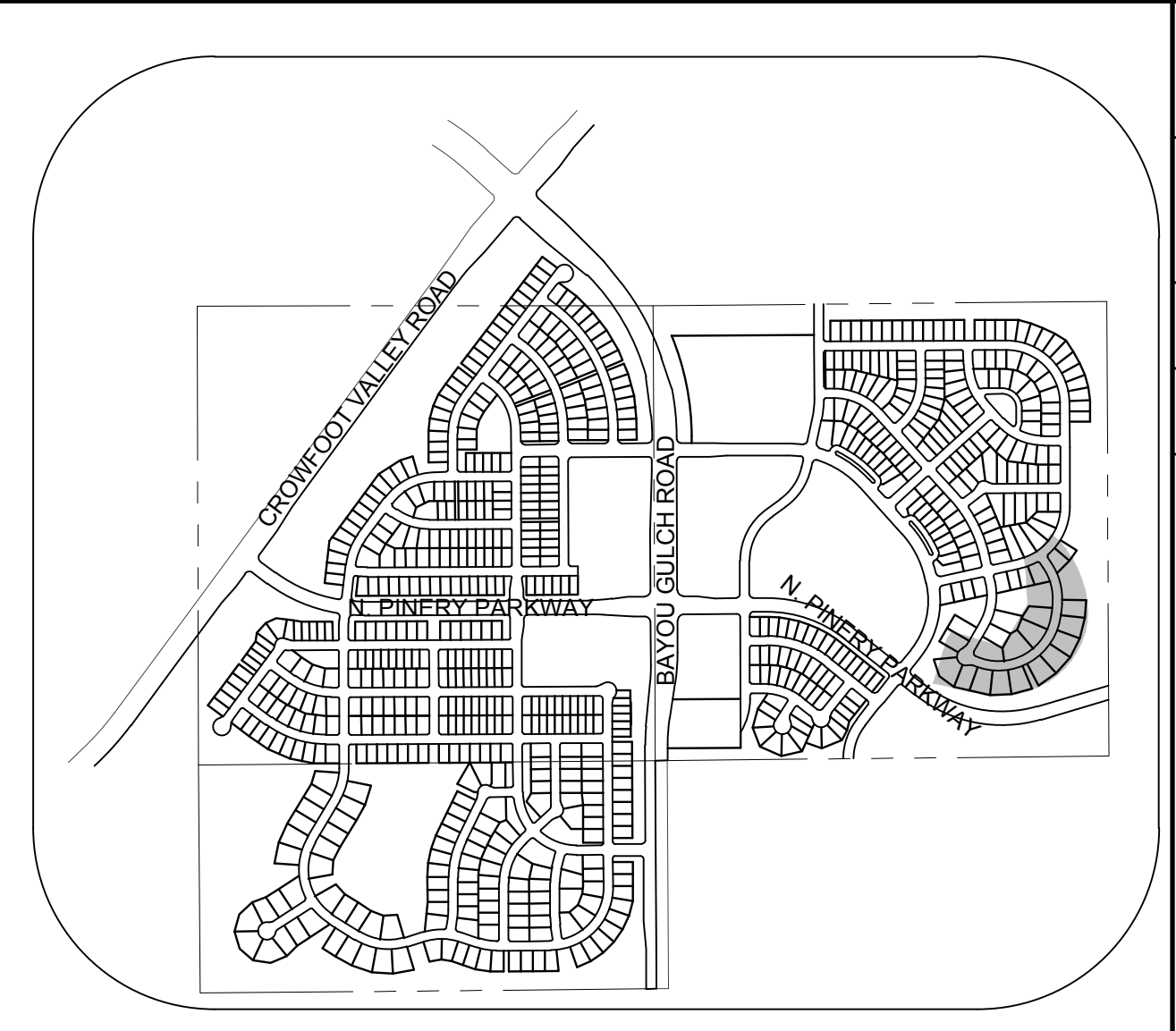
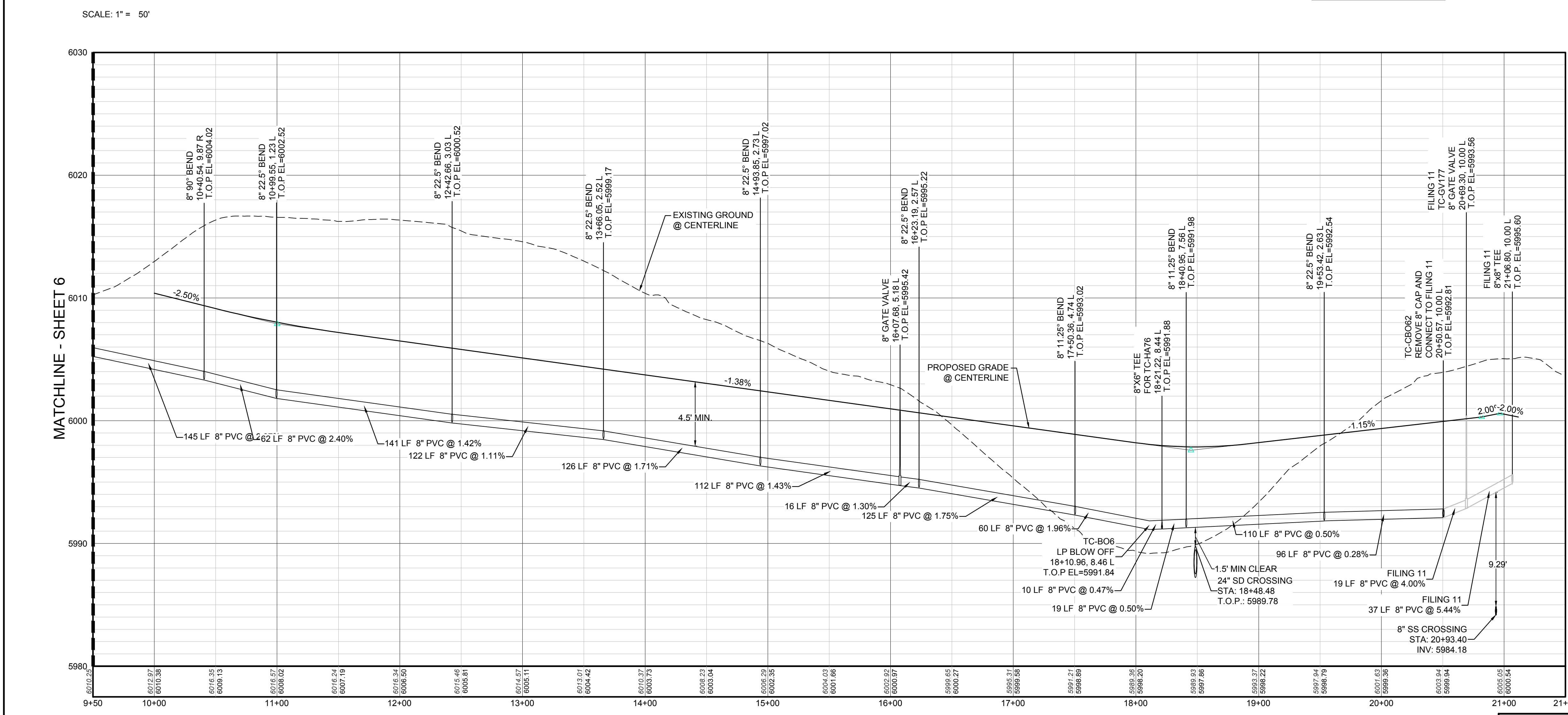


PLAN: FIELD MINT LN STA: 9+50.00 TO 21+50.00
HORIZONTAL SCALE: 1" = 50'



KEYMAP
N.T.S.
LEGEND

②	BLOCK NUMBER	△	PROPOSED RANGE POINT
Ⓐ	LOT TYPE	---	CENTERLINE
6	LOT NUMBER	---	RIGHT-OF-WAY
⊕	PROPOSED BUTTERFLY VALVE	---	PROPERTY LINE
⌋	PROPOSED CAP WITH END OF LINE BLOWOFF	---	EDGE OF PAVEMENT
⊞	PROPOSED REDUCER	→	PROPOSED DIRECTION OF FLOW
⊕	PROPOSED VALVE	1.0%	PROPOSED SLOPE & DIRECTION
⊕	PROPOSED FIRE HYDRANT	---	EXISTING 5' CONTOUR
⊕	PROPOSED WL FITTING WITH THRUST BLOCK	---	EXISTING 1' CONTOUR
⊕	PROPOSED FLARED END SECTION	---	PROPOSED 5' CONTOUR
⊕	PROPOSED LOW POINT BLOW-OFF	---	PROPOSED 1' CONTOUR
⊕	PROPOSED AIR VALVE	---	PROPOSED STORM DRAIN
⊕	FUTURE PHASE VALVE	---	PROPOSED SEWER LINE WITH MANHOLE
⊕	FUTURE FIRE HYDRANT	---	PROPOSED SEWER LATERAL
⊕	PROPOSED LIGHT POLE	---	PROPOSED WATER LINE
⊕	PROPOSED SIDEWALK	---	PROPOSED WATER LATERAL W/ METER
⊕	PROPOSED SIDEWALK RAMP	---	SECTION LINE
10.00	EXISTING ELEVATION	---	FILING BOUNDARY
10.00	PROPOSED DESIGN ELEVATION	---	EXISTING FIBER OPTIC LINE
⊕	PROPOSED STORM DRAIN INLET	---	EXISTING OVERHEAD POWER
⊕	PROPOSED STORM DRAIN MANHOLE	---	EXISTING TELEPHONE LINE



PROFILE: FIELD MINT LN STA: 9+50.00 TO 21+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
AV	AIR VAC RELEASE VALVE	N.T.S.	NOT TO SCALE
BVC	BEGIN VERTICAL CURVE	PVC	POLYVINYL CHLORIDE
BVP	BEGIN VERTICAL PROFILE	PVI	PT. OF VERTICAL INTERSECTION
CBO	CAP WITH BLOW OFF	PVT	POINT OF VERTICAL TANGENT
CRR	CURB RETURN RADIUS	ROBC	REINFORCED CONCRETE BOX CULVERT
ELEV	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EVC	END VERTICAL CURVE	SC	SANITARY CAP
EVP	END VERTICAL PROFILE	SD	STORM DRAIN
FG	FINISHED GROUND	SL	SECTION LINE
FL	FLOW LINE	SS	SANITARY SEWER
GV	GATE VALVE	STA	STATION
HA	HYDRANT ASSEMBLY	T.O.P.	TOP OF PIPE
HCR	HANDICAP CURB RAMP	UE	UTILITY EASEMENT
HP	HIGH POINT	VC	VERTICAL CURVE
INV	INVERT	WL	WATER LINE
K	CURVATURE COEFFICIENT	WLC	WATER LINE CONNECTION
LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION

1. SEE SHEET 3 FOR WATER SERVICE TABLES

CALL 811
TWO WORKING DAYS
BEFORE YOU DIG
UNCC 1-800-922-1987

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.069032, BEING A 3-1/4" ALUMINUM CAP BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2648.70 FEET.

PREPARED UNDER THE SUPERVISION OF

BRIAN P. WILSON
COLORADO P.E. 0050067

SHEET NUMBER	7	DATE	SEPTEMBER 2017	DRAWN BY	RHR	CHECKED BY	JU	SCALE	AS SHOWN	FILE NO.	8130283701	TRAILS AT CROWFOOT	FILING 12 CONSTRUCTION DRAWINGS	WATER PLAN & PROFILE	FIELD MINT LANE	HR 935 LLC	7353 South Alton Way CENTENNIAL, CO 80112	10333 E. Dry Creek Rd. Suite 410 Englewood, CO 80110 Tel: (720) 482-9526 Fax: (720) 482-9546	CONSULTANTS	Revisions	No.	Date	Appr.	Date
	No.		Date		Appr.		Date																	

INSPECTION POLICY:

1. ALL SERVICE INSPECTIONS MUST BE SCHEDULED WITH THE DISTRICT OFFICE AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
2. IF THE CONTRACTOR IS NOT READY FOR INSPECTION WHEN THE INSPECTOR ARRIVES AT THE SITE, A RE-INSPECTION WILL HAVE TO BE SCHEDULED IN ACCORDANCE WITH NOTE 1 ABOVE AND A RE-INSPECTION FEE CHARGED.
3. SHOULD THE SERVICE LINES BE DAMAGED BY LATER CONSTRUCTION, AN INSPECTION OF THE REPAIR WILL BE REQUIRED IN ACCORDANCE WITH NOTES 1 AND 2 ABOVE.
4. THE CONTRACTOR SHALL LEAVE ALL PIPE AND FITTINGS EXPOSED FOR THE INSPECTOR TO OBSERVE. INSPECTORS WILL NOT ENTER ANY EXCAVATIONS TO CHECK MATERIALS. THE TOP LAYER OF BEDDING CAN BE ADDED AFTER THE INSPECTION HAS BEEN COMPLETED.
5. ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA STANDARDS.
6. LOTS WITHOUT BUILDING ADDRESSES OR LOT AND BLOCK NUMBERS BEFORE DISTRICT INSPECTION OR METER SET WILL FAIL AUTOMATICALLY.
7. CONTRACTOR MUST BE PRESENT AT TIME OF INSPECTION UNLESS COORDINATED WITH DISTRICT INSPECTOR.

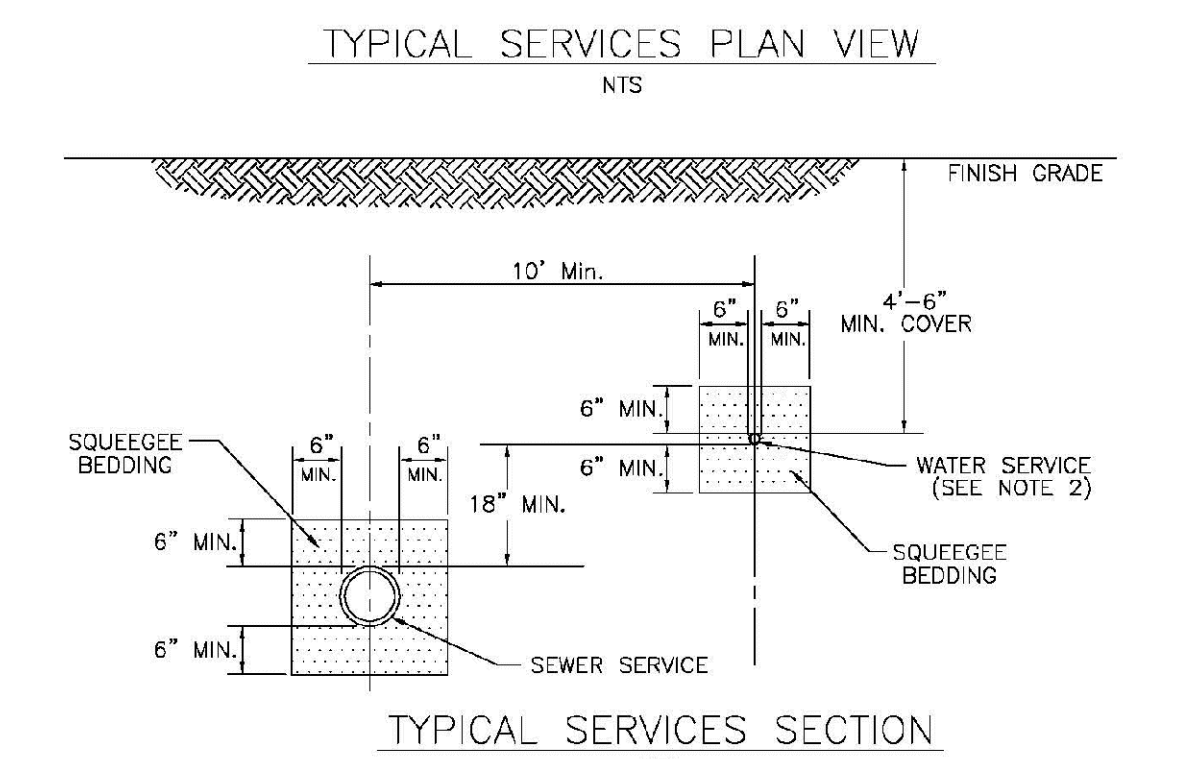
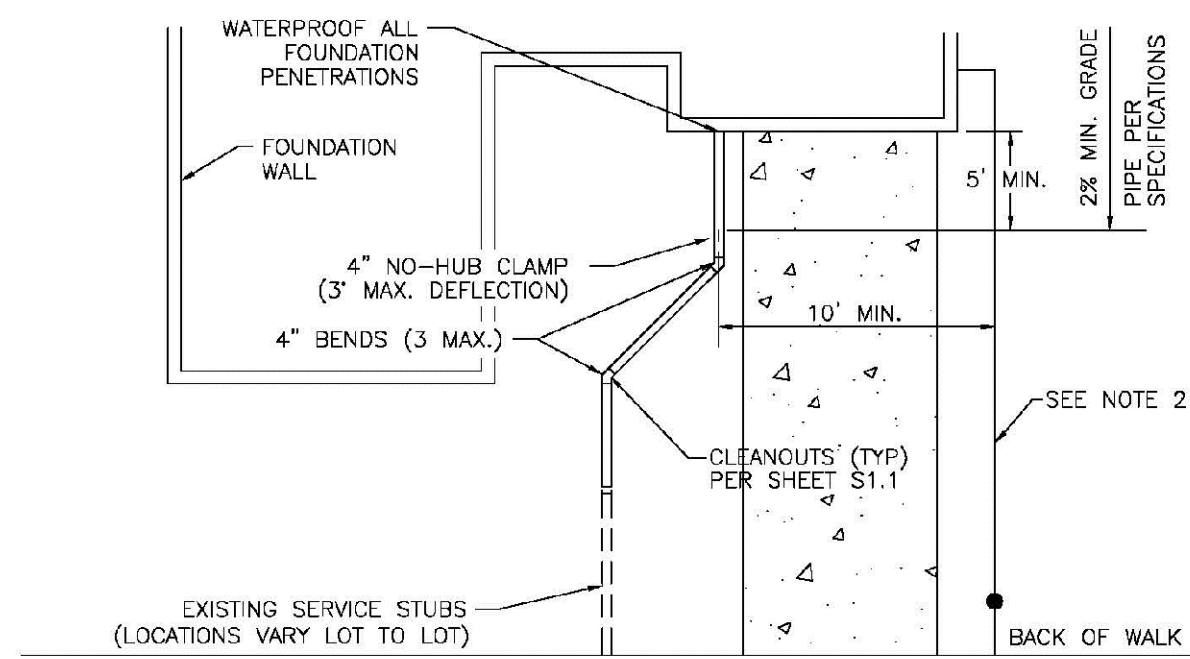
INSTALLATION NOTES:

- SEWER**
1. ACCEPTABLE PIPE MATERIALS ARE TO BE SDR 35 PVC PIPE, ABS PIPE AND PVC SCHD 40 PIPE. APPROVED BEDDING IS TO BE SOLGEEGE.
 2. NO-HUB CLAMPS SHALL BE USED TO JOIN 2 MALE PIPE ENDS WITH A MAXIMUM DEFLECTION OF 3°.
 3. MINIMUM GRADE SHALL BE 2%.
 4. INSTALLATION SHALL INCLUDE NO MORE THAN 3 BENDS. 90° BENDS ARE NOT ALLOWED. SOLVENT WELDED PIPE WILL NOT BE ALLOWED.
 5. CLEAN-OUTS SHALL BE INSTALLED AT 100' INTERVALS AND EVERY CHANGE IN DIRECTION. CLEAN-OUTS ARE NOT REQUIRED FOR SERVICES LESS THAN 100' UNLESS THERE ARE CHANGES IN DIRECTION. PROVIDE DUAL CLEAN-OUT WITHIN 5 FEET OF FOUNDATION.
 6. STRESSING OF THE PIPE BETWEEN FITTINGS WILL NOT BE ALLOWED.
 7. SEWER SERVICE LINE SHALL NOT BE LOCATED UNDER CONCRETE SURFACE.
 8. ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:
"X" FOR SANITARY SEWER SERVICE
"V" FOR WATER SERVICES

PARKER WATER & SANITATION DISTRICT
DISTRICT POLICIES & INSTALLATION NOTES FOR SEWER SERVICES

SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/02	10/16
		1/08	
DIRECTOR OF ENGINEERING		1/16	

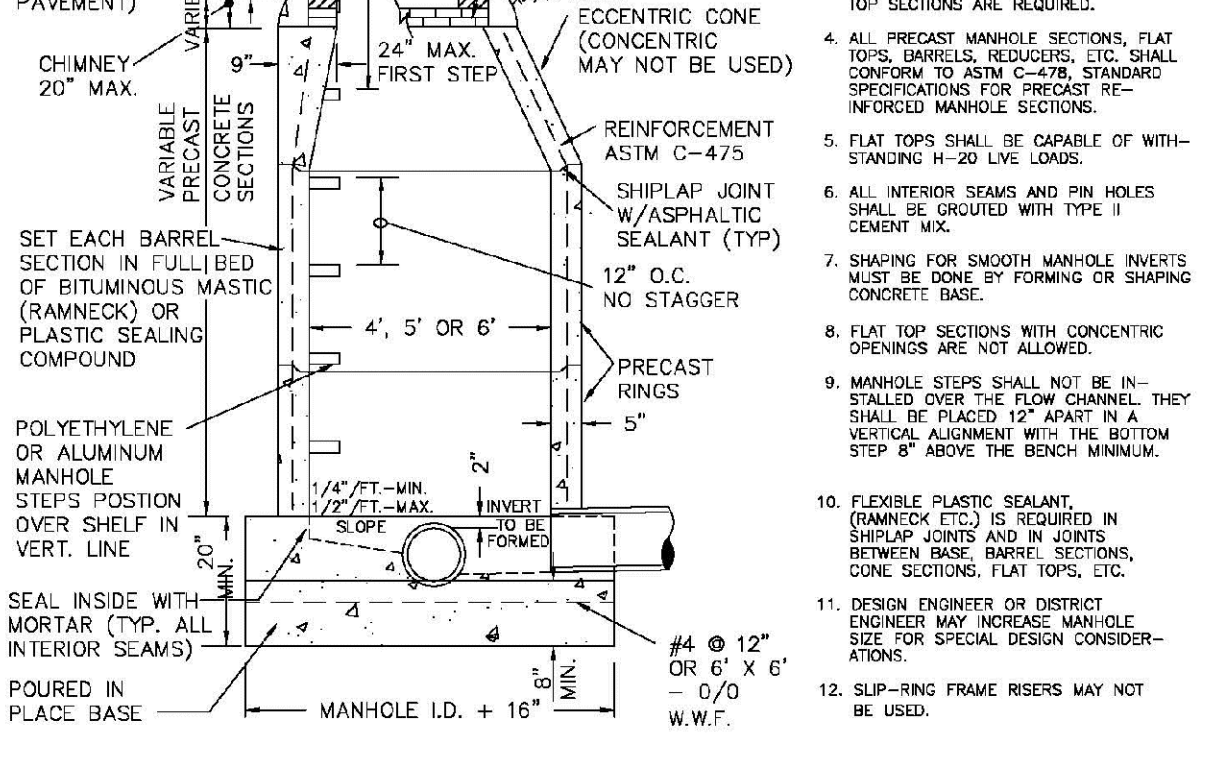
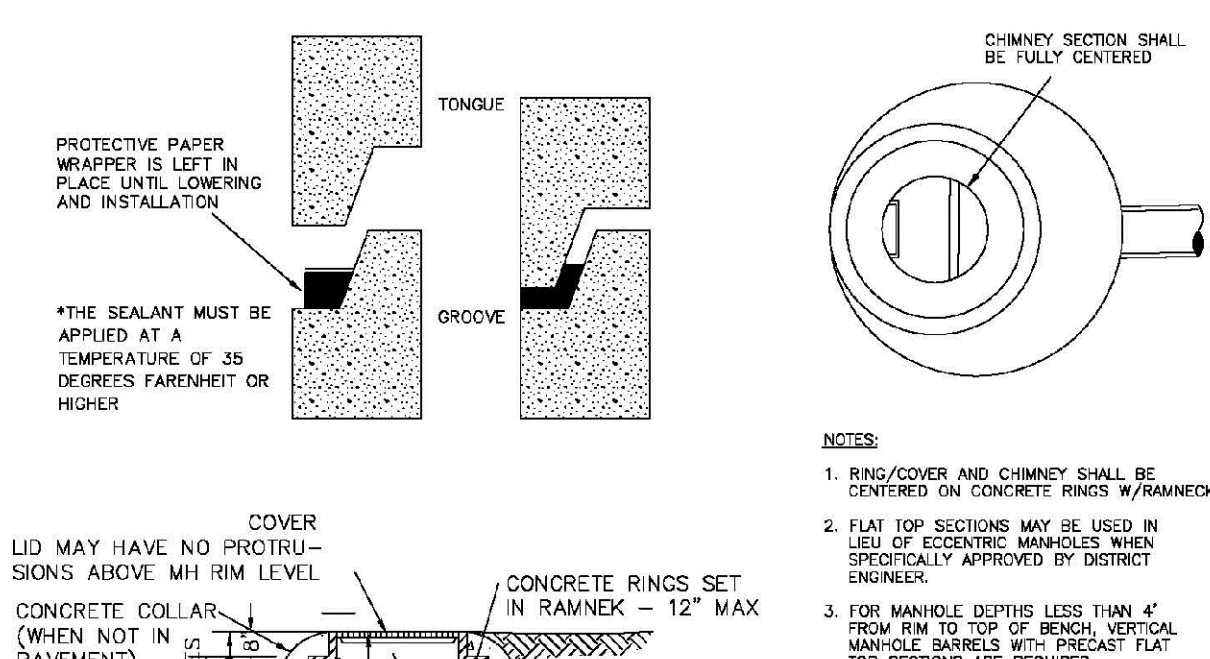
SHEET S1.1



PARKER WATER & SANITATION DISTRICT
TYPICAL SEWER SERVICES

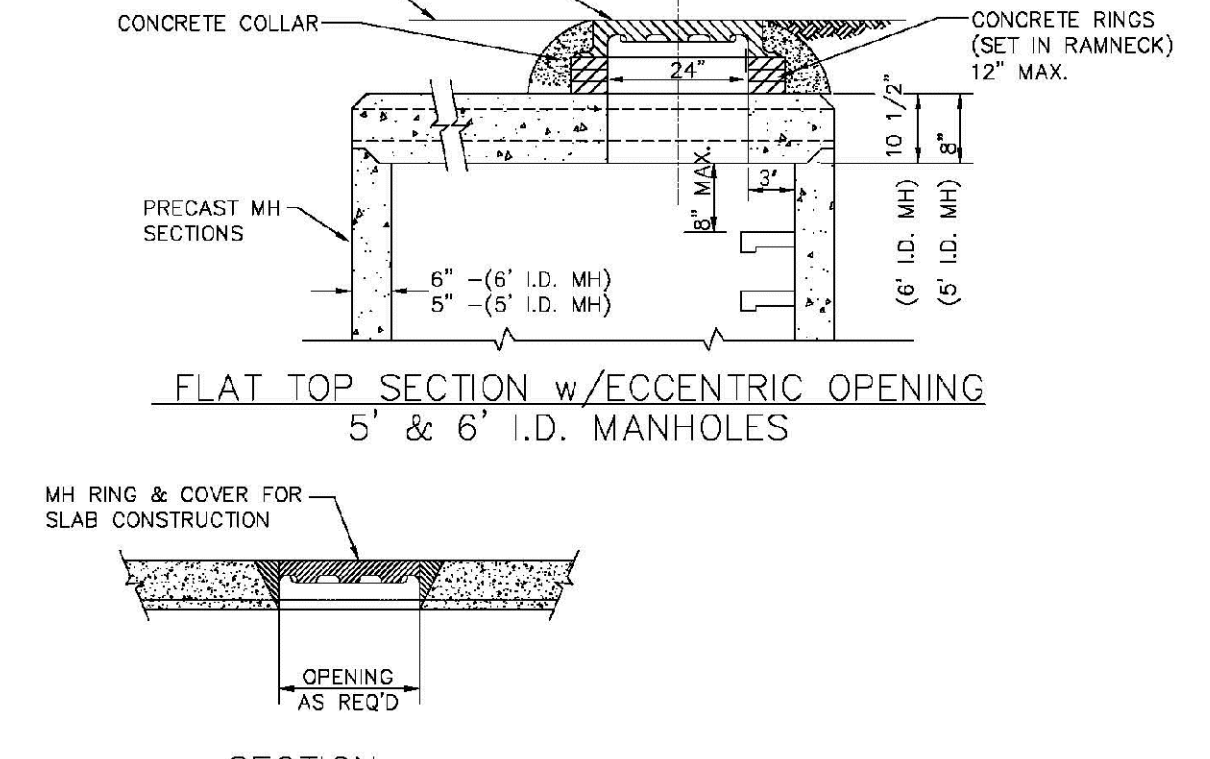
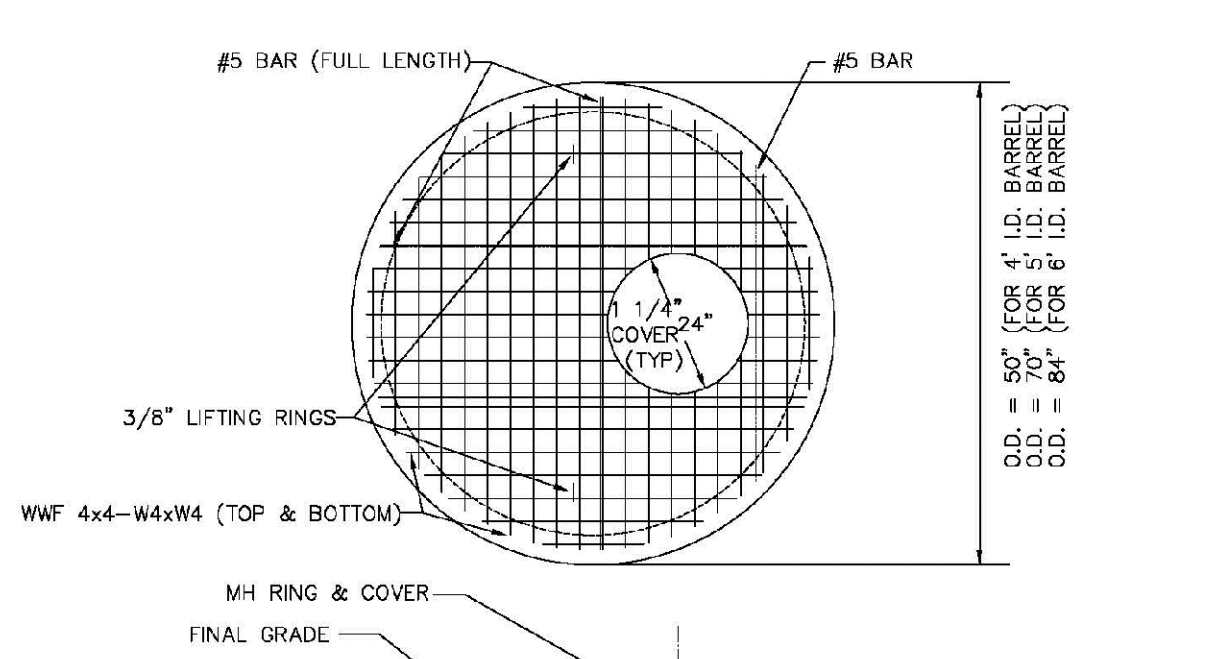
SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	2/90	01/02
		01/16	
DIRECTOR OF ENGINEERING		10/15	

SHEET S1.2



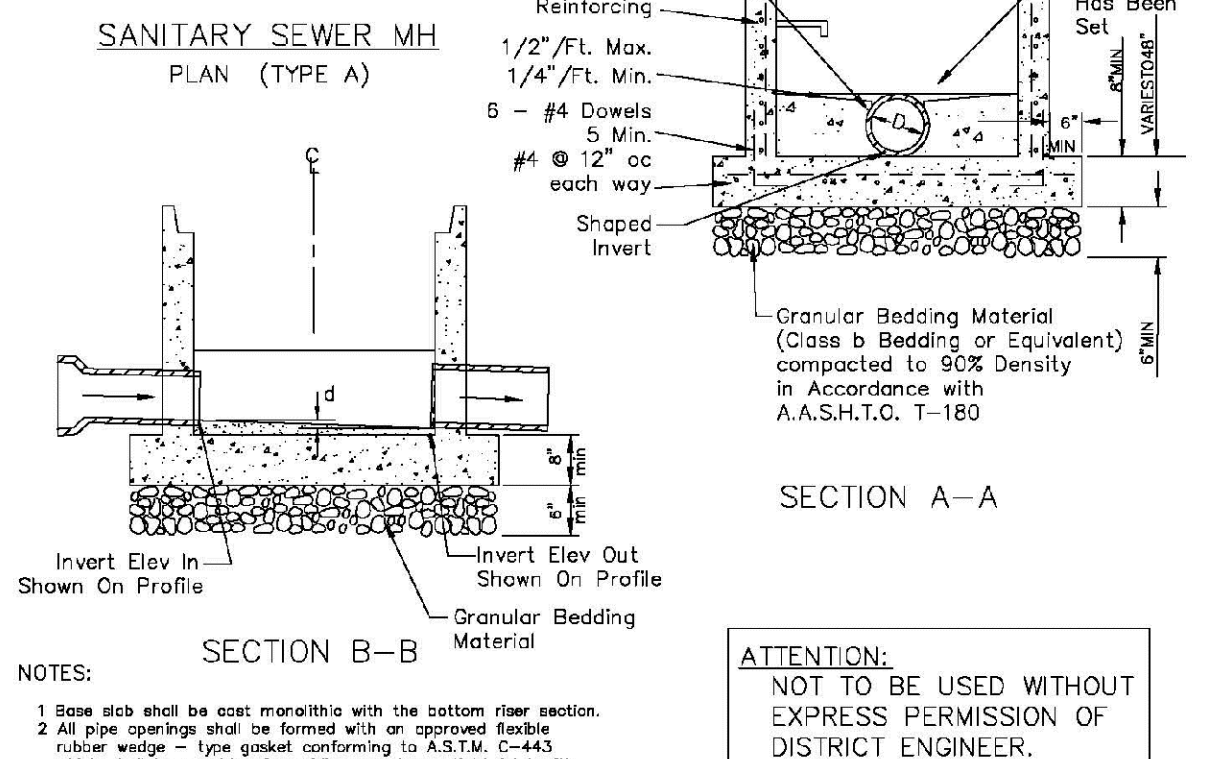
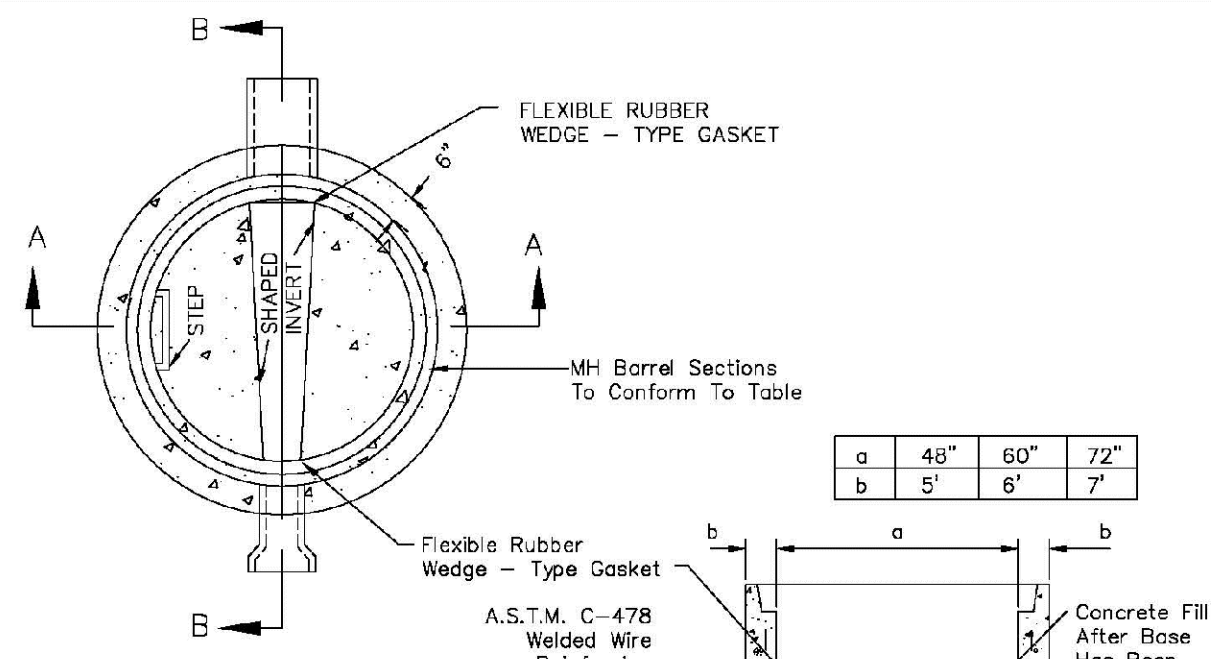
PIPE I.D.	MANHOLE I.D.
18" & SMALLER	4'-0"
21" TO 48"	5'-0"
54"	5'-0"
60" & LARGER	SPECIAL DESIGN

SHEET S3.1



SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/02	10/16
		1/08	
DIRECTOR OF ENGINEERING		10/16	

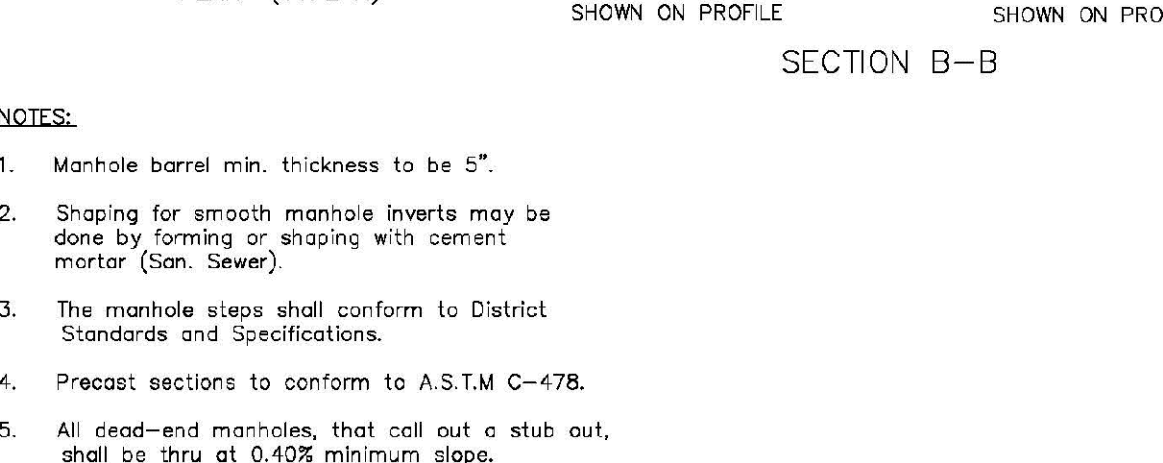
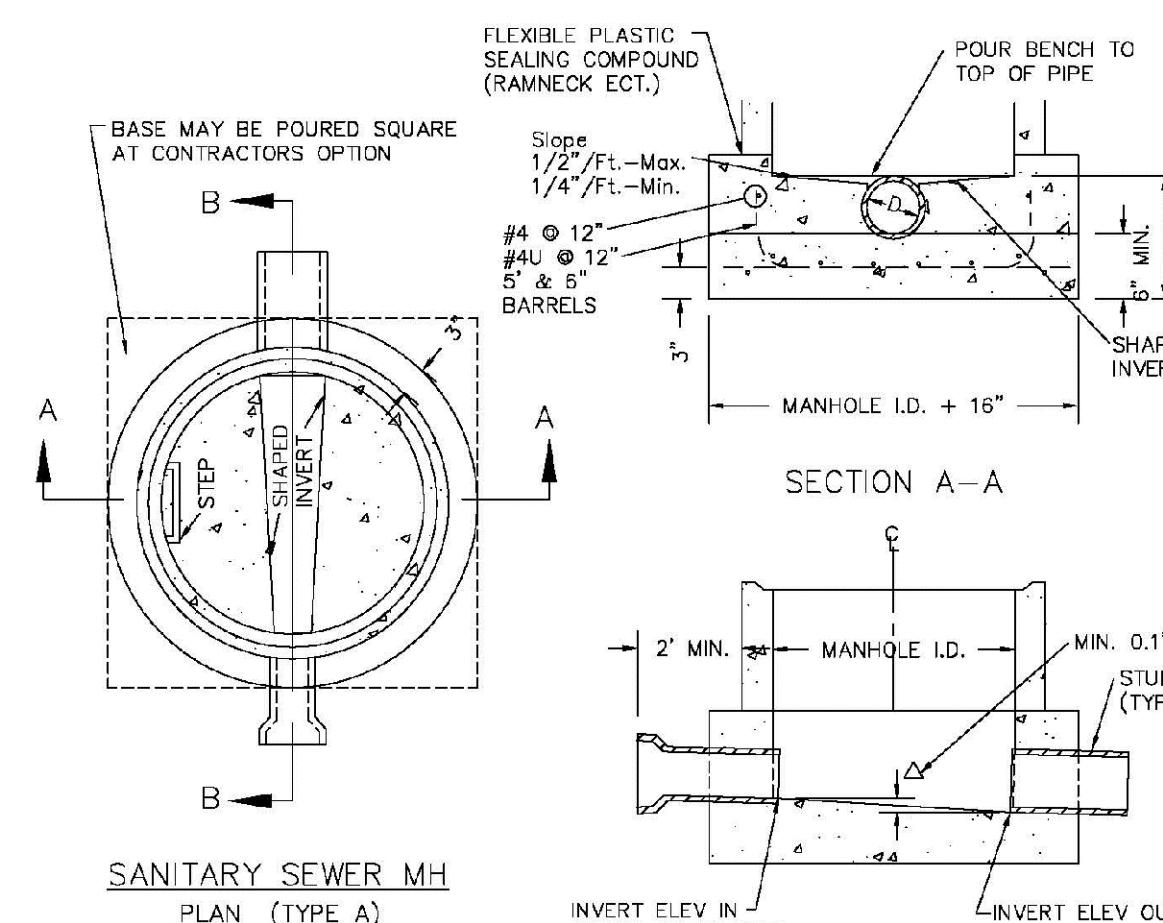
SHEET S3.3



PARKER WATER & SANITATION DISTRICT
PRECAST MANHOLE BASE DETAIL

SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/02	10/16
		10/16	
DIRECTOR OF ENGINEERING			

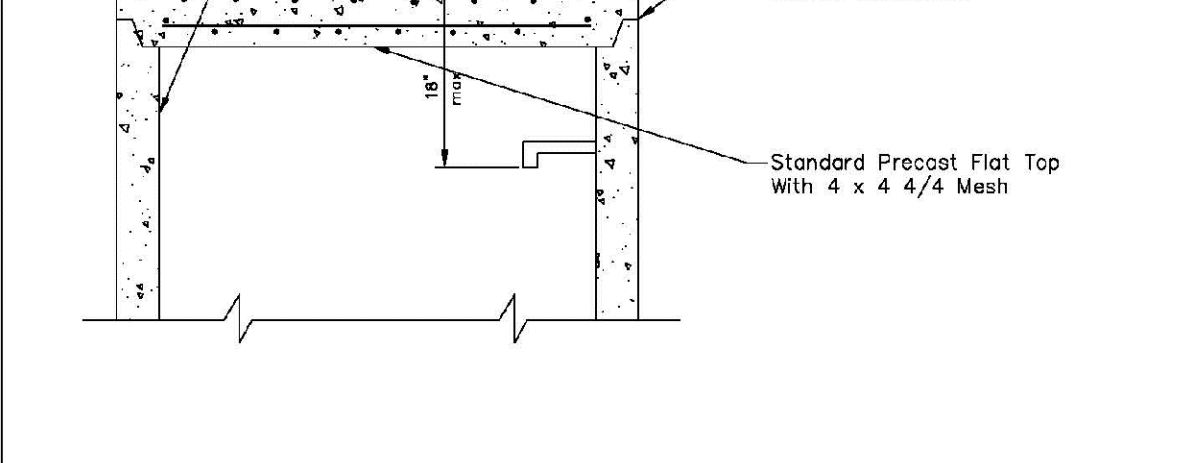
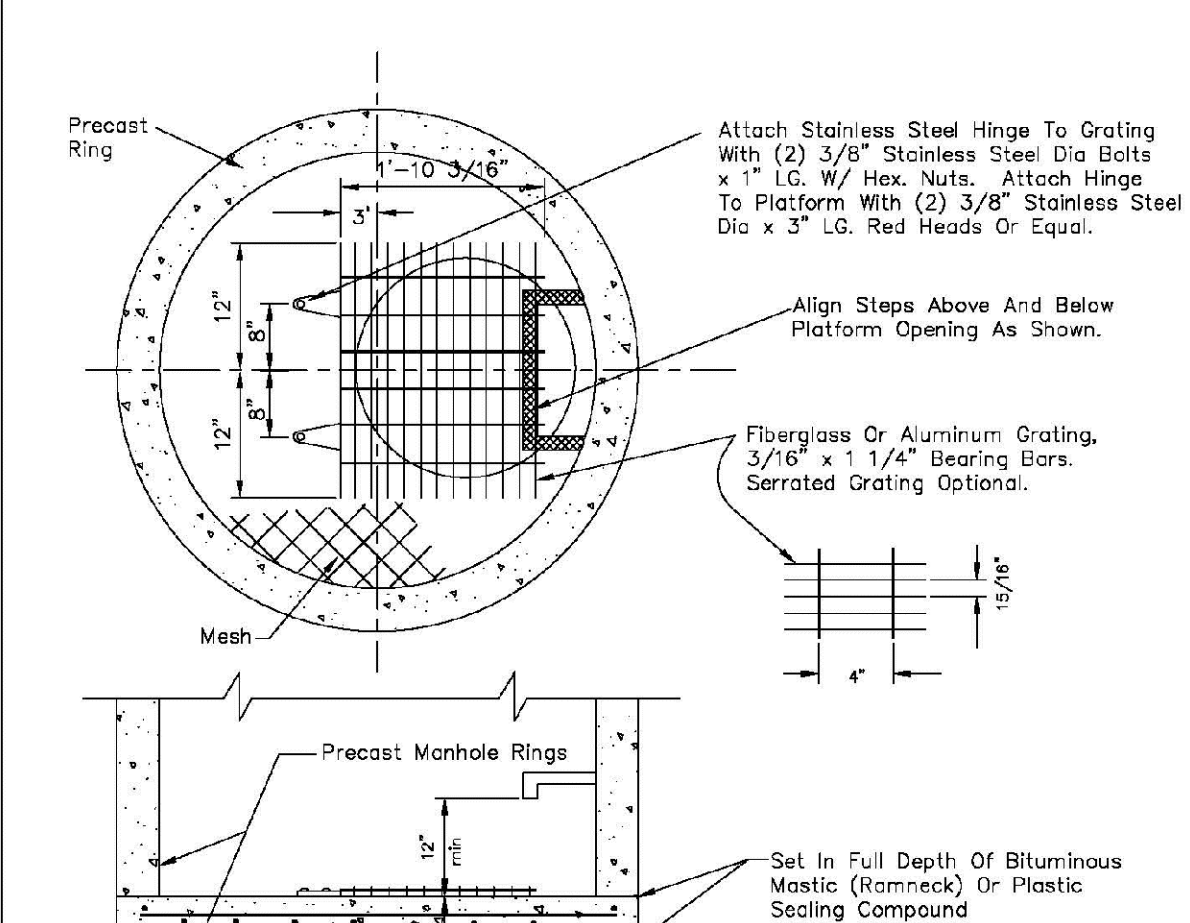
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PARKER WATER & SANITATION DISTRICT
CAST-IN-PLACE MANHOLE BASE DETAIL

SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/02	10/16
		01/16	
DIRECTOR OF ENGINEERING		10/16	

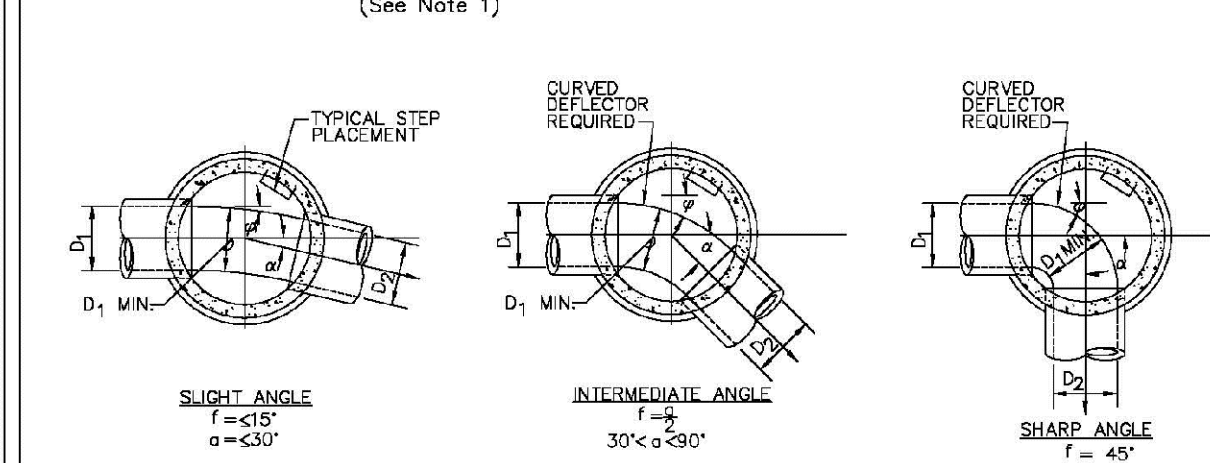
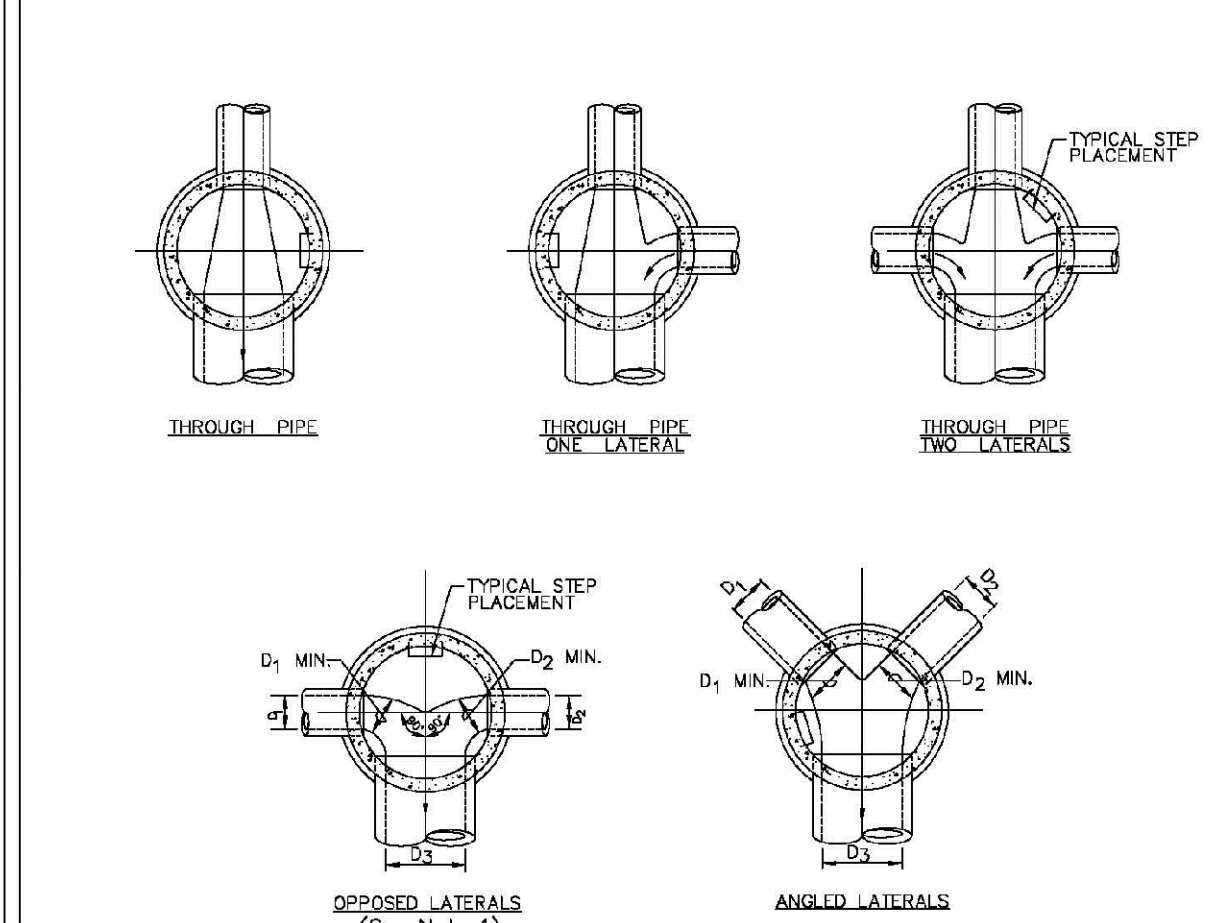
SHEET S3.5



PARKER WATER & SANITATION DISTRICT
TYPICAL BASE CHANNELIZATION DETAILS

SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	2/90	01/16
		1/16	10/16
DIRECTOR OF ENGINEERING			

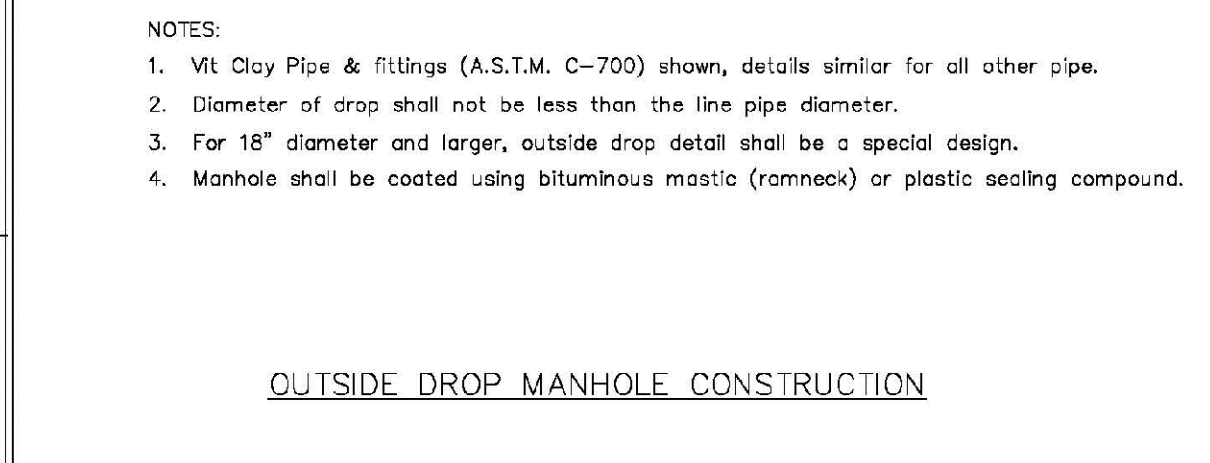
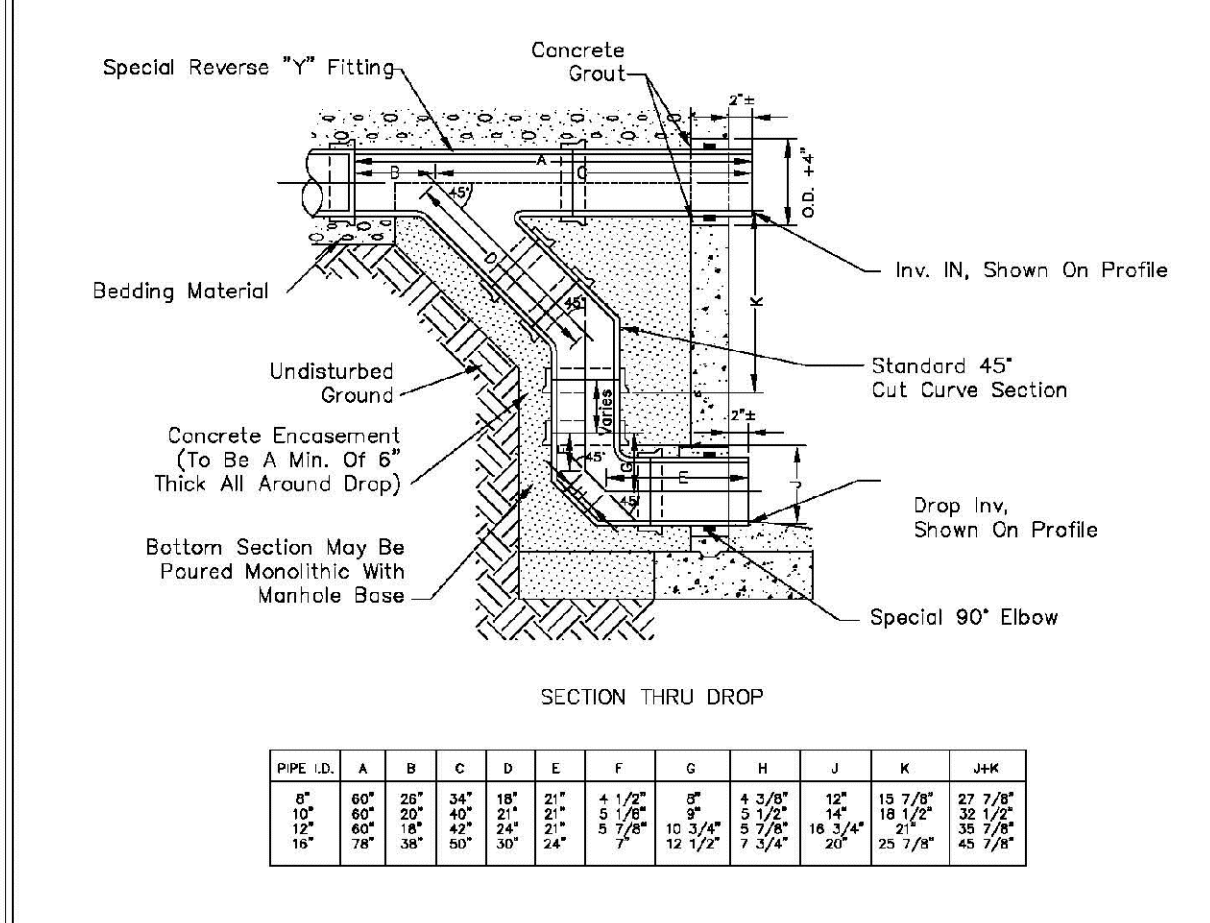
SHEET S3.7



PARKER WATER & SANITATION DISTRICT
OUTSIDE DROP MANHOLE CONSTRUCTION

SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/16	10/16
		10/16	
DIRECTOR OF ENGINEERING			

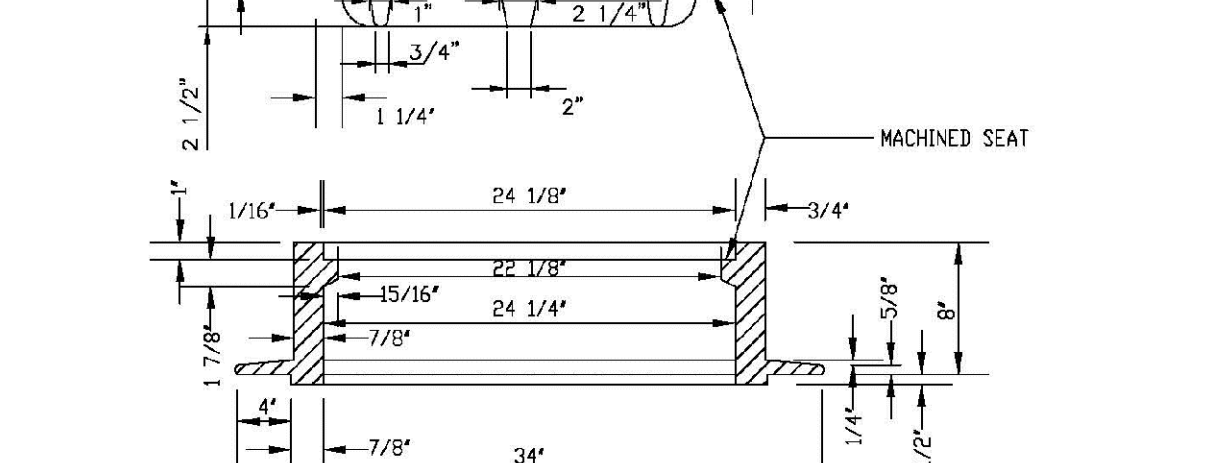
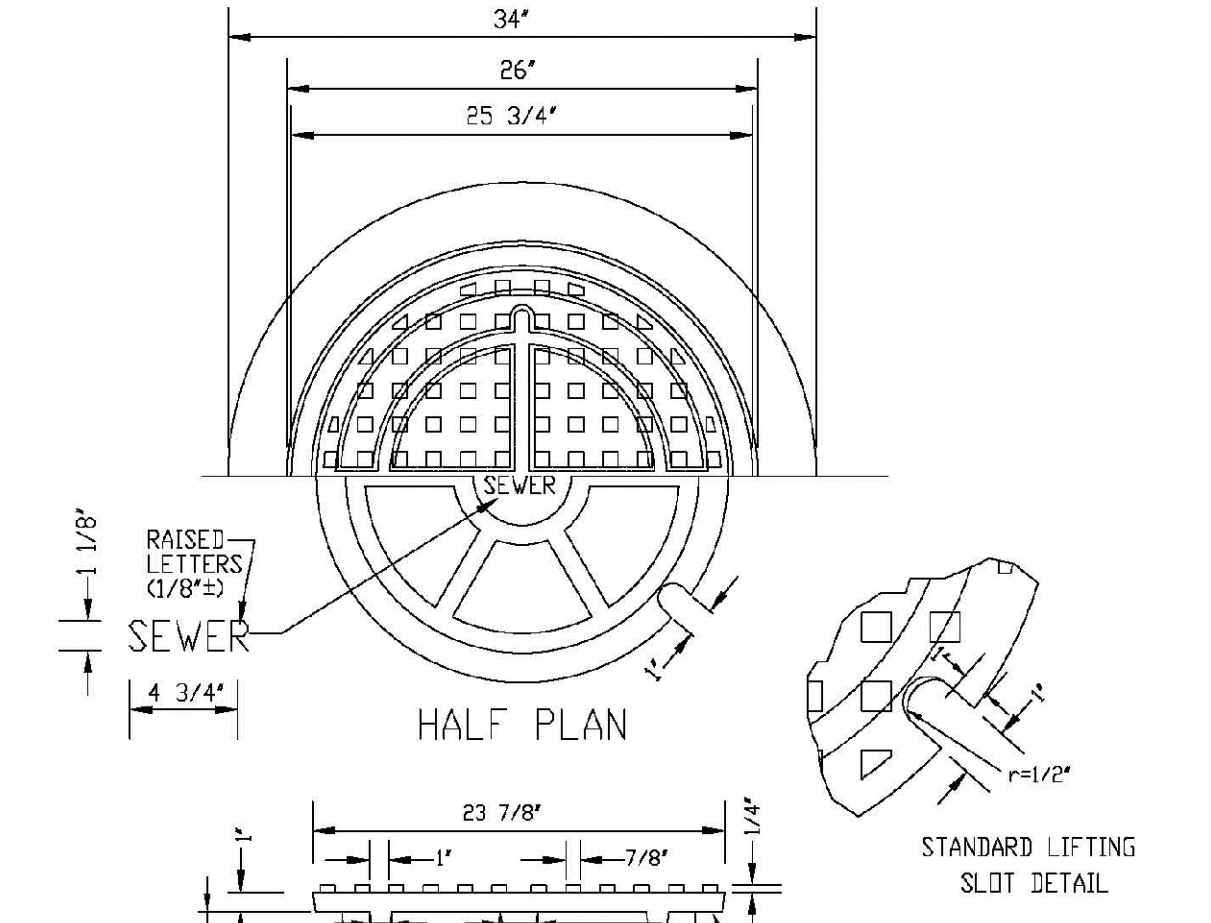
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PARKER WATER & SANITATION DISTRICT
24" DIAMETER RING AND COVER

SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/16	10/16
		10/16	
DIRECTOR OF ENGINEERING			

SHEET S3.9



PARKER WATER & SANITATION DISTRICT
24" DIAMETER RING AND COVER

SCALE:	NONE	DATE:	2/98
APPROVED:	PVR	01/16	10/16
		10/16	
DIRECTOR OF ENGINEERING			

SHEET S3.9

N:\PROJECTS\BIRNACK\ENGINEERING\DRAWINGS\SEWER\DETAILS\DWG\BRNACK_1402018_741.PDW

DATE:	SEPTEMBER 2017
CHECKED BY:	JU
AS SHOWN	
SCALE:	AS SHOWN
FILE NO.:	8130283701
TRAILS AT CROWFOOT FILING 12 CONSTRUCTION DRAWINGS SANITARY SEWER DETAIL	
HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112	
10335 E. Dry Creek Rd. Suite 410 Englewood, CO 80152 Tel: (720) 482-9526 Fax: (720) 482-9548	CVL CONSULTANTS

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UTILITY NOTIFICATION CENTER OF COLORADO

SHEET NUMBER
8

ALUMINUM STEP

CONCRETE WALL SECTION

STEPS TO BE HOOKED BEHIND REINFORCING WHEN CONCRETE SECTIONS ARE CAST.

TYPICAL INSTALLATION

TOE POCKET DETAILS

STANDARD EXTRUDED ALUMINUM MANHOLE STEP

NOTES:

- ALUMINUM ALLOY SPECIFICATIONS:
 - FED. SPEC. QQ-A-200/9 (ALUMINUM-MAGNESIUM-SILICATE ALLOY)
 - MINIMUM TENSILE STRENGTH=38,000 p.s.i.
 - MINIMUM YIELD STRENGTH=35,000 p.s.i.
 - MINIMUM ELONGATION=10% IN 2
- MINIMUM LOAD CAPACITY (APPLIED AT CENTER OF STEP)
 - 1,000 lb. WITH 4" PROJECTION FROM WALL
 - 1,500 lb. WITH 4" PROJECTION FROM WALL
- WEIGHT PER STEP=2.25 POUNDS
- STEPS TO BE CAST, UNALTERED, IN MANHOLE WALL IN STRAIGHT LINE, VERTICALLY, AT THE SAME TIME THE BARREL OR CONE SECTIONS ARE CAST.
- VERTICAL SPACING BETWEEN STEPS SHALL BE CONSISTENT IN EACH INDIVIDUAL MANHOLE.
- TOE POCKETS ARE REQUIRED IN STORM SEWER MANHOLES IF TOP OF BENCH IS MORE THAN 18" ABOVE INVERT. TOE POCKETS ARE NOT REQUIRED IN SANITARY SEWER MANHOLES UNLESS OTHERWISE SPECIFIED.

PARKER WATER & SANITATION DISTRICT
STANDARD EXTRUDED ALUMINUM MANHOLE STEP

SCALE: NONE DATE: 2/98
APPROVED: PVR 01/16 10/16
DIRECTOR OF ENGINEERING

POLYPROPYLENE REINFORCED PLASTIC STEP

NOTES:

- THE CAST ALUMINUM MANHOLE STEP SHALL BE USED WHEN SPECIFIED ON THE DRAWINGS.
- ALUMINUM ALLOY SPECIFICATIONS:
 - ALLOY DESIGNATION: 6061 T6
 - MIN. TENSILE STRENGTH: 40 K.S.I.
 - MIN. YIELD STRENGTH: 20 K.S.I.
 - MIN. SHEAR STRENGTH: 27.45 K.S.I.
 - ELONGATION: 10% IN 2
 - BRINELL HARDNESS: 70
- MINIMUM LOAD CAPACITY, STEP SPACING AND ALIGNMENT, TOE POCKET DETAILS AND OTHER APPLICABLE NOTES OR DETAILS SPECIFIED FOR EXTRUDED ALUMINUM MANHOLE STEP SHALL ALSO APPLY TO THIS STANDARD.
- MIN. WT. = 2.0 LB.

PARKER WATER & SANITATION DISTRICT
POLYPROPYLENE REINFORCED PLASTIC MANHOLE STEP

SCALE: NONE DATE: 2/03
APPROVED: PVR 01/16 10/16
DIRECTOR OF ENGINEERING

CAST ALUMINUM MANHOLE STEP

NOTES:

- THE CAST ALUMINUM MANHOLE STEP SHALL BE USED WHEN SPECIFIED ON THE DRAWINGS.
- ALUMINUM ALLOY SPECIFICATIONS:
 - ALLOY DESIGNATION: 6061 T6
 - MIN. TENSILE STRENGTH: 40 K.S.I.
 - MIN. YIELD STRENGTH: 20 K.S.I.
 - MIN. SHEAR STRENGTH: 27.45 K.S.I.
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- MIN. WT. = 2.0 LB.

PARKER WATER & SANITATION DISTRICT
CAST ALUMINUM MANHOLE STEP

SCALE: NONE DATE: 2/98
APPROVED: PVR 01/16 10/16
DIRECTOR OF ENGINEERING

MARKER POST DETAIL

CONCRETE CAP
STANDARD 4" STEEL PIPE PAINTED FIRE HYDRANT YELLOW OR 4" X 4" REDWOOD POST
DIRT FILL
GROUND LEVEL
12" CONCRETE

STEEL PIPE
STENCILED IDENTIFICATION MARKS ON POSTS SHALL FACE THE APPURTENANCE WITH 2" STENCILS INDICATING TYPE OF APPURTENANCE (MH, 12" VALVE, ETC.) AND THE DISTANCE IN FEET AND INCHES FROM POST.

REDWOOD POST
ROUTER LETTERS AND NUMBERS INTO POST. PAINT LETTERS AND NUMBERS BLACK.

PARKER WATER & SANITATION DISTRICT
MARKER POST DETAIL

SCALE: NONE DATE: 2/98
APPROVED: PVR 01/16 10/16 4/01 1/06 1/16
DIRECTOR OF ENGINEERING

TYPICAL TRENCH DETAIL

Original Ground Surface of Final Grade Elevation
max. limits of excavation
Backfill to be placed and compacted in accordance with backfill method specified

NOTES:

- Slating or benching of trench side walls, where permitted shall be in accordance with applicable Federal, State and Local safety regulations.
- Trench shall be propped and shored as necessary to assure safe working conditions or to protect adjacent utilities, structures, etc. (Unless otherwise specified on the plans, no propping will be made for removal, replacement or relocation of curb and gutter, utilities, structures, etc. outside the maximum limits of excavation as shown on the contractor shall be responsible for protection of same.)
- If dimension T_b is $< 5'$, then existing adjacent pavement shall be removed and replaced up to the gutter. Maximum asphalt strip width, B_2 & B_3 shall then be based upon this actual width.

PARKER WATER & SANITATION DISTRICT
SEWER TRENCHING AND BEDDING DETAIL

SCALE: NONE DATE: 2/98
APPROVED: PVR 5/98 1/16 10/16
DIRECTOR OF ENGINEERING

2016 REVISION

SHEET 53-10

2016 REVISION

SHEET 53-11

2016 REVISION

SHEET 53-12

2016 REVISION

SHEET 53-13

2016 REVISION

SHEET 54-1

CONCRETE ARCH

Lower limit of sloping or benching of trench walls

Plain or Reinforced Concrete Continuous $f_c = 3500$ psi min.

Densely compacted backfill, hand-tamped (90% density, AASHTO T-180) in open areas and 95% density, AASHTO T-99 in all public R.O.W.

Compacted Granular Material (Class "B" Bedding)

CONCRETE CRADLE

Plain or Reinforced Concrete Continuous $f_c = 3500$ psi min.

PARKER WATER & SANITATION DISTRICT
TRENCHING AND BEDDING DETAIL - CLASS "A" BEDDING

SCALE: NONE DATE: 2/98
APPROVED: PVR 1/16 10/16
DIRECTOR OF ENGINEERING

CLASS "B" BEDDING

LIMIT OF SLOPING OR BENCHING OF TRENCH WALLS

TRENCH BACKFILL MATERIAL, HAND-TAMPED IN 6" LIFTS

GRANULAR CLASS "B" BEDDING, HAND-TAMPED IN 6" LIFTS

TABLE IV
MIN. DEPTH OF BEDDING MATL. BELOW BOTTOM OF PIPE

PIPE SIZE - D	MIN. DEPTH OF BEDDING MATL. BELOW BOTTOM OF PIPE
18" & SMALLER	6"
21" TO 36"	6"
42" TO 60"	6"
66" TO 96"	6"
104" & LARGER	12"

GENERAL NOTES:

- THESE DETAILS ARE TYPICAL FOR NORMAL TRENCH CONDITIONS. FOR INSTALLATIONS OTHER THAN THESE (SUCH AS DRAINAGE OR TUNNEL INSTALLATIONS, ETC.) EXCAVATION, BEDDING AND BACKFILL REQUIREMENTS SHALL BE DETAILED ON THE CONSTRUCTION DRAWINGS. FOR UNUSUAL OR UNSTABLE SOIL CONDITIONS, TRENCH AND BEDDING DETAILS SHALL BE A SPECIAL DESIGN.
- BEDDING TRENCH BACKFILL TO BE COMPACTED TO 90% DENSITY, AASHTO T-99 IN OPEN AREAS AND 95% DENSITY, AASHTO T-99 IN ALL PUBLIC R.O.W.

PARKER WATER & SANITATION DISTRICT
TRENCHING AND BEDDING DETAIL - CLASS "B"

SCALE: NONE DATE: 2/98
APPROVED: PVR 3/98 2/00 1/16 10/16
DIRECTOR OF ENGINEERING

ROCK EXCAVATION

HAND-TAMPED BACKFILL (TYP) FOR SIZE 18" AND LARGER

GRANULAR CLASS "B" BEDDING, HAND-TAMPED IN 6" LIFTS

TABLE IV
MIN. DEPTH OF BEDDING MATL. BELOW BOTTOM OF PIPE

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PARKER WATER & SANITATION DISTRICT
TRENCHING AND BEDDING DETAIL - CLASS "B"

SCALE: NONE DATE: 2/98
APPROVED: PVR 5/98 2/00 1/16 10/16
DIRECTOR OF ENGINEERING

CLASS "B" BEDDING

HAND-TAMPED BACKFILL (TYP) FOR SIZE 18" AND LARGER

GRANULAR CLASS "B" BEDDING, HAND-TAMPED IN 6" LIFTS

GEOTEXTILE FILTER CLOTH

LARGE STONES, BROKEN CONCRETE, ETC. IF REQUIRED

TABLE IV
MIN. DEPTH OF BEDDING MATL. BELOW BOTTOM OF PIPE

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PARKER WATER & SANITATION DISTRICT
TRENCHING AND BEDDING DETAIL - CLASS "B"

SCALE: NONE DATE: 2/98
APPROVED: PVR 5/98 2/00 1/16 10/16
DIRECTOR OF ENGINEERING

TYPE I CONCRETE ENCASEMENT FOR SANITARY SEWERS

PROPOSED SEWER OR CONDUIT

FILLER MATERIAL (SEE NOTE 1)

PIER SUPPORT (EACH SIDE, IF REQUIRED. (SEE NOTE 8))

CONCRETE ARCH ($f_c = 2000$ PSI)

SHORING (SEE NOTE 6)

UNDISTURBED EARTH

HAND EXCAVATION REQUIRED AROUND SANITARY SEWER

GENERAL NOTES FOR TYPE I, II, III ENCASEMENT

- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING. IF OPTIONAL CONSTRUCTION JOINT IS USED, BOTTOM HALF OF ENCASEMENT IS POURED SEPARATELY, A ONE INCH LAYER OF SAND OR MORTAR SHALL BE PLACED BETWEEN BOTTOM OF SANITARY SEWER AND TOP OF CONCRETE.
- LENGTH OF ENCASEMENT FOR:
 - TYPE I & II ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
 - TYPE III ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
- UNLESS OTHERWISE NOTED ON PLAN/PROFILE DRAWINGS, TYPE I, II & III ENCASEMENTS NEED NOT BE REINFORCED. REINFORCEMENT, IF REQUIRED, SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN & PROFILE DRAWINGS.
- TYPE I, II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
 - TYPE I OR II ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
 - TYPE III ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
 - TYPE I OR II ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
 - TYPE III ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
- FILLER MATERIAL BETWEEN CONDUITS TO BE:
 - CONCRETE CLASS "B" BEDDING IF $d_1, d_2, d_3 > 6"$ (IF $d_1, d_2, d_3 \leq 6"$ TYPE I OR II ENCASEMENT FOUR CONCRETE ON UNDISTURBED SOIL)
 - SHORING OR SHEETING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT.
 - IF IN CERTAIN SITUATIONS THE REQUIRED DIMENSION T_b IS EXTREMELY LARGE, PIER SUPPORTS ON EACH SIDE OF SANITARY SEWER MAY BE USED. IF REQUIRED, SUPPORTS SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN AND PROFILE DRAWINGS.

PARKER WATER & SANITATION DISTRICT
CONCRETE ENCASEMENT TYPE I

SCALE: NONE DATE: 2/98
APPROVED: JFN
DISTRICT ENGINEER

2016 REVISION

SHEET 54-2

2016 REVISION

SHEET 54-3

2016 REVISION

SHEET 54-4

2016 REVISION

SHEET 54-5

2008 REVISION

SHEET 6

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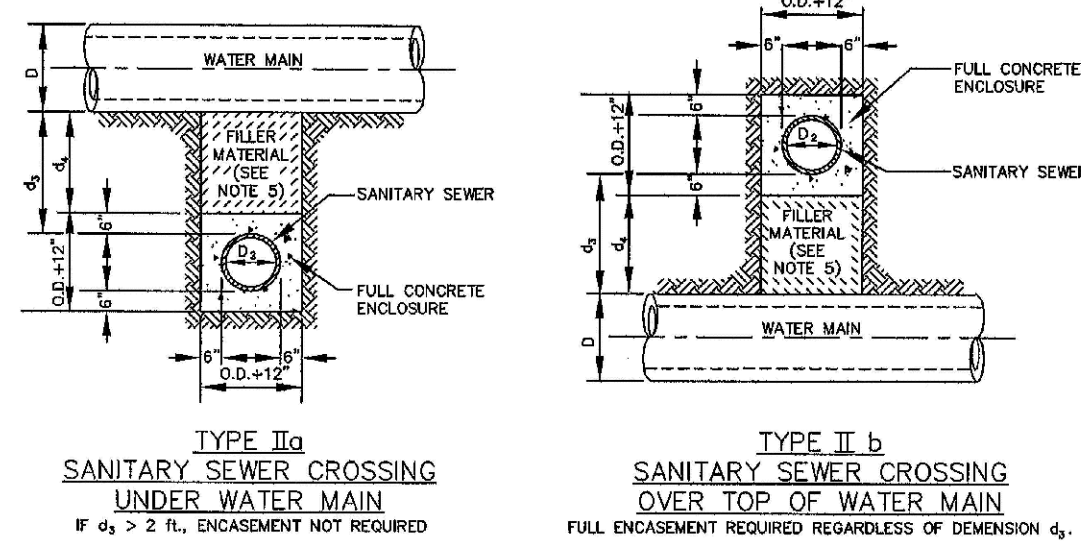
TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAIL

SCALE: AS SHOWN
FILE NO: 8130283701

DRAWN BY: JF
CHECKED BY: JJ
DATE: SEPTEMBER 2017

SHEET NUMBER: 9

DATE: 10/16
INIT: JFN
APPR: JFN
DATE: 10/16



TYPE IIa
SANITARY SEWER CROSSING
UNDER WATER MAIN
IF $d_s > 2$ FT., ENCASEMENT NOT REQUIRED

TYPE IIb
SANITARY SEWER CROSSING
OVER TOP OF WATER MAIN
FULL ENCASEMENT REQUIRED REGARDLESS OF DIMENSION d_s .

TYPE II
CONCRETE ENCASEMENT FOR SANITARY SEWERS
CROSSING OVER OR UNDER WATER MAIN

GENERAL NOTES FOR TYPE IIa & IIb ENCASEMENT

- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING. IF OPTIONAL CONSTRUCTION JOINT IS USED & BOTTOM HALF OF ENCASEMENT IS POURED SEPARATELY, A ONE INCH LAYER OF SAND OR MORTAR SHALL BE PLACED BETWEEN BOTTOM OF SANITARY SEWER AND TOP OF CONCRETE.
- LENGTH OF ENCASEMENT FOR:
 - TYPE I & TYPE II ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
 - TYPE III ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
- UNLESS OTHERWISE NOTED ON PLAN/PROFILE DRAWINGS, TYPE I, II & III ENCASEMENTS NEED NOT BE REINFORCED. REINFORCEMENT, IF REQUIRED, SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN & PROFILE DRAWINGS.
- TYPE I, II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
 - TYPE I OR TYPE II IF $d_s \leq 18"$ ($d_s \leq 12"$ EXCEPT FOR SANITARY SEWER CROSSING OVER OR UNDER WATER MAINS).
 - TYPE III IF $d_s \leq 24"$ ($d_s \leq 18"$).
 - TYPE III IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS REGARDLESS OF DIMENSION d_s .
 - EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSINGS OR UNDER UNUSUAL SOIL CONDITIONS ARE UNREINFORCED. TYPE I ENCASEMENT WILL NORMALLY BE SATISFACTORY.
 - IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF DUCTILE IRON PIPE (AWWA C-150 OR C-151), CONCRETE ENCASEMENT MAY NOT BE REQUIRED.
- FILLER MATERIAL BETWEEN CONDUITS TO BE:
 - APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC IF $d_s \leq 4"$ & $d_c \leq 7"$.
 - COMPACTED CLASS "D" BEDDING IF $d_s \leq 4"$ & $d_c \leq 7"$ (IF $d_s > 4"$ FOR TYPE II ENCASEMENT POUR CONCRETE ON UNDISTURBED SOIL).
- SHORING OR SHIELDING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT.
- THESE ENCASEMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS.
- IN CERTAIN SITUATIONS WHERE CONDUIT DIAMETER "D" IS EXTREMELY LARGE, PER SUPPORTS ON EACH SIDE OF SANITARY SEWER MAY ALSO BE REQUIRED. IF REQUIRED, SUPPORTS SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN AND PROFILE DRAWINGS.

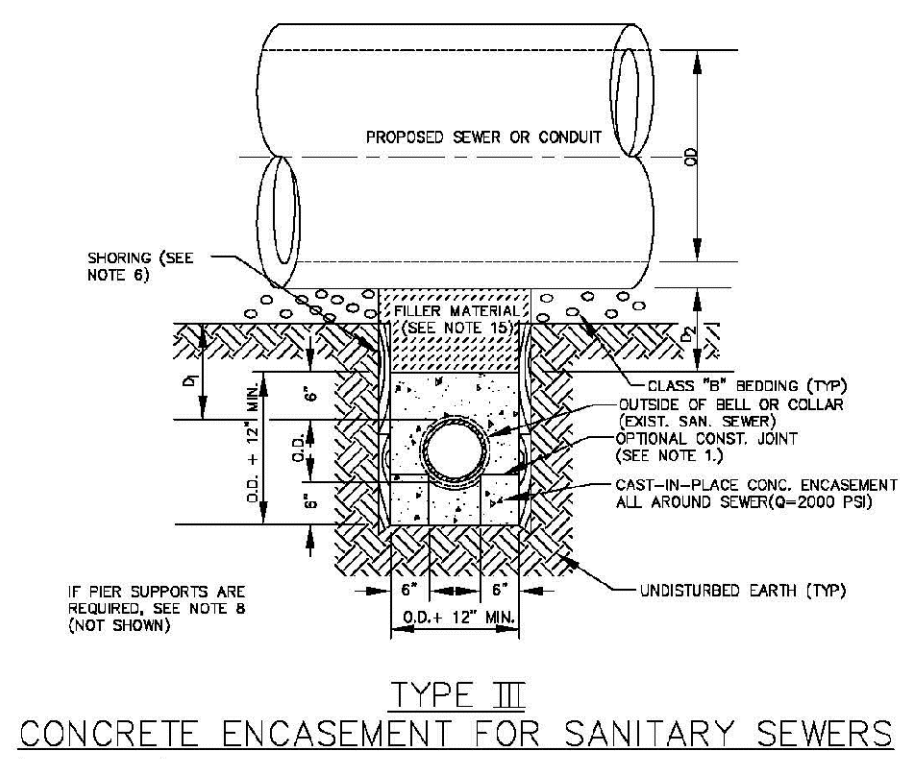
PARKER WATER & SANITATION DISTRICT
CONCRETE ENCASEMENT
TYPE II

SCALE: NONE DATE: 2/98

APPROVED: JFN 5/98
4/01
1/98

DISTRICT ENGINEER

2008 REVISION SHEET 7



TYPE III
CONCRETE ENCASEMENT FOR SANITARY SEWERS
(FULL ENCASEMENT) NO SCALE

GENERAL NOTES FOR TYPE III ENCASEMENT

- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING. IF OPTIONAL CONSTRUCTION JOINT IS USED & BOTTOM HALF OF ENCASEMENT IS POURED SEPARATELY, A ONE INCH LAYER OF SAND OR MORTAR SHALL BE PLACED BETWEEN BOTTOM OF SANITARY SEWER AND TOP OF CONCRETE.
- LENGTH OF ENCASEMENT FOR:
 - TYPE I & TYPE II ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
 - TYPE III ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
- UNLESS OTHERWISE NOTED ON PLAN/PROFILE DRAWINGS, TYPE I & II ENCASEMENTS NEED NOT BE REINFORCED. REINFORCEMENT, IF REQUIRED, TO BE SPECIFIED AND DETAILED SEPARATELY ON PLAN & PROFILE DRAWINGS.
- TYPE I, II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
 - TYPE I OR TYPE II IF $d_s \leq 18"$ ($d_s \leq 12"$ EXCEPT FOR SANITARY SEWER CROSSING OVER OR UNDER WATER MAINS).
 - TYPE III IS REQUIRED FOR SANITARY SEWERS CROSSING UNDER WATER MAINS WATER MAINS AND $d_s \leq 24"$ ($d_s \leq 18"$).
 - TYPE III IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS REGARDLESS OF DIMENSION d_s .
 - EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSINGS OR UNDER UNUSUAL SOIL CONDITIONS ARE UNREINFORCED. TYPE I ENCASEMENT WILL NORMALLY BE SATISFACTORY.
 - IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF DUCTILE IRON PIPE (AWWA C-150 OR C-151), CONCRETE ENCASEMENT MAY NOT BE REQUIRED.
- FILLER MATERIAL BETWEEN CONDUITS TO BE:
 - APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC IF $d_s \leq 4"$ & $d_c \leq 7"$.
 - COMPACTED CLASS "D" BEDDING IF $d_s \leq 4"$ & $d_c \leq 7"$ (IF $d_s > 4"$ FOR TYPE III ENCASEMENT POUR CONCRETE ON UNDISTURBED SOIL).
- SHORING OR SHIELDING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT.
- THESE ENCASEMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS.
- IN CERTAIN SITUATIONS WHERE CONDUIT DIAMETER "D" IS EXTREMELY LARGE, PER SUPPORTS ON EACH SIDE OF SANITARY SEWER MAY ALSO BE REQUIRED. IF REQUIRED, SUPPORTS SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN AND PROFILE DRAWINGS.
- CONCRETE ENCASED PIPING SHALL BE LINED WITH FILL LAYER.

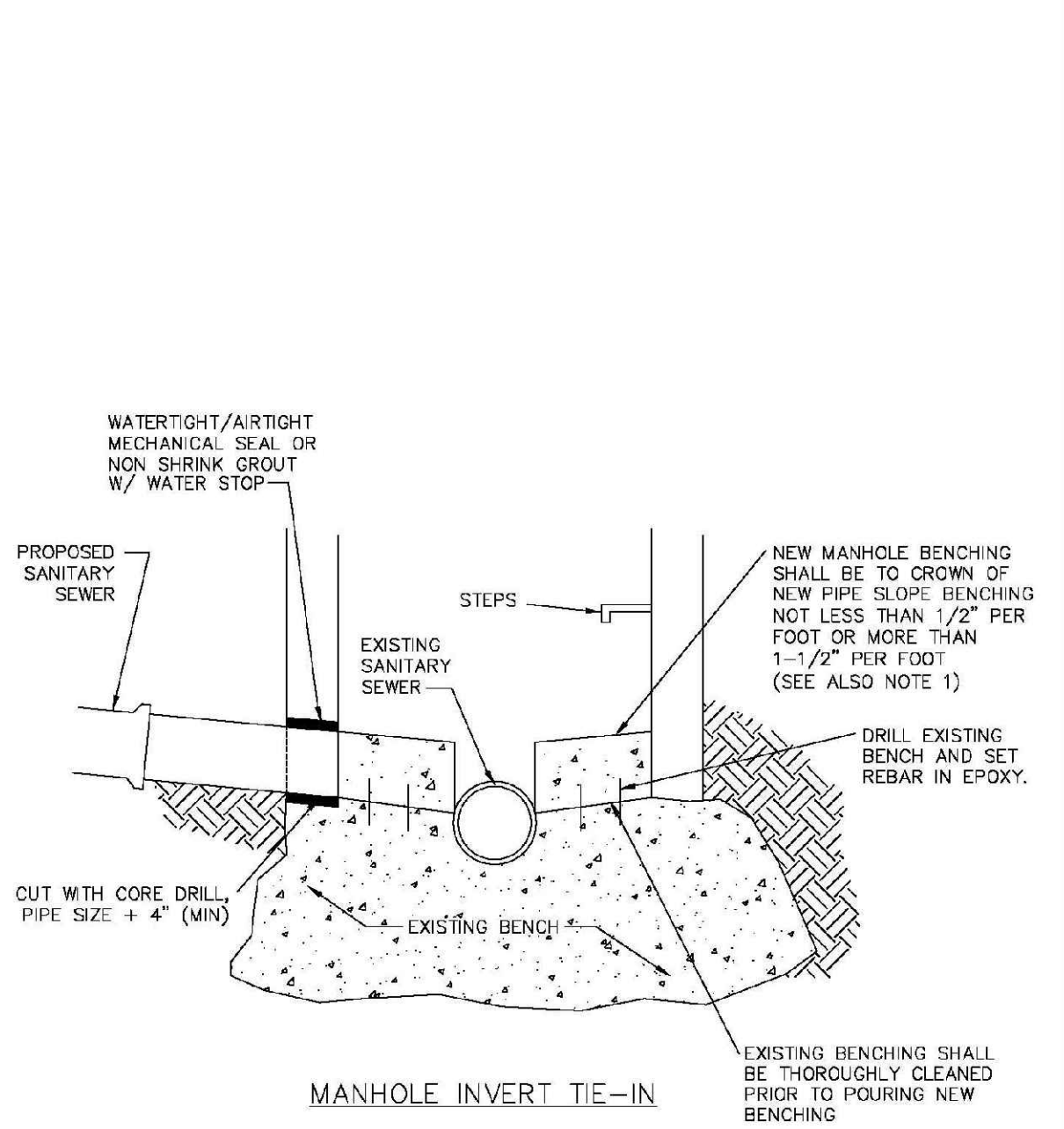
PARKER WATER & SANITATION DISTRICT
CONCRETE ENCASEMENT
TYPE III

SCALE: NONE DATE: 2/98

APPROVED: PVR 5/98
1/98
10/98

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.8



MANHOLE INVERT TIE-IN

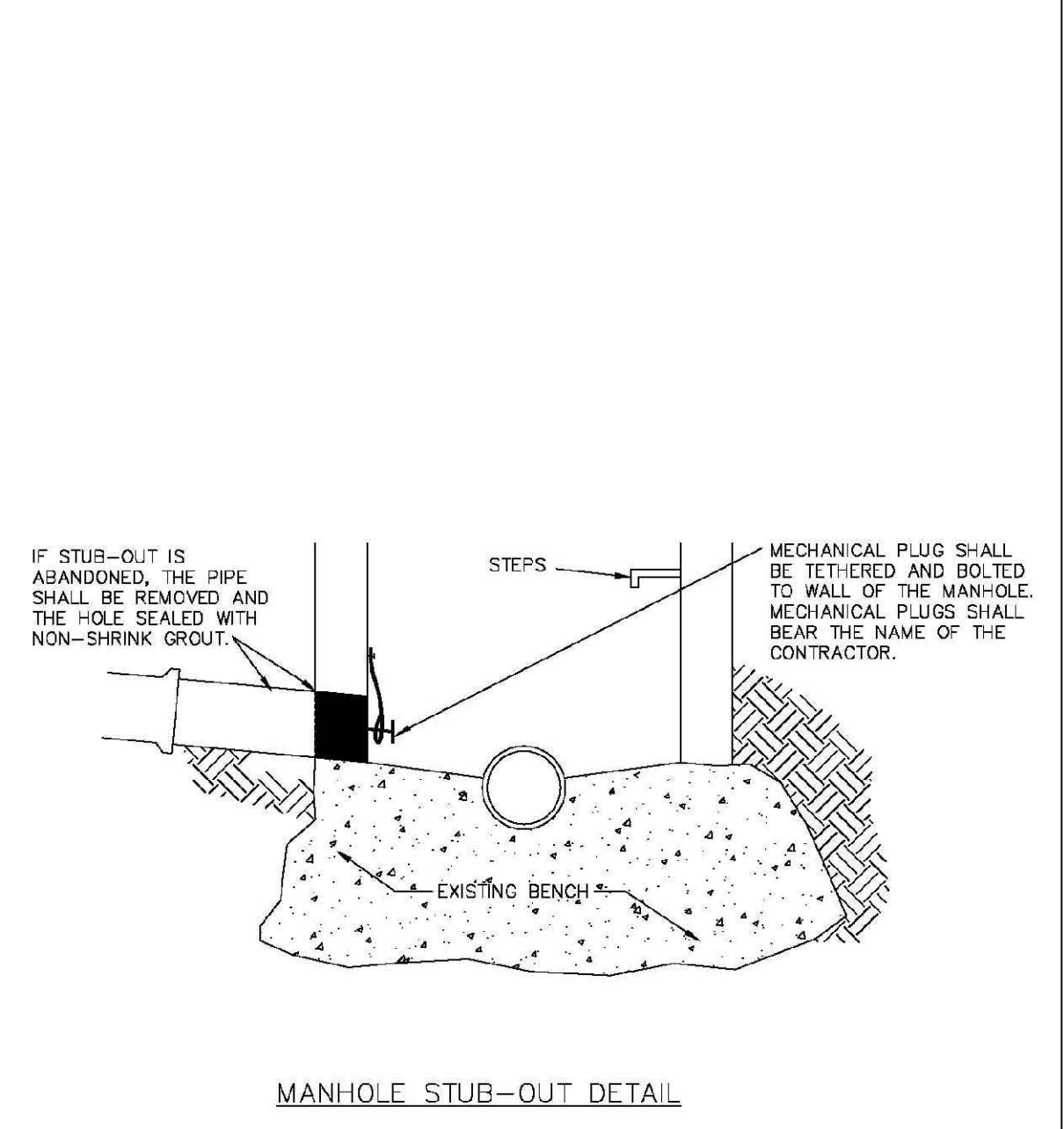
PARKER WATER & SANITATION DISTRICT
MANHOLE INVERT TIE-IN DETAIL

SCALE: NONE DATE: 2/98

APPROVED: PVR 5/98
1/98
10/98

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.9



MANHOLE STUB-OUT DETAIL

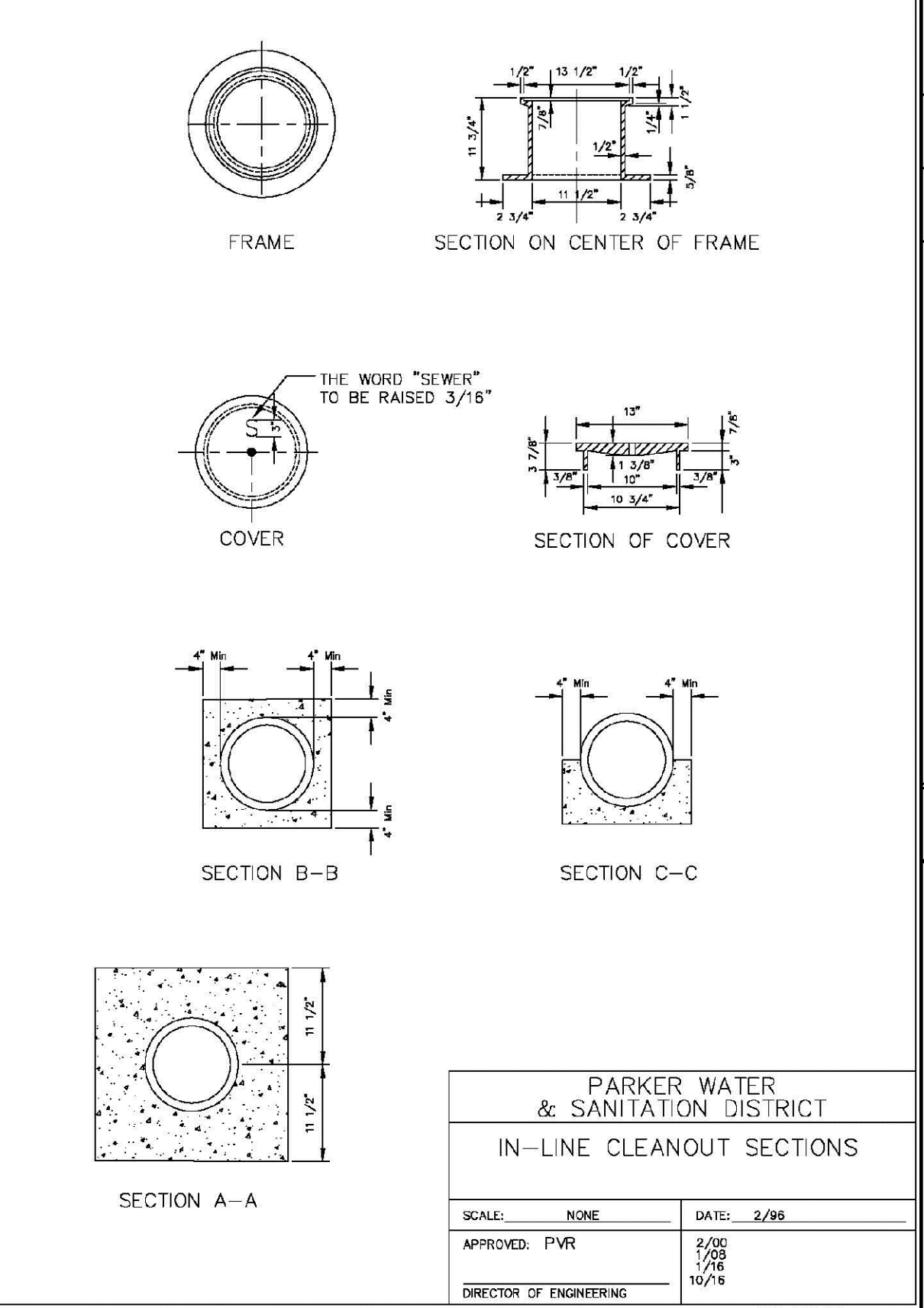
PARKER WATER & SANITATION DISTRICT
MANHOLE STUB-OUT DETAIL

SCALE: NONE DATE: 2/98

APPROVED: PVR 5/98
1/98
10/98

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.10



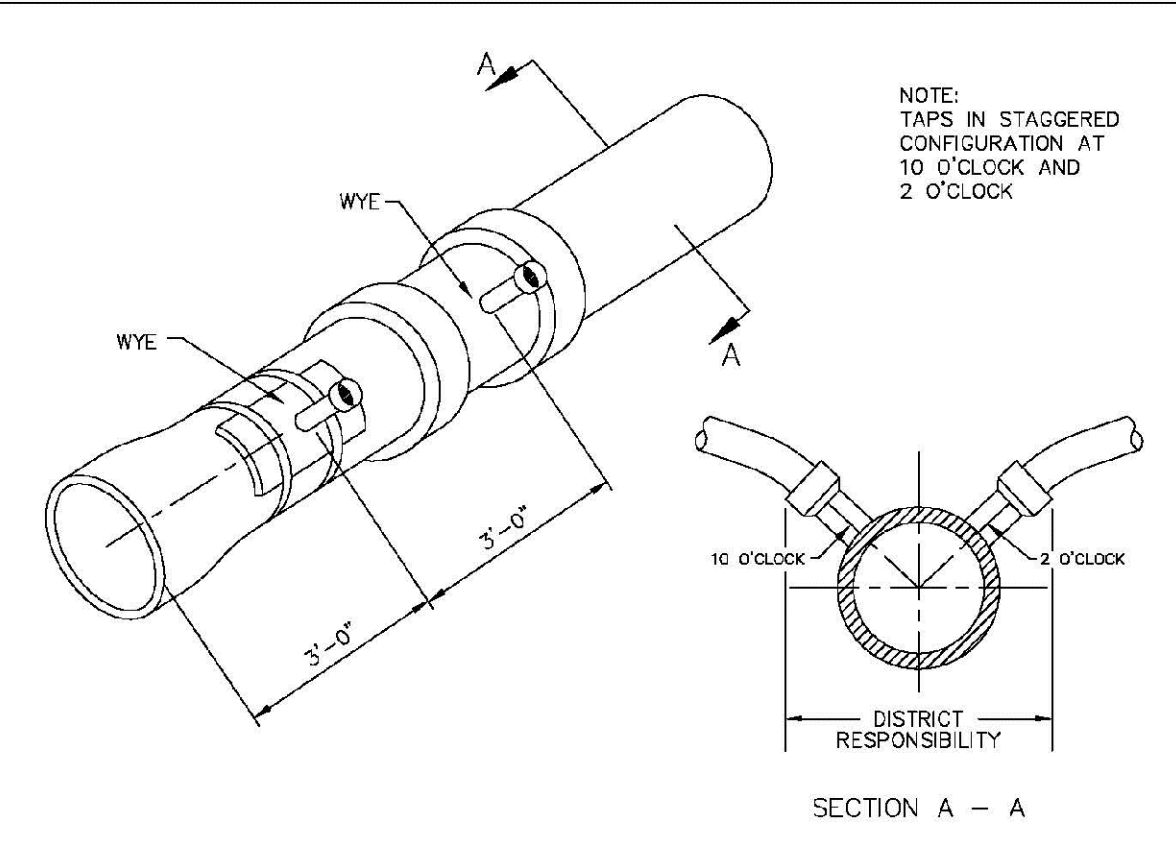
PARKER WATER & SANITATION DISTRICT
IN-LINE CLEANOUT SECTIONS

SCALE: NONE DATE: 2/98

APPROVED: PVR 5/98
1/98
10/98

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.12



Sewer service connections shall be positioned at either the 2 o'clock or the 10 o'clock position on the circumference of the sewer main. On new installations, tee or wye fittings shall be used. When tapping into existing sewer main, a saddle connection and approved coring method shall be used. The minimum distance between service connections made along the pipe shall be 3 feet. The minimum distance from either the bell or spigot end of a pipe shall be 3 feet. The minimum distance from the center of a manhole to a service connection shall be either 7 feet or the transition joint from the manhole trench to the normal pipe trench, whichever is greater. A maximum of 4 sewer service connections shall be allowed per 20 foot length of pipe. In all cases, a specific soils investigation should be conducted to assure that the external loading will be within allowable limits regardless of the number of taps involved.

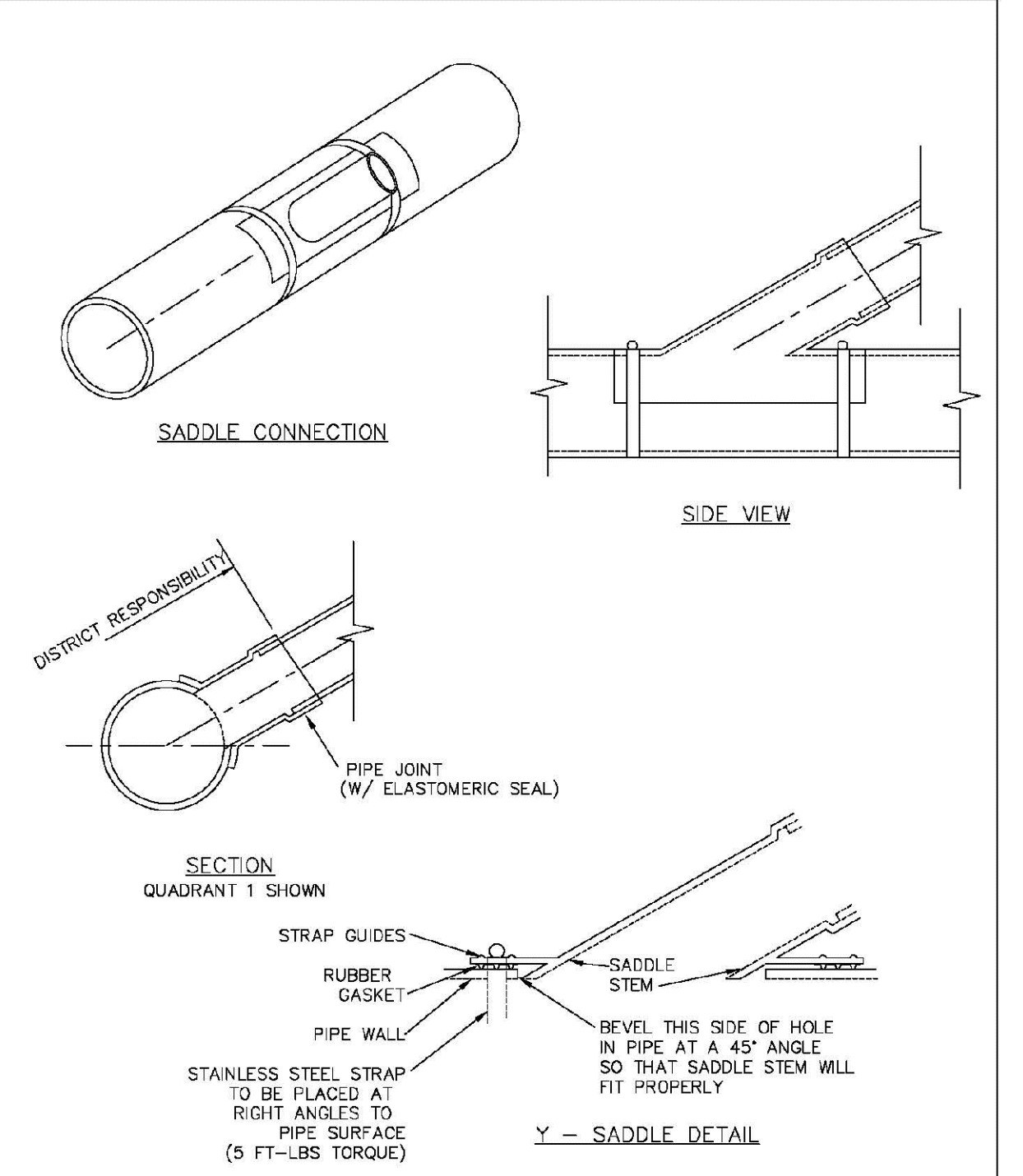
PARKER WATER & SANITATION DISTRICT
DOMESTIC SEWER TAPPING DETAIL

SCALE: NONE DATE: 2/98

APPROVED: PVR 4/01
1/98
10/98

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.13



PARKER WATER & SANITATION DISTRICT
P.V.C. SADDLE CONNECTION DETAIL

SCALE: NONE DATE: 2/98

APPROVED: PVR 4/01
1/98
10/98

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.14

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TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAIL

SCALE: AS SHOWN
FILE NO: 8130283701

DRAWN BY: JF
CHECKED BY: JJ
DATE: SEPTEMBER 2017

SHEET NUMBER **10**

Revisions	No.	Date	Init.	Appr.	Date

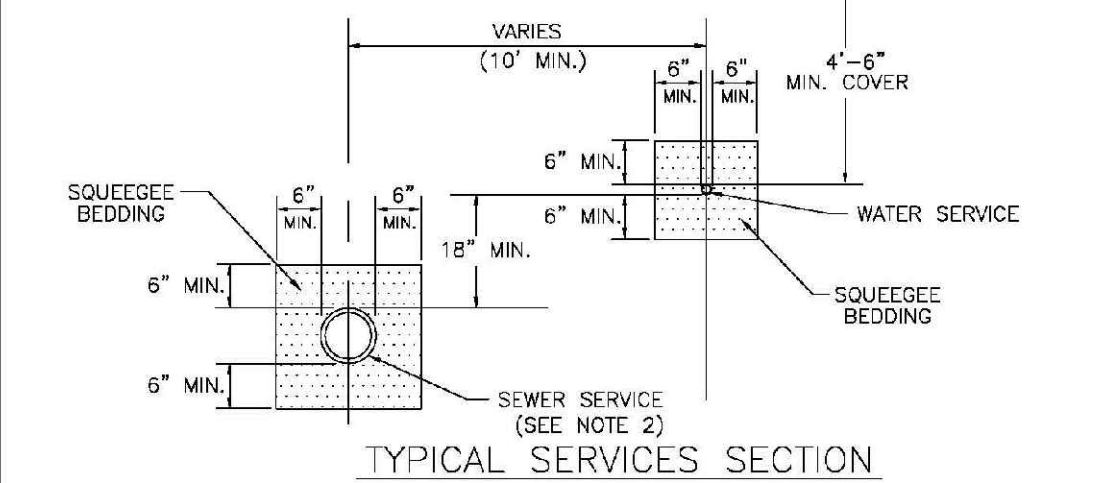
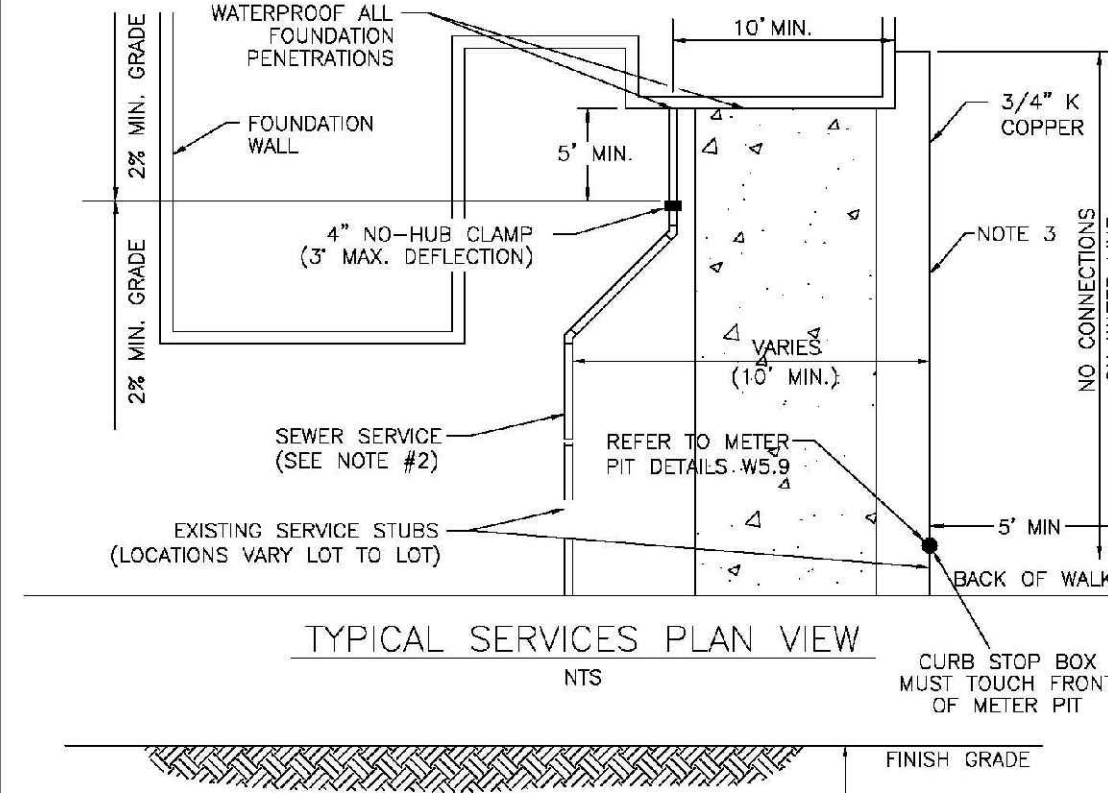
- INSPECTION POLICY:**
1. ALL SERVICE INSPECTIONS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
 2. SERVICE INSPECTIONS WILL OCCUR BETWEEN 1:00 P.M. AND 3:00 P.M. SPECIFIC INSPECTION TIMES ARE NOT AVAILABLE.
 3. IF THE CONTRACTOR IS NOT READY FOR INSPECTION WHEN THE INSPECTOR ARRIVES AT THE SITE OR SERVICE FAILS, A RE-INSPECTION WILL HAVE TO BE SCHEDULED IN ACCORDANCE WITH NOTES 1 AND 2 ABOVE AND A RE-INSPECTION FEE CHARGED.
 4. SHOULD THE SERVICE LINES BE DAMAGED BY LATER CONSTRUCTION, AN INSPECTION OF THE REPAIR WILL BE REQUIRED IN ACCORDANCE WITH NOTES 1 AND 2 ABOVE.
 5. THE CONTRACTOR SHALL LEAVE ALL PIPE AND FITTINGS EXPOSED FOR THE INSPECTOR TO OBSERVE. INSPECTORS WILL NOT ENTER ANY EXCAVATIONS TO CHECK MATERIALS. THE TOP LAYER OF BEDDING CAN BE ADDED AFTER THE INSPECTION HAS BEEN COMPLETED.
 6. ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA STANDARDS.
 7. LOTS WITHOUT BUILDING ADDRESSES BEFORE DISTRICT INSPECTION OR METER SET WILL FAIL AUTOMATICALLY.
 8. CONTRACTOR MUST BE PRESENT AT TIME OF INSPECTION, UNLESS COORDINATED WITH DISTRICT INSPECTOR.

- INSTALLATION NOTES:**
- WATER**
1. ACCEPTABLE PIPE MATERIALS SHALL BE K-COPPER TUBING, (3/4" MIN.)
 2. APPROVED BEDDING TO BE SQUEEGEE.
 3. ONLY ONE COUPLING WILL BE ALLOWED BETWEEN THE SUB-IN AND BUILDING. COMPRESSION COUPLINGS WILL NOT BE ALLOWED ON NEW CONSTRUCTION. SILVER SOLDERED JOINTS MUST BE USED ON SERVICES LARGER THAN 3/4". SILVER SOLDERED JOINTS MUST BE INSPECTED BY PWS BEFORE BURIAL. FLARED COUPLINGS WILL BE ALLOWED ON ALL SERVICES 3/4" AND SMALLER.
 4. A WATER SERVICE WHICH CROSSES A SEWER SERVICE CAN DO SO ONLY AT A 45-90° ANGLE. WATER SERVICES SHALL BE LOCATED A MINIMUM OF 18" ABOVE SEWER SERVICE.
 5. WATER SERVICE FOUNDATION PENETRATIONS SHALL BE WATERPROOFED USING MASTIC OR OTHER APPROVED METHOD. CRAWL SPACE REQUIRES CONTINUOUS COPPER WITH A 1" BURY.
 6. CURB STOP MUST BE PLUMB AND CENTERED OVER THE NUT. IT SHOULD BE STRAPPED TO THE METER PIT (RESIDENTIAL INSTALLATIONS) OR CENTERED OVER THE EASEMENT LINE (COMMERCIAL INSTALLATIONS). THE ASSEMBLY MUST BE AT OR SLIGHTLY ABOVE FINISHED GRADE.
 7. MOVED CURB BOXES MUST BE INSPECTED BY PWS PRIOR TO BURIAL.
 8. WATERLINE MUST BE ATTACHED TO A SUPPORT BOARD THAT IS MOUNTED TO THE WALL.
 9. NO VOIDS ALLOWED UNDER WATERLINES FROM STOP BOX TO FOUNDATION.
 10. CURBSTOP BOXES AND METER PITS CANNOT BE IN DRIVEWAYS.
 11. ONLY 3/4" (JUMPER) PIPES (RESIDENCES) ARE ALLOWED. (JUMPER) PIPES WILL BE REMOVED PRIOR TO METER SET DATE.
 12. ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:
"X" FOR SANITARY SEWER SERVICE
"W" FOR WATER SERVICES
 13. NO SPLICES OR FLARED COUPLINGS ALLOWED ON SERVICES LARGER THAN 3/4". SILVER SOLDERED JOINTS MUST BE INSPECTED BY PWS PRIOR TO BURIAL. FLARED COUPLINGS WILL BE ALLOWED ON ALL SERVICES 3/4" AND SMALLER.

PARKER WATER & SANITATION DISTRICT	
DISTRICT POLICIES & INSTALLATION NOTES FOR WATER SERVICES	
SCALE: NONE	DATE: 2/96
APPROVED: 1/04	1/16
PVR	10/16
DIRECTOR OF ENGINEERING	

2016 REVISION

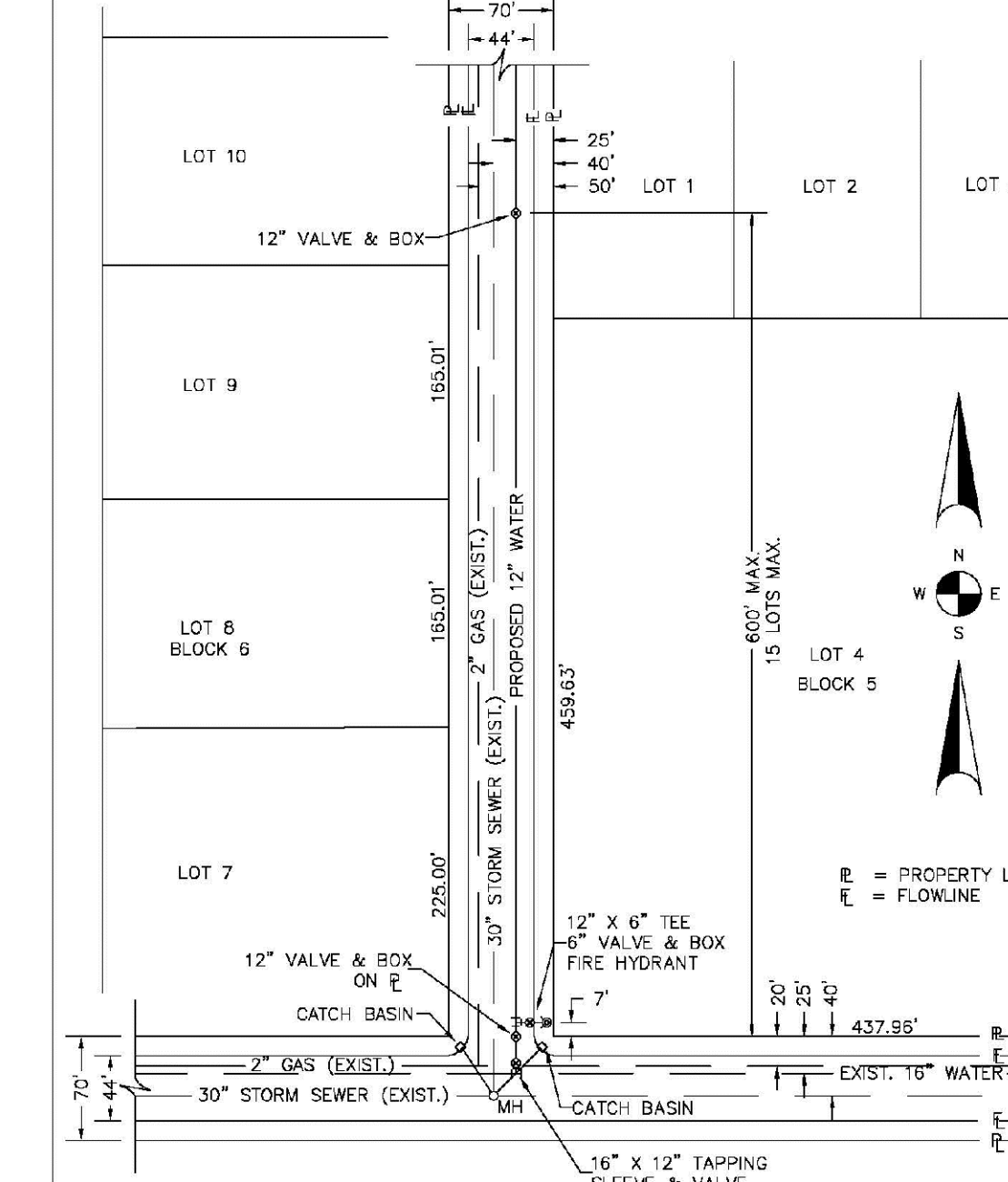
SHEET W1.1



PARKER WATER & SANITATION DISTRICT	
TYPICAL WATER SERVICES	
SCALE: NONE	DATE: 2/96
APPROVED: 1/04	10/16
PVR	12/07
DIRECTOR OF ENGINEERING	

2016 REVISION

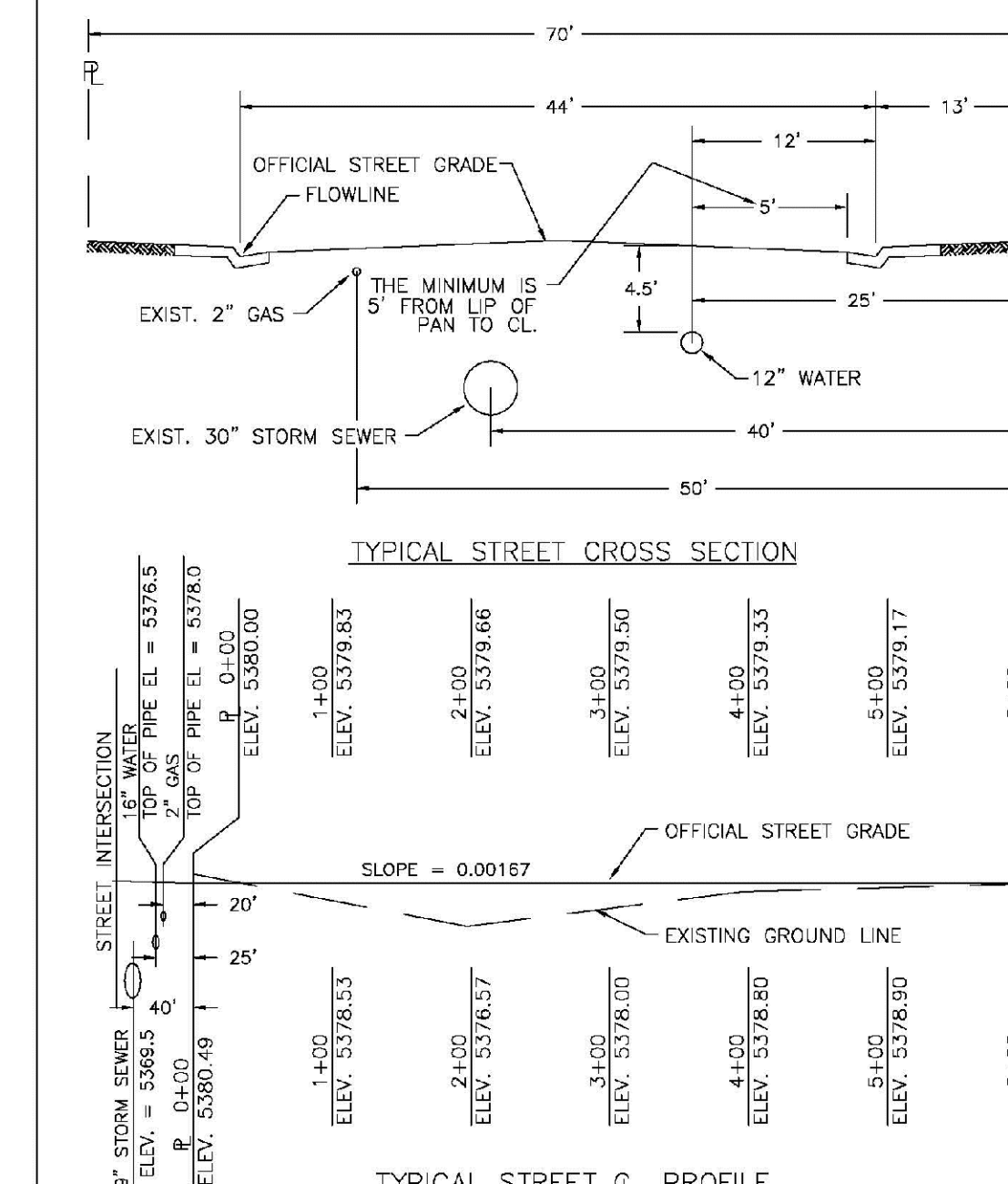
SHEET W1.2



PARKER WATER & SANITATION DISTRICT	
WATER DISTRIBUTION SYSTEM TYPICAL PLAN	
SCALE: NONE	DATE: 2/96
APPROVED: 1/16	10/16
PVR	DIRECTOR OF ENGINEERING

2016 REVISION

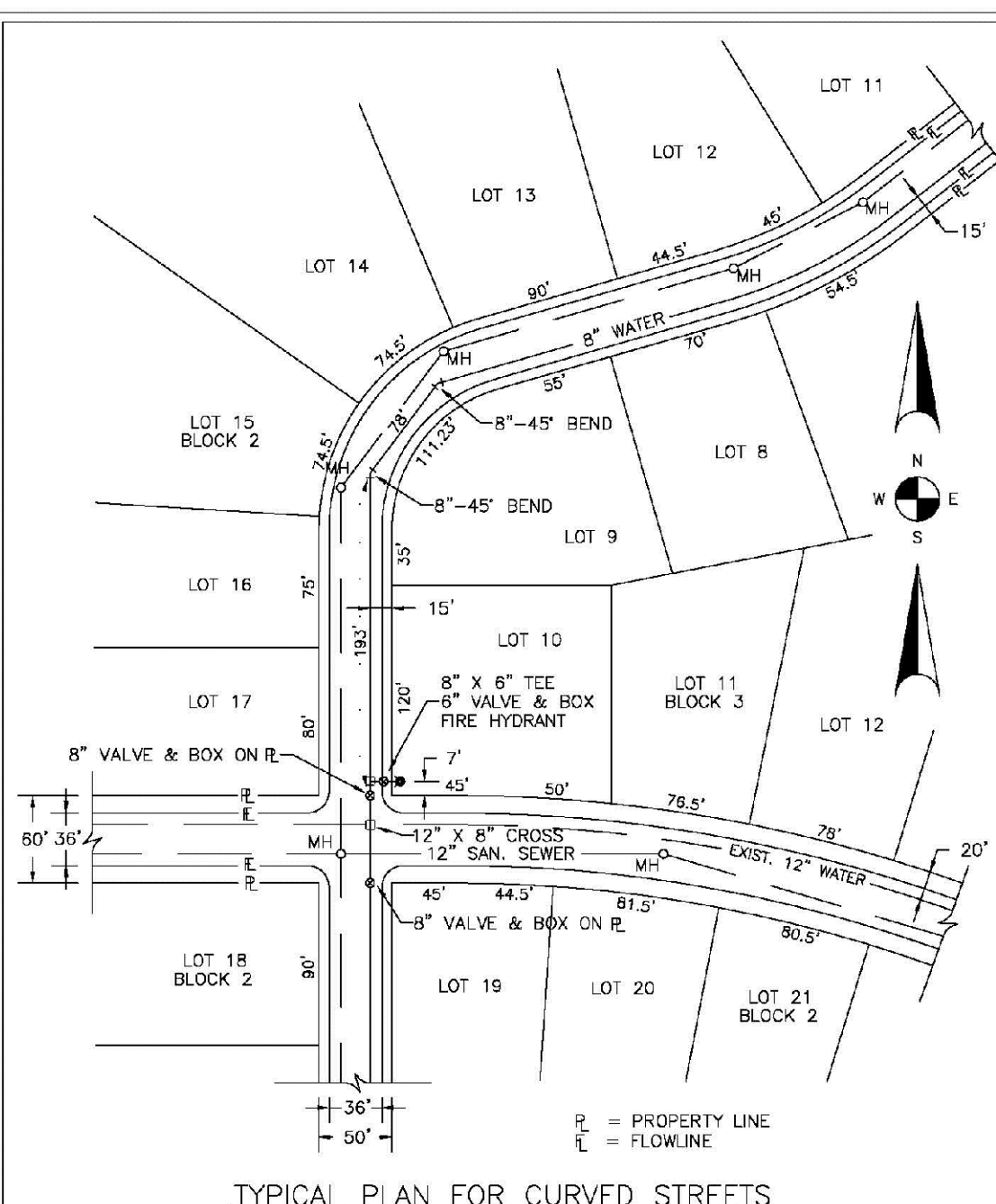
SHEET W2.1



PARKER WATER & SANITATION DISTRICT	
TYPICAL STREET CROSS SECTION	
SCALE: NONE	DATE: 2/96
APPROVED: 1/16	10/16
PVR	DIRECTOR OF ENGINEERING

2016 REVISION

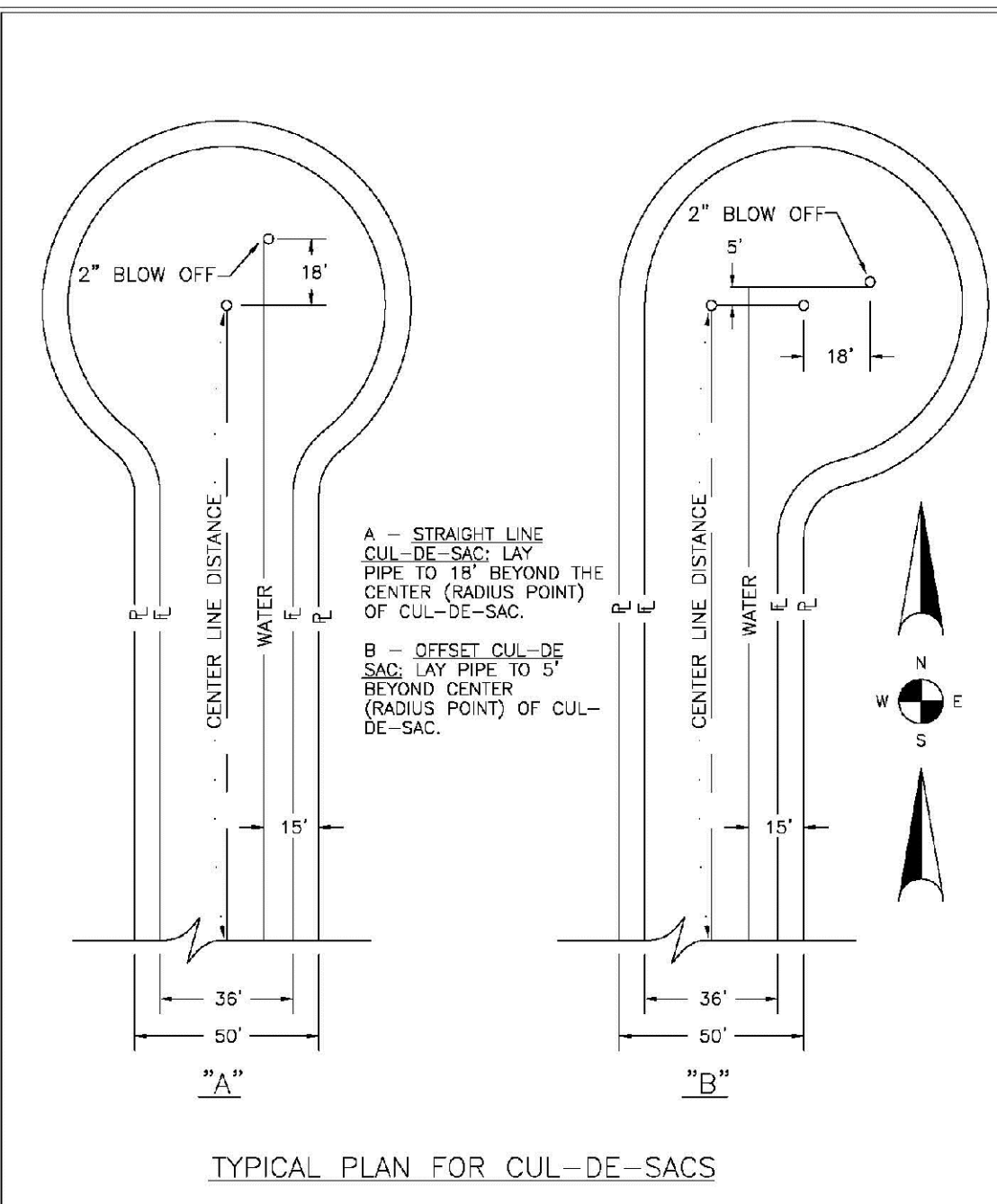
SHEET W2.2



PARKER WATER & SANITATION DISTRICT	
WATER DISTRIBUTION SYSTEM TYPICAL PLAN FOR CURVED STREETS	
SCALE: NONE	DATE: 2/96
APPROVED: 1/16	10/16
PVR	DIRECTOR OF ENGINEERING

2016 REVISION

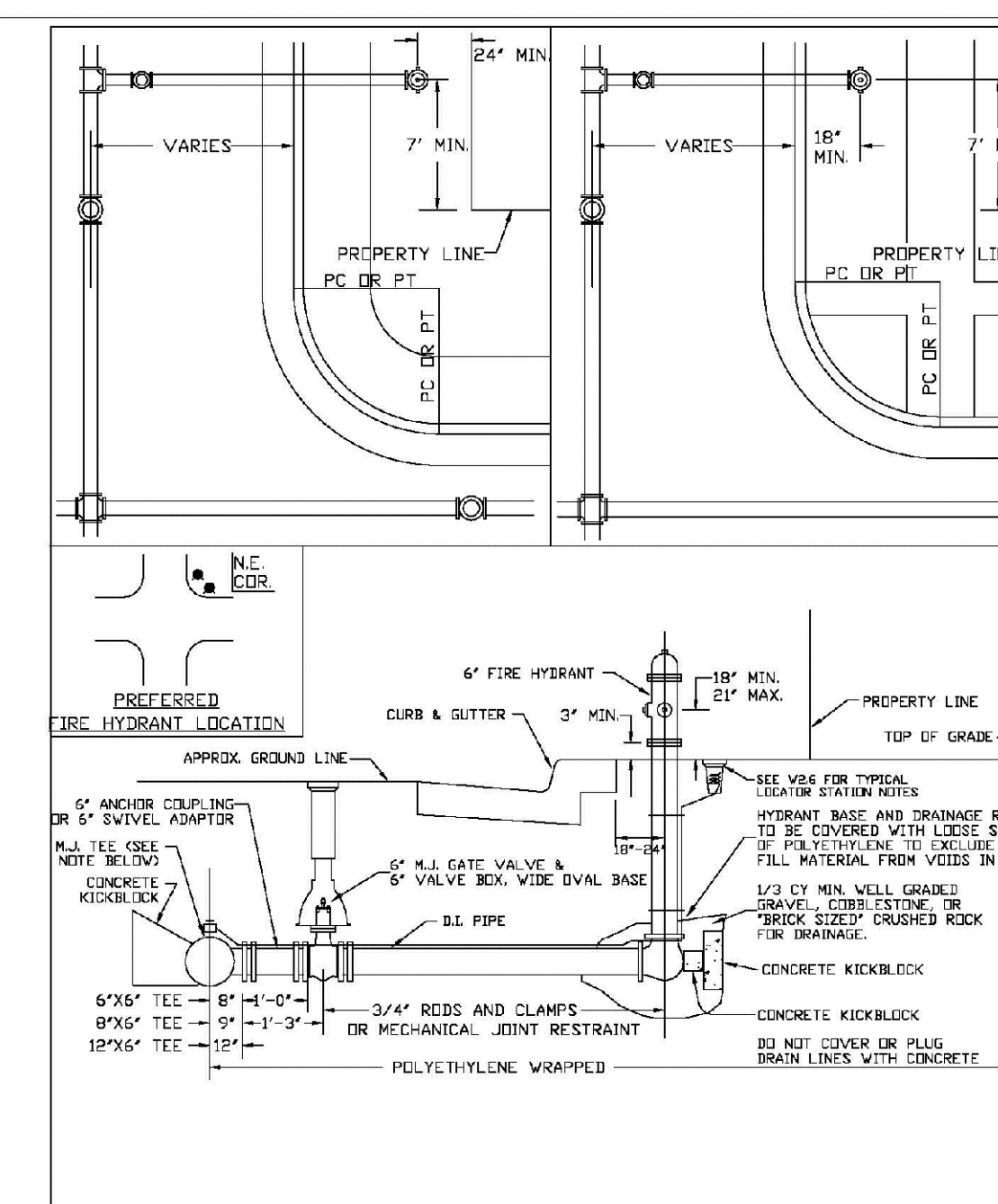
SHEET W2.3



PARKER WATER & SANITATION DISTRICT	
WATER DISTRIBUTION SYSTEM TYPICAL PLAN FOR CUL-DE-SACS	
SCALE: NONE	DATE: 2/96
APPROVED: 1/16	10/16
PVR	DIRECTOR OF ENGINEERING

2016 REVISION

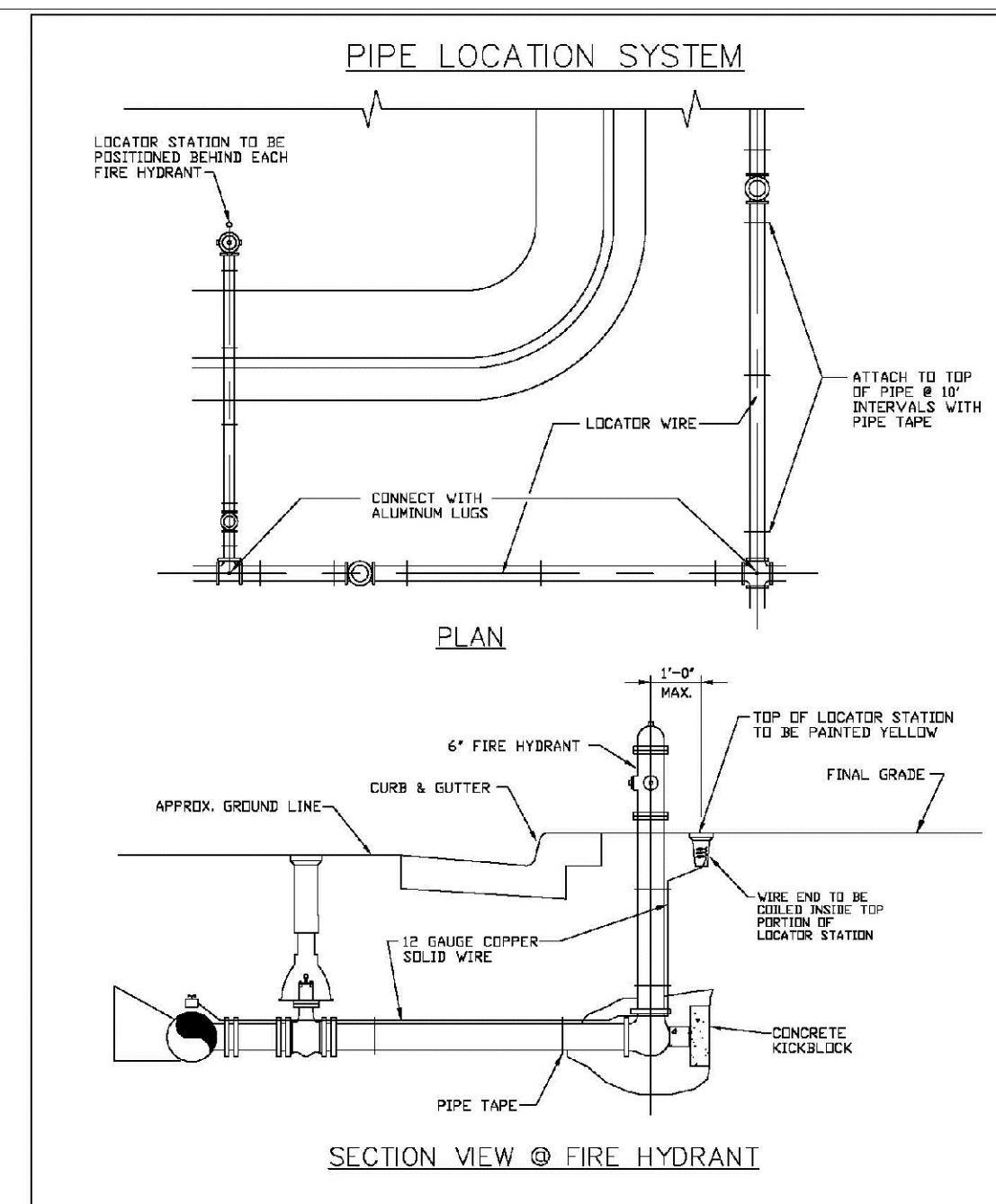
SHEET W2.4



PARKER WATER & SANITATION DISTRICT	
FIRE HYDRANTS LOCATION & INSTALLATION	
SCALE: NONE	DATE: 2/96
APPROVED: 4/01	10/16
PVR	10/27
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W2.5



PARKER WATER & SANITATION DISTRICT	
LOCATOR WIRE DETAILS	
SCALE: NONE	DATE: 2/96
APPROVED: 4/01	10/16
PVR	10/16
DIRECTOR OF ENGINEERING	

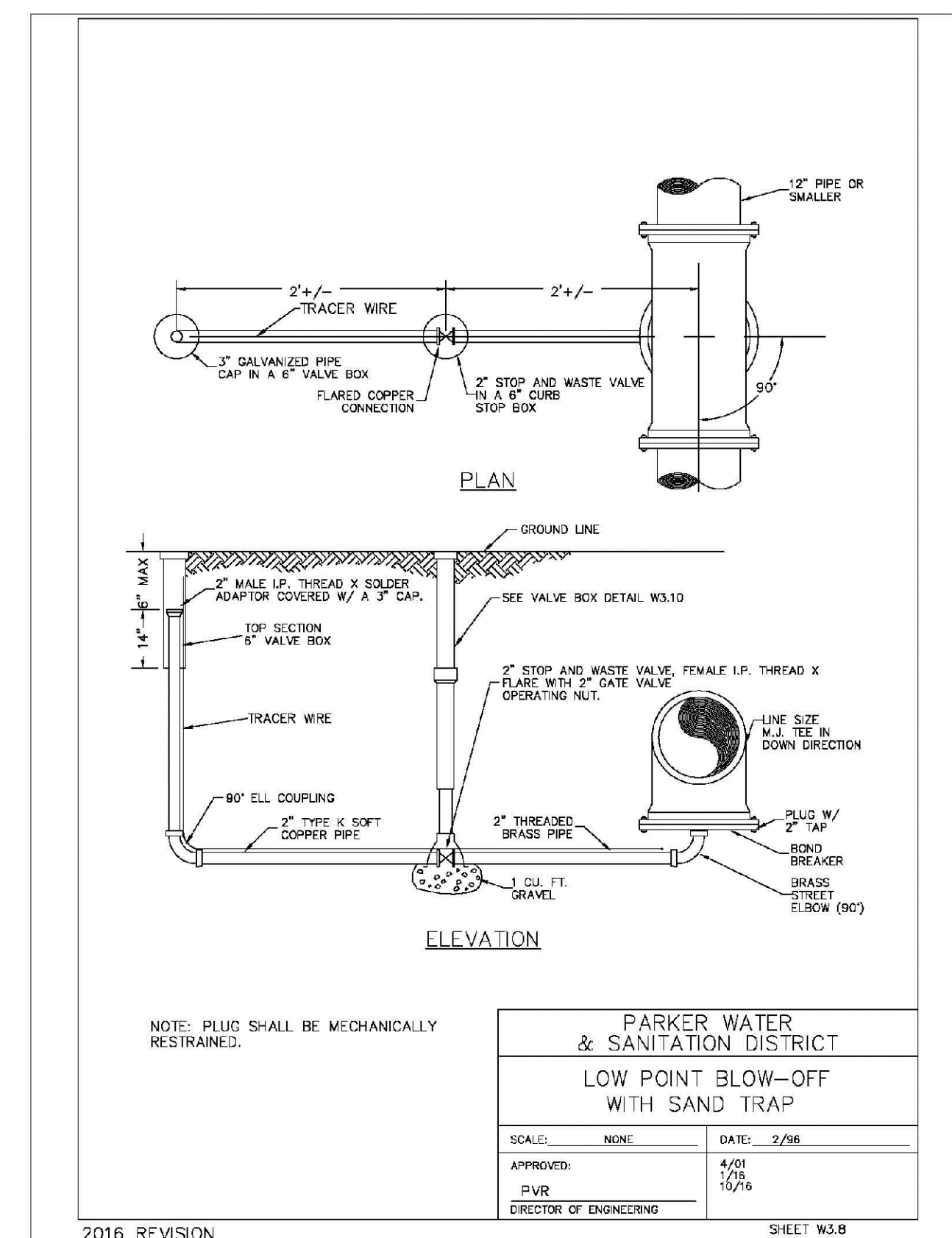
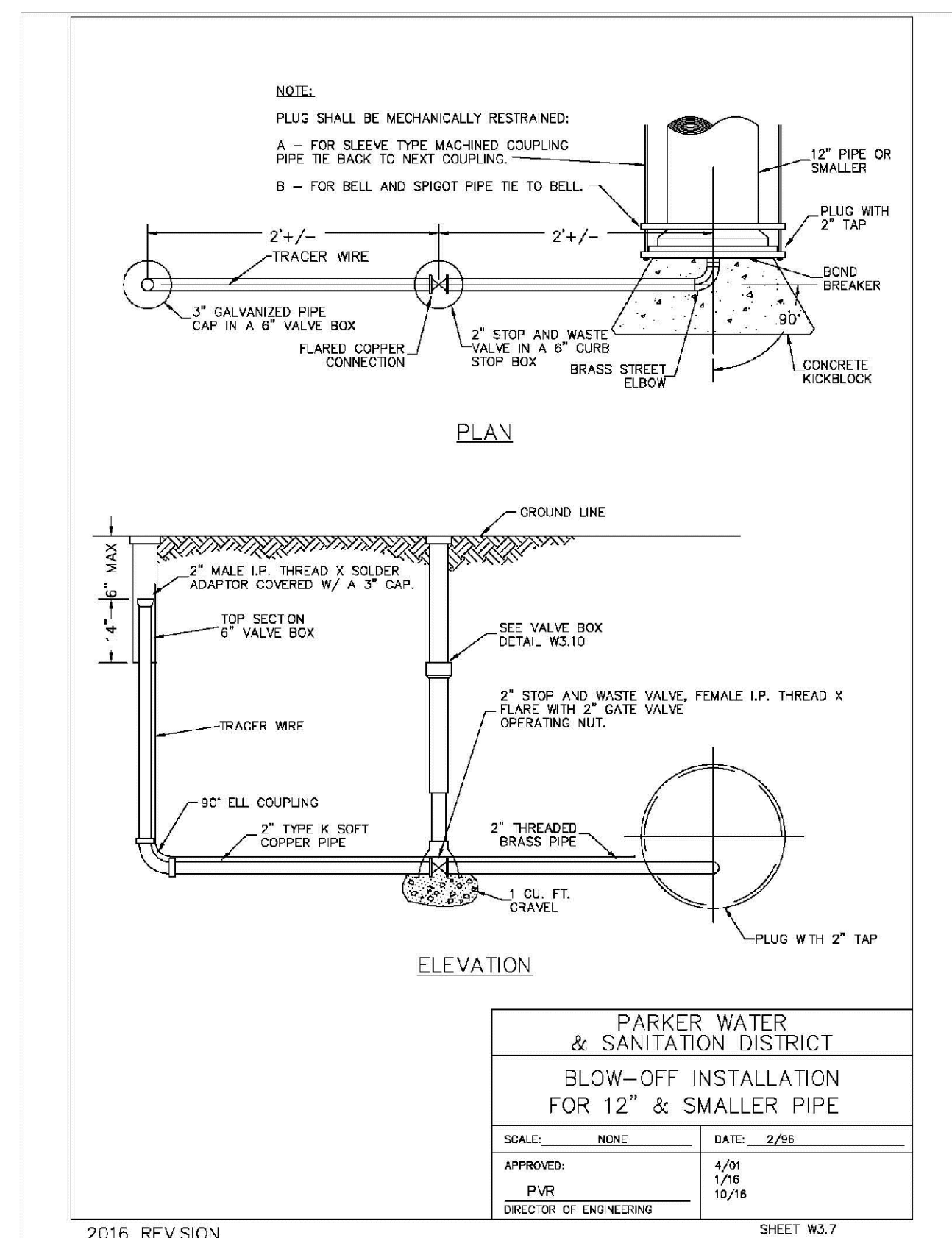
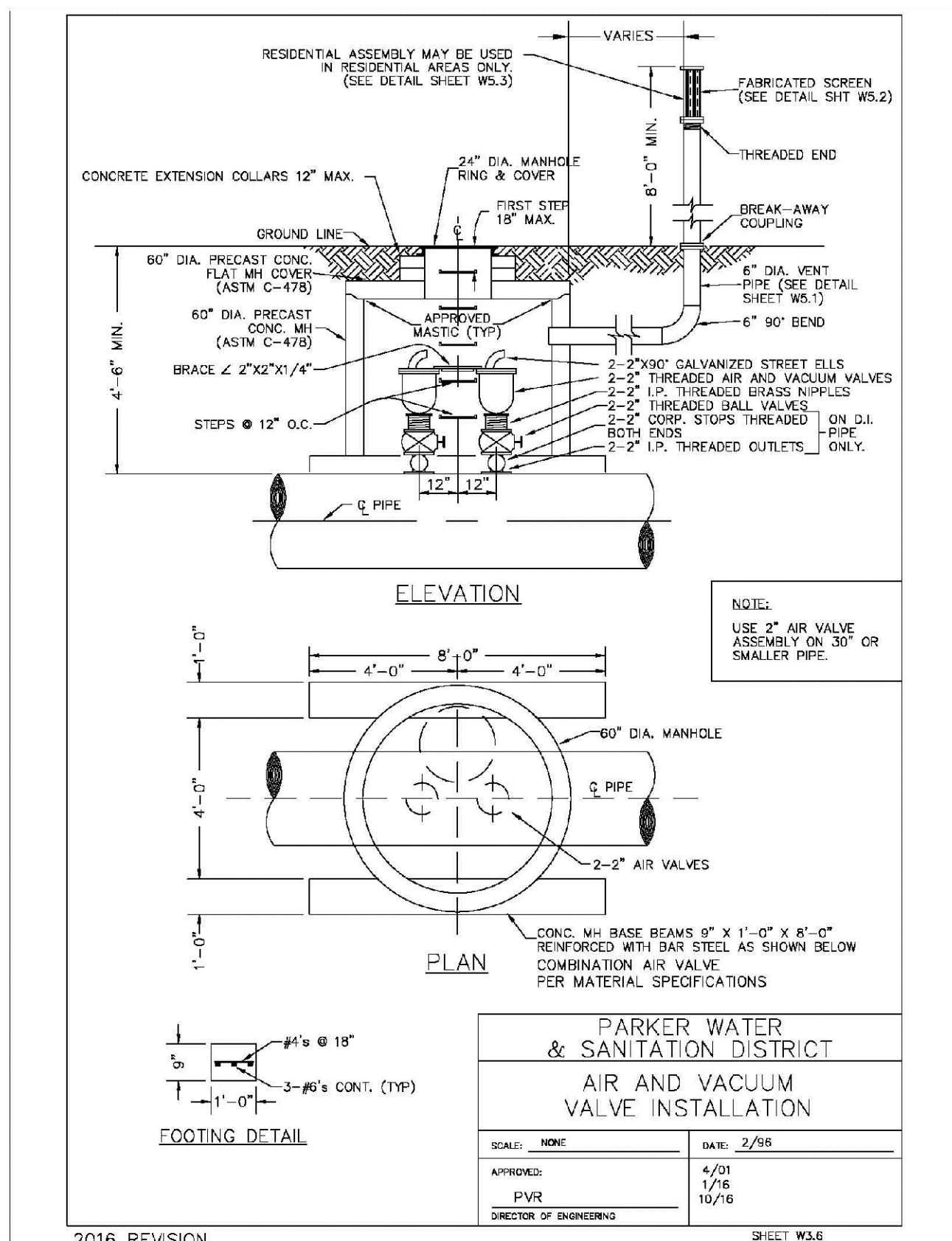
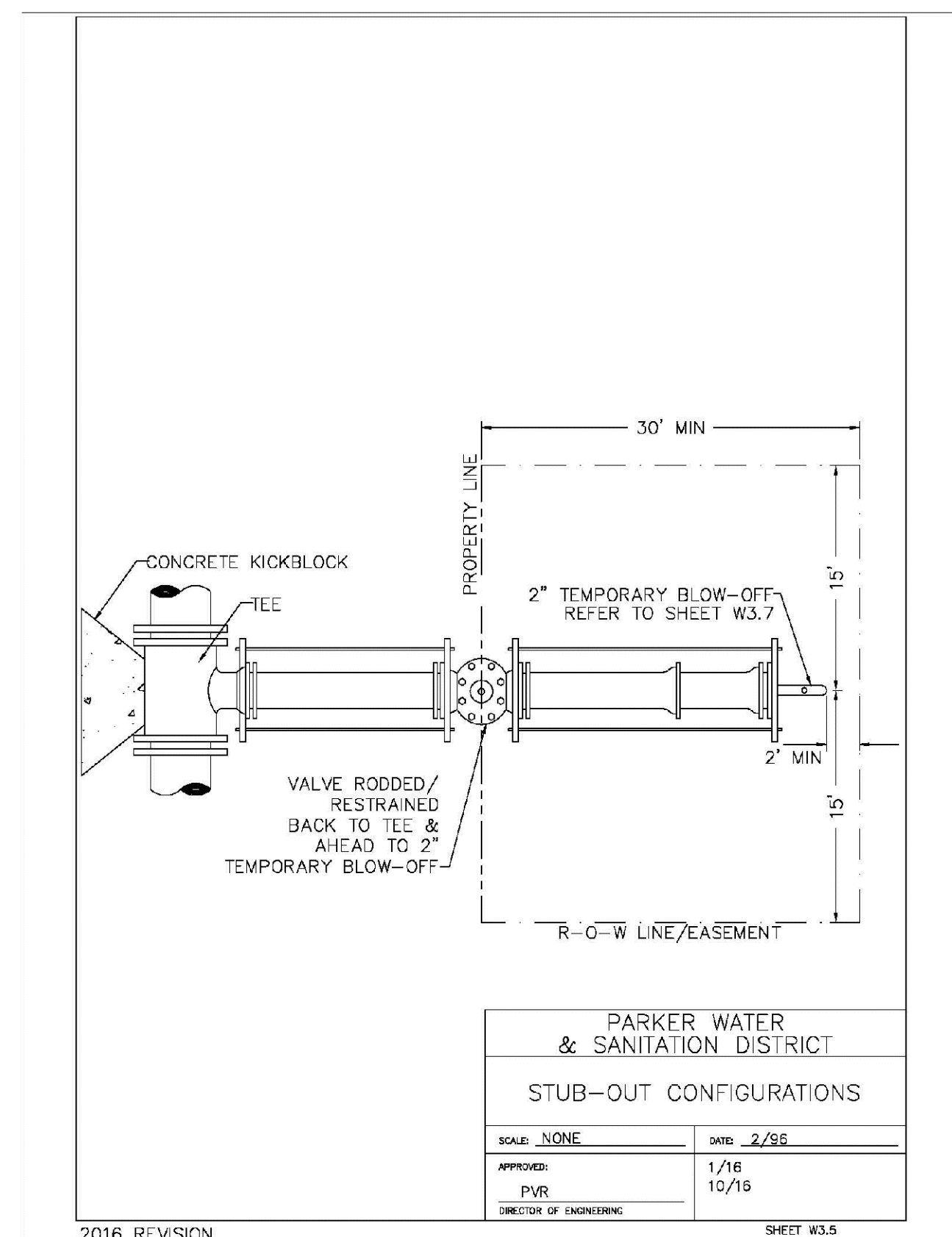
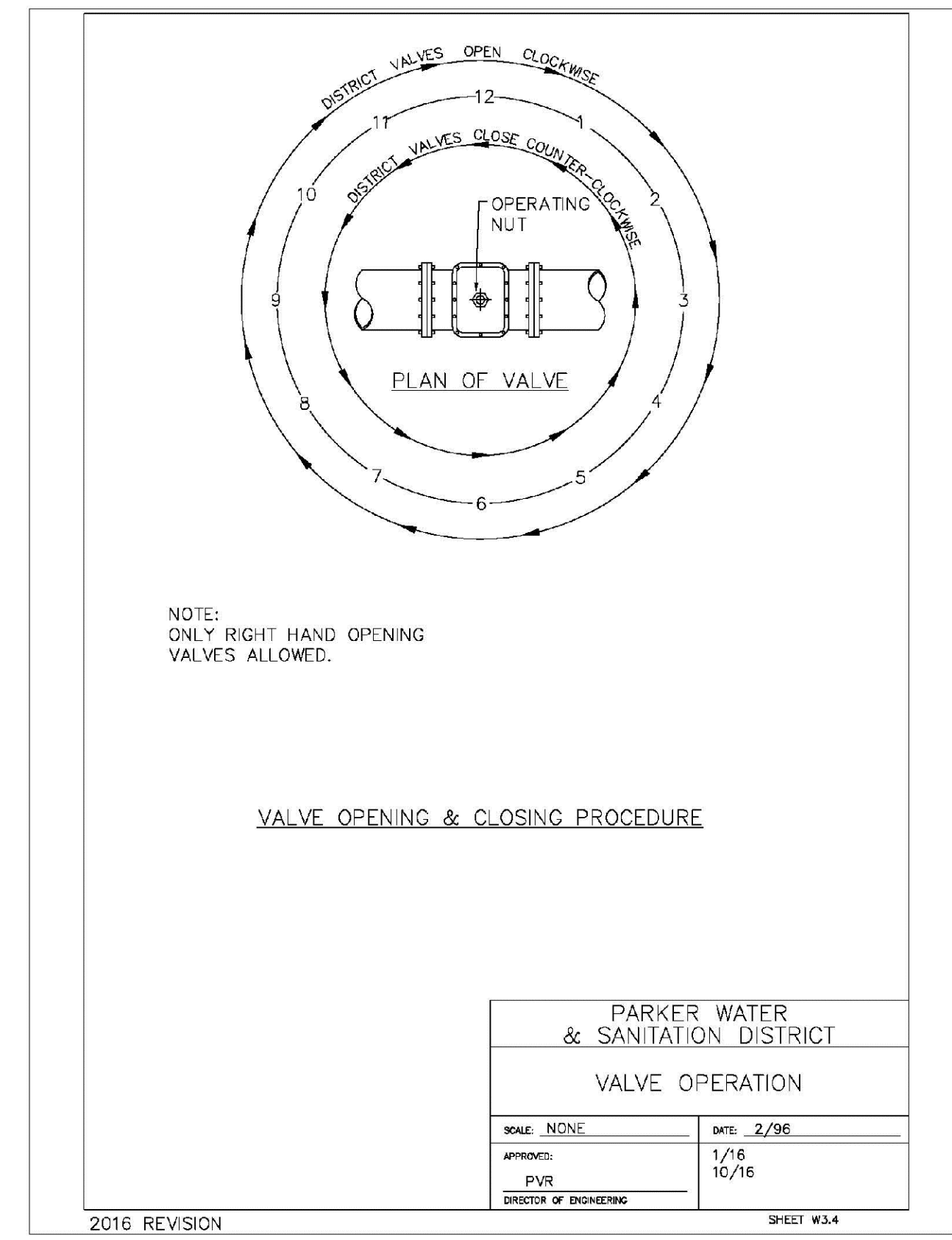
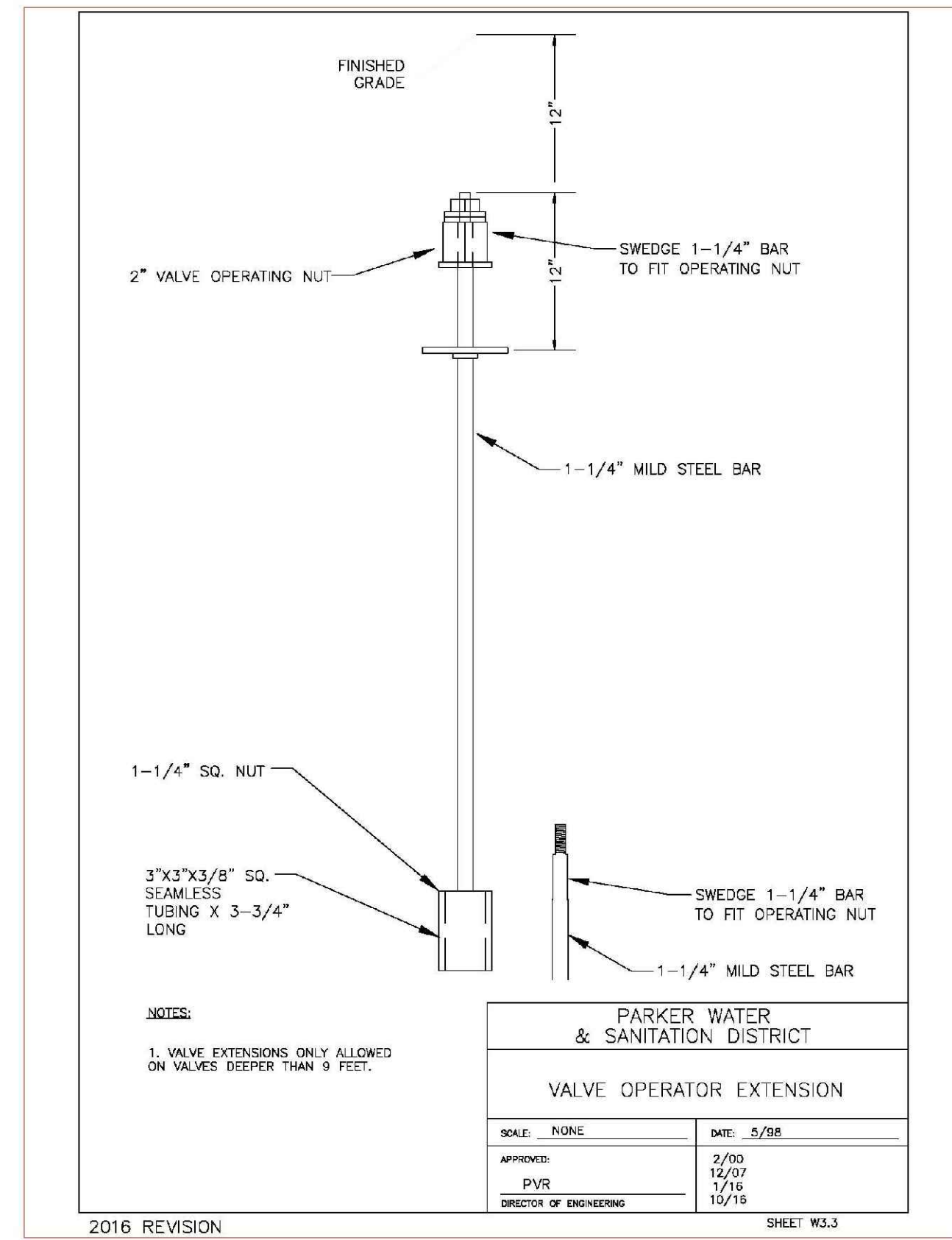
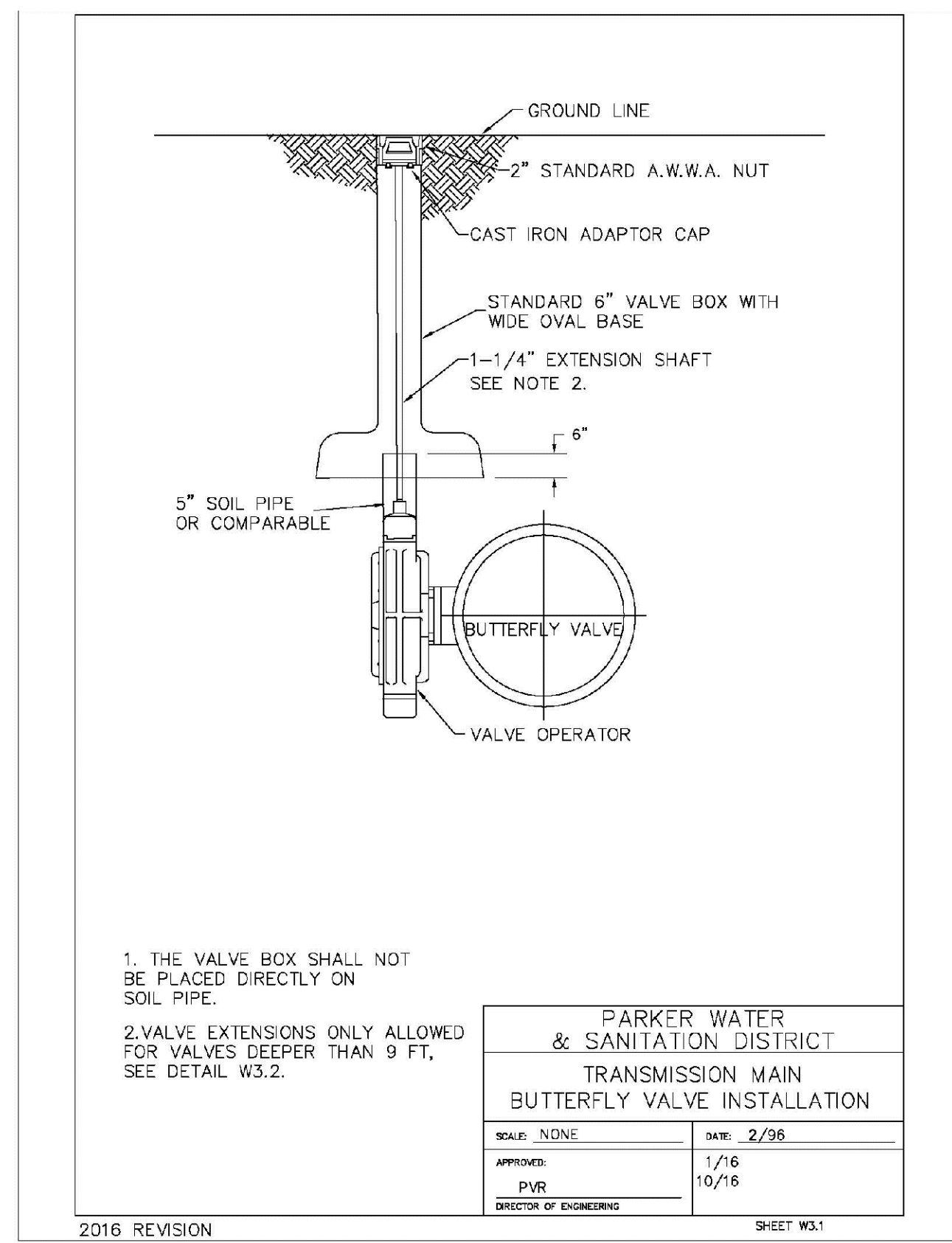
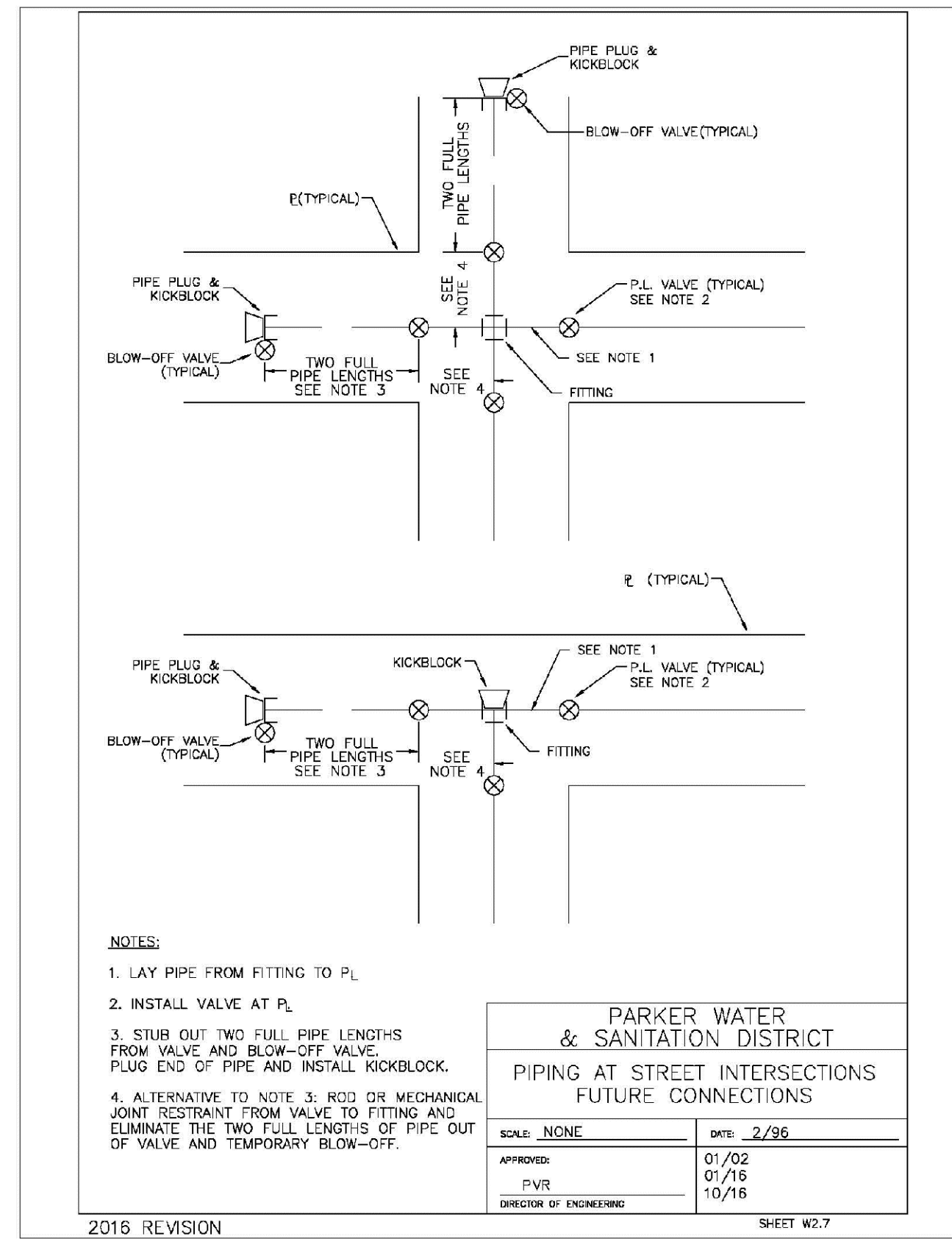
2016 REVISION

SHEET W2.6

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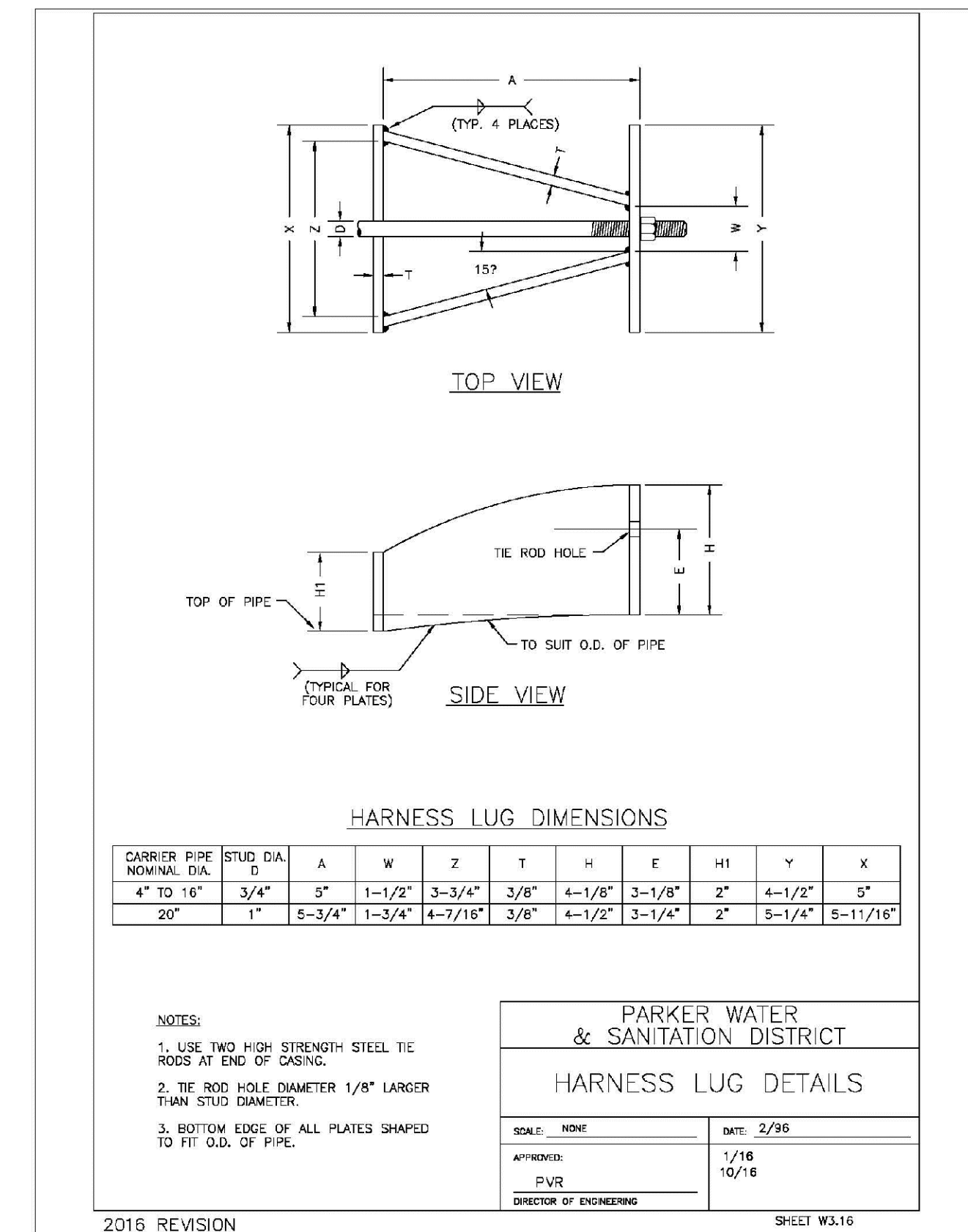
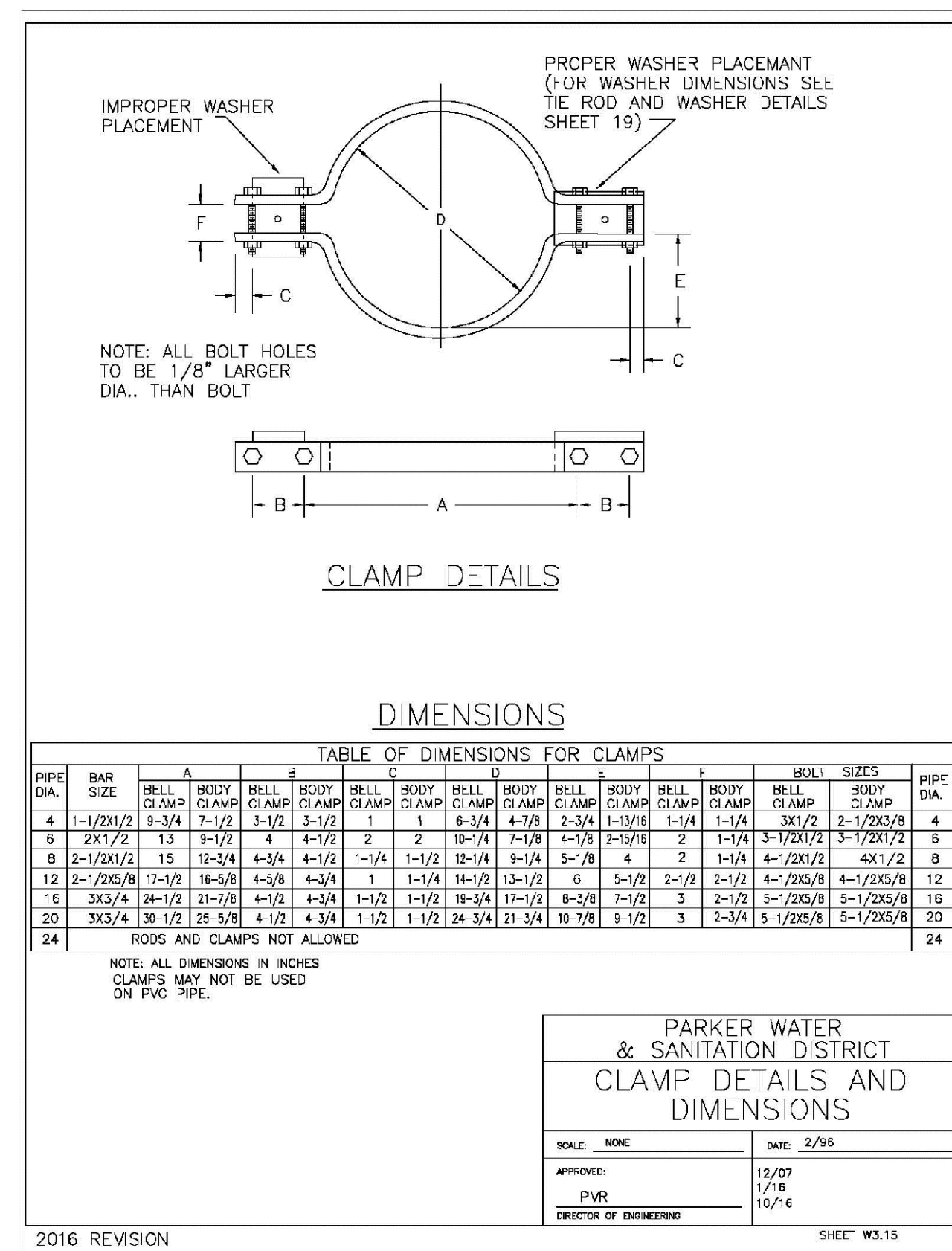
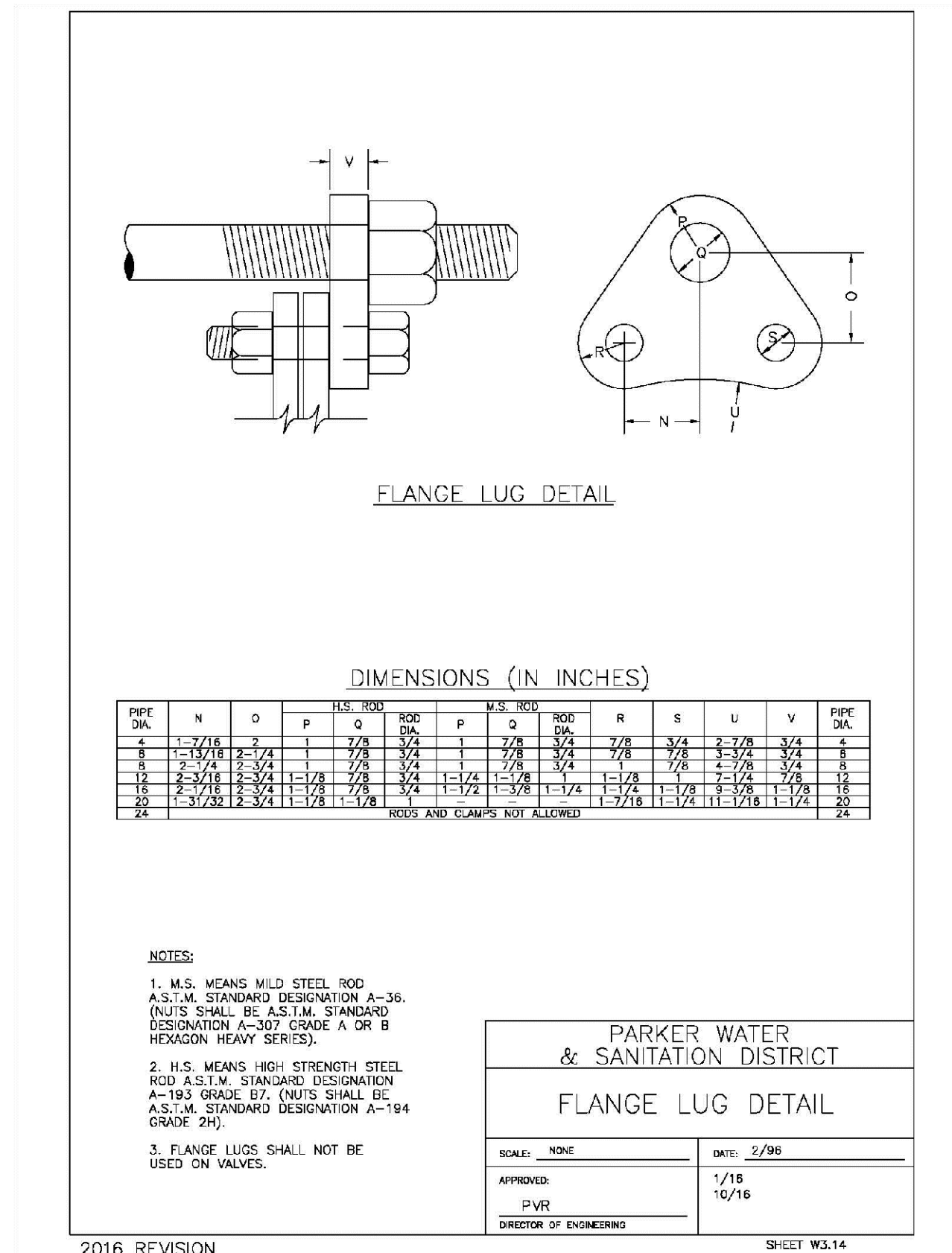
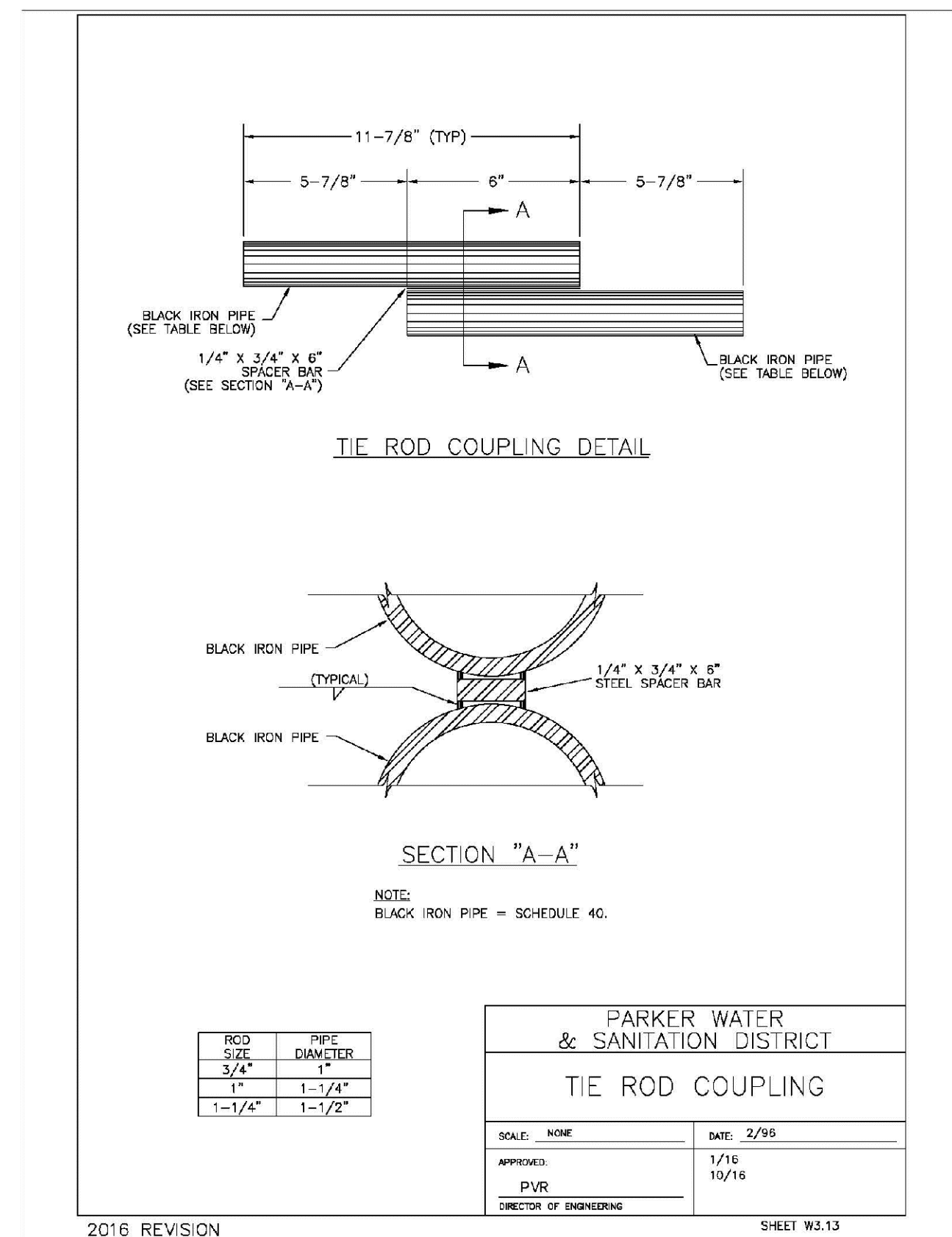
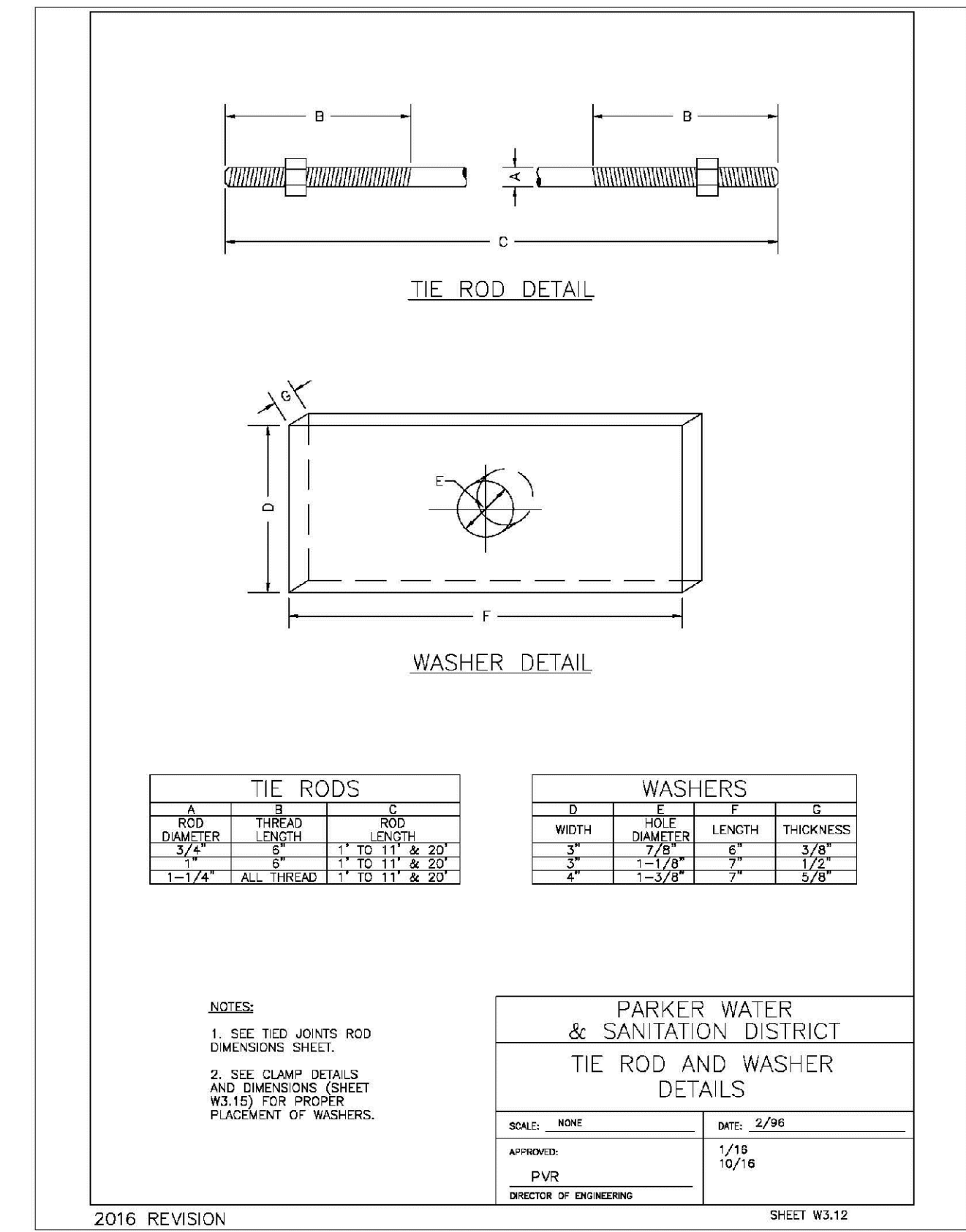
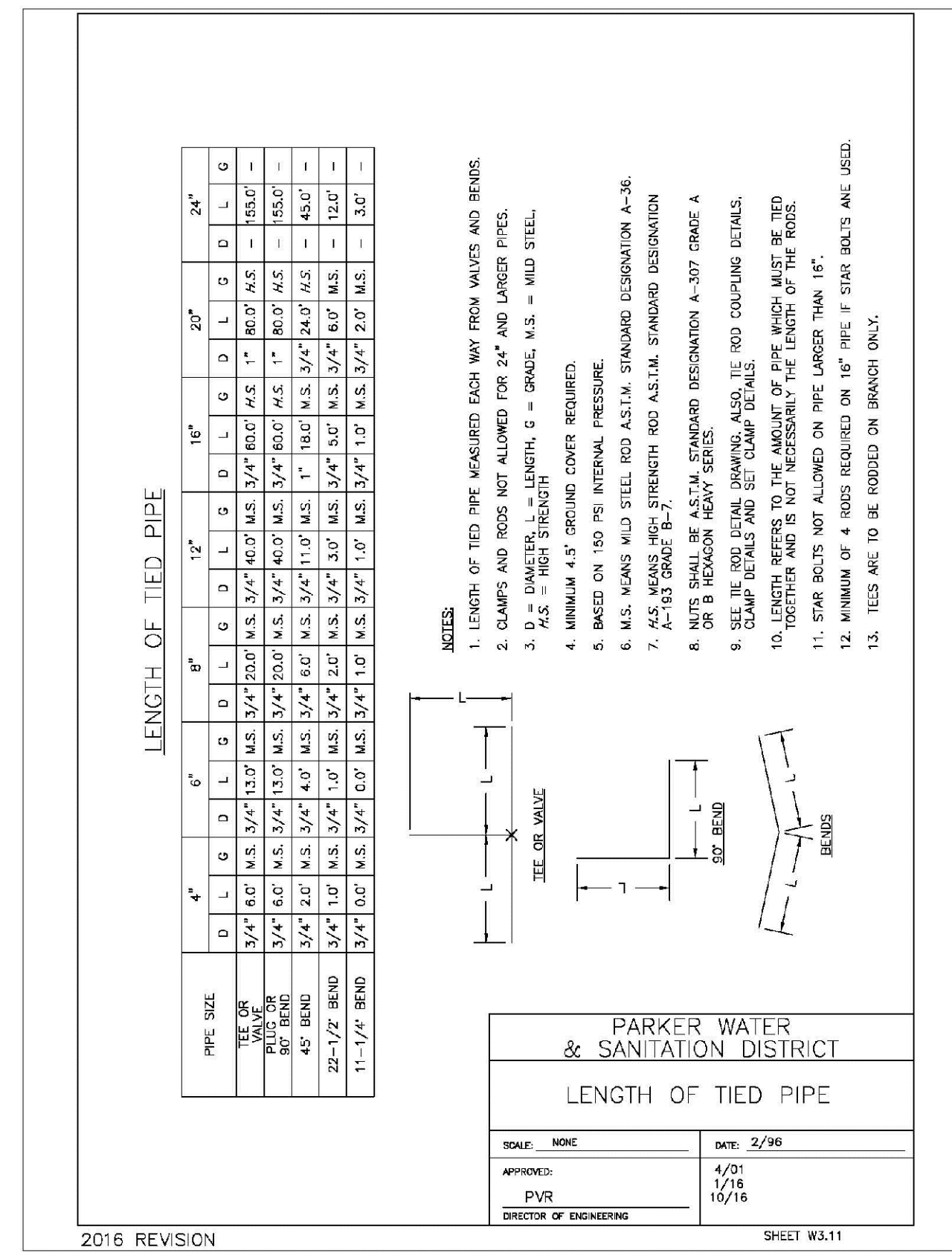
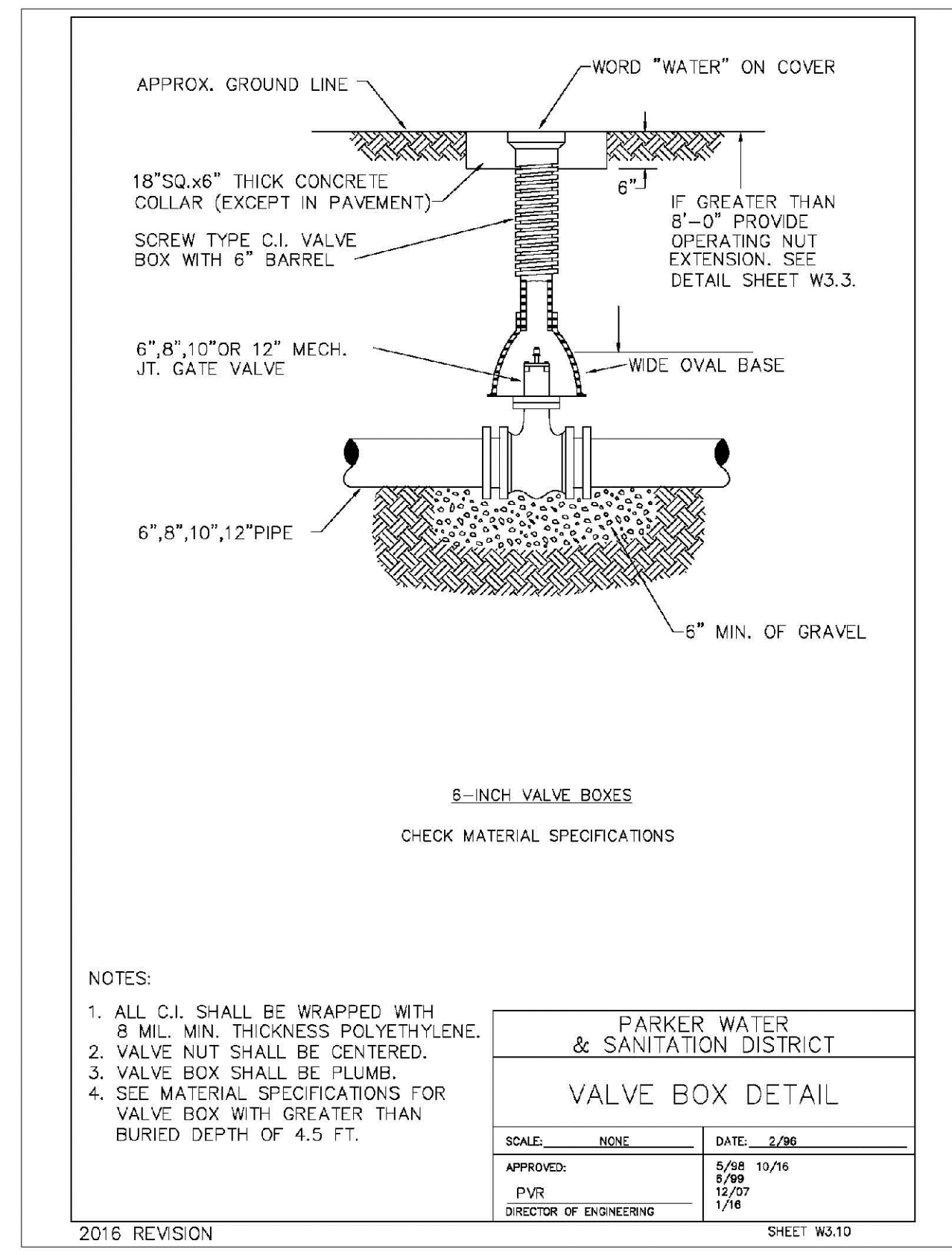
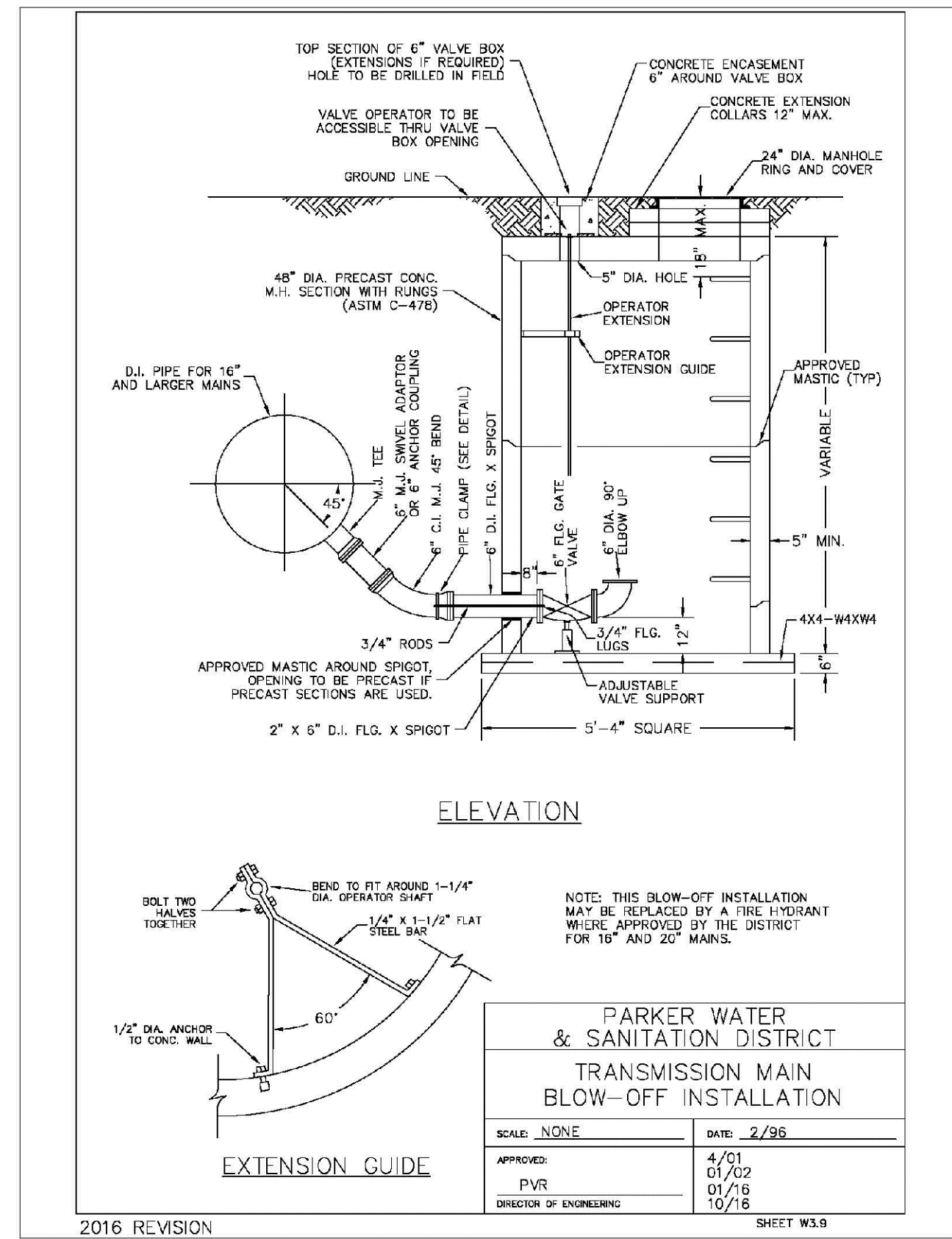
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				TRAILS AT CROWFOOT FILING 12 CONSTRUCTION DRAWINGS WATER DETAILS	HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112					



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No.	Revisions	Date	Init.	Appr.	Date

MECHANICAL JOINT RESTRAINT

WEDGE DETAIL BOLT HOLE DETAIL

NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	K2 INCHES	K1 INCHES	F INCHES	M INCHES
4"	2	2				
6"	3	3	11.12	9.5	7.00	0.88
8"	4	4	13.37	11.75	8.75	1.00
10"	5	5	15.62	14.00	11.20	1.00
12"	6	6	17.88	16.25	13.30	1.25

NOTES:
1. DIMENSIONS FOR 16" AND 20" D.I. PIPE NOT SHOWN.

PARKER WATER & SANITATION DISTRICT
MECHANICAL JOINT RESTRAINT DETAILS

SCALE: NONE DATE: 2/96

APPROVED: 2/90
PVR 12/07
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W3.17

11-1/4", 22-1/2", 45" & 90" BENDS

DEAD END

TYPICAL CROSS SECTION

TEE

MINIMUM BEARING SURFACE AREA (IN SQUARE FEET)

SIZE OF PIPE	11-1/4" BENDS	22-1/2" BENDS	45" BENDS	90" BENDS	TEE OR DEAD END
4"	1.00	1.20	1.00	1.80	1.50
6"	1.00	1.45	1.25	4.00	3.00
8"	1.00	2.00	4.00	7.50	3.50
10"	3.20	10.00	12.50	23.00	11.00
12"	3.20	12.00	15.00	28.00	13.00
24"	5.50	12.00	28.00	47.00	33.00

NOTES:
1. ALL VALVES, TEES, BENDS AND PLUGS SHALL BE RESTRAINED AND KICKBLOCKED.
2. WATER HAMMER: 1" C.P. 16", 20" AND 24" WATER HAMMER = 70 PSI.
3. BASED ON 150 PSI PIPE PRESSURE.
4. SOIL BEARING CAPACITY = 3,000 LBS./SQ. FT.

PARKER WATER & SANITATION DISTRICT
CONCRETE KICKBLOCKS BEARING SURFACES AND INSTALLATION

SCALE: NONE DATE: 2/96

APPROVED: 4/01
PVR 1/16
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W3.18

HALF PLAN

TYPICAL CROSS SECTION

24" DIAMETER RING AND COVER

NOTES:
1. Coating Specifications: ASTM A-48 With A Minimum Tenacity Strength of 20 KSI (Class 20)
2. All Castings to be Dipped in Asphalt Base Coat (Or Approved Lead)

PARKER WATER & SANITATION DISTRICT
24" DIAMETER RING AND COVER

SCALE: NONE DATE: 6/96

APPROVED: 12/97
PVR 1/16
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W3.19

ACCESS MANHOLE

ACCESS MANHOLE AND AIR VALVE ASSEMBLY

NOTES:
1. USE 2" AIR VALVE ASSEMBLY ON 30" OR SMALLER PIPES.
2. RESIDENTIAL ASSEMBLY MAY BE USED IN RESIDENTIAL AREAS ONLY (SEE DETAIL SHEET W6.3).
3. SEE SHEET W3.6 FOR CONCRETE MANHOLE BASE BEAMS AND AIR/VACUUM VALVE DETAILS.

PARKER WATER & SANITATION DISTRICT
ACCESS MANHOLE ASSEMBLY

SCALE: NONE DATE: 2/96

APPROVED: 4/01
PVR 1/16
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W3.20

STANDARD TRENCH SECTION

STREET CUT PATCH

PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	1'-4"	2'-4"
6"	1'-6"	2'-6"
8"	1'-8"	2'-8"
10"	2'-0"	3'-0"
12"	2'-2"	3'-2"
24"	3'-0"	4'-0"

PARKER WATER & SANITATION DISTRICT
TYPICAL TRENCH SECTION PIPE PROTECTION

SCALE: NONE DATE: 2/96

APPROVED: 5/98
PVR 2/02
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W4.1

PIPE BEDDING

(a) Installation of Bedding and Pipes: After completion of the trench excavation and proper preparation of the foundation, six inches (6") of bedding material shall be placed on the trench bottom for support under the pipe. Bed holes shall be dug deep enough to provide a minimum of two inches (2") of clearance between the soil and bedding material. All pipe shall be installed in such a manner as to insure full support of the pipe barrel over its entire length. After the pipe is adjusted for line and grade, and the joint is made, the bedding material shall be carefully placed and tamped under the fullness of the pipe and in the previously dug bed holes.

(b) Bedding Material: The bedding material shall be a clean well-graded sand or spongy sand and shall conform to the following limits when tested by means of laboratory sieves.

Sieve Size	Total Percent Passing by Weight
3/8 inch	100
No. 4	70-100
No. 6	35-83
No. 16	20-80
No. 30	5-60
No. 50	2-30
No. 100	1-10
No. 200	0-3

PARKER WATER & SANITATION DISTRICT
PIPE BEDDING

SCALE: NONE DATE: 2/96

APPROVED: 5/98
PVR 2/02
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2016 REVISION SHEET W4.2

PLAN VIEW

PROFILE

TYPICAL SECTION

NOTES:
1. ALL CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3,000 PSI USING TYPE I PORTLAND CEMENT AND 3/4" AGGREGATE. ALL CONCRETE SHALL HAVE 5-7% ENTRAINED AIR CONTENT AND A MAXIMUM SLUMP OF 4".
2. ALL REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60.
3. ALL REINFORCEMENT SHALL HAVE 2" MIN. CONCRETE COVER.
4. THE SUBGRADE SHALL BE COMPACTED TO 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY PRIOR TO FORMING THE STRUCTURE.
5. PIPE SHALL BE WRAPPED WITH FELT LAYER BEFORE ENCASING.

PARKER WATER & SANITATION DISTRICT
WATERLINE ENCASEMENT

SCALE: NONE DATE: 5/98

APPROVED: 1/16
PVR 10/16
DIRECTOR OF ENGINEERING

2016 REVISION SHEET W4.3

PLAN FOR PERPENDICULAR CROSSING

PLAN FOR ANGLE CROSSING

PROFILE

FORMULA FOR FINDING C:

$$C = B + (2)(1.5) \left[\frac{B}{2} + A + F \right]$$

FORMULA FOR FINDING L:

$$L = \frac{C}{\sin \phi}$$

PARKER WATER & SANITATION DISTRICT
BORED CROSSINGS BENEATH CONDUITS

SCALE: NONE DATE: 2/96

APPROVED: 2/00
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2016 REVISION SHEET W4.4

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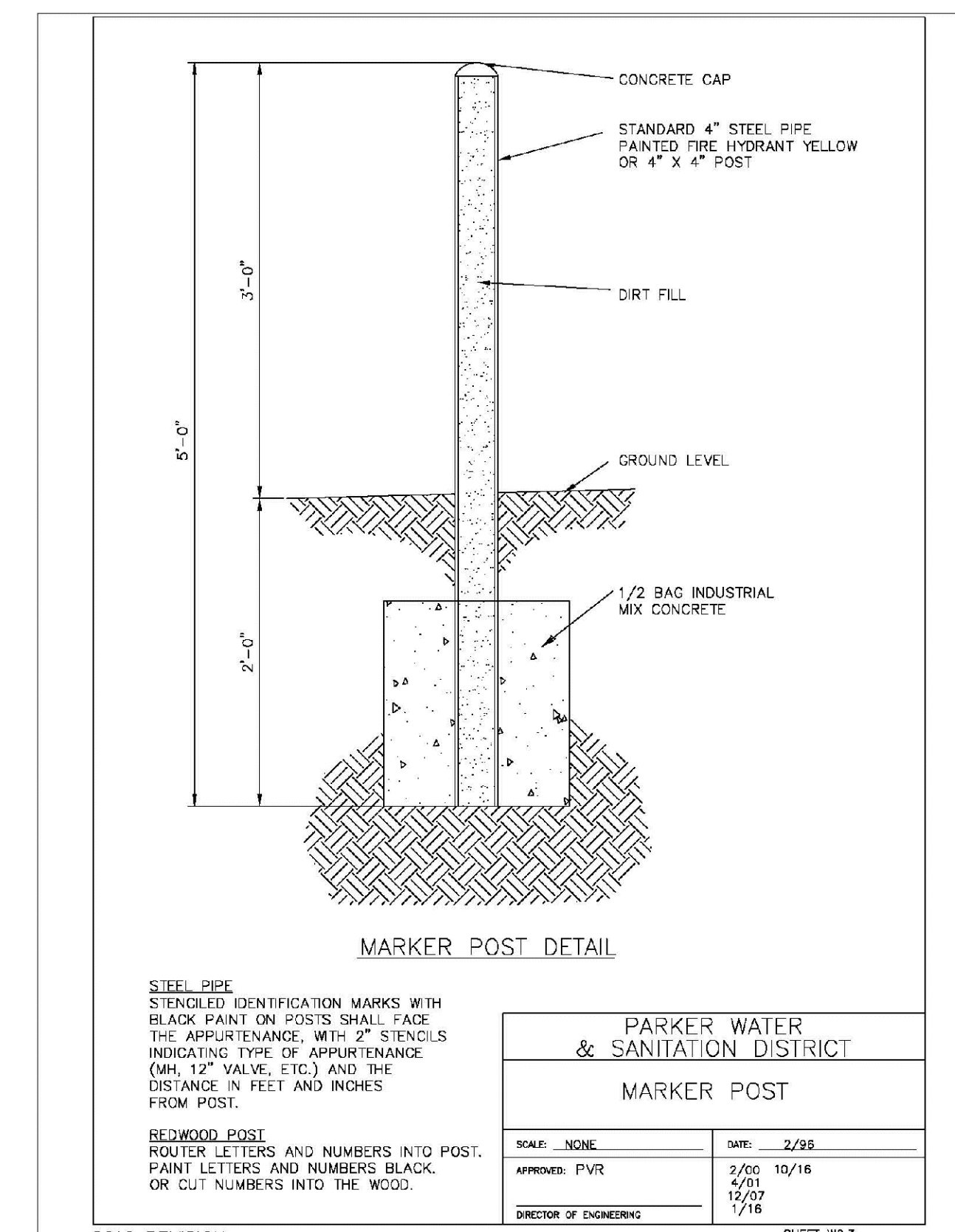
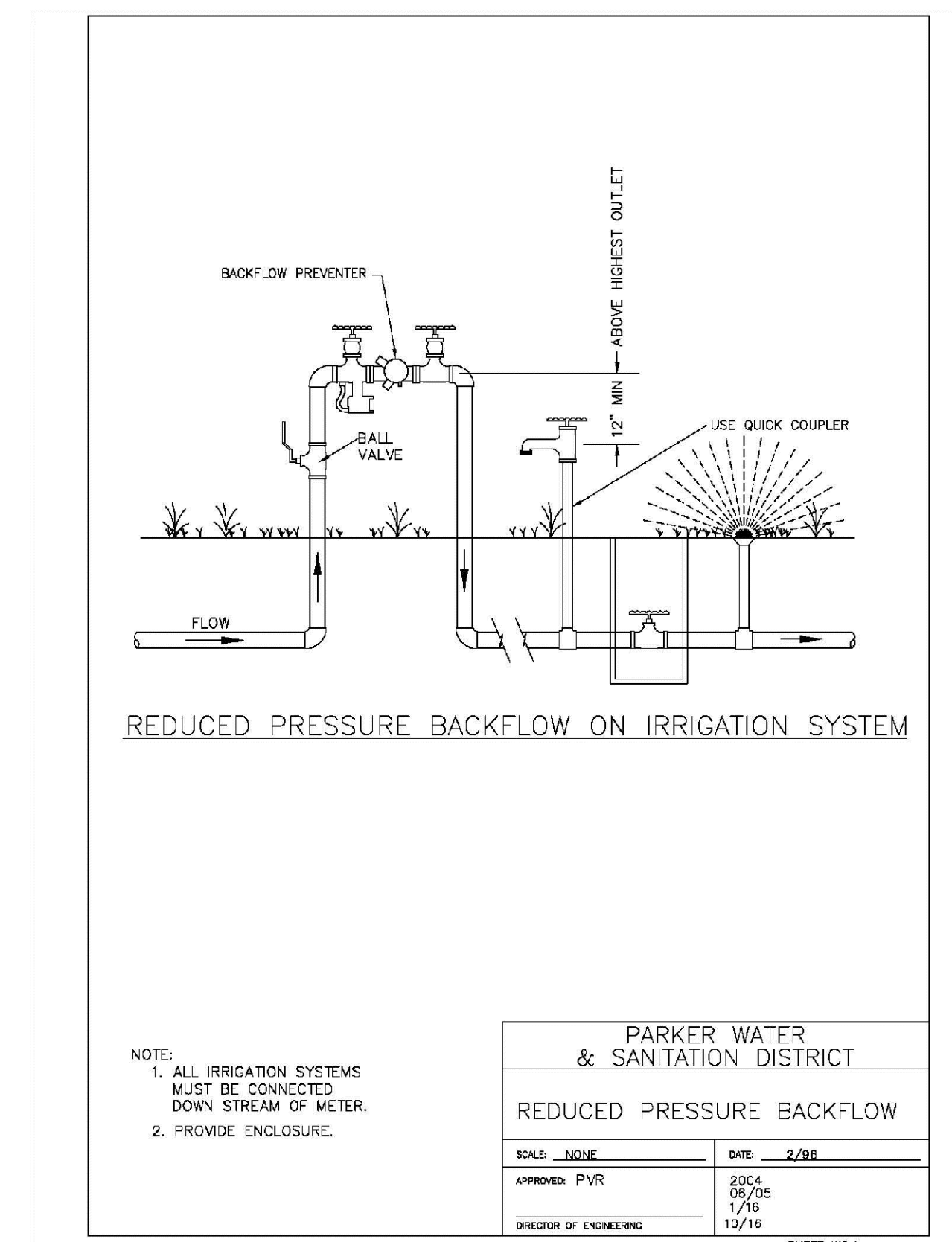
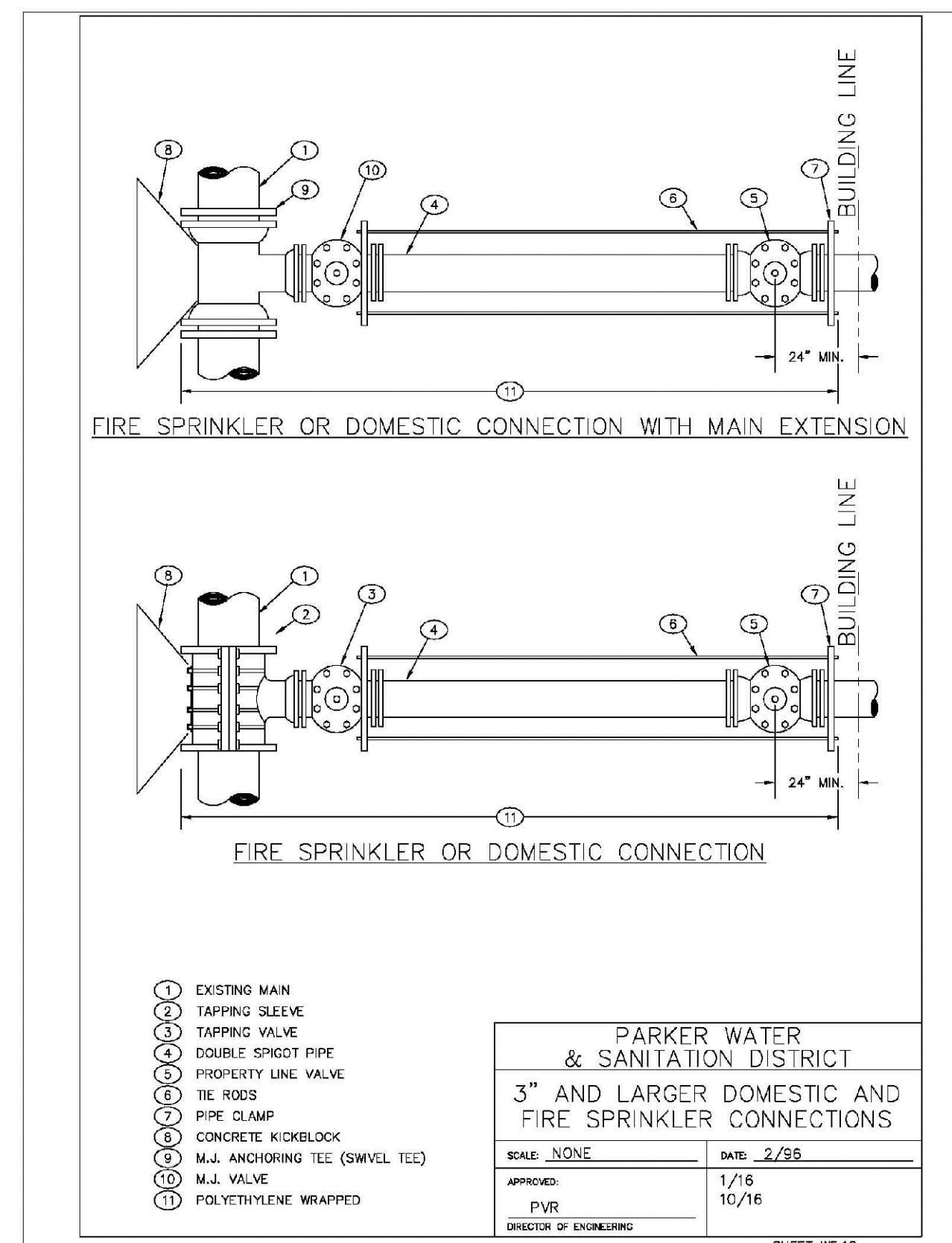
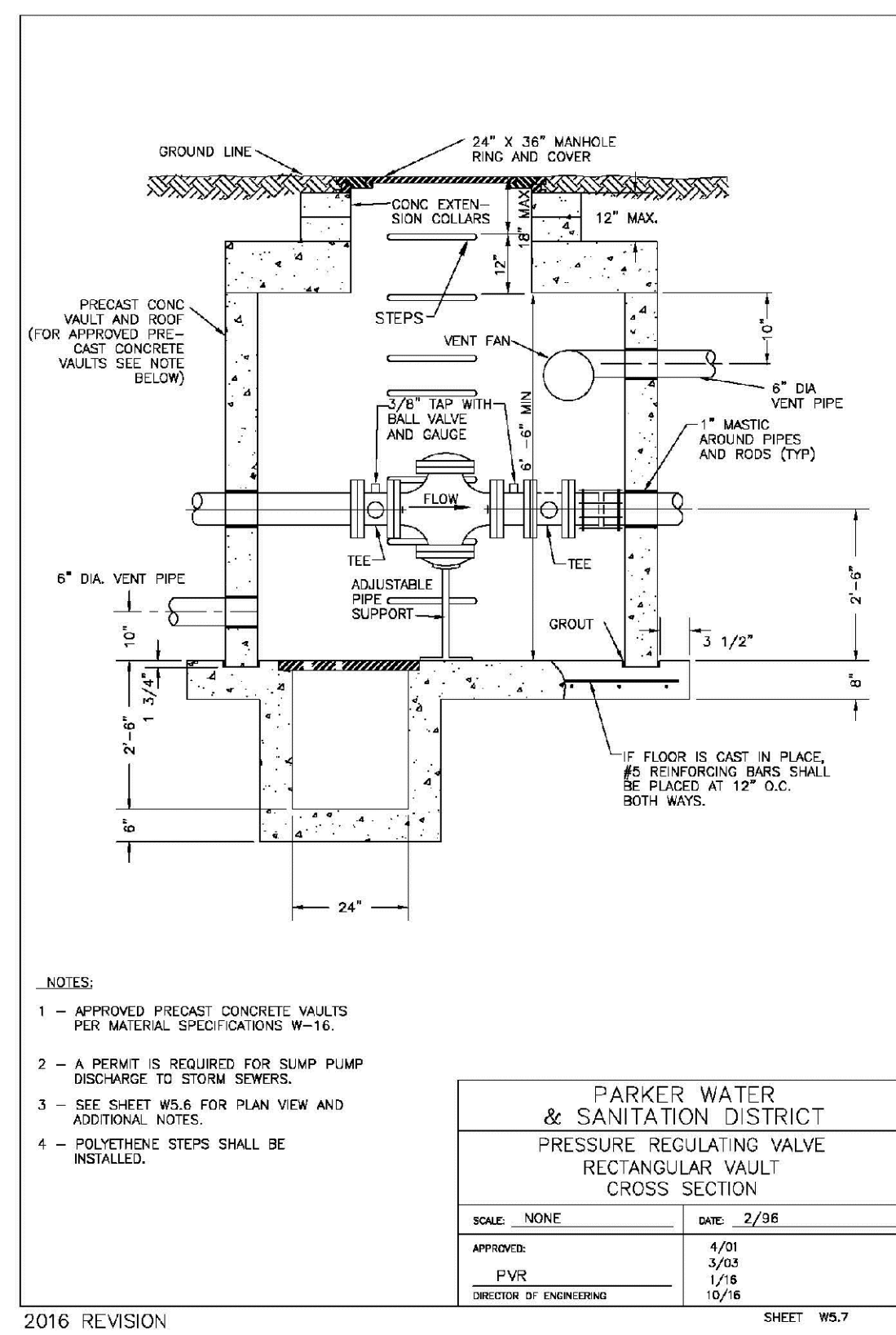
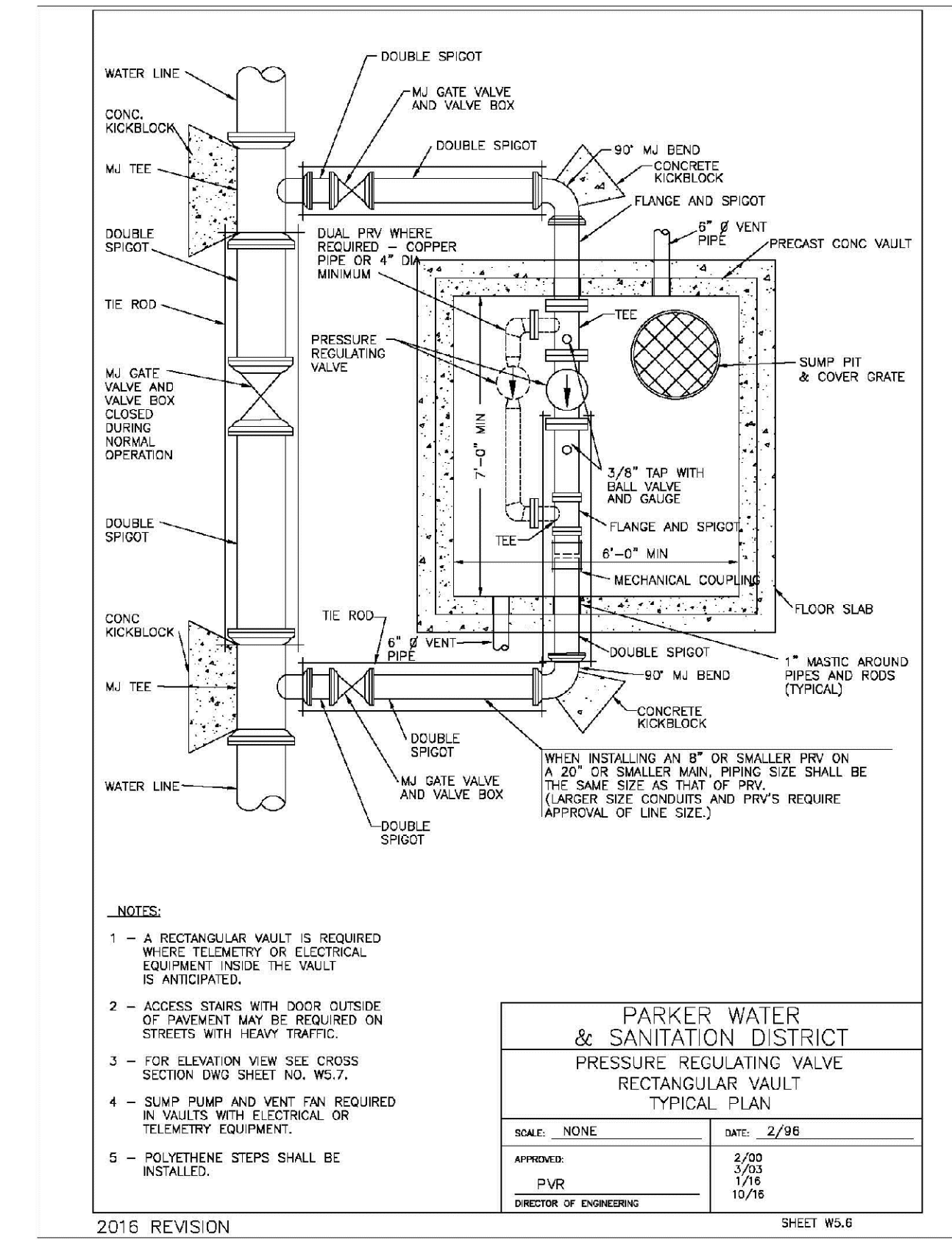
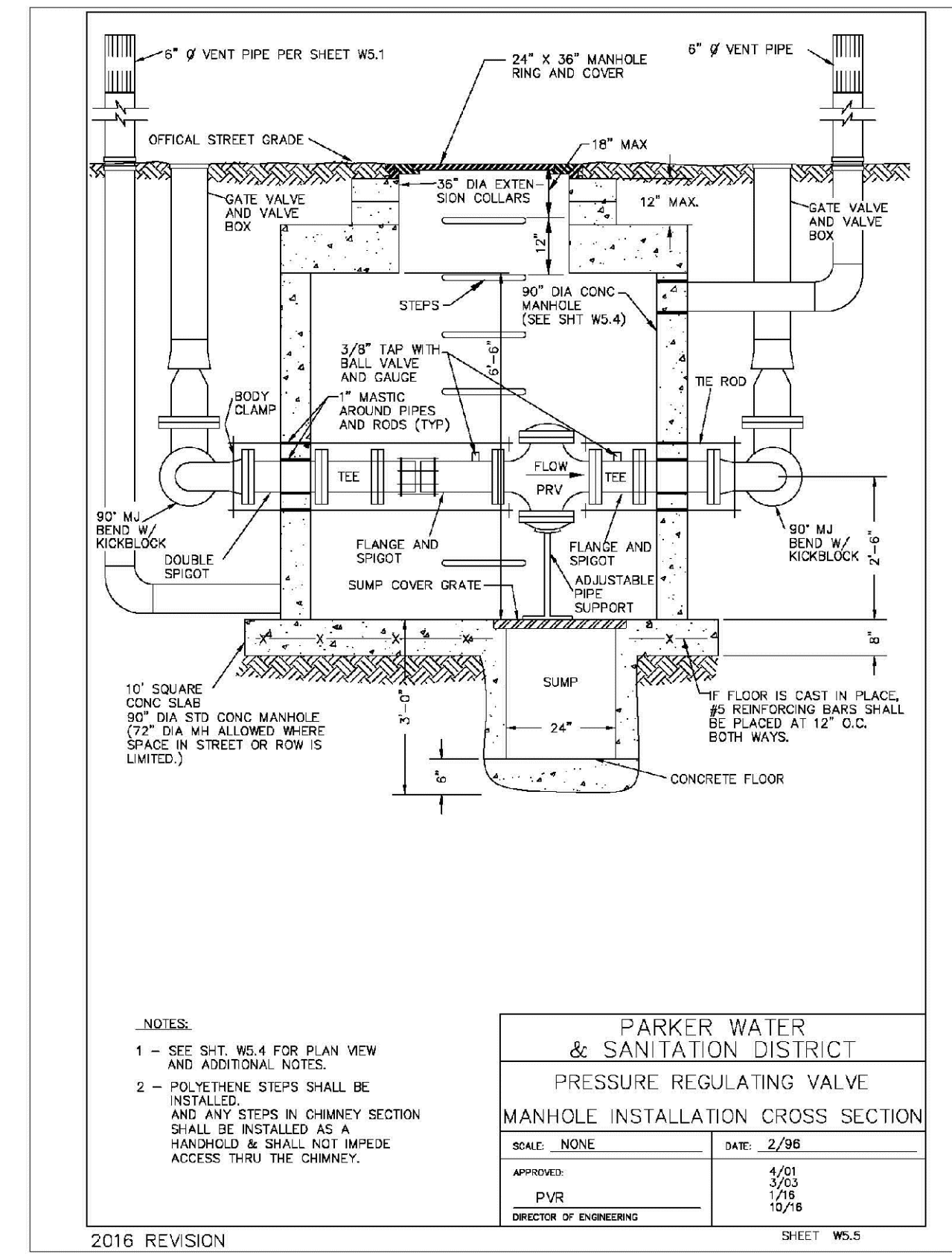
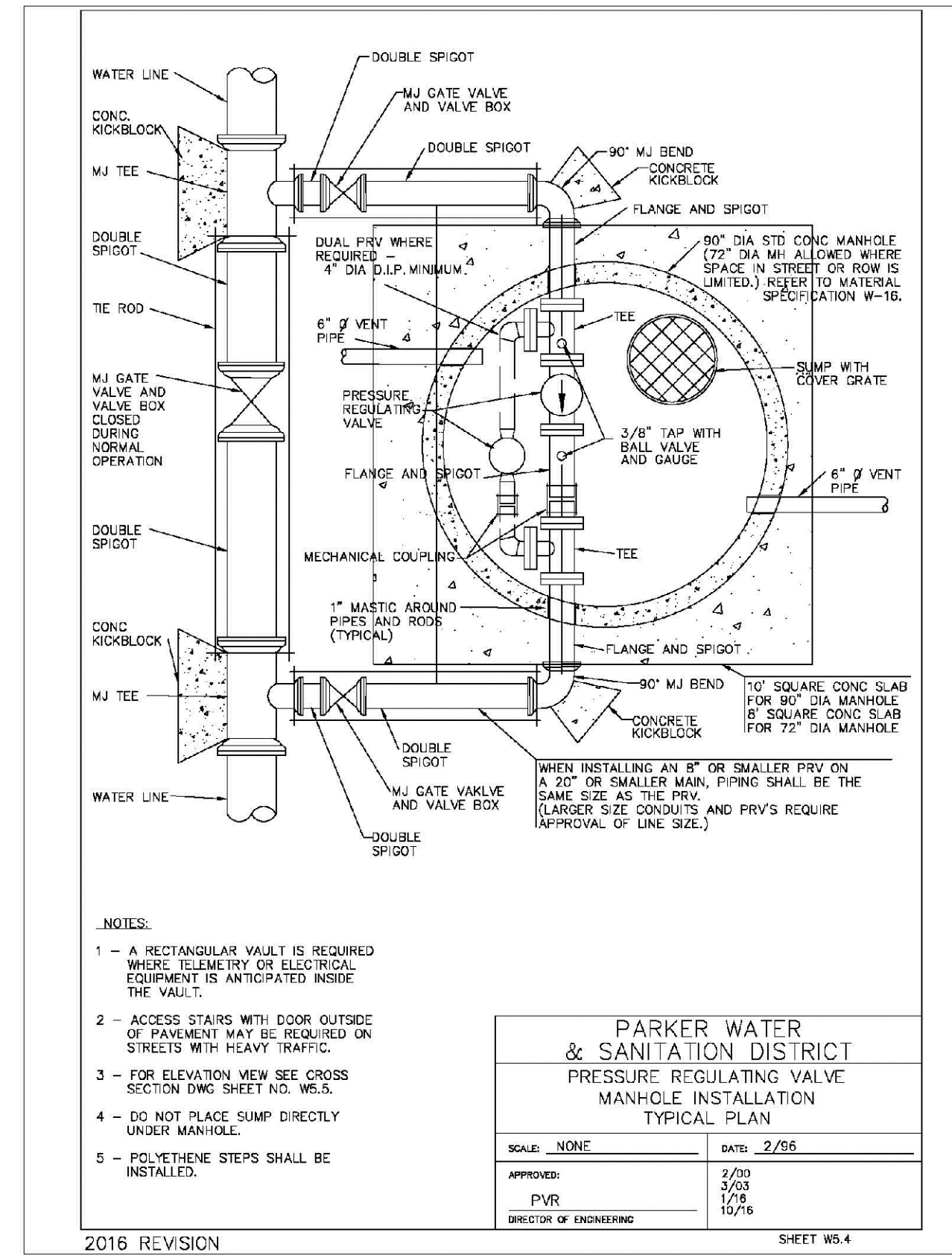
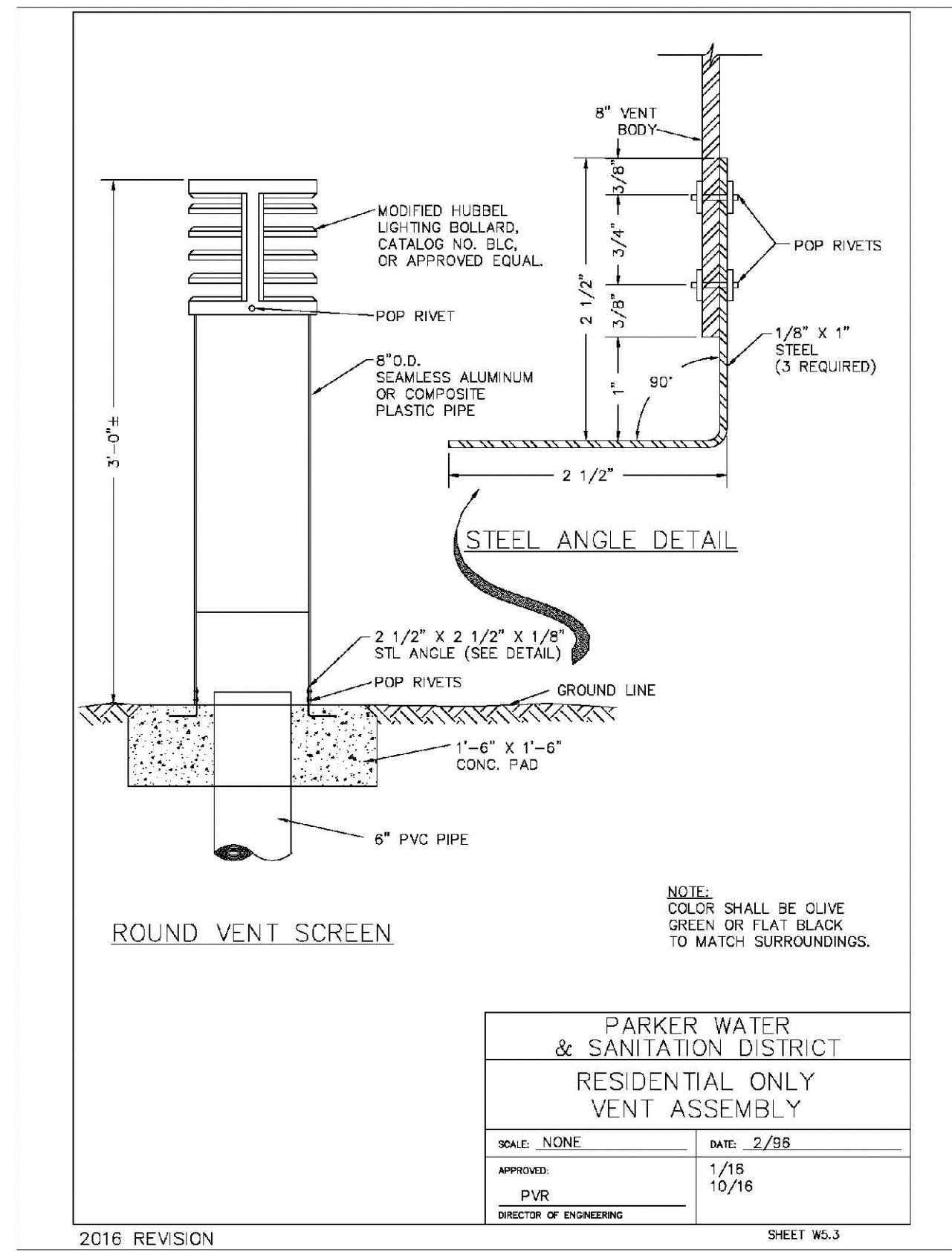
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