



**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 AND SANITATION DISTRICT AND THE DISTRICT ENGINEER.
2. ALL WATER MAINS SHALL BE PER PWSO 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 PWSO 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 PERMATAX 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 DETERMINE 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 ENCASMENT.
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.

CALL 811  
TWO WORKING DAYS  
**BEFORE YOU DIG**  
UNCC 1-800-922-1987  
UTILITY NOTIFICATION  
CENTER OF COLORADO

**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.

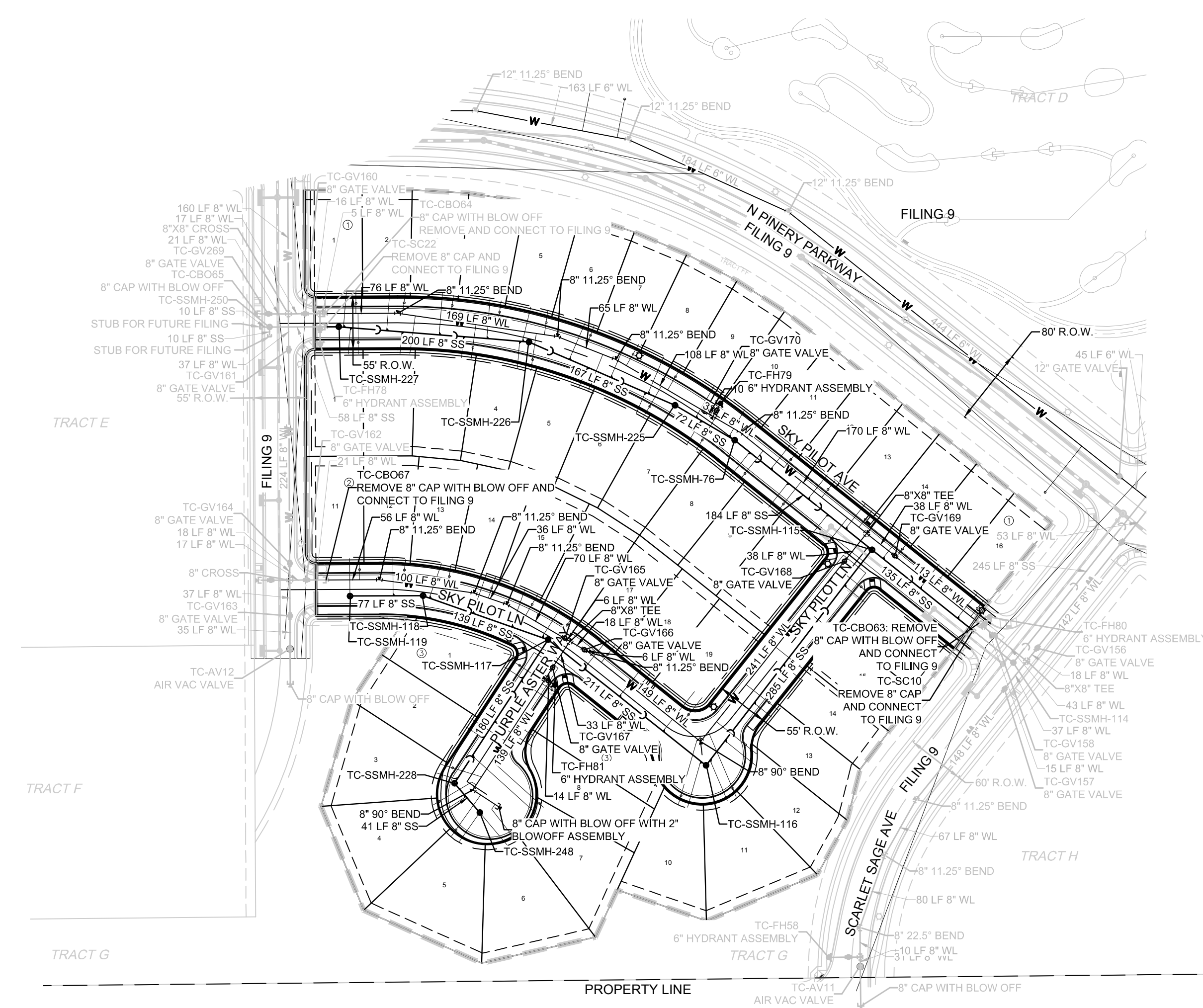
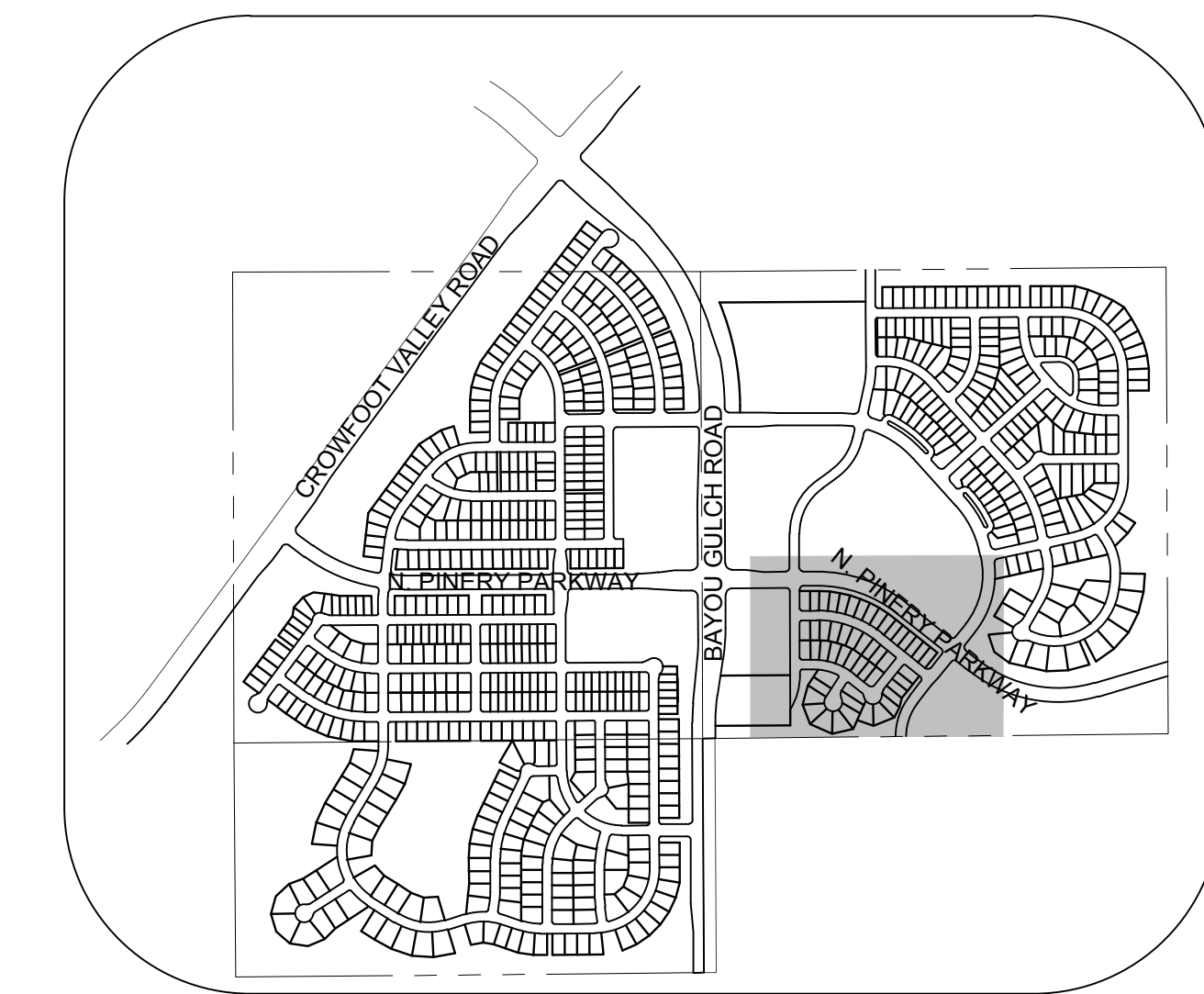
**BASIS OF BEARINGS:**  
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH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

PREPARED UNDER THE SUPERVISION OF  
  
BRIAN P. WILSON  
COLORADO P.E. 0050067

SHEET NUMBER	DRAWN BY: KJD	CHECKED BY: JJ	DATE: SEPTEMBER 2017	SCALE:	AS SHOWN	FILE NO:	8130283701
				<b>TRAILS AT CROWFOOT</b> <b>FILING 13 CONSTRUCTION DRAWINGS</b> PARKER WATER AND SANITATION NOTES			
2	10338 E. Dry Creek Rd. Suite 110 Englewood, CO 80110 Tel: (720) 482-9526 Fax: (720) 482-9546						
	HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112			No.	Revisions	Appr.	Date

N:\PROJECTS\SSR\BENCHM\ENGINEERING\SSR\BENCHM\WATER AND SANITATION\13 COVER.DWG, CDDVA, 3/13/2018 2:13 PM

SERVICE TABLE			
FILING, BLOCK, LOT	STREET	SANITARY STATIONING	WATER STATIONING
F13.B1.L1	SKY PILOT AVE	10+67.60	10+80.72
F13.B1.L2	SKY PILOT AVE	11+12.83	11+29.28
F13.B1.L3	SKY PILOT AVE	11+68.67	11+78.66
F13.B1.L4	SKY PILOT AVE	12+19.65	12+28.49
F13.B1.L5	SKY PILOT AVE	12+57.17	12+77.64
F13.B1.L6	SKY PILOT AVE	13+10.34	13+22.42
F13.B1.L7	SKY PILOT AVE	13+58.55	13+68.28
F13.B1.L8	SKY PILOT AVE	14+01.64	14+18.08
F13.B1.L9	SKY PILOT AVE	14+58.33	14+67.60
F13.B1.L10	SKY PILOT AVE	14+98.56	15+14.05
F13.B1.L11	SKY PILOT AVE	15+54.04	15+64.05
F13.B1.L12	SKY PILOT AVE	16+04.04	16+14.05
F13.B1.L13	SKY PILOT AVE	16+54.04	16+64.05
F13.B1.L14	SKY PILOT AVE	17+04.04	17+14.05
F13.B1.L15	SKY PILOT AVE	17+54.04	17+64.05
F13.B1.L16	SKY PILOT AVE	18+04.04	18+14.05
F13.B2.L1	SKY PILOT AVE	10+74.77	10+82.84
F13.B2.L2	SKY PILOT AVE	11+28.82	11+42.61
F13.B2.L3	SKY PILOT AVE	11+94.64	12+06.19
F13.B2.L4	SKY PILOT AVE	12+54.18	12+69.28
F13.B2.L5	SKY PILOT AVE	13+31.39	13+41.44
F13.B2.L6	SKY PILOT AVE	13+98.60	14+10.45
F13.B2.L7	SKY PILOT AVE	14+64.67	14+75.21
F13.B2.L8	SKY PILOT AVE	15+25.65	15+35.65
F13.B2.L9	SKY PILOT AVE	15+77.09	15+87.09
F13.B2.L10	SKY PILOT LN	16+30.21	16+48.82
F13.B2.L11	SKY PILOT LN	10+72.98	10+82.98
F13.B2.L12	SKY PILOT LN	11+18.40	11+27.54
F13.B2.L13	SKY PILOT LN	11+57.15	11+74.22
F13.B2.L14	SKY PILOT LN	12+06.11	12+16.77
F13.B2.L15	SKY PILOT LN	12+50.83	12+58.98
F13.B2.L16	SKY PILOT LN	12+84.70	13+00.78
F13.B2.L17	SKY PILOT LN	13+40.68	13+50.63
F13.B2.L18	SKY PILOT LN	13+87.63	13+97.63
F13.B2.L19	SKY PILOT LN	14+46.09	14+58.40
F13.B3.L1	PURPLE ASTER WAY	11+49.96	11+59.96
F13.B3.L2	PURPLE ASTER WAY	10+75.49	10+85.49
F13.B3.L3	PURPLE ASTER WAY	10+28.00	10+40.43
F13.B3.L4	PURPLE ASTER WAY	10+20.20	10+18.00
F13.B3.L5	PURPLE ASTER WAY	9+99.01	10+08.41
F13.B3.L6	PURPLE ASTER WAY	9+99.01	9+90.50
F13.B3.L7	PURPLE ASTER WAY	10+53.64	10+60.58
F13.B3.L8	PURPLE ASTER WAY	10+96.13	11+06.13
F13.B3.L9	PURPLE ASTER WAY	11+46.96	11+56.96
F13.B3.L10	SKY PILOT LN	14+82.17	14+80.54
F13.B3.L11	SKY PILOT LN	14+88.52	14+93.60
F13.B3.L12	SKY PILOT LN	15+04.06	15+07.42
F13.B3.L13	SKY PILOT LN	15+49.92	15+59.92
F13.B3.L14	SKY PILOT LN	15+99.92	16+09.92
F13.B3.L15	SKY PILOT LN	16+49.92	16+59.92
F13.B3.L16	SKY PILOT LN	17+04.92	17+14.92



### KEYMAP N.T.S. LEGEND

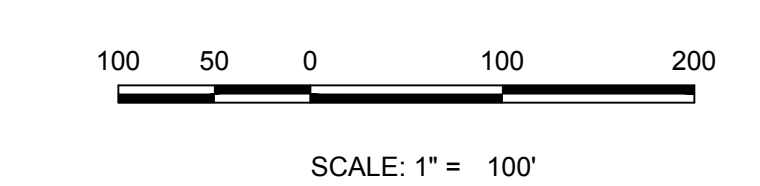
②	BLOCK NUMBER	△	PROPOSED RANGE POINT
Ⓐ	LOT TYPE	---	CENTERLINE
6	LOT NUMBER	---	RIGHT-OF-WAY
⊗	PROPOSED BUTTERFLY VALVE	---	PROPERTY LINE
⊞	PROPOSED CAP WITH END OF LINE BLOWOFF	---	EDGE OF PAVEMENT
⊞	PROPOSED REDUCER	→	PROPOSED DIRECTION OF FLOW
⊞	PROPOSED VALVE	1.0%	PROPOSED SLOPE & DIRECTION
⊞	PROPOSED FIRE HYDRANT	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 WITH METER
⊞	PROPOSED LIGHT POLE	---	PROPOSED WATER LATERAL W/ METER
⊞	PROPOSED SIDEWALK	---	SECTION LINE
⊞	PROPOSED SIDEWALK RAMP	---	FILING BOUNDARY
10.00	EXISTING ELEVATION	---	EXISTING FIBER OPTIC LINE
10.00	EXISTING DESIGN ELEVATION	---	EXISTING OVERHEAD POWER
⊞	PROPOSED STORM DRAIN INLET	---	EXISTING TELEPHONE LINE
⊞	PROPOSED STORM DRAIN MANHOLE	---	

### 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

THE TOWN OF PARKER REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE TOWN'S STANDARDS AND APPROVED VARIANCES, SUBJECT TO THESE PLANS BEING STAMPED, SIGNED, AND DATED BY THE PROFESSIONAL ENGINEER OF RECORD. REVIEW BY THE TOWN DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN OR ACCURACY AND CORRECTNESS OF ENGINEERING CALCULATIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE REGISTERED PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE ARE AFFIXED TO THIS DOCUMENT.

THIS REVIEW DOES NOT CONSTITUTE APPROVAL OF ANY PRIVATE ON-SITE IMPROVEMENTS WHICH MAY BE SHOWN. CONSTRUCTION CANNOT COMMENCE UNTIL ALL REQUIRED DRAINAGE/TRAFFIC REPORT(S), FINAL DEVELOPMENT PLANS(S), SPECIAL REVIEW(S), GRADING PERMIT, AND/OR OTHER PERMITS ARE COMPLETE, APPROVED AND ON FILE WITH THE TOWN OF PARKER.



PREPARED UNDER THE SUPERVISION OF

BRIAN P. WILSON  
COLORADO P.E. 0050067

THE DISTRICT INSPECTOR MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. CALL PARKER WATER AND SANITATION DISTRICT AT 303-841-4627. THE DISTRICT WILL PROVIDE PERIODIC INSPECTIONS OF THE WORK. 24 HOUR NOTICE TO THE INSPECTOR IS REQUIRED FOR SCHEDULED INSPECTIONS. ANY WORK ACCOMPLISHED WITHOUT THE APPROVAL OF THE INSPECTOR WILL BE SUBJECT TO REJECTION.

REVIEWED FOR CONFORMANCE TO PARKER WATER AND SANITATION DISTRICT STANDARDS.

BY: \_\_\_\_\_ DATE \_\_\_\_\_  
(DISTRICT REPRESENTATIVE)

APPROVED FOR CONSTRUCTION:  
PARKER WATER AND SANITATION DISTRICT

BY: \_\_\_\_\_ DATE \_\_\_\_\_  
(DISTRICT ENGINEER)

**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.

**FIRE DEPARTMENT APPROVAL**  
ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO WATER UTILITY STANDARDS. THE NUMBER AND LOCATIONS OF THE FIRE HYDRANTS AS SHOWN ON THE OVERALL UTILITY PLAN ARE CORRECT AS SPECIFIED BY THE TOWN OF PARKER, COMMUNITY DEVELOPMENT DEPARTMENT.

(FIRE CODE OFFICIAL OR DESIGNATED REPRESENTATIVE) \_\_\_\_\_ DATE \_\_\_\_\_

(NOTE: UNDERGROUND FIRE LINE (UFL) SUBMITTAL DOCUMENTS MUST MEET THE REQUIREMENTS OF NFP242 WHEN SUBMITTING FOR REVIEW.)

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

10339 E. Dry Creek Rd.  
Suite 410  
Englewood, Colorado 80110  
Tel: (720) 482-9526  
Fax: (720) 482-9548

**CVL CONSULTANTS**

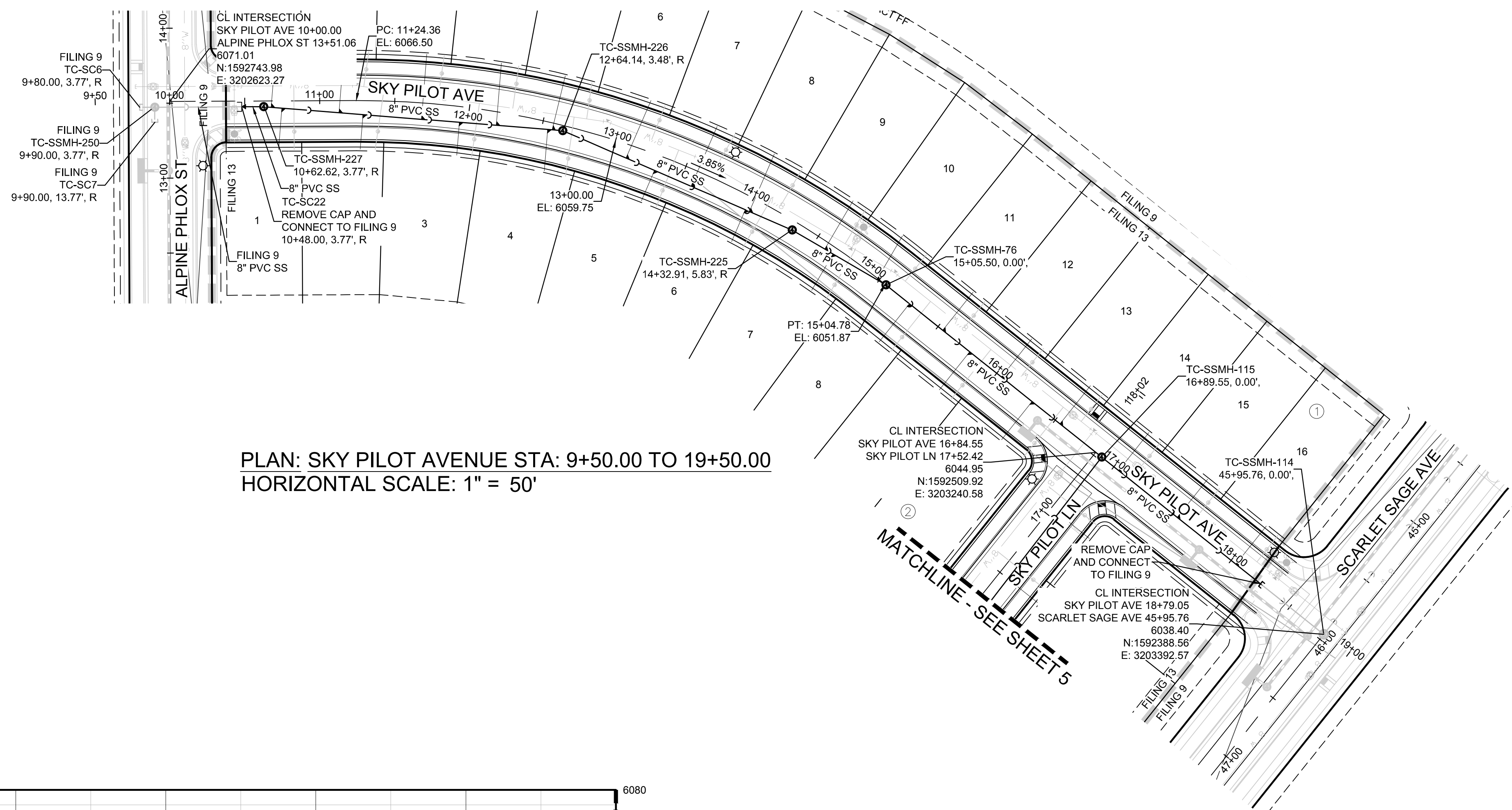
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7353 South Alton Way  
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT  
FILING 13 CONSTRUCTION DRAWINGS  
AREA UTILITY PLAN

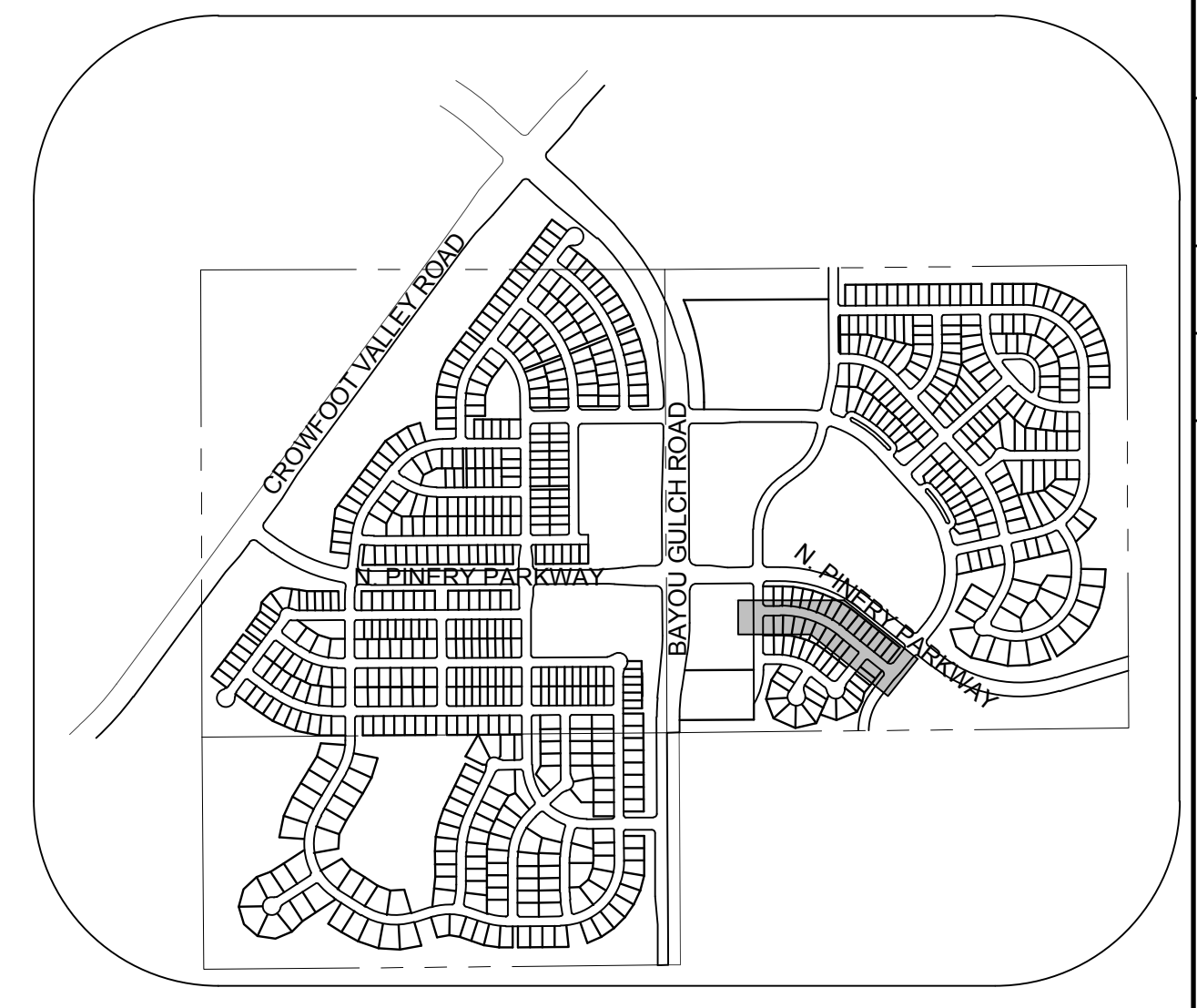
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DRAWN BY: JLR  
CHECKED BY: JJJ  
DATE: SEPTEMBER 2017

SHEET NUMBER **3**



PLAN: SKY PILOT AVENUE STA: 9+50.00 TO 19+50.00  
HORIZONTAL SCALE: 1" = 50'



KEYMAP  
N.T.S.

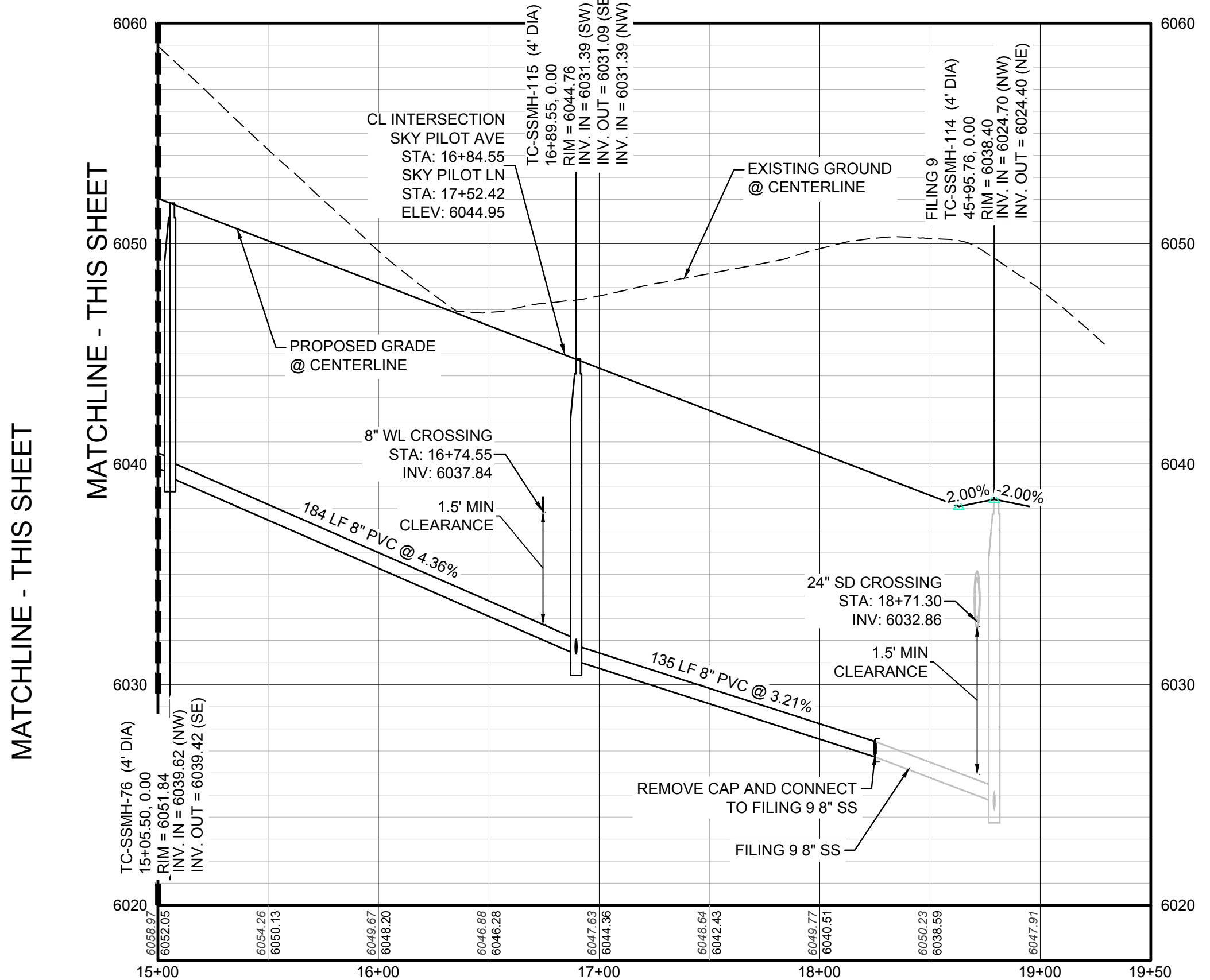
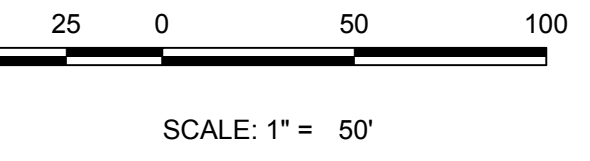
### LEGEND

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 WL FITTING WITH THRUST BLOCK	---	EXISTING 5' CONTOUR
⊕	PROPOSED FLARED END SECTION	---	EXISTING 1' CONTOUR
⊕	PROPOSED LOW POINT BLOW-OFF	---	PROPOSED 5' CONTOUR
⊕	PROPOSED AIR VALVE	---	PROPOSED 1' CONTOUR
⊕	FUTURE PHASE VALVE	---	PROPOSED STORM DRAIN
⊕	FUTURE FIRE HYDRANT	---	PROPOSED SEWER LINE WITH MANHOLE
⊕	PROPOSED LIGHT POLE	---	PROPOSED SEWER LATERAL
⊕	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

### 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	RCPC	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

1. SEE SHEET 3 - AREA UTILITY PLAN FOR SANITARY SERVICE TABLES.

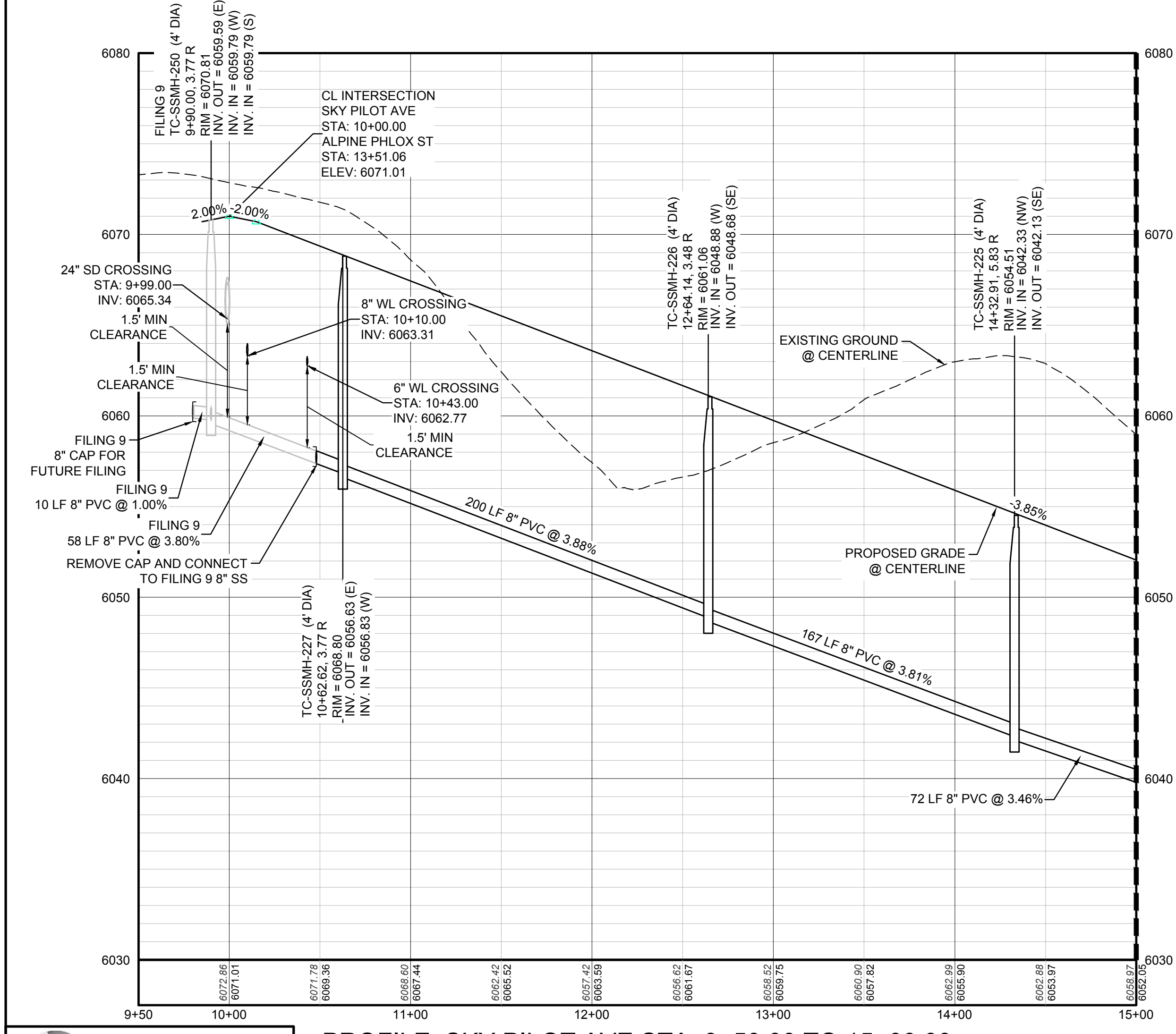


PROFILE: SKY PILOT AVE STA: 15+00.00 TO 19+50.00  
HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'

**BENCHMARK**  
THE 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.

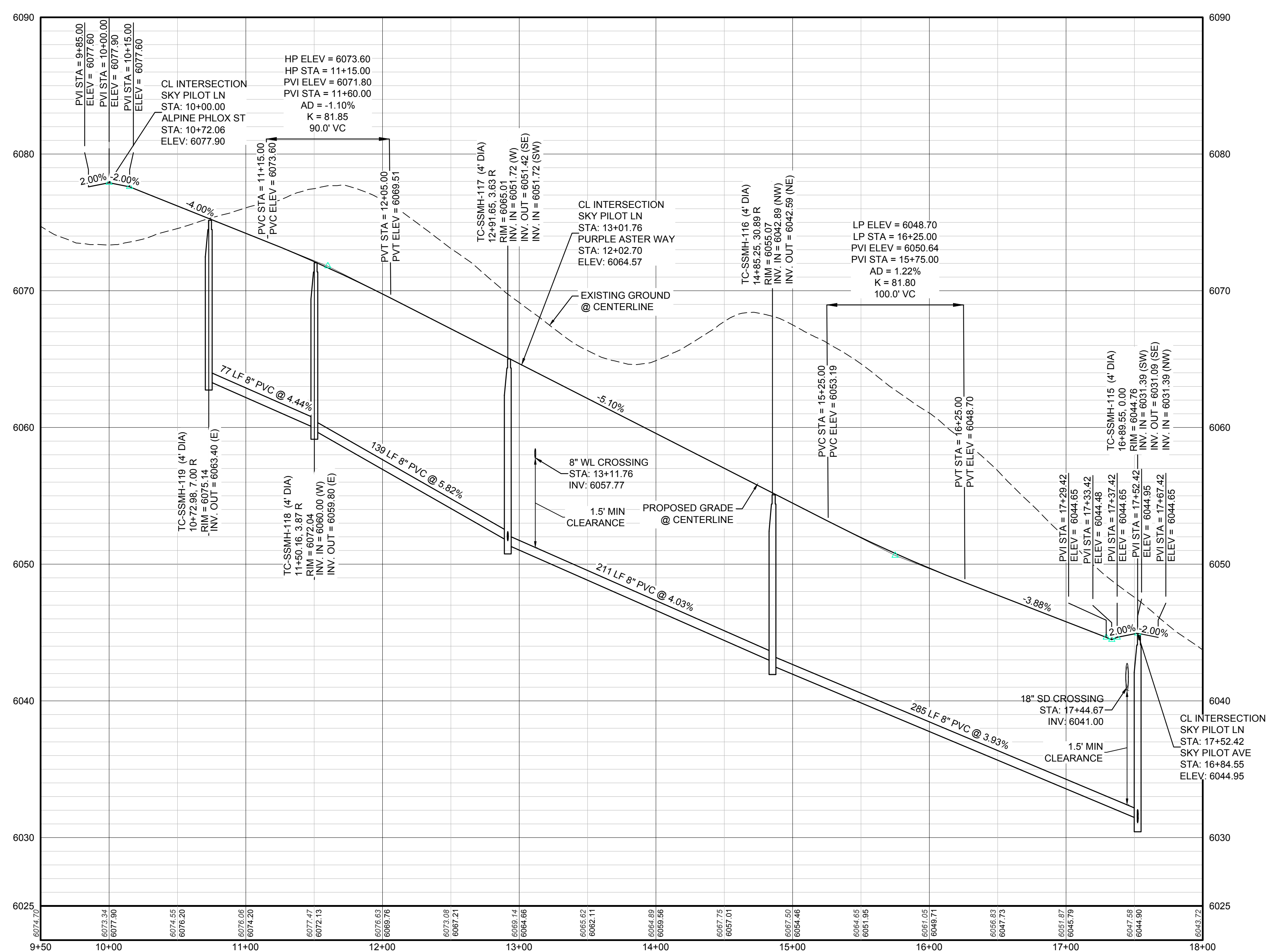
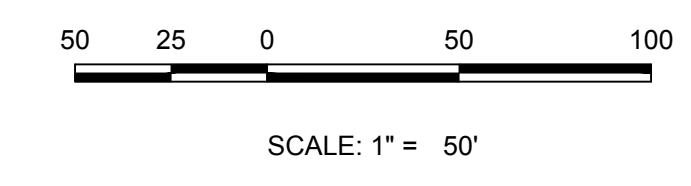
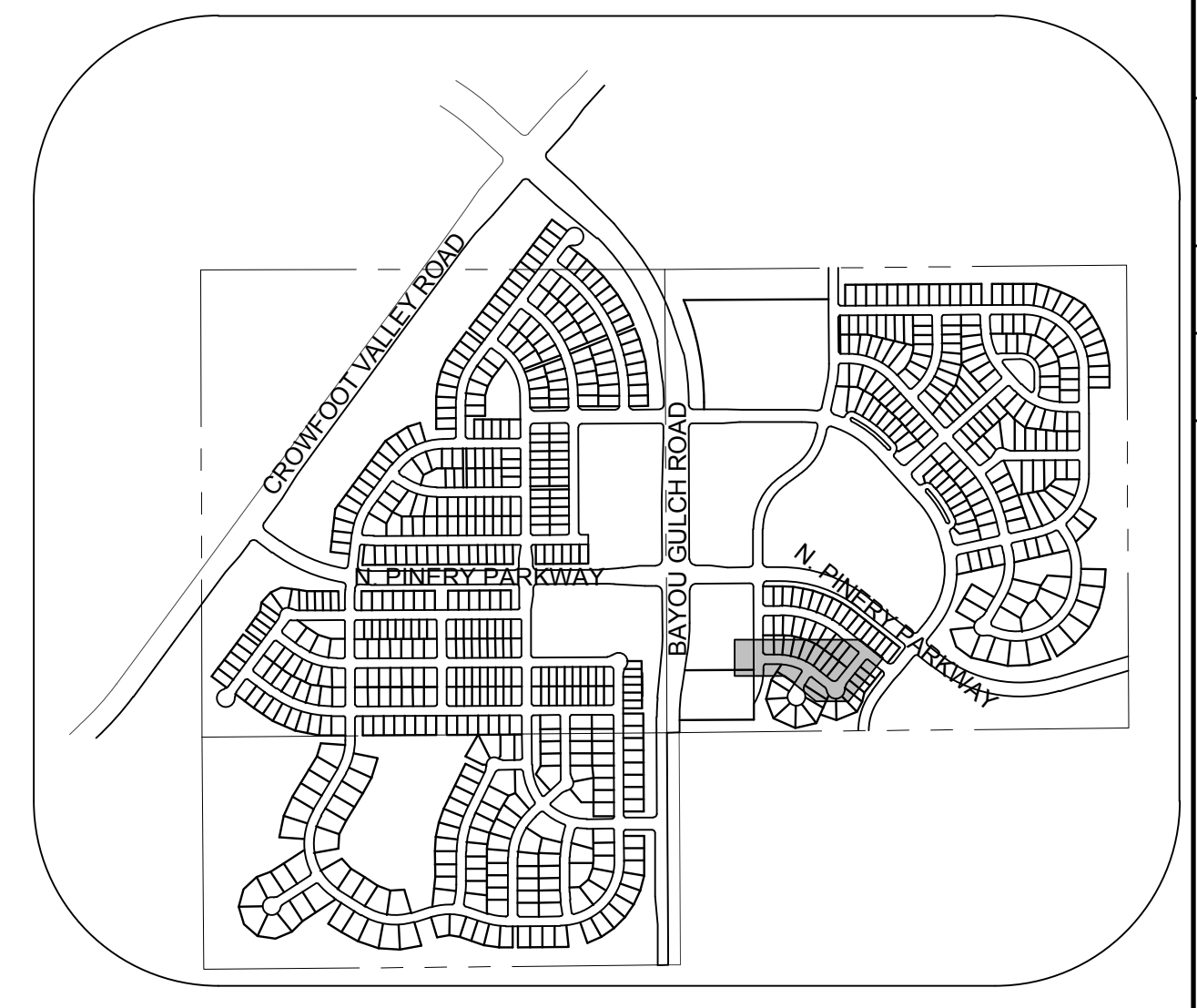
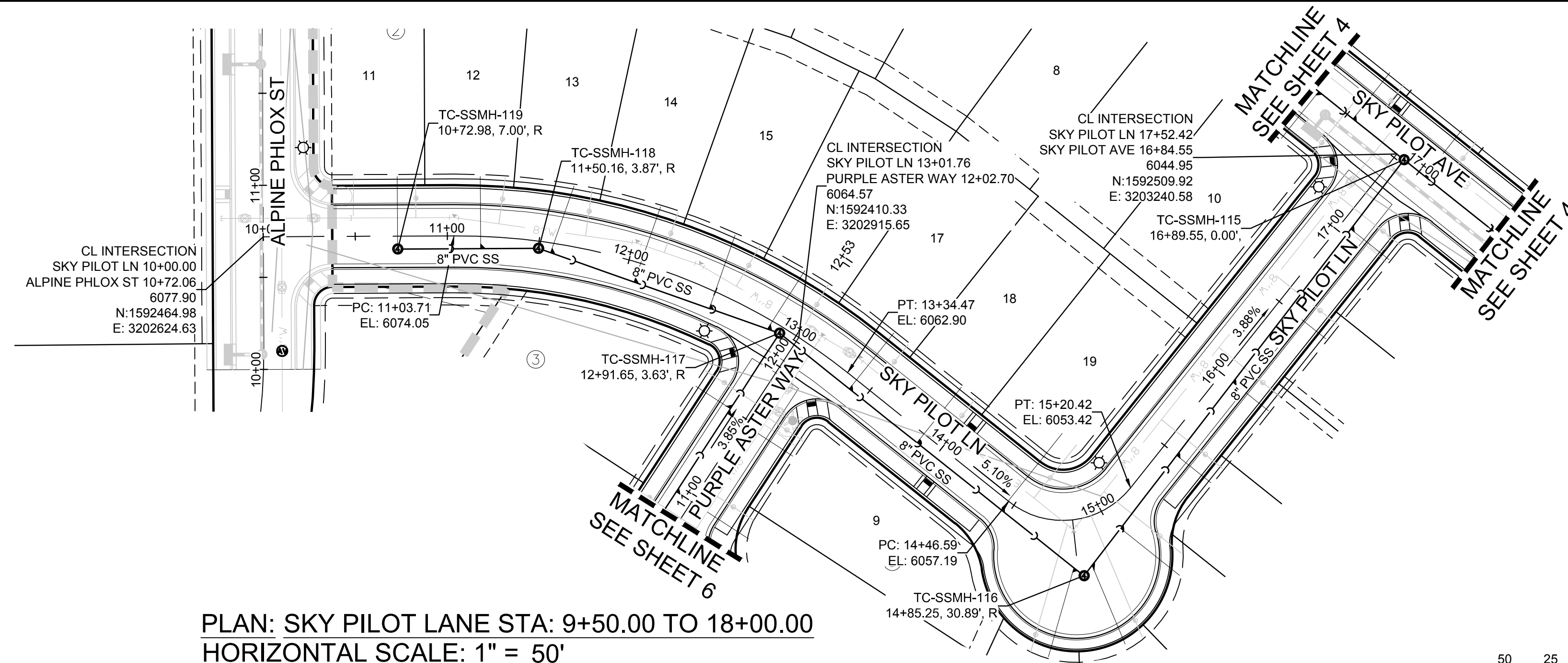
PREPARED UNDER THE SUPERVISION OF  
  
BRIAN P. WILSON  
COLORADO P.E. 0050067



PROFILE: SKY PILOT AVE STA: 9+50.00 TO 15+00.00  
HORIZONTAL: 1" = 50'  
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CALL 811  
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BEFORE YOU DIG  
UNCC 1-800-922-1987  
UTILITY NOTIFICATION CENTER OF COLORADO

10333 E. Dry Creek Rd. Suite 410 Englewood, CO 80150 Tel: (720) 482-9526 Fax: (720) 482-9548	10333 E. Dry Creek Rd. Suite 410 Englewood, CO 80150 Tel: (720) 482-9526 Fax: (720) 482-9548	10333 E. Dry Creek Rd. Suite 410 Englewood, CO 80150 Tel: (720) 482-9526 Fax: (720) 482-9548	10333 E. Dry Creek Rd. Suite 410 Englewood, CO 80150 Tel: (720) 482-9526 Fax: (720) 482-9548
Revisions	Revisions	Revisions	Revisions
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10333 E. Dry Creek Rd. Suite 410			



LEGEND			
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⌋	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	---	PROPOSED WATER LATERAL W/ METER
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10.00	PROPOSED DESIGN ELEVATION	FO	EXISTING FIBER OPTIC LINE
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ABBREVIATIONS			
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CRR	CURB RETURN RADIUS	ROBC	REINFORCED CONCRETE BOX CULVERT
ELEVATION	ELEVATION	RCP	REINFORCED CONCRETE PIPE
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FL	FLOW LINE	STA	STATION
GV	GATE VALVE	T.O.P.	TOP OF PIPE
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1. SEE SHEET 3 - AREA UTILITY PLAN FOR SANITARY SERVICE TABLES.

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PREPARED UNDER THE SUPERVISION OF  
  
BRIAN P. WILSON  
COLORADO P.E. 0050067

SHEET NUMBER	DRAWN BY:	SCALE:	AS SHOWN	FILE NO:	DATE:	Revisions		Date	Appr.	Date
						No.	Date			
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	JJJ									

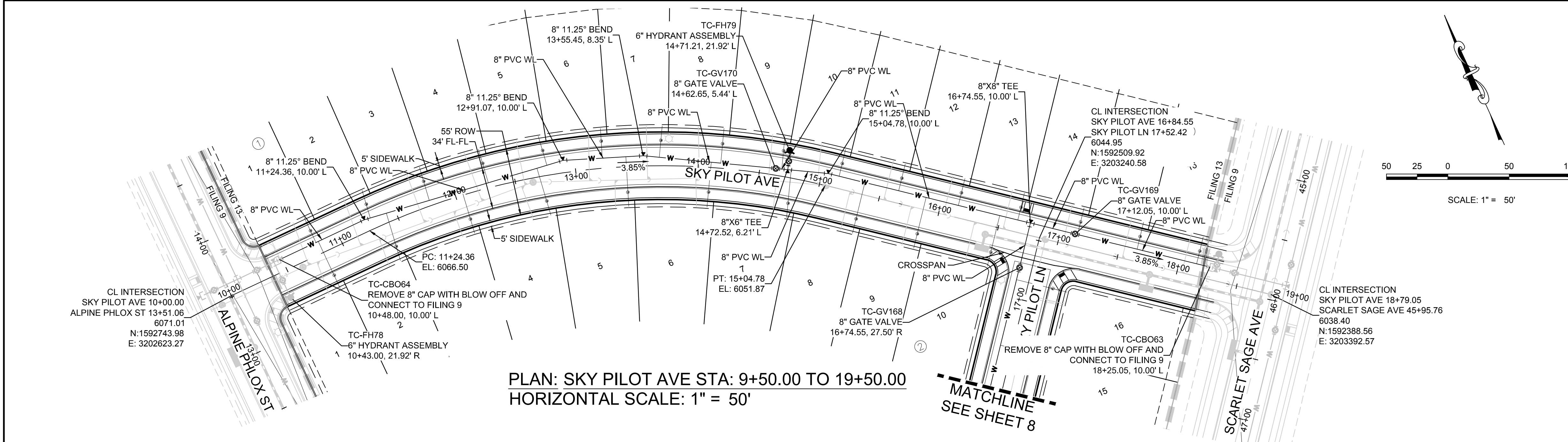
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**CVL CONSULTANTS**

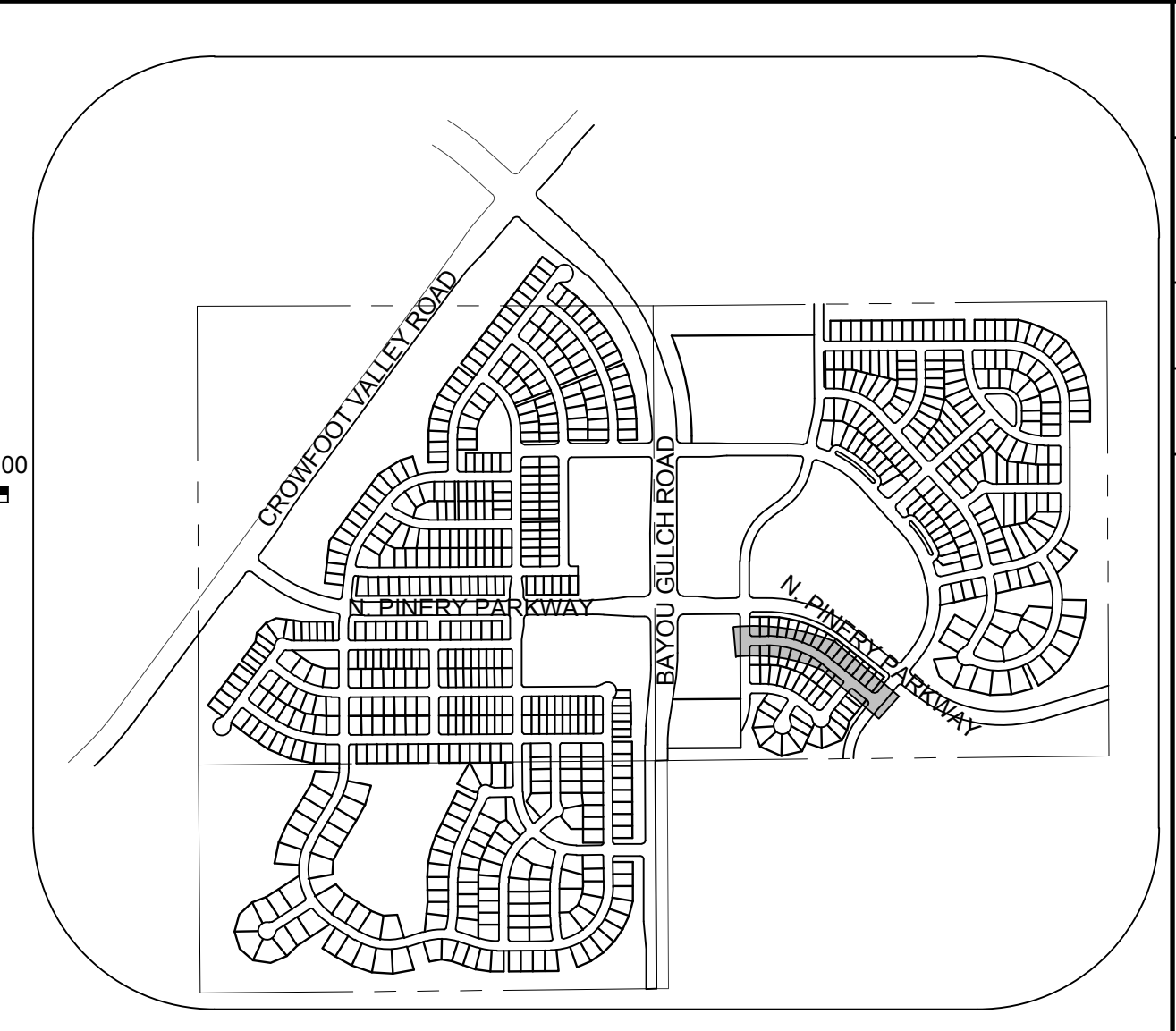
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SKY PILOT LANE



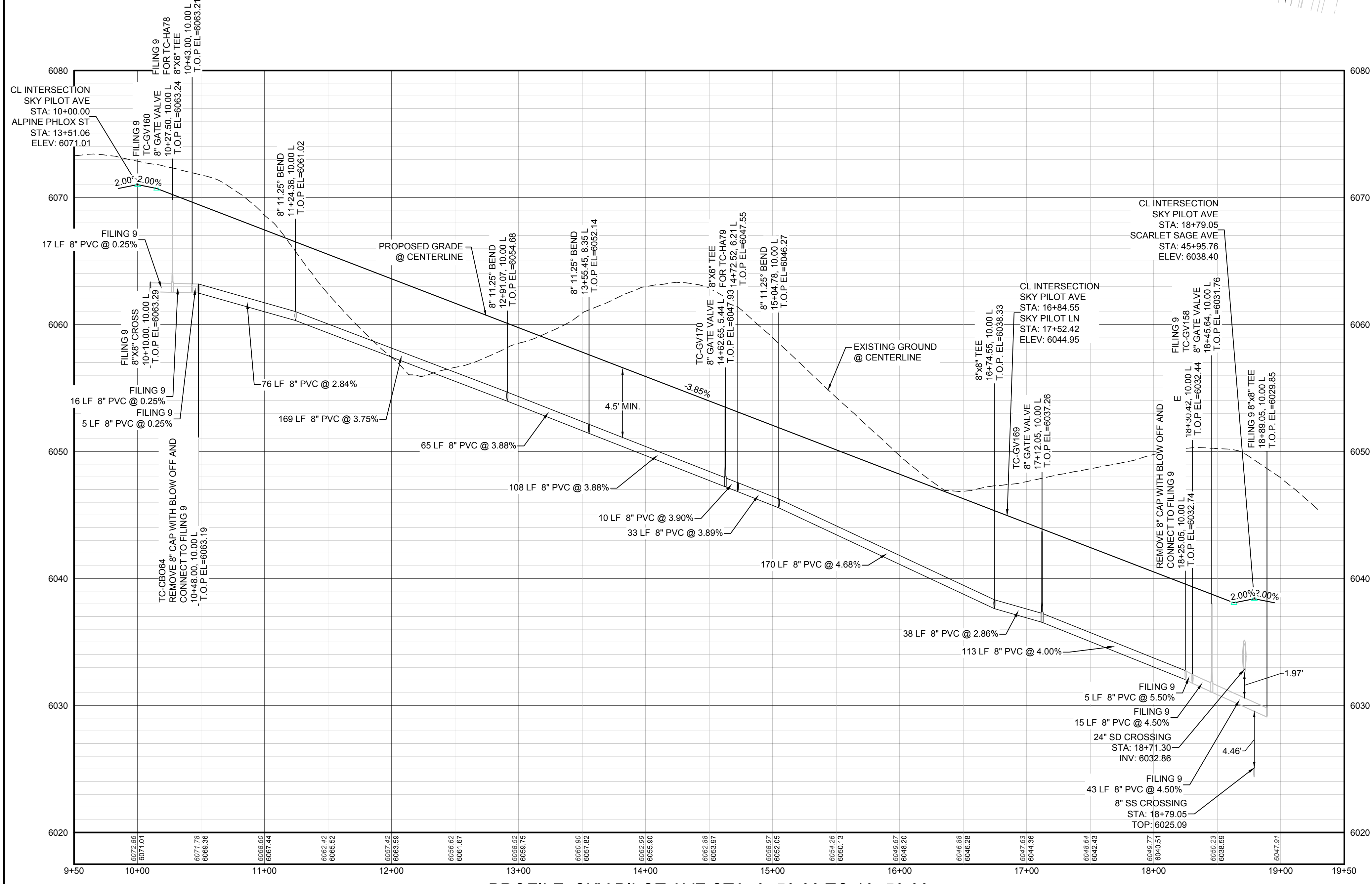


PLAN: SKY PILOT AVE STA: 9+50.00 TO 19+50.00  
HORIZONTAL SCALE: 1" = 50'



KEYMAP  
N.T.S.  
LEGEND

②	BLOCK NUMBER	△	PROPOSED RANGE POINT
(A)	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	---	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

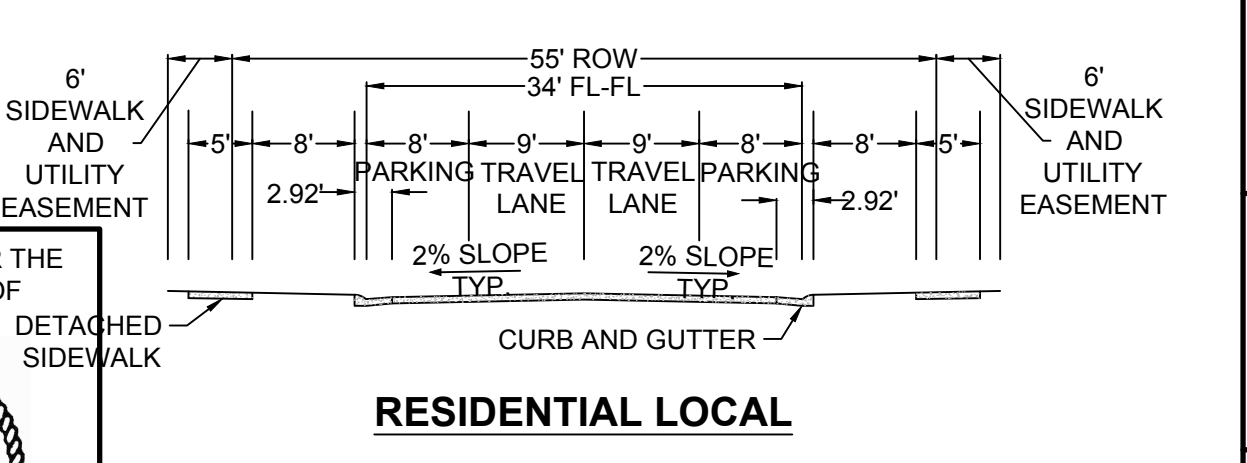


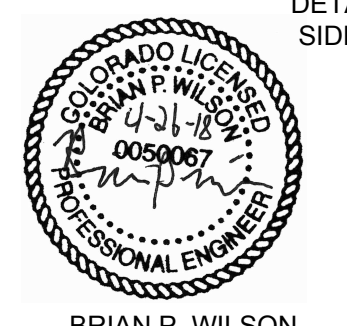
PROFILE: SKY PILOT AVE STA: 9+50.00 TO 19+50.00  
HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'

**BENCHMARK**  
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.

**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
FI	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



PREPARED UNDER THE SUPERVISION OF  
  
 BRIAN P. WILSON  
 COLORADO P.E. 0050067

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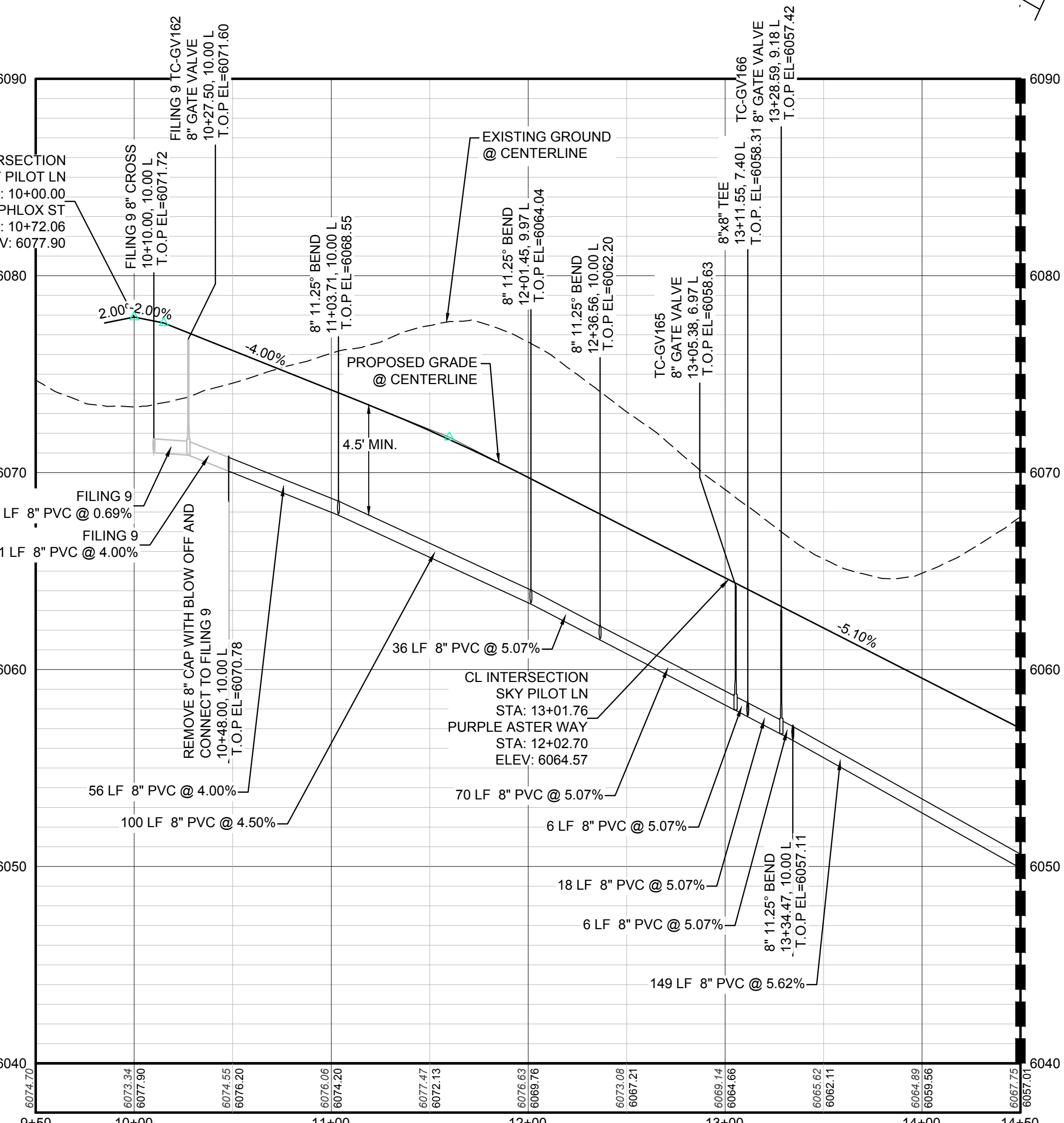
SHEET NUMBER	7
	TRAILS AT CROWFOOT FILING 13 CONSTRUCTION DRAWINGS WATER PLAN & PROFILE SKY PILOT AVENUE
DRAWN BY:	RHR
CHECKED BY:	JU
DATE:	SEPTEMBER 2017
SCALE:	AS SHOWN
FILE NO.:	8130283701
No.	
Revisions	
Init.	
Date	
Appr.	
Date	

10338 E. Dry Creek Rd.  
Suite 6410  
Englewood, CO 80150  
Tel: (720) 482-9526  
Fax: (720) 482-9548

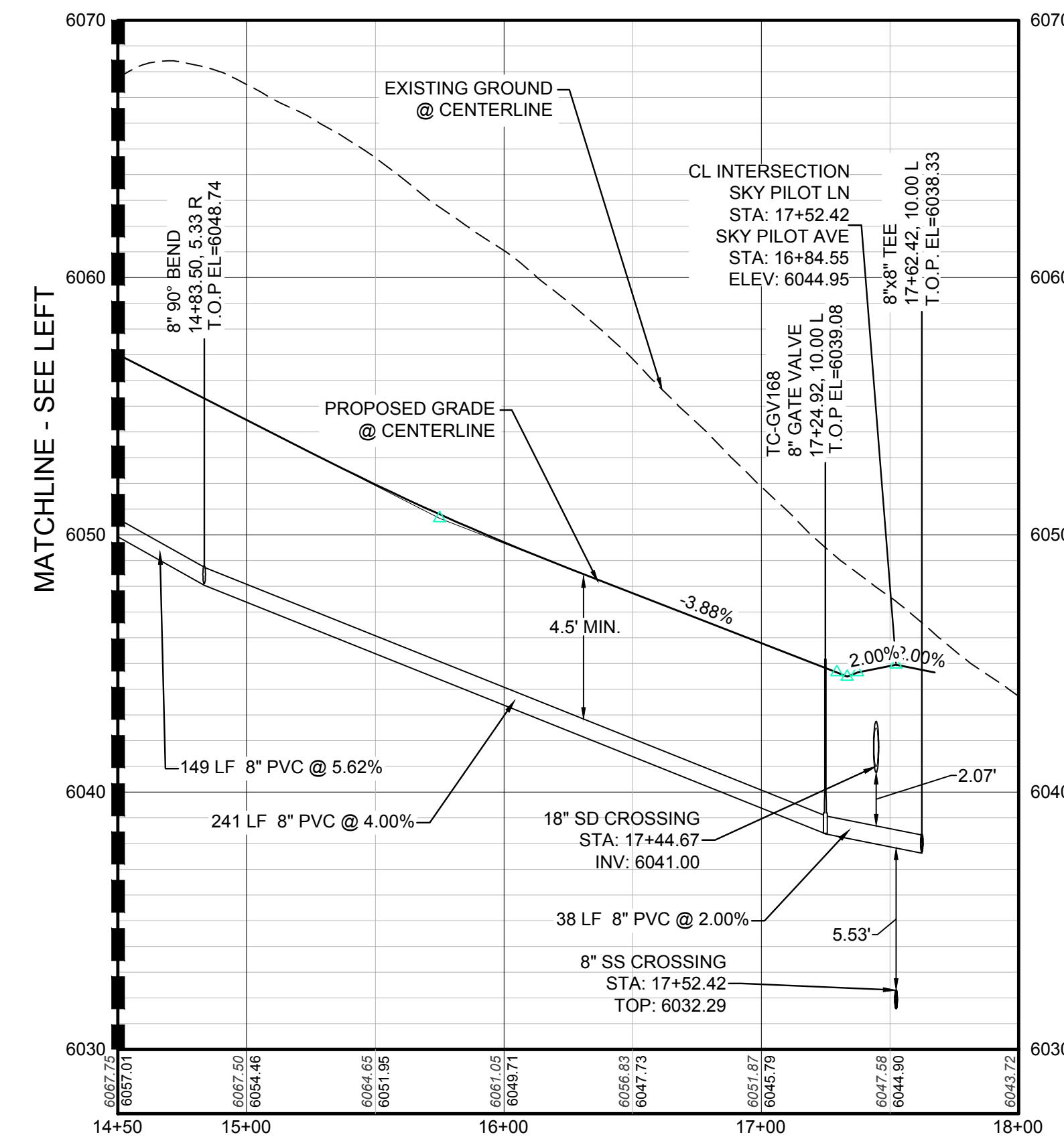
**CVL**  
CONSULTANTS

HR 935 LLC  
7353 South Alton Way  
CENTENNIAL, CO 80112

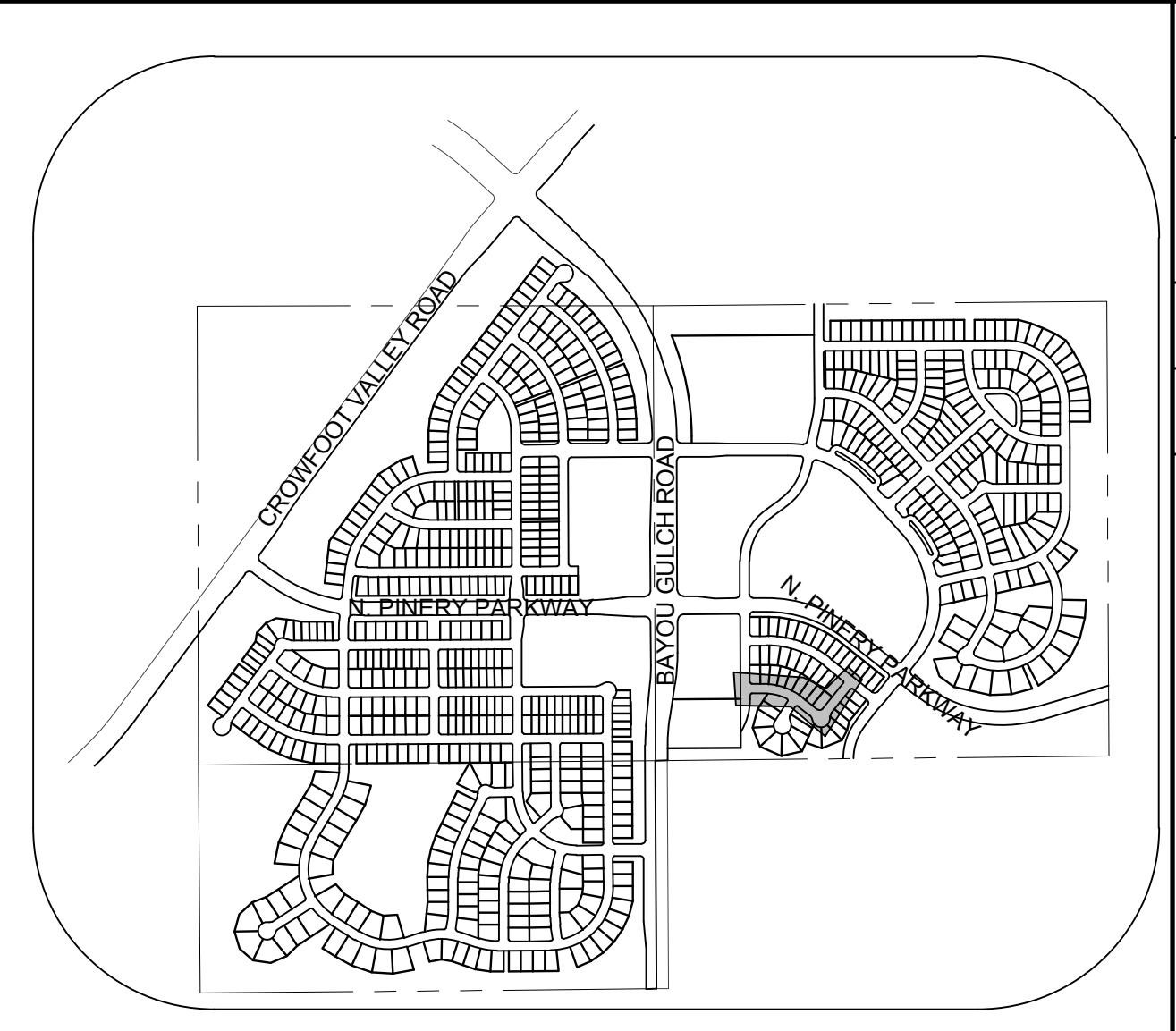
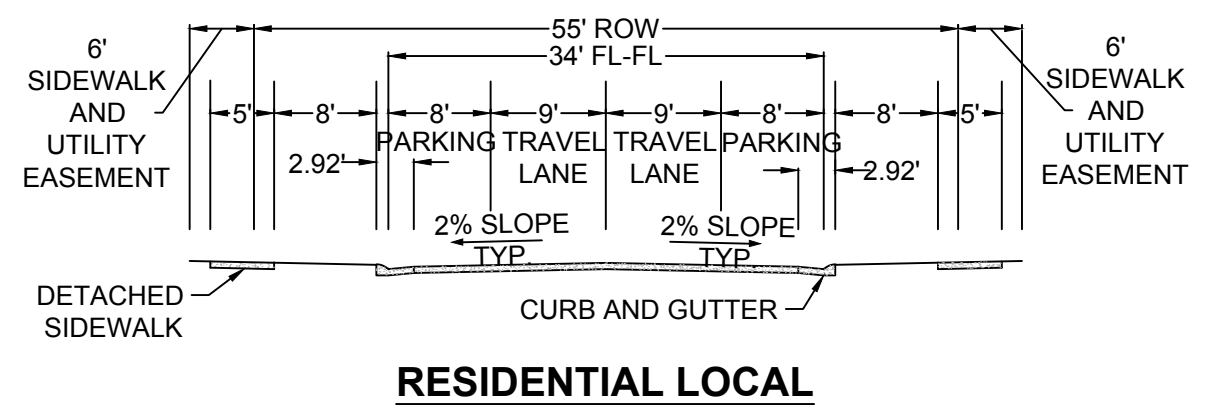
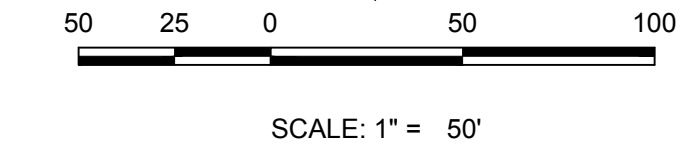
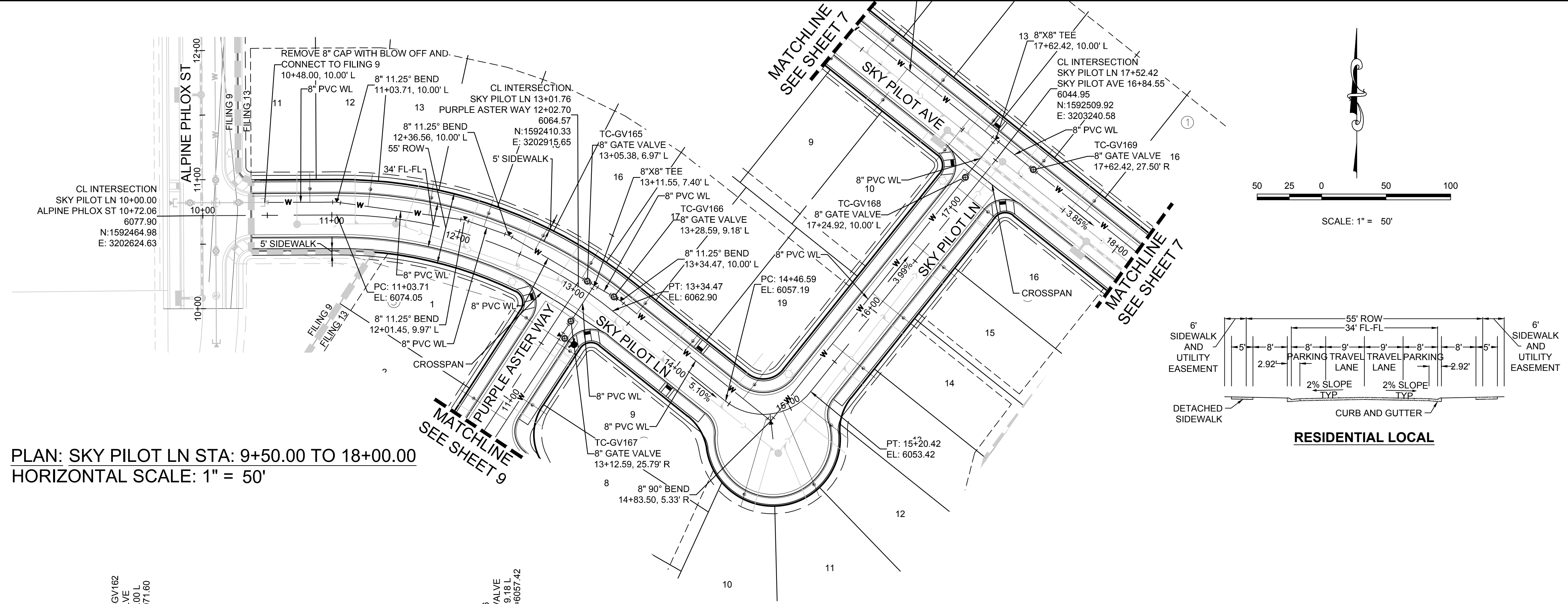
PLAN: SKY PILOT LN STA: 9+50.00 TO 18+00.00  
HORIZONTAL SCALE: 1" = 50'



PROFILE: SKY PILOT LN STA: 9+50.00 TO 14+50.00  
HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'



PROFILE: SKY PILOT LN STA: 14+50.00 TO 18+00.00  
HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'



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
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⊕	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

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
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FH	FIRE HYDRANT	SS	SANITARY SEWER
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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 - AREA UTILITY PLAN FOR WATER SERVICE TABLES.

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**BENCHMARK**  
THE 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

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**CVL CONSULTANTS**

HR 935 LLC  
7353 South Alton Way  
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT  
FILING 13 CONSTRUCTION DRAWINGS  
WATER PLAN & PROFILE  
SKY PILOT LANE

SCALE: AS SHOWN  
DRAWN BY: RHR  
CHECKED BY: JJ  
DATE: SEPTEMBER 2017

FILE NO: 8130283701

SHEET NUMBER: 8

No. Revisions: \_\_\_\_\_  
Date: \_\_\_\_\_  
Init: \_\_\_\_\_  
Date: \_\_\_\_\_  
Appr: \_\_\_\_\_  
Date: \_\_\_\_\_





**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:
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  - ELONGATION: 10% IN 2"
  - BRINELL HARDNESS: 70
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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 asphalt 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**

Lower limit of sloping or benching of trench walls  
Densely compacted backfill (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  
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

**IDEAL TRENCH CONDITIONS**  
LARGER THAN 12" DIA.

**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 SUBURBAN 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 2/02 1/16 10/16  
DIRECTOR OF ENGINEERING

**CLASS "B" BEDDING**

HAND-TAMPED BACKFILL (TYP) FOR SIZE 18" AND LARGER  
GRANULAR CLASS "B" SQUEEZE BEDDING MATERIAL, HAND-TAMPED IN 6" LIFTS  
GEOTEXTILE FIBER CLOTH  
LARGE STONES, BROKEN CONCRETE, ETC. IF REQUIRED

**UNSTABLE SUBGRADE CONDITION**

**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 2/02 1/16 10/16  
DIRECTOR OF ENGINEERING

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HAND-TAMPED BACKFILL (TYP) FOR SIZE 18" AND LARGER  
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**PARKER WATER & SANITATION DISTRICT**  
TRENCHING AND BEDDING DETAIL - CLASS "B"

SCALE: NONE DATE: 2/98  
APPROVED: PVR 5/98 2/02 1/16 10/16  
DIRECTOR OF ENGINEERING

**TYPE I CONCRETE ENCASEMENT FOR SANITARY SEWERS**  
(CONCRETE ARCH)

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 ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
- TYPE I 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 I ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
  - TYPE I ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
  - TYPE I ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
- FILLER MATERIAL BETWEEN CONDUITS TO BE:
  - CONCRETE
  - CONCRETE
  - CONCRETE
  - CONCRETE
- 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 THESE CONDUIT DIAMETER TOP ENCASEMENT WILL NORMALLY BE SATISFACTORY.
- IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF EXISTING PIPE (AWD-150 OR C-151), CONCRETE ENCASEMENT MAY NOT BE REQUIRED.

**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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UTILITY NOTIFICATION CENTER OF COLORADO

10333 E. Dry Creek Rd.  
Denver, CO 80231  
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Tel: (720) 482-9296  
Fax: (720) 482-9548

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

**TRAILS AT CROWFOOT**  
FILING 13 CONSTRUCTION DRAWINGS  
SANITARY SEWER DETAILS

SCALE: AS SHOWN  
FILE NO: 8130283701

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

SHEET NUMBER: 11

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



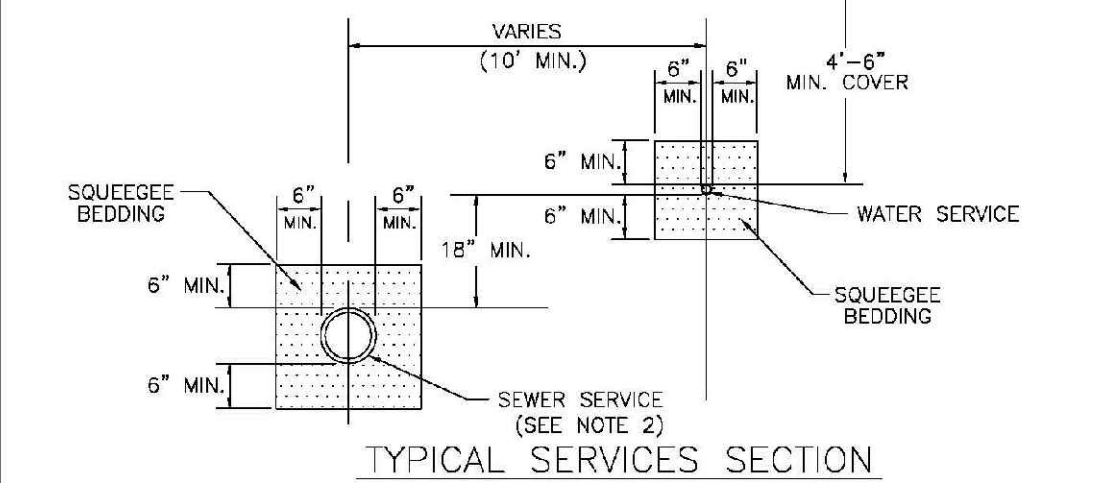
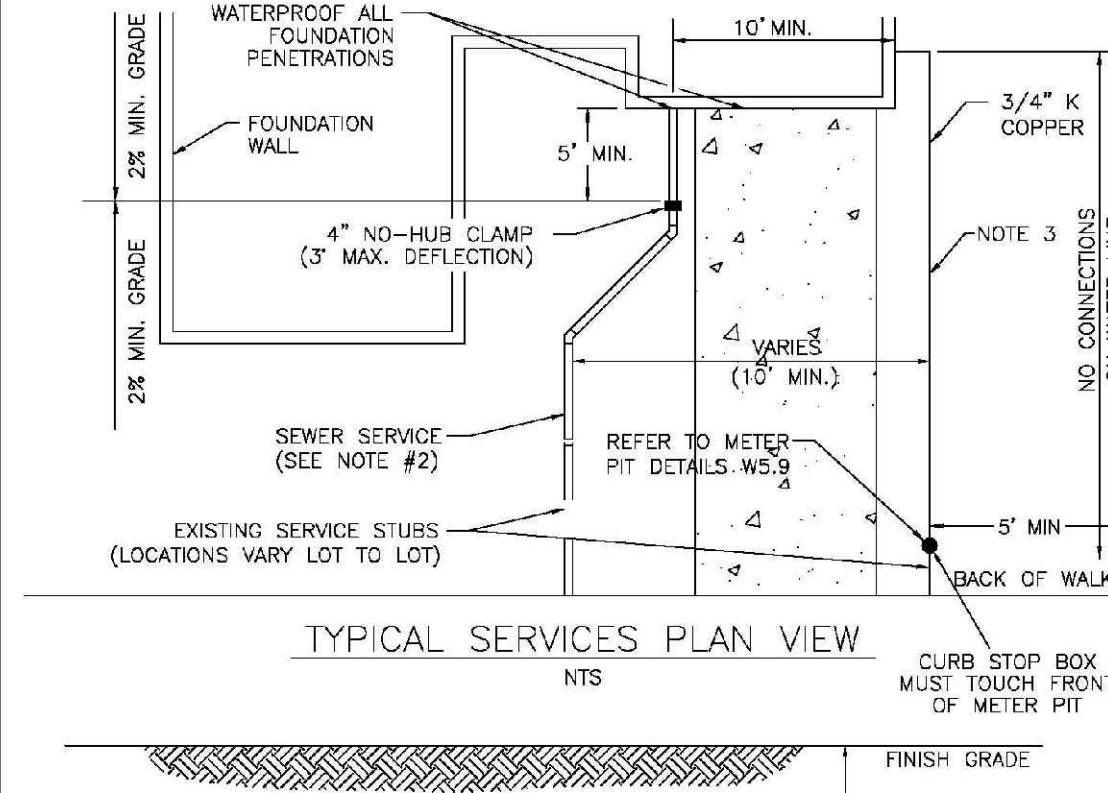
- INSPECTION POLICY:**
1. ALL SERVICE INSPECTIONS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
  2. SERVICE INSPECTIONS WILL OCCUR BETWEEN 1:00 P.M. AND 3:00 P.M. SPECIFIC INSPECTION TIMES ARE NOT AVAILABLE.
  3. IF THE CONTRACTOR IS NOT READY FOR INSPECTION WHEN THE INSPECTOR 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.

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

2016 REVISION

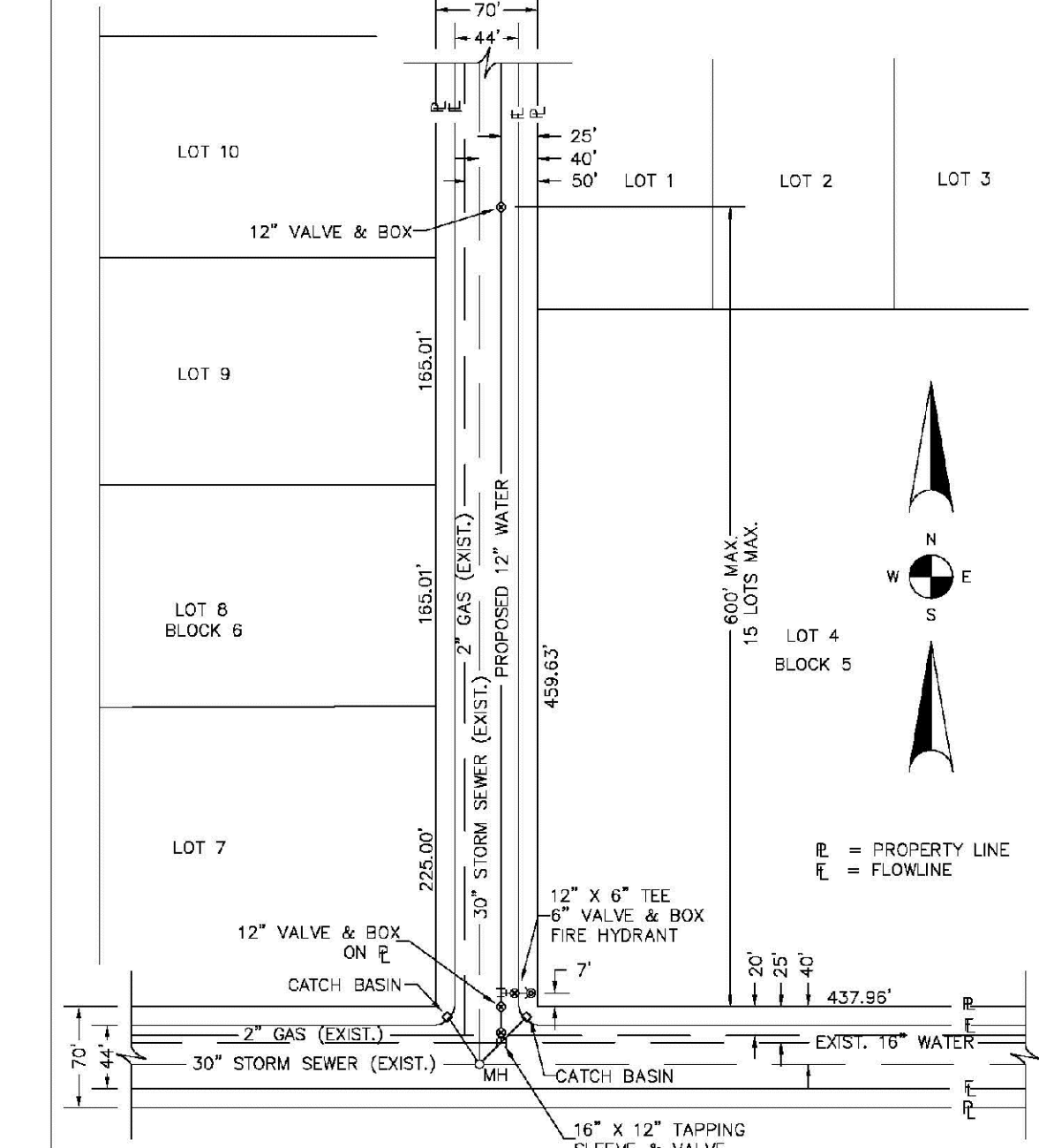
SHEET W1.1



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

2016 REVISION

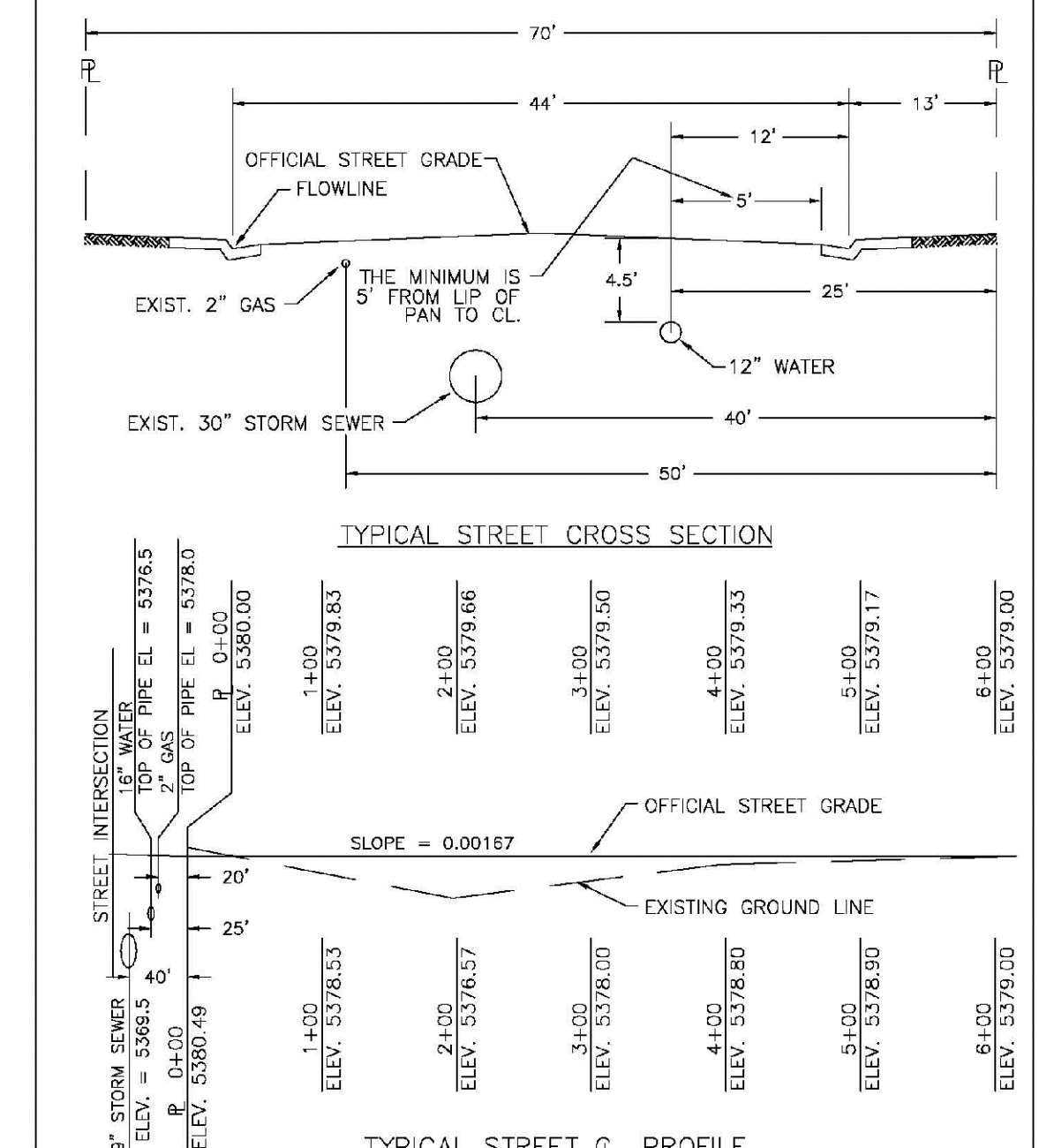
SHEET W1.2



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

2016 REVISION

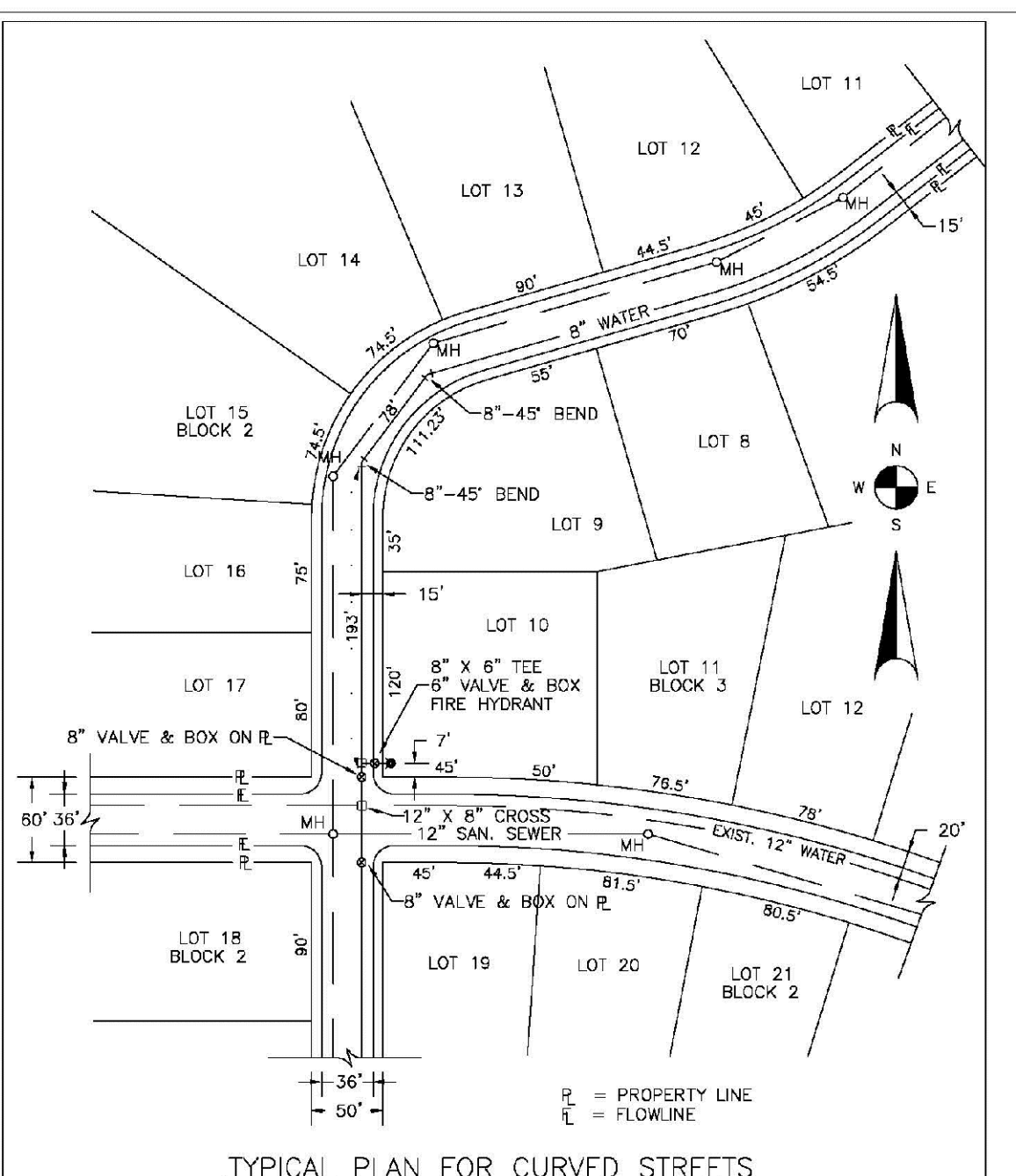
SHEET W2.1



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

2016 REVISION

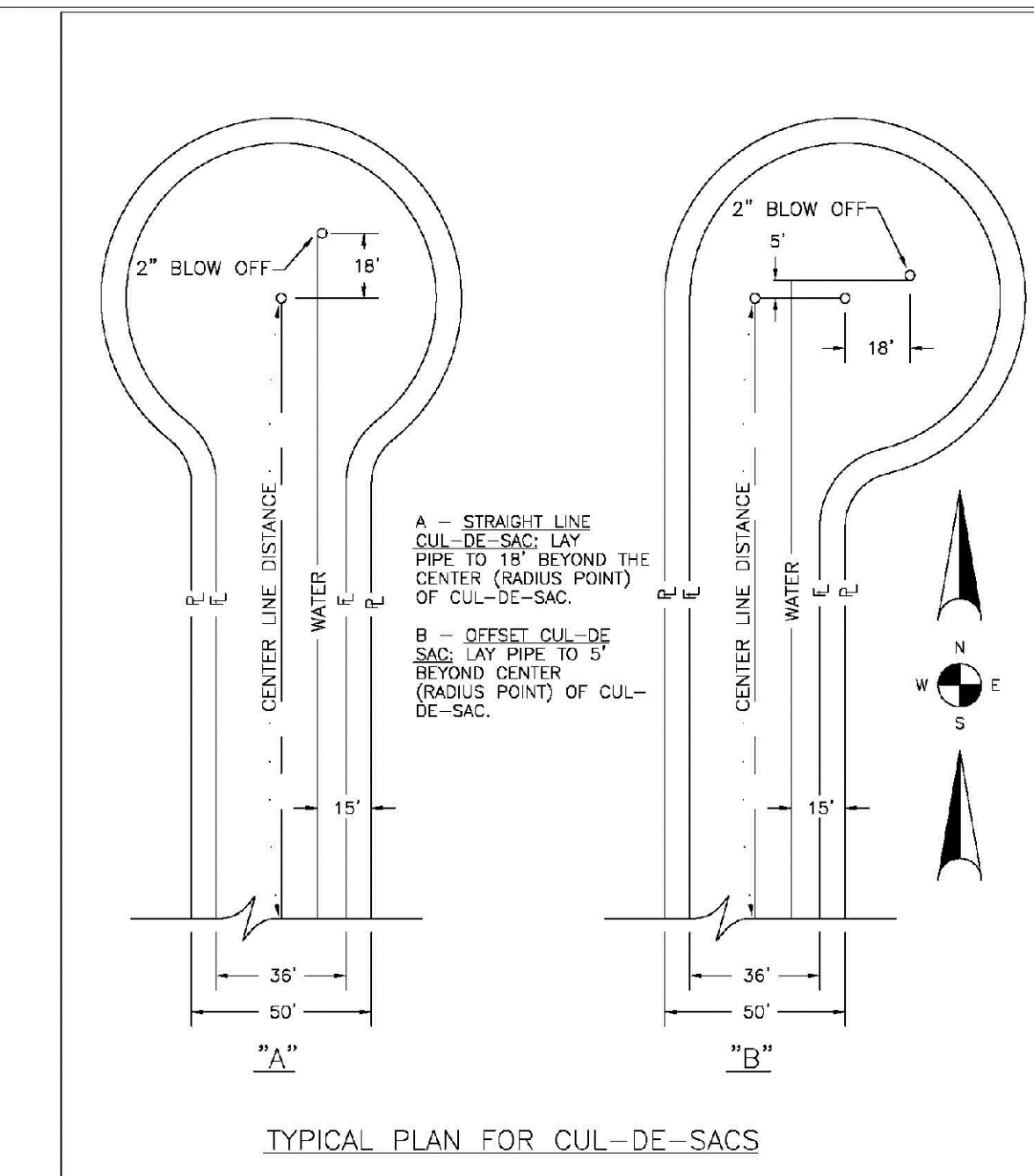
SHEET W2.2



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

2016 REVISION

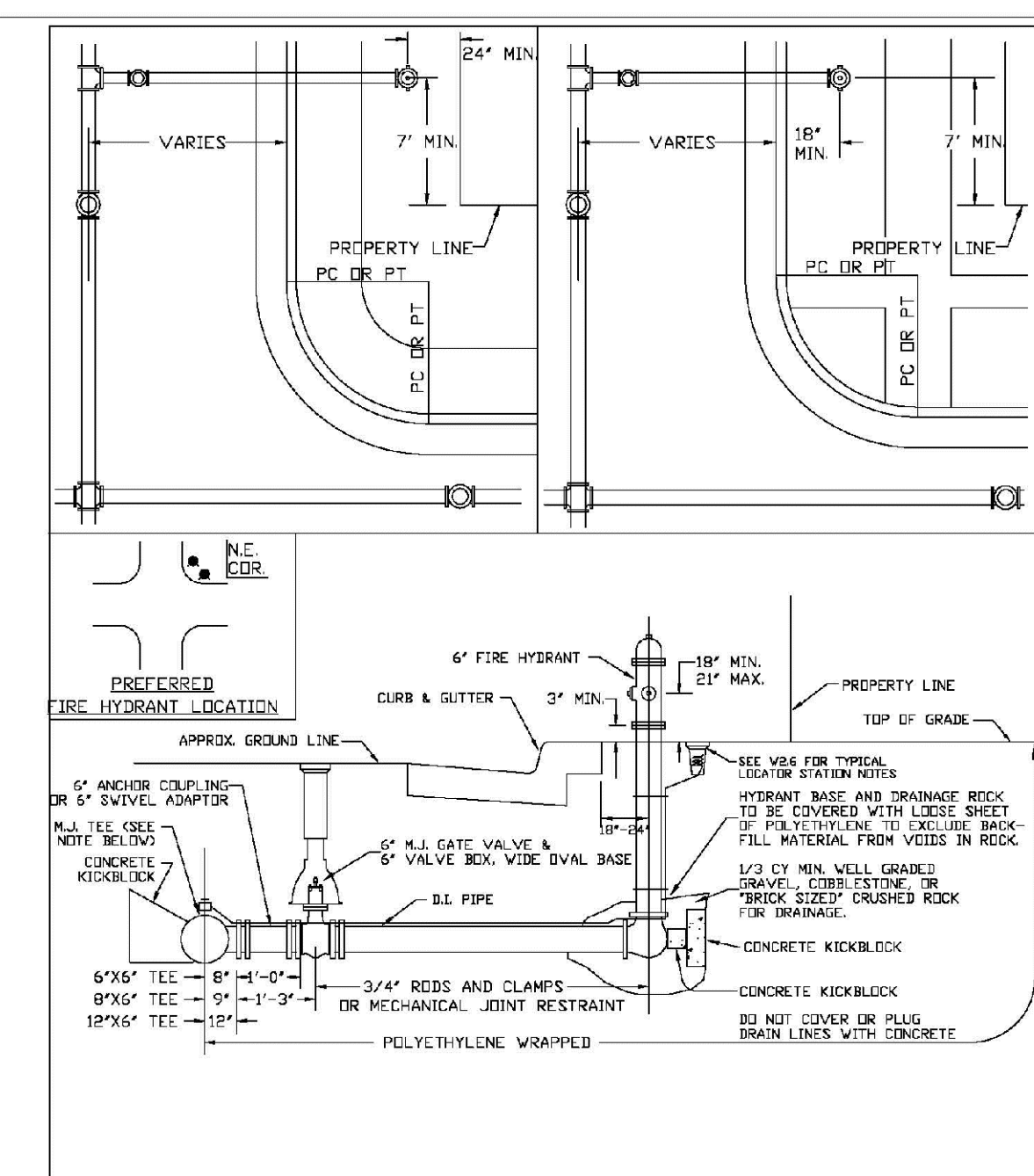
SHEET W3.3



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

2016 REVISION

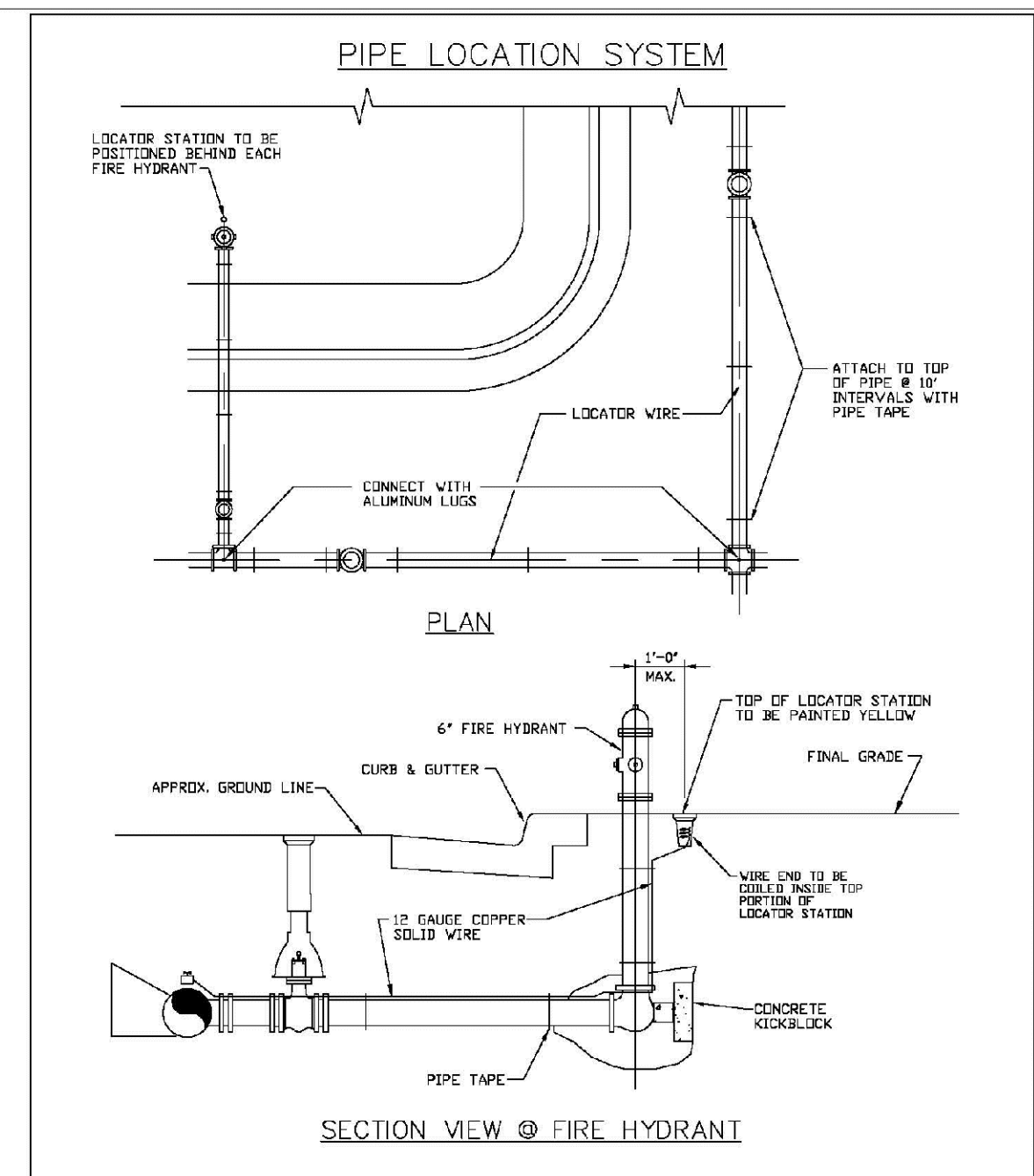
SHEET W2.4



<b>PARKER WATER &amp; SANITATION DISTRICT</b>	
<b>FIRE HYDRANTS LOCATION &amp; INSTALLATION</b>	
SCALE: NONE	DATE: 2/96
APPROVED: 4/01	10/16
PVR	09/05
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W3.5



<b>PARKER WATER &amp; SANITATION DISTRICT</b>	
<b>LOCATOR WIRE DETAILS</b>	
SCALE: NONE	DATE: 2/96
APPROVED: 4/01	10/16
PVR	09/05
DIRECTOR OF ENGINEERING	

2016 REVISION

SHEET W3.6

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CALL 811  
TWO WORKING DAYS  
BEFORE YOU DIG  
UNCC 1-800-922-1987  
LITLTY NOTIFICATION  
CENTER OF EXCELLENCE

DRAWN BY: JF	SCALE: AS SHOWN	DATE: SEPTEMBER 2017	FILE NO: 8130283701	SHEET NUMBER: 13	DATE: 10/16	INIT: JF	APPR: PVR	DATE: 10/16	NO. REVISIONS: 0	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10	NO. 11	NO. 12	NO. 13	NO. 14	NO. 15	NO. 16	NO. 17	NO. 18	NO. 19	NO. 20	NO. 21	NO. 22	NO. 23	NO. 24	NO. 25	NO. 26	NO. 27	NO. 28	NO. 29	NO. 30	NO. 31	NO. 32	NO. 33	NO. 34	NO. 35	NO. 36	NO. 37	NO. 38	NO. 39	NO. 40	NO. 41	NO. 42	NO. 43	NO. 44	NO. 45	NO. 46	NO. 47	NO. 48	NO. 49	NO. 50	NO. 51	NO. 52	NO. 53	NO. 54	NO. 55	NO. 56	NO. 57	NO. 58	NO. 59	NO. 60	NO. 61	NO. 62	NO. 63	NO. 64	NO. 65	NO. 66	NO. 67	NO. 68	NO. 69	NO. 70	NO. 71	NO. 72	NO. 73	NO. 74	NO. 75	NO. 76	NO. 77	NO. 78	NO. 79	NO. 80	NO. 81	NO. 82	NO. 83	NO. 84	NO. 85	NO. 86	NO. 87	NO. 88	NO. 89	NO. 90	NO. 91	NO. 92	NO. 93	NO. 94	NO. 95	NO. 96	NO. 97	NO. 98	NO. 99	NO. 100	NO. 101	NO. 102	NO. 103	NO. 104	NO. 105	NO. 106	NO. 107	NO. 108	NO. 109	NO. 110	NO. 111	NO. 112	NO. 113	NO. 114	NO. 115	NO. 116	NO. 117	NO. 118	NO. 119	NO. 120	NO. 121	NO. 122	NO. 123	NO. 124	NO. 125	NO. 126	NO. 127	NO. 128	NO. 129	NO. 130	NO. 131	NO. 132	NO. 133	NO. 134	NO. 135	NO. 136	NO. 137	NO. 138	NO. 139	NO. 140	NO. 141	NO. 142	NO. 143	NO. 144	NO. 145	NO. 146	NO. 147	NO. 148	NO. 149	NO. 150	NO. 151	NO. 152	NO. 153	NO. 154	NO. 155	NO. 156	NO. 157	NO. 158	NO. 159	NO. 160	NO. 161	NO. 162	NO. 163	NO. 164	NO. 165	NO. 166	NO. 167	NO. 168	NO. 169	NO. 170	NO. 171	NO. 172	NO. 173	NO. 174	NO. 175	NO. 176	NO. 177	NO. 178	NO. 179	NO. 180	NO. 181	NO. 182	NO. 183	NO. 184	NO. 185	NO. 186	NO. 187	NO. 188	NO. 189	NO. 190	NO. 191	NO. 192	NO. 193	NO. 194	NO. 195	NO. 196	NO. 197	NO. 198	NO. 199	NO. 200	NO. 201	NO. 202	NO. 203	NO. 204	NO. 205	NO. 206	NO. 207	NO. 208	NO. 209	NO. 210	NO. 211	NO. 212	NO. 213	NO. 214	NO. 215	NO. 216	NO. 217	NO. 218	NO. 219	NO. 220	NO. 221	NO. 222	NO. 223	NO. 224	NO. 225	NO. 226	NO. 227	NO. 228	NO. 229	NO. 230	NO. 231	NO. 232	NO. 233	NO. 234	NO. 235	NO. 236	NO. 237	NO. 238	NO. 239	NO. 240	NO. 241	NO. 242	NO. 243	NO. 244	NO. 245	NO. 246	NO. 247	NO. 248	NO. 249	NO. 250	NO. 251	NO. 252	NO. 253	NO. 254	NO. 255	NO. 256	NO. 257	NO. 258	NO. 259	NO. 260	NO. 261	NO. 262	NO. 263	NO. 264	NO. 265	NO. 266	NO. 267	NO. 268	NO. 269	NO. 270	NO. 271	NO. 272	NO. 273	NO. 274	NO. 275	NO. 276	NO. 277	NO. 278	NO. 279	NO. 280	NO. 281	NO. 282	NO. 283	NO. 284	NO. 285	NO. 286	NO. 287	NO. 288	NO. 289	NO. 290	NO. 291	NO. 292	NO. 293	NO. 294	NO. 295	NO. 296	NO. 297	NO. 298	NO. 299	NO. 300	NO. 301	NO. 302	NO. 303	NO. 304	NO. 305	NO. 306	NO. 307	NO. 308	NO. 309	NO. 310	NO. 311	NO. 312	NO. 313	NO. 314	NO. 315	NO. 316	NO. 317	NO. 318	NO. 319	NO. 320	NO. 321	NO. 322	NO. 323	NO. 324	NO. 325	NO. 326	NO. 327	NO. 328	NO. 329	NO. 330	NO. 331	NO. 332	NO. 333	NO. 334	NO. 335	NO. 336	NO. 337	NO. 338	NO. 339	NO. 340	NO. 341	NO. 342	NO. 343	NO. 344	NO. 345	NO. 346	NO. 347	NO. 348	NO. 349	NO. 350	NO. 351	NO. 352	NO. 353	NO. 354	NO. 355	NO. 356	NO. 357	NO. 358	NO. 359	NO. 360	NO. 361	NO. 362	NO. 363	NO. 364	NO. 365	NO. 366	NO. 367	NO. 368	NO. 369	NO. 370	NO. 371	NO. 372	NO. 373	NO. 374	NO. 375	NO. 376	NO. 377	NO. 378	NO. 379	NO. 380	NO. 381	NO. 382	NO. 383	NO. 384	NO. 385	NO. 386	NO. 387	NO. 388	NO. 389	NO. 390	NO. 391	NO. 392	NO. 393	NO. 394	NO. 395	NO. 396	NO. 397	NO. 398	NO. 399	NO. 400	NO. 401	NO. 402	NO. 403	NO. 404	NO. 405	NO. 406	NO. 407	NO. 408	NO. 409	NO. 410	NO. 411	NO. 412	NO. 413	NO. 414	NO. 415	NO. 416	NO. 417	NO. 418	NO. 419	NO. 420	NO. 421	NO. 422	NO. 423	NO. 424	NO. 425	NO. 426	NO. 427	NO. 428	NO. 429	NO. 430	NO. 431	NO. 432	NO. 433	NO. 434	NO. 435	NO. 436	NO. 437	NO. 438	NO. 439	NO. 440	NO. 441	NO. 442	NO. 443	NO. 444	NO. 445	NO. 446	NO. 447	NO. 448	NO. 449	NO. 450	NO. 451	NO. 452	NO. 453	NO. 454	NO. 455	NO. 456	NO. 457	NO. 458	NO. 459	NO. 460	NO. 461	NO. 462	NO. 463	NO. 464	NO. 465	NO. 466	NO. 467	NO. 468	NO. 469	NO. 470	NO. 471	NO. 472	NO. 473	NO. 474	NO. 475	NO. 476	NO. 477	NO. 478	NO. 479	NO. 480	NO. 481	NO. 482	NO. 483	NO. 484	NO. 485	NO. 486	NO. 487	NO. 488	NO. 489	NO. 490	NO. 491	NO. 492	NO. 493	NO. 494	NO. 495	NO. 496	NO. 497	NO. 498	NO. 499	NO. 500	NO. 501	NO. 502	NO. 503	NO. 504	NO. 505	NO. 506	NO. 507	NO. 508	NO. 509	NO. 510	NO. 511	NO. 512	NO. 513	NO. 514	NO. 515	NO. 516	NO. 517	NO. 518	NO. 519	NO. 520	NO. 521	NO. 522	NO. 523	NO. 524	NO. 525
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### 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
4"	4	2				
6"	5	3	11.12	9.5	7.00	0.88
8"	6	4	13.37	11.75	9.75	1.00
10"	7	5	15.62	14.00	11.20	1.00
12"	8	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 1/16

2016 REVISION      SHEET W3.17

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

DEAD END

TYPICAL CROSS SECTION

TEE

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	2.00	2.00
8"	1.00	1.70	1.50	2.25	2.25
10"	1.00	1.95	1.75	2.50	2.50
12"	1.00	2.20	2.00	2.75	2.75
14"	1.00	2.45	2.25	3.00	3.00
16"	1.00	2.70	2.50	3.25	3.25
18"	1.00	2.95	2.75	3.50	3.50
20"	1.00	3.20	3.00	3.75	3.75
24"	1.00	3.70	3.50	4.25	4.25

MINIMUM BEARING SURFACE AREA (IN SQUARE FEET)

NOTES:  
1. ALL VALVES, TEES, BENDS AND PLUGS SHALL BE RESTRAINED AND KICKBLOCKED.  
2. WATER HAMMER: 1" C.I. PIPE, 16", 20" AND 24" WATER HAMMER = 70 PSI.  
3. 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

STANDARD LIFTING SLOT DETAIL

MACHINED SEAT

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: 6/20

APPROVED: 12/07  
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"
14"	2'-4"	3'-4"
16"	2'-6"	3'-6"
18"	2'-8"	3'-8"
20"	3'-0"	4'-0"
24"	3'-4"	4'-4"

PARKER WATER & SANITATION DISTRICT  
TYPICAL TRENCH SECTION PIPE PROTECTION

SCALE: NONE      DATE: 2/96

APPROVED: 5/98  
PVR 2/00  
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.

Tamping is herein defined as the act of placing approved bedding material under the fullness of the pipe, paying particular attention to voids, bed 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 details 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.

(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

Spongy 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 detritus, shall be placed under the pipe. 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: 5/98  
PVR 2/00  
DIRECTOR OF ENGINEERING 10/16

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 ENCASUREMENT

SCALE: NONE      DATE: 5/20

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:

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

NOTES:  
1. FINAL APPROVAL OF BORING AND CASING METHOD AND MATERIALS SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO CONSTRUCTION.

PARKER WATER & SANITATION DISTRICT  
BORED CROSSINGS BENEATH CONDUITS

SCALE: NONE      DATE: 2/96

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

2016 REVISION      SHEET W4.4

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7253 South Alton Way  
CENTENNIAL, CO 80112

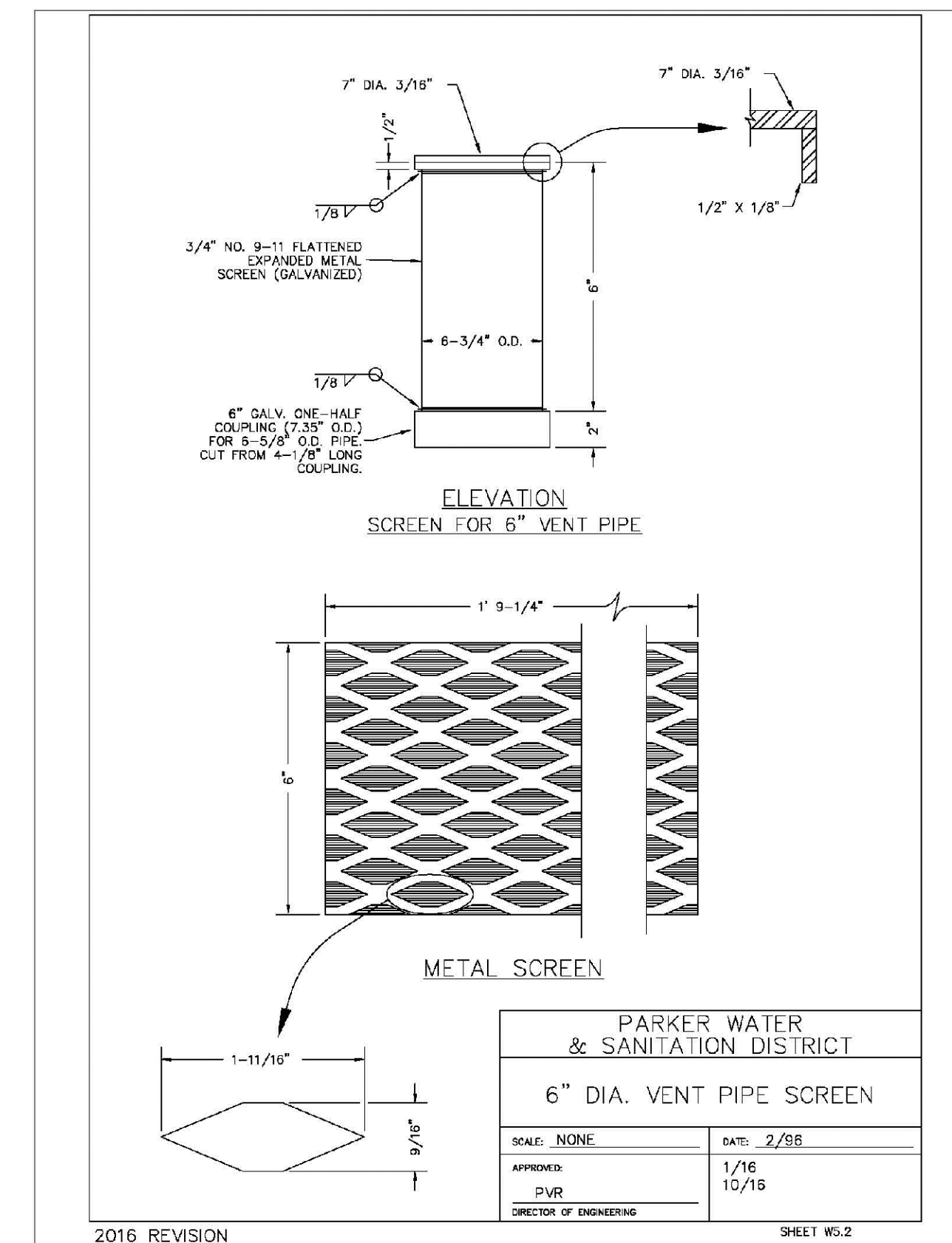
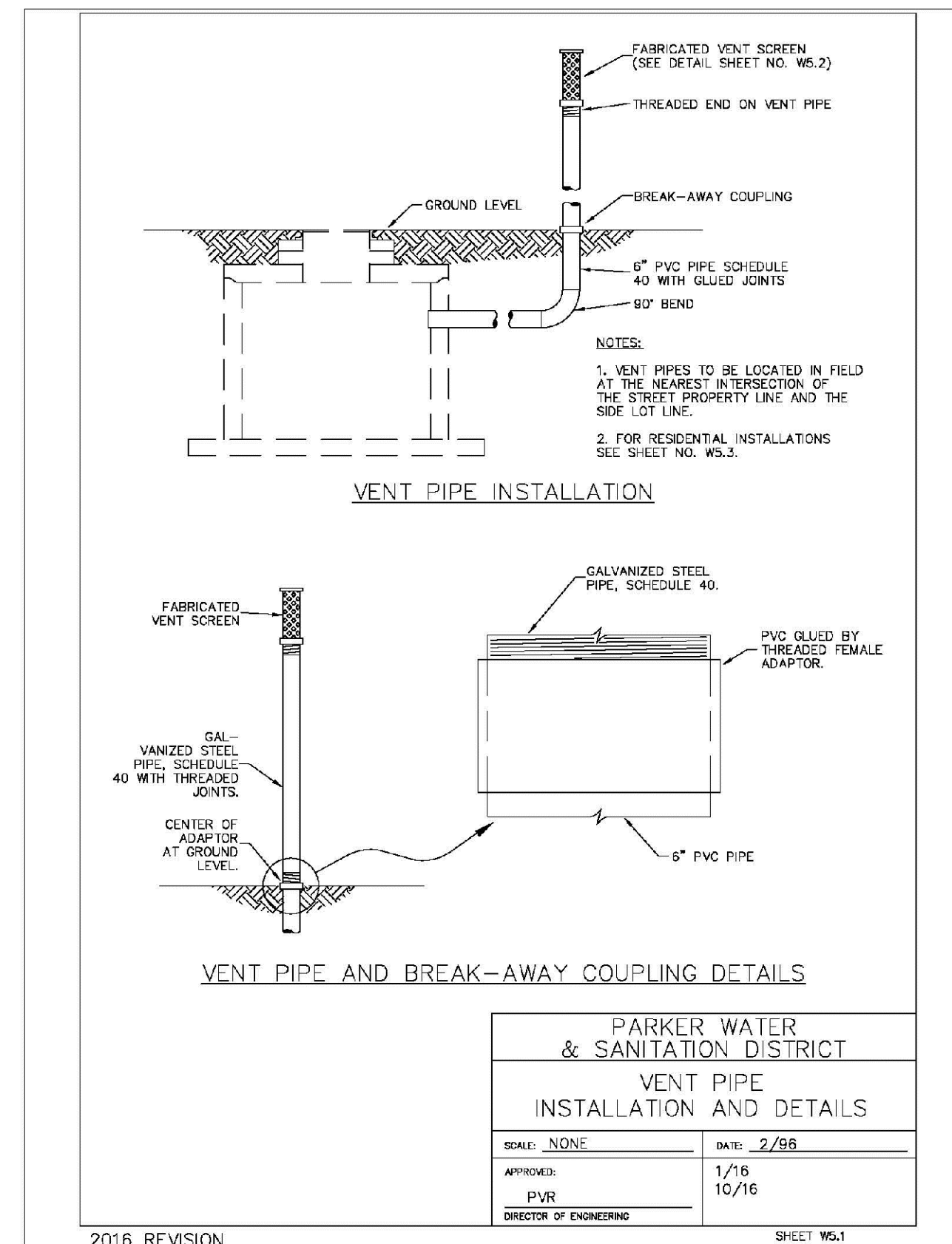
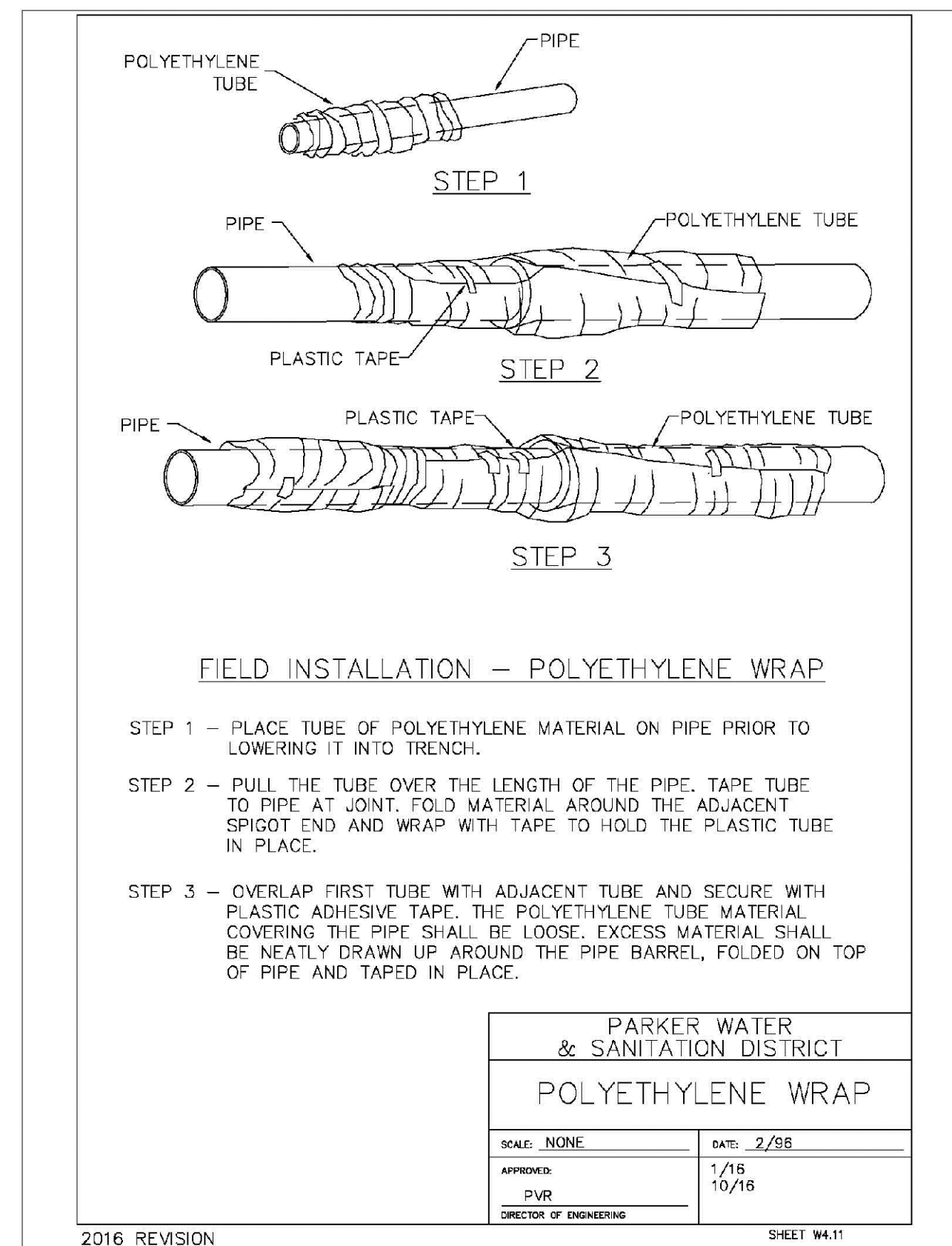
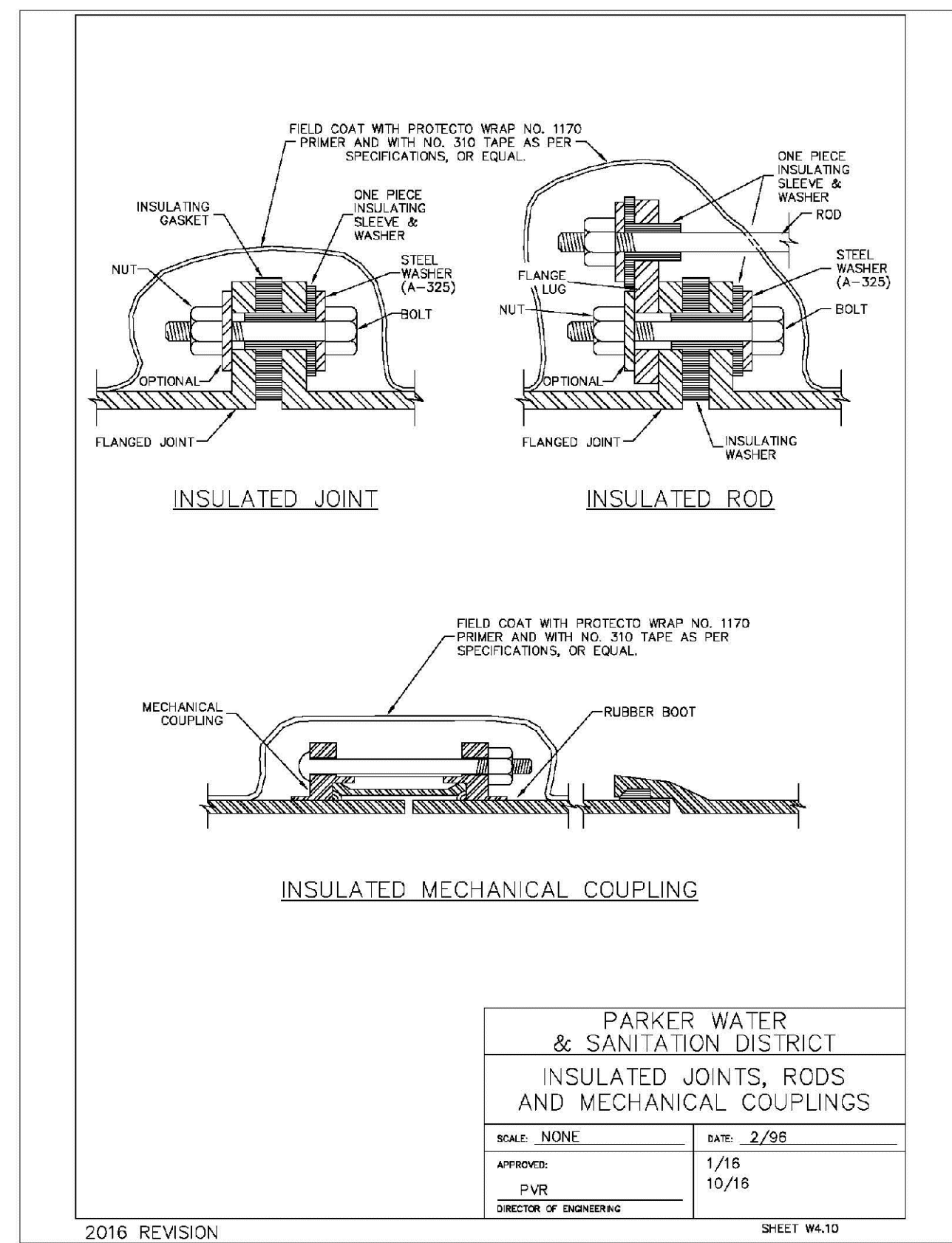
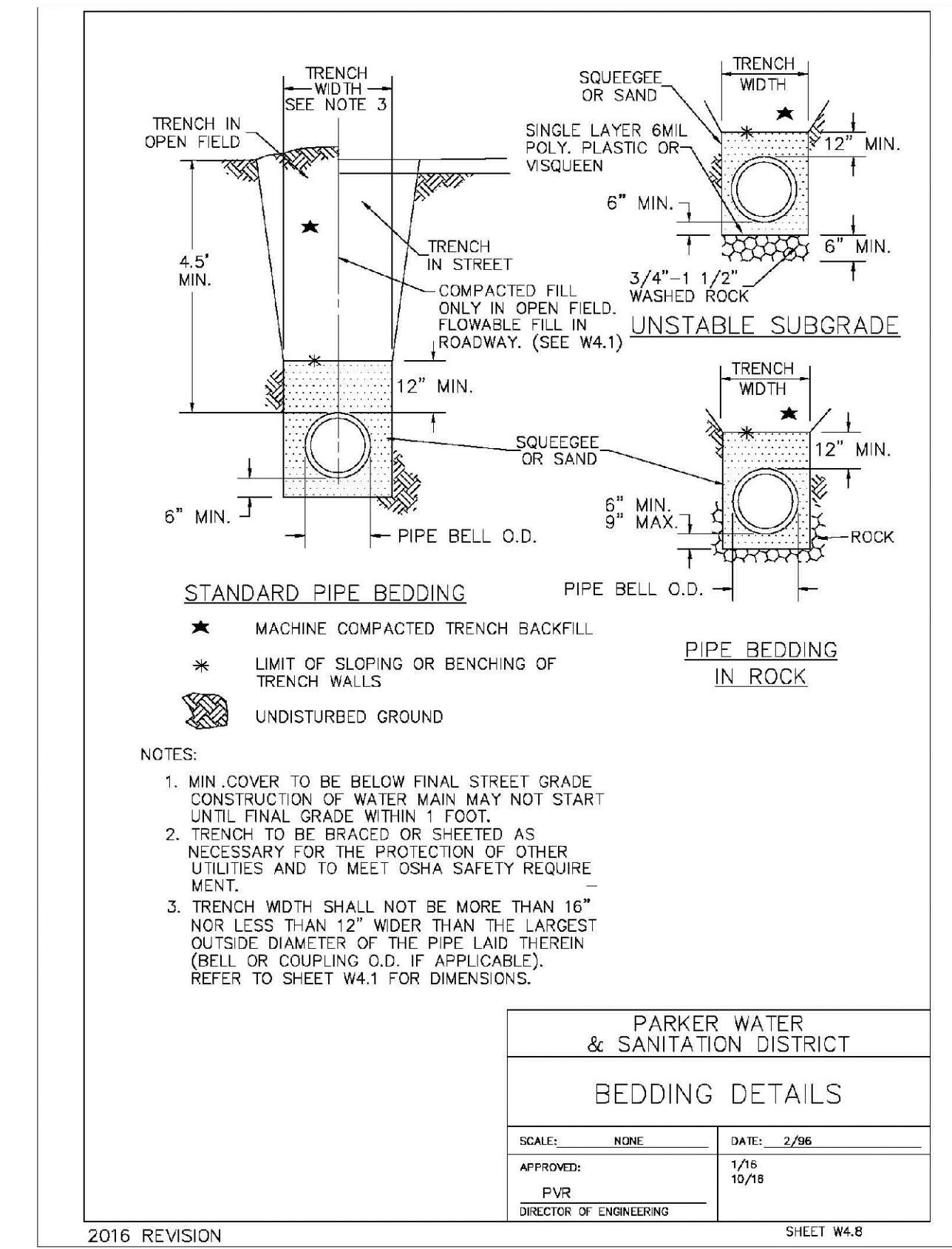
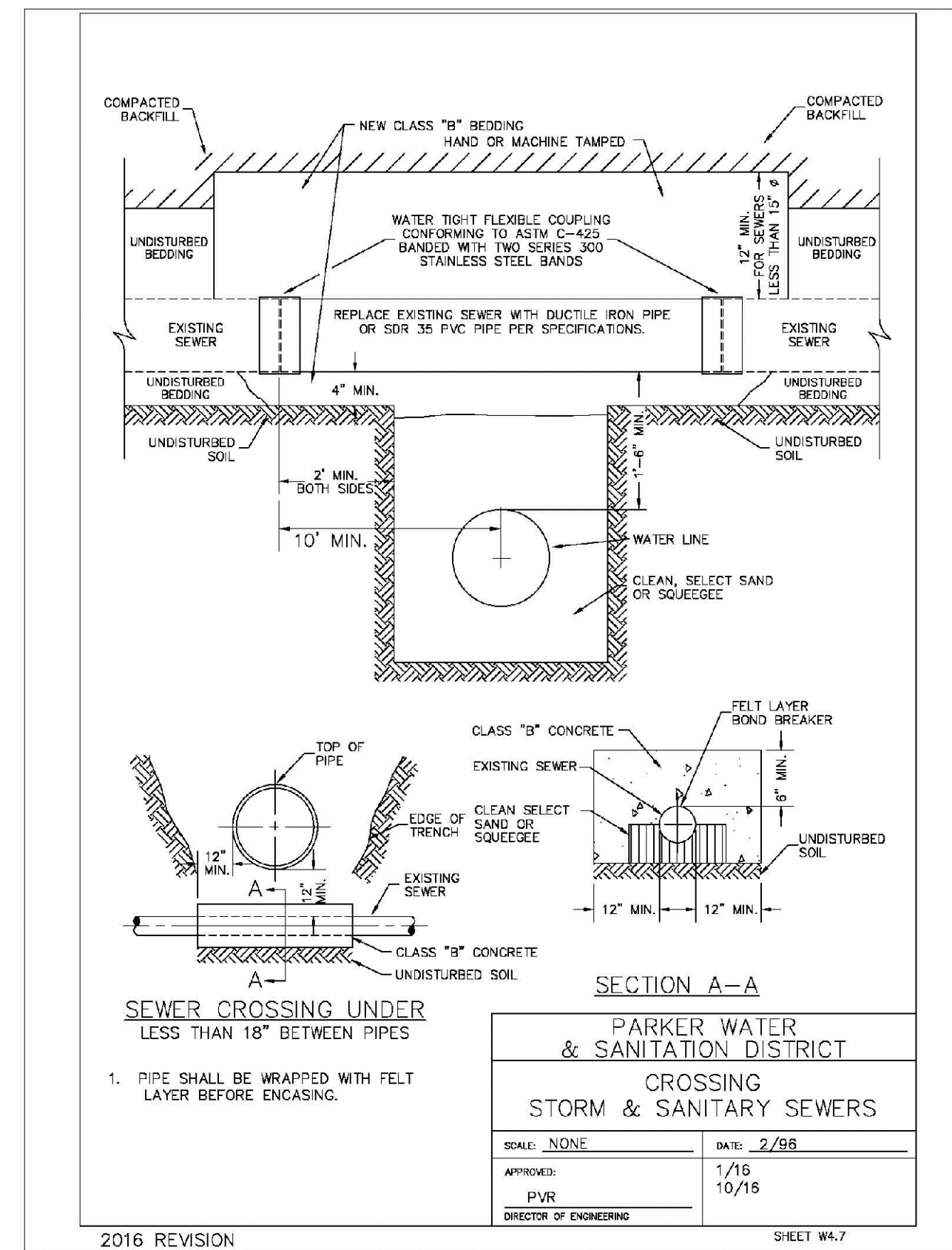
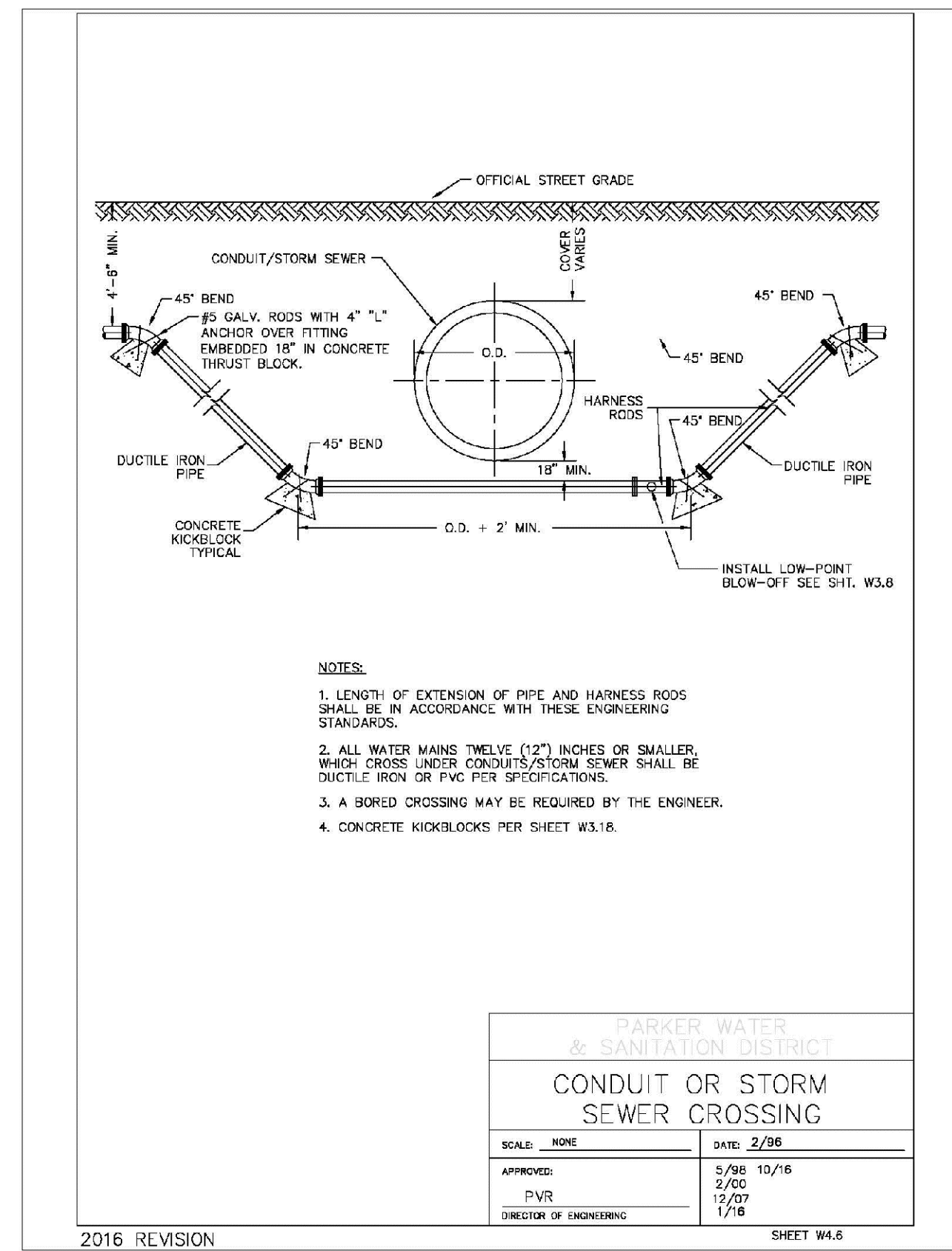
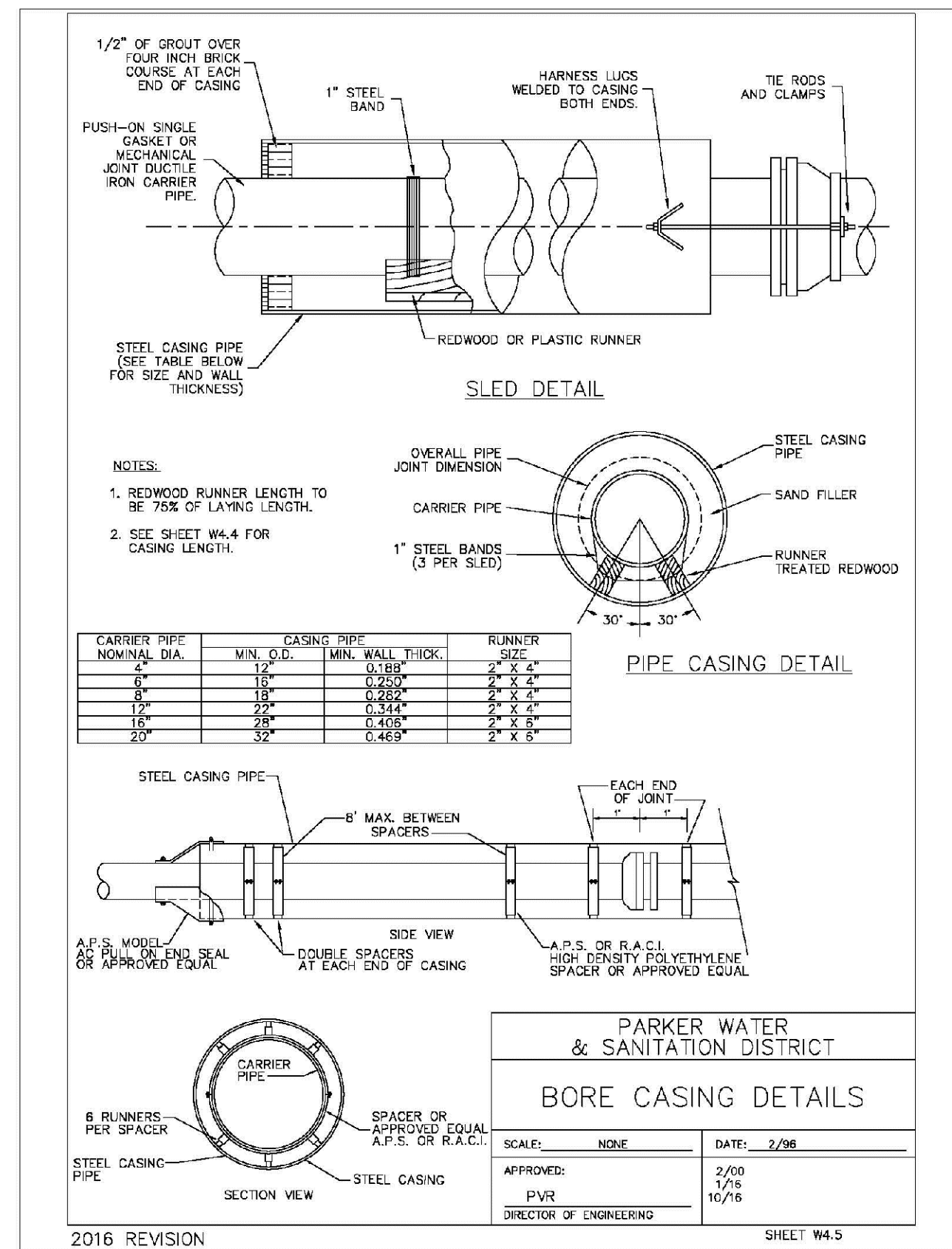
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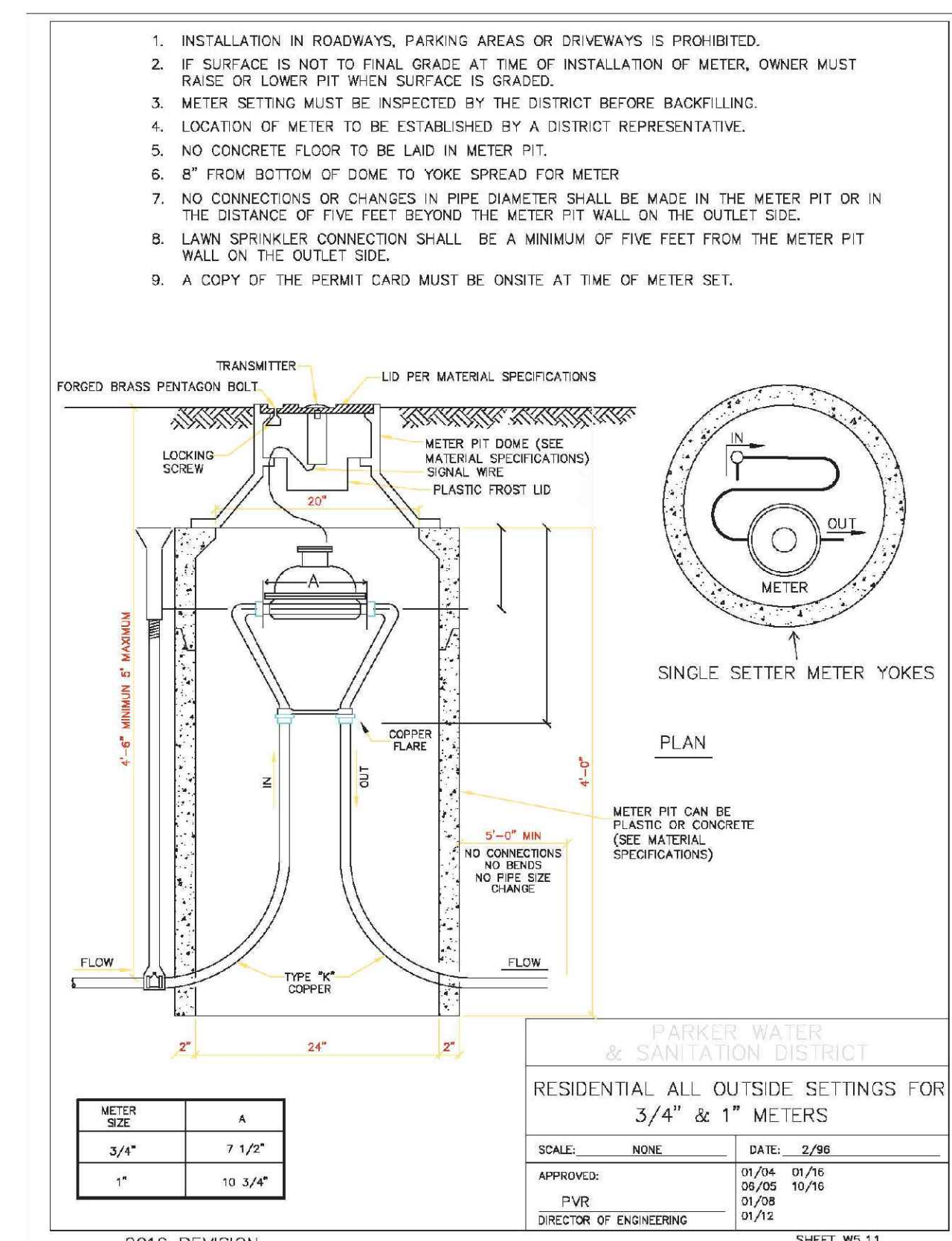
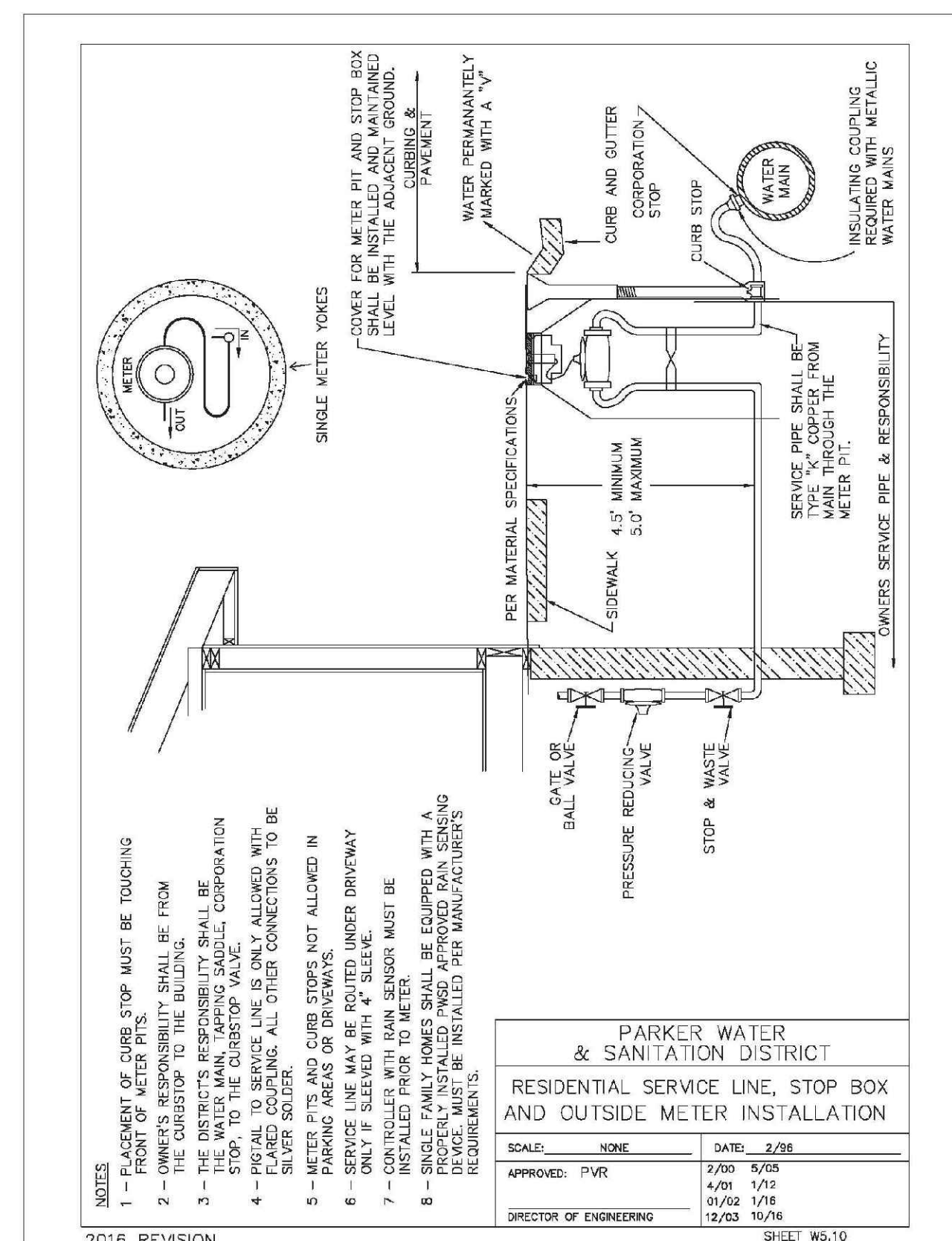
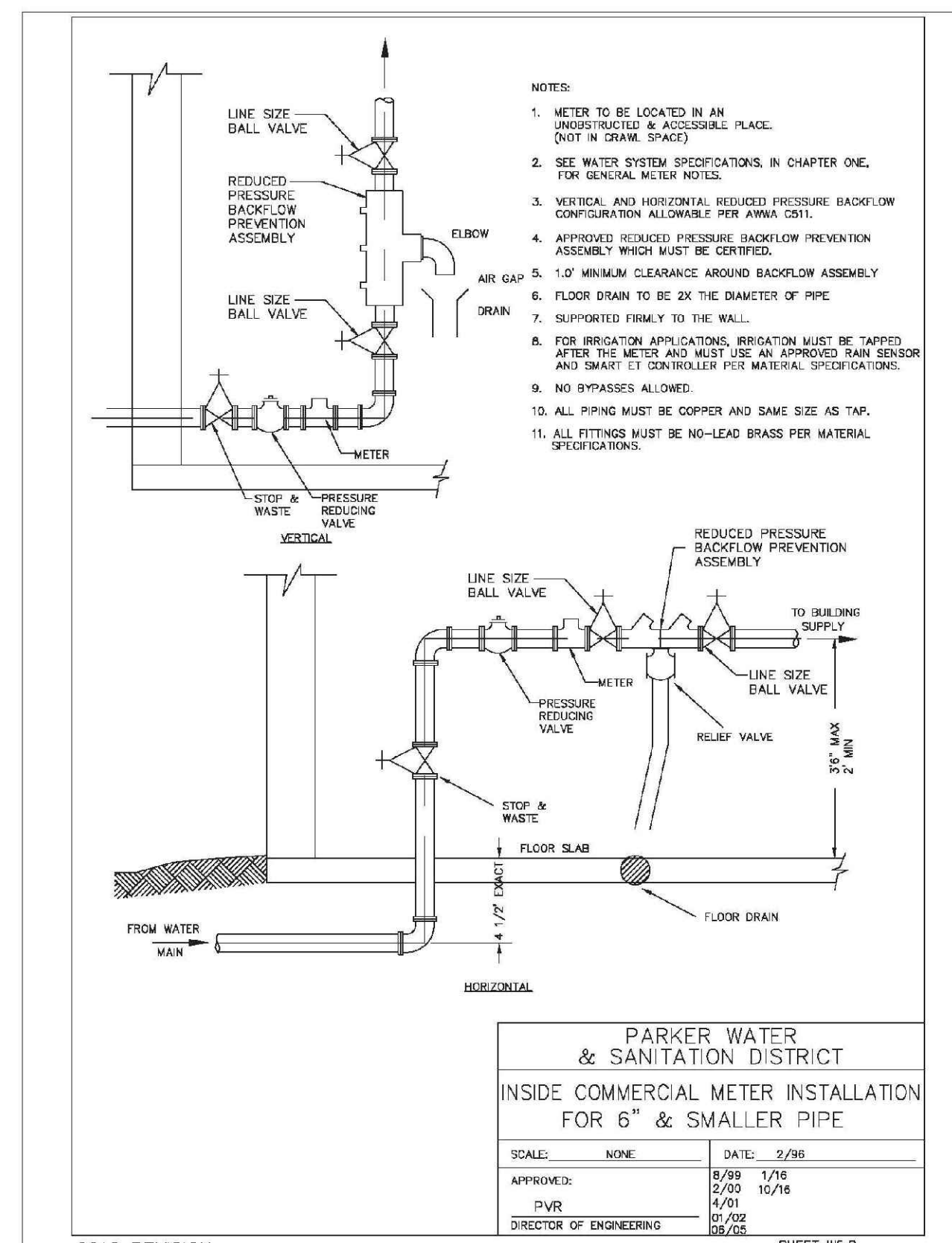
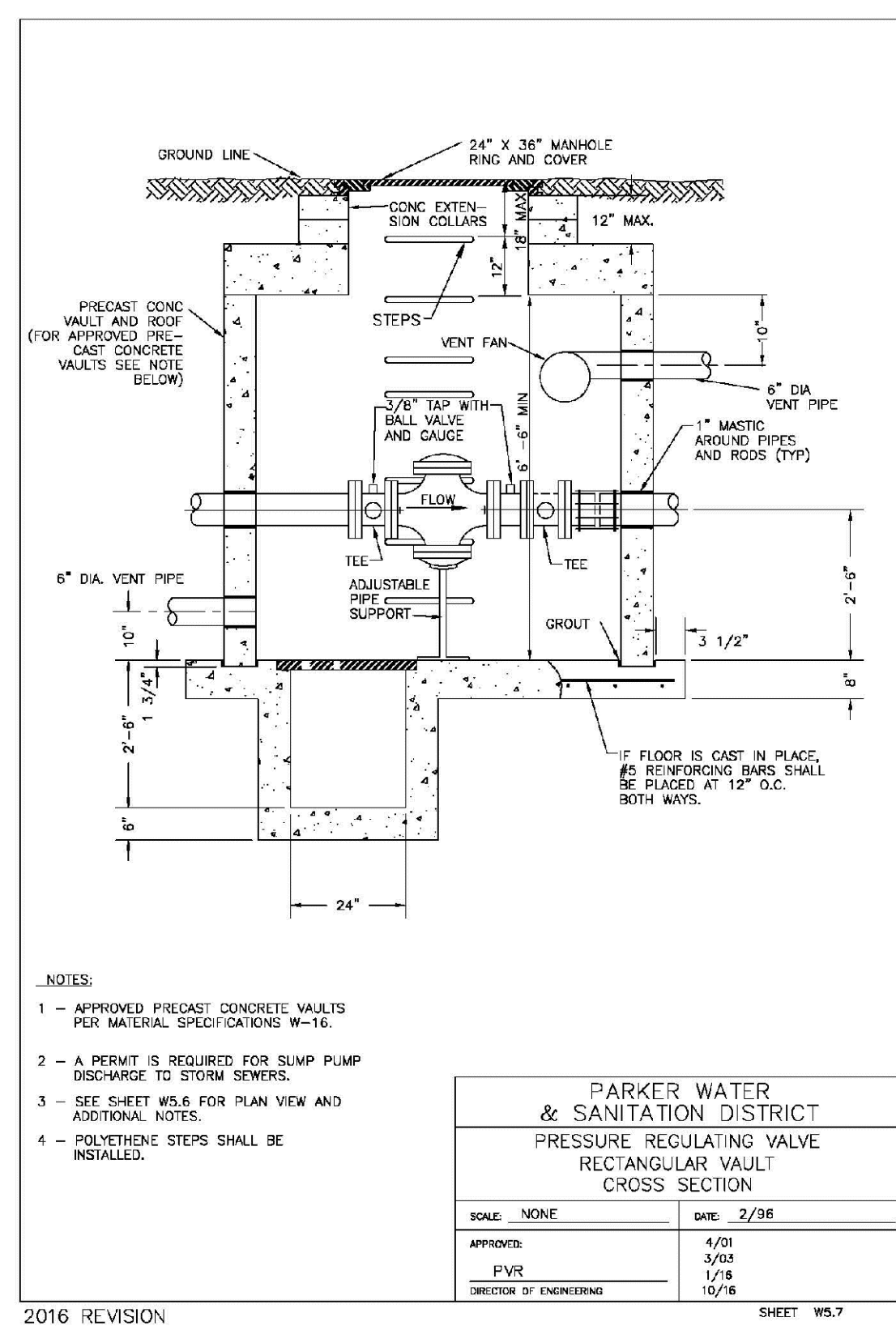
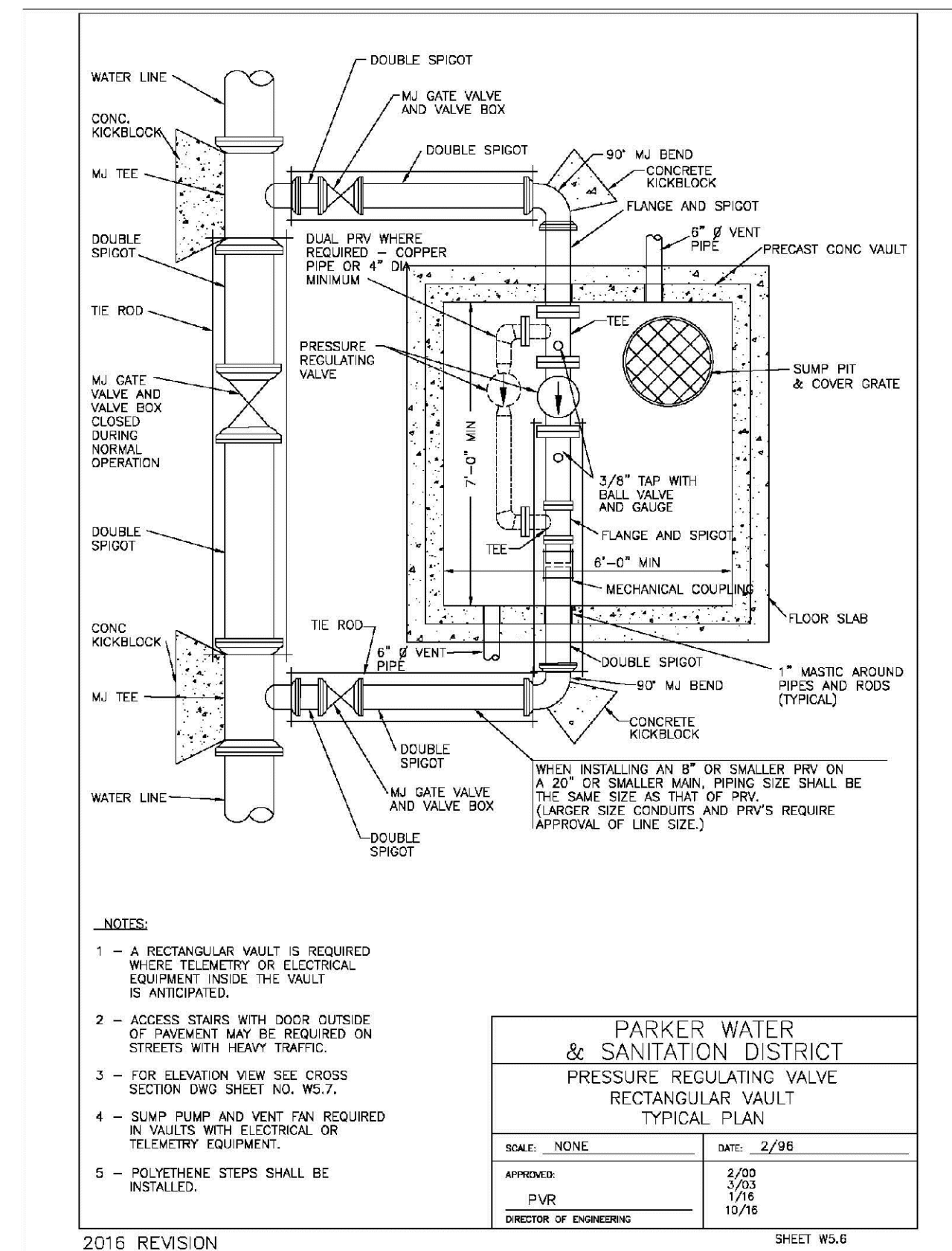
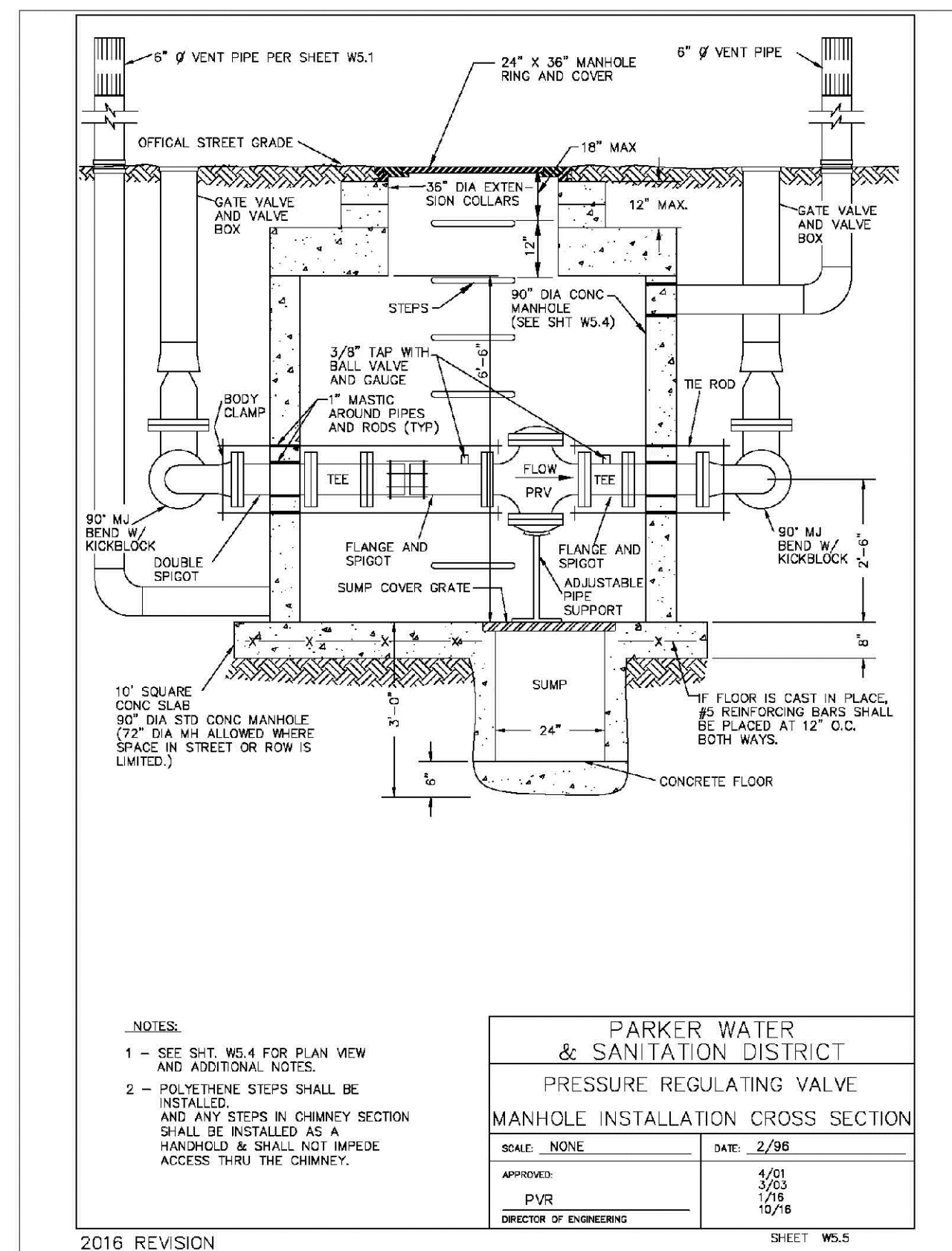
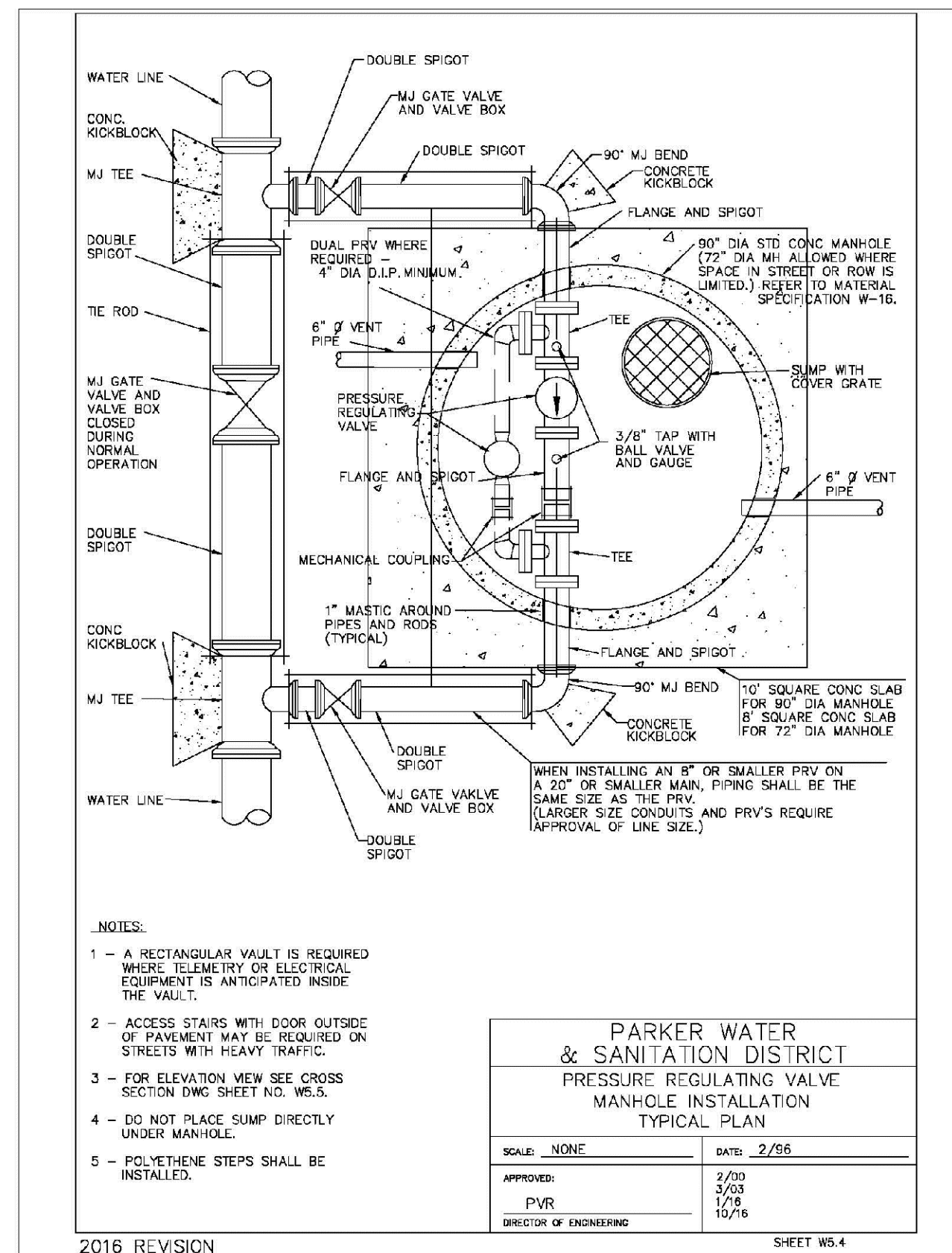
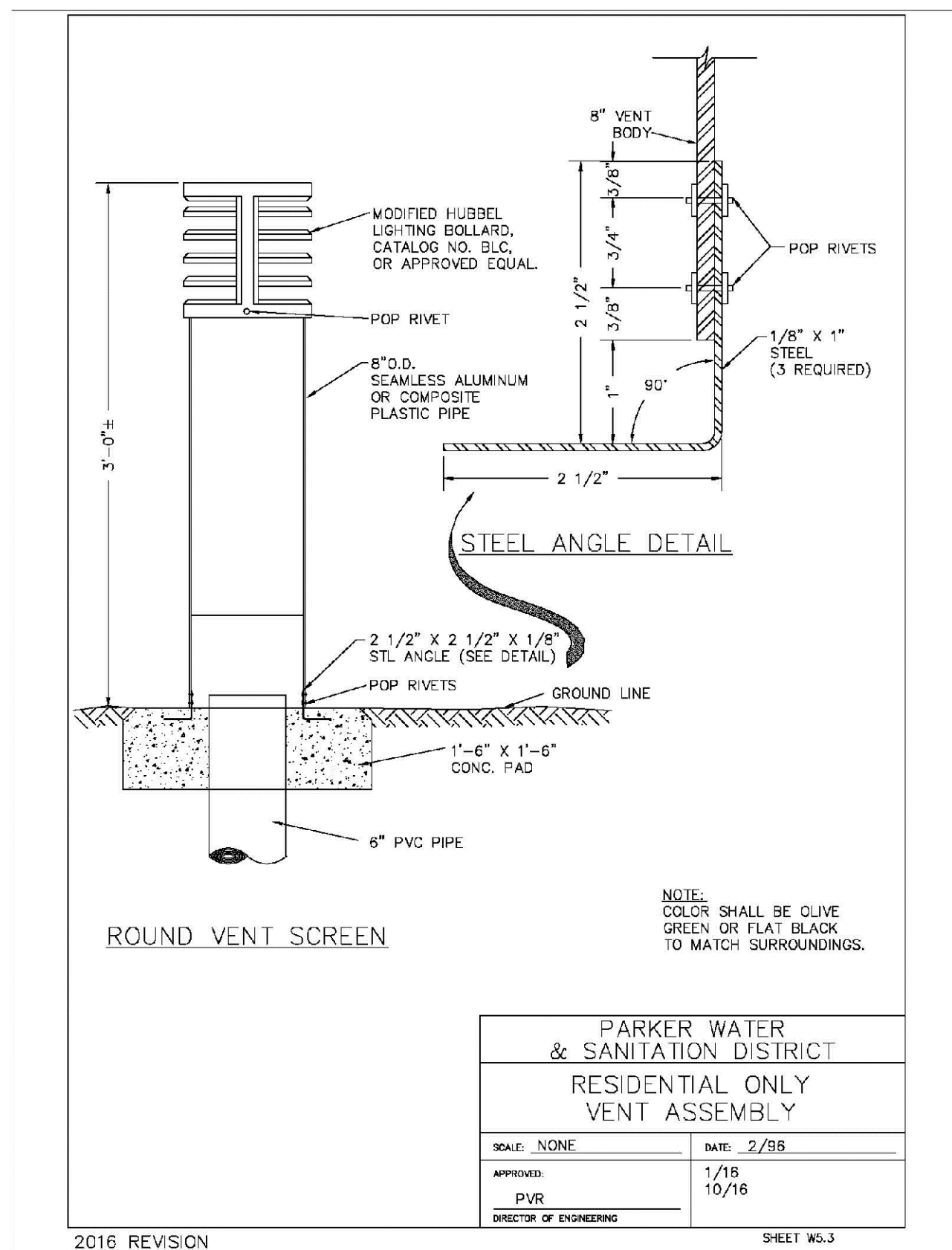
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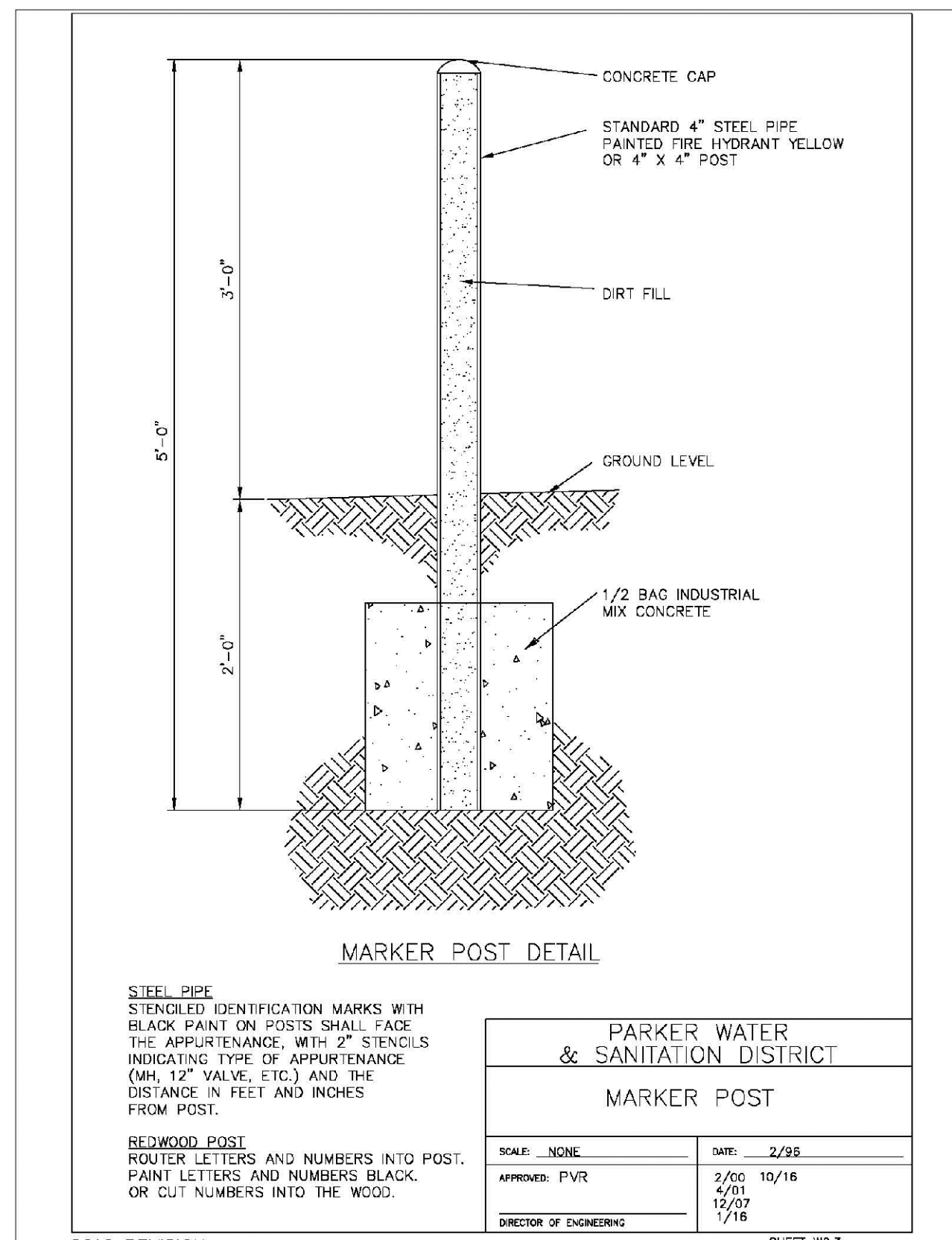
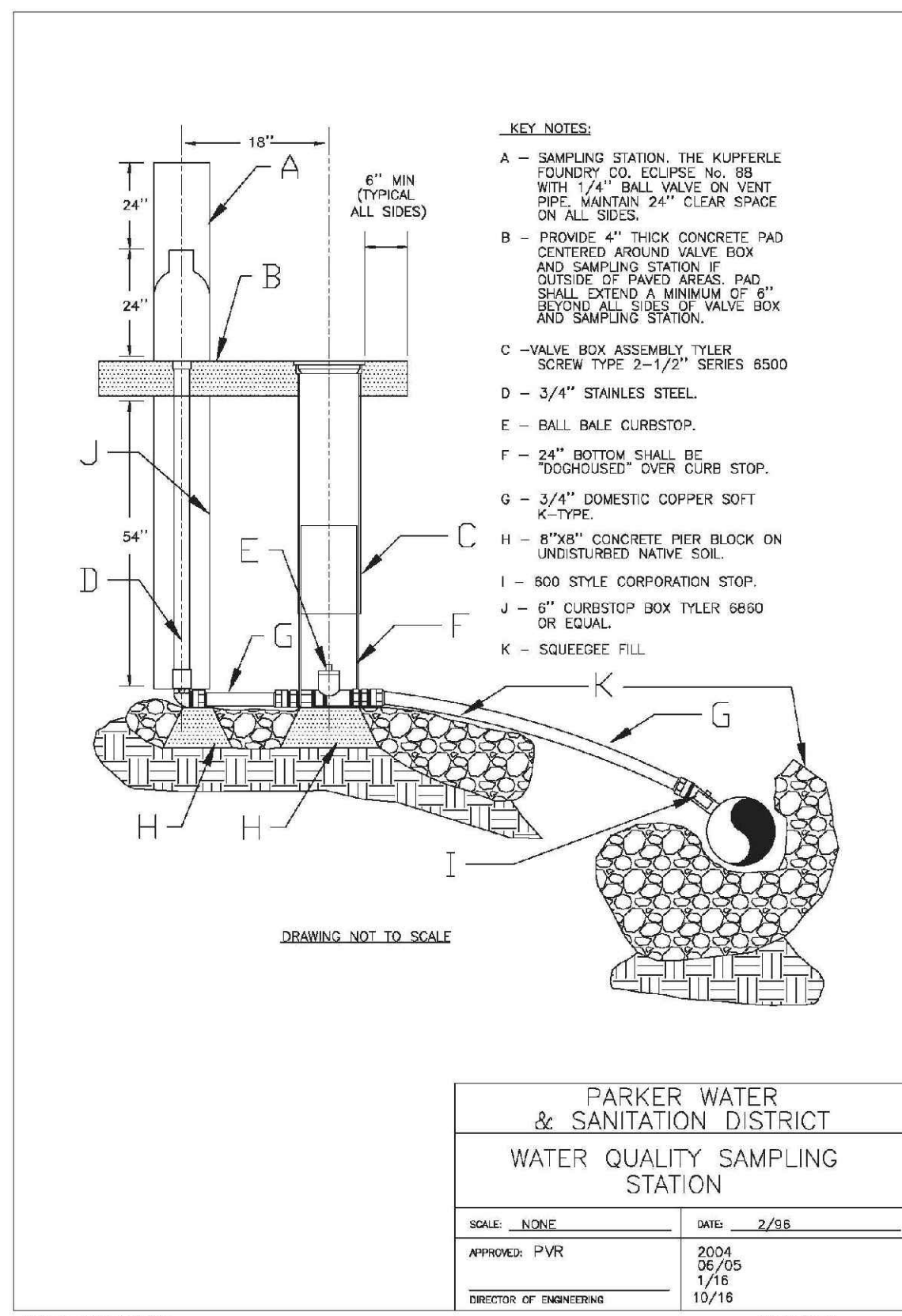
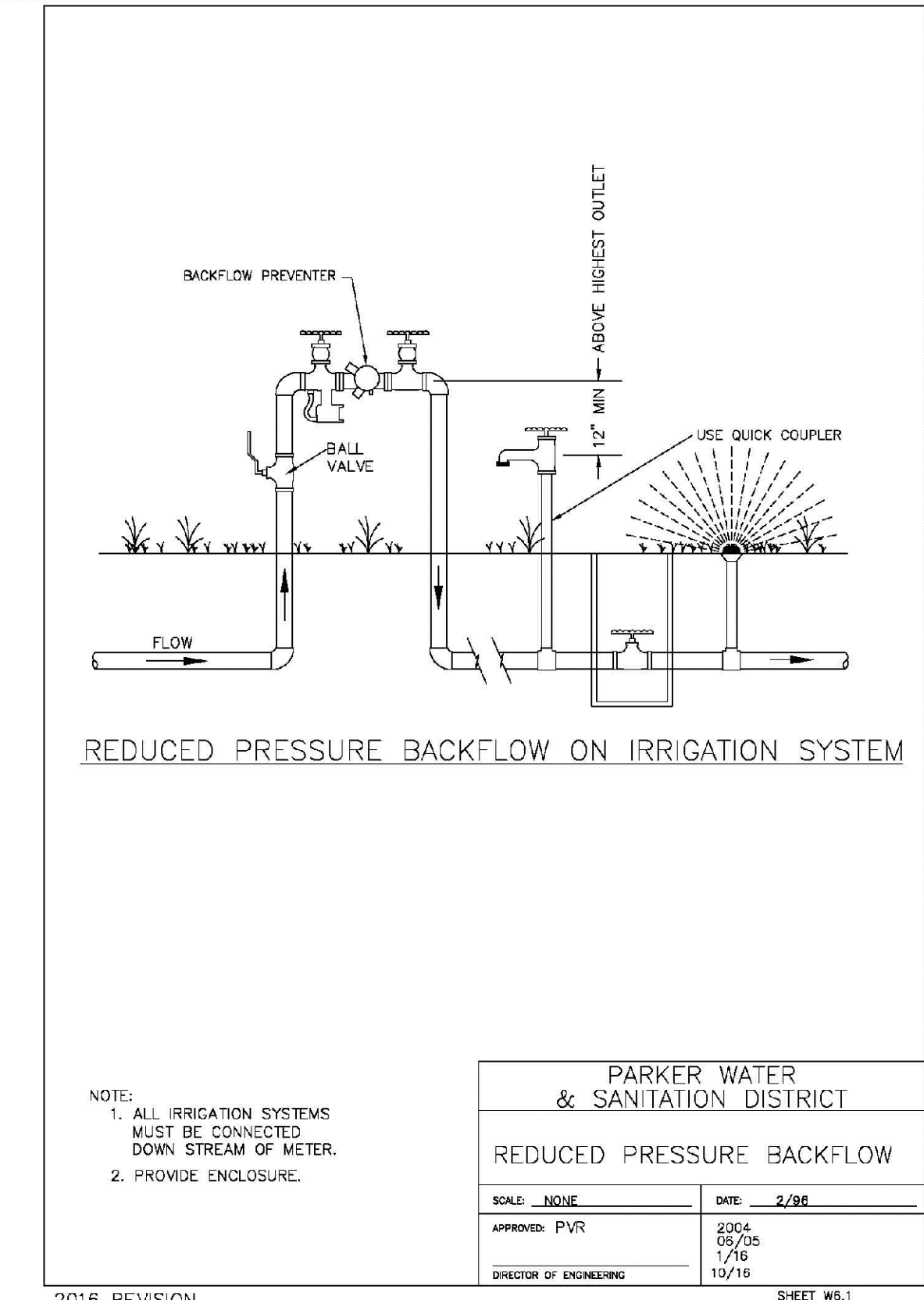
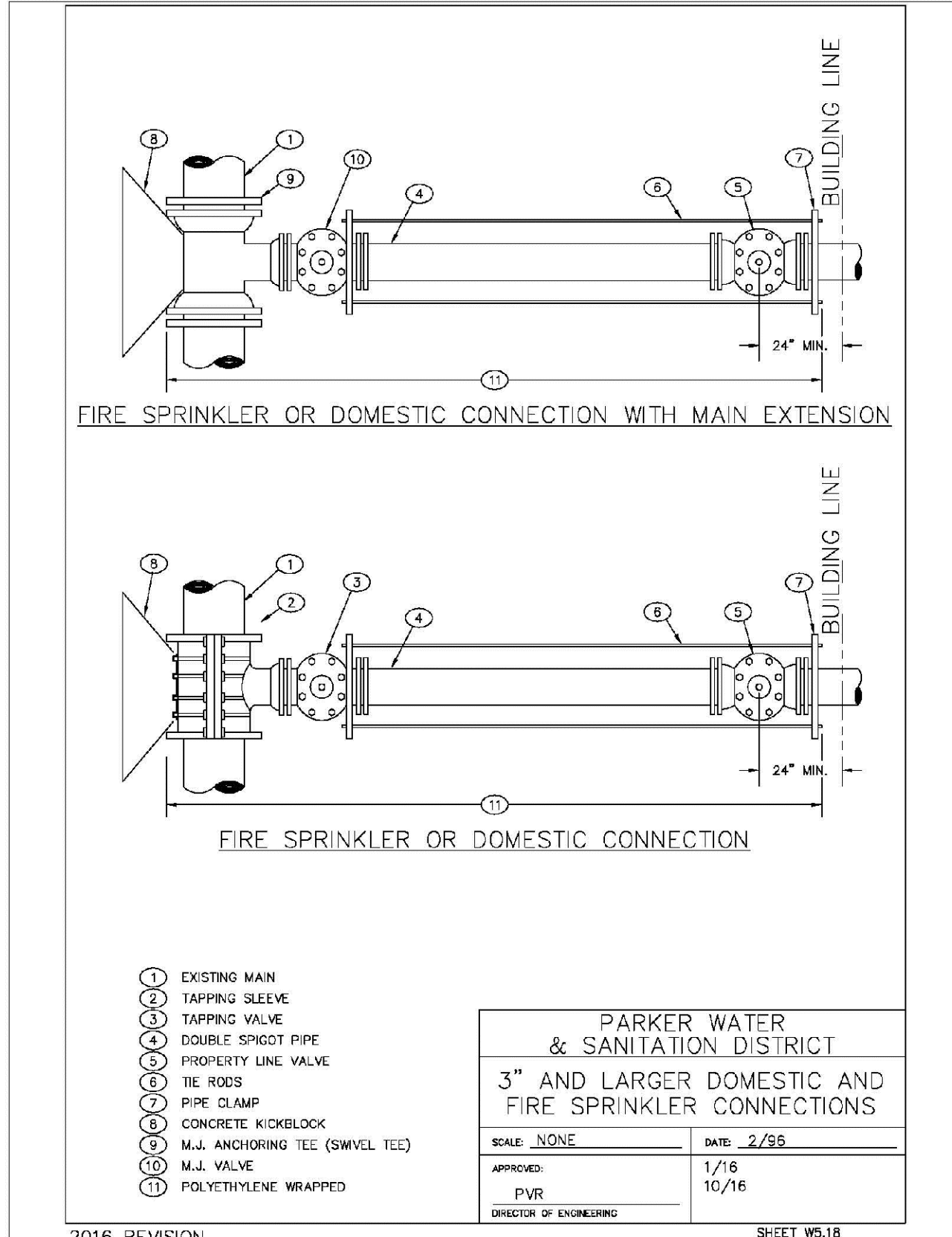
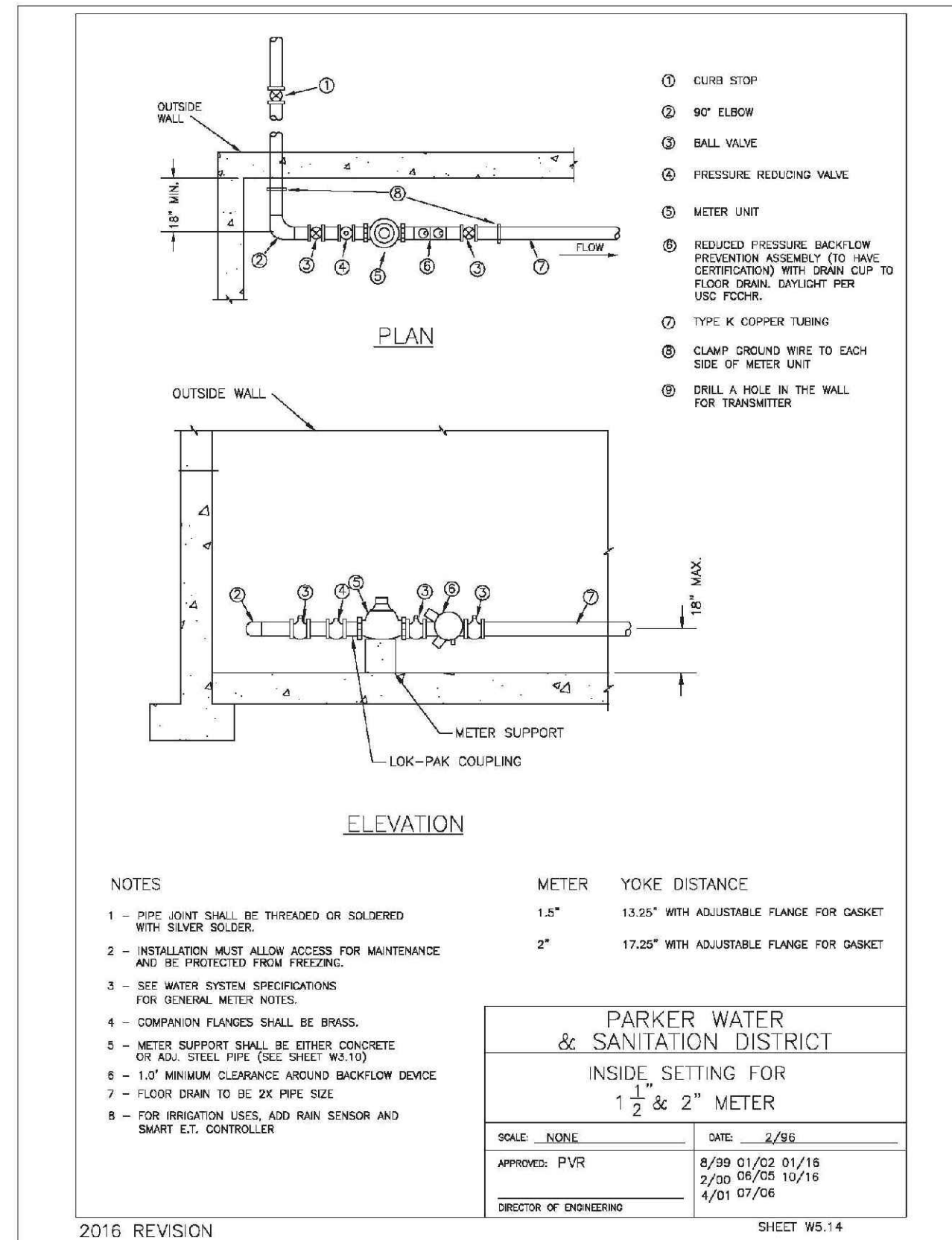
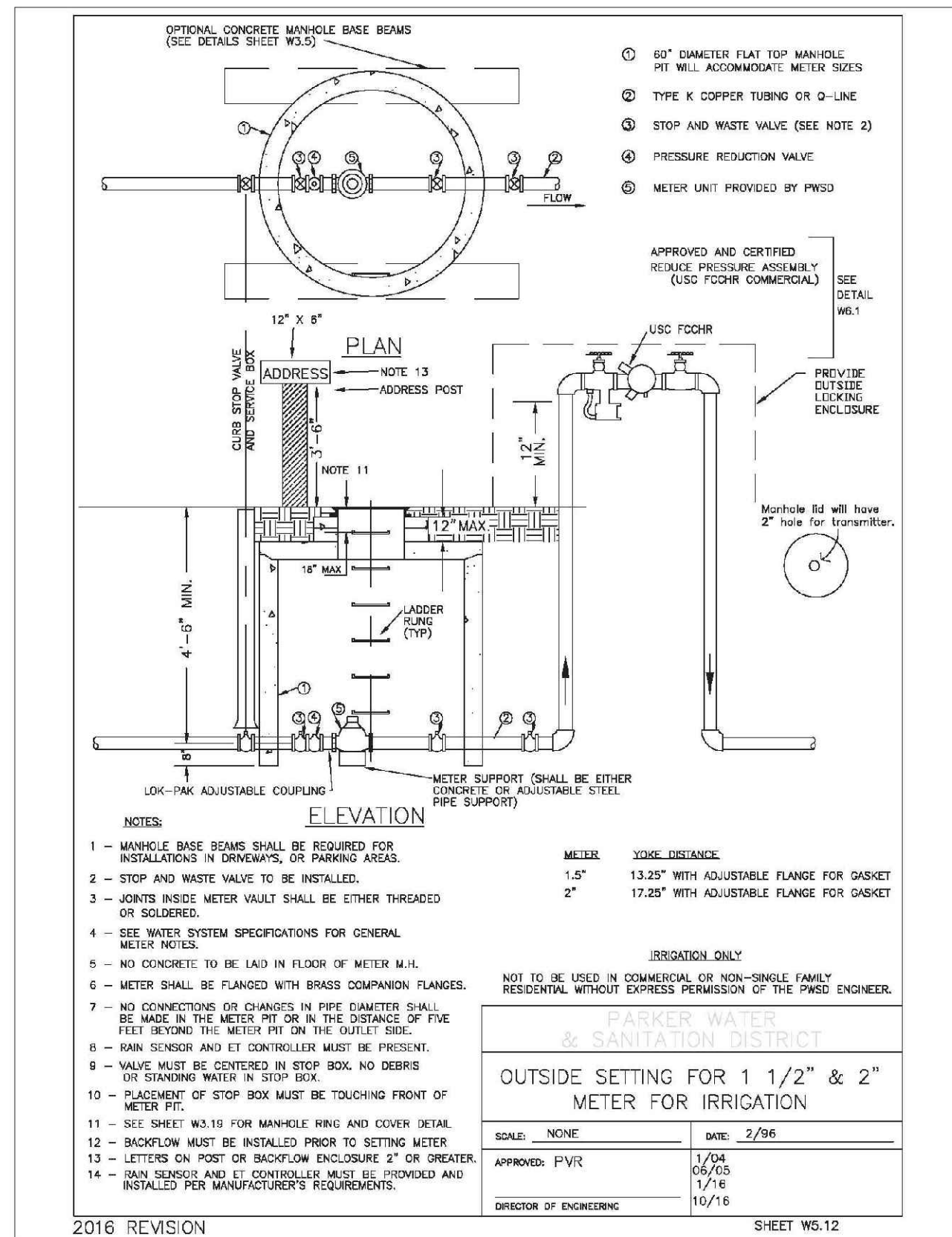
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