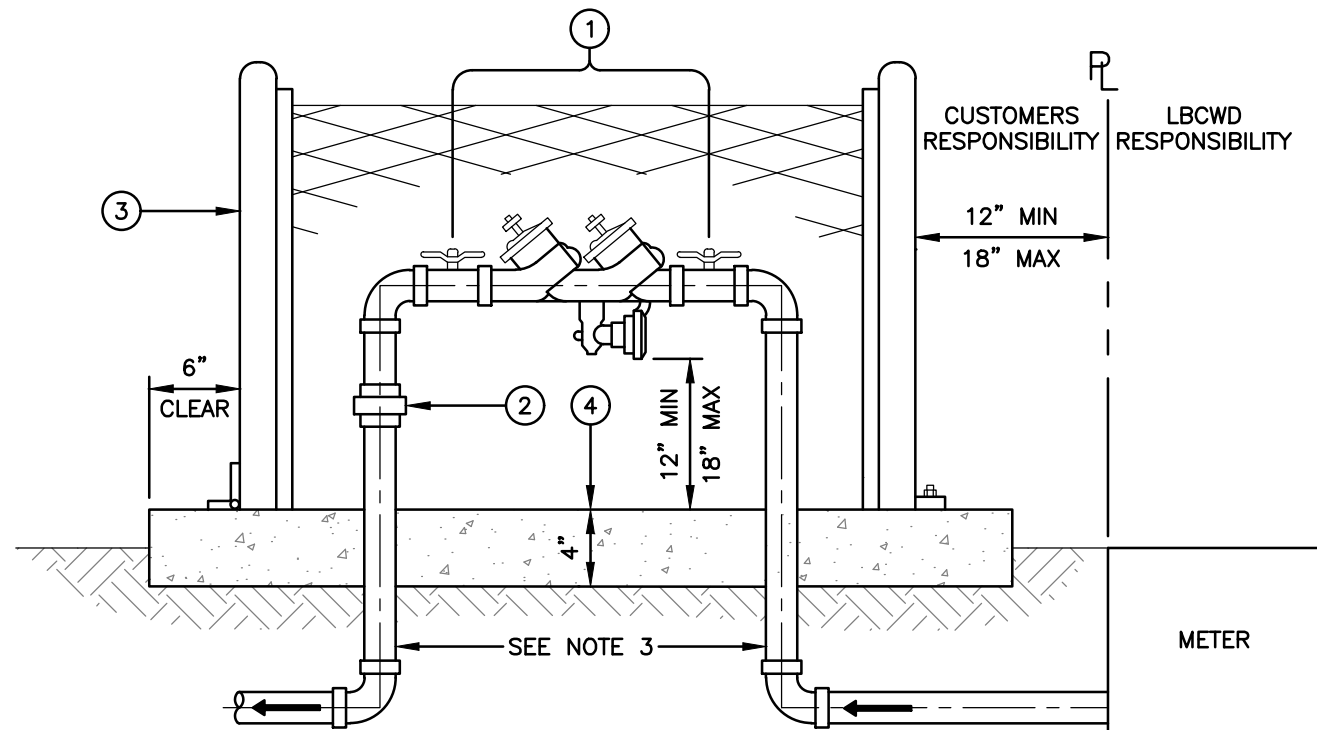
LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

 10/18
 DAVID YOUNGBLOOD RCE 59742 Date

SEPARATION CRITERIA FOR
 WATER MAINS

STD DWG NO.
W-13

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ELEVATION
DRAWING NOT TO SCALE

MATERIALS

- ① BACKFLOW PREVENTION ASSEMBLY (TO BE DETERMINED BY THE DISTRICT).
- ② BRASS UNION TO BE REQUIRED IF THREADED FITTINGS (ELBOWS) ARE USED ON THE DOWNSTREAM SIDE OF ASSEMBLY.
- ③ INSTALL BACKFLOW PREVENTION ASSEMBLY ENCLOSURE PER MANUFACTURER'S RECOMMENDATIONS LIST OF APPROVED ENCLOSURES WILL BE PROVIDED BY LBCWD.
- ④ CONCRETE PAD, CLASS 520-C-2500. CONCRETE PAD MUST BE CONSTRUCTED TO ENSURE 6" CLEARANCE AROUND THE BACKFLOW PREVENTION.
- ⑤ ALL MATERIAL FROM THE WATER METER TO THE DOWNSTREAM ELBOW OF THE BACKFLOW PREVENTION ASSEMBLY WILL CONSIST OF BRASS, COPPER OR COMBINATION OF BOTH.

BUILDING TYPE


- SINGLE FAMILY RESIDENTIAL**
 - WITH FIRE SPRINKLER
 - WITH SERVICE LIFT PUMP
- COMMERCIAL**
 DOMESTIC FIRE SPRINKLER
 IRRIGATION FIRE SPRINKLER

REQUIRED BACKFLOW ASSEMBLY

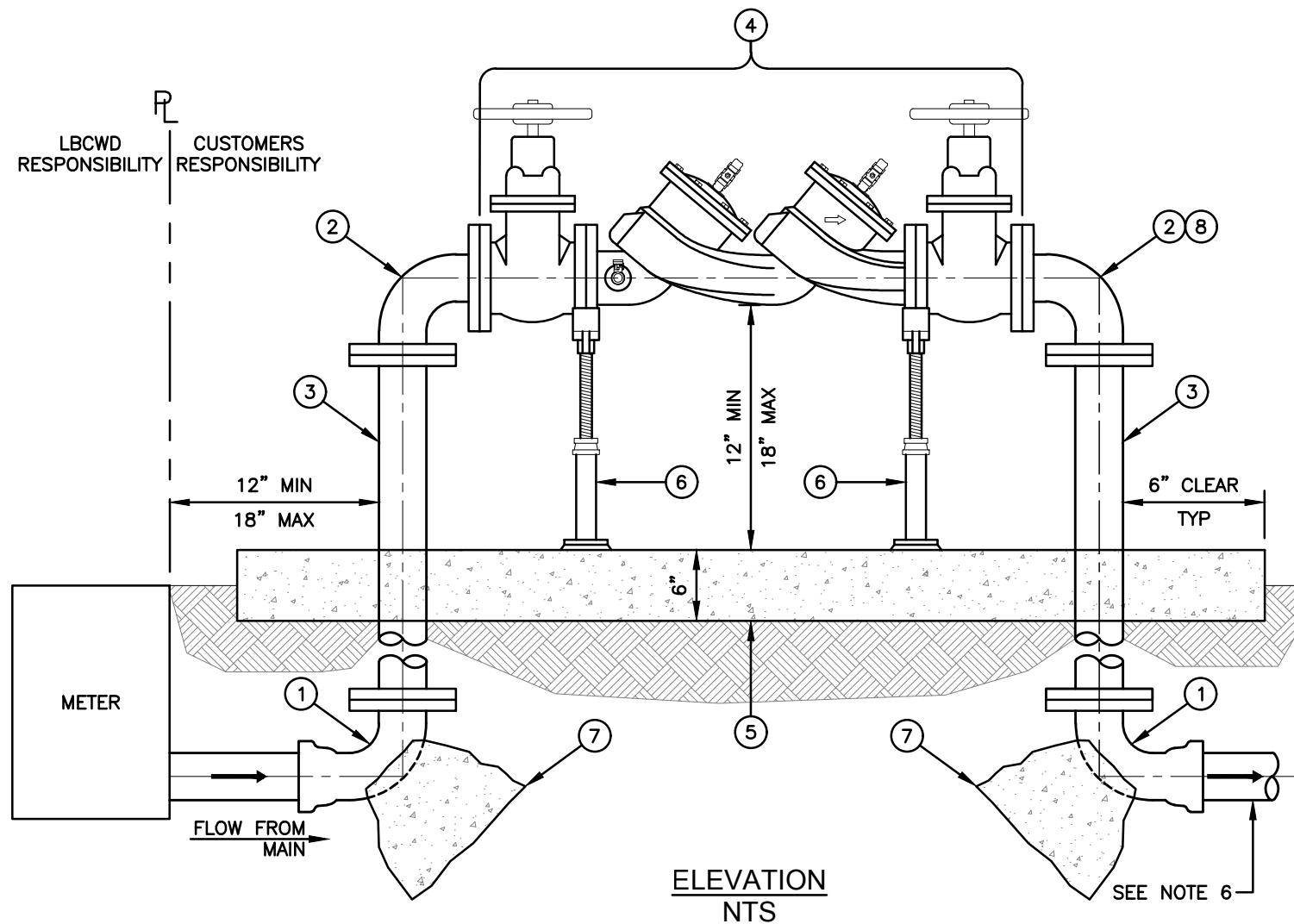
- DOUBLE CHECK (DC)
 REDUCE PRESSURE PRINCIPLE (RP)
- REDUCE PRESSURE PRINCIPLE (RP)
 PRESSURE VACUUM BREAKER (PVB) OR DC
 DOUBLE CHECK DETECTOR ASSEMBLY (DCDA)

NOTES:

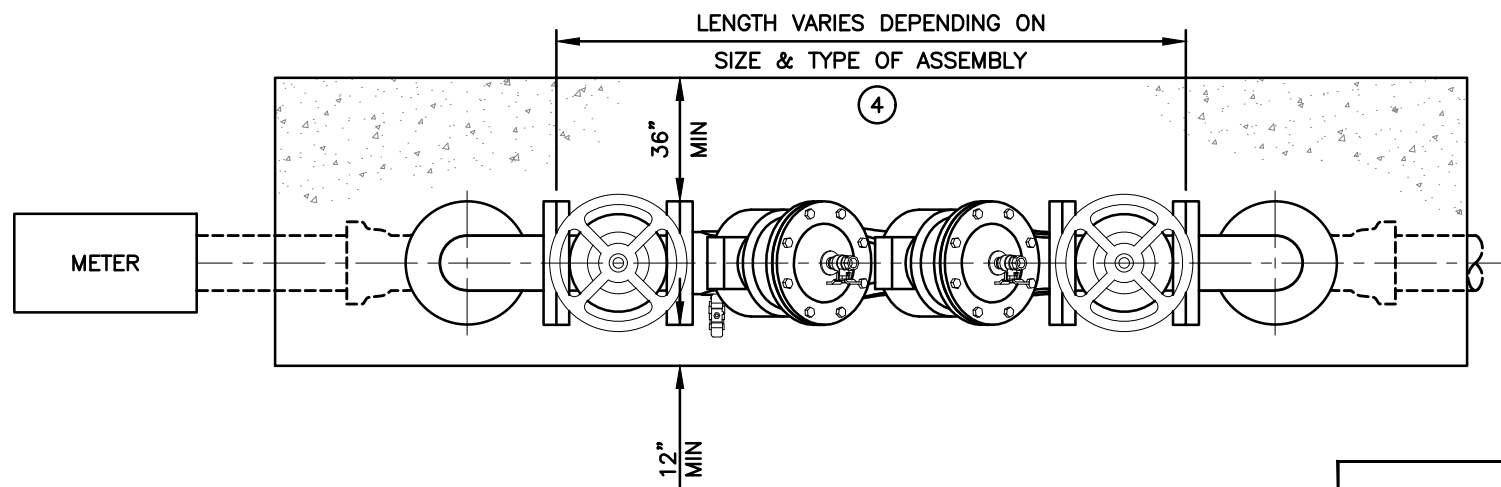
1. NOTIFY DISTRICT PRIOR TO INSTALLATION OF UNIT.
2. PROPOSED LOCATION OF THE BACKFLOW DEVICE, PROTECTIVE ENCLOSURE AND ALL APPURTENANCES MUST BE DISTRICT APPROVED PRIOR TO INSTALLATION. FAILURE TO COMPLY MAY RESULT IN PROJECT DELAYS TO CORRECT ALL UNACCEPTED/UNAPPROVED WORK.
3. ALL FITTINGS AND PIPE SHALL BE BRASS OR COPPER WITH EITHER IPT OR SOLDERED CONNECTIONS, RESPECTIVELY.
4. A WYE STRAINER OR HOSE BIB MUST HAVE A HOSE BIB VACUUM BREAKER OR ANTI-SIPHON VALVE AND CAP INSTALLED.
5. THERE SHALL BE NO CONNECTIONS BETWEEN THE METER AND THE BACKFLOW ASSEMBLY.
6. IF A NEW METER IS INSTALLED, PIPE SHALL BE COPPER FROM METER TO BACKFLOW ASSEMBLY. IF THERE IS EXISTING PIPING METER, IT MAY REMAIN PER PLUMBING CODE.
7. UPON COMPLETION OF THE INSTALLATION OF THE DEVICE, A TEST SHALL BE PERFORMED AND A CERTIFICATE OF THE ADEQUACY AND OPERATIONAL COMPLIANCE SHALL BE FURNISHED TO LBCWD. THE TEST SHALL BE PERFORMED BY A TESTING AGENCY CERTIFIED BY THE ORANGE COUNTY CARE HEALTH AGENCY.
8. INSTALLATION SHALL COMPLY WITH THE LATEST PLUMBING CODES AND APPLICABLE LOCAL AGENCY REQUIREMENTS.

LAGUNA BEACH COUNTY WATER DISTRICT		
ENGINEER'S APPROVAL:  DAVID YOUNGBLOOD RCE 59742	10/18 Date	3/4" THROUGH 2 1/2" BACKFLOW PREVENTER ASSEMBLY
		STD DWG NO. W-14

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ELEVATION
NTS



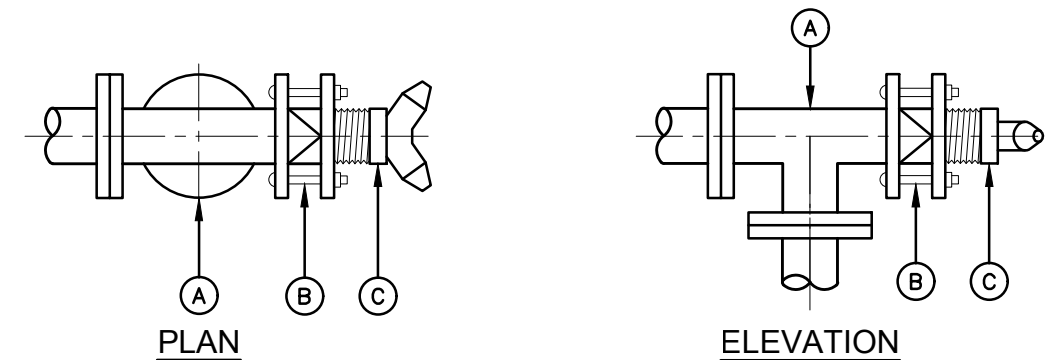
PLAN
NTS

MATERIALS

- ① FLG x PO DIP 90° ELL
- ② FLG x FLG DIP 90° ELL
- ③ FLG x FLG DIP SPOOL (LENGTH AS REQUIRED)
- ④ USC-LISTED BACKFLOW PREVENTION ASSEMBLY (TO BE DETERMINED BY THE DISTRICT)
- ⑤ CLASS B (520-A-2500) CONCRETE PAD WITH WIRE-MESH REINFORCEMENT
- ⑥ ADJUSTABLE PIPE SUPPORT
- ⑦ CONCRETE THRUST BLOCK SEE STD DWG NO. W-05
- ⑧ SEE DETAIL BELOW FOR ALTERNATIVE FIRE DEPARTMENT CONNECTION

NOTES:

1. REQUIRED ON ALL COMMERCIAL, INDUSTRIAL, MULTI-FAMILY RESIDENTIAL AND IRRIGATION SERVICES USING POTABLE WATER.
2. NOTIFY DISTRICT PRIOR TO INSTALLATION OF UNIT.
3. PROPOSED LOCATION OF THE BACKFLOW DEVICE, PROTECTIVE ENCLOSURE AND ALL PARTS MUST BE DISTRICT APPROVED PRIOR TO INSTALLATION. FAILURE TO COMPLY MAY RESULT IN PROJECT DELAYS TO CORRECT ALL UNACCEPTED/UNAPPROVED WORK.
4. INSTALLATION SHALL COMPLY WITH THE LATEST PLUMBING CODE AND APPLICABLE LOCAL AGENCY REQUIREMENTS.
5. UPON COMPLETION OF THE INSTALLATION OF THE DEVICE, A TEST SHALL BE PERFORMED AND A CERTIFICATE OF THE ADEQUACY AND OPERATIONAL COMPLIANCE SHALL BE FURNISHED TO LBCWD. THE TEST SHALL BE PERFORMED BY A TESTING AGENCY CERTIFIED BY THE ORANGE COUNTY HEALTH DEPARTMENT.
6. CUSTOMER TO CONNECT TO PUSH-ON END OF DOWNSTREAM ELBOW.
7. SEPARATE PERMIT AND INSPECTION FROM LAGUNA BEACH FIRE DEPARTMENT (LBFD) REQUIRED FOR FDC, TAMPER SWITCHES, DOWNSTREAM PIPING AND APPURTENANCES. SIZE, LOCATION, MATERIALS AND ELEVATION TO BE REVIEWED AND APPROVED BY LBFD.



- Ⓐ FLG x FLG x FLG DIP TEE
- Ⓑ DIP BLIND FLG W/4" THREADED TAPPED OUTLET FOR FIRE DEPARTMENT CONNECTION
- Ⓒ 4" x 2 1/2" x 2 1/2" FIRE DEPARTMENT (SIAMESE) CONNECTION

FIRE DEPARTMENT CONNECTION (FDC)
NTS

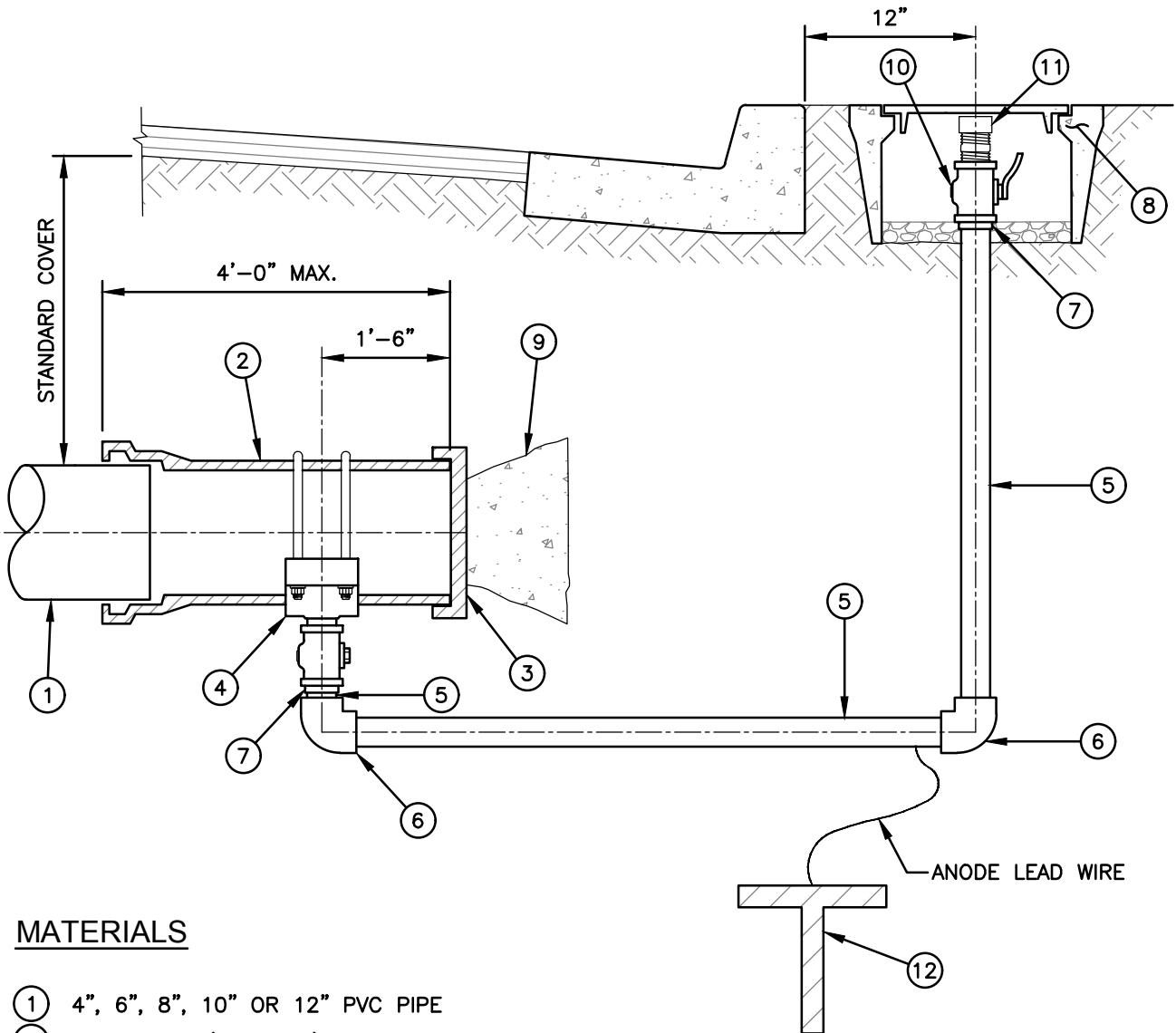
LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:
David Youngblood
DAVID YOUNGBLOOD RCE 59742 10/18
Date

BACKFLOW PREVENTER ASSEMBLY -
SIZES 3" AND LARGER

STD DWG NO.
W-15

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MATERIALS

- ① 4", 6", 8", 10" OR 12" PVC PIPE
- ② PVC SPOOL (OPTIONAL)
- ③ DIP CAP
- ④ 2" SERVICE SADDLE WITH 2" CC x FIP BALL CORP STOP AND FLARE ADAPTER
- ⑤ 2" TYPE K COPPER TUBING
- ⑥ 2" SWEAT x SWEAT COPPER 90° ELL
- ⑦ 2" FL x CC THREAD SWEAT COPPER ADAPTER AS NEEDED
- ⑧ METER BOX WITHOUT READING LID
- ⑨ CONCRETE THRUST BLOCK PER STD DWG NO. W-05
- ⑩ 2" FIP x FIP BRASS BALL VALVE
- ⑪ 2" FIP x 2-1/2" NSHT BRASS ADAPTOR WITH CAP
- ⑫ ZINC ANODE AND LEAD WIRE. PLACE ANODE AT LEAST 2' FROM COPPER TUBING

* NOTE: IF METER BOX IS IN TRAFFIC, BOX AND LID MUST BE TRAFFIC RATED.

DRAWING NOT TO SCALE

LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

10/18

DAVID YOUNGBLOOD RCE 59742

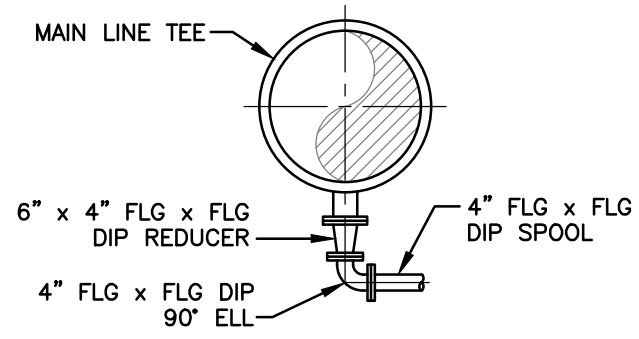
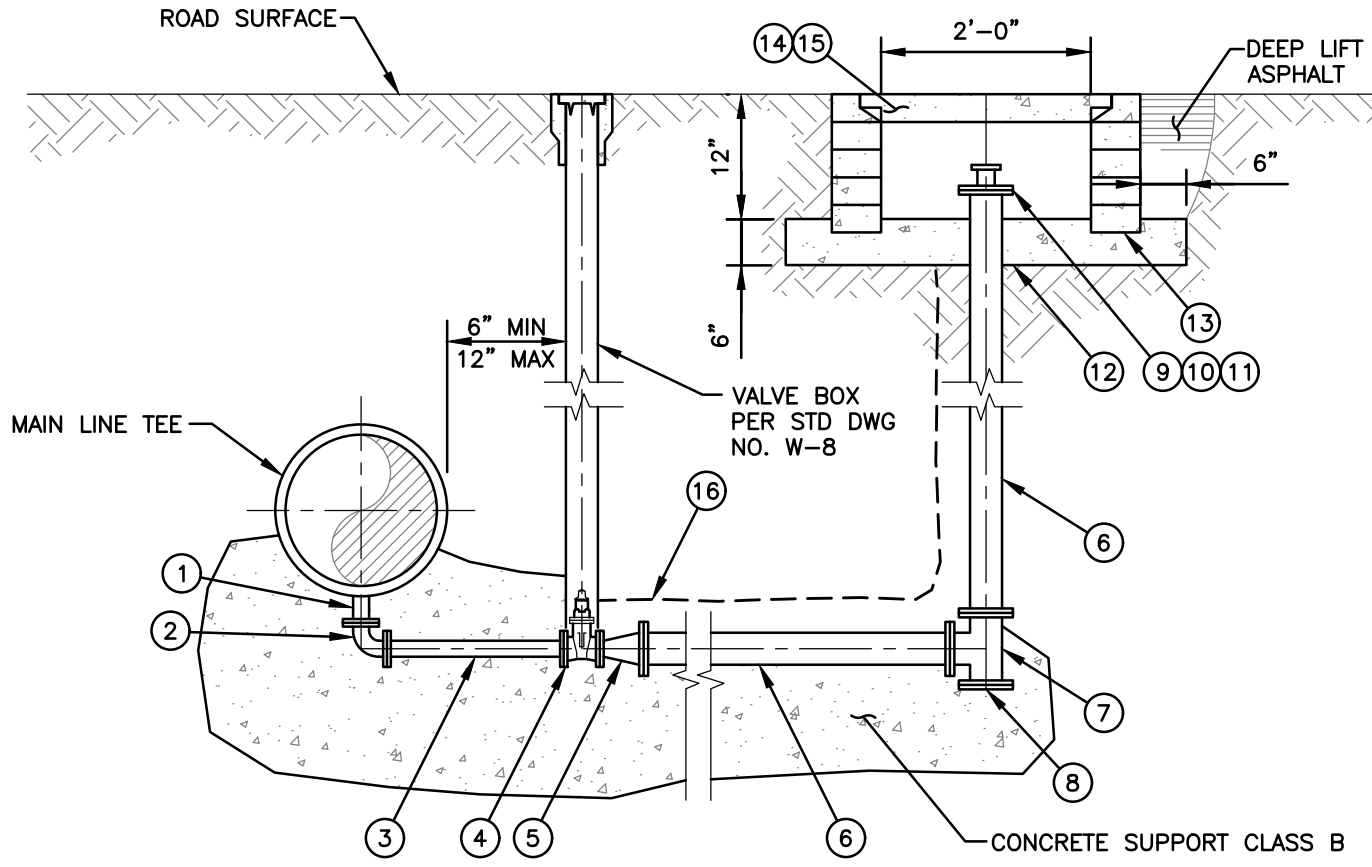
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2" BLOW-OFF ASSEMBLY

STD DWG NO.

W-16

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FOR MAIN SIZES
GREATER THAN 18"

MATERIALS

- ① PO x PO x FLG DIP TEE
- ② 4" FLG x FLG DIP 90° ELL
- ③ 4" FLG x FLG DIP SPOOL
- ④ 4" FLG x FLG RW GATE VALVE
- ⑤ 8" x 4" FLG x FLG DIP REDUCER
- ⑥ 8" FLG x FLG DIP SPOOL
- ⑦ 8" x 8" DIP TEE
- ⑧ 8" BLIND FLG
- ⑨ 8" BLIND FLG W/ 3" TAP
- ⑩ 2-1/2" MNTP x NSHT BRASS HOSE ADAPTOR (POTTER ROEMER 2830)
- ⑪ 2-1/2" NSHT CAP AND CHAIN
- ⑫ 36" x 36" CLASS B (520-A-2500) CONCRETE BASE
- ⑬ 24" ID STANDARD MANHOLE RINGS
- ⑭ 24" MANHOLE COVER
- ⑮ DISTRICT MAY ACCEPT SUBSTITUTION OF 12" x 24" METER BOX WHERE SPACE FOR MANHOLE COVER IS NOT AVAILABLE
- ⑯ WARNING TAPE

DRAWING NOT TO SCALE

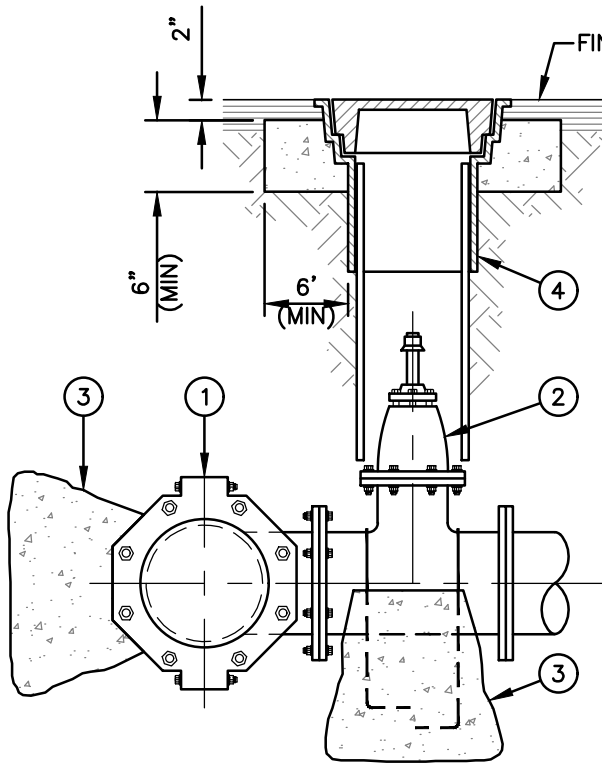
LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

 10/18
 DAVID YOUNGBLOOD RCE 59742 Date

4" BLOW-OFF ASSEMBLY

STD DWG NO.
W-17

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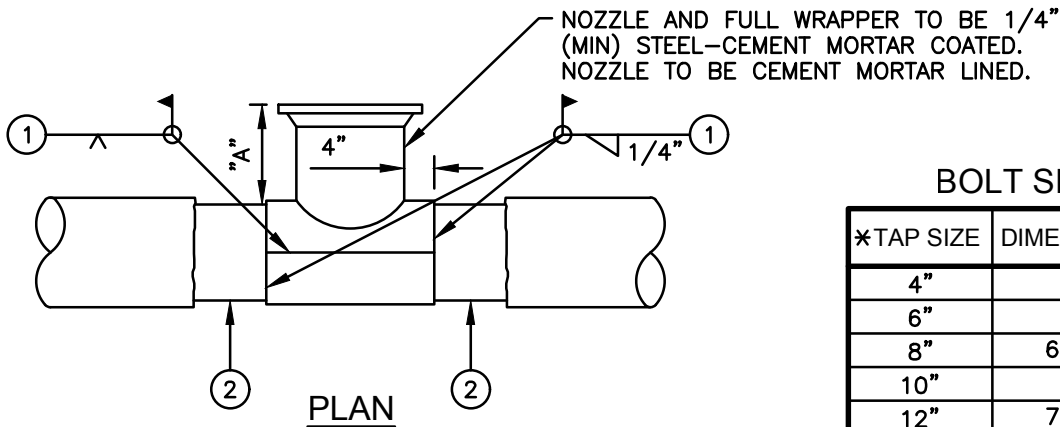
MATERIALS

- ① TAPPING SLEEVE – 316 STAINLESS STEEL, FORD OR APPROVED EQUAL
- ② TAPPING VALVE – RESILIENT WEDGE, FLANGED GATE VALVE
- ③ CONSTRUCT CONCRETE THRUST BLOCK PER STD DWG NO. W-05
- ④ VALVE RISER AND BOX PER STD DWG NO. W-08

NOTES:

- 1. AIR TEST TAPPING SLEEVE PRIOR TO TAP
- 2. COAT ALL TAPPING SLEEVE BOLTS WITH KOPPERS BITUMASTIC
- 3. USE SHELL CUTTER ON ALL PVC TAPS
- 4. FOR ACP PIPE TAPPING PER CAL OSHA PROCEDURES

TAP OF ACP, PVC OR DIP MAINS



BOLT SIZE

*TAP SIZE	DIMENSION "A"
4"	5"
6"	6"
8"	6 3/4"
10"	7"
12"	7 1/2"

CONSTRUCTION STEPS

- ① WELD NOZZLE TO PIPE
- ② AIR TEST NOZZLE
- ③ TAP PIPE
- ④ INSTALL WIRE MESH AND MORTAR OVER EXPOSED STEEL

HOT TAP OF STEEL MAINS

DRAWING NOT TO SCALE

LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

10/18

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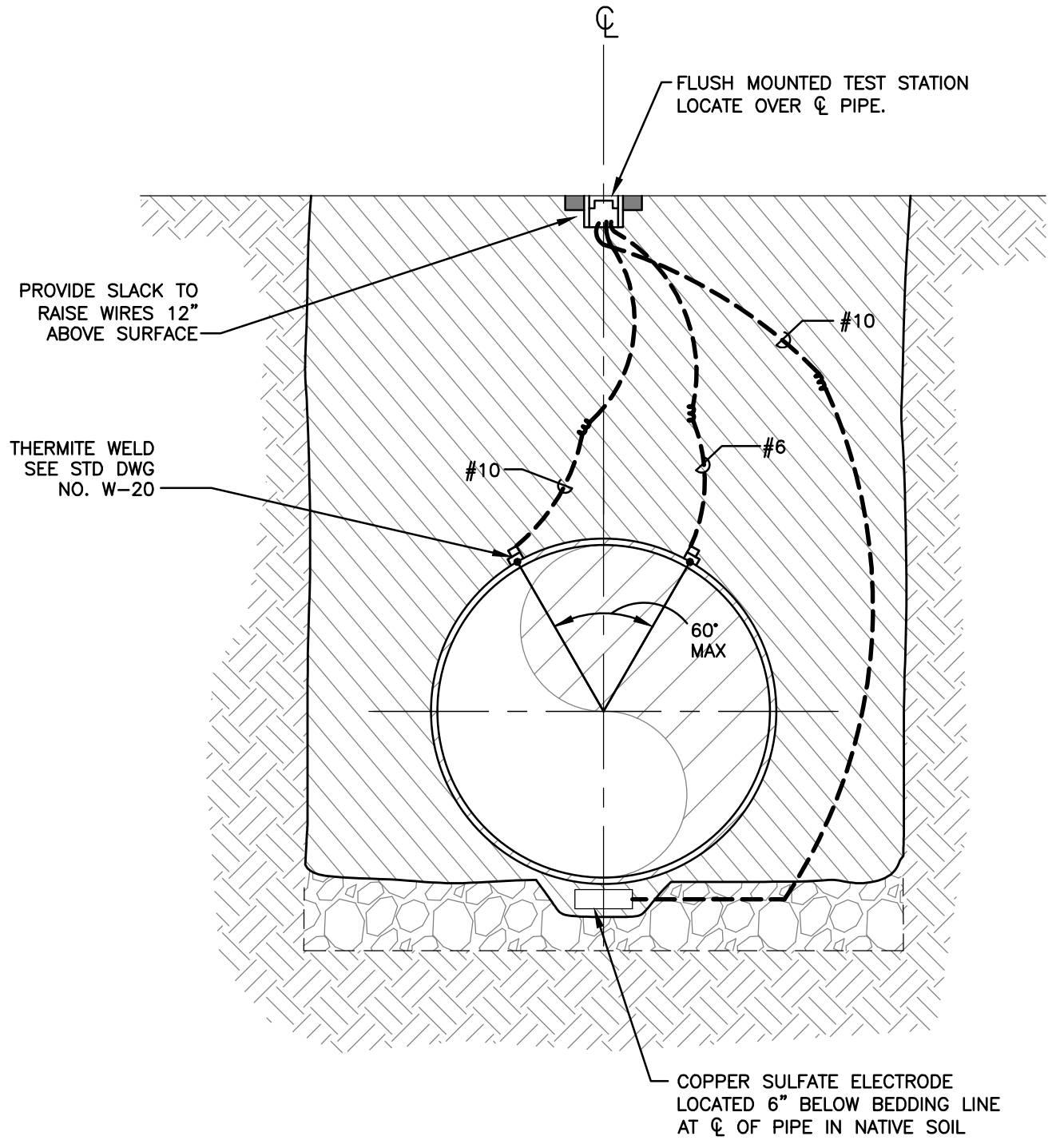
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HOT TAP INSTALLATION

STD DWG NO.


W-18

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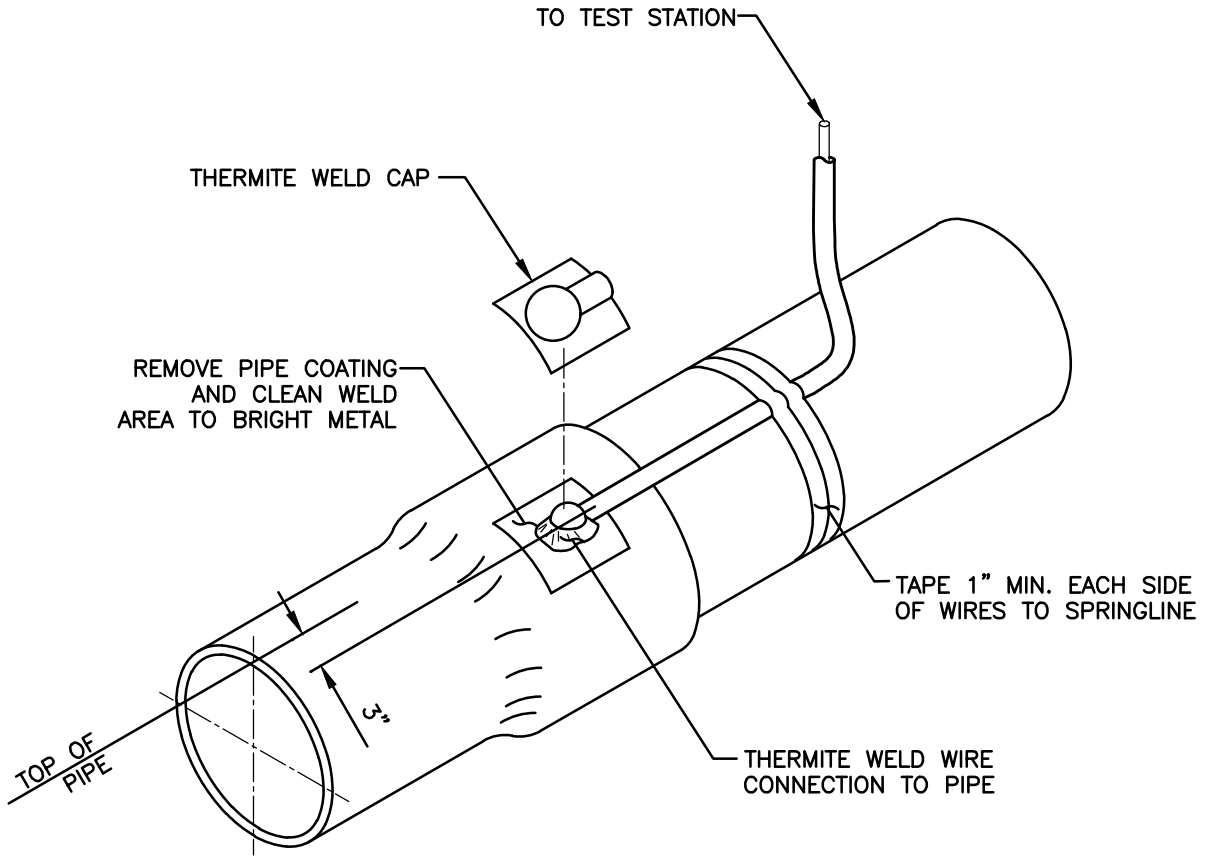
LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

 10/18
 DAVID YOUNGBLOOD RCE 59742 Date

CATHODIC TEST STATION

STD DWG NO.
W-19

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NOTES:

1. USE CHARGE, SIZE AND PROCEDURE AS RECOMMENDED BY THERMITE WELD MANUFACTURER.
2. TEST COMPLETED WELD BY STRIKING SIDE OF WELD SHARPLY WITH 16 oz. OR LARGER HAMMER. IF THE WELD IS KNOCKED OFF, RECLEAN PIPE, REWELD AND RETEST.
3. SECURE WIRE TO PIPE WITH TAPE OR OTHER ACCEPTABLE METHOD WITHOUT DAMAGING PIPE COATING.
4. COAT BARE WELD AREA AND APPLY CAP TO WELD PER MANUFACTURER'S RECOMMENDATIONS.

DRAWING NOT TO SCALE

LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

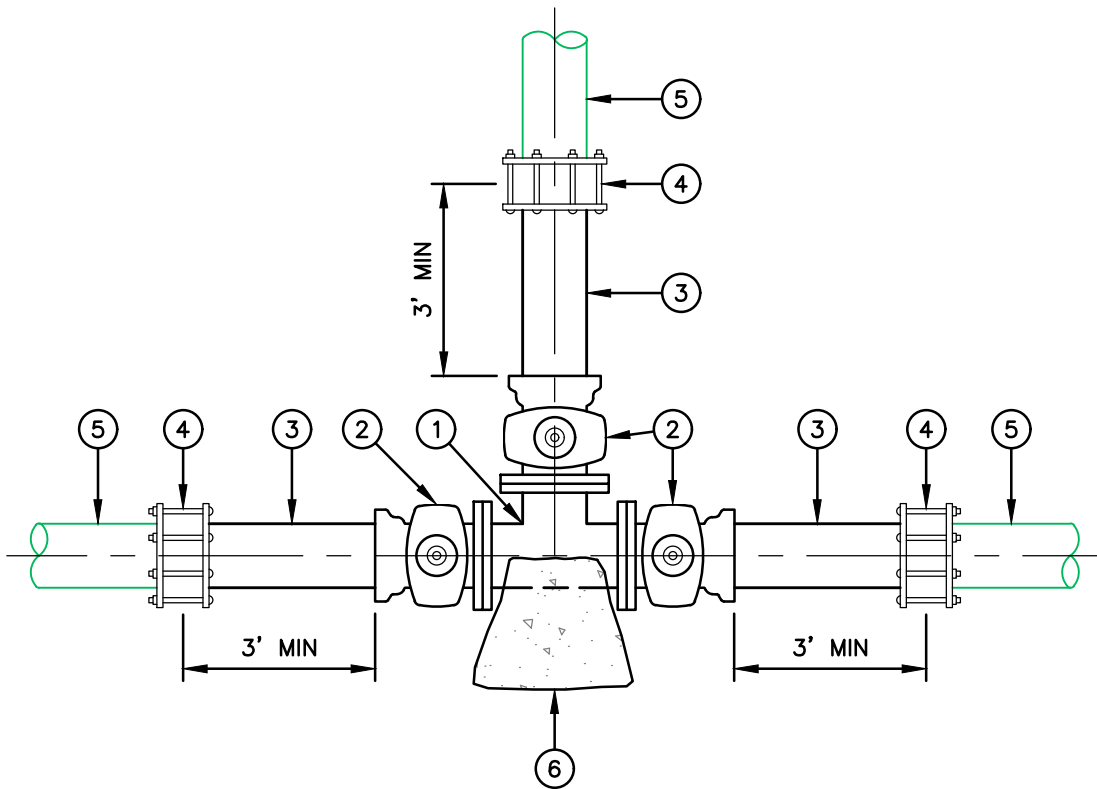
10/18

DAVID YOUNGBLOOD RCE 59742 Date

THERMITE WELD WIRE CONNECTION

STD DWG NO.

W-20



MATERIALS:

- ① FLG x FLG x FLG DIP TEE
- ② FLG x PO RW GATE VALVE SEE STD DWG NO. W-08
- ③ PE DIP (CL 150) OR PE DR-14 PVC (C900) PIPE
- ④ CAST BOLTED SLEEVE-TYPE COUPLING FOR IDENTICAL OR DIFFERENT PIPE MATERIALS ON EACH SIDE (SEE NOTE 7)
- ⑤ EXISTING PIPE
- ⑥ CONCRETE THRUST BLOCK SIZED PER STD DWG NO. W-05

NOTES:

- 1. NUTS AND BOLTS SHALL BE 316 STAINLESS STEEL.
- 2. DOUBLE WRAP TEES, VALVES AND ALL FITTINGS IN 8-MIL POLYETHYLENE.
- 3. WARNING TAPE SHALL BE INSTALLED.
- 4. SEE STD DWG NO. W-07 FOR TRENCH DETAILS.
- 5. SEE STD DWG NO. W-05 FOR FURTHER THRUST BLOCK DETAILS.
- 6. SEE STD DWG NO. W-08 FOR VALVE BOX ASSEMBLY AND VALVE EXTENSION.
- 7. SLEEVE-TYPE COUPLING SHALL BE EPOXY COATED WITH STAINLESS STEEL HARDWARE.

DRAWING NOT TO SCALE

LAGUNA BEACH COUNTY WATER DISTRICT

ENGINEER'S APPROVAL:

9/19

DAVID YOUNGBLOOD RCE 59742 Date

CUT-IN TEE AND VALVES

STD DWG NO.

W-21