

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITH PARKER WATER AND SANITATION DISTRICT SPECIFICATIONS.
2. THE CONTRACTOR SHALL CONTACT ALL APPROPRIATE UTILITY COMPANIES AND THE TOWN OF PARKER PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ANY EXISTING UTILITY (INCLUDING DEPTHS) WHICH MAY CONFLICT WITH THE PROPOSED CONSTRUCTION. ALL EXISTING UTILITIES SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. DAMAGED UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
3. ALL ITEMS SHOWN ON THE PLANS AS EXISTING ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE ACTUAL LOCATIONS MAY VARY FROM THE PLANS, ESPECIALLY IN THE CASE OF UNDERGROUND UTILITIES. WHENEVER CONTRACTOR DISCOVERS A DISCREPANCY IN LOCATIONS, HE SHALL CONTACT THE ENGINEER IMMEDIATELY.
4. THE DISTRICT ENGINEER AND OTHER APPROVING AGENCIES ARE TO BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL OBTAIN, AT HIS EXPENSE, ALL PERMITS THAT ARE NECESSARY TO PERFORM THE PROPOSED WORK.
6. ALL CONCRETE SHALL BE A MINIMUM OF CLASS "A", 6 SACK, TYPE II, 3000-POUND COMPRESSION STRENGTH.
7. THE DESIGN ENGINEER SHALL SUBMIT ONE (1) SET OF ROLLED "AS-BUILT" BLUELINE PRINTS AND ELECTRONIC FILES TO THE DISTRICT ENGINEER FOR APPROVAL PRIOR TO PRINTING MYLAR SEPIAS FOR THE DISTRICT. AFTER APPROVAL HAS BEEN GRANTED BY THE DISTRICT ENGINEER, FULL SIZE MYLAR SEPIA PRINTS SHALL BE TRANSMITTED TO THE PARKER WATER AND SANITATION DISTRICT OFFICE.
8. ALL BACKFILL MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY. COMPACTION TESTS MUST BE SUBMITTED TO DISTRICT ENGINEER PRIOR TO PROBATIONARY ACCEPTANCE.
9. TRENCHES SHALL BE EXCAVATED AND THE PIPE EXPOSED FOR THE INSPECTION AT ANY LOCATION ON THE PROJECT IF SO ORDERED BY THE INSPECTOR.
10. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE PROPER FUNCTIONING OF LINES (WATER AND SEWER) FOR UP TO TWO (2) YEARS FROM THE DATE OF PROBATIONARY ACCEPTANCE OF THE LINES BY THE DISTRICT. ANY MALFUNCTION DURING THIS PERIOD OF GUARANTEE SHALL BE REMEDIED BY THE CONTRACTOR TO THE SATISFACTION OF THE DISTRICT ENGINEER AT NO EXPENSE TO THE DISTRICT.
11. SURFACE GRADES ARE TO BE WITHIN PLUS OR MINUS ONE FOOT OF FINISHED GRADE AND VERIFICATION OF COMPACTION RESULTS OBTAINED PRIOR TO THE INSTALLATION OF WATER AND SEWER LINES. RESULTS MUST BE SUBMITTED TO THE DISTRICT ENGINEER.
12. NO WORK SHALL BE BACKFILLED UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FOR BACKFILLING BY THE DISTRICT ENGINEER OR REPRESENTATIVE OF THE DISTRICT ENGINEER.
13. ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS: "X" FOR SANITARY SERVICE SEWERS "V" FOR WATER SERVICES
14. NO TREES SHALL BE ALLOWED IN EASEMENTS OR WITHIN 8' OF ANY WATER OR SANITARY SEWER MAINS IN RIGHT OF WAY.
15. THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PLANS WHICH HAVE BEEN APPROVED BY THE PARKER WATER AND SANITATION DISTRICT AND THE DISTRICT ENGINEER AND ONE (1) COPY OF THE LATEST PARKER WATER AND SANITATION DISTRICT SPECIFICATION MANUAL.

WATER MAIN NOTES:

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE PARKER WATER AND SANITATION DISTRICT ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST REVISIONS. ALL WORK SHALL BE INSPECTED AND APPROVED BY PERSONNEL OF THE PARKER WATER SANITATION DISTRICT AND THE DISTRICT ENGINEER.
2. ALL WATER MAINS SHALL BE PER PWS MATERIALS SPECIFICATIONS.
3. ALL BENDS, PLUGS, REDUCERS, AND FIRE HYDRANTS TO BE RODDED OR MEGA-LUGGED. ALL FITTINGS SHALL BE WRAPPED WITH 8-MIL MINIMUM THICKNESS POLYETHYLENE MATERIAL PER PWS MATERIALS SPECIFICATIONS.
4. THERE SHALL BE A MINIMUM COVER OF 4.5 FEET OVER ALL WATER MAINS.
5. FIRE HYDRANTS SHALL CONFORM TO AWWA C-502 "DRY BARREL FIRE HYDRANTS" PIPE HYDRANT ASSEMBLIES SHALL INCLUDE ALL PIPE, FITTINGS, VALVES, MATERIALS, AND LABOR WHICH ARE NECESSARY TO INSTALL THE HYDRANT COMPLETE IN PLACE. SEE MATERIALS SPECIFICATIONS FOR APPROVED MODELS.
6. ALL BENDS, TEES, FIRE HYDRANTS, BLOW-OFFS AND PLUGS AT DEAD END MAINS SHALL BE PROTECTED FROM THRUST BY USING CONCRETE THRUST BLOCKS.
7. PRECAUTIONS SHALL BE TAKEN TO PROTECT THE INTERIOR OF PIPES, FITTINGS, AND VALVES AGAINST CONTAMINATION. ALL OPENINGS IN THE PIPELINE SHALL BE CLOSED WITH WATERTIGHT PLUGS WHEN PIPE LAYING IS STOPPED AT THE CLOSE OF THE DAY'S WORK OR FOR OTHER REASONS, SUCH AS REST BREAKS OR MEAL PERIODS. THE MORE CLOSELY THE RATE OF DELIVERY IS CORRELATED TO THE RATE OF PIPE LAYING, THE LOWER THE RISK OF CONTAMINATION.
8. CHLORINATION AND FLUSHING: ALL WATER MAINS SHALL BE INSTALLED AND CHLORINATED PER PARKER WATER AND SANITATION STANDARDS AND SPECIFICATIONS. THE LINES SHALL BE CHLORINATED IN ACCORDANCE WITH ANSI/AWWA C-651-92., "DISINFECTING WATER MAINS." PARKER WATER AND SANITATION DISTRICT REQUIRES THE INITIAL DOSAGE RATE OF DISINFECTION BE AT LEAST 50 MG PER LITER. CHLORINE TABLETS SHOULD BE ADHERED TO THE TOP OF THE PIPE SECTION WITH PERMATEX NO.1 (RED). THE CHLORINATION OF ANY FINISHED PIPELINE SHALL BE DONE PRIOR TO THE HYDROSTATIC TESTING.
9. HYDROSTATIC TESTING: ALL WATER MAINS SHALL BE TESTED PER THE REQUIREMENTS OF THE PARKER WATER AND SANITATION DISTRICT STANDARDS AND SPECIFICATIONS. ALL PIPE SHALL BE FIELD PRESSURE TESTED TO A MINIMUM OF 150 PSI. ALL TESTING SHALL BE DONE IN THE PRESENCE OF A PARKER WATER AND SANITATION DISTRICT INSPECTOR. LEAKAGE FOR EACH SECTION OF PIPE BETWEEN LINES VALVES SHALL NOT EXCEED THE LIMITS SET FORTH IN THE PARKER WATER AND SANITATION DISTRICT STANDARDS AND SPECIFICATIONS.
10. VALVES IN STREETS ARE TO BE LOCATED AT PROPERTY LINE EXTENSIONS EXCEPT FOR TAPPING TEES WHERE AN ADDITIONAL VALVES SHALL BE PLACED ON THE TAPPING TEE. OTHER VALVE LOCATIONS, SUCH AS WHERE CROSS PANS EXIST, ARE SHOWN ON THE PLANS.
11. WHEN NECESSARY TO LOWER OR RAISE WATER LINES AT STORM DRAINS AND OTHER UTILITY CROSSING, A MINIMUM CLEARANCE OF 1.50 FEET SHALL BE MAINTAINED BETWEEN OUTSIDE OF PIPES.
12. THE CONTRACTOR SHALL NOTIFY THE PARKER WATER AND SANITATION DISTRICT AND THE DISTRICT ENGINEER AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION. IF WORK IS SUSPENDED FOR ANY PERIOD OF TIME AFTER INITIAL START-UP, THE CONTRACTOR MUST NOTIFY THE DISTRICT ENGINEER 48 HOURS PRIOR TO RE-START.
13. PIPE BEDDING SHALL BE A CLEAN, WELL-GRADED SAND OR SQUEEGEE SAND IN ACCORDANCE WITH PARKER WATER AND SANITATION DISTRICT STANDARDS AND SPECIFICATIONS, LATEST REVISION.
14. THE CONTRACTOR SHALL NOTIFY THE PUBLIC UTILITY COMPANIES AND DETERMINED THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO PROCEEDING WITH THE EXCAVATION. ALL WORK PERFORMED IN THE AREA OF THE PUBLIC UTILITIES SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS OF THESE AGENCIES.
15. COMPACTION OF ALL TRENCHES MUST BE ATTAINED IN ACCORDANCE WITH THE SOILS REPORTS AND COMPACTION TEST RESULTS SUBMITTED TO THE DISTRICT ENGINEER PRIOR TO PROBATIONARY ACCEPTANCE.
16. VALVE BOXES: TYLER SCREW-TYPE 6 INCHES CAST IRON VALVE BOX ASSEMBLY SERIES 6860 WITH NO. 160 OVAL BASE. CLAY AND BAILEY SCREW-TYPE 6 INCH CAST IRON VALVE BOX ASSEMBLY NO. P-108 WITH NO. 106 LARGE OVAL BASE.
17. ALL PIPE LENGTHS ARE APPROXIMATE.
18. AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING WILL BE HELD AT THE OFFICE OF THE DISTRICT ENGINEER AND ATTENDED BY THE CONTRACTOR AND REPRESENTATIVE OF OTHER APPROVING AGENCIES. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE DISTRICT ENGINEER.

SANITARY SEWER NOTES:

1. ALL SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE PARKER WATER AND SANITATION DISTRICT SPECIFICATION.
2. ALL SEWER MAINS SHALL BE PVC, ASTM D-3034, SDR 35 OR APPROVED EQUAL. ALL SEWER MAIN SIZE IS 8" IN DIAMETER UNLESS OTHERWISE NOTED.
3. SEWER LINES SHALL BE INSTALLED 5.0 FEET SOUTH OR WEST OF STREET CENTERLINE, UNLESS OTHERWISE SHOWN ON PLANS. SEWER LINES SHALL BE 10.00 FEET FROM WATER LINES EXCEPT WHEN CROSSING EACH OTHER. SEWER LINES WHICH CROSS LESS THAN 1.50 FEET VERTICALLY FROM THE WATER MAIN SHALL BE ENCASED IN CONCRETE AS PER PARKER WATER AND SANITATION DISTRICT STANDARD AND SPECIFICATIONS. USE RUBBER GASKETS FOR PVC ENCASEMENT.
4. SEWER RIM ELEVATIONS SHOWN ARE APPROPRIATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. RING AND COVER SHALL BE SET IN CENTERED CONCRETE RINGS WITH RAM-NECK FOR ADJUSTMENT TO MATCH FINAL PAVEMENT ELEVATIONS.
5. THE CONTRACTOR AND SURVEY CREW SHALL VERIFY ELEVATIONS OF EXISTING SEWER LINES AND MANHOLES TO BE TIED TO PRIOR TO CONSTRUCTION OR STAKING OF SANITARY SEWER.
6. NO UNDERDRAIN SYSTEM WILL BE ALLOWED TO BE PLACED IN MAINLINE OR SEWER SERVICE TRENCHES.
7. SEWER SERVICE TEES FOR EACH UNIT SHALL BE STAKED BY A SURVEY CREW AND FURNISHED AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER "AS CONSTRUCTED" LOCATION OF TEES. SEWER WYES SHALL BE USED RATHER THAN TEES.
8. ALL MANHOLES SHALL BE 48-INCHES IN DIAMETER WITH 24-INCH RING AND COVER, ECCENTRIC CONE UNLESS OTHERWISE SPECIFIED.
9. PIPE BEDDING SHALL BE CLASS "B" AND SHALL CONFORM TO ASTM C-33 OR D-448 GRADATION NO. 6 OR NO. 67.
10. AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING WILL BE HELD AT THE OFFICE OF THE DISTRICT ENGINEER AND ATTENDED BY THE CONTRACTOR AND REPRESENTATIVES OF THE OTHER APPROVING AGENCIES. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE DISTRICT ENGINEER TO SCHEDULE THIS MEETING.
11. ALL PIPE LENGTHS ARE APPROXIMATE.
12. THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES ONE (1) SIGNED COPY OF THE PLANS WHICH HAVE BEEN APPROVED BY THE PARKER WATER AND SANITATION DISTRICT AND THE DISTRICT ENGINEER AND ONE (1) COPY OF THE LATEST PARKER WATER AND SANITATION DISTRICT SPECIFICATION MANUAL.
13. ALL MANHOLES SHALL HAVE SHAPED INVERTS.
14. ALL SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH THE PARKER WATER AND SANITATION DISTRICT STANDARDS AND SPECIFICATIONS PRIOR TO ACCEPTANCE OR ANY CONNECTION TO AN EXISTING SEWER LINE.
15. PRIOR TO START WORK WHERE SEWER MAIN TO BE INSTALLED INTO EXISTING DISTRICT SEWER SYSTEMS. THE NEAREST MANHOLE TO THE POINT OF TIE-IN SHALL BE PLUGGED WITH A PLUMBER'S PLUG ON THE INLET SIDE BY THE CONTRACTOR. THIS PLUG SHALL REMAIN IN PLACE UNTIL FINAL ACCEPTANCE BY THE DISTRICT. ITS PURPOSE SHALL BE TO PREVENT ANY MUD, WATER OR OTHER MATERIALS FROM ENTERING THE LINE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PUMPING AND CLEANING THESE MANHOLES AND REMOVING THE PLUG WHEN SO INSTRUCTED BY THE DISTRICT.
16. PRIOR TO PROBATIONARY ACCEPTANCE WALK-THROUGH, THE CLIENT SHALL JET CLEAN THE ENTIRE SANITARY SEWER SYSTEM AND PUMP OUT AT THE PLUGGED MANHOLE.

DISTRICT ACCEPTANCE NOTES:

1. UPON COMPLETION OF SANITARY SEWER AND WATER CONSTRUCTION AND TESTING, THE DEVELOPER OR CONTRACTOR SHALL CONTACT THE DISTRICT FOR PROBATIONARY ACCEPTANCE INSPECTION. A PUNCHLIST WILL BE PROVIDED THE DEVELOPER AND CONTRACTOR UPON COMPLETION OF THE INITIAL WALK-THRU AND PROBATIONARY ACCEPTANCE WILL BE ISSUED FOLLOWING COMPLETION AND ACCEPTANCE OF THE WORK OUTLINED IN THE PUNCHLIST.
2. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE PROPER FUNCTIONING OF THE LINES FOR UP TO TWO (2) YEARS FROM THE DATE OF PROBATIONARY ACCEPTANCE OF THE LINES BY THE DISTRICT. ANY MALFUNCTION DURING THIS PERIOD OF GUARANTEE SHALL BE REMEDIED BY THE CONTRACTOR TO THE SATISFACTION OF THE DISTRICT ENGINEER AT NO EXPENSE TO THE DISTRICT.
3. THE DATE OF FINAL ACCEPTANCE WILL BE INDICATED IN THE CONDITIONS OF THE PROBATIONARY ACCEPTANCE LETTER. THE DEVELOPER SHALL BE RESPONSIBLE FOR CONTACTING THE DISTRICT FOR FINAL INSPECTION AND FINAL ACCEPTANCE.

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BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

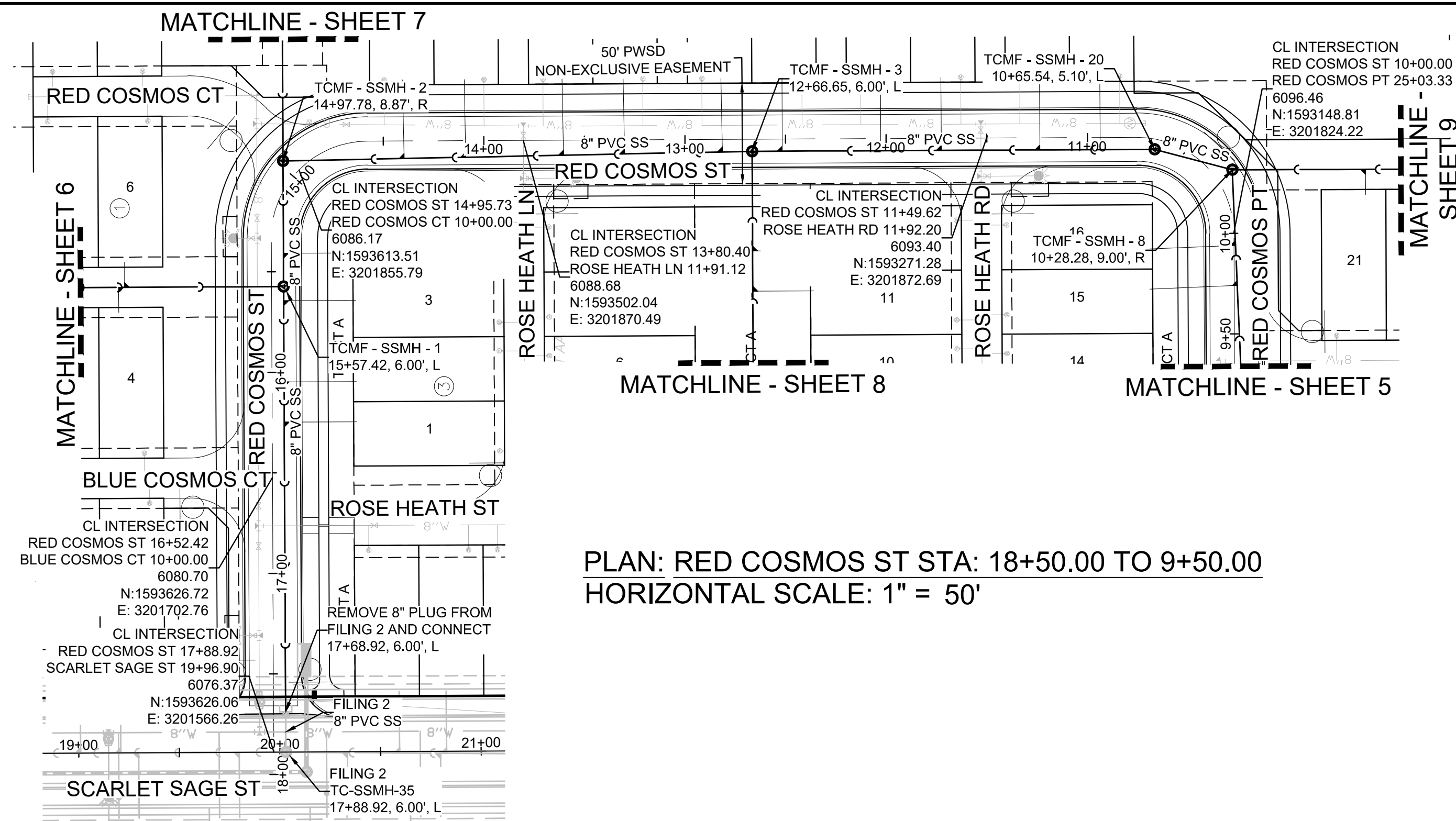
BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06"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

PREPARED UNDER THE SUPERVISION OF

BRIAN P. WILSON
COLORADO P.E. 0050067

SHEET NUMBER	DRAWN BY:	KID	CHECKED BY:	BFW	DATE:	SEPTEMBER 2018	SCALE:	AS SHOWN	FILE NO:	8130283701	TRAILS AT CROWFOOT FILING 14 CONSTRUCTION DRAWINGS PARKER WATER AND SANITATION NOTES	HR 95 LLC 7353 South Alton Way CENTENNIAL, CO 80112		10335 E. Dry Creek Rd. Suite 240 Englewood, CO 80112 Tel: (720) 482-9526 Fax: (720) 482-9546	No.	Revisions	Date	Appr.	Date

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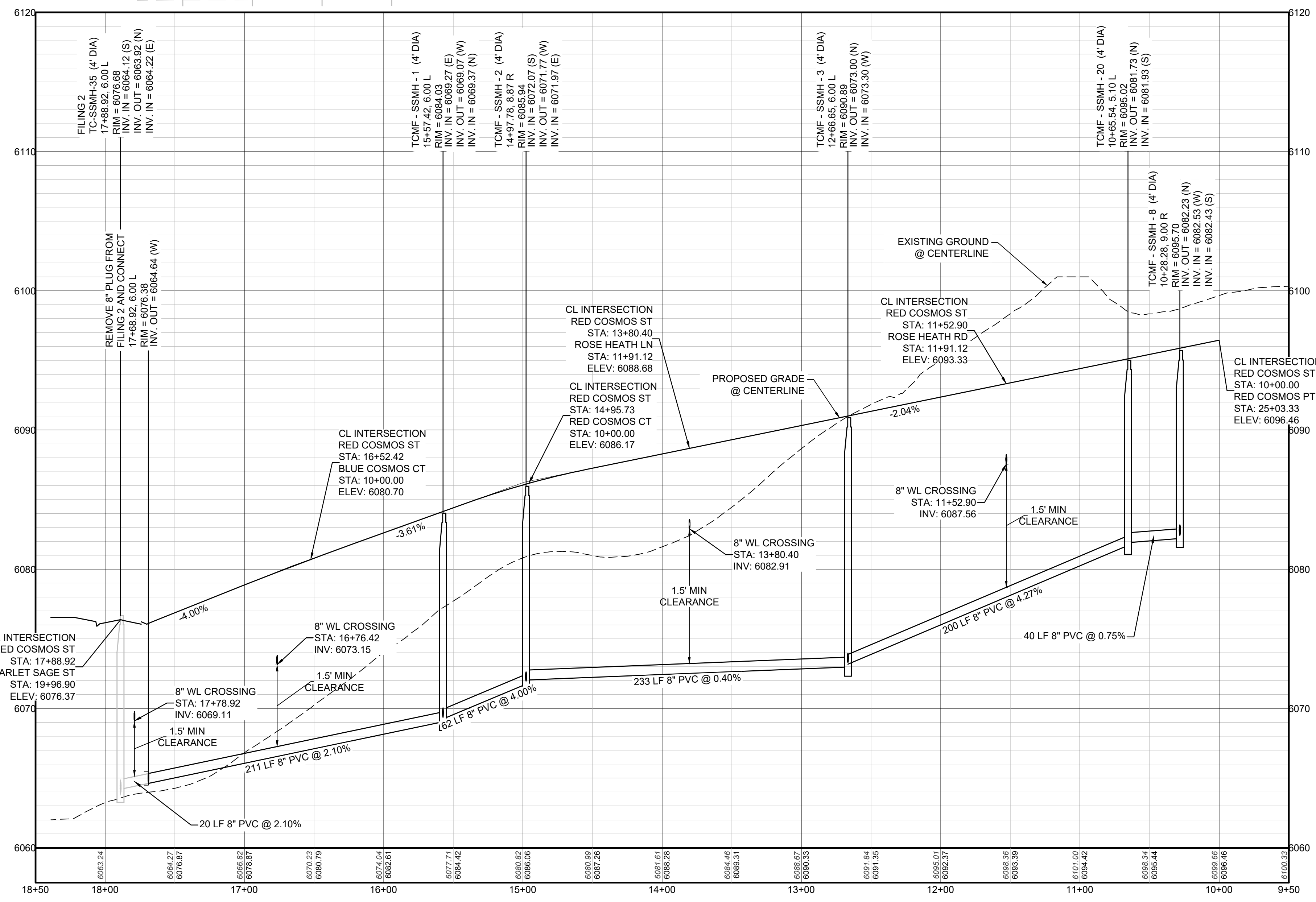


PLAN: RED COSMOS ST STA: 18+50.00 TO 9+50.00
HORIZONTAL SCALE: 1" = 50'

SANITARY SERVICE TABLE		
ILING, BLOCK, LOT	STREET	STATIONING
F14,B1,L9	RED COSMOS ST	14+39.68
F14,B1,L10	RED COSMOS ST	14+09.04
F14,B1,L11	RED COSMOS ST	13+60.42
F14,B1,L12	RED COSMOS ST	13+30.06
F14,B1,L13	RED COSMOS ST	12+81.44
F14,B1,L14	RED COSMOS ST	12+51.65
F14,B1,L15	RED COSMOS ST	12+02.65
F14,B1,L16	RED COSMOS ST	11+72.65
F14,B1,L17	RED COSMOS ST	11+23.65
F14,B1,L18	RED COSMOS ST	10+93.65
F14,B3,L1	RED COSMOS ST	16+24.86
F14,B3,L2	RED COSMOS ST	16+04.86
F14,B3,L3	RED COSMOS ST	15+64.42
F14,B3,L4	RED COSMOS ST	15+40.86



KEYMAP
N.T.S.



PROFILE: RED COSMOS ST STA: 18+50.00 TO 9+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

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	5615	EXISTING 5' CONTOUR
⊞	PROPOSED WL FITTING WITH THRUST BLOCK	5616	EXISTING 1' CONTOUR
⊞	PROPOSED FLARED END SECTION	5620	PROPOSED 5' CONTOUR
⊞	PROPOSED LOW POINT BLOW-OFF	5607	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 RAMP	---	PROPOSED WATER LATERAL W/ METER
10.00	EXISTING ELEVATION	---	SECTION LINE
10.00	PROPOSED DESIGN ELEVATION	---	FILING BOUNDARY
⊞	PROPOSED STORM DRAIN INLET	FO	EXISTING FIBER
⊞	PROPOSED STORM DRAIN MANHOLE	OH	EXISTING OVERHEAD POWER
		TEL	EXISTING TELEPHONE LINE

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
CBD	CAP WITH BLOW OFF	PVT	POINT OF VERTICAL TANGENT
CRR	CURB RETURN RADIUS	RCBC	REINFORCED CONCRETE BOX CULVERT
EL	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
FH	FIRE HYDRANT	SS	SANITARY SEWER
FL	FLOW LINE	STA	STATION
GV	GATE VALVE	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

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CVL CONSULTANTS

HR 935 LLC
7353 South Alton Way, CENTENNIAL, CO 80112

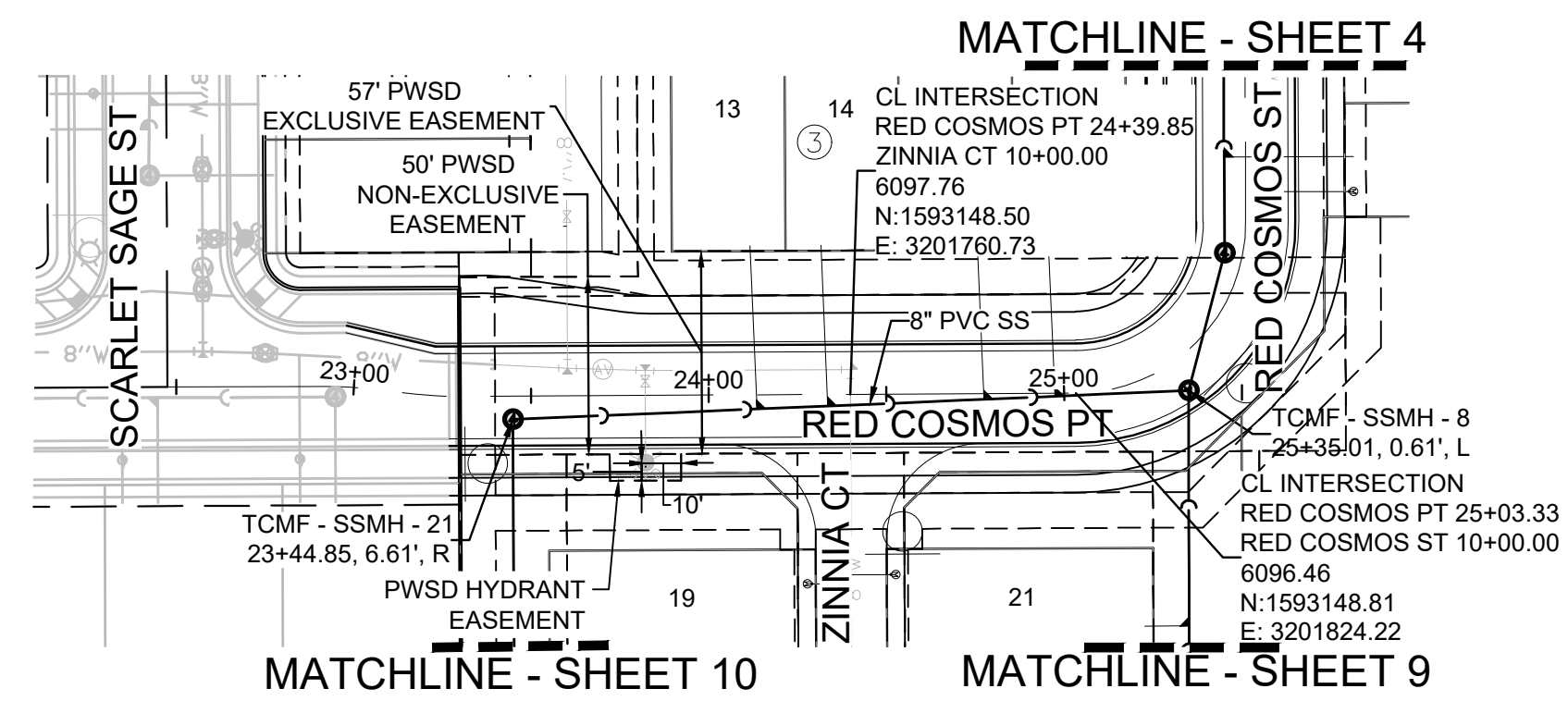
TRAILS AT CROWFOOT
FILING 14 CONSTRUCTION DRAWINGS
SANITARY SEWER PLAN & PROFILE
RED COSMOS STREET

SCALE: AS SHOWN
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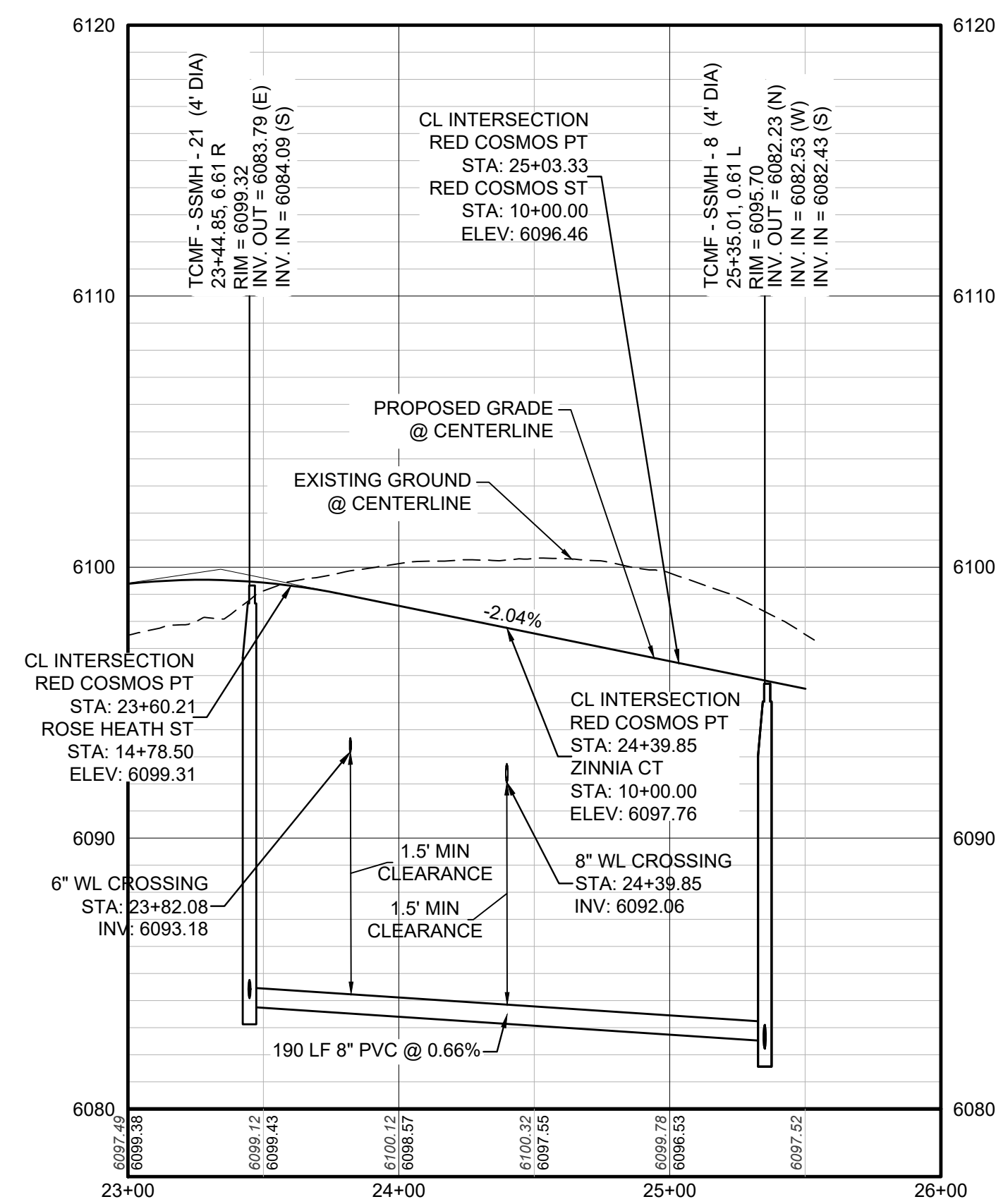
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DATE: SEPTEMBER 2018

SHEET NUMBER: 4

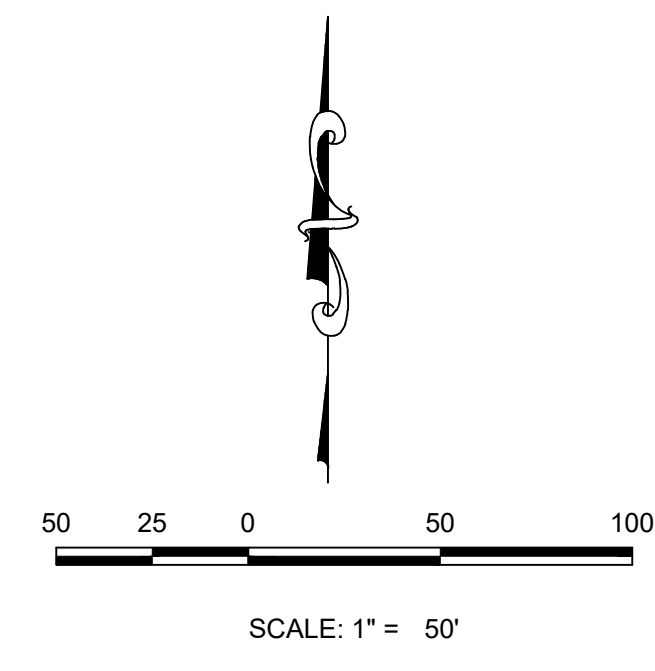
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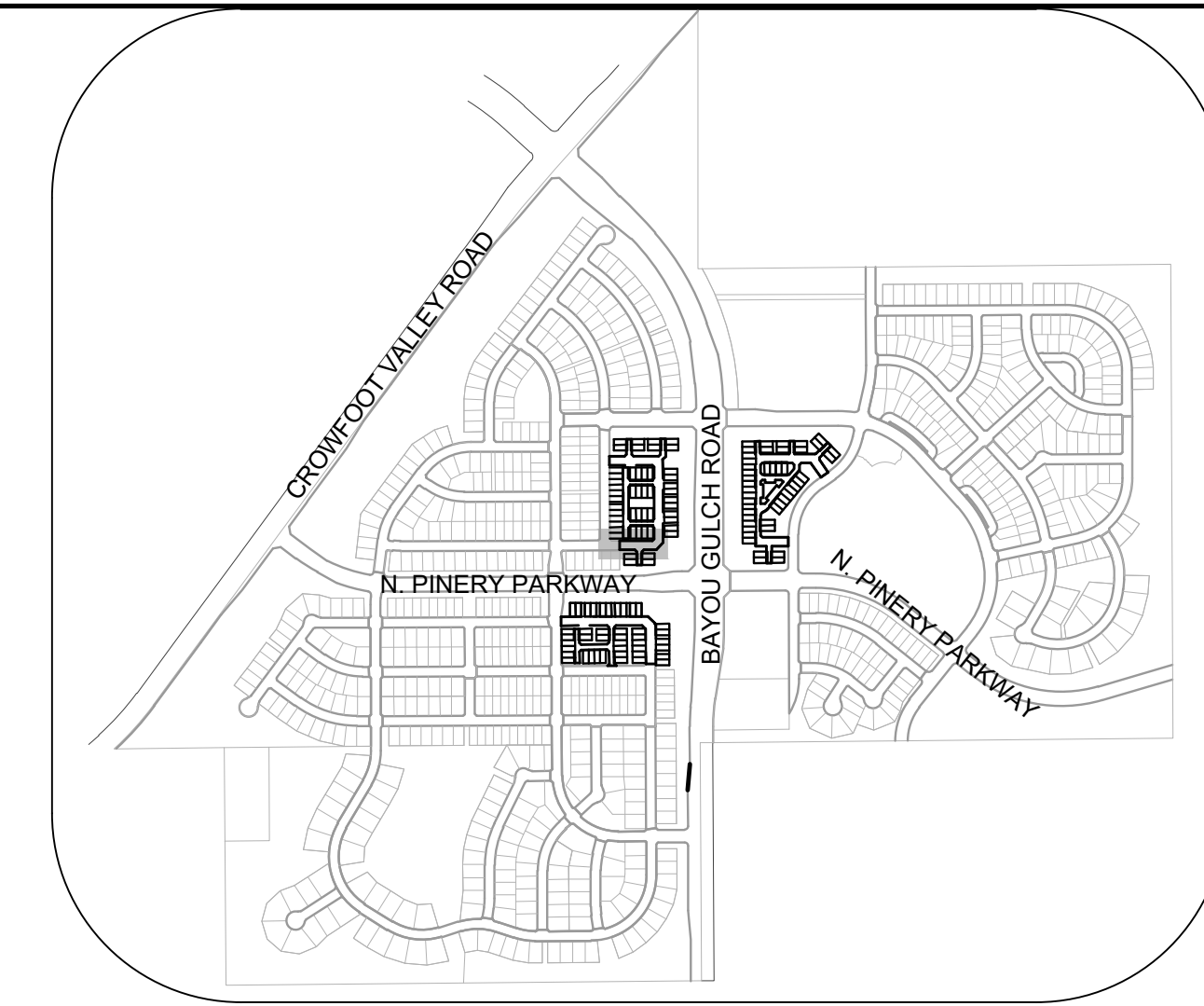
PLAN: RED COSMOS PT STA: 23+00.00 TO 26+00.00
HORIZONTAL SCALE: 1" = 50'



PROFILE: RED COSMOS PT STA: 23+00.00 TO 26+00.00
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ILING, BLOCK, LOT	STREET	STATIONING
F14.B3.L13	RED COSMOS PT	24+13.51
F14.B3.L14	RED COSMOS PT	24+33.49
F14.B3.L15	RED COSMOS ST	9+74.09
F14.B3.L16	RED COSMOS ST	9+94.06



KEYMAP
N.T.S.

LEGEND

Ⓜ	BLOCK NUMBER	△	PROPOSED RANGE POINT
Ⓛ	LOT TYPE	---	CENTERLINE
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Ⓜ	PROPOSED REDUCER	---	EDGE OF PAVEMENT
Ⓜ	PROPOSED VALVE	→	PROPOSED DIRECTION OF FLOW
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Ⓜ	PROPOSED SIDEWALK RAMP	8"W	PROPOSED WATER LINE
10.00	EXISTING ELEVATION	---	PROPOSED WATER LATERAL W/ METER
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Ⓜ	PROPOSED STORM DRAIN INLET	---	FILING BOUNDARY
Ⓜ	PROPOSED STORM DRAIN MANHOLE	---	FO
		---	EXISTING FIBER
		---	OH
		---	EXISTING OVERHEAD POWER
		---	TEL
		---	EXISTING TELEPHONE LINE

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HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112		
DRAWN BY: RRR CHECKED BY: BPW DATE: SEPTEMBER 2018	TRAILS AT CROWFOOT FILING 14 CONSTRUCTION DRAWINGS SANITARY SEWER PLAN & PROFILE RED COSMOS PT	SCALE: AS SHOWN FILE NO: 8130283701
SHEET NUMBER: 5	PREPARED UNDER THE SUPERVISION OF 	Revisions: No. Date Init. Appr. Date

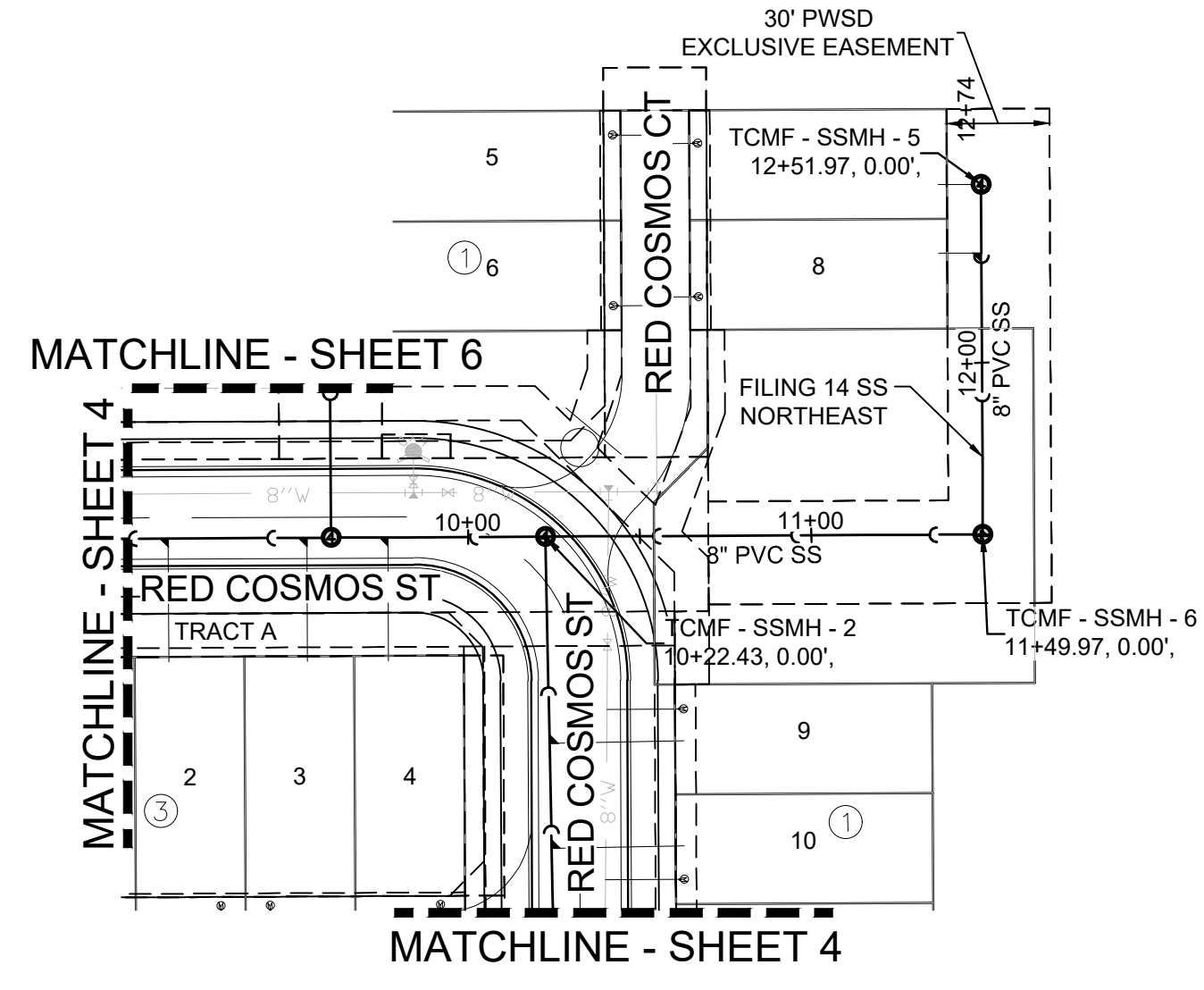
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BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

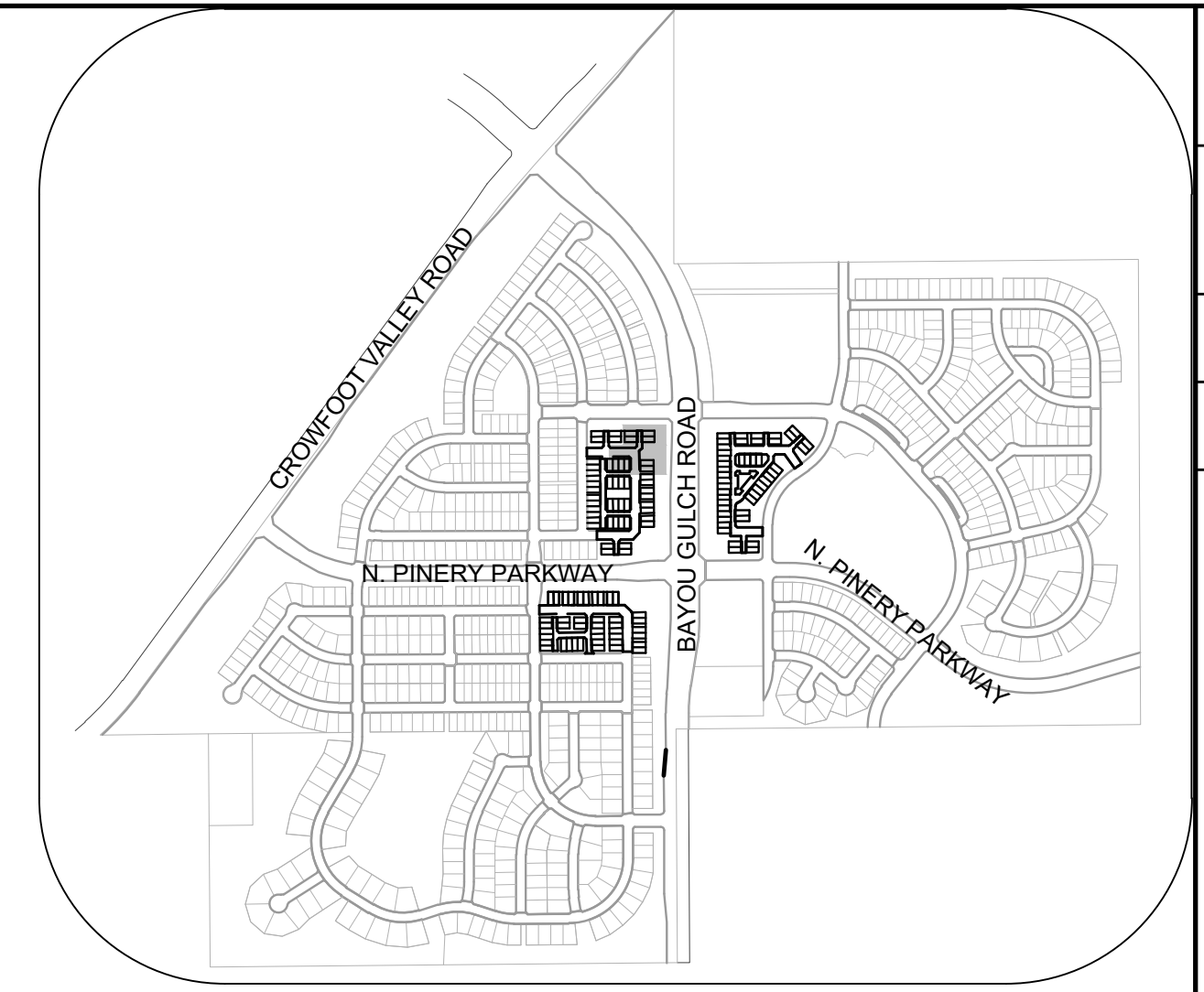
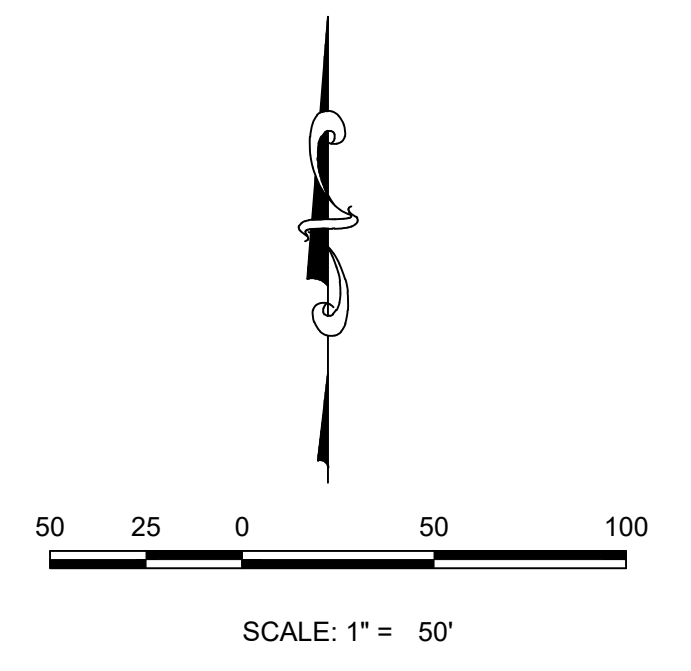
BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06"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

PREPARED UNDER THE SUPERVISION OF

 BRIAN P. WILSON
 COLORADO P.E. 0050067



PLAN: FILING 14 SS NORTHEAST STA: 9+00.00 TO 13+00.00
HORIZONTAL SCALE: 1" = 50'

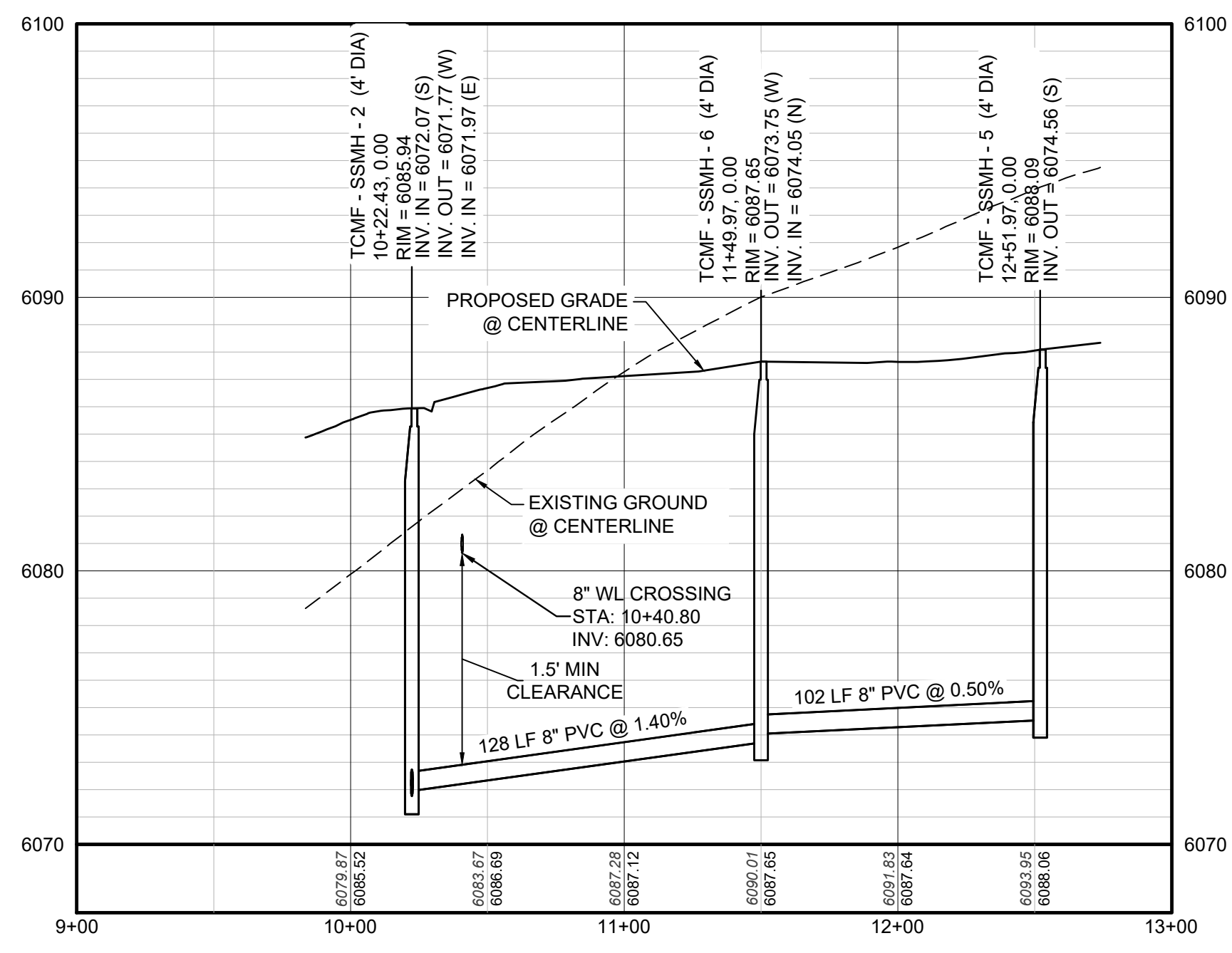


KEYMAP
N.T.S.

SANITARY SERVICE TABLE		
ILING, BLOCK, LOT	STREET	STATIONING
F14,B1,L7	FILING 14 SS NORTHEAST	12+51.97
F14,B1,L8	FILING 14 SS NORTHEAST	12+31.97

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: FILING 14 SS NORTHEAST STA: 9+00.00 TO 13+00.00
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
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FL	FLOW LINE	STA	STATION
GV	GATE VALVE	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

N:\PROJECTS\SS RANCH\ENGINEERING\SSHEET SETS\MULTIFAMILY\CD\14 PARKER WATER AND SANITATIONS\SANITARY SEWER SHEET 14 SS NORTHEAST DWG.BRANW.11/11/2020 9:08 AM

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BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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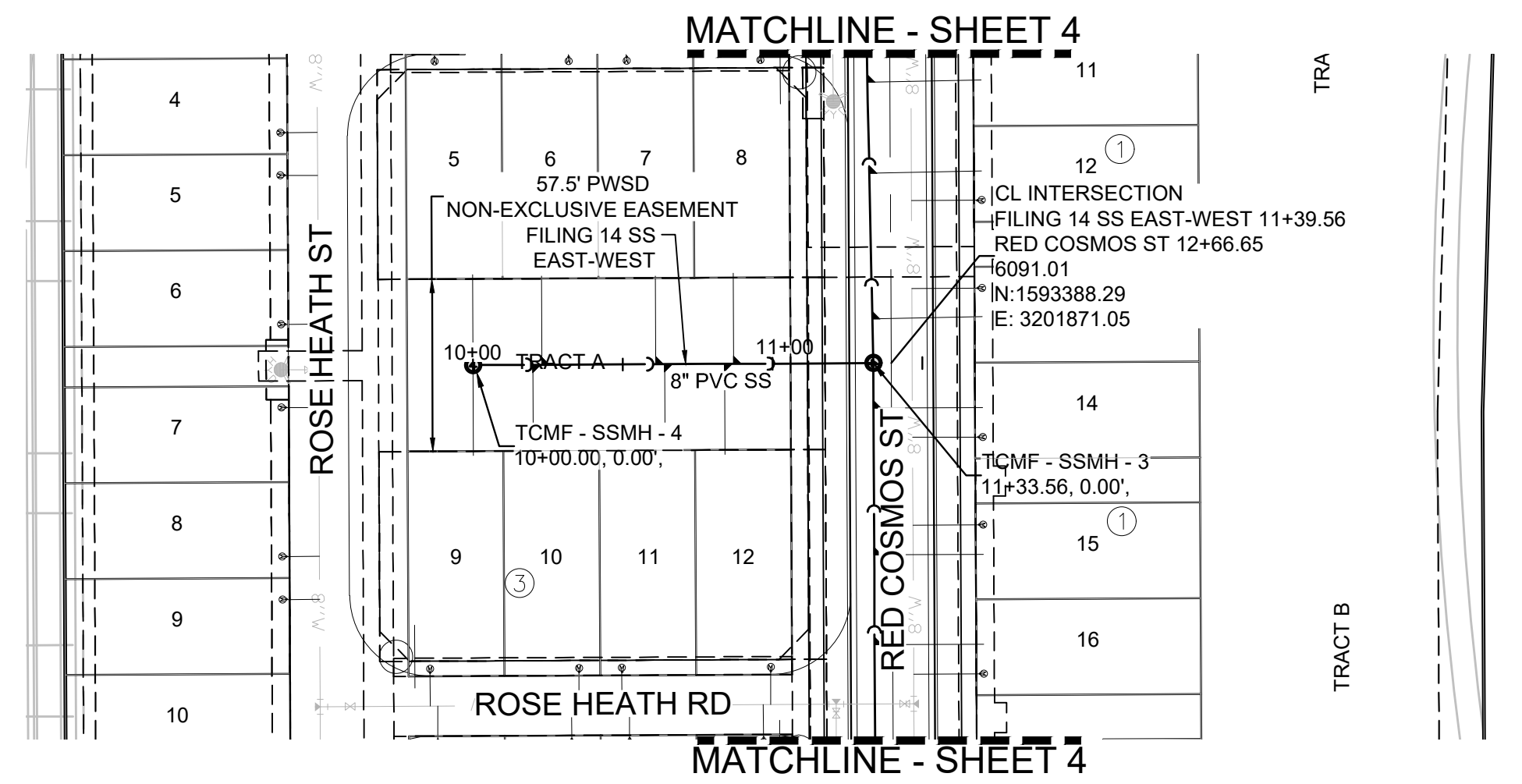
PREPARED UNDER THE SUPERVISION OF

BRIAN P. WILSON
COLORADO P.E. 0050067

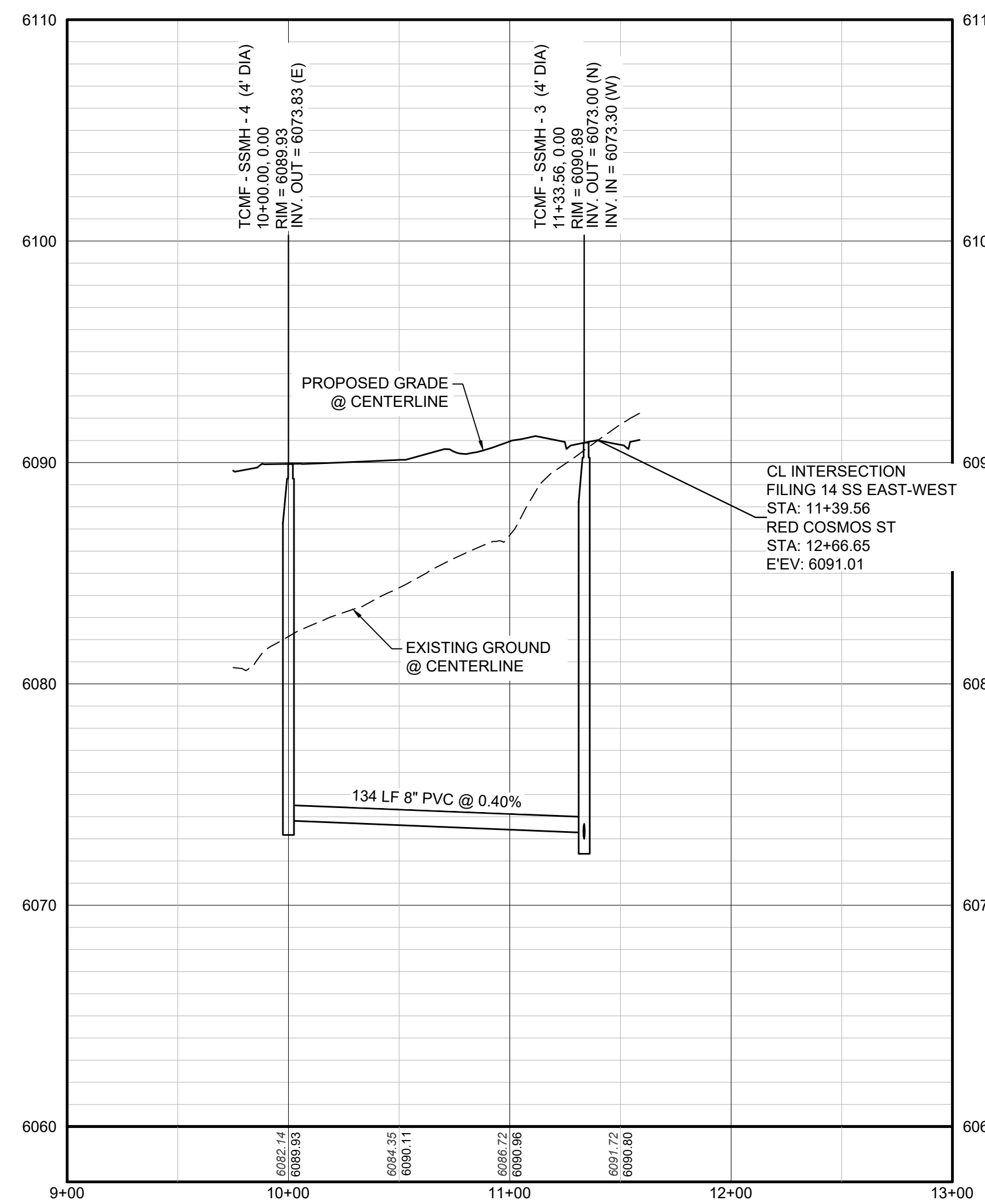
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	CHECKED BY: BPW		FILE NO: 8130283701
7	DATE: SEPTEMBER 2018		TRAILS AT CROWFOOT FILING 14 CONSTRUCTION DRAWINGS SANITARY SEWER PLAN & PROFILE FILING 14 SS NORTHEAST
	Revisions		HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112
No.	Date	Init.	Date
Appr.			
Date			

10333 E. Dry Creek Rd., Suite 240, Englewood, CO 80112
Tel: (720) 482-9528
Fax: (720) 482-9546

CVL CONSULTANTS

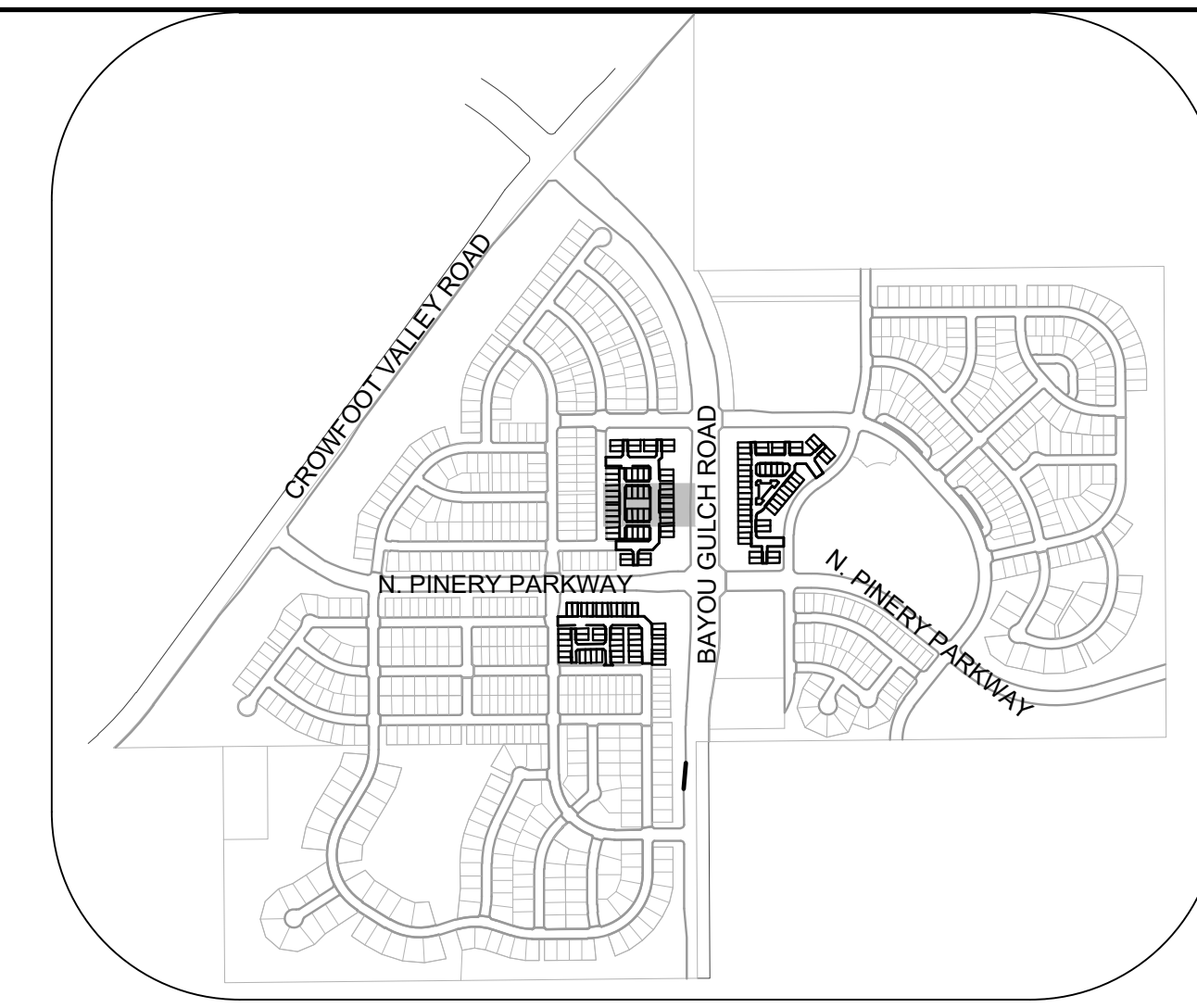
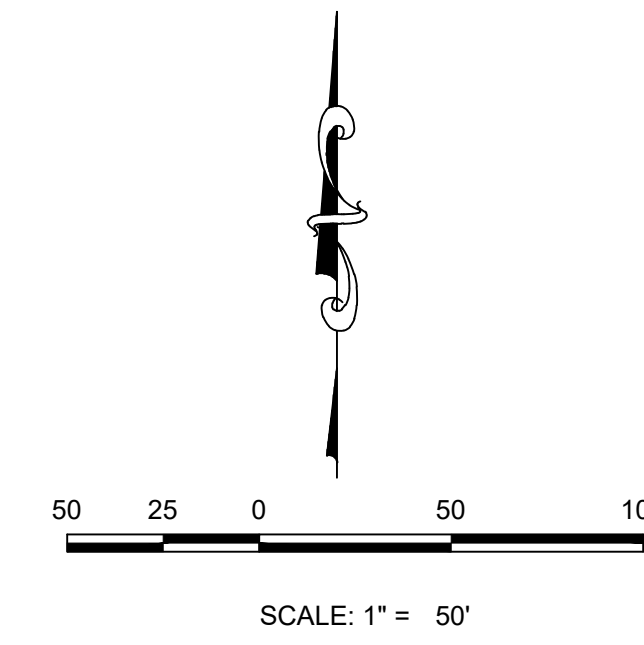


PLAN: FILING 14 SS EAST-WEST STA: 9+00.00 TO 13+00.00
HORIZONTAL SCALE: 1" = 50'



PROFILE: FILING 14 SS EAST-WEST STA: 9+00.00 TO 13+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

SANITARY SERVICE TABLE		
ILING, BLOCK, LOT	STREET	STATIONING
F14,B3,L5	FILING 14 SS EAST-WEST	10+00.00
F14,B3,L6	FILING 14 SS EAST-WEST	10+23.00
F14,B3,L7	FILING 14 SS EAST-WEST	10+61.00
F14,B3,L8	FILING 14 SS EAST-WEST	10+87.00
F14,B3,L9	FILING 14 SS EAST-WEST	10+00.00
F14,B3,L10	FILING 14 SS EAST-WEST	10+20.00
F14,B3,L11	FILING 14 SS EAST-WEST	10+64.00
F14,B3,L12	FILING 14 SS EAST-WEST	10+84.00



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 RAMP	---	PROPOSED WATER LATERAL W/ METER
10.00	EXISTING ELEVATION	---	SECTION LINE
10.00	PROPOSED DESIGN ELEVATION	---	FILING BOUNDARY
Ⓜ	PROPOSED STORM DRAIN INLET	---	FO
Ⓜ	PROPOSED STORM DRAIN MANHOLE	---	EXISTING FIBER OPTIC LINE
		---	OH
		---	EXISTING OVERHEAD POWER
		---	TEL
		---	EXISTING TELEPHONE LINE

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
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10333 E. Dry Creek Rd. Suite 240 Englewood, CO 80112 Tel: (720) 482-9528 Fax: (720) 482-9546	Revisions	Date	Appr.	Date
	No.			
HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112				
TRAILS AT CROWFOOT FILING 14 CONSTRUCTION DRAWINGS SANITARY SEWER PLAN & PROFILE FILING 14 SS EAST-WEST				
SCALE: AS SHOWN FILE NO: 8130283701				
DRAWN BY: RRR CHECKED BY: BPW DATE: SEPTEMBER 2018				
SHEET NUMBER: 8				

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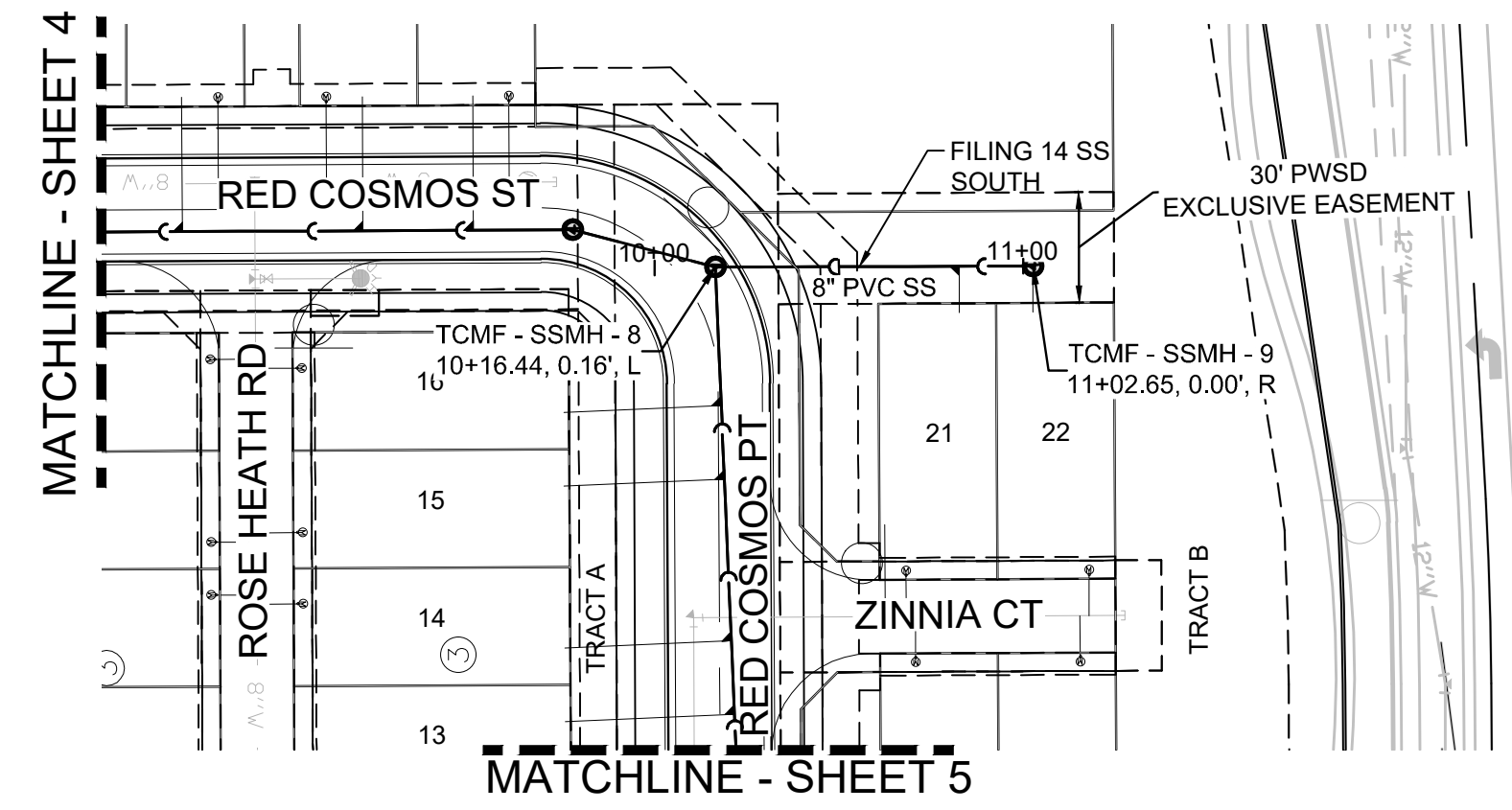
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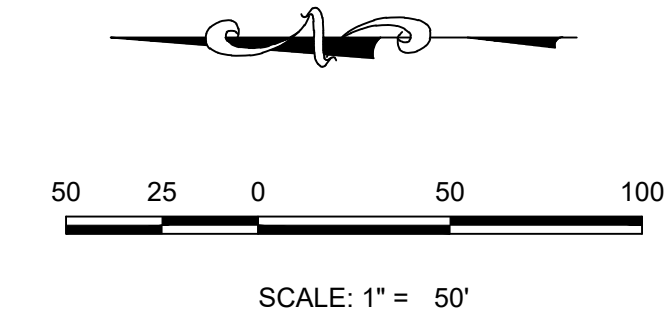
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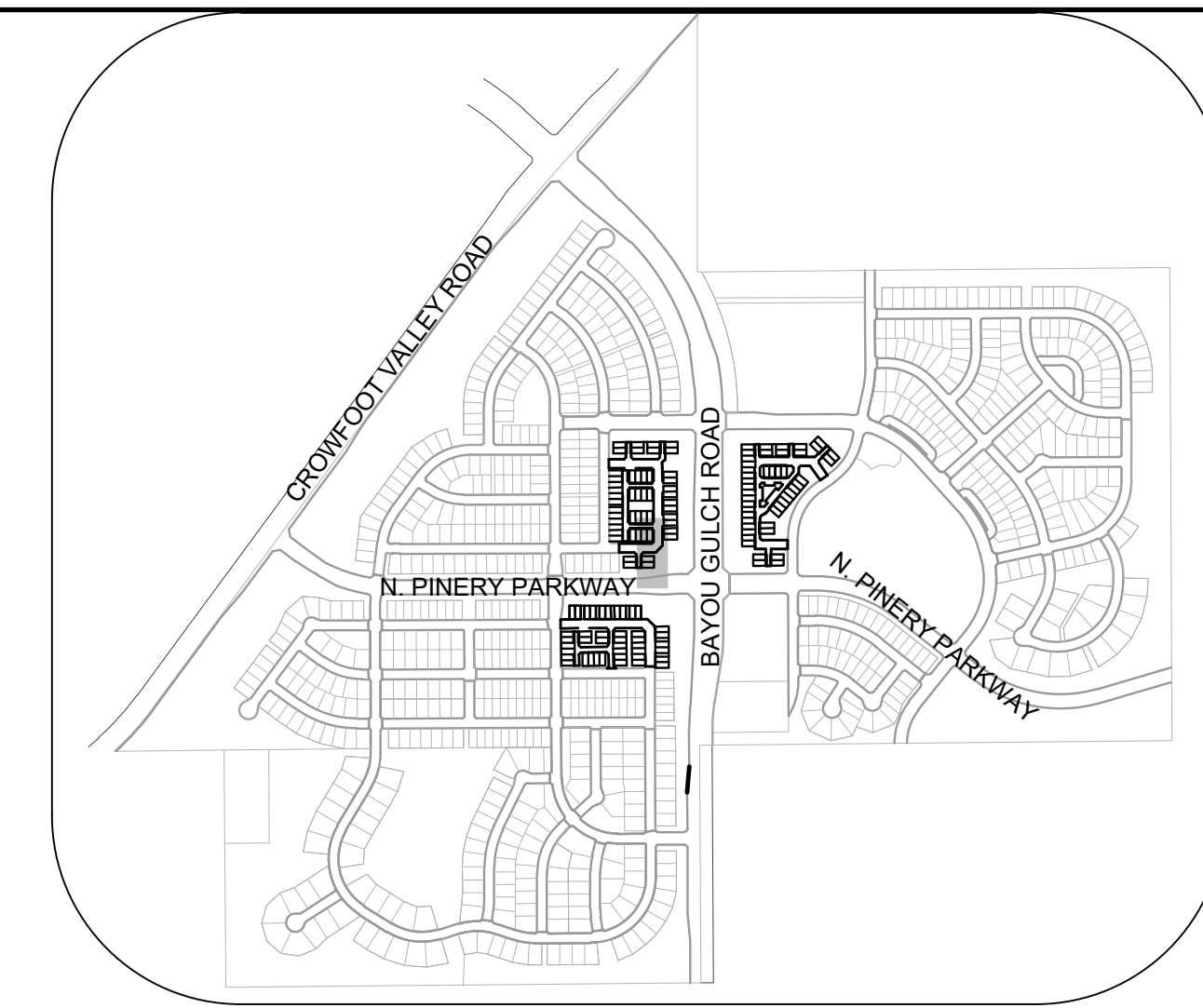
BRIAN P. WILSON
COLORADO P.E. 0050067



PLAN: FILING 14 SS SOUTH STA: 9+00.00 TO 12+00.00
HORIZONTAL SCALE: 1" = 50'



SANITARY SERVICE TABLE		
ILING, BLOCK, LOT	STREET	STATIONING
F14.B1.L21	FILING 14 SS SOUTH	10+82.67
F14.B1.L22	FILING 14 SS SOUTH	11+02.67



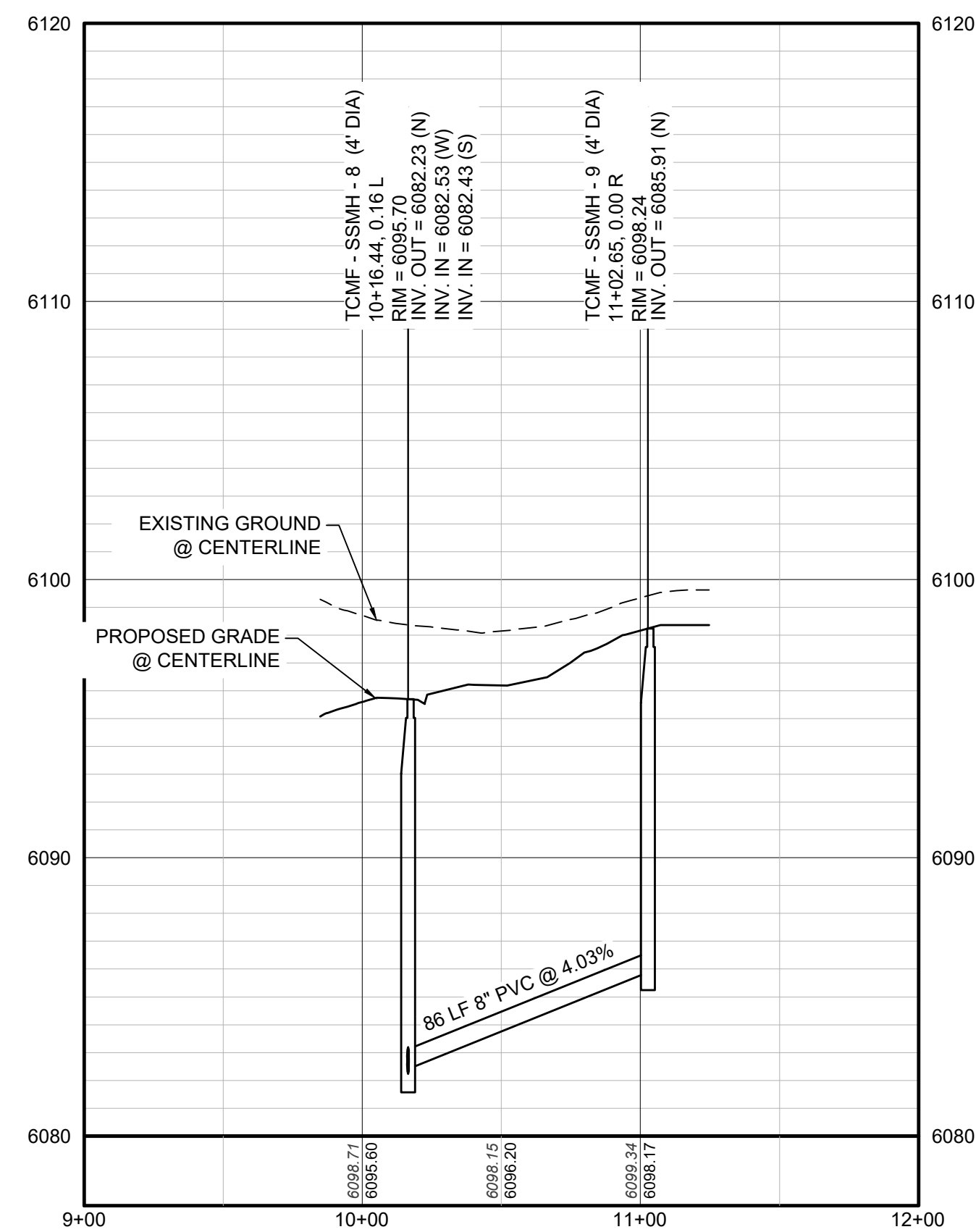
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PROFILE: FILING 14 SS SOUTH STA: 9+00.00 TO 12+00.00
HORIZONTAL: 1" = 50'
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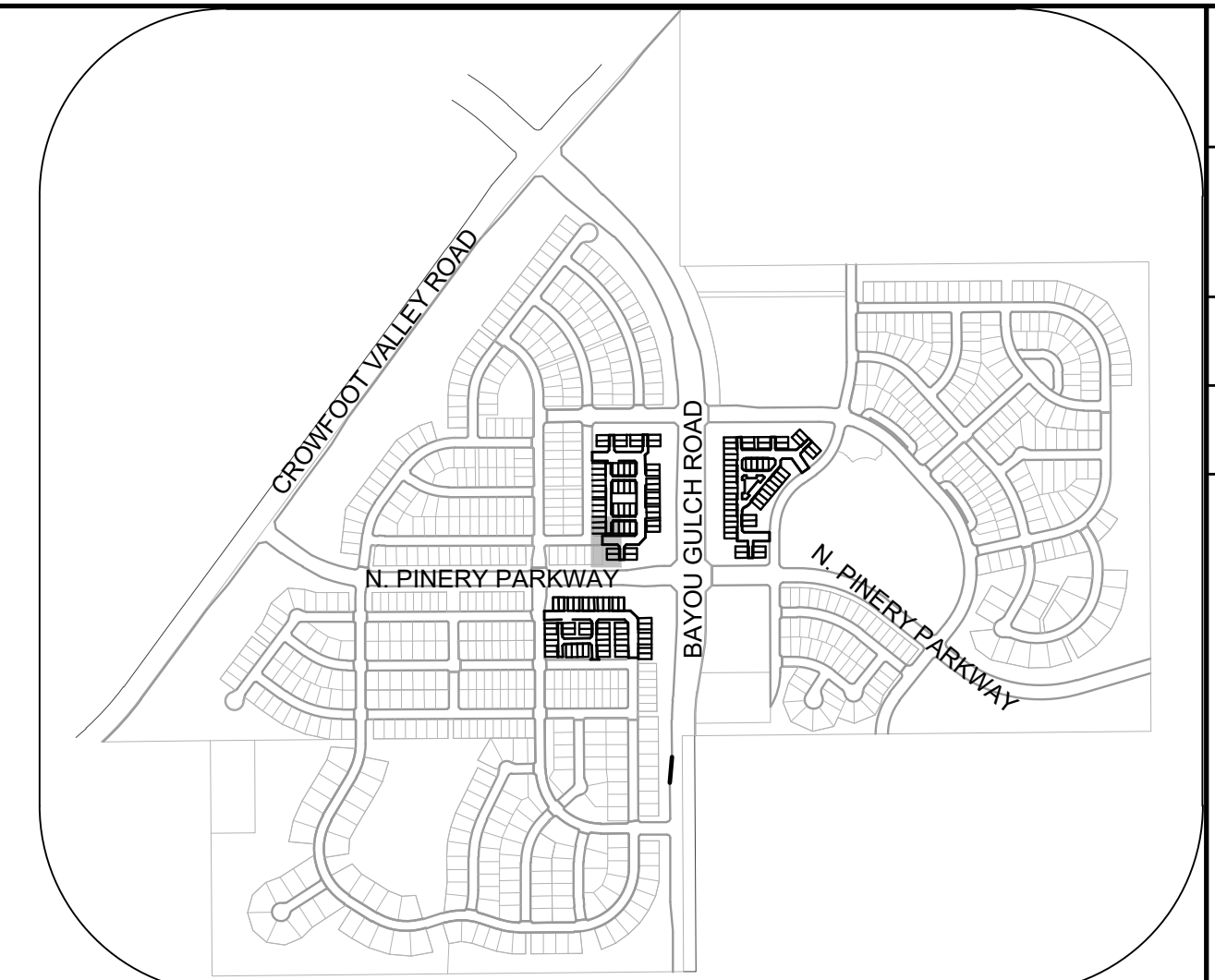
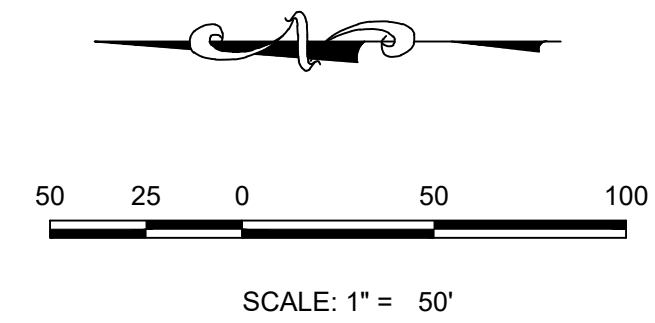
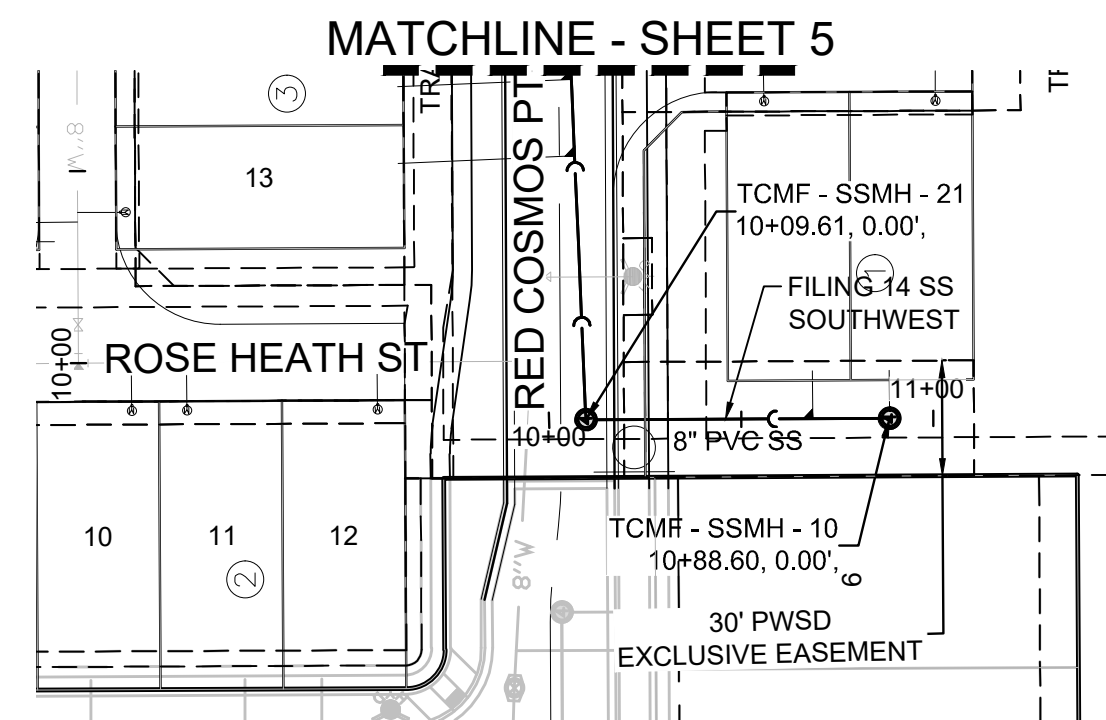
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			TRAILS AT CROWFOOT FILING 14 CONSTRUCTION DRAWINGS SANITARY SEWER PLAN & PROFILE FILING 14 SS SOUTH			
SHEET NUMBER 9			 10333 E. Dry Creek Rd. Suite 240 Englewood, CO 80112 Tel: (720) 482-9528 Fax: (720) 482-9546 HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112			
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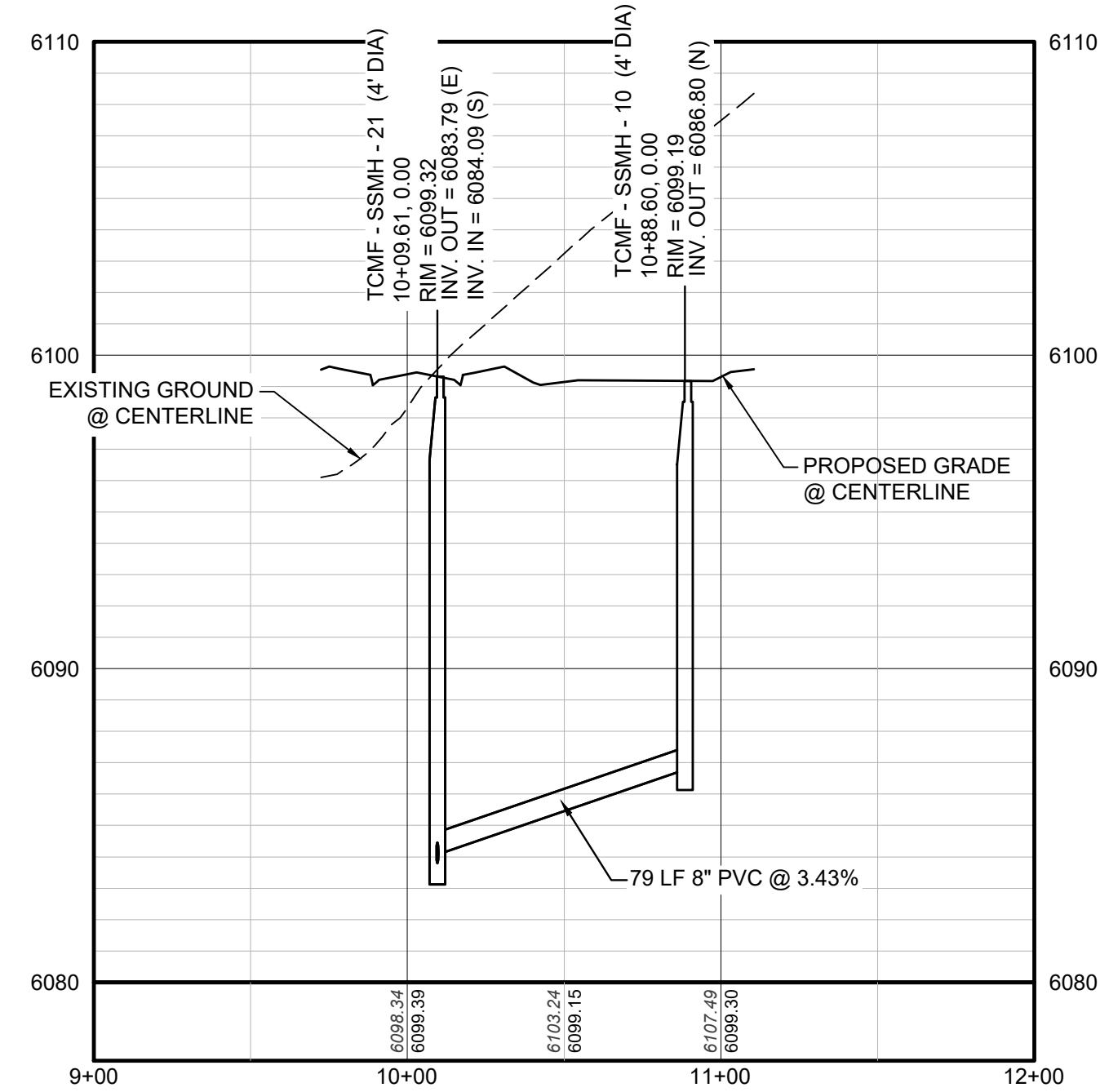
KEYMAP
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HORIZONTAL SCALE: 1" = 50'

SANITARY SERVICE TABLE		
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F14.B1.L19	FILING 14 SS SOUTHWEST	10+68.60
F14.B1.L20	FILING 14 SS SOUTHWEST	10+88.60

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CVL CONSULTANTS

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TRAILS AT CROWFOOT
FILING 14 CONSTRUCTION DRAWINGS
SANITARY SEWER PLAN & PROFILE
FILING 14 SS SOUTHWEST

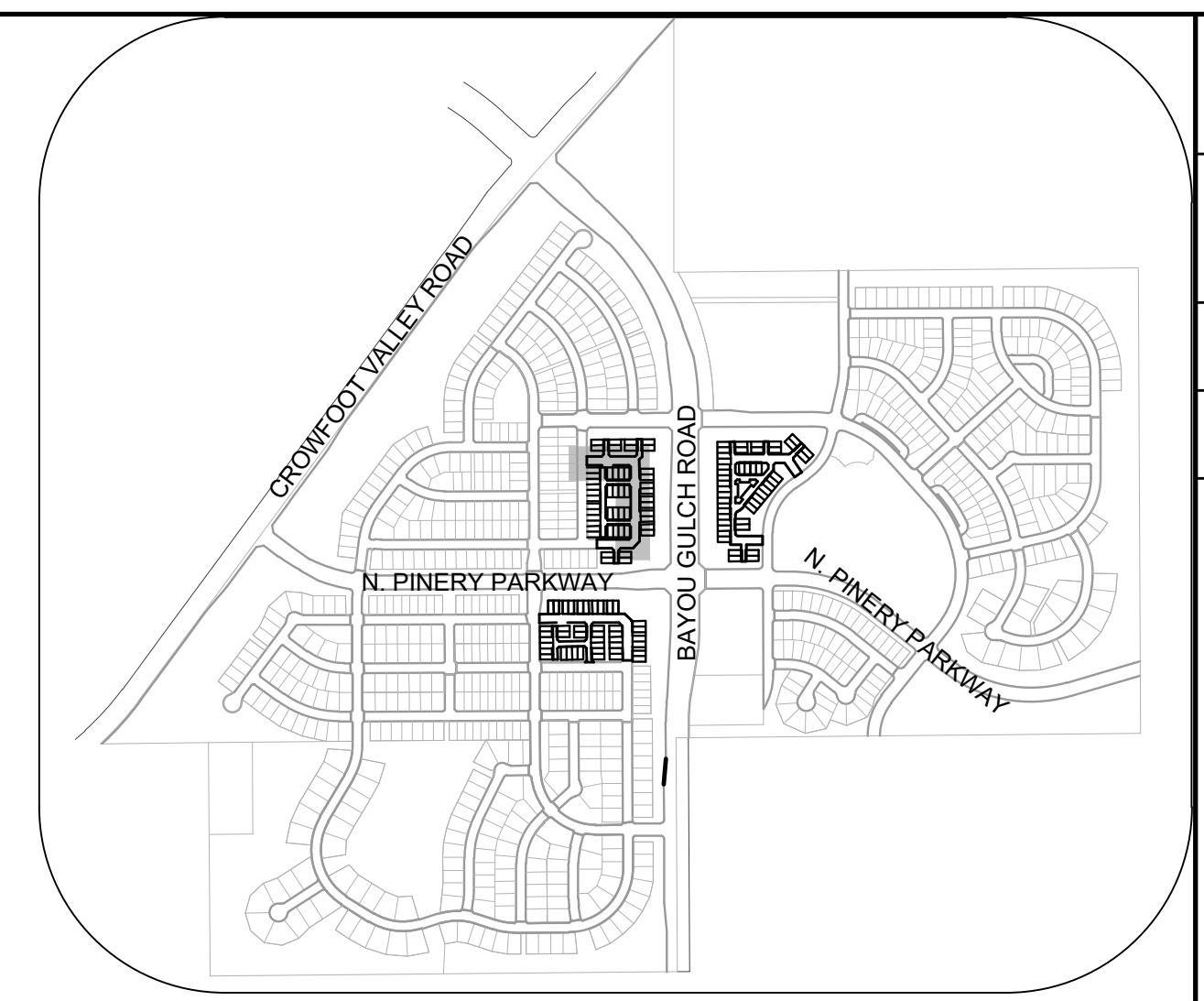
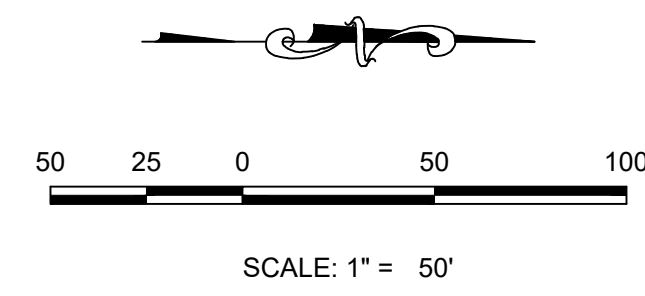
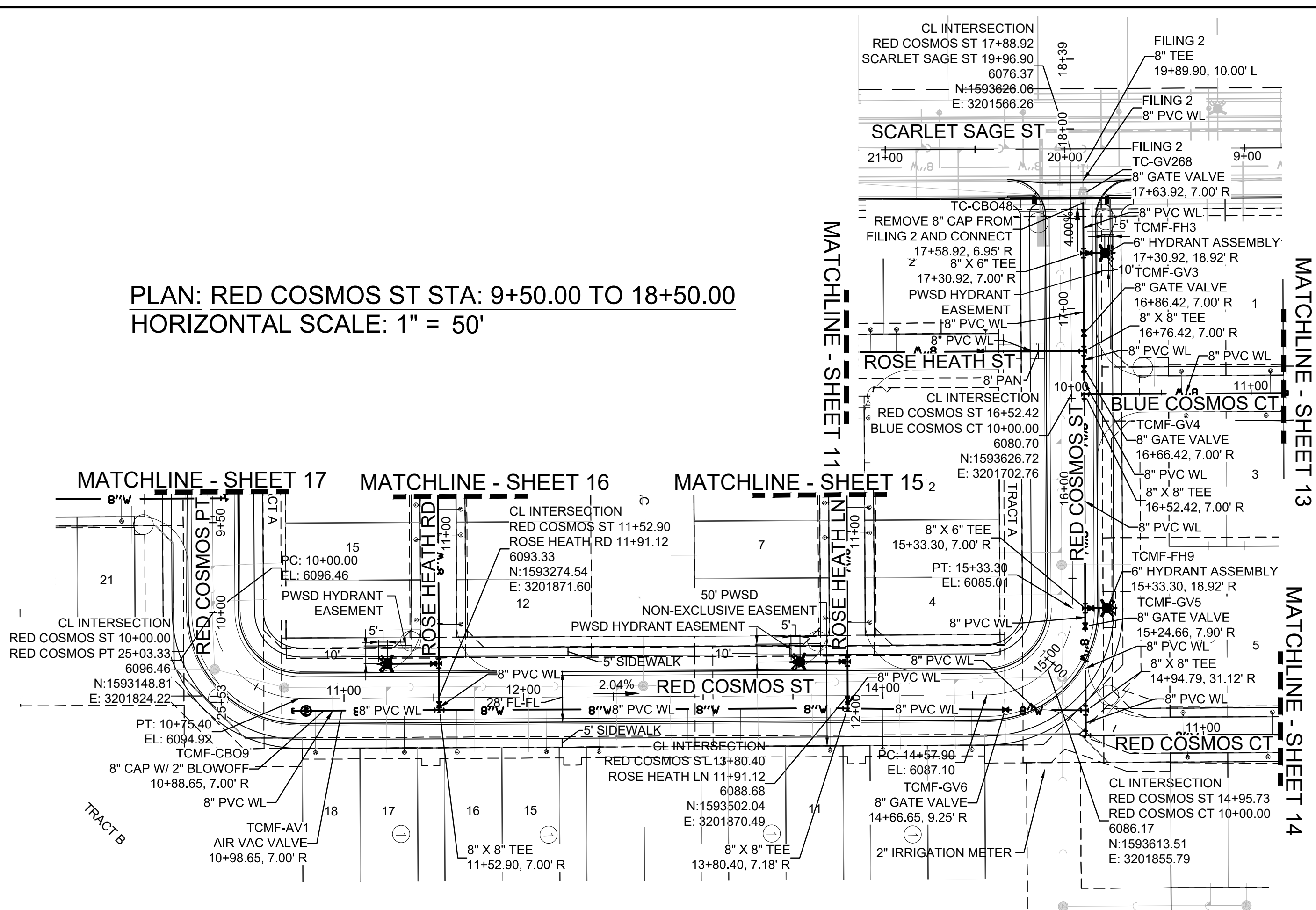
SCALE: AS SHOWN
FILE NO: 8130283701

DRAWN BY: RRR
CHECKED BY: BPW
DATE: SEPTEMBER 2018

SHEET NUMBER **10**

No.	Revisions	Date	Init.	Appr.	Date

PLAN: RED COSMOS ST STA: 9+50.00 TO 18+50.00
HORIZONTAL SCALE: 1" = 50'



FILING, BLOCK, LOT	STREET	STATIONING
F14,B1,L9	RED COSMOS ST	14+49.48
F14,B1,L10	RED COSMOS ST	13+99.82
F14,B1,L11	RED COSMOS ST	13+70.48
F14,B1,L12	RED COSMOS ST	13+20.82
F14,B1,L13	RED COSMOS ST	12+91.48
F14,B1,L14	RED COSMOS ST	12+41.82
F14,B1,L15	RED COSMOS ST	12+12.48
F14,B1,L16	RED COSMOS ST	11+62.82
F14,B1,L17	RED COSMOS ST	11+33.48
F14,B1,L18	RED COSMOS ST	10+83.82

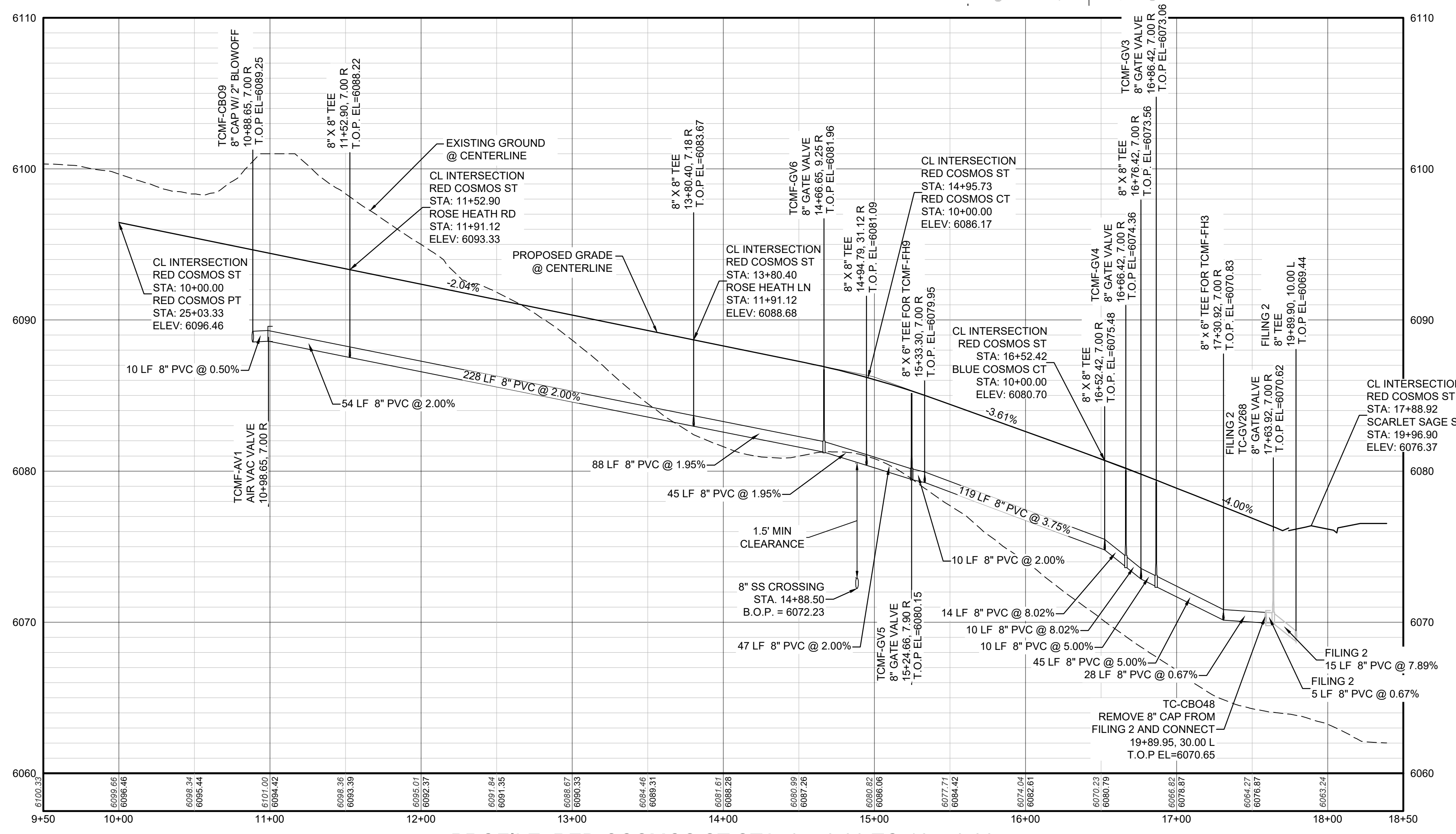
KEYMAP
N.T.S.

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
10.00	EXISTING ELEVATION	---	SECTION LINE
10.00	PROPOSED DESIGN ELEVATION	---	FILING BOUNDARY
⊕	PROPOSED STORM DRAIN INLET	---	FO
⊕	PROPOSED STORM DRAIN MANHOLE	---	OH
		---	TEL

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	RCBC	REINFORCED CONCRETE BOX CULVERT
EL	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
FH	FIRE HYDRANT	SS	SANITARY SEWER
FL	FLOW LINE	STA	STATION
GV	GATE VALVE	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



PROFILE: RED COSMOS ST STA: 9+50.00 TO 18+50.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 68 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

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CVL CONSULTANTS

HR 935 LLC
7353 South Alton Way, CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 14 CONSTRUCTION DRAWINGS
WATER PLAN & PROFILE
RED COSMOS STREET

SCALE: AS SHOWN
FILE NO: 8130283701

DRAWN BY: KID
CHECKED BY: BPW
DATE: SEPTEMBER 2018

SHEET NUMBER
12

Revisions
No. Date Init. Appr. Date

ALUMINUM STEP

NOTES:

- ALUMINUM ALLOY SPECIFICATIONS
 - F35C-90-A-200/9 (ALUMINUM-MAGNESIUM-SILICATE ALLOY)
 - MINIMUM TENSILE STRENGTH= 35,000 P.S.I.
 - MINIMUM YIELD STRENGTH= 35,000 P.S.I.
 - MINIMUM ELONGATION=10% IN 2 INCHES
- MINIMUM LOAD CAPACITY (APPLIED AT CENTER OF STEP)
 - 1000 LB. WITH 6" PROJECTION FROM WALL.
 - 1500 LB. WITH 4" PROJECTION FROM WALL.
- WEIGHT PER STEP=2.23 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.

TYPICAL INSTALLATION

TOE POCKET DETAILS

STANDARD EXTRUDED ALUMINUM MANHOLE STEP

PARKER WATER & SANITATION DISTRICT
STANDARD EXTRUDED ALUMINUM MANHOLE STEP

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

SHEET 53.10

PIN FOR PRESS STEP

NOTES:

- ASTM SPECIFICATIONS:
 - ASTM C-419
 - ASTM A-815 GRADE 60 (STEEL ROD)
 - ASTM 2146-99, TYPE II, GRADE 100 (POLYPROPYLENE)
- STEPS INSTALLED IN MANHOLE BARREL SECTIONS OR VERTICAL WALLS OF STRUCTURE SHALL HAVE A 3/4" RICH LEG AND SHALL PROJECT FROM THE WALL 8-5/8" INCHES.
- STEPS INSTALLED IN MANHOLE CONE SECTIONS SHALL HAVE AN 8-1/4" RICH LEG AND SHALL PROJECT FROM THE WALL 4-7/8" INCHES.
- ALL STEPS SHALL HAVE A PENETRATION DEPTH INTO THE WALL OF 3-3/8" INCHES.
- STEPS SHALL BE INSTALLED BY THE "PRESS-FIT" METHOD UTILIZING A SPECIALLY FABRICATED PIN TO FORM THE INSERT HOLE AS SHOWN.
- INSTALLED STEPS SHALL BE CAPABLE OF WITHSTANDING A PULL OUT FORCE OF 2500 P.S.I. PER LEG FOR A MINIMUM PERIOD OF TWO MINUTES.
- STEPS SHALL BE INSTALLED BY THE "PRESS-FIT" METHOD EXCLUSIVELY FOLLOWING MANUFACTURER'S RECOMMENDED PROCEDURE AND SHALL NOT BE GROUTED IN PLACE.

POLYPROPYLENE REINFORCED PLASTIC STEP

PARKER WATER & SANITATION DISTRICT
POLYPROPYLENE REINFORCED PLASTIC MANHOLE STEP

SCALE: NONE DATE: 2/05
APPROVED: PVR 01/16 10/16
DIRECTOR OF ENGINEERING

SHEET 53.11

CAST ALUMINUM MANHOLE STEP

NOTES:

- THE CAST ALUMINUM MANHOLE STEP SHALL ONLY BE USED WHEN SPECIFIED ON THE DRAWINGS.
- ALUMINUM ALLOY SPECIFICATIONS:
 - F35C-90-A-200/9 (ALUMINUM-MAGNESIUM-SILICATE ALLOY)
 - 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 INCHES
 - BRIEFLY 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.

MARKER POST DETAIL

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
CAST ALUMINUM MANHOLE STEP

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

SHEET 53.12

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

MARKER POST DETAIL

NOTES:

- Slipping or bending of trench side walls, where permitted, shall be in accordance with applicable Federal, State and Local safety regulations.
- Trench shall be broomed and shored as necessary to allow safe working conditions or to protect adjacent utilities, structures, etc. (Unless otherwise specified on the plans, no pavement will be made for removal, replacement or relocation of existing gutters, utilities, sidewalks, structures, etc. outside the maximum limits of excavation as shown and the contractor shall be responsible for protection of same.)
- If excavation "B₁" is < 5', then existing asphalt pavement shall be removed and replaced up to the gutter. Maximum asphalt pty width, B₁ & B₂ shall then be based upon the actual width.

PARKER WATER & SANITATION DISTRICT
MARKER POST DETAIL

SCALE: NONE DATE: 2/00 10/16
APPROVED: PVR 4/01 1/06 1/16
DIRECTOR OF ENGINEERING

SHEET 53.13

TYPICAL TRENCH DETAIL

NOTES:

- Slipping or bending of trench side walls, where permitted, shall be in accordance with applicable Federal, State and Local safety regulations.
- Trench shall be broomed and shored as necessary to allow safe working conditions or to protect adjacent utilities, structures, etc. (Unless otherwise specified on the plans, no pavement will be made for removal, replacement or relocation of existing gutters, utilities, sidewalks, structures, etc. outside the maximum limits of excavation as shown and the contractor shall be responsible for protection of same.)
- If excavation "B₁" is < 5', then existing asphalt pavement shall be removed and replaced up to the gutter. Maximum asphalt pty width, B₁ & B₂ shall then be based upon the actual width.

PARKER WATER & SANITATION DISTRICT
SEWER TRENCHING AND BEDDING DETAIL

SCALE: NONE DATE: 2/98
APPROVED: PVR 5/98 1/16 12/96
DIRECTOR OF ENGINEERING

SHEET 54.1

2015 REVISION

2016 REVISION

2016 REVISION

2016 REVISION

2016 REVISION

CONCRETE ARCH

NOTES:

- 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

NOTE:
The Design Engineer shall be responsible for structural design of the concrete cradle and/or concrete arch.

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

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

SHEET 54.2

CLASS "B" BEDDING

NOTES:

- THESE DETAILS ARE TYPICAL FOR NORMAL TRENCH CONDITIONS. FOR INSTALLATIONS OTHER THAN THESE (SUCH AS EMBANKMENT 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.
- BELL HOLES SHALL BE EXCAVATED AT ALL BELL AND SPIGOT JOINTS.
- BEDDING TRENCH BACKFILL TO BE COMPACTED TO 90% DENSITY, AASHTO T-180 IN OPEN AREAS AND 95% DENSITY AASHTO T-99 IN ALL PUBLIC R.O.W.

ROCK EXCAVATION

GENERAL NOTES:

- THESE DETAILS ARE TYPICAL FOR NORMAL TRENCH CONDITIONS. FOR INSTALLATIONS OTHER THAN THESE (SUCH AS EMBANKMENT 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.
- BELL HOLES SHALL BE EXCAVATED AT ALL BELL AND SPIGOT JOINTS.
- BEDDING TRENCH BACKFILL TO BE COMPACTED TO 90% DENSITY, AASHTO T-180 IN OPEN AREAS AND 95% DENSITY AASHTO T-99 IN ALL PUBLIC R.O.W.

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

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

SHEET 54.3

CLASS "B" BEDDING

GENERAL NOTES:

- THESE DETAILS ARE TYPICAL FOR NORMAL TRENCH CONDITIONS. FOR INSTALLATIONS OTHER THAN THESE (SUCH AS EMBANKMENT 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.
- BELL HOLES SHALL BE EXCAVATED AT ALL BELL AND SPIGOT JOINTS.
- BEDDING TRENCH BACKFILL TO BE COMPACTED TO 90% DENSITY, AASHTO T-180 IN OPEN AREAS AND 95% DENSITY AASHTO T-99 IN ALL PUBLIC R.O.W.

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

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

SHEET 54.4

CLASS "B" BEDDING

GENERAL NOTES:

- THESE DETAILS ARE TYPICAL FOR NORMAL TRENCH CONDITIONS. FOR INSTALLATIONS OTHER THAN THESE (SUCH AS EMBANKMENT 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.
- BELL HOLES SHALL BE EXCAVATED AT ALL BELL AND SPIGOT JOINTS.
- BEDDING TRENCH BACKFILL TO BE COMPACTED TO 90% DENSITY, AASHTO T-180 IN OPEN AREAS AND 95% DENSITY AASHTO T-99 IN ALL PUBLIC R.O.W.

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

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

SHEET 54.5

TYPE I CONCRETE ENCASEMENT FOR SANITARY SEWERS

GENERAL NOTES FOR TYPE I ENCASEMENT:

- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING IF OPTIONAL CONSTRUCTION JOINT IS USED AND BOTTOM HALF OF ENCASEMENT IS FOUNDED 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 ENCASEMENT SHALL EXTEND AT LEAST TO FREE EACH SIDE OF WATER MAIN.
 - IF TYPE I ENCASEMENTS ARE NOT REINFORCED, REINFORCEMENT, IF REQUIRED, SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN AND PROFILE DRAWINGS.
 - TYPE I & II ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
 - TYPE I OR II IF $d \leq 48"$ (SEE NOTE 1)
 - TYPE I OR II IF $d > 48"$ (SEE NOTE 1)
- WATER MAINS AND $d \leq 24"$ ($d \leq 18"$)
- TYPE II IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS, REGARDLESS OF DIMENSION d .
- EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSINGS OR UNDER PASSABLE SOIL CONDITIONS ARE ENCOURAGED. 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 COMPRESSED MATERIAL SUCH AS STYROFOAM, ETC. $2" \times 2" \times 2"$.
 - IF $d \leq 48"$ FOR TYPE II ENCASEMENT FOUR CONCRETE ON UNDISTURBED SOIL.
 - IF $d > 48"$ FOR TYPE II ENCASEMENT FOUR CONCRETE ON UNDISTURBED SOIL.
- SHORING OR SHEETING, 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 IS EXTREMELY LARGE PER SUPPORTS ON EACH SIDE OF SANITARY SEWER SHALL BE 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 5/98 2/00 1/16 10/16
DISTRICT ENGINEER

SHEET 6

2016 REVISION

2016 REVISION

2016 REVISION

2016 REVISION

2008 REVISION

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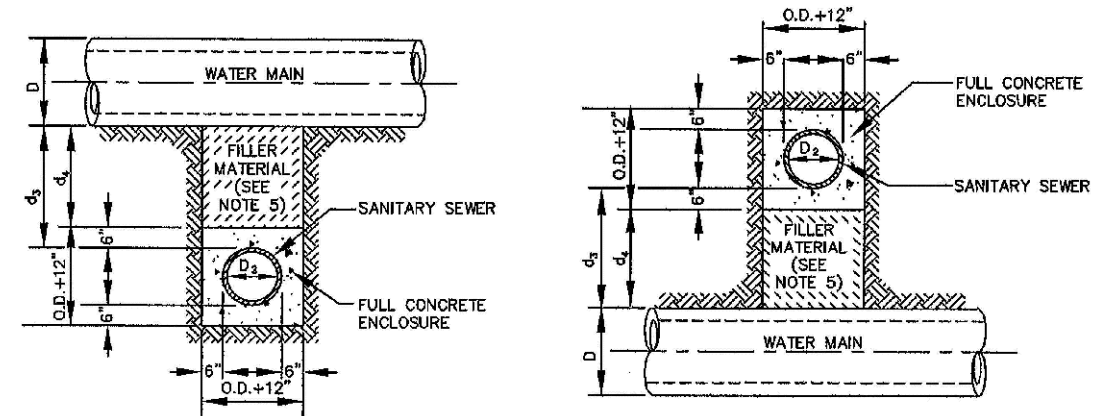
TRAILS AT CROWFOOT
FILING 14 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAILS

SCALE: AS SHOWN
FILE NO: 8130283701

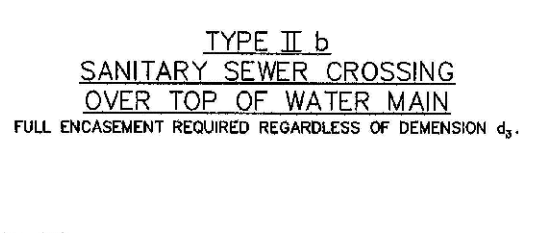
DRAWN BY: RRR
CHECKED BY: BPW
DATE: SEPTEMBER 2018

SHEET NUMBER: 20

Revisions: No. Date Init. Appr. Date



TYPE IIa
SANITARY SEWER CROSSING UNDER WATER MAIN
If $d_s > 2$ ft., ENCASMENT NOT REQUIRED



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

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

- GENERAL NOTES FOR TYPE I, II & III ENCASMENT**
- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING. IF OPTIONAL CONSTRUCTION JOINT IS USED, BOTTOM HALF OF ENCASMENT 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 ENCASMENT FOR:
 - TYPE I & TYPE II ENCASMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
 - TYPE III ENCASMENT SHALL EXTEND AT LEAST TO FEET EACH SIDE OF WATER MAIN.
 - UNLESS OTHERWISE NOTED ON PLAN/PROFILE DRAWINGS, TYPE I, II & III ENCASMENTS NEED NOT BE REINFORCED. REINFORCEMENT, IF REQUIRED, SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN & PROFILE DRAWINGS.
 - TYPE I, II OR III ENCASMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
 - TYPE I OR TYPE II IF $d_s \leq 18"$ (IF $d_s \leq 12"$) EXCEPT FOR SANITARY SEWER CROSSING OVER OR UNDER WATER MAINS.
 - 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 WHERE UNUSUAL SOIL CONDITIONS ARE ENCOUNTERED, TYPE I ENCASMENT WILL NORMALLY BE SATISFACTORY.
 - IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF DUCTILE IRON PIPE (AWWA C-152 OR C-151), CONCRETE ENCASMENT MAY NOT BE REQUIRED.
 - FILLER MATERIAL BETWEEN CONDUITS TO BE:
 - APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC. IF $d_s \leq 4"$ OR $d_s \leq 6"$.
 - COMPACTED CLASS 75 BENDING IF $d_s \leq 4"$ OR $d_s > 6"$ (IF $d_s > 6"$ FOR TYPE III ENCASMENT POUR CONCRETE ON UNDISTURBED SOIL).
 - SHORING OR SHEETING, IF USED, TO BE CUT OFF AT TOP OF ENCASMENT.
 - THESE ENCASMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS. IN CERTAIN SITUATIONS WHERE CONDUIT DIAMETER "D" IS EXTREMELY LARGE, PIPE 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.

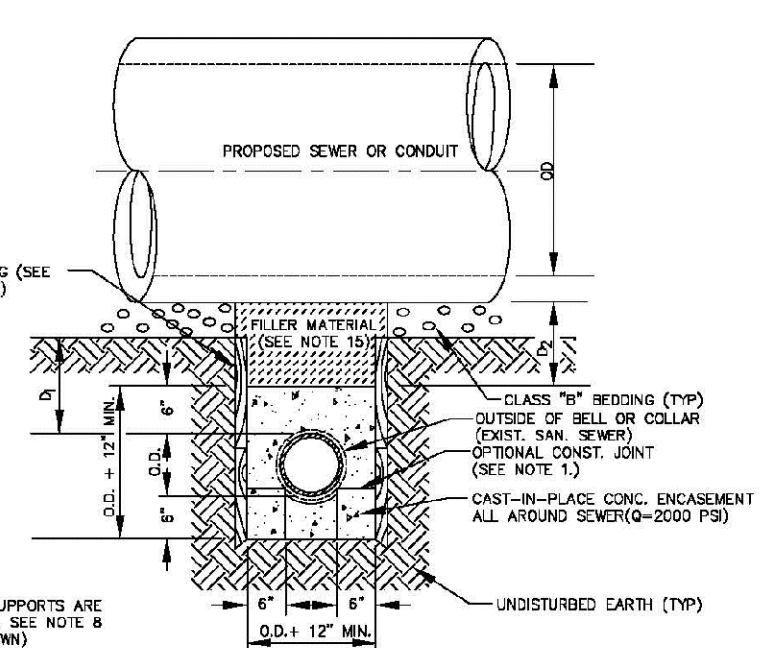
PARKER WATER & SANITATION DISTRICT
CONCRETE ENCASMENT TYPE II

SCALE: NONE DATE: 2/98

APPROVED: JFN 5/98
4/01

DISTRICT ENGINEER 1/08

SHEET 7



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

- GENERAL NOTES FOR TYPE I, II & III ENCASMENT**
- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING. IF OPTIONAL CONSTRUCTION JOINT IS USED, BOTTOM HALF OF ENCASMENT 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 ENCASMENT FOR:
 - TYPE I & TYPE II ENCASMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
 - TYPE III ENCASMENT SHALL EXTEND AT LEAST TO FEET EACH SIDE OF WATER MAIN.
 - UNLESS OTHERWISE NOTED ON PLAN/PROFILE DRAWINGS, TYPE I & II ENCASMENTS NEED NOT BE REINFORCED. REINFORCEMENT, IF REQUIRED, TO BE SPECIFIED AND DETAILED SEPARATELY ON PLAN & PROFILE DRAWINGS.
 - TYPE I, II OR III ENCASMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
 - TYPE I OR TYPE II IF $d_s \leq 18"$ (IF $d_s \leq 12"$) EXCEPT FOR SANITARY SEWER CROSSING OVER OR UNDER WATER MAINS.
 - 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 WHERE UNUSUAL SOIL CONDITIONS ARE ENCOUNTERED, TYPE I ENCASMENT WILL NORMALLY BE SATISFACTORY.
 - IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF DUCTILE IRON PIPE (AWWA C-152 OR C-151), CONCRETE ENCASMENT MAY NOT BE REQUIRED.
 - FILLER MATERIAL BETWEEN CONDUITS TO BE:
 - APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC. IF $d_s \leq 4"$ OR $d_s \leq 6"$.
 - COMPACTED CLASS 75 BENDING IF $d_s \leq 4"$ OR $d_s > 6"$ (IF $d_s > 6"$ FOR TYPE III ENCASMENT POUR CONCRETE ON UNDISTURBED SOIL).
 - SHORING OR SHEETING, IF USED, TO BE CUT OFF AT TOP OF ENCASMENT.
 - THESE ENCASMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS. IN CERTAIN SITUATIONS WHERE CONDUIT DIAMETER "D" IS EXTREMELY LARGE, PIPE 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.

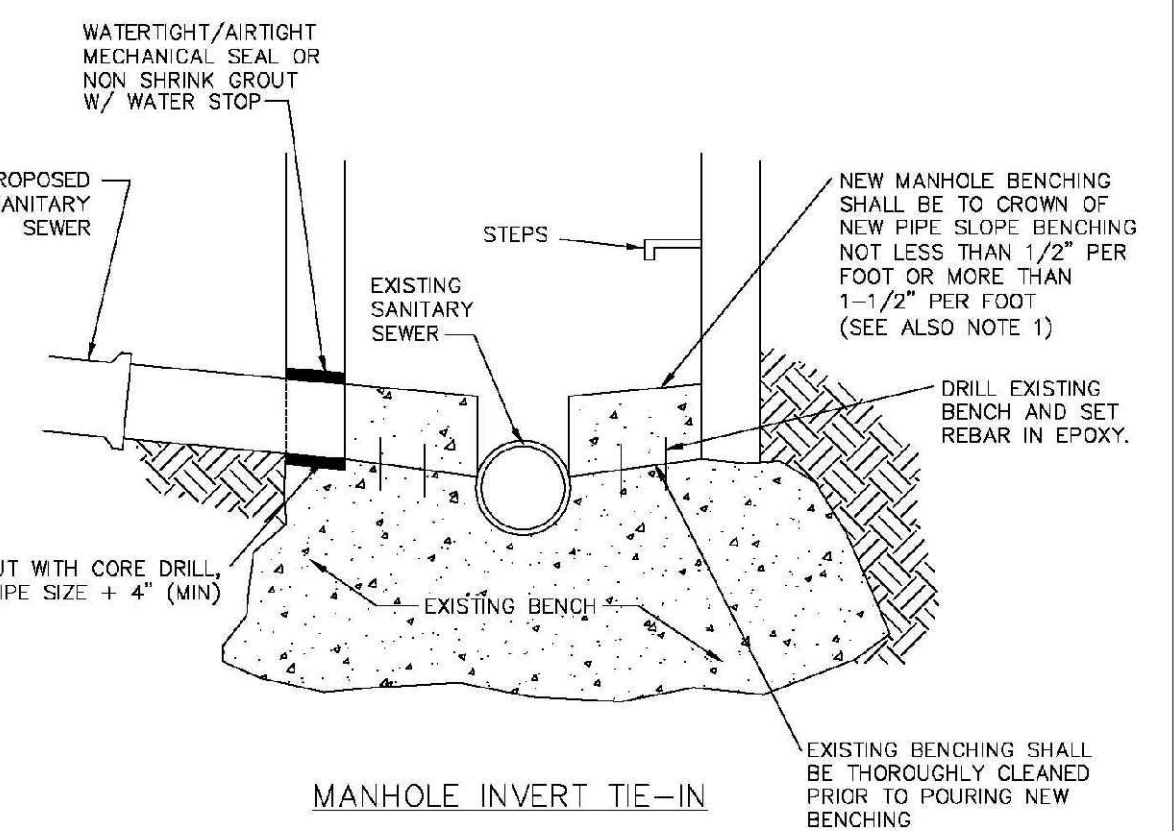
PARKER WATER & SANITATION DISTRICT
CONCRETE ENCASMENT TYPE III

SCALE: NONE DATE: 2/98

APPROVED: PVR 5/98
1/18

DIRECTOR OF ENGINEERING 10/16

SHEET 8A.8



MANHOLE INVERT TIE-IN

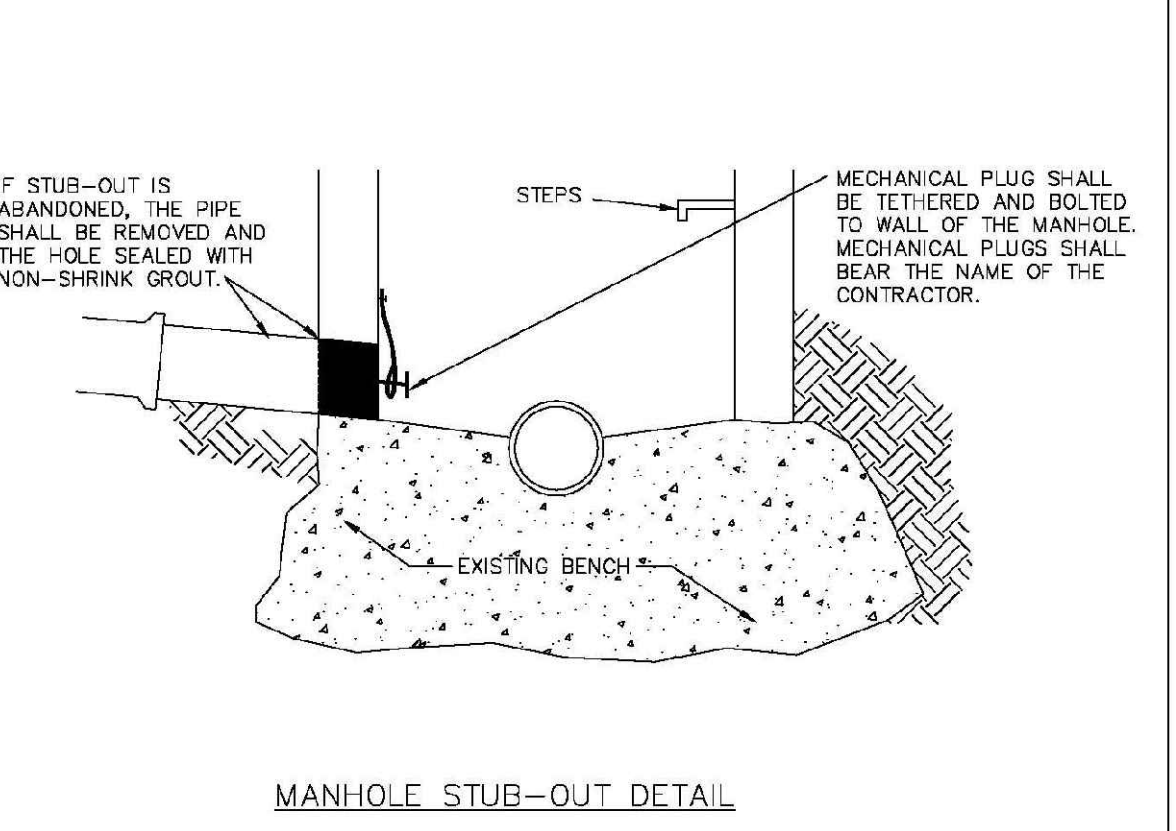
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MANHOLE INVERT TIE-IN DETAIL

SCALE: NONE DATE: 2/98

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SHEET 8A.9



MANHOLE STUB-OUT DETAIL

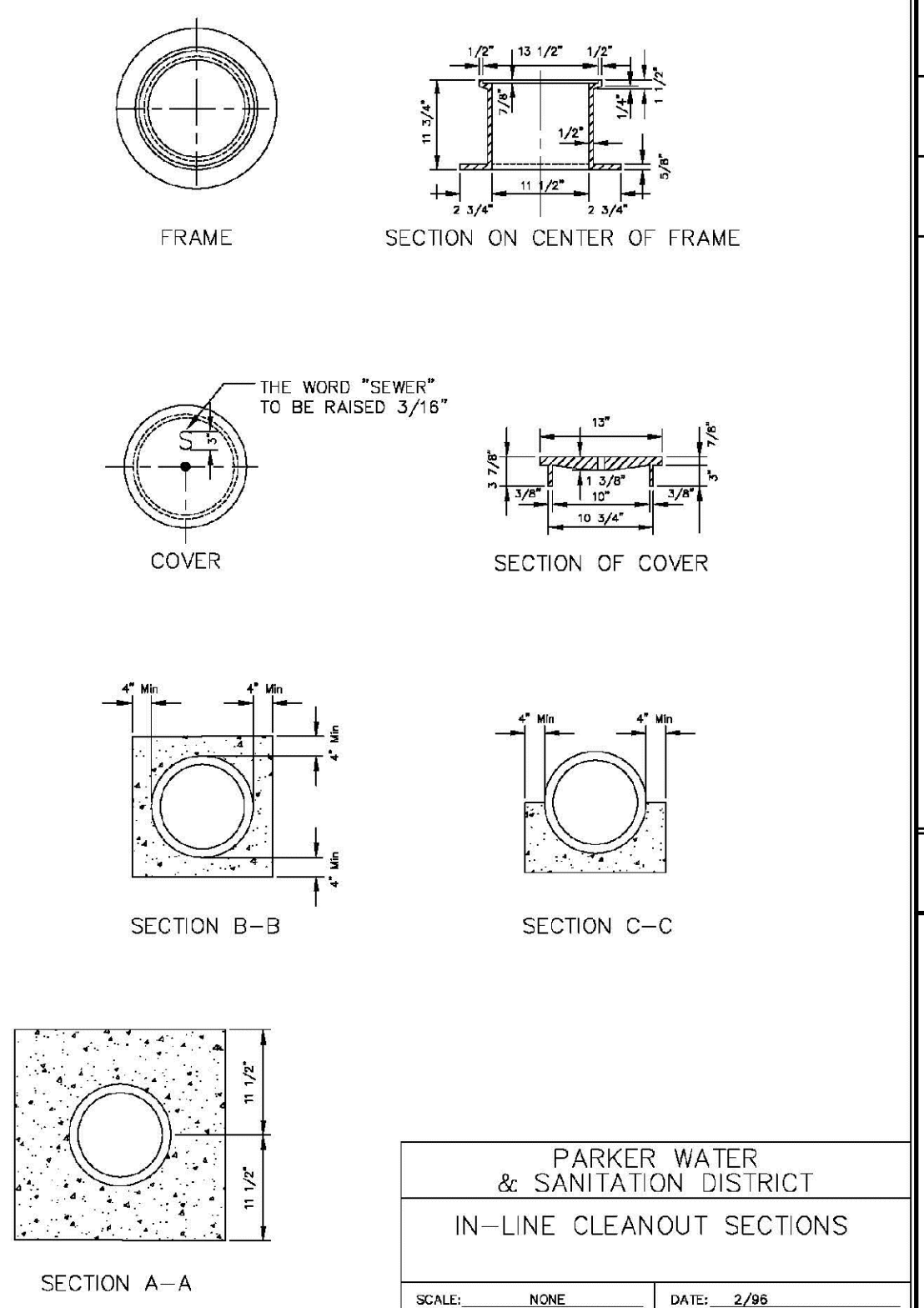
PARKER WATER & SANITATION DISTRICT
MANHOLE STUB-OUT DETAIL

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SHEET 8A.10



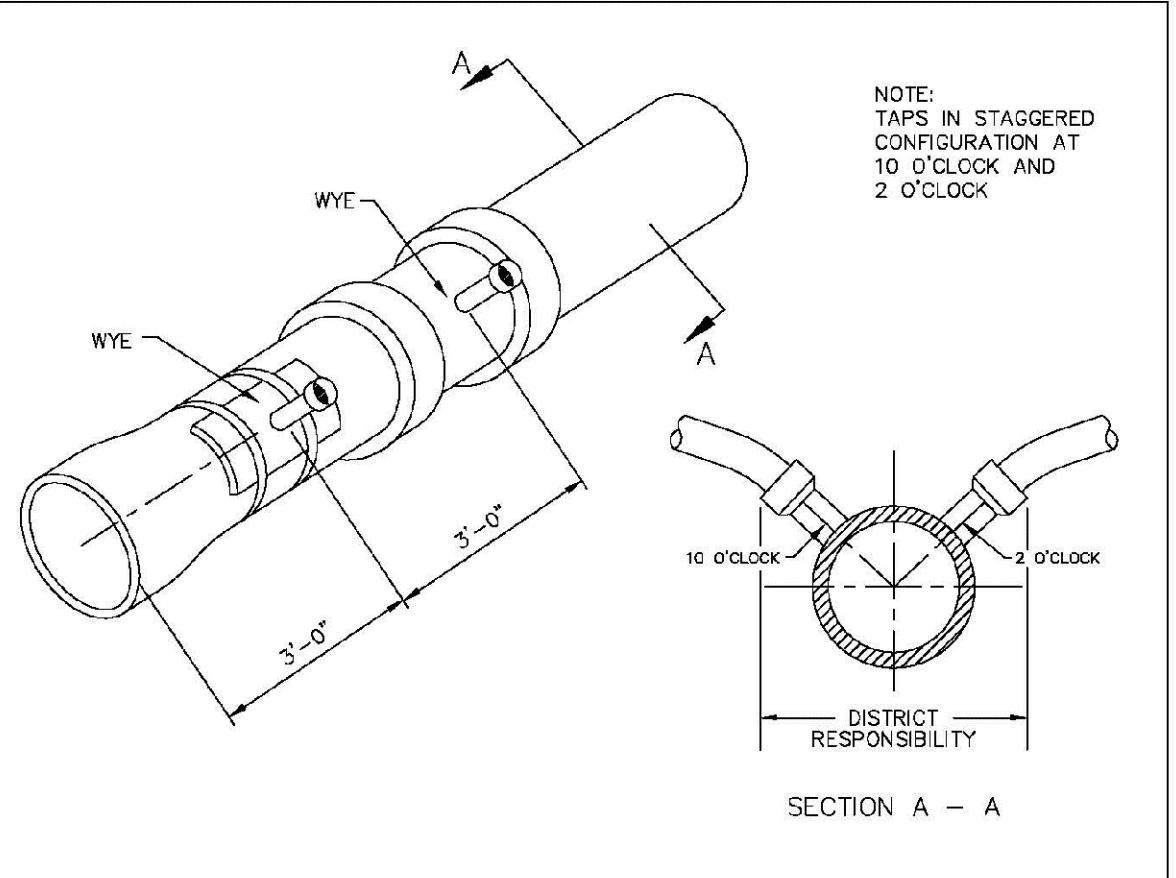
PARKER WATER & SANITATION DISTRICT
IN-LINE CLEANOUT SECTIONS

SCALE: NONE DATE: 2/98

APPROVED: PVR 5/98
1/18

DIRECTOR OF ENGINEERING 10/16

SHEET 8A.12



Sewer 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 point 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.

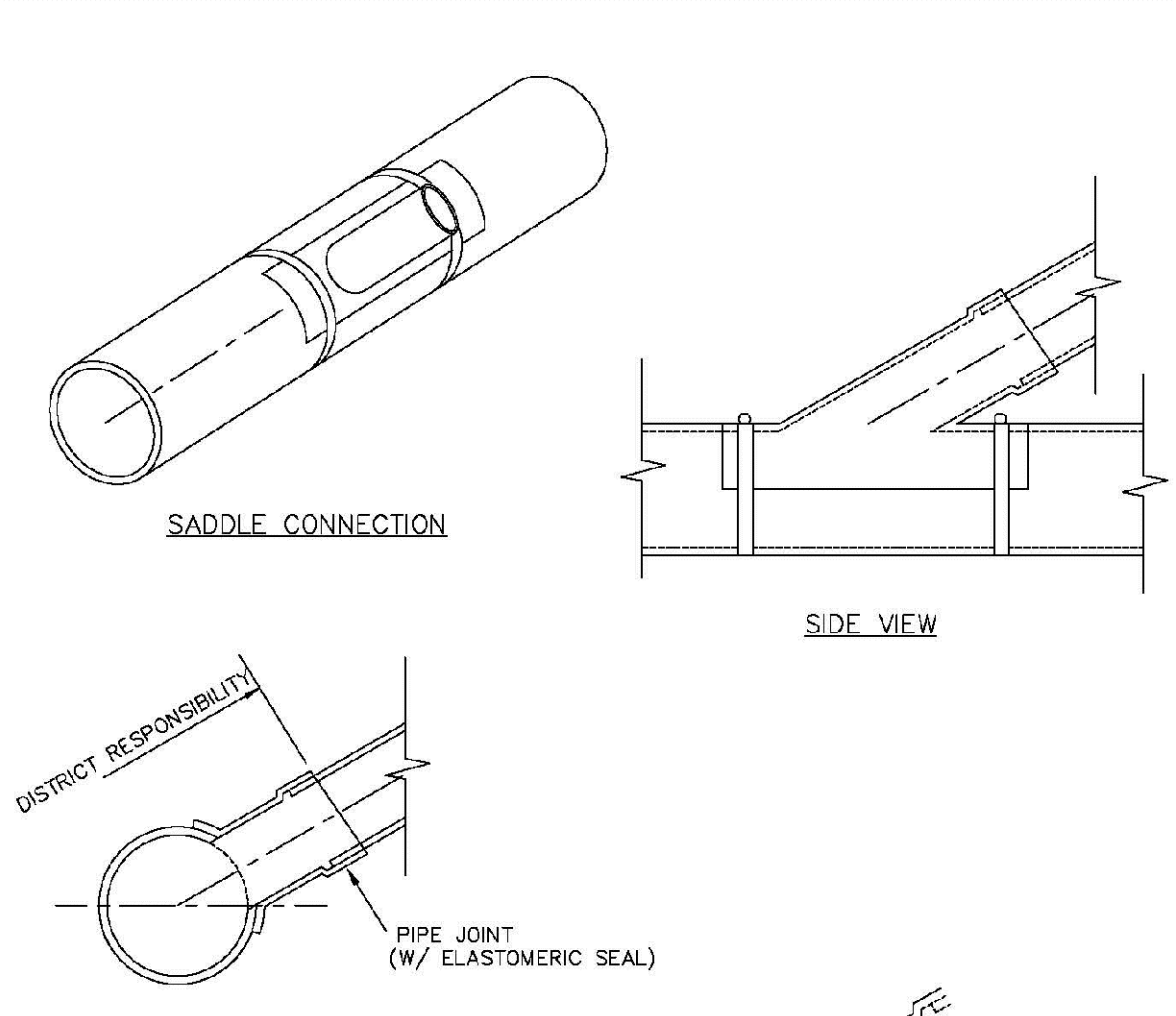
PARKER WATER & SANITATION DISTRICT
DOMESTIC SEWER TAPPING DETAIL

SCALE: NONE DATE: 2/98

APPROVED: PVR 4/01
1/08

DIRECTOR OF ENGINEERING 10/16

SHEET 8A.13



NOTES:

- SADDLE FITTINGS TO BE PER ASTM D3034.
- CONNECTION SHALL BE Y - SADDLE WITH TWO BONDS.

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

SCALE: NONE DATE: 2/98

APPROVED: PVR 5/98
1/18

DIRECTOR OF ENGINEERING 10/16

SHEET 8A.14

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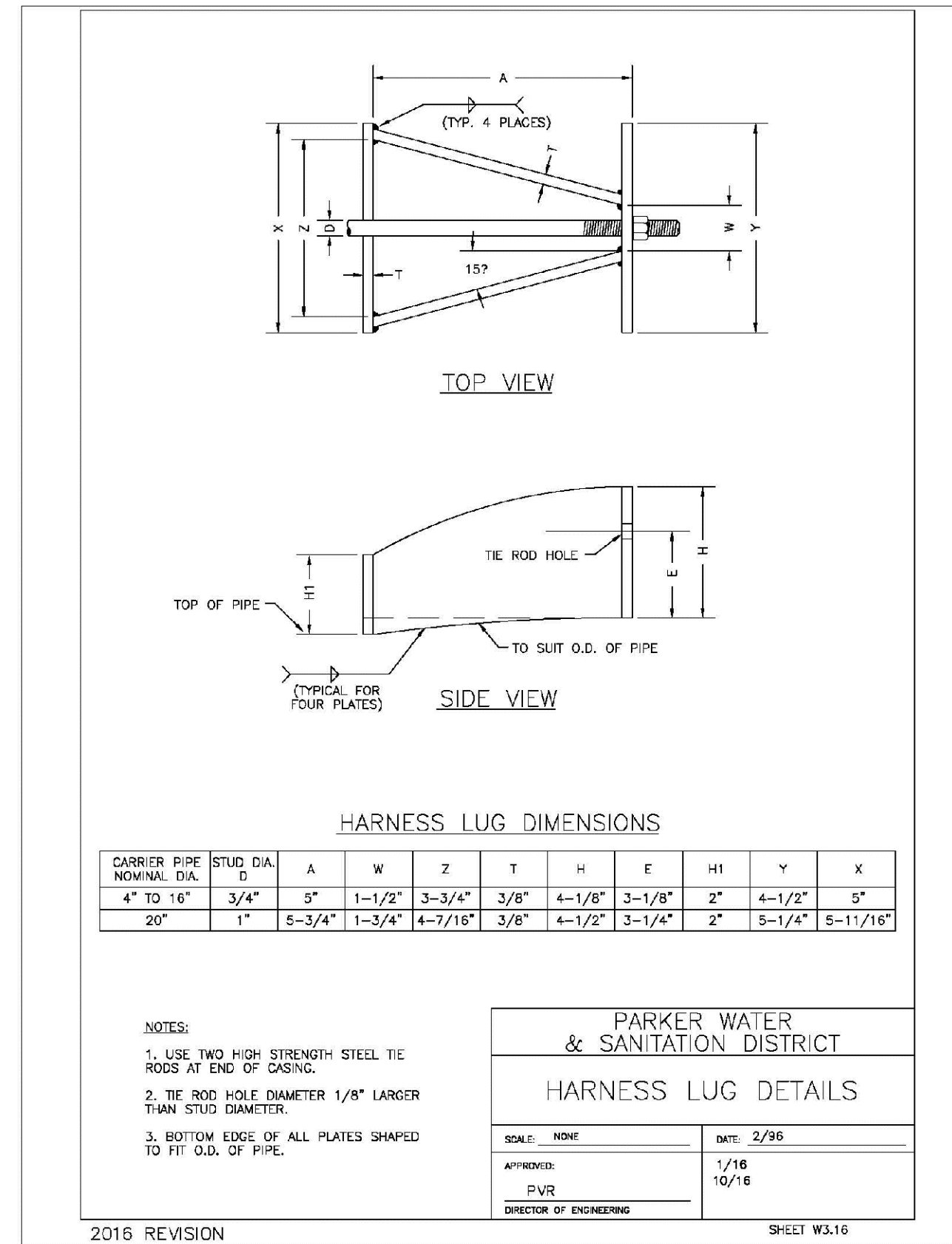
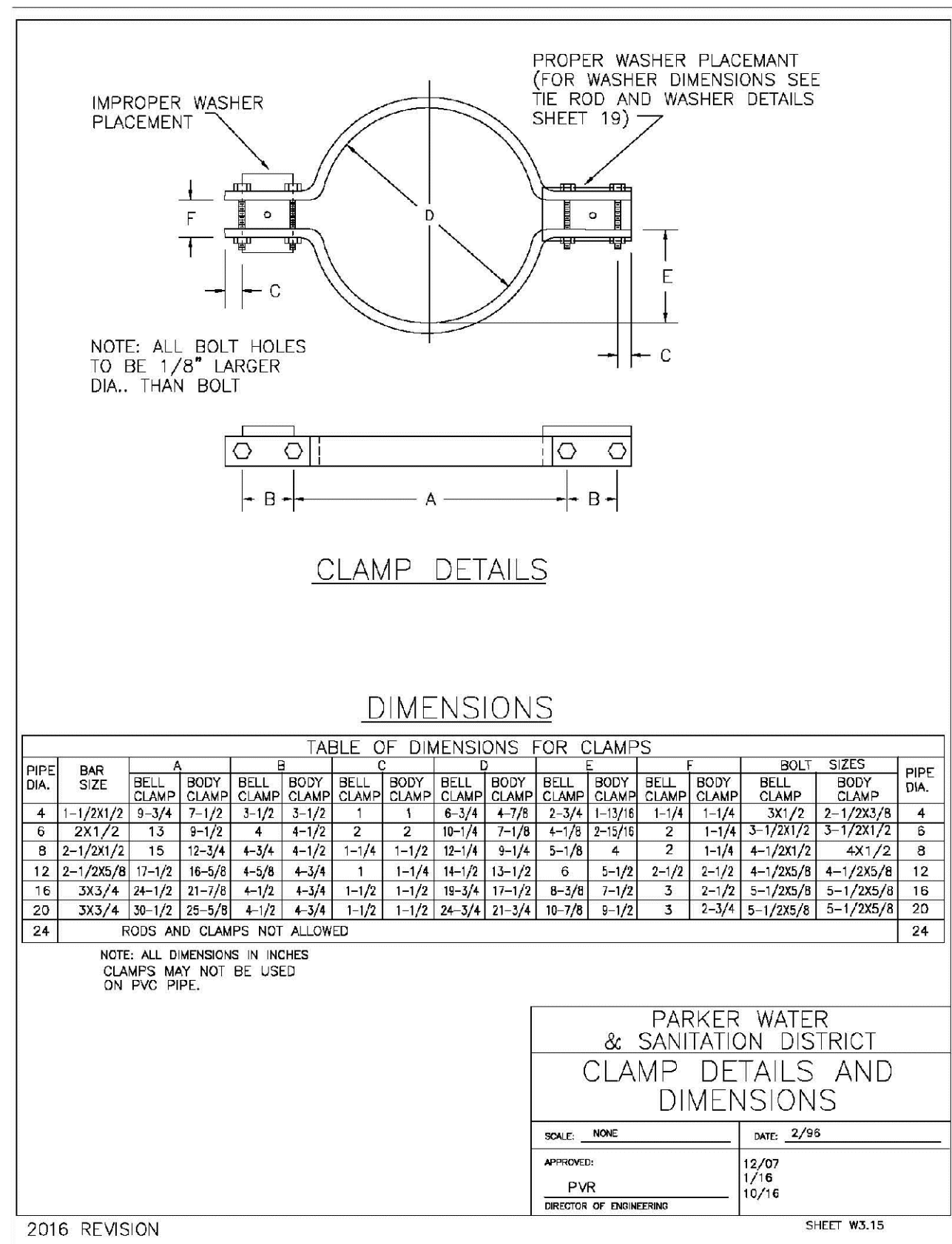
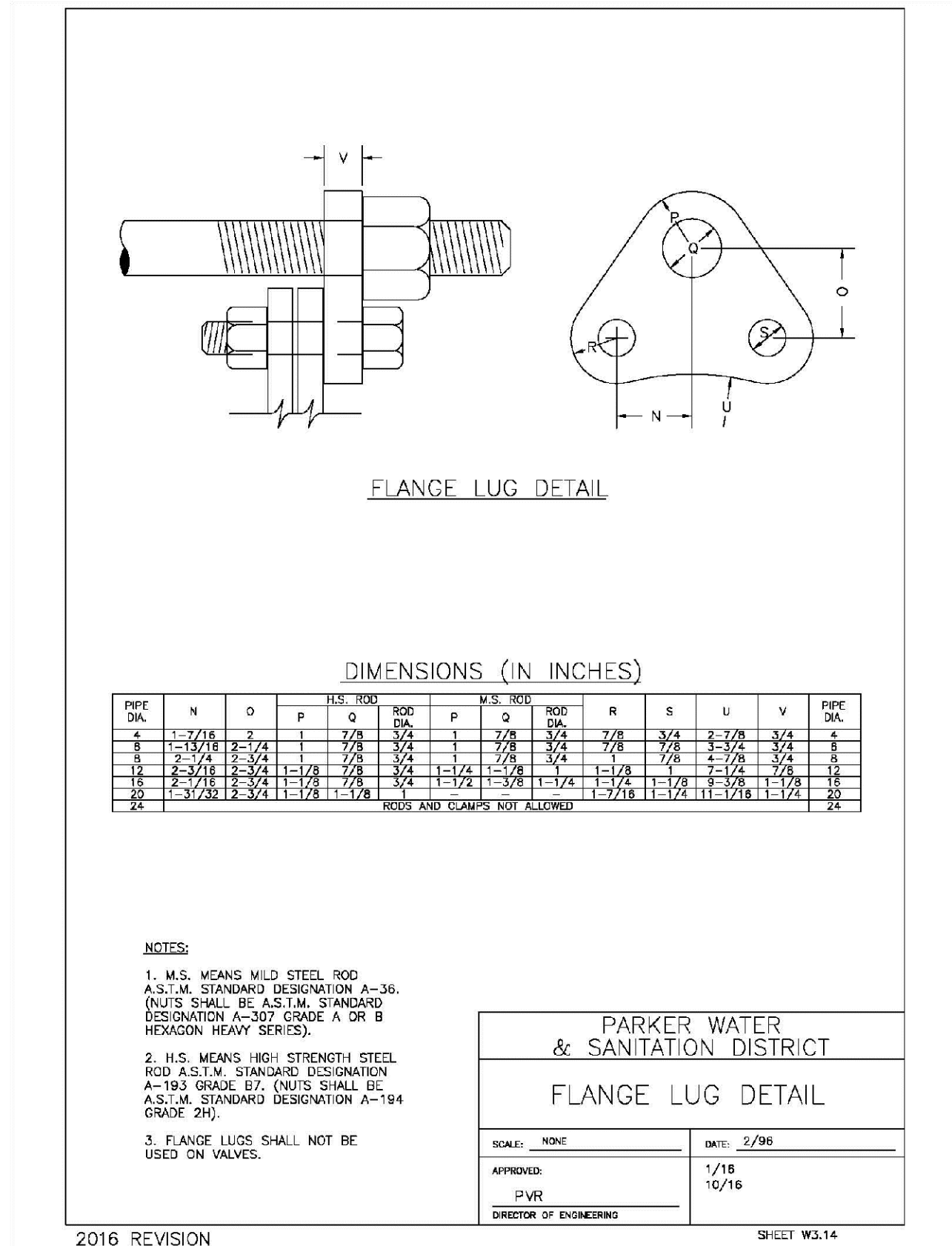
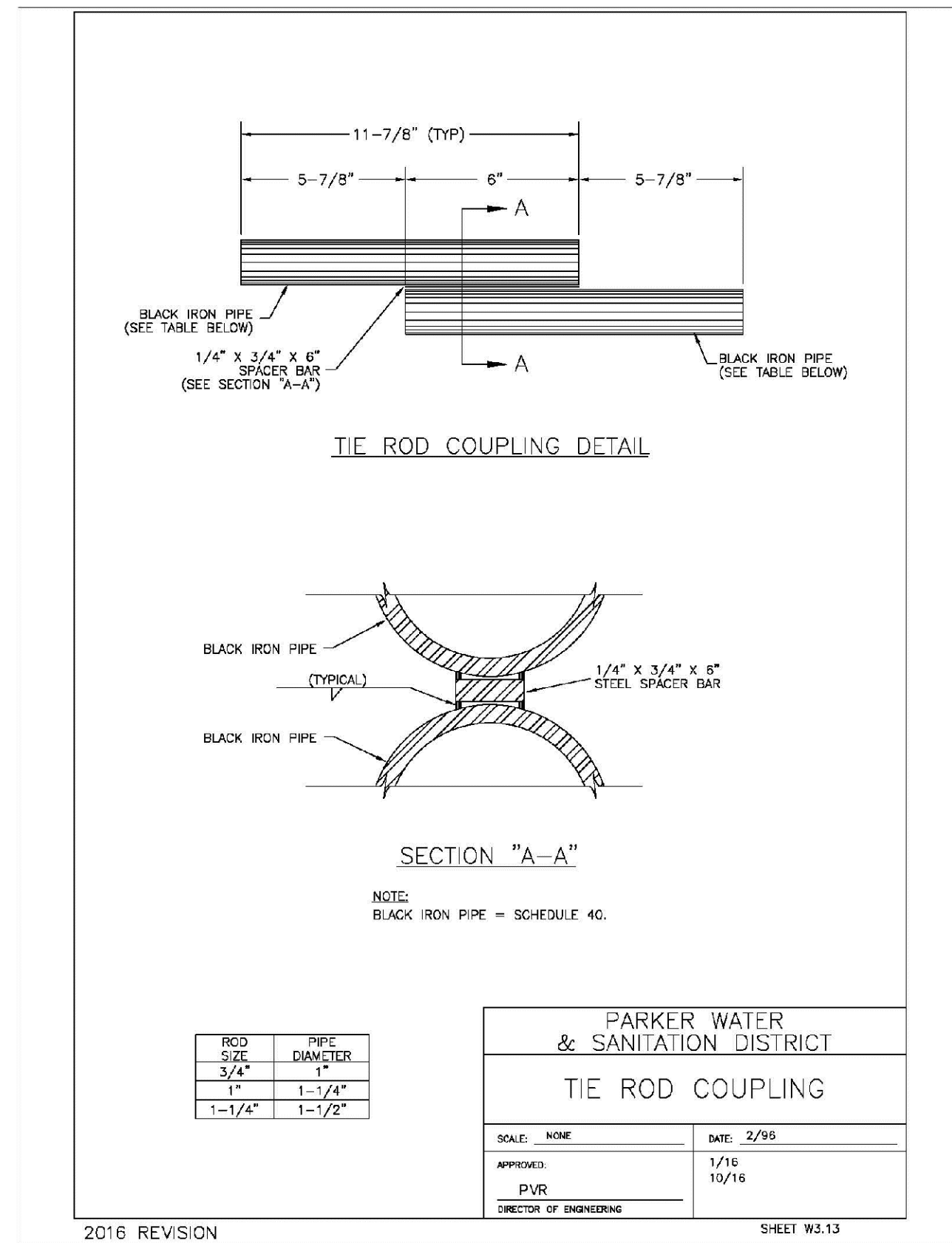
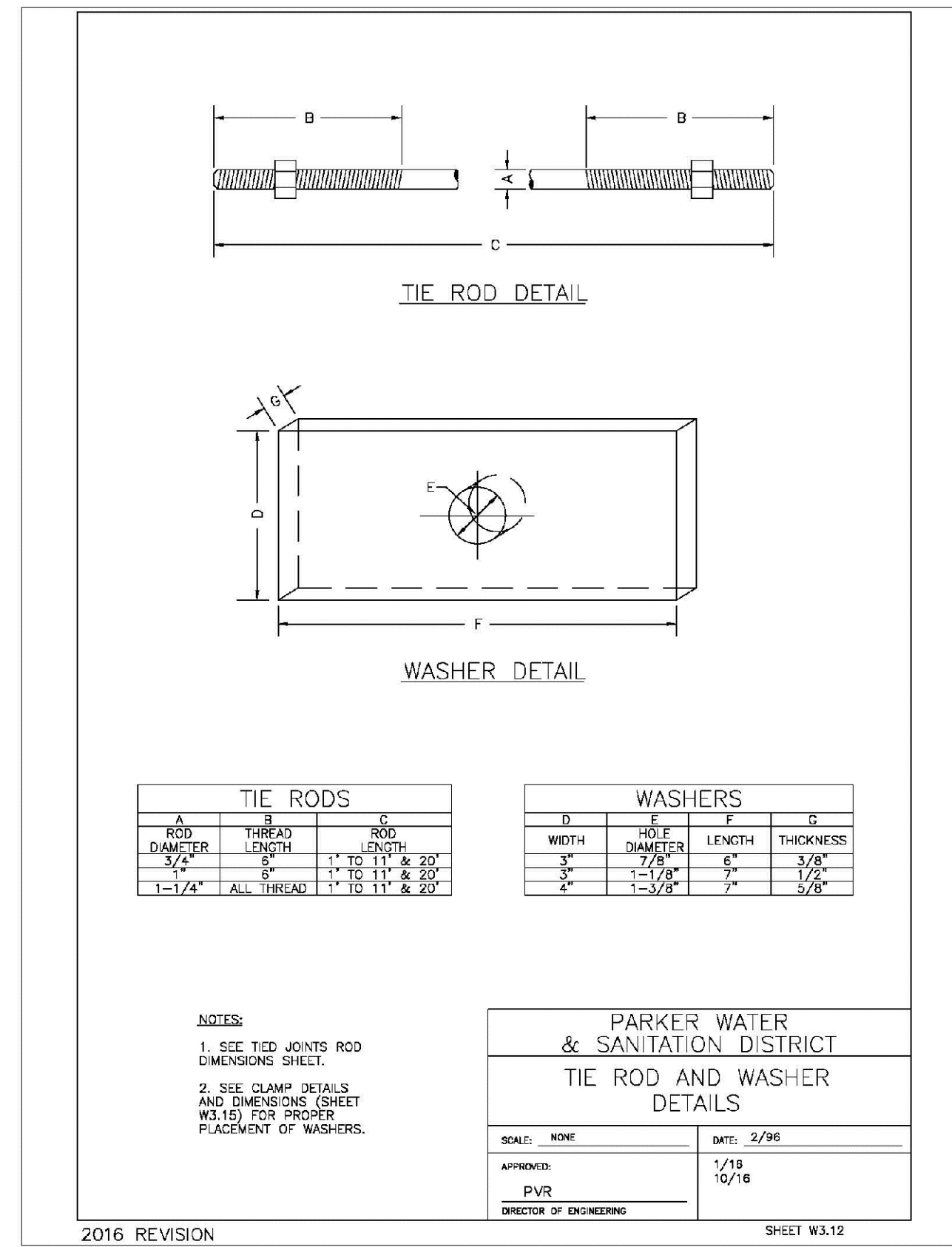
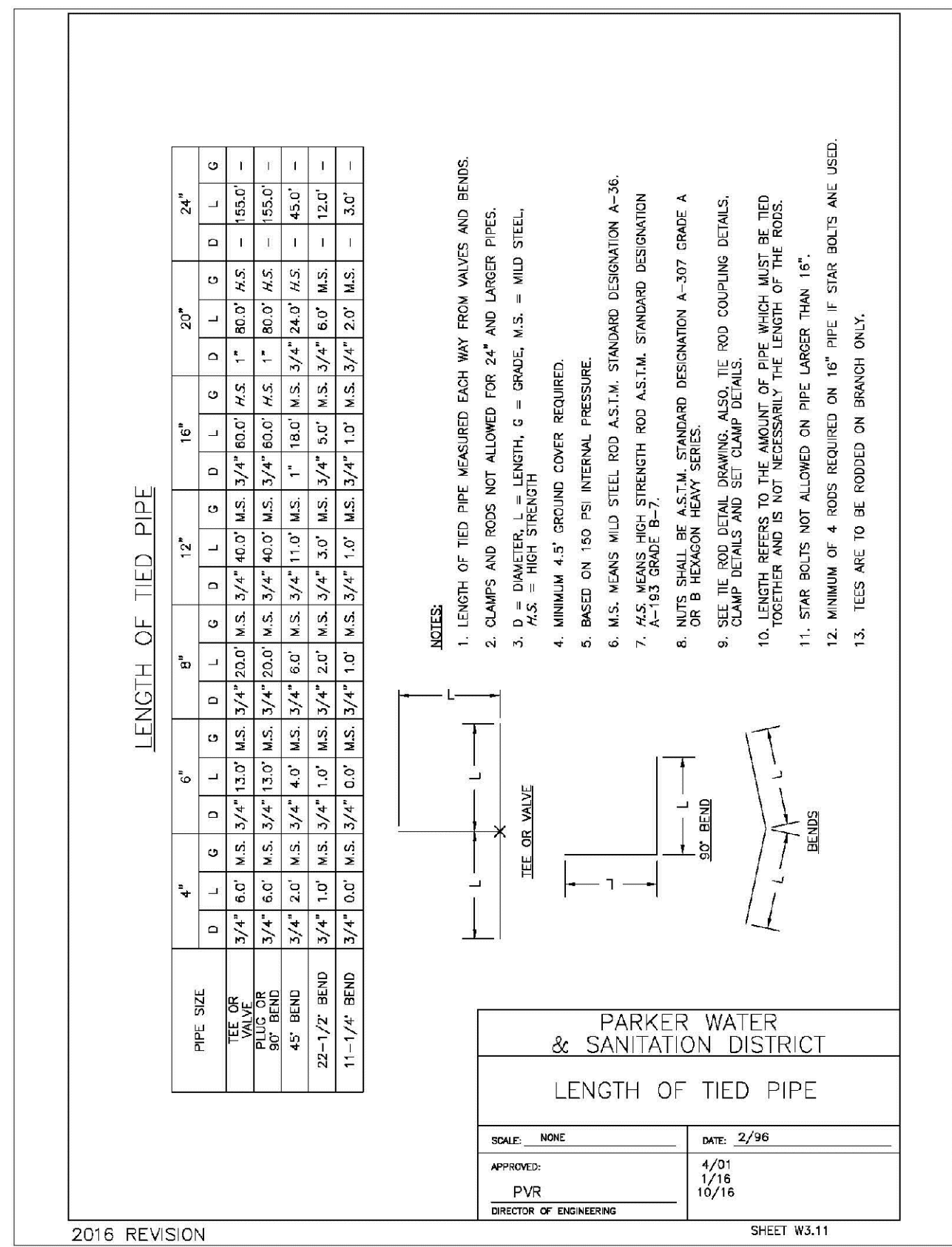
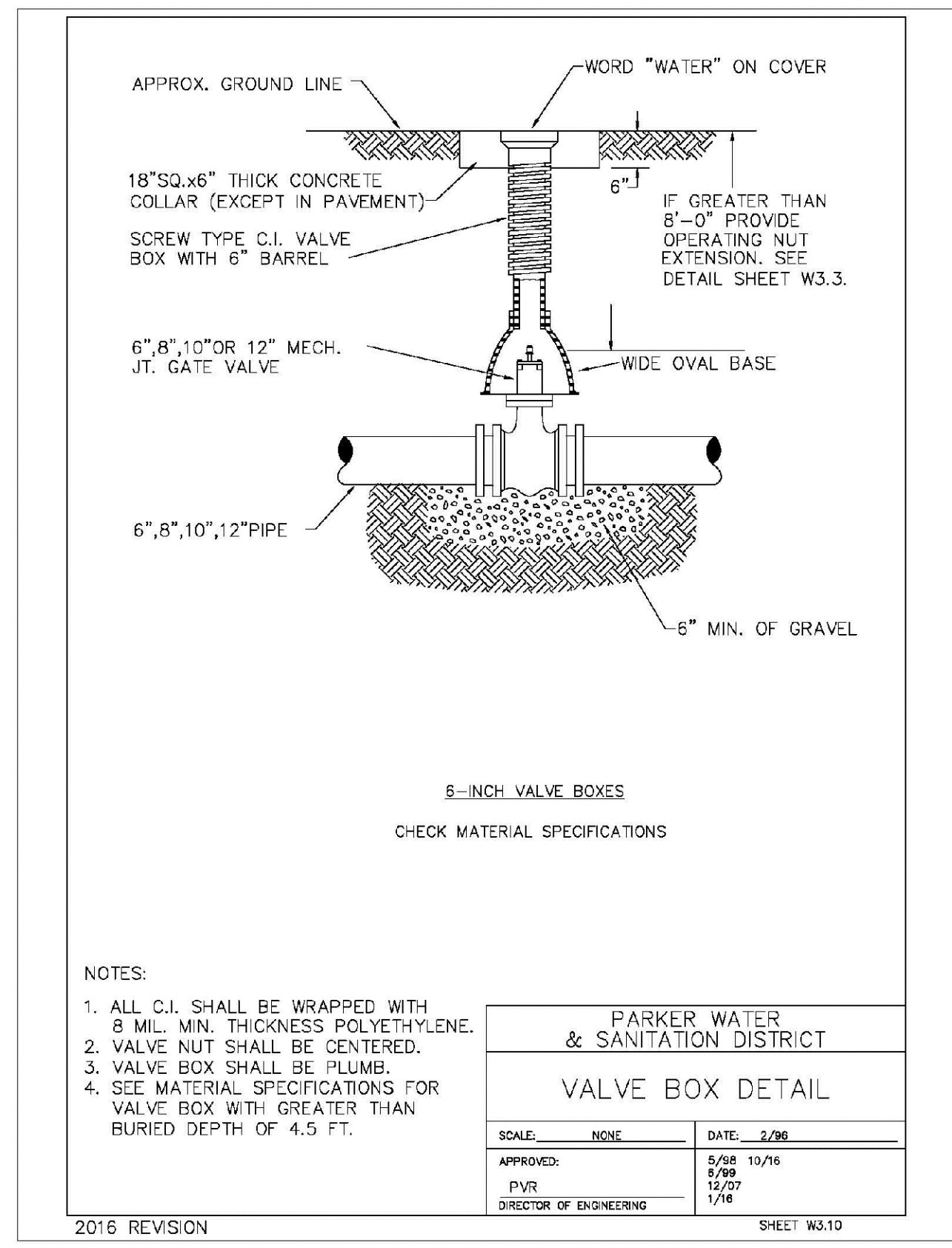
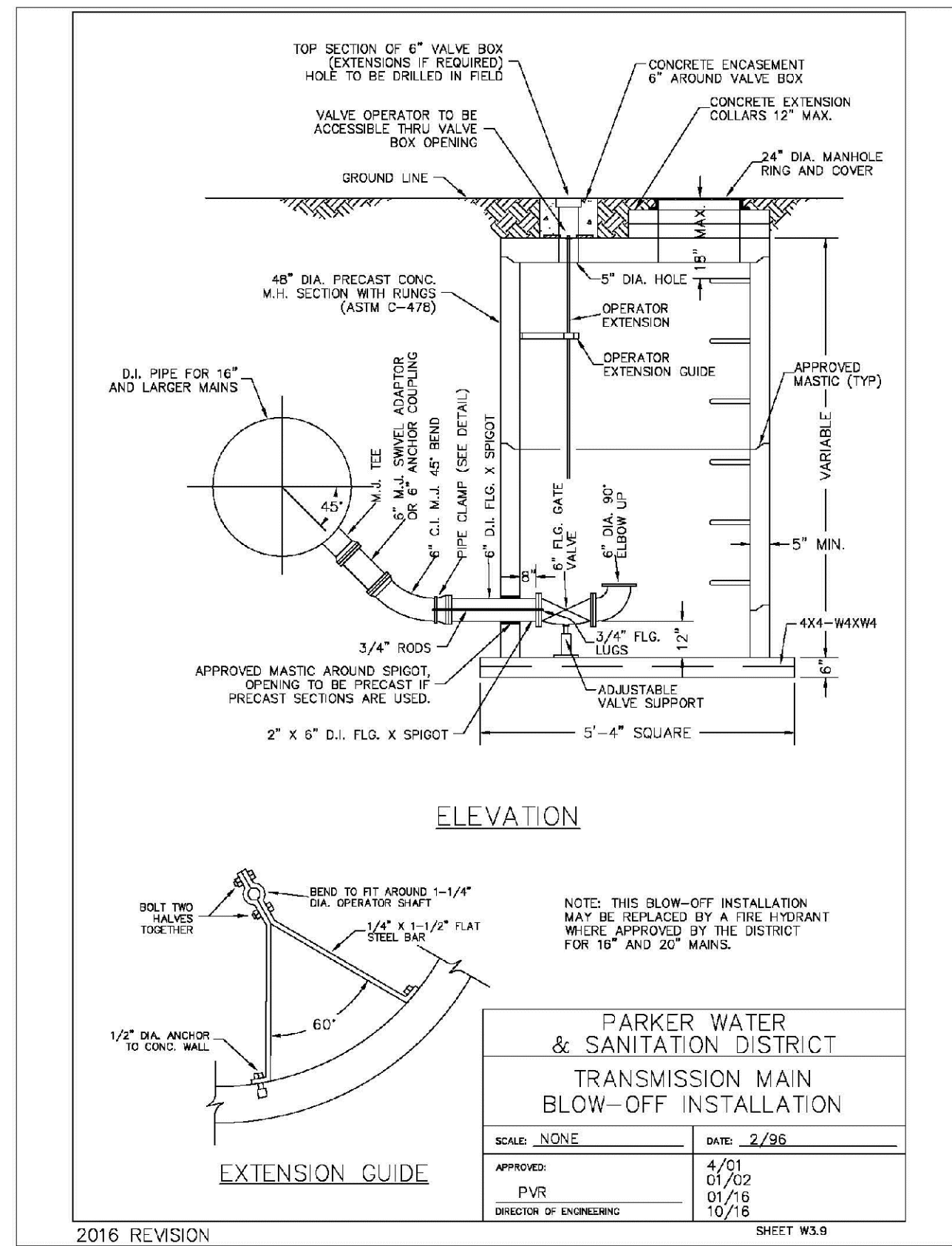
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SANITARY SEWER DETAILS

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FILE NO: 8130283701

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DATE: SEPTEMBER 2018

SHEET NUMBER **21**

No.	Revisions	Date	Init.	Appr.	Date



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WATER DETAILS**

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FILE NO: 8130283701

DRAWN BY: RRR
CHECKED BY: BPW
DATE: SEPTEMBER 2018

SHEET NUMBER: 24

No.	Revisions	Date	Init.	Appr.	Date

MECHANICAL JOINT RESTRAINT

WEDGE DETAIL BOLT HOLE DETAIL

NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	W INCHES	J INCHES	F INCHES	M INCHES	P
4"	2	2					P
6"	6	2	11.12	9.5	7.00	0.88	V
8"	8	4	13.37	11.75	9.15	1.00	V
10"	8	6	15.62	14.00	11.20	1.00	C
12"	8	8	17.88	16.25	13.30	1.25	C
4"	4	2					D
6"	8	3	11.12	9.5	7.00	0.88	D
8"	8	4	13.37	11.75	9.15	1.00	I
10"	8	6	15.62	14.00	11.20	1.00	I
12"	8	8	17.88	16.25	13.30	1.25	I

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: 2/00
PVR 1/18
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W3.17

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

TEE TYPICAL CROSS SECTION

MINIMUM BEARING SURFACE AREA (IN SQUARE FEET)

SIZE OF	BENDS				TEE OR DEAD END
	11-1/4"	22-1/2"	45"	90"	
4"	1.00	1.00	1.00	1.00	1.50
6"	1.00	1.25	2.25	4.00	3.00
8"	1.00	2.00	4.00	7.00	5.00
10"	1.50	3.50	7.50	13.00	10.00
12"	2.00	5.00	10.00	18.00	14.00
24"	3.50	10.00	20.00	47.00	33.00

NOTES:
1. ALL VALVES, TEES, BENDS AND PLUGS SHALL BE RESTRAINED AND KICKBLOCKED.
2. BEARING SURFACES SHOWN IN CHART ARE MINIMUM.
3. BASED ON 150 PSI PIPE PRESSURE PLUS WATER HAMMER.
4. 6" AND 8" WATER HAMMER = 120 PSI.
5. 12" WATER HAMMER = 110 PSI.
6. 16", 20" AND 24" WATER HAMMER = 70 PSI.
7. 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 1/18
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W3.18

24" DIAMETER RING AND COVER

HALF PLAN STANDARD LIFTING SLOT DETAIL

NOTE:
1. Coating Specifications: ASTM A-48 With A Minimum Tenate Strength Of 25 KSI (Class 25).
2. All Casting To Be Done In Anhydrous Base (Or Approved Equal).

**PARKER WATER & SANITATION DISTRICT
24" DIAMETER RING AND COVER**

SCALE: NONE DATE: 6/05

APPROVED: 12/07
PVR 1/18
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W3.19

ACCESS MANHOLE AND AIR VALVE ASSEMBLY

NOTE:
USE 2" AIR VALVE ASSEMBLY ON 30" OR SMALLER PIPE.
RESIDENTIAL ASSEMBLY MAY BE USED IN RESIDENTIAL AREAS ONLY (SEE DETAIL SHEET W3.3)

**PARKER WATER & SANITATION DISTRICT
ACCESS MANHOLE ASSEMBLY**

SCALE: NONE DATE: 2/96

APPROVED: 4/01
PVR 1/18
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"
18"	3'-0"	4'-0"
24"	4'-0"	5'-0"

**PARKER WATER & SANITATION DISTRICT
TYPICAL TRENCH SECTION PIPE BEDDING**

SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W4.1

PIPE BEDDING

(c) 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. Bedding shall be dug deep enough to provide a minimum of two inches (2") of clearance between the bed 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 haunches of the pipe and in the previously dug ball holes.

Tamping is herein defined as the act of placing approved bedding material under the haunches of the pipe, paying particular attention to voids, ball holes and silt holes. The purpose of tamping is to ensure uniform support for the pipe.

The limits of bedding shall be from six inches (6") below the bottom of the pipe to twelve inches (12") above the top of the pipe. Approved bedding may then be installed to the groundline. See Chapter 2 of these Standards for bedding and composition of bedding.

Composition of bedding is not required. The only requirement is sufficient tamping to achieve uniform support under the pipe. See Sheet W4.1 of the Standard Details for a typical trench cross section.

(d) Bedding Material: the bedding material shall be a clean well-graded sand or squeegee sand and shall conform to the following limits when tested by means of laboratory tests:

Well-Graded Sand for (24-inch or larger diameter)

Sieve Size	Total Percent Passing by Weight
3/8 inch	100
No. 4	70-100
No. 6	35-65
No. 10	20-50
No. 20	5-25
No. 40	2-10
No. 100	1-5
No. 200	0-3

Squeegee Sand for use with 20-inch or smaller

Sieve Size	Total Percent Passing by Weight
3/8 inch	100
No. 200	0-3

If approved by the District, fines from the trench walls and spoils pile may be used to provide uniform support for the pipe. No rock or stone larger than that allowed by the sieve analysis, or any other detrimental materials, shall be placed closer to the pipe than six inches (6"). Approved bedding materials shall be stockpiled on the jobsite to be used in the event natural materials become unsatisfactory. The District reserves the right to require the use of the specified bedding material at any time.

**PARKER WATER & SANITATION DISTRICT
PIPE BEDDING**

SCALE: NONE DATE: 2/96

APPROVED: 5/08
PVR 2/00
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W4.2

WATERLINE ENCASEMENT

PLAN VIEW PROFILE

NOTE:
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 ENCASEMENT.

**PARKER WATER & SANITATION DISTRICT
WATERLINE ENCASEMENT**

SCALE: NONE DATE: 5/08

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

2016 REVISION SHEET W4.3

BORED CROSSINGS BENEATH CONDUITS

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

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2016 REVISION SHEET W4.4

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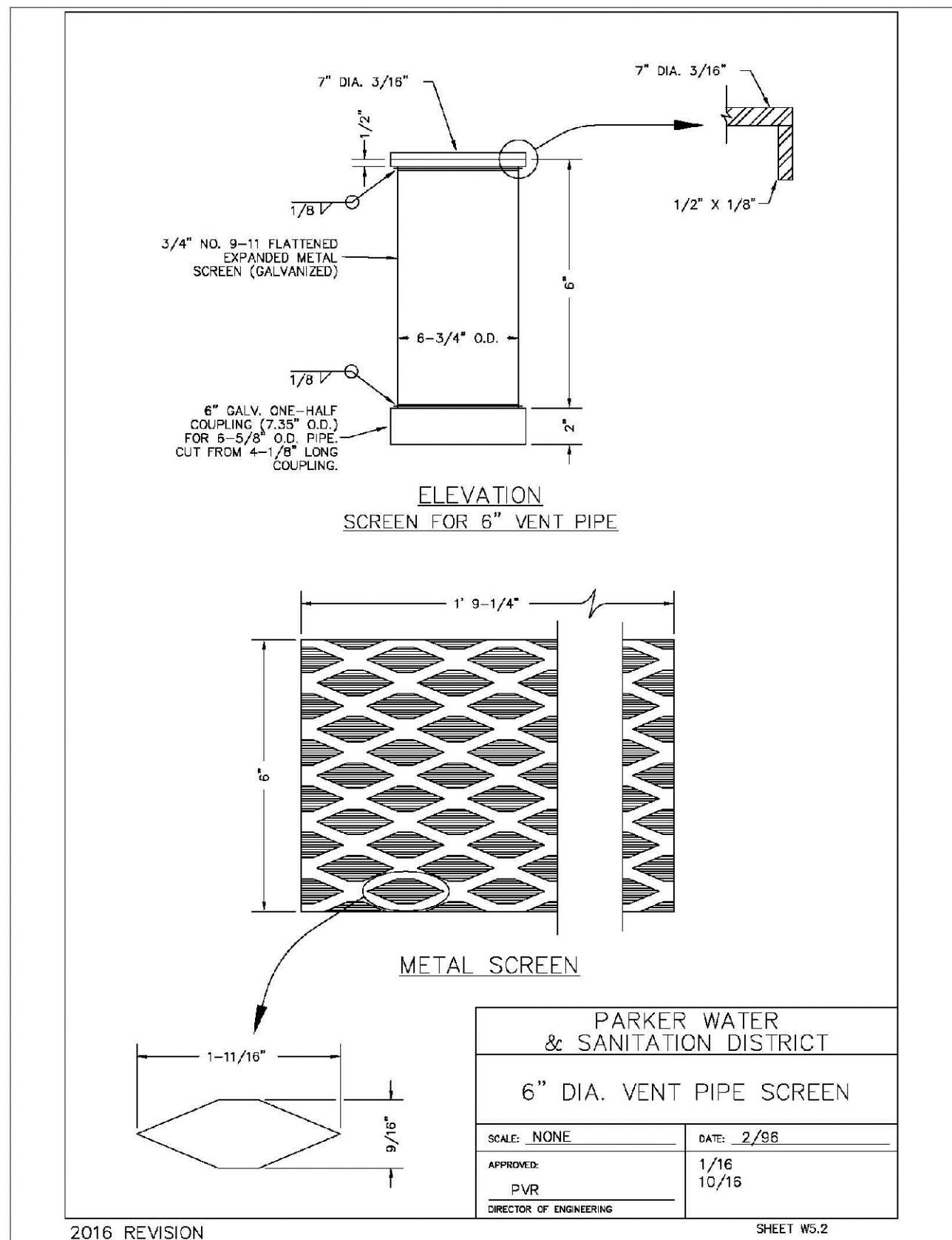
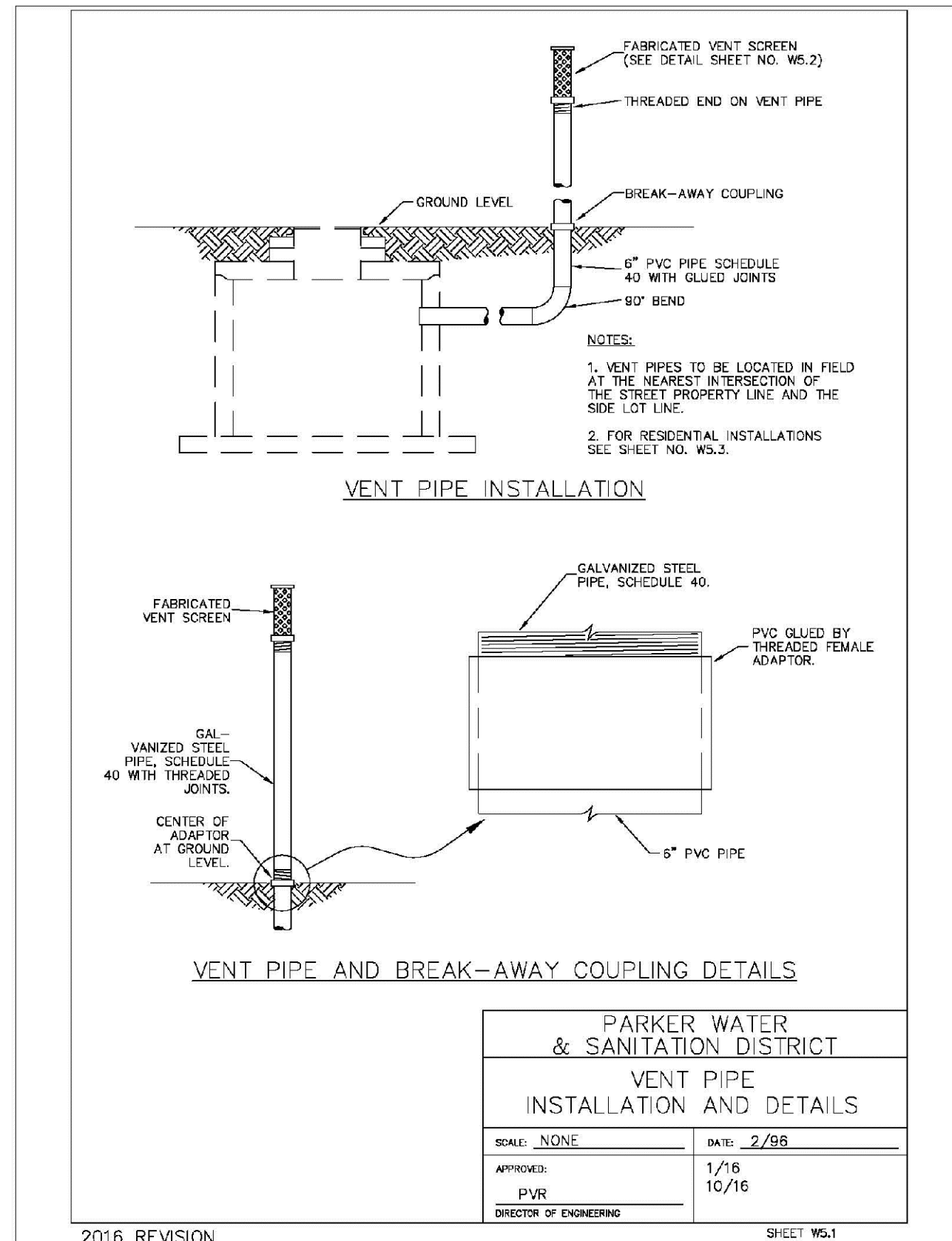
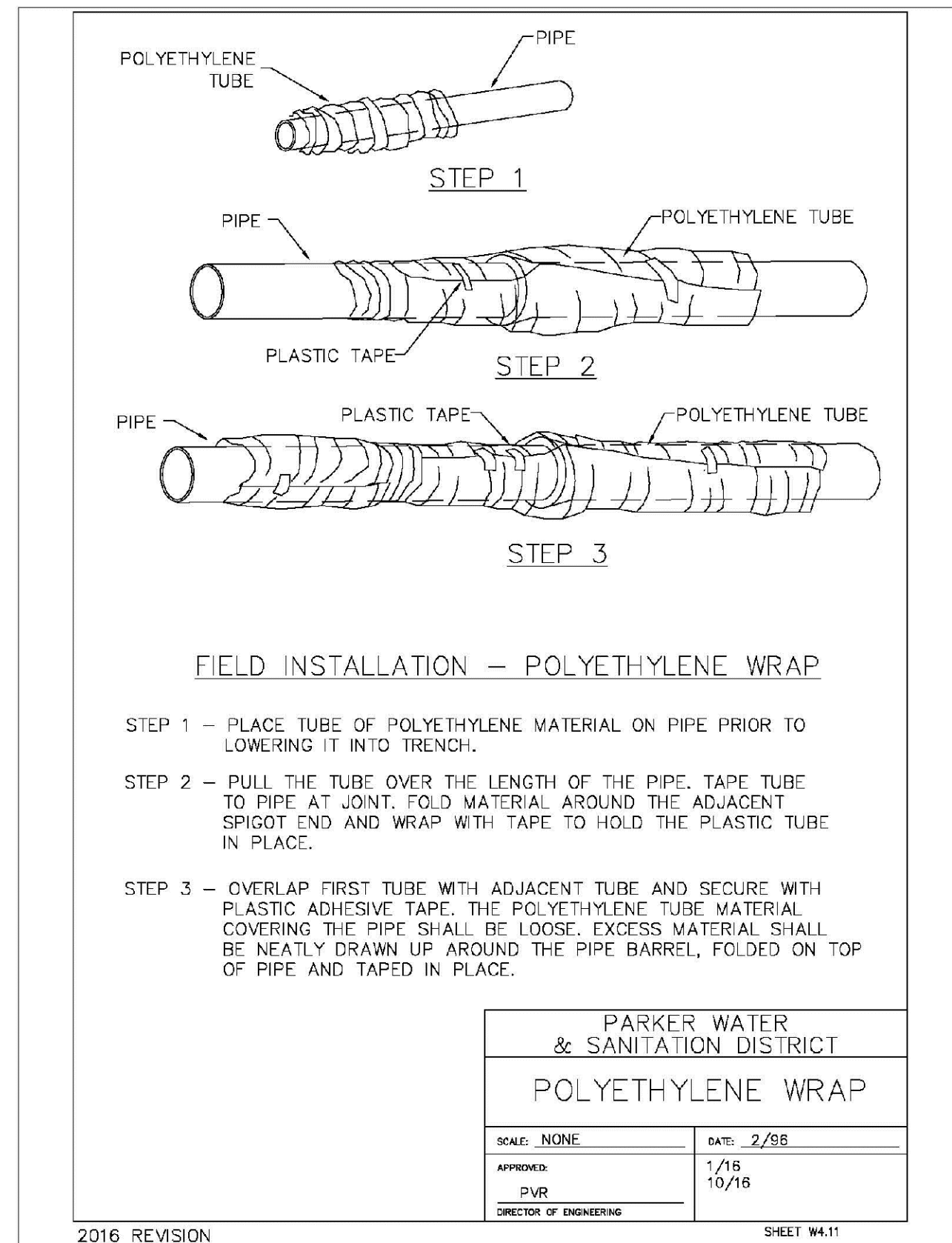
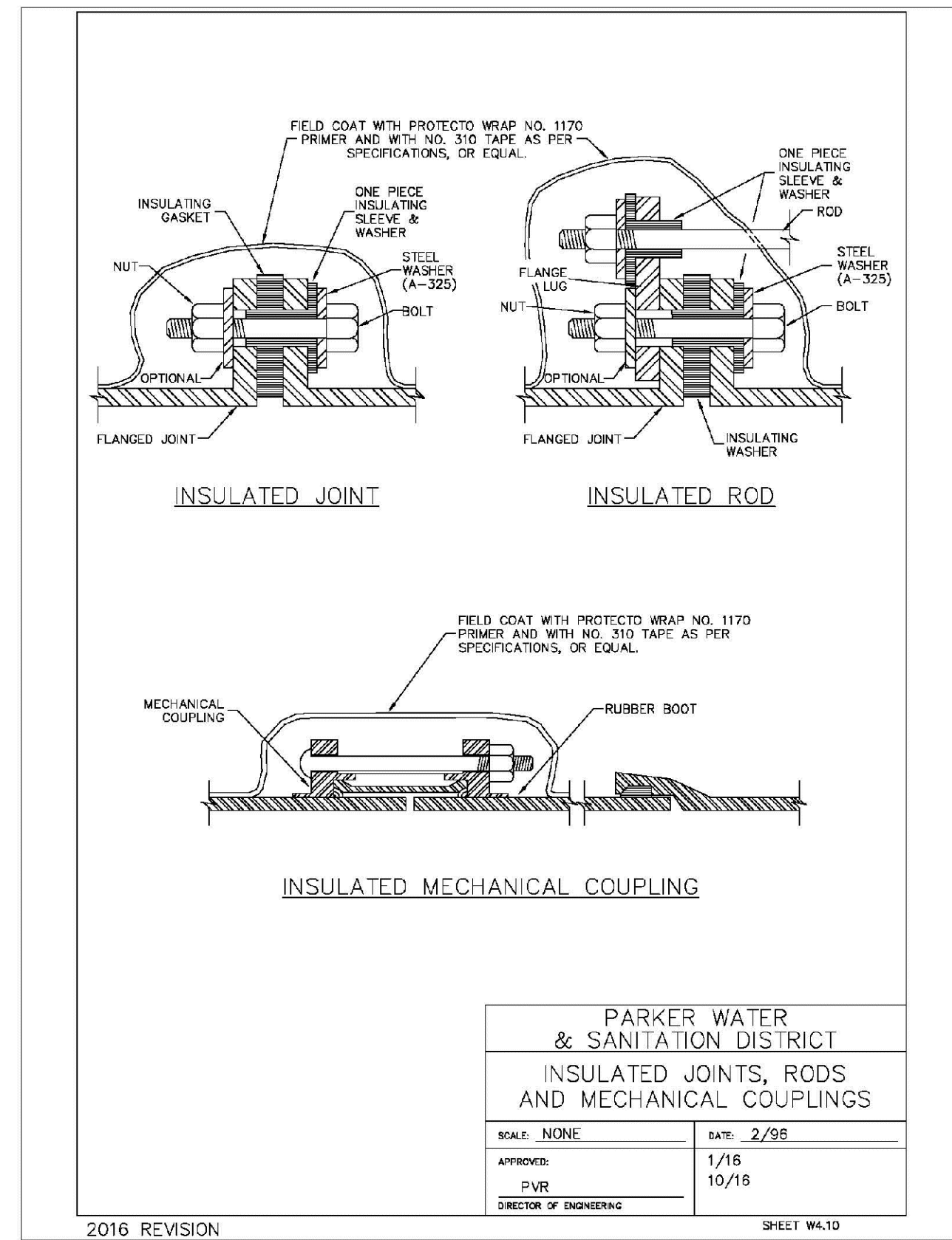
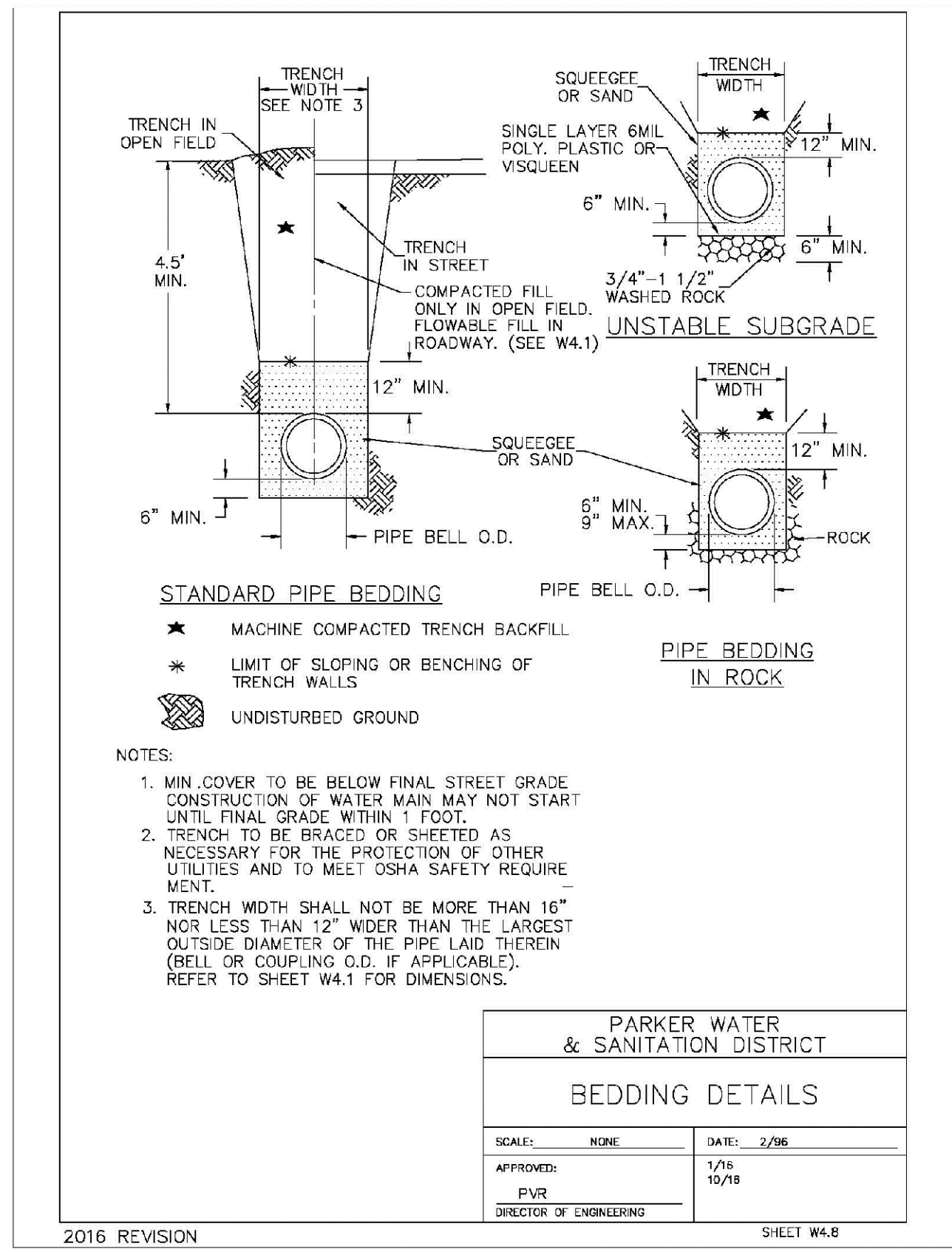
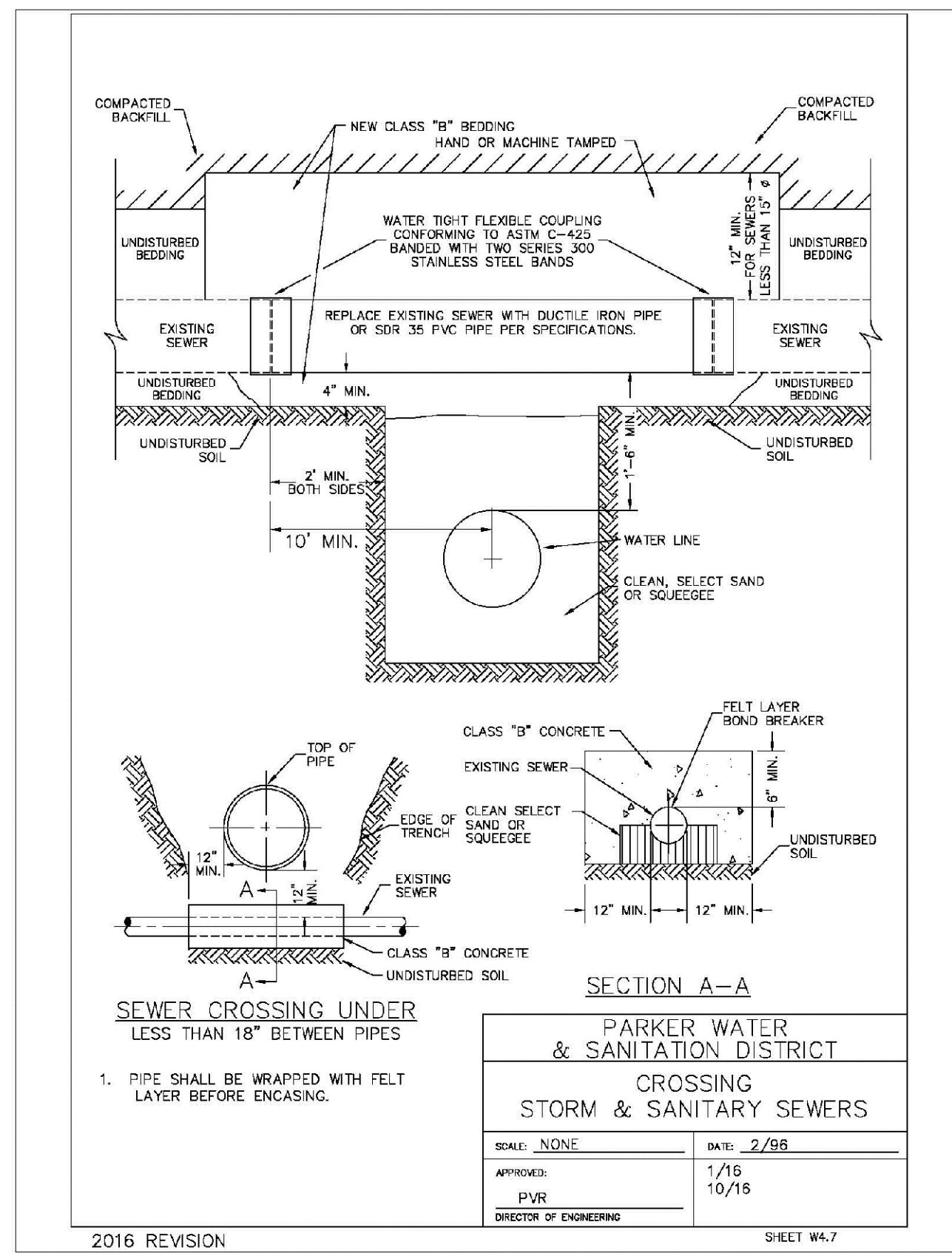
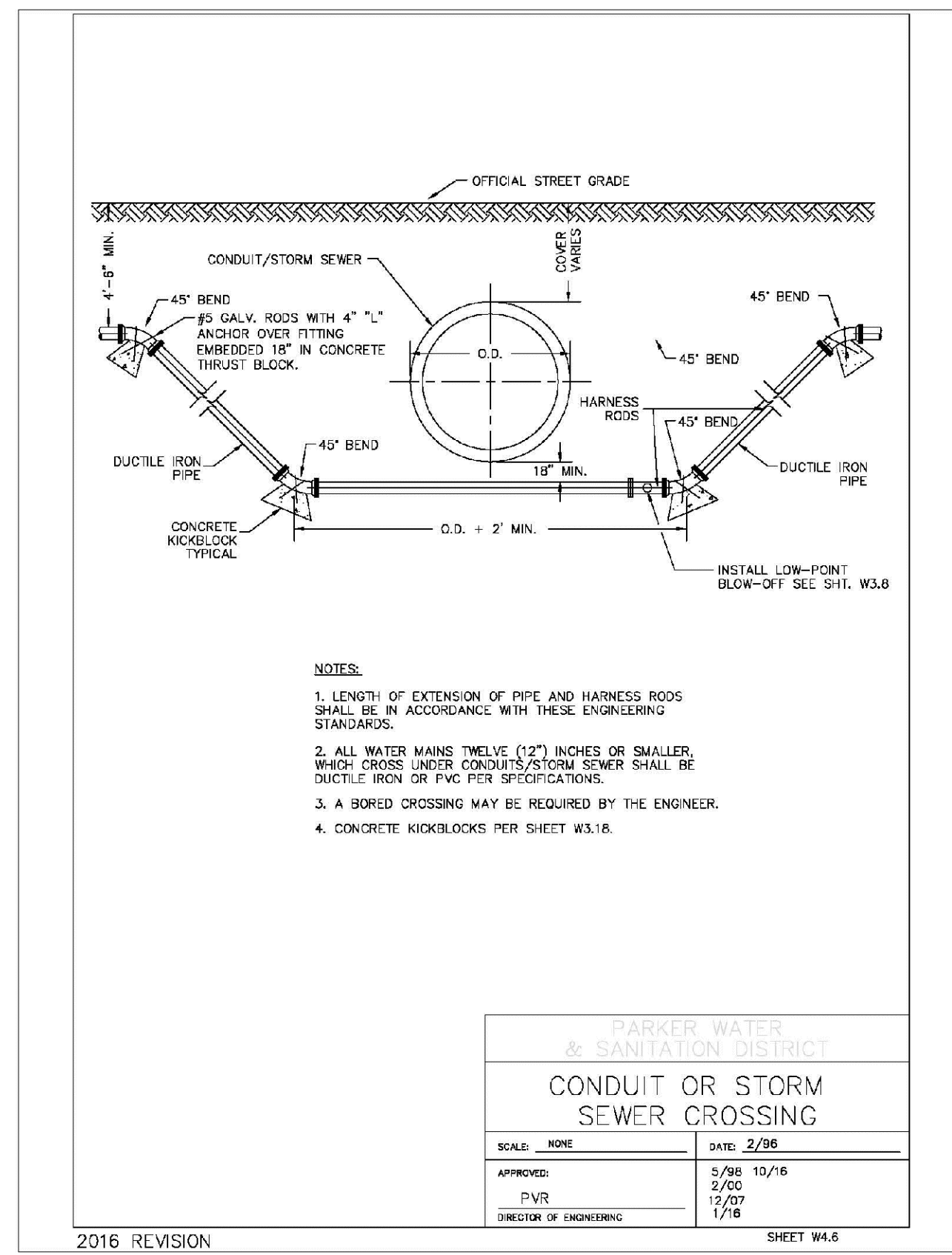
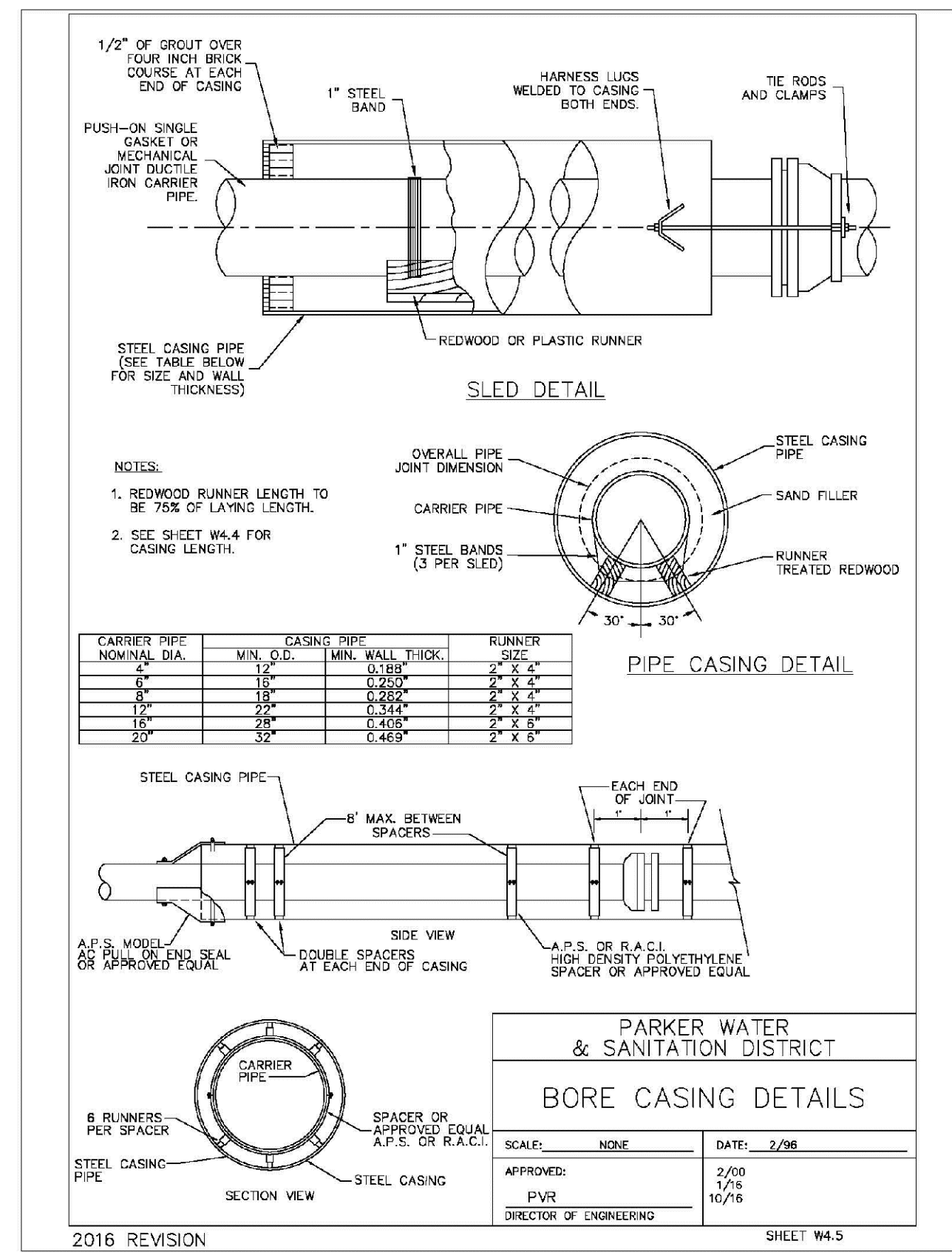
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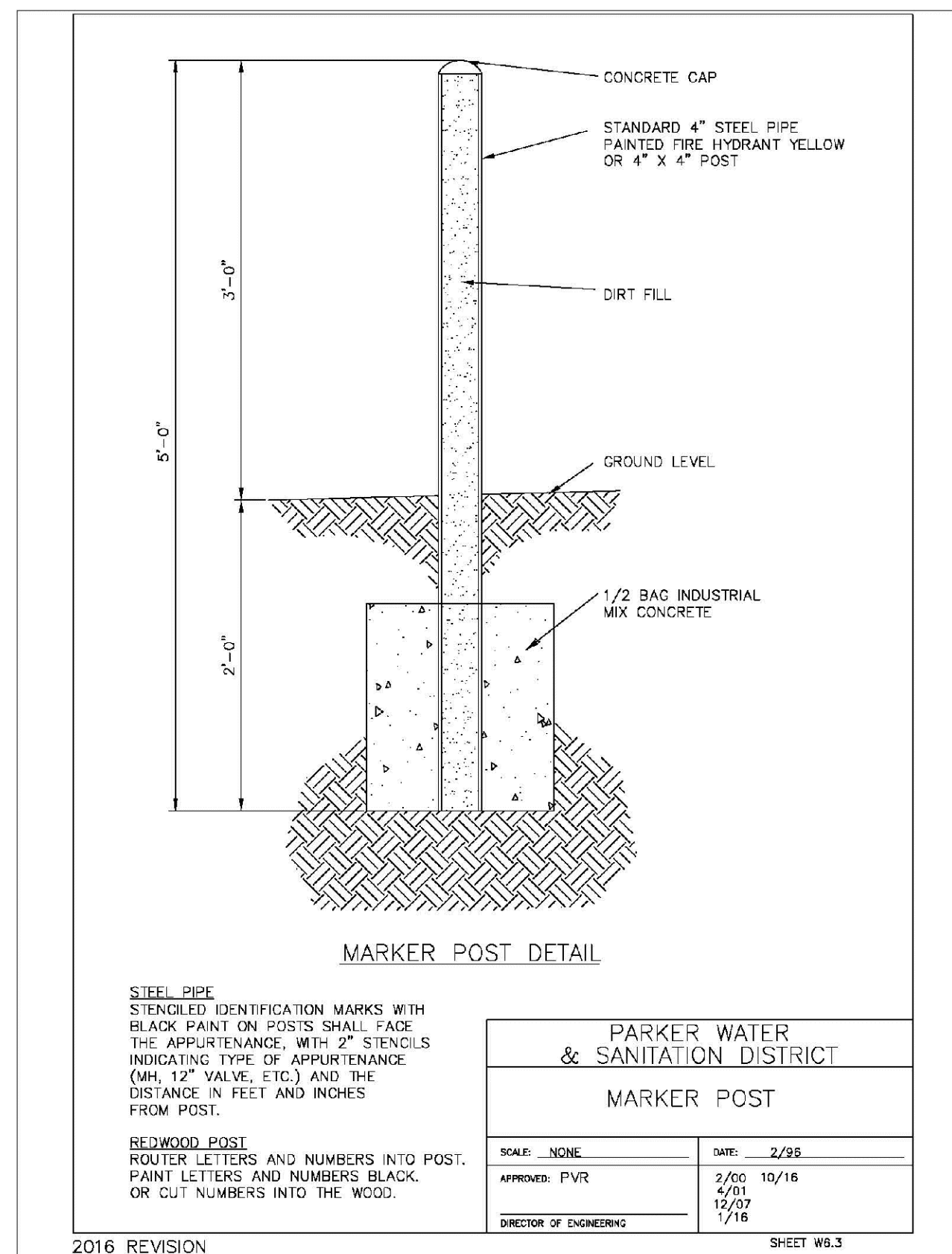
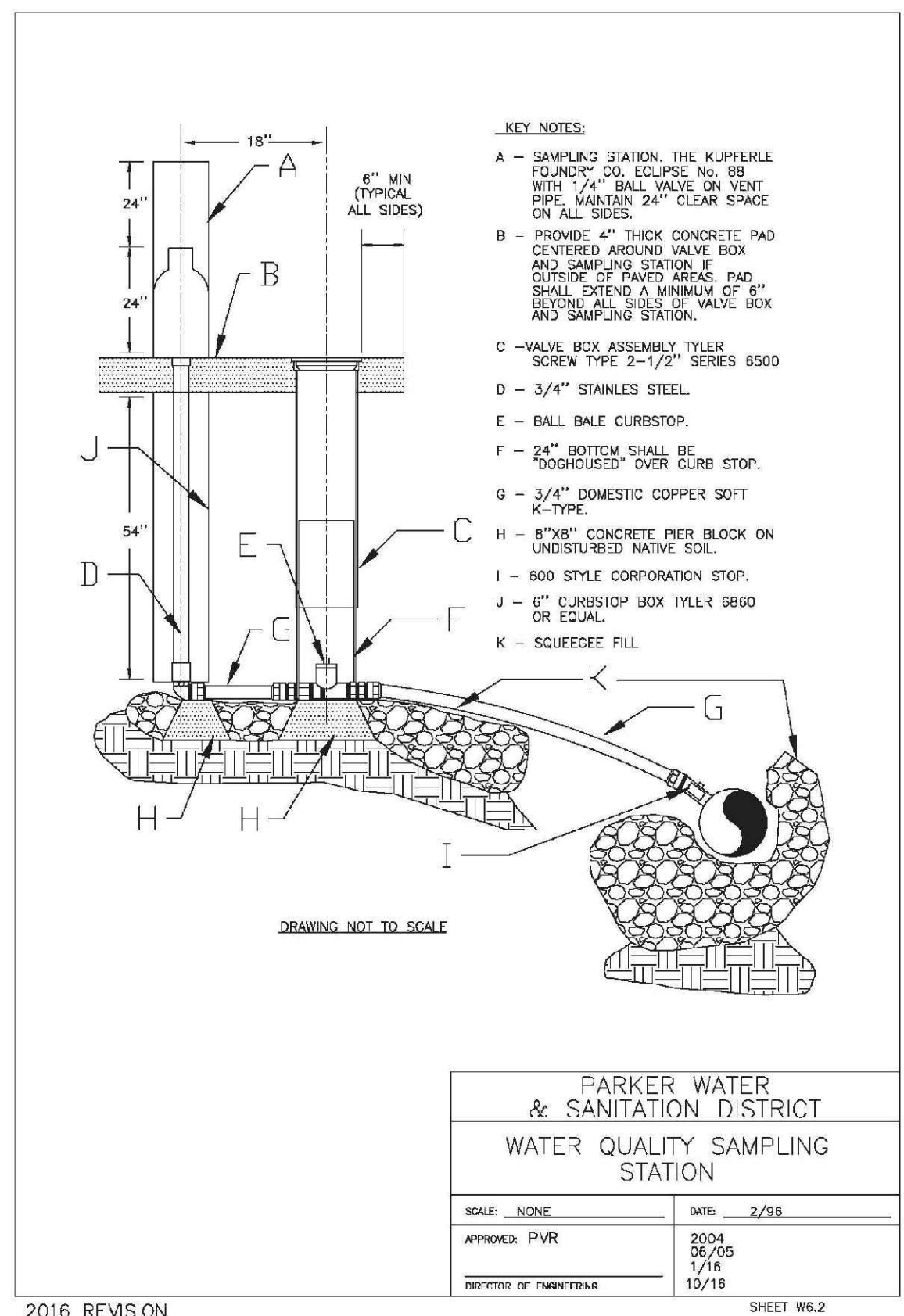
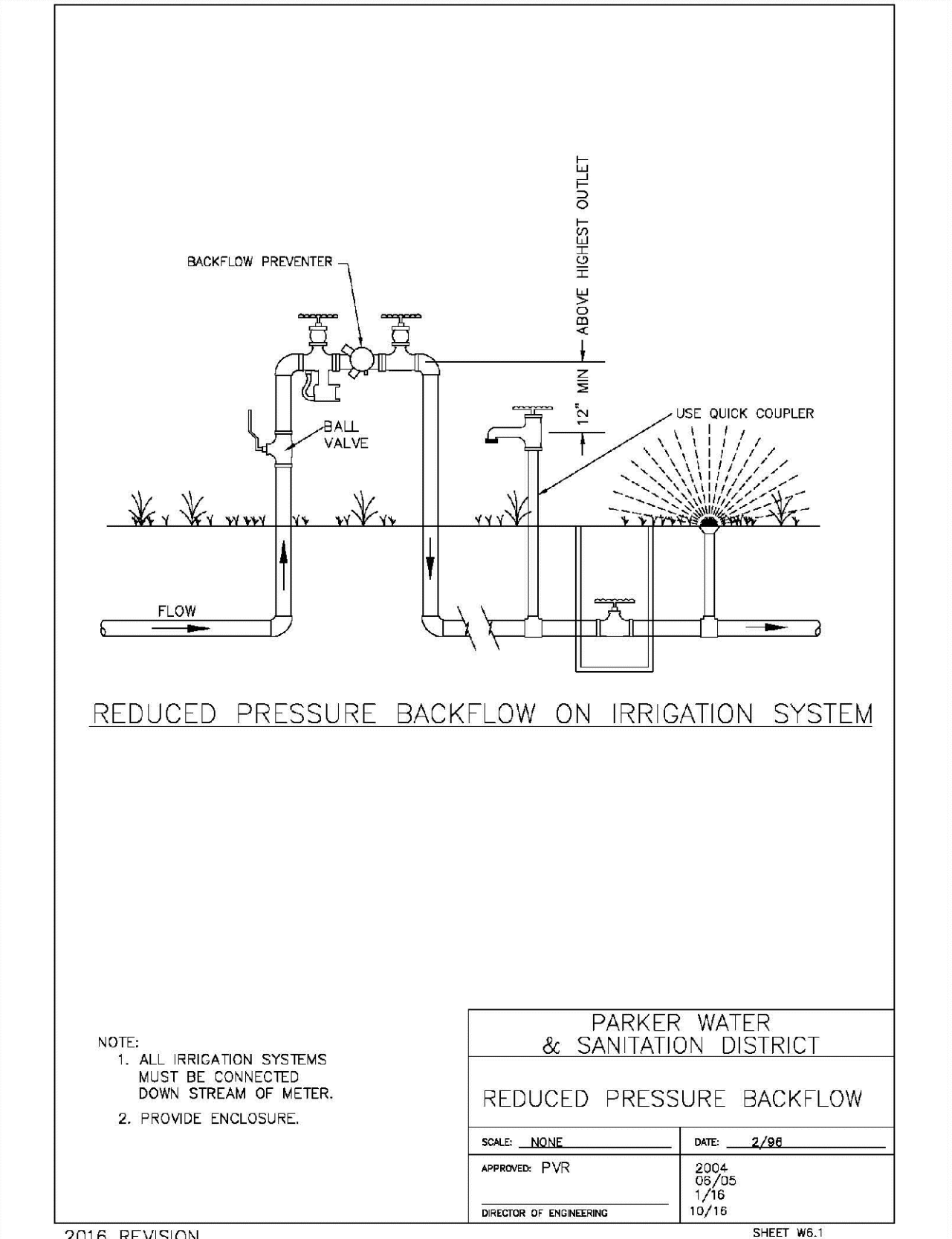
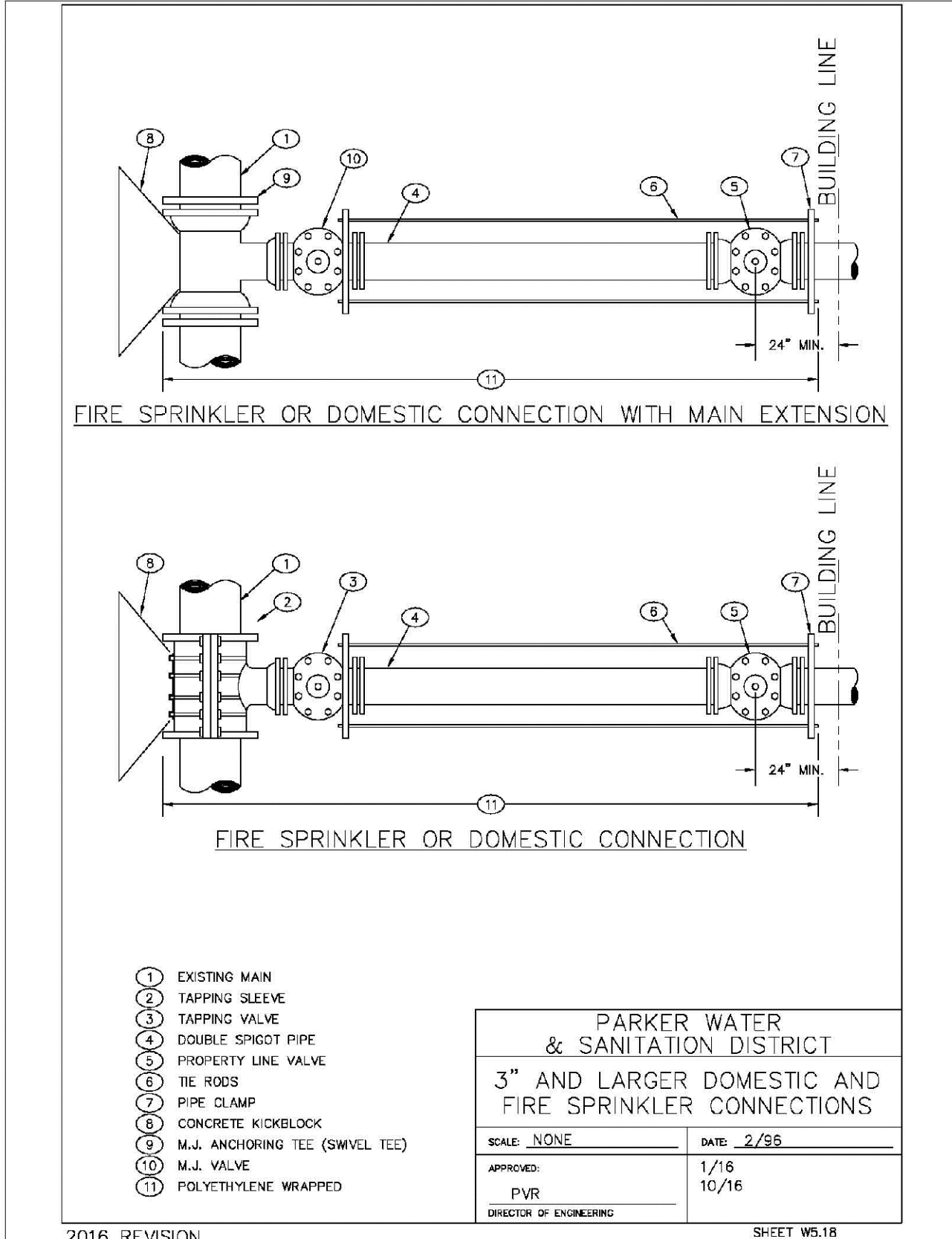
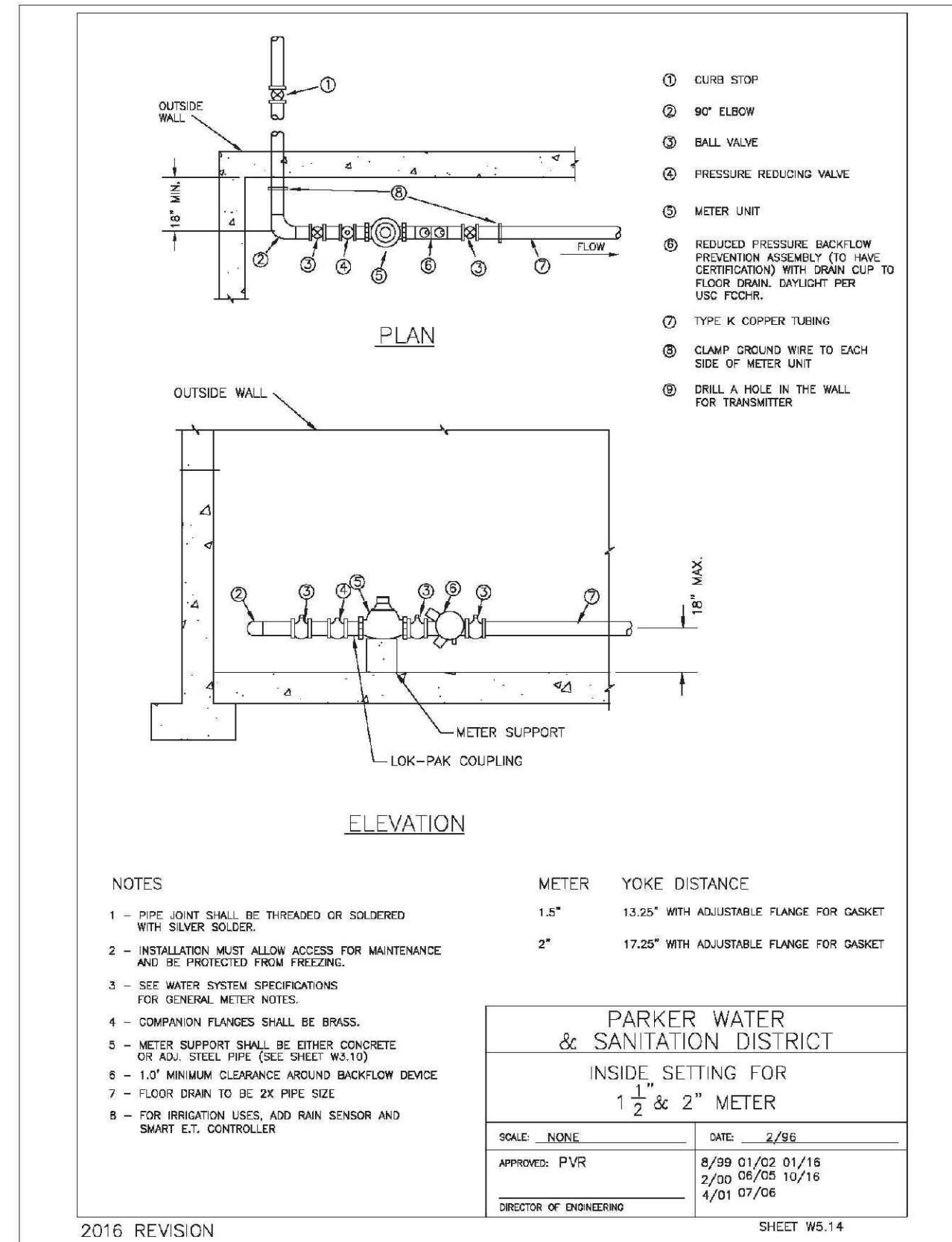
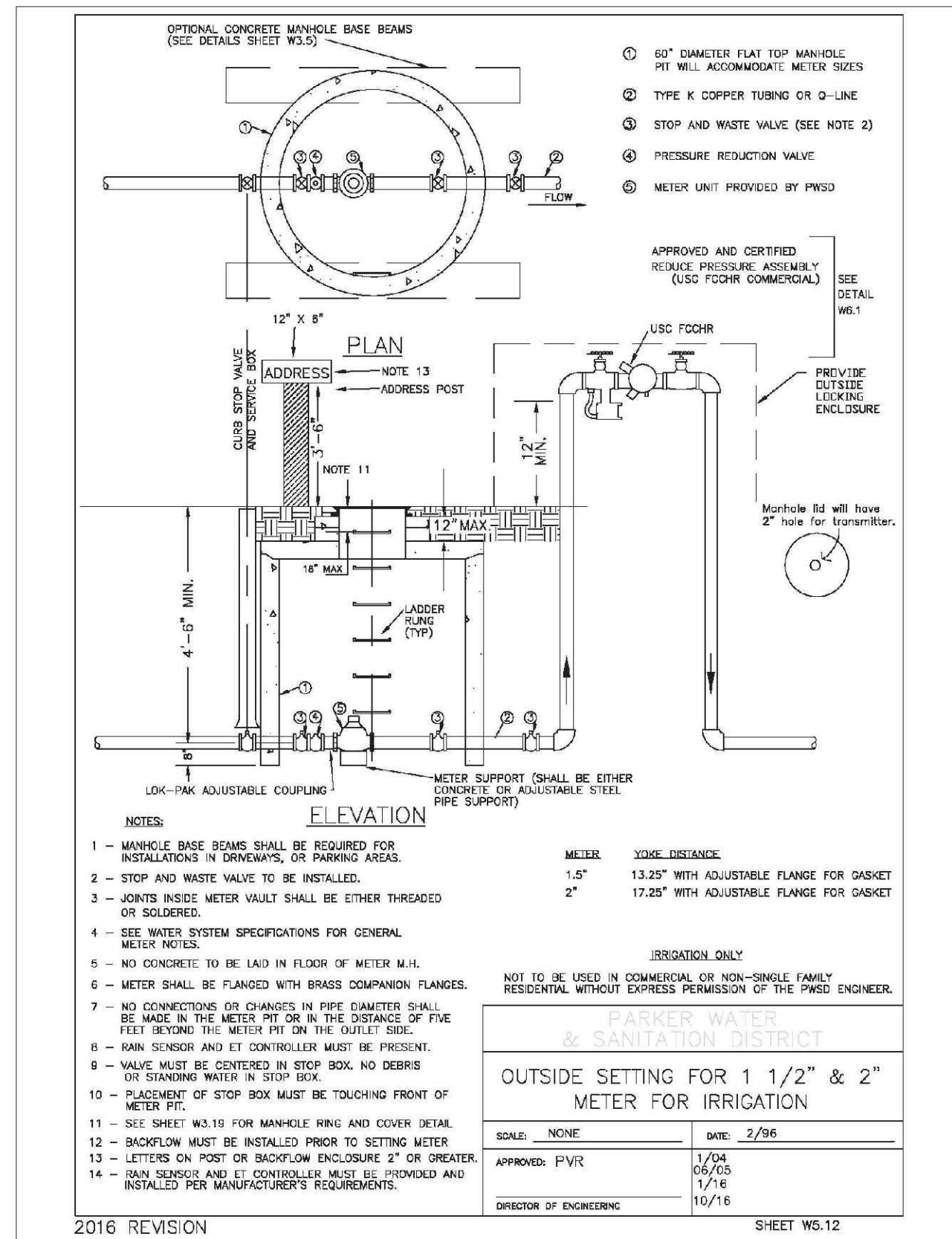
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