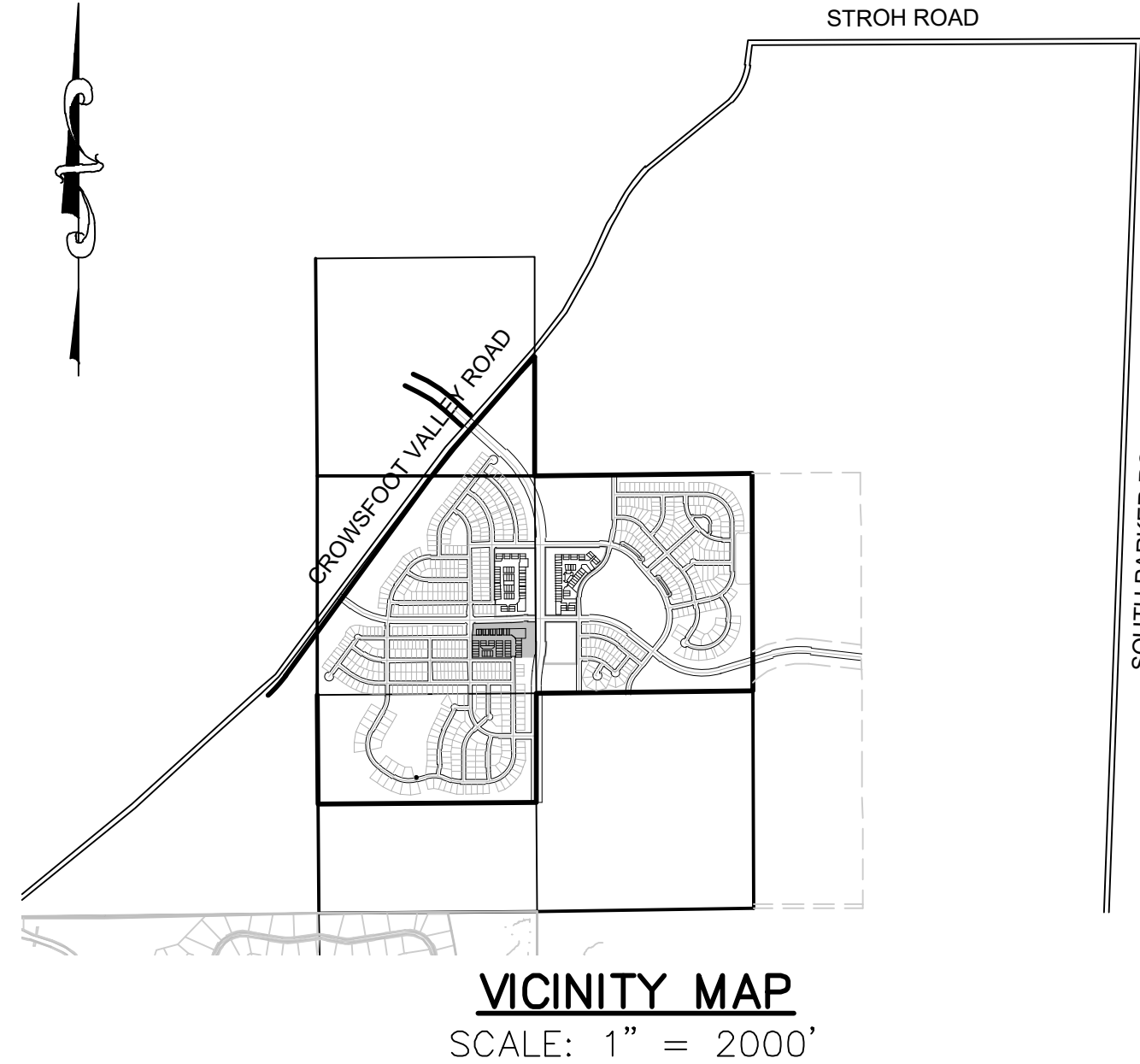


TRAILS AT CROWFOOT FILING 16

PARKER WATER AND SANITATION CONSTRUCTION PLANS

SECTIONS 4, 8, AND 9 TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN COUNTY OF DOUGLAS, STATE OF COLORADO

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	PARKER WATER AND SANITATION NOTES
3	AREA UTILITY PLAN
4	BIRDS FOOT TRAIL
5	FILING 16 SS NORTHWEST
6	FILING 16 SS NORTHEAST
7	FILING 16 SS EAST
8	BIRDS FOOT TRAIL
9	HOP CLOVER TRAIL
10	ALPINE LILY LANE
11	ALPINE LILY TRAIL
12	ALPINE LILY STREET
13	SANITARY SEWER DETAILS
14	SANITARY SEWER DETAILS
15	SANITARY SEWER DETAILS
16	WATER DETAILS
17	WATER DETAILS
18	WATER DETAILS
19	WATER DETAILS
20	WATER DETAILS
21	WATER DETAILS
22	WATER DETAILS



MATERIALS LIST		
DESCRIPTION	QUANTITY	UNIT
8" SEWER (SDR-35 PVC)	1,184	L.F.
4' DIA. MANHOLE	7	EA.
SEWER SERVICE LATERAL W/ WYE TAP	32	EA.
CONNECTION TO EXISTING MAIN	1	EA.
6" WATERPIPE (DIP)	55	L.F.
8" WATERPIPE (PVC)	1,422	L.F.
6" GATE VALVE W/ BOX	4	EA.
8" GATE VALVE	4	EA.
8" MISC FITTINGS	12	EA.
FIRE HYDRANT WITH 6" LEAD	3	EA.
FIRE HYDRANT WITH VERTICAL SHOE AND 6" LEAD	1	EA.
IRRIGATION SERVICE WITH METER (1.5")	1	EA.
DOMESTIC WATER SERVICE WITH METER	42	EA.
CONNECTION TO EXISTING MAIN	4	EA.

Date	Appr.	Date	Init.	Date

10333 E. Dry Creek Rd
Suite 240
Englewood, CO 80112
Tel: 720.482.9526
www.cvlinc.net
westwoodpx.com

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

**TRAILS AT CROWFOOT
FILING 16 CONSTRUCTION DRAWINGS
COVER SHEET**

DRAWN BY: RRR	CHECKED BY: BPW	DATE: JUNE 2018
SCALE: AS SHOWN	FILE NO: 8130283701	
SHEET NUMBER 1		

DEVELOPER

HR 935 LLC
7353 SOUTH ALTON WAY
CENTENNIAL, CO 80112
TEL: (303) 770-9111
CONTACT: MATT JANKE

PLANNER/ LANDSCAPE DESIGNER:

PCS GROUP, INC.
200 KALAMATH STREET
DENVER, CO 80233
TEL: (303) 531-4905
CONTACT: JOHN PRESTWICH

SURVEYOR/ ENGINEER:

**CVL, A WESTWOOD
TEAM**
10333 E. DRY CREEK RD. STE 240
ENGLEWOOD, CO 80112
TEL: (720) 482-9526
CONTACT: JIM JANNICKE

UTILITY DISTRICT

**PARKER WATER AND
SANITATION DISTRICT**
18100 E. WOODMAN DRIVE
PARKER, CO 80134
TEL: (303) 841-4627

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.

[Signature] 09/22/2021
FIRE CODE OFFICIAL OR DESIGNATED REPRESENTATIVE DATE

(NOTE - UNDERGROUND FIRE LINE (UFL) SUBMITTAL DOCUMENTS MUST MEET THE REQUIREMENT OF NFPA 24 WHEN SUBMITTING FOR REVIEW.

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 SCHEDULE 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: _____
(DISTRICT REPRESENTATIVE)

DATE SIGNED: _____

APPROVED FOR CONSTRUCTION:
PARKER WATER AND SANITATION DISTRICT

BY: _____
(DISTRICT ENGINEER)

DATE SIGNED: _____

PREPARED UNDER THE SUPERVISION OF

BRIAN P. WILSON
COLORADO P.E. 0050067

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 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.

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

N:\PROJECTS\SS RANCH\ENGINEERING\SSHEET SET\SMULTIFAMILY\CDS\16\PARKER WATER AND SANITATION\COVER.DWG, BPWILSON, 7/16/2021 9:52 AM

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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)

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
		---	PWSD EASEMENT
		---	TYP. EASEMENT

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
CR	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
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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

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.

09/22/2021 DATE

FIRE CODE OFFICIAL OR DESIGNATED REPRESENTATIVE

(NOTE - UNDERGROUND FIRE LINE (UFL) SUBMITTAL DOCUMENTS MUST MEET THE REQUIREMENT OF NFPA 24 WHEN SUBMITTING FOR REVIEW.

SANITARY SERVICE TABLE		
FILING, BLOCK, LOT	STREET	STATIONING
F16,B1,L1	BIRDS FOOT TRL	30+47.85
F16,B1,L2	BIRDS FOOT TRL	30+82.08
F16,B1,L3	BIRDS FOOT TRL	31+31.85
F16,B1,L4	BIRDS FOOT TRL	31+73.58
F16,B1,L5	BIRDS FOOT TRL	32+15.10
F16,B1,L6	BIRDS FOOT TRL	32+45.65
F16,B1,L7	BIRDS FOOT TRL	33+00.10
F16,B1,L8	BIRDS FOOT TRL	33+30.60
F16,B1,L9	BIRDS FOOT TRL	33+84.08
F16,B1,L10	BIRDS FOOT TRL	34+14.74
F16,B1,L11	FILING 16 SS EAST	10+36.57
F16,B1,L12	FILING 16 SS EAST	10+56.57
F16,B1,L13	FILING 16 SS EAST	11+20.57
F16,B1,L14	FILING 16 SS EAST	11+40.57
F16,B1,L15	FILING 16 SS EAST	12+04.57
F16,B1,L16	FILING 16 SS EAST	12+24.57
F16,B2,L7	FILING 16 SS WEST	10+60.92
F16,B2,L8	FILING 16 SS WEST	10+83.92
F16,B2,L9	FILING 16 SS WEST	10+63.92
F16,B2,L10	FILING 16 SS WEST	10+83.92
F16,B2,L15	FILING 16 SS MIDDLE	10+62.00
F16,B2,L16	FILING 16 SS MIDDLE	10+82.00
F16,B2,L17	FILING 16 SS MIDDLE	11+26.00

SANITARY SERVICE TABLE		
F16,B2,L17	FILING 16 SS MIDDLE	11+26.00
F16,B2,L18	FILING 16 SS MIDDLE	11+46.00
F16,B2,L19	FILING 16 SS MIDDLE	11+90.00
F16,B2,L20	FILING 16 SS MIDDLE	12+10.00
F16,B2,L21	FILING 16 SS MIDDLE	10+59.00
F16,B2,L22	FILING 16 SS MIDDLE	10+85.00
F16,B2,L23	FILING 16 SS MIDDLE	11+23.00
F16,B2,L24	FILING 16 SS MIDDLE	11+49.00
F16,B2,L25	FILING 16 SS MIDDLE	11+87.00
F16,B2,L26	FILING 16 SS MIDDLE	12+10.00

FILING 16 SANITARY SERVICES FOR BLOCK 2 LOTS 11-14 WERE INSTALLED WITH TRAILS AT CROWFOOT FILING 5

WATER SERVICE TABLE		
FILING, BLOCK, LOT	STREET	STATIONING
F16,B1,L1	BIRDS FOOT TRL	30+87.68
F16,B1,L2	BIRDS FOOT TRL	30+38.02
F16,B1,L3	BIRDS FOOT TRL	31+22.02
F16,B1,L4	BIRDS FOOT TRL	31+71.75
F16,B1,L5	BIRDS FOOT TRL	32+06.09
F16,B1,L6	BIRDS FOOT TRL	32+55.75
F16,B1,L7	BIRDS FOOT TRL	32+90.09
F16,B1,L8	BIRDS FOOT TRL	33+39.75
F16,B1,L9	BIRDS FOOT TRL	33+74.09
F16,B1,L10	BIRDS FOOT TRL	34+50.96
F16,B1,L11	HOP CLOVER TRL	10+54.27
F16,B1,L12	HOP CLOVER TRL	10+73.91
F16,B1,L13	HOP CLOVER TRL	11+32.48
F16,B1,L14	HOP CLOVER TRL	11+82.14
F16,B1,L15	HOP CLOVER TRL	12+49.07
F16,B1,L16	HOP CLOVER TRL	12+51.57
F16,B2,L1	ALPINE LILY LN	10+09.67
F16,B2,L2	ALPINE LILY LN	10+54.33
F16,B2,L3	ALPINE LILY LN	10+71.17
F16,B2,L4	ALPINE LILY LN	11+20.83
F16,B2,L5	ALPINE LILY LN	11+35.17
F16,B2,L6	ALPINE LILY LN	11+84.87
F16,B2,L7	ALPINE LILY LN	10+07.17

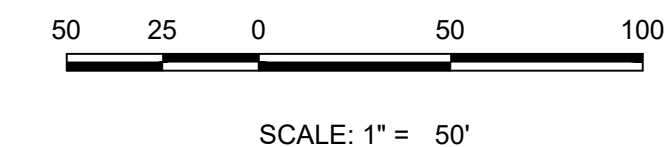
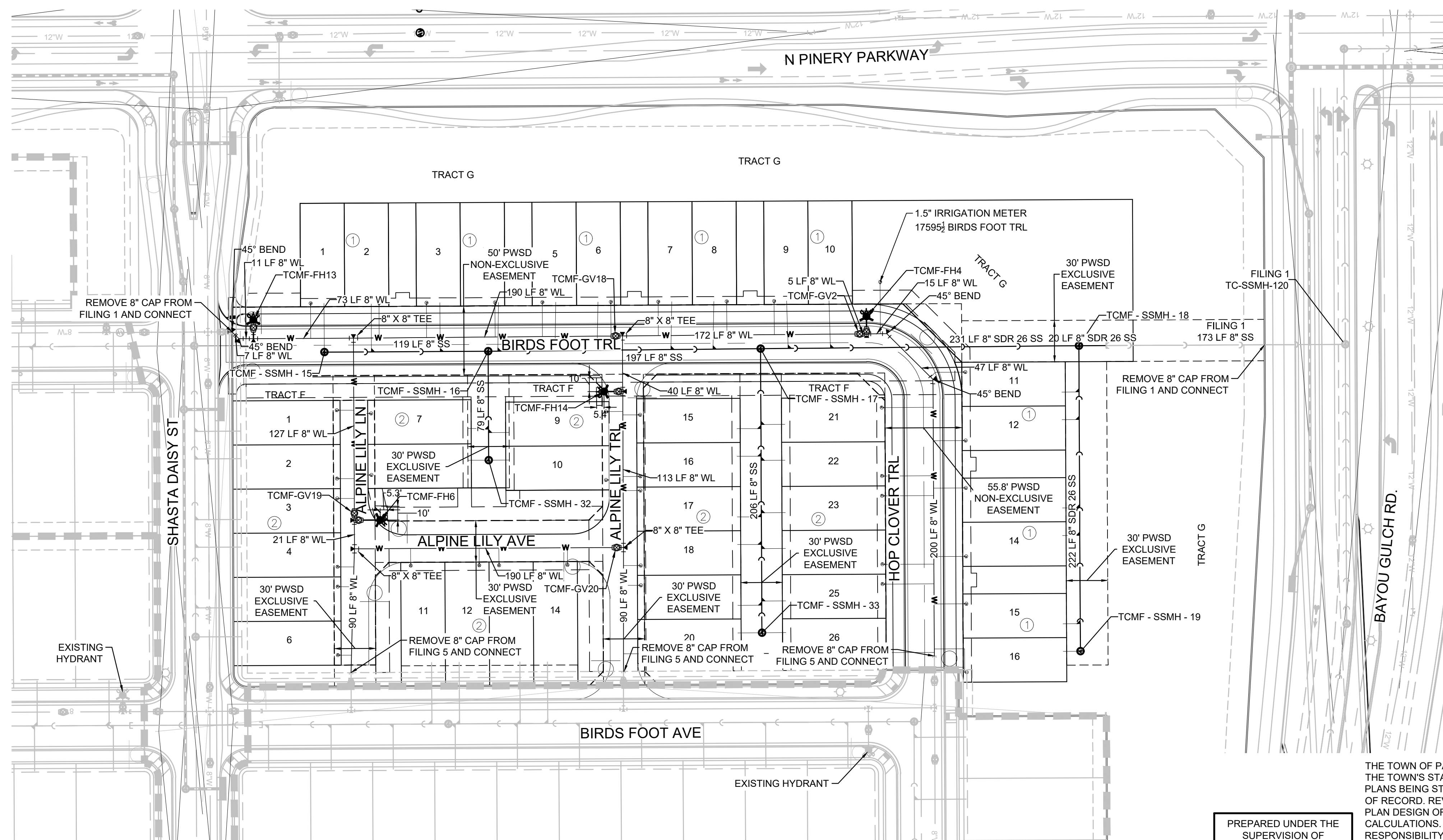
WATER SERVICE TABLE		
F16,B2,L8	ALPINE LILY LN	10+56.83
F16,B2,L9	ALPINE LILY TRL	10+51.59
F16,B2,L10	ALPINE LILY TRL	10+98.75
F16,B2,L11	ALPINE LILY ST	10+40.65
F16,B2,L12	ALPINE LILY ST	10+90.31
F16,B2,L13	ALPINE LILY ST	11+04.65
F16,B2,L14	ALPINE LILY ST	11+54.31
F16,B2,L15	ALPINE LILY TRL	10+49.09
F16,B2,L16	ALPINE LILY TRL	10+96.25
F16,B2,L17	ALPINE LILY TRL	11+06.45
F16,B2,L18	ALPINE LILY TRL	11+60.78
F16,B2,L19	ALPINE LILY TRL	11+75.12
F16,B2,L20	ALPINE LILY TRL	12+24.78
F16,B2,L21	HOP CLOVER TRL	10+98.14
F16,B2,L22	HOP CLOVER TRL	11+23.57
F16,B2,L23	HOP CLOVER TRL	11+37.91
F16,B2,L24	HOP CLOVER TRL	11+87.57
F16,B2,L25	HOP CLOVER TRL	12+01.91
F16,B2,L26	HOP CLOVER TRL	12+16.48



KEYMAP
N.T.S.

NOTES:

- SANITARY SERVICES FOR BLOCK 7, LOTS 1-6 & 21-28 WILL BE INSTALLED WITH TRAILS AT CROWFOOT FILING 1.
- THE PROPOSED UTILITY CONNECTION WILL REQUIRE A TOWN RIGHT-OF-WAY PERMIT PRIOR TO COMMENCING WORK. THE TOWN PREFERS CONNECTIONS TO BE BORED TO THE EXTENT POSSIBLE, AND ANY STREET CUT ALLOWED BY THE TOWN WILL BE REQUIRED TO BE PATCHED ACCORDING TO THE TOWN'S CONSTRUCTION STANDARDS AND DETAILS. THE LIMITS OF PATCHING WILL BE DETERMINED BY THE TOWN AT THE TIME OF CONSTRUCTION. THE TOWN OF PARKER DOES NOT ALLOW ROADWAY CLOSURES FOR UTILITY WORK.
- SANITARY SEWER PIPE INSTALLED DEEPER THAN 20' SHALL BE SDR 26 PVC.



PROJECT SHEET: BRANCH/ENGINEERING SHEET SETS/MULTIFAMILY/CS/IF/PARKER WATER AND SANITATION/AREA/UTILITY PLANNING, BR/WILSON, 04/20/21 2:07 PM

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

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 66 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

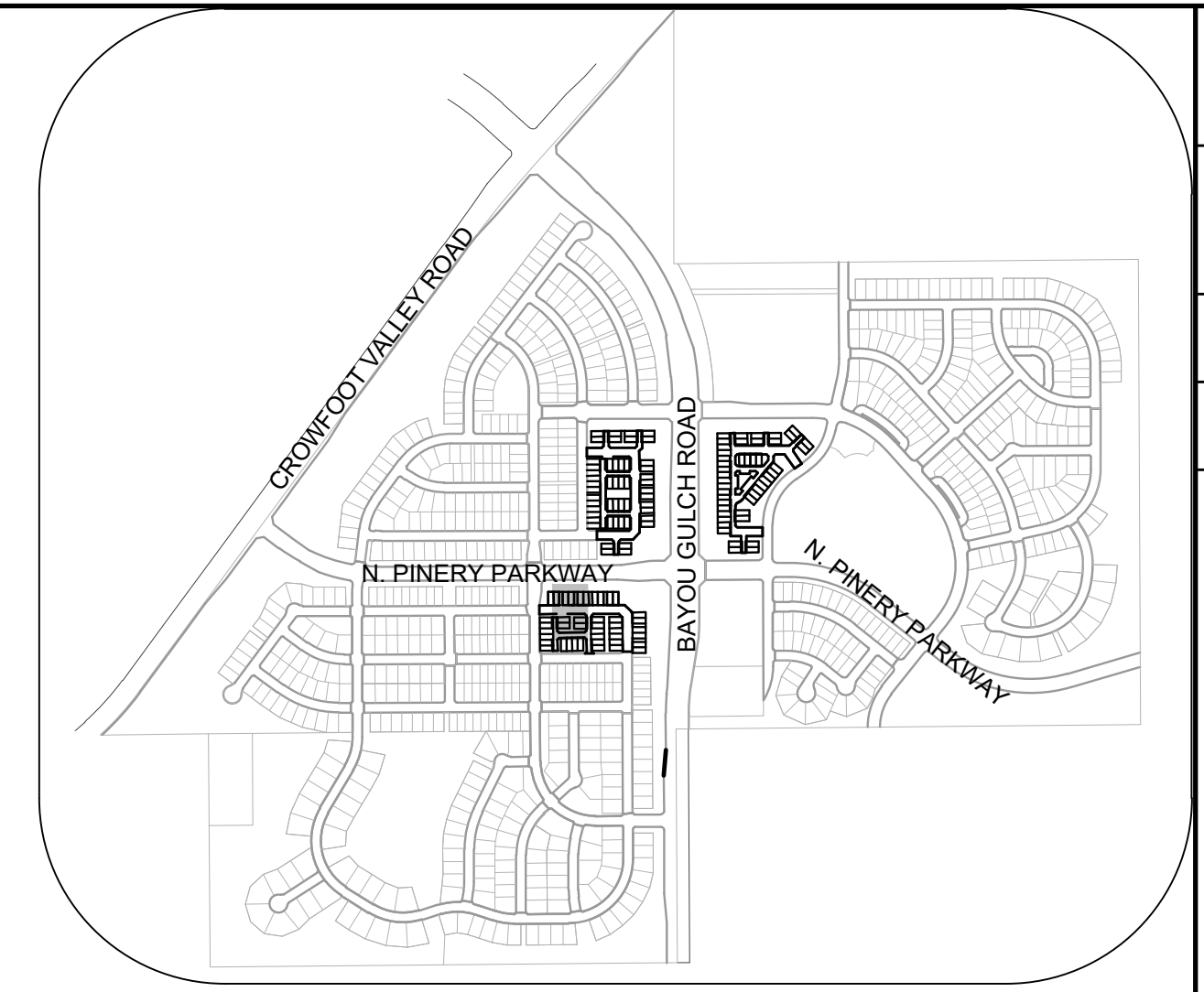
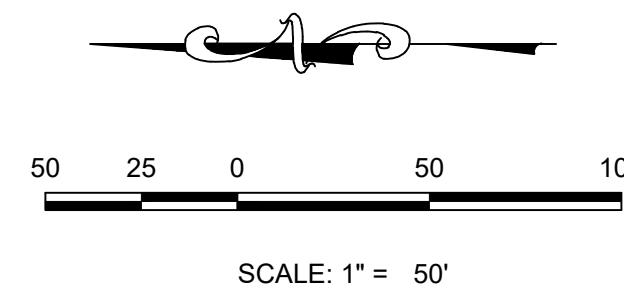
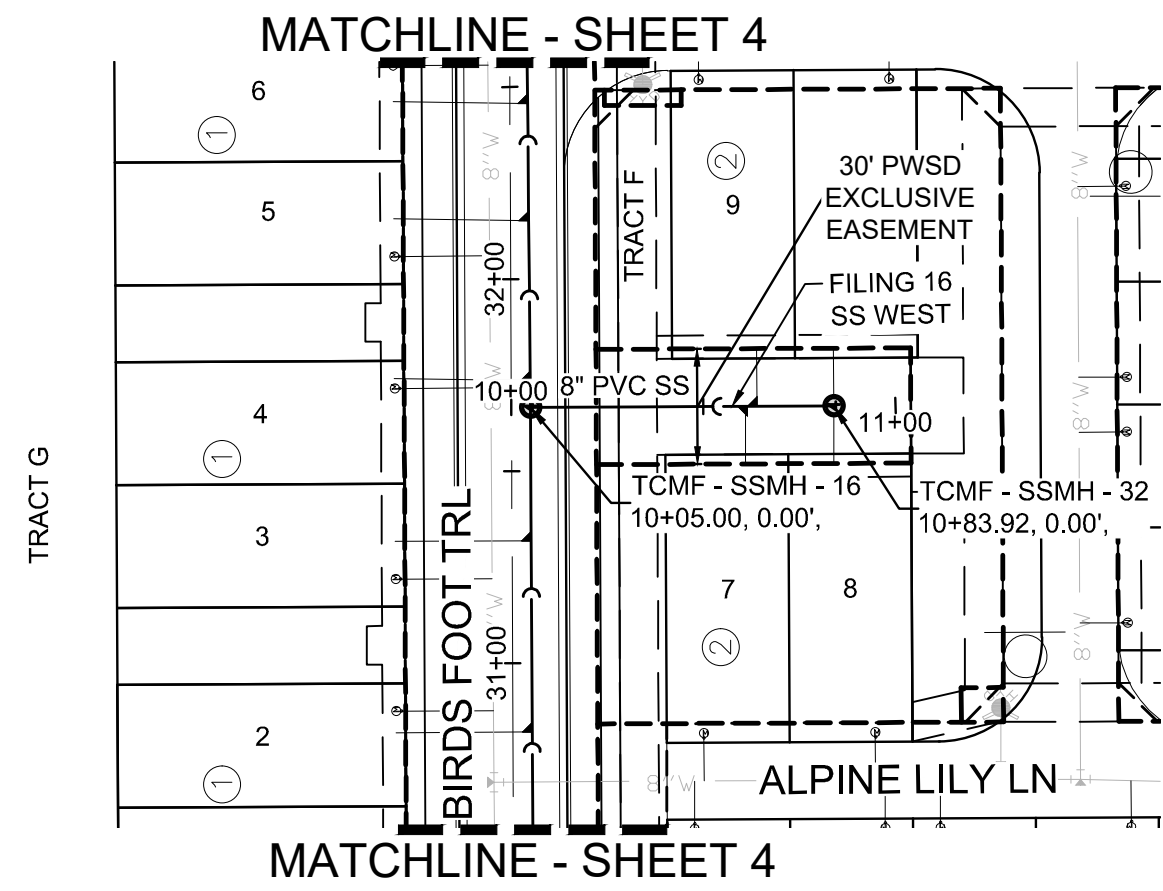
BRIAN P. WILSON
COLORADO P.E. 005067

THE TOWN OF PARKER REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE TOWN'S STANDARDS AND APPROVED VARIANCES. SUBJECT TO THESE IMPROVEMENTS WHICH MAY BE SHOWN, CONSTRUCTION CANNOT COMMENCE UNTIL ALL REQUIRED DRAINAGE/TRAFFIC REPORT(S), FINAL DEVELOPMENT PLAN(S), SPECIAL REVIEW(S), GRADING PERMIT, AND/OR OTHER PERMITS ARE COMPLETE, APPROVED AND ON FILE WITH THE TOWN OF PARKER.

TOWN OF PARKER, DIRECTOR OF ENGINEERING DATE _____

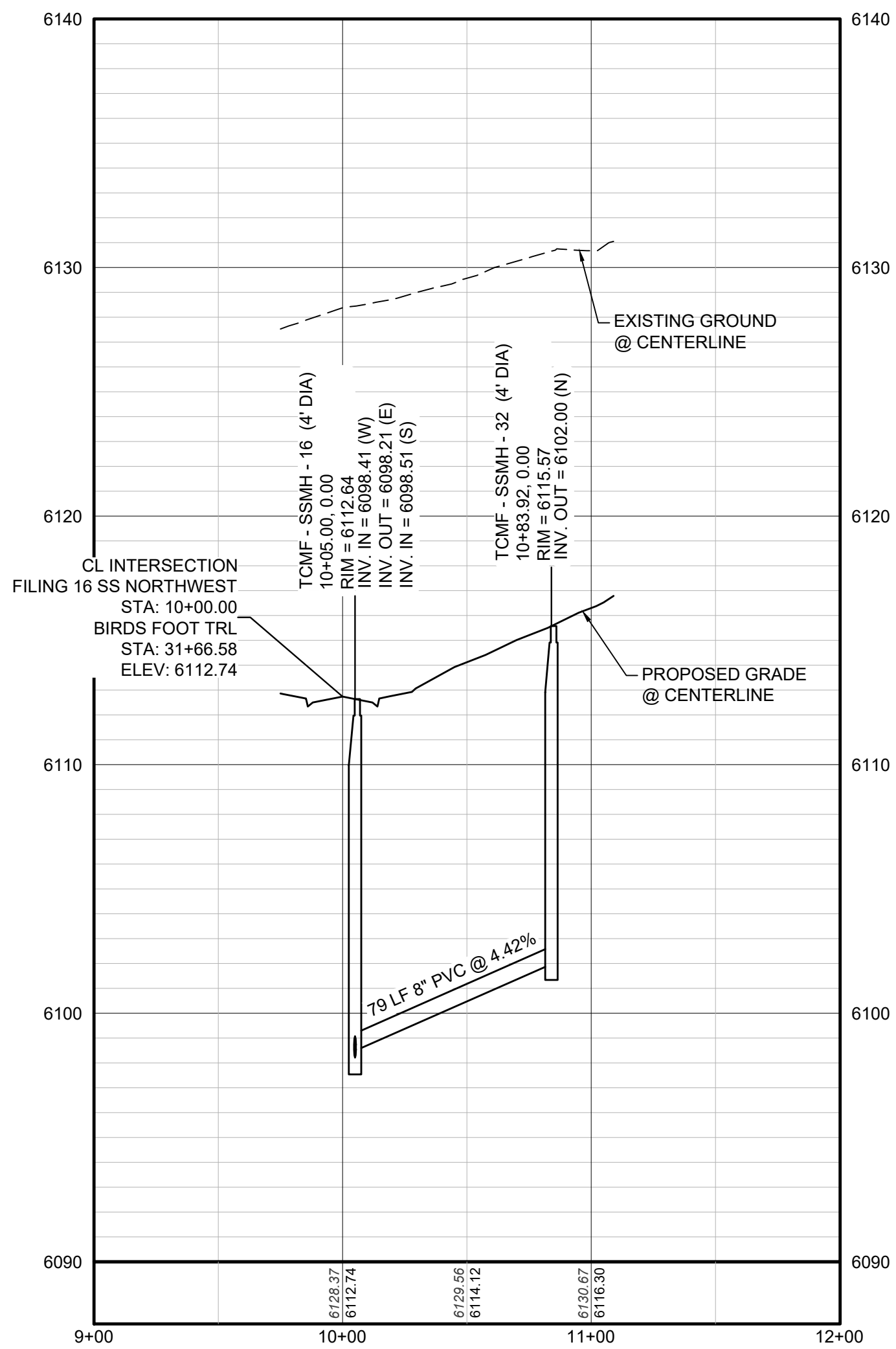
10333 E. Dry Creek Rd. Suite 240 Englewood, CO 80112 Tel: 720.482.9522 www.cwllc.com westwoodsps.com	10333 E. Dry Creek Rd. Suite 240 Englewood, CO 80112 Tel: 720.482.9522 www.cwllc.com westwoodsps.com
HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112	HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112
TRAILS AT CROWFOOT FILING 16 CONSTRUCTION DRAWINGS AREA UTILITY PLAN	TRAILS AT CROWFOOT FILING 16 CONSTRUCTION DRAWINGS AREA UTILITY PLAN
SCALE: AS SHOWN	SCALE: AS SHOWN
DRAWN BY: BPW	DRAWN BY: BPW
CHECKED BY: BPW	CHECKED BY: BPW
DATE: JUNE 2018	DATE: JUNE 2018
FILE NO: 8130283701	FILE NO: 8130283701
SHEET NUMBER	SHEET NUMBER
3	3

N:\PROJECTS\SS RANCH\ENGINEERING\SS RANCH\SS FILING 16 SS NORTHWEST.DWG, D:\DOBEN, 04/20/21, 12:31 PM



KEYMAP
N.T.S.

PLAN: FILING 16 SS WEST STA: 9+00.00 TO 12+00.00
HORIZONTAL SCALE: 1" = 50'



PROFILE: FILING 16 SS WEST STA: 9+00.00 TO 12+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

LEGEND

Ⓜ	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	
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Ⓜ	PROPOSED FIRE HYDRANT	---	EXISTING 5' CONTOUR	
Ⓜ	PROPOSED WL FITTING WITH THRUST BLOCK	---	EXISTING 1' CONTOUR	
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Ⓜ	PROPOSED STORM DRAIN INLET	---	FO	EXISTING FIBER
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		---	TEL	EXISTING TELEPHONE LINE
		---		PWSD EASEMENT
		---		TYP. EASEMENT

ABBREVIATIONS

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EL	ELEVATION	ROP	REINFORCED CONCRETE PIPE
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LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION

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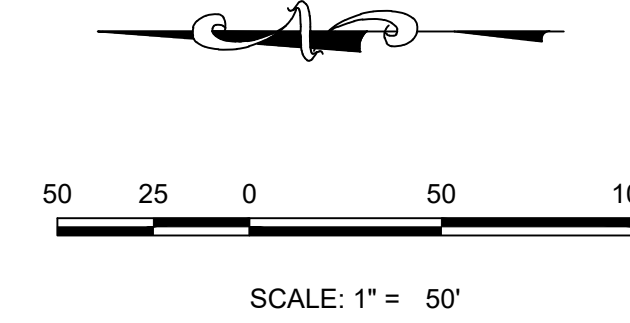
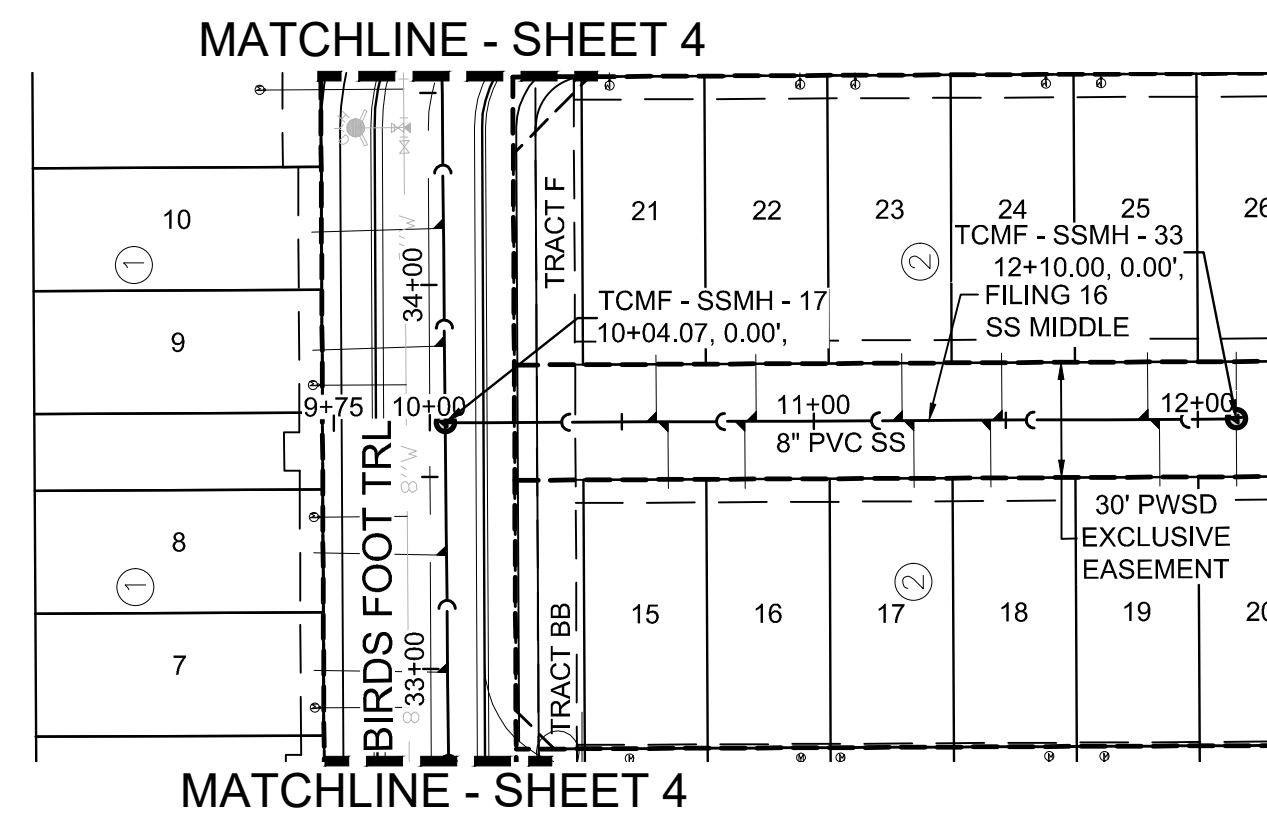
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PREPARED UNDER THE SUPERVISION OF

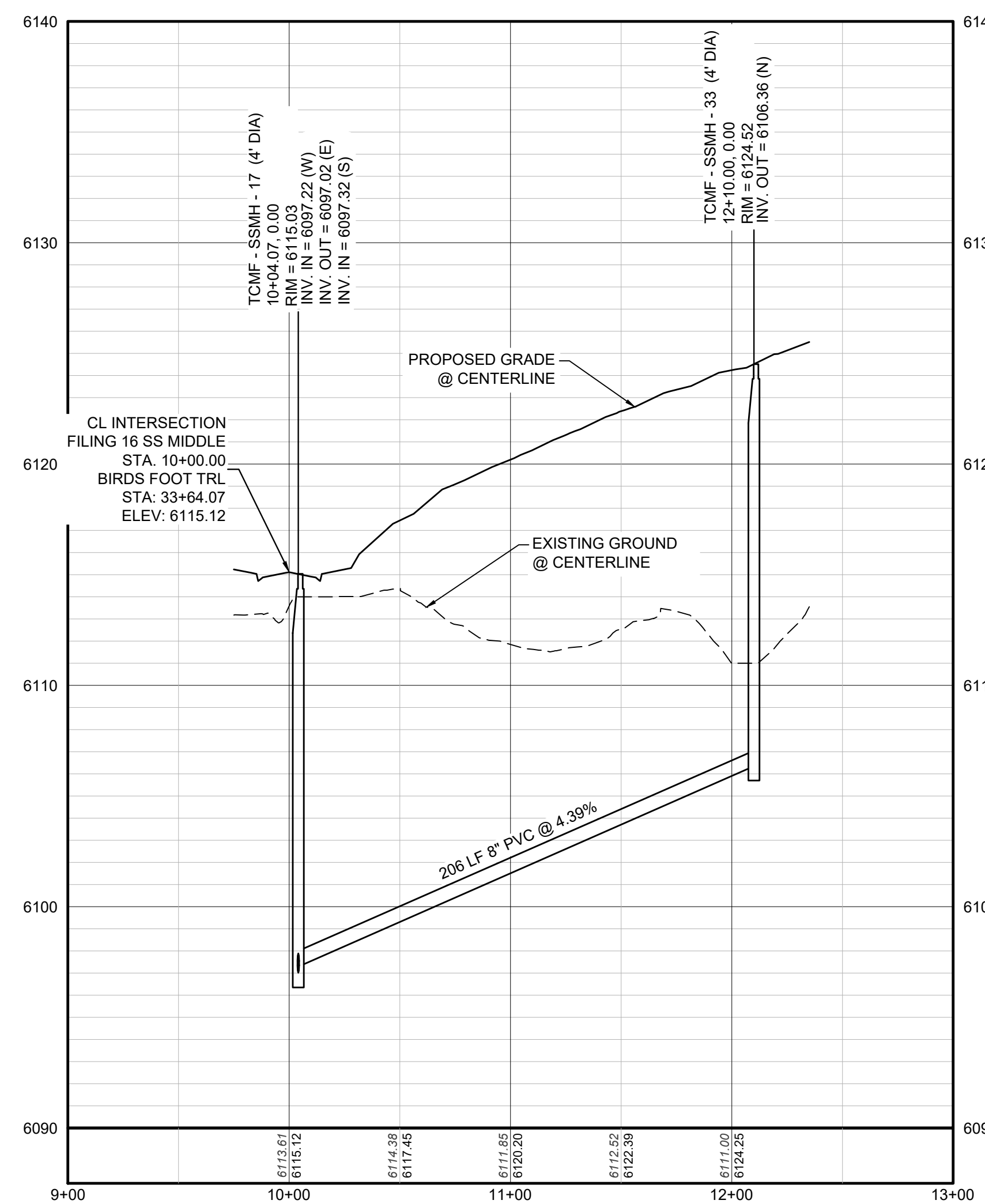
BRIAN P. WILSON
COLORADO P.E. 0050067

DRAWN BY: RRR	CHECKED BY: BPW	DATE: JUNE 2018	SCALE: AS SHOWN	FILE NO: 8130283701
			TRAILS AT CROWFOOT FILING 16 CONSTRUCTION DRAWINGS SANITARY SEWER PLAN & PROFILE FILING 16 SS NORTHWEST	
SHEET NUMBER 5	10333 E. Dry Creek Rd Suite 240 Englewood, CO 80112 Tel: 720.482.952 www.cvlinc.net westwoodjps.com		a Westwood team	
	HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112		Revisions	
			No.	Date
			Init.	Date
			Appr.	Date

N:\PROJECTS\SS RANCH\ENGINEERING\SS SHEET 16 SS NORTH EAST DWS, DTT\DWG_04/20/21_12:32 PM



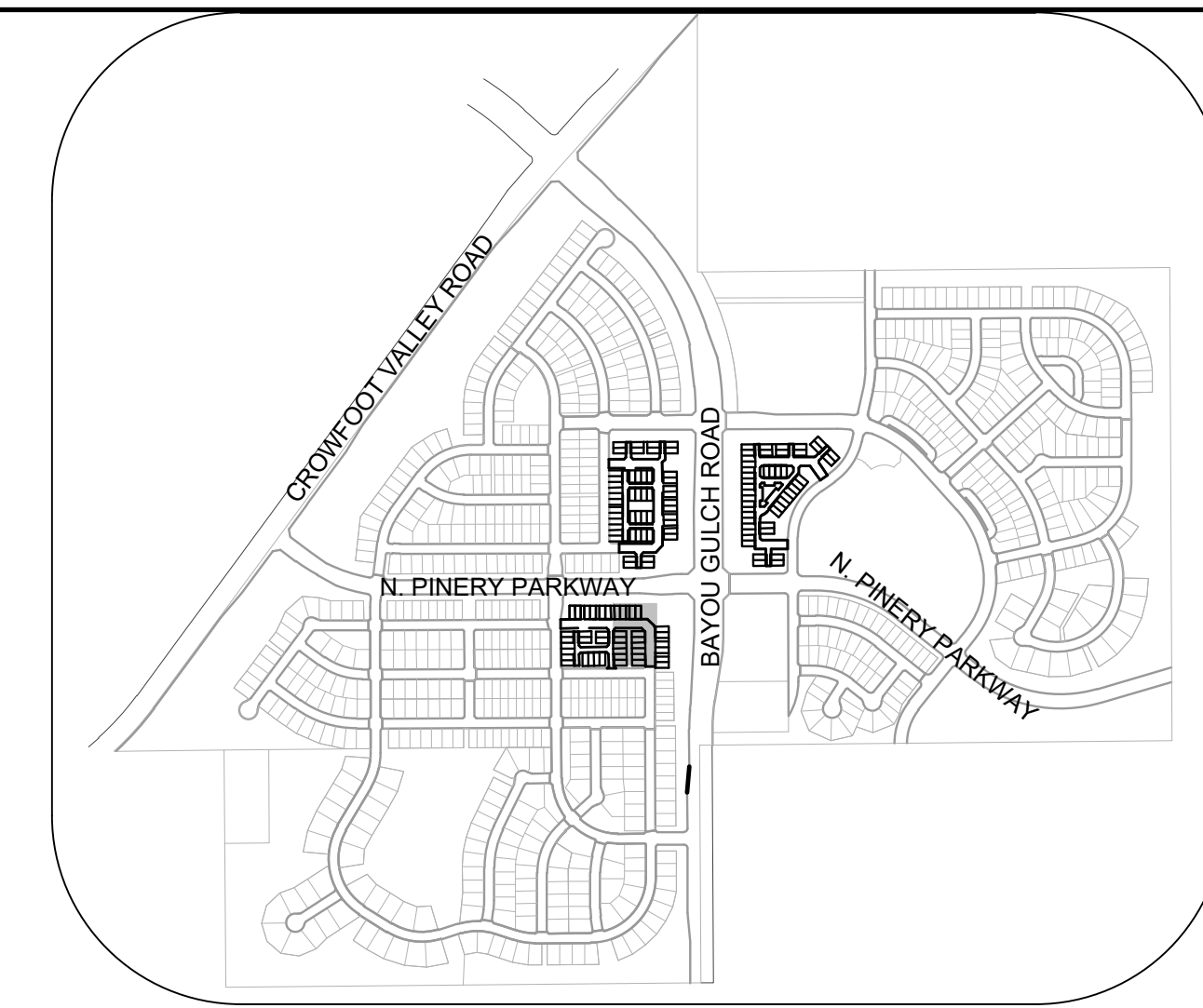
PLAN: FILING 16 SS MIDDLE STA: 9+00.00 TO 13+00.00
HORIZONTAL SCALE: 1" = 50'



PROFILE: FILING 16 SS MIDDLE STA: 9+00.00 TO 13+00.00
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 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.



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	---	EXISTING FIBER OPTIC LINE
Ⓜ	PROPOSED STORM DRAIN MANHOLE	---	EXISTING OVERHEAD POWER
		---	EXISTING TELEPHONE LINE
		---	PWSD EASEMENT
		---	TYP. EASEMENT

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	ROP	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

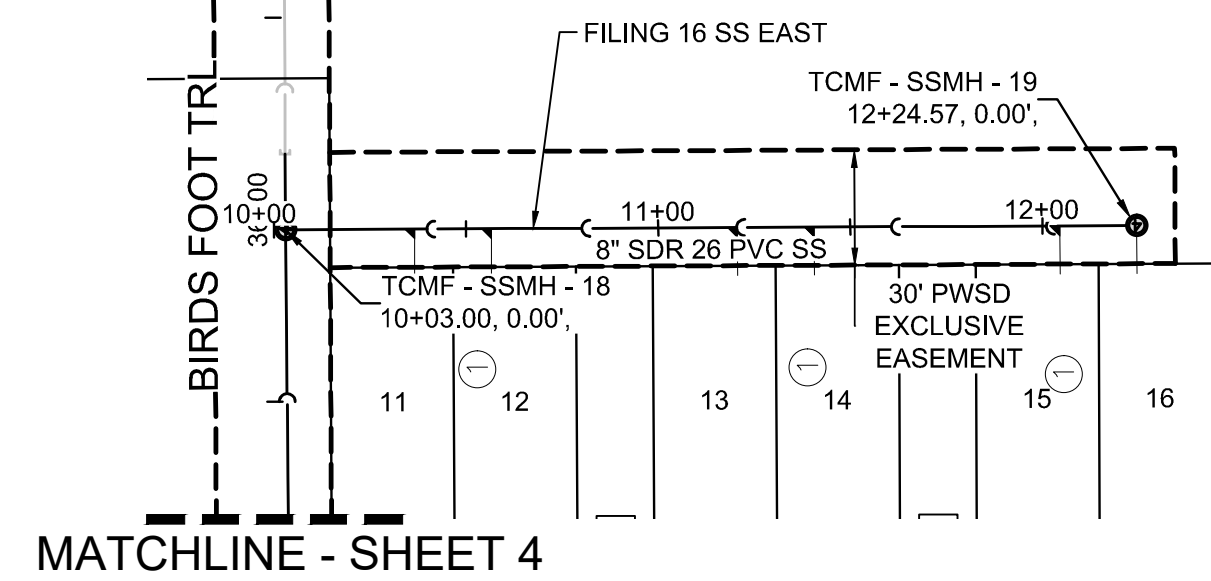
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 BRIAN P. WILLSON
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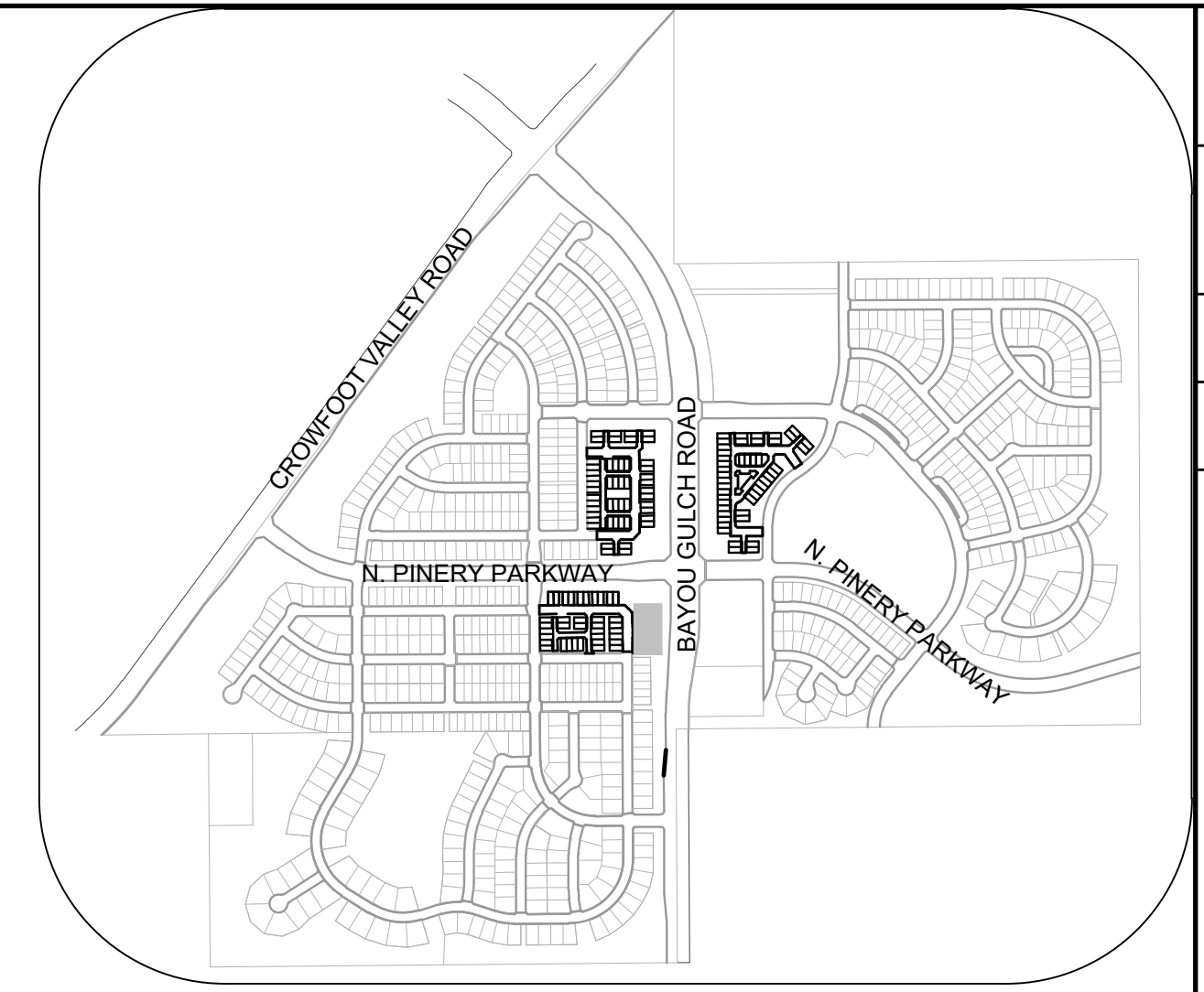
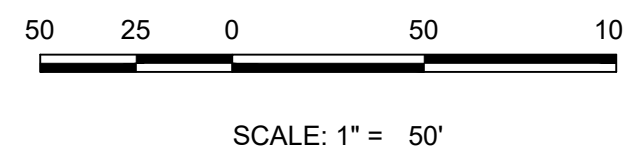
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	AS SHOWN		FILE NO:		8130283701
SHEET NUMBER	6		NO. REVISIONS	Date	
				Init	
TRAILS AT CROWFOOT FILING 16 CONSTRUCTION DRAWINGS SANITARY SEWER PLAN & PROFILE FILING 16 SS NORTHEAST			10333 E. Dry Creek Rd Suite 240 Englewood, CO 80112 Tel: 720.482.952 www.cvlinc.net westwoodjpa.com		
HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112			a Westwood team		

MATCHLINE - SHEET 4



MATCHLINE - SHEET 4

PLAN: FILING 16 SS EAST STA: 9+00.00 TO 12+00.00
HORIZONTAL SCALE: 1" = 50'



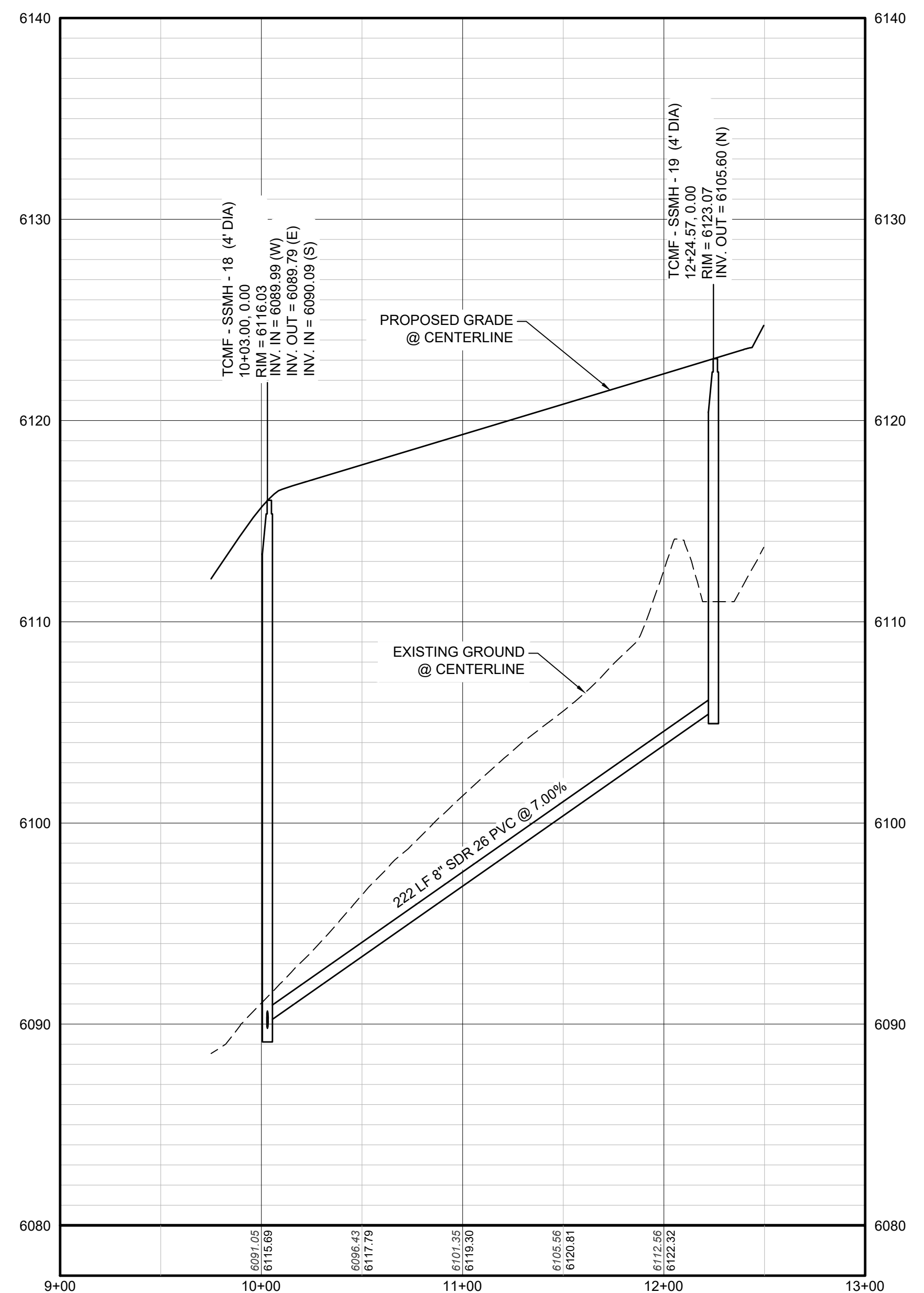
KEYMAP
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⊕	PROPOSED FLARED END SECTION	---	PROPOSED 5' CONTOUR
⊕	PROPOSED LOW POINT BLOW-OFF	---	PROPOSED 1' CONTOUR
⊕	PROPOSED AIR VALVE	---	PROPOSED STORM DRAIN
⊕	FUTURE PHASE VALVE	---	PROPOSED SEWER LINE WITH MANHOLE
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⊕	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
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PROFILE: FILING 16 SS EAST STA: 9+00.00 TO 13+00.00
HORIZONTAL: 1" = 50'
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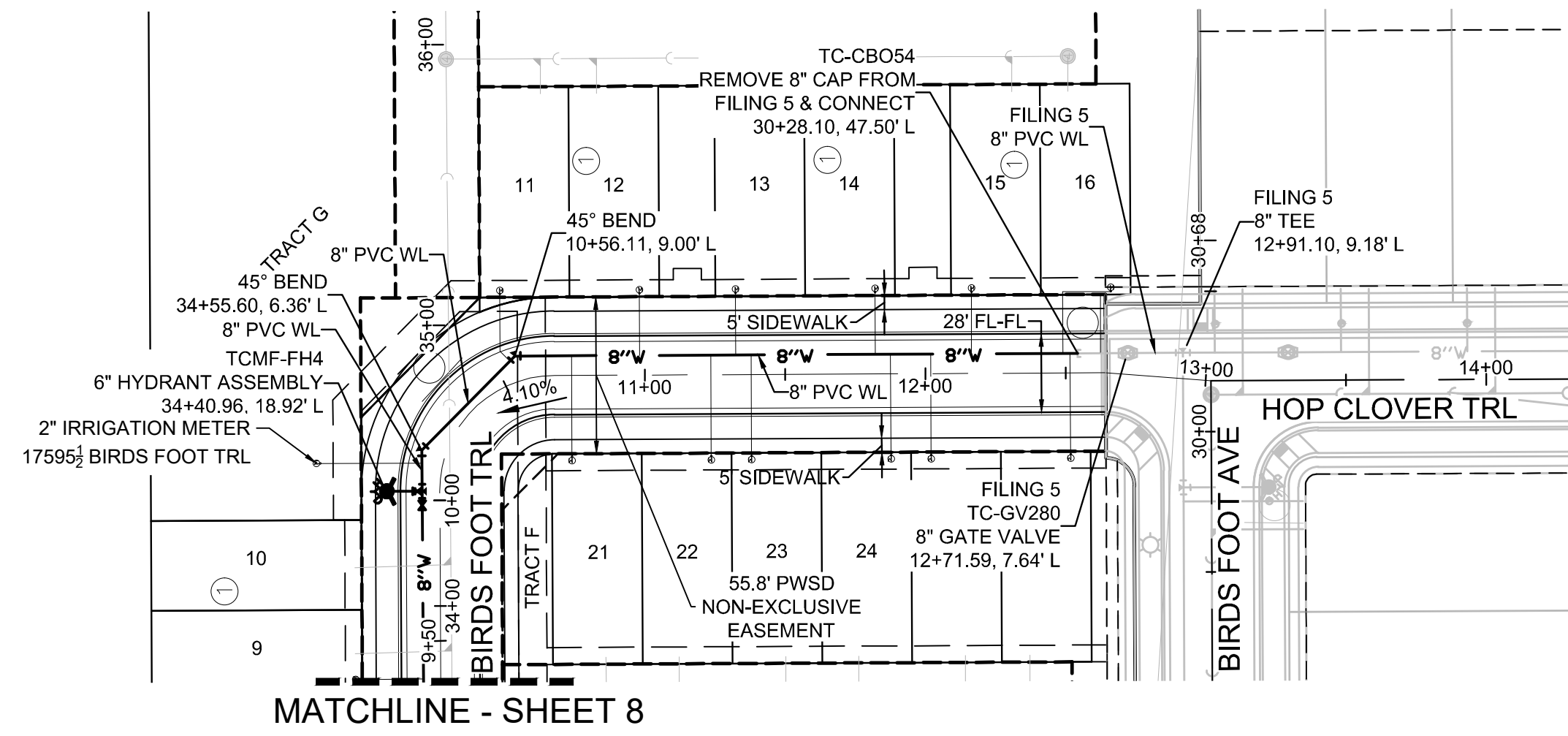
PREPARED UNDER THE SUPERVISION OF

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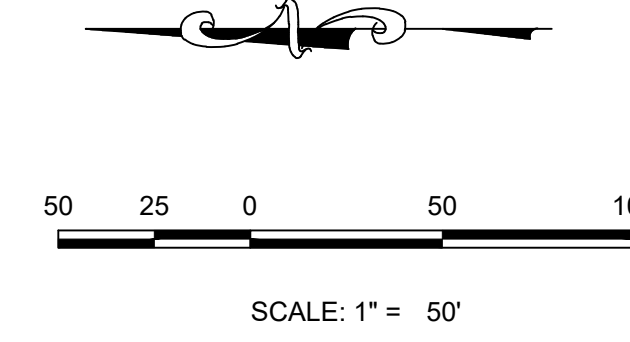
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SHEET NUMBER	DRAWN BY:	CHECKED BY:	DATE:	RRR	BPW	JUNE 2018
				AS SHOWN	FILE NO:	8130283701
7	TRAILS AT CROWFOOT FILING 16 CONSTRUCTION DRAWINGS SANITARY SEWER PLAN & PROFILE 7 - FILING 16 SS EAST			HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112		
	10333 E. Dry Creek Rd Suite 240 Englewood, CO 80112 Tel: 720.482.952 www.cvlinc.net westwoodjpa.com			a Westwood team		
Revisions		No.	Date	Init.	Appr.	Date

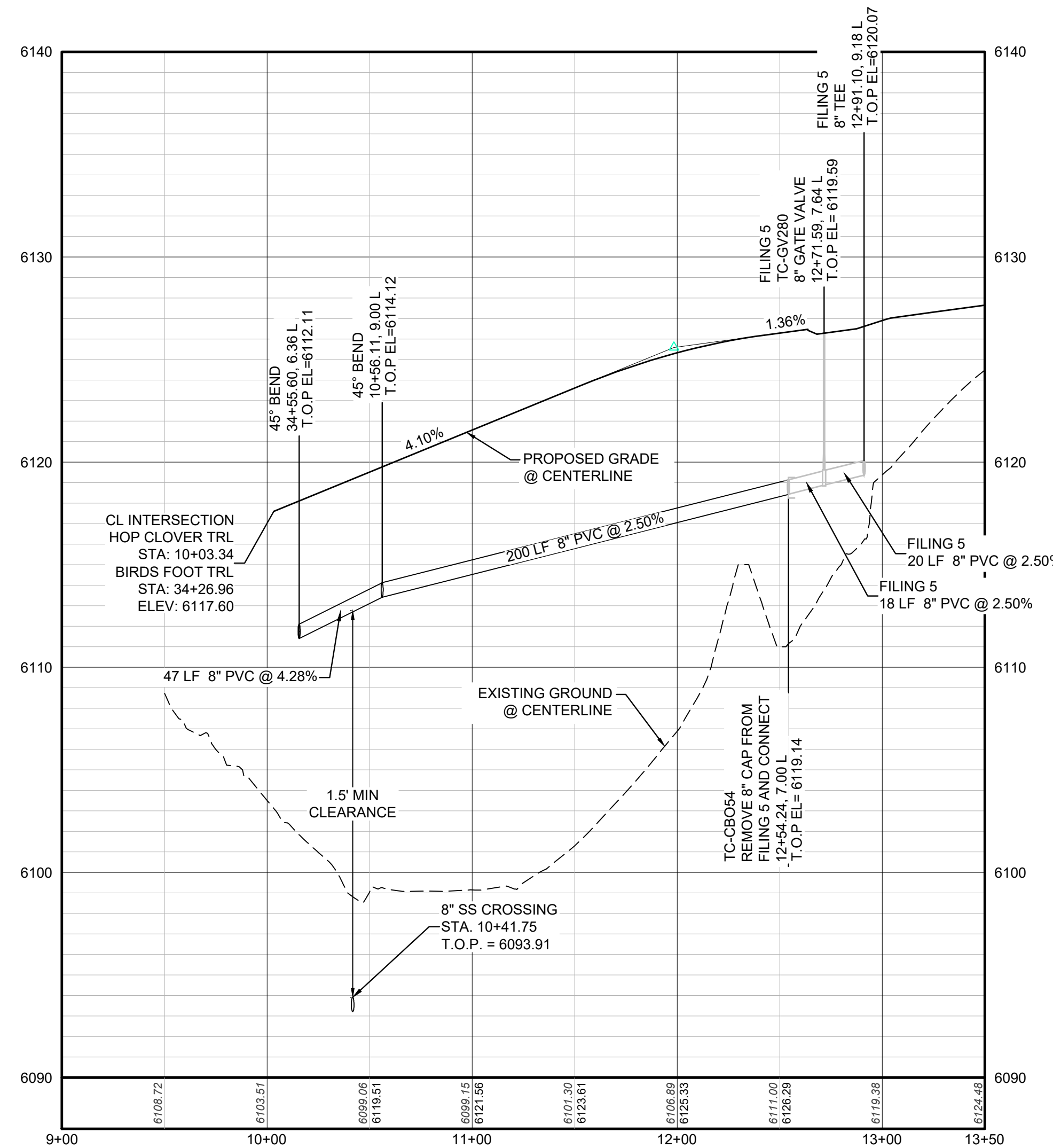
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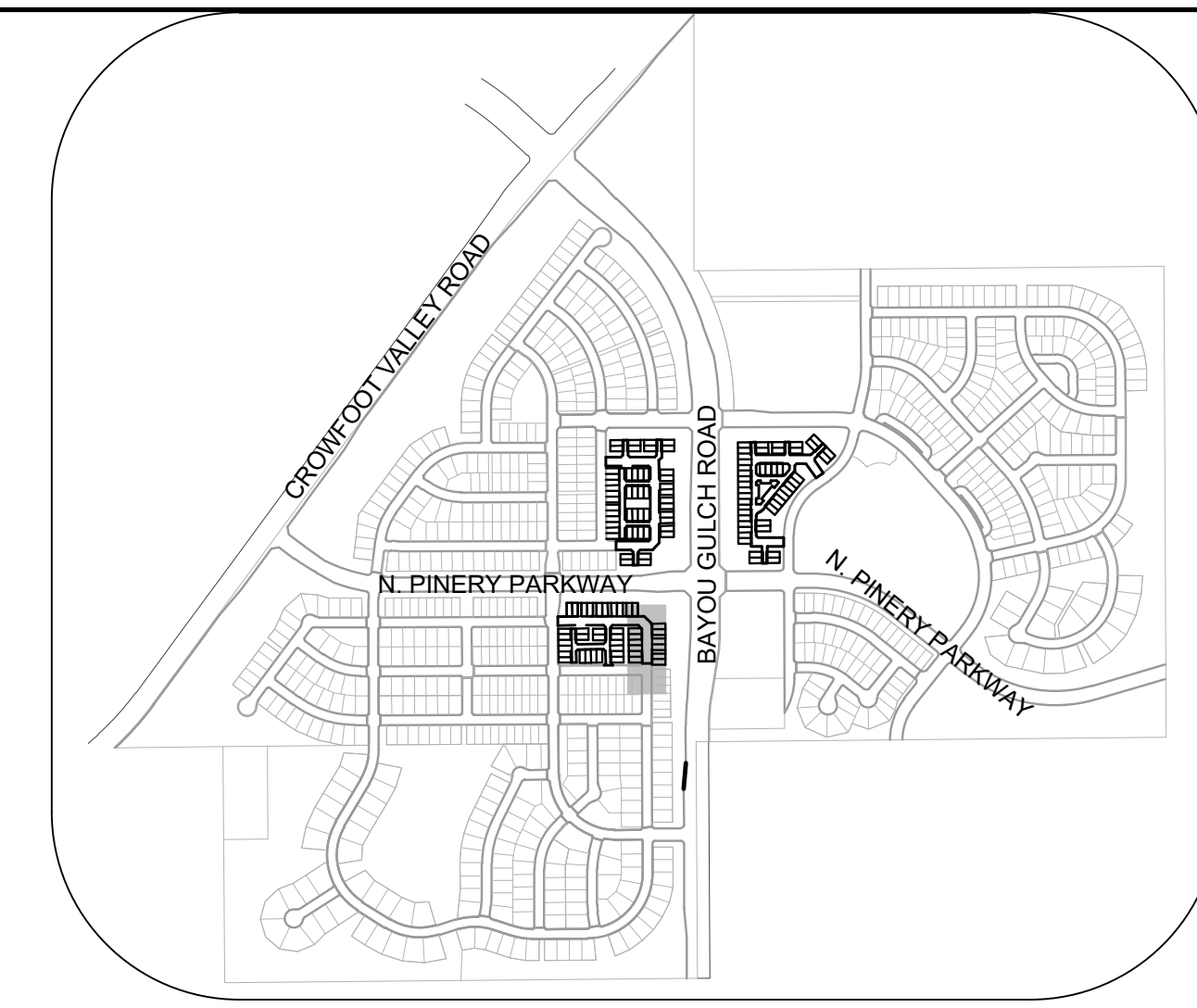
MATCHLINE - SHEET 8



PLAN: HOP CLOVER TRL STA: 9+50.00 TO 14+00.00
HORIZONTAL SCALE: 1" = 50'



PROFILE: HOP CLOVER TRL STA: 9+00.00 TO 13+50.00
HORIZONTAL: 1" = 50'
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N.T.S.

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Ⓜ	PROPOSED VALVE	→	PROPOSED DIRECTION OF FLOW
Ⓜ	PROPOSED FIRE HYDRANT	1.0%	PROPOSED SLOPE & DIRECTION
Ⓜ	PROPOSED WL FITTING WITH THRUST BLOCK	5615	EXISTING 5' CONTOUR
Ⓜ	PROPOSED FLARED END SECTION	5616	EXISTING 1' CONTOUR
Ⓜ	PROPOSED LOW POINT BLOW-OFF	5620	PROPOSED 5' CONTOUR
Ⓜ	PROPOSED AIR VALVE	5607	PROPOSED 1' CONTOUR
Ⓜ	FUTURE PHASE VALVE	---	PROPOSED STORM DRAIN
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Ⓜ	PROPOSED STORM DRAIN INLET	---	FO
Ⓜ	PROPOSED STORM DRAIN MANHOLE	---	OH
		---	TEL
		---	PWSd EASEMENT
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CVL a Westwood team
HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112
TRAILS AT CROWFOOT FILING 16 CONSTRUCTION DRAWINGS WATER PLAN & PROFILE HOP CLOVER TRAIL
SCALE: AS SHOWN FILE NO: 8130283701
DRAWN BY: RRR CHECKED BY: BPW DATE: JUNE 2018
SHEET NUMBER: 9
Revisions
No.
Date
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Date

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PREPARED UNDER THE SUPERVISION OF

BRIAN P. WILSON
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N:\PROJECTS\SS RANCH\ENGINEERING\SS RANCH WATER AND SANITATION\WATER PLAN\HOP CLOVER TRAIL.DWG, DTTORIN, 04/20/21, 12:42 PM

INSPECTION POLICY:

- ALL SERVICE INSPECTIONS MUST BE SCHEDULED WITH THE DISTRICT OFFICE AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
- IF THE CONTRACTOR IS NOT READY FOR INSPECTION WHEN THE INSPECTOR ARRIVES AT THE SITE, A RE-INSPECTION WILL HAVE TO BE SCHEDULED IN ACCORDANCE WITH NOTE 1 ABOVE AND A RE-INSPECTION FEE CHARGED.
- 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.
- 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.
- ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA STANDARDS.
- LOTS WITHOUT BUILDING ADDRESSES OR LOT AND BLOCK NUMBERS BEFORE DISTRICT INSPECTION OR METER SET WILL FAIL AUTOMATICALLY.
- CONTRACTOR MUST BE PRESENT AT TIME OF INSPECTION UNLESS COORDINATED WITH DISTRICT INSPECTOR.

INSTALLATION NOTES:

SEWER

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

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

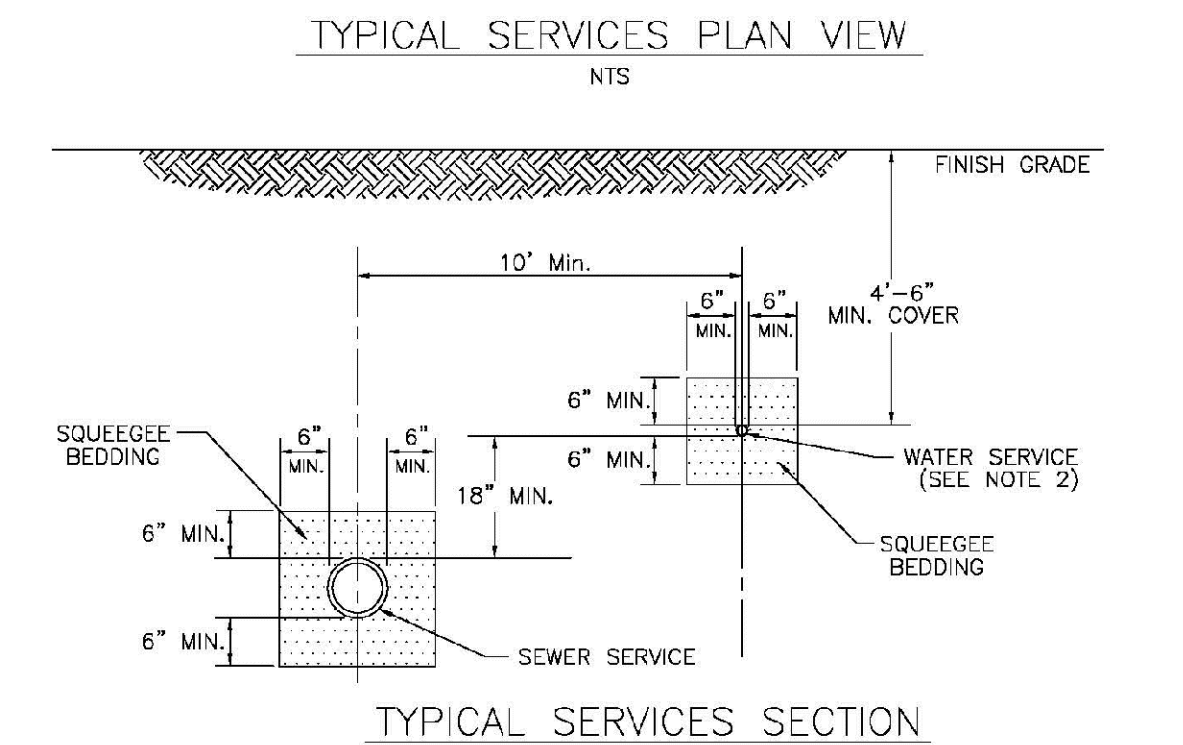
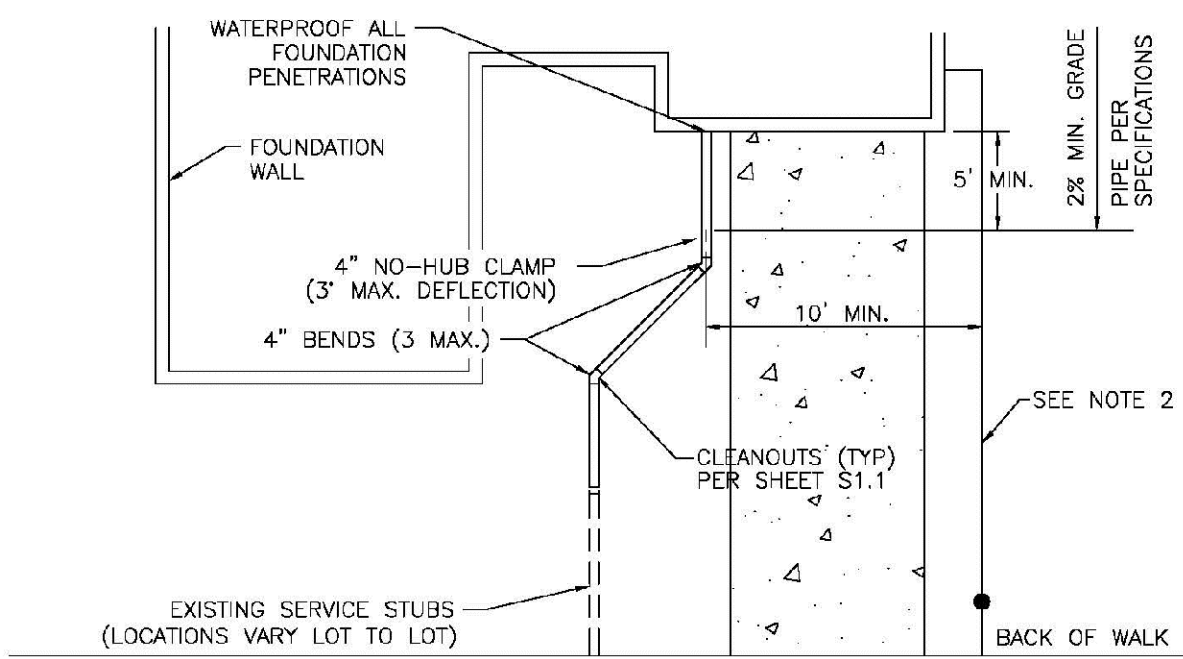
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SHEET S1.1



PARKER WATER & SANITATION DISTRICT
TYPICAL SEWER SERVICES

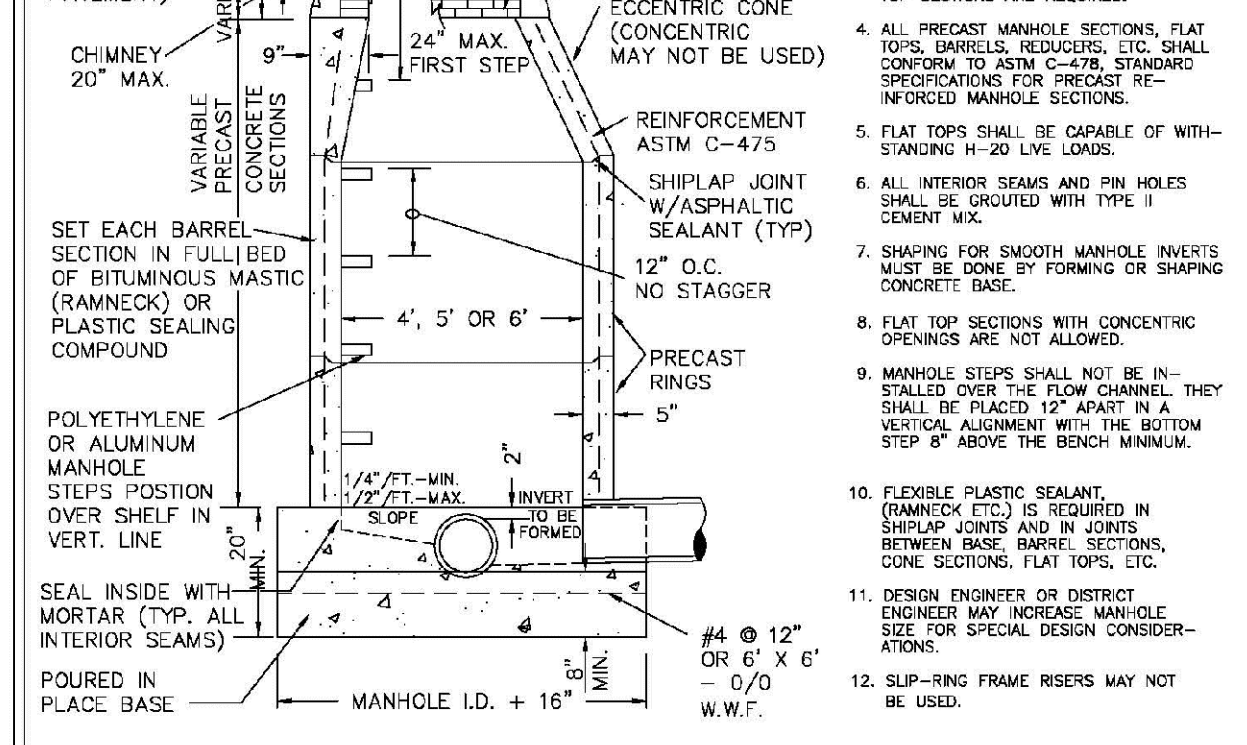
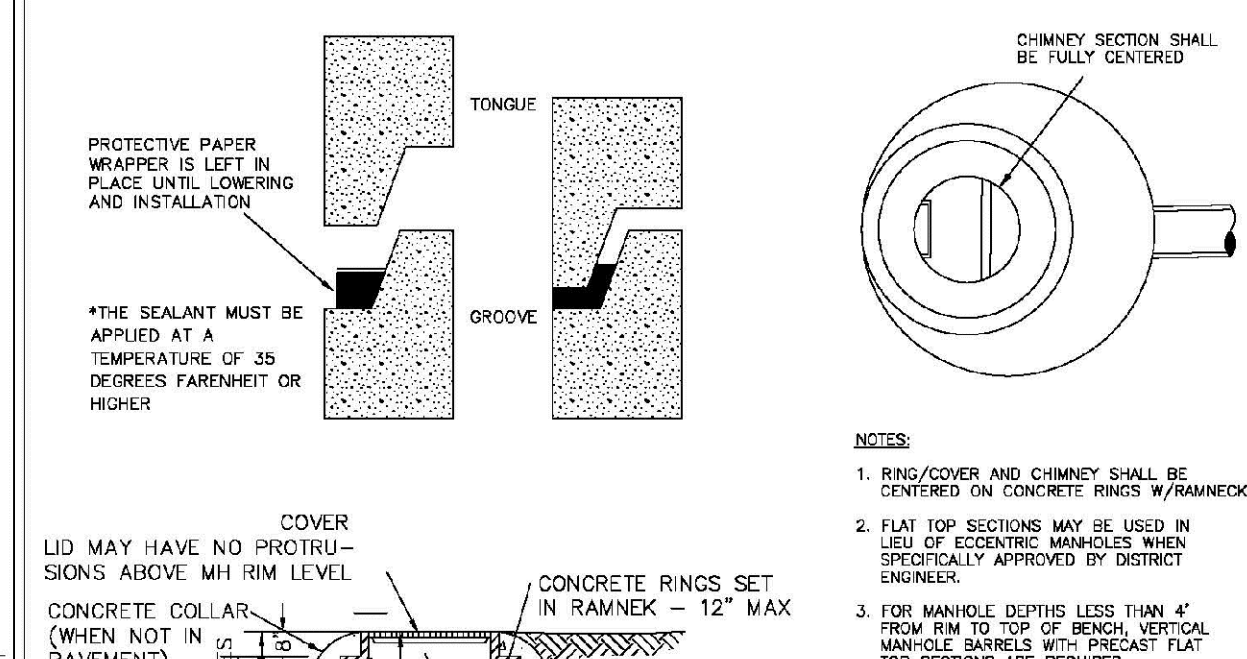
SCALE: NONE DATE: 2/96

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SHEET S1.2



PARKER WATER & SANITATION DISTRICT
PARKER MANHOLE ECCENTRIC CONE

PIPE I.D.	MANHOLE I.D.
18" & SMALLER	4'-0"
21" TO 48"	5'-0"
54"	6'-0"
60" & LARGER	SPECIAL DESIGN

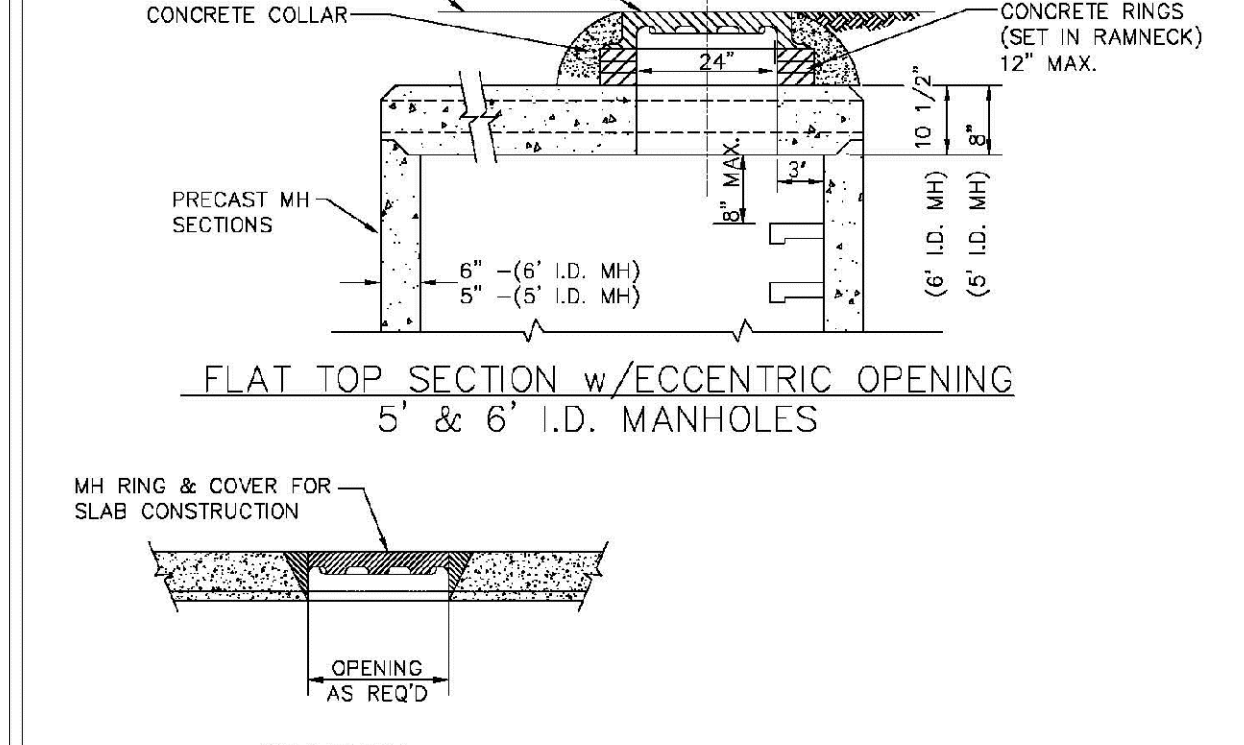
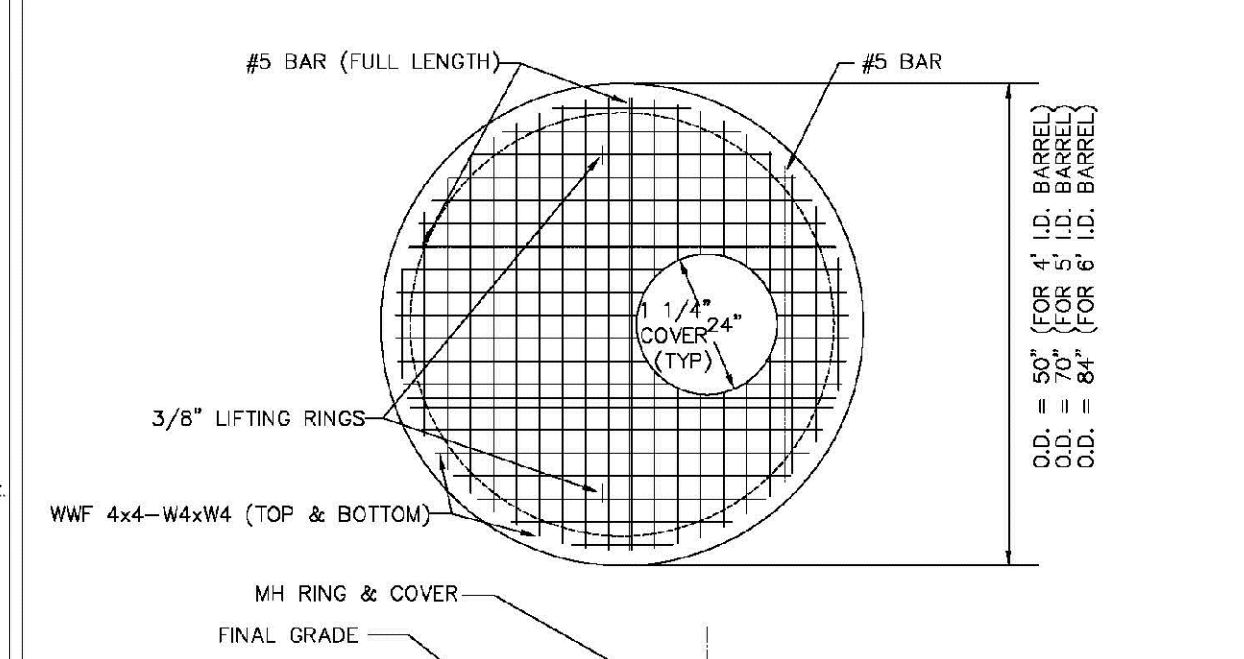
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SHEET S3.1



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

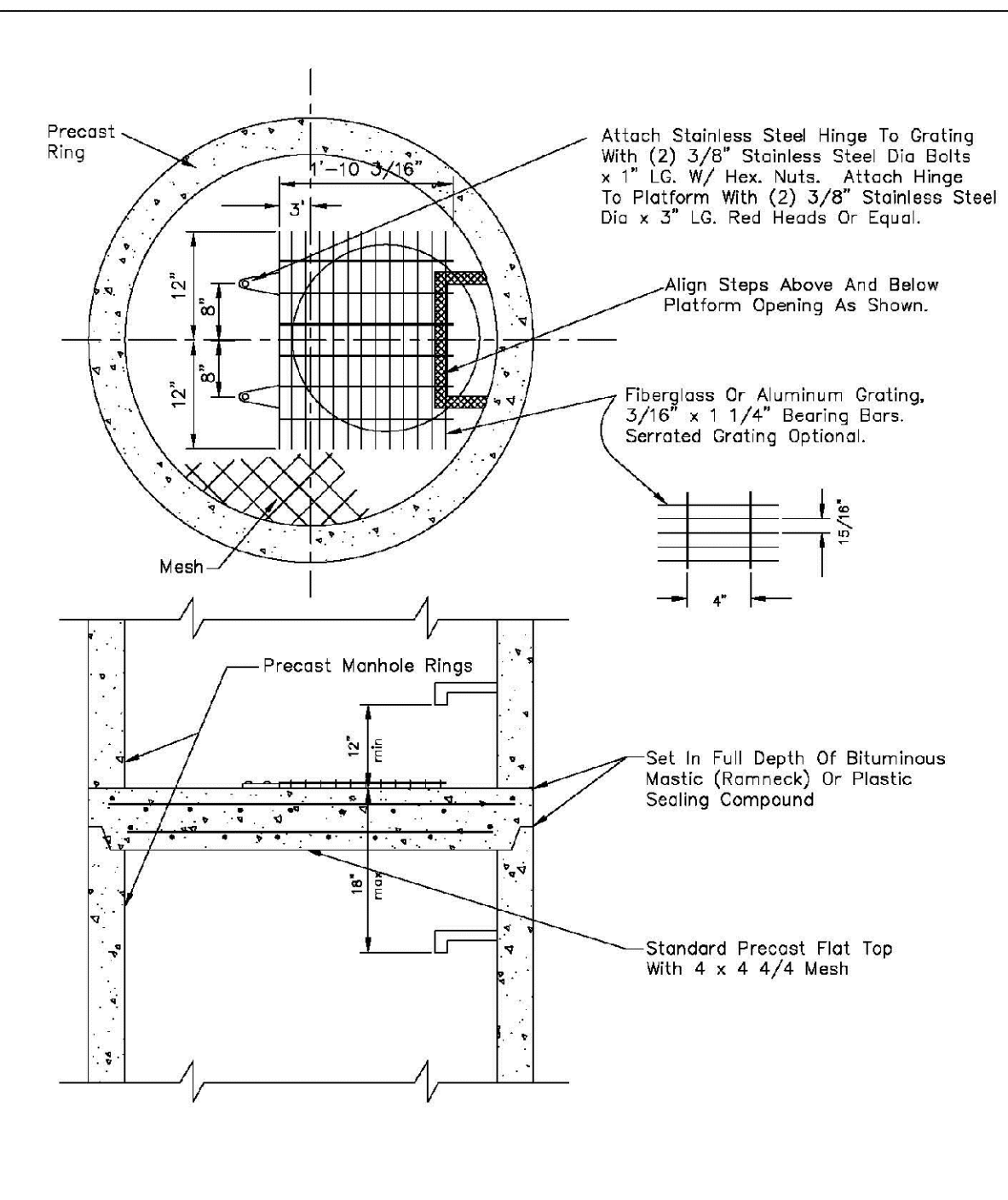
SCALE: NONE DATE: 2/96

APPROVED: PVR 01/02 01/16 10/16

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SHEET S3.5



PARKER WATER & SANITATION DISTRICT
INTERMEDIATE PLATFORM FOR MANHOLES OVER 20' DEPTH

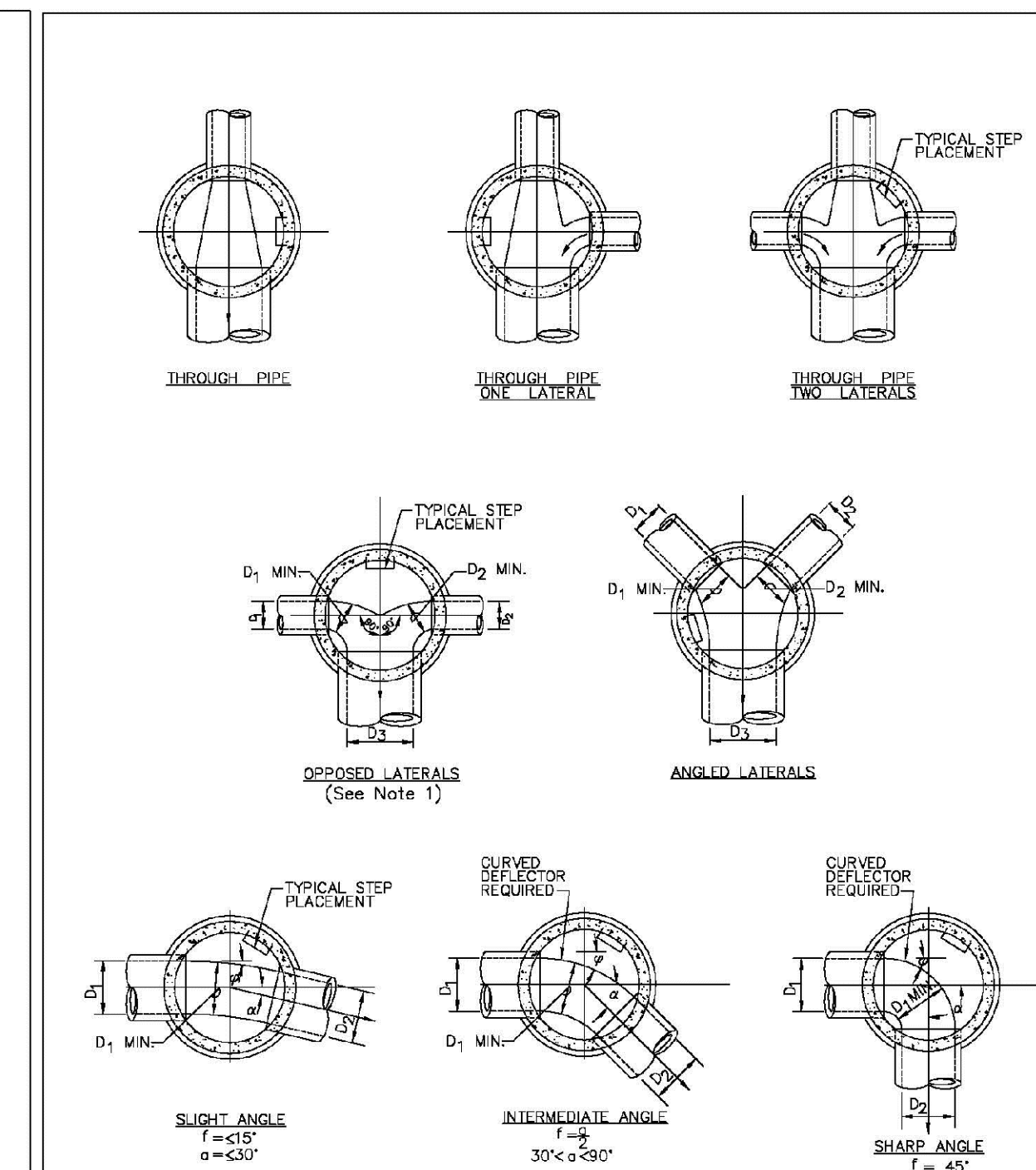
SCALE: NONE DATE: 2/96

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SHEET S3.6



PARKER WATER & SANITATION DISTRICT
TYPICAL BASE CHANNELIZATION DETAILS

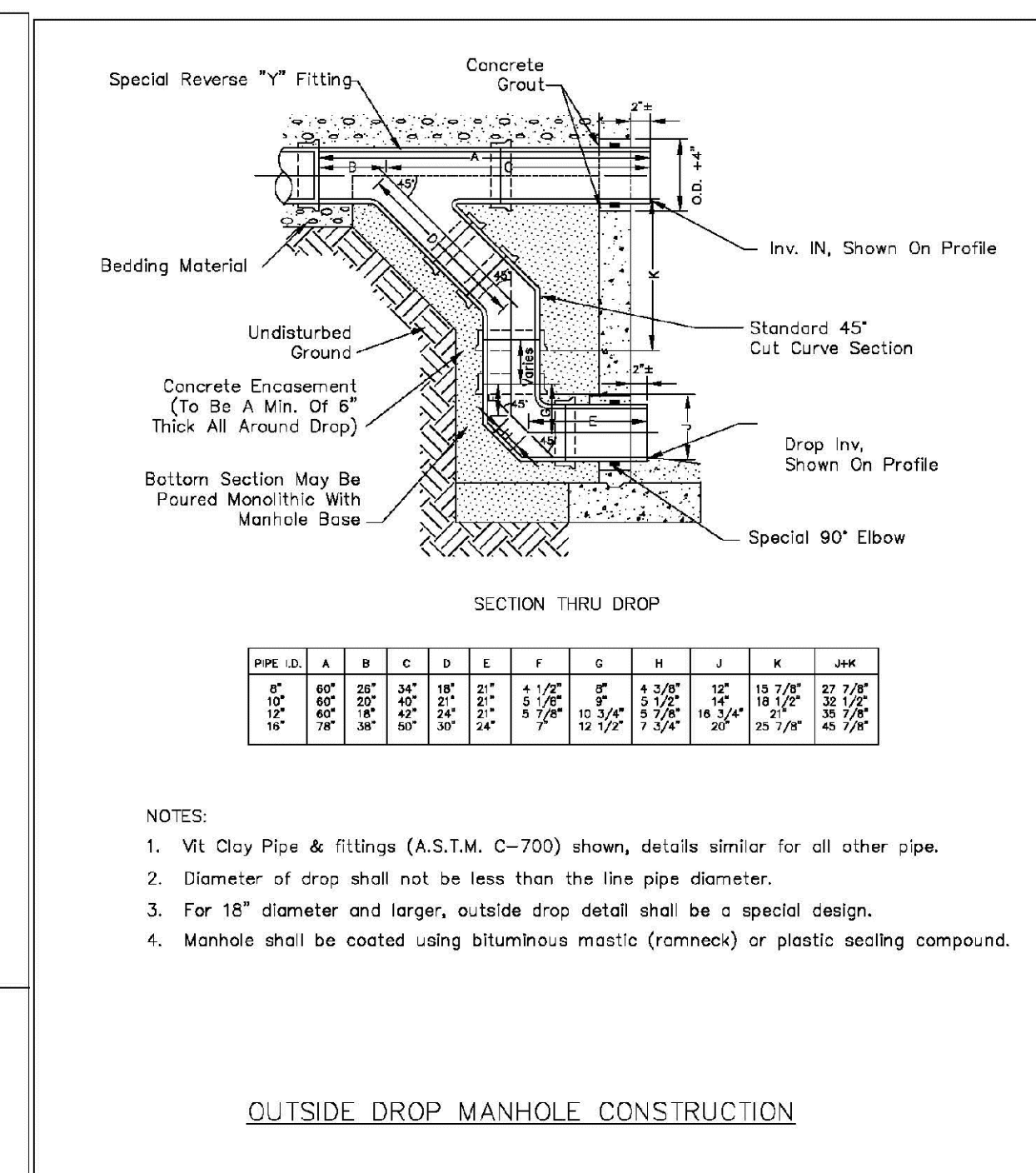
SCALE: NONE DATE: 2/96

APPROVED: PVR 01/16 10/16

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SHEET S3.7



PARKER WATER & SANITATION DISTRICT
OUTSIDE DROP MANHOLE CONSTRUCTION

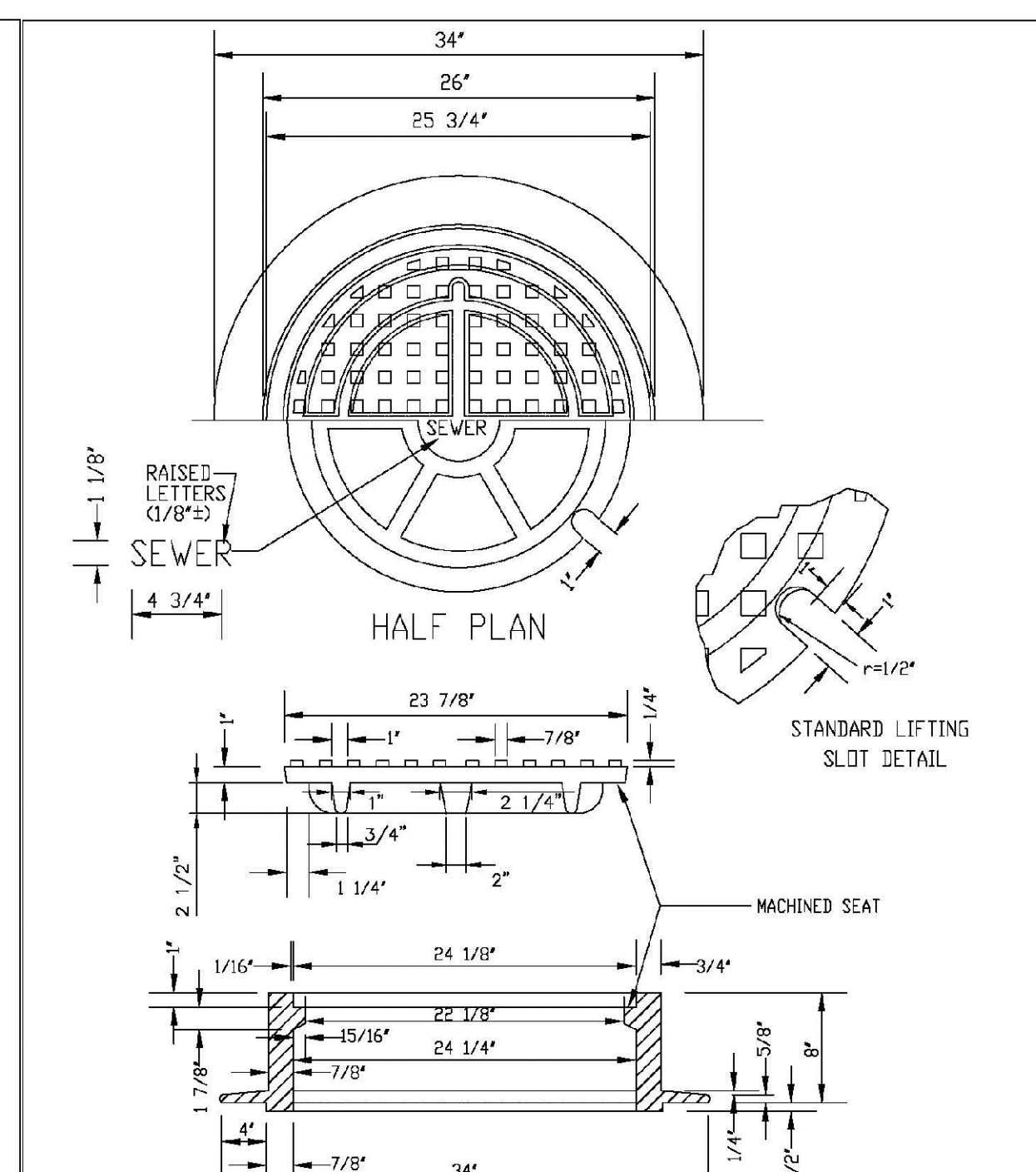
SCALE: NONE DATE: 2/96

APPROVED: PVR 01/16 10/16

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SHEET S3.8



PARKER WATER & SANITATION DISTRICT
24" DIAMETER RING AND COVER

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APPROVED: PVR 01/16 10/16

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SHEET S3.9

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UTILITY NOTIFICATION
CENTER OF COLORADO

TRAILS AT CROWFOOT
FILING 16 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAILS

SCALE: AS SHOWN
FILE NO: 8130283701
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13

DRAWN BY: RRR
CHECKED BY: BFW
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Tel: 720.482.9512
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CVL
a Westwood team

HR 935 LLC
7353 South Alton Way
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No.	Revisions	Date	Init.	Appr.	Date

ALUMINUM STEP

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

VERTICAL SPACING 12" MIN. WITH BOTTOM STEP 6"-8" ABOVE BENCH

TYPICAL INSTALLATION

TOE POCKET DETAILS

STANDARD EXTRUDED ALUMINUM MANHOLE 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.

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

POLYPROPYLENE REINFORCED PLASTIC STEP

NOTES:

- ASTM SPECIFICATIONS:
 - ASTM C-419
 - ASTM A-815 GRADE 60 (STEEL ROD)
 - ASTM 2140-99, TYPE II, GRADE 180 (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.

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

REINFORCING

STEPS TO BE HOOKED BEHIND REINFORCED STEEL AND CAST AT SAME TIME CONCRETE SECTIONS ARE CAST.

MARKER POST DETAIL

STEEL PIPE 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

CONCRETE

PARKER WATER & SANITATION DISTRICT
MARKER POST DETAIL

SCALE: NONE DATE: 2/98

APPROVED: PVR 2/00 10/16

DIRECTOR OF ENGINEERING

SHEET 53.13

SEWER TRENCHING AND BEDDING DETAIL

Lower limit of sloping or benching of trench walls

Bedding Squeezes to be placed in 6" lifts and fully compacted by hand. Backfill to 90% density, AASHTO T-180 in open areas and 95% density, AASHTO T-99 in all public R.O.W.

Bedding Squeezes to be placed in 6" lifts and fully compacted by hand. Backfill to 90% density, AASHTO T-180 in open areas and 95% density, AASHTO T-99 in all public R.O.W.

NOTE: If solid sheeting or shoring is used, it shall be cut off at top of pipe and left in place.

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

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

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

LIMIT OF SLOPING OR BENCHING OF TRENCH WALLS

TRENCH BACKFILL MATERIAL, HAND-TAMPED IN 6" LIFTS

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

PIPE O.D.

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"

NOTE: *FOR ARCH OR ELLIPTICAL PIPE, D=SPAN DIMENSION.

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

ROCK EXCAVATION

12" MIN.

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

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

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"

NOTE: *FOR ARCH OR ELLIPTICAL PIPE, D=SPAN DIMENSION.

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

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

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

GEOTEXTILE FILTER CLOTH

LARGE STONES, BRICK, CONCRETE, ETC. IF REQUIRED.

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"

NOTE: *FOR ARCH OR ELLIPTICAL PIPE, D=SPAN DIMENSION.

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

PROPOSED SEWER OR CONDUIT

FILLER MATERIAL (SEE NOTE 15)

PIER SUPPORT (SEE NOTE 8)

CONCRETE ARCH (1' = 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 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.
 - TYPE II ENCASEMENT SHALL EXTEND AT LEAST TO FREE EACH SIDE OF WATER MAIN.
 - TYPE 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 BE REQUIRED FOR SANITARY SEWERS CROSSING OVER OR UNDER WATER MAINS.
 - TYPE III ENCASEMENT SHALL BE REQUIRED FOR SANITARY SEWERS CROSSING OVER OR UNDER WATER MAINS.
 - EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSINGS OR UNDER PASSAGE 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. 6" & 6" < 24" (4, < 18")
 - TYPE II ENCASEMENT SHALL BE 4" & 4" > 6" (4, > 6")
 - IF 4" > 6" FOR TYPE II ENCASEMENT POUR 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

DIRECTOR OF ENGINEERING

SHEET 54.6

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TRAILS AT CROWFOOT
FILING 16 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAILS

SCALE: AS SHOWN
FILE NO: 8130283701

DRAWN BY: RRR
CHECKED BY: BPV
DATE: JUNE 2018

SHEET NUMBER: 14

DATE: JUNE 2018

Revisions: No. 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"	4	4	11.12	9.5	7.00	0.88	V
8"	6	6	13.37	11.75	9.15	1.00	V
10"	8	8	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"	6	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

BEND BREAKER **DEAD END**

TYPICAL CROSS SECTION

TEE

MINIMUM BEARING SURFACE AREA (IN SQUARE FEET)

SIZE OF	BENDS			TEE OR
	11-1/4"	22-1/2"	45"	DEAD END
4"	1.00	1.00	1.00	1.00
6"	1.00	1.25	2.25	4.00
8"	1.00	2.00	4.00	7.00
10"	1.50	3.50	12.50	23.00
12"	2.00	5.00	18.50	36.50
24"	2.50	15.00	45.00	47.00

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.
12" WATER HAMMER = 110 PSI.
16", 20" AND 24" WATER HAMMER = 70 PSI.
4. SOIL BEARING CAPACITY = 3,000 LBS./SQ. FT.

**PARKER WATER & SANITATION DISTRICT
CONCRETE KICKBLOCKS
BEARING SURFACES AND INSTALLATION**

SCALE: NONE DATE: 2/96

APPROVED: 4/01
PVR 1/18
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W3.18

HALF PLAN **STANDARD LIFTING SLOT DETAIL**

24" DIAMETER RING AND COVER

NOTES:
1. Coating Specifications: ASTM A-48 With A Minimum Tensile Strength of 28 KSI (Class 25).
2. All Casting to be Done in Anhydrous Base (Or Approved Equivalent).

**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 **ACCESS MANHOLE AND AIR VALVE ASSEMBLY**

NOTES:
1. USE 2" AIR VALVE ASSEMBLY ON 30" OR SMALLER PIPE.
2. RESIDENTIAL ASSEMBLY MAY BE USED IN RESIDENTIAL AREAS ONLY (SEE DETAIL SHEET W3.3).
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 1/18
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"
24"	8'-0"	4'-0"

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

SCALE: NONE DATE: 2/96

APPROVED: 1/18
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 bell holes.

Tamping is herein defined as the act of placing approved bedding material under the haunches of the pipe, paying particular attention to voids, bell 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 for a typical trench cross section.

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	20-60
No. 20	5-35
No. 30	2-30
No. 100	1-10
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

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: 5/08

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 1/18
DIRECTOR OF ENGINEERING 10/16

2016 REVISION SHEET W4.4

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**TRAILS AT CROWFOOT
FILING 16 CONSTRUCTION DRAWINGS
WATER DETAILS**

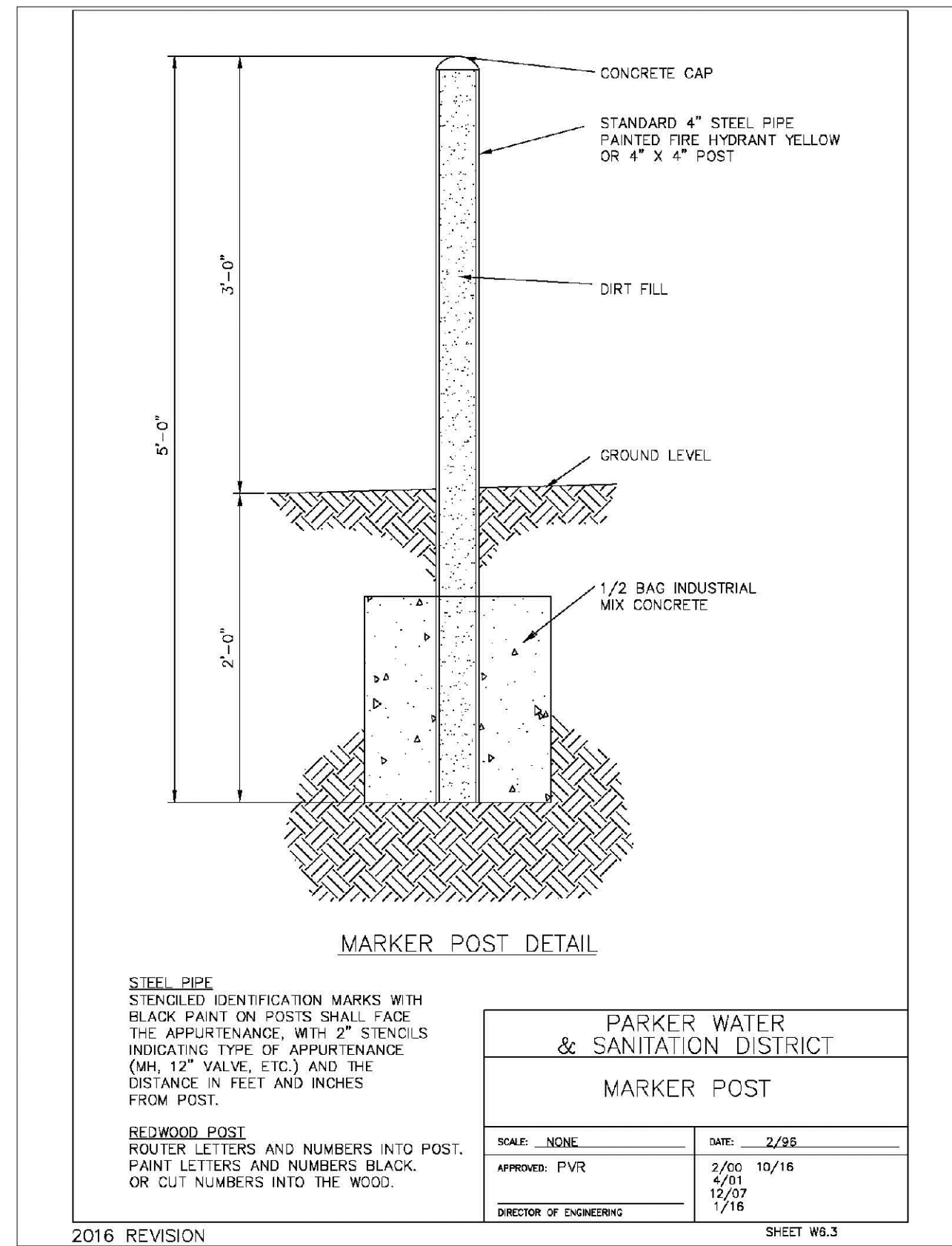
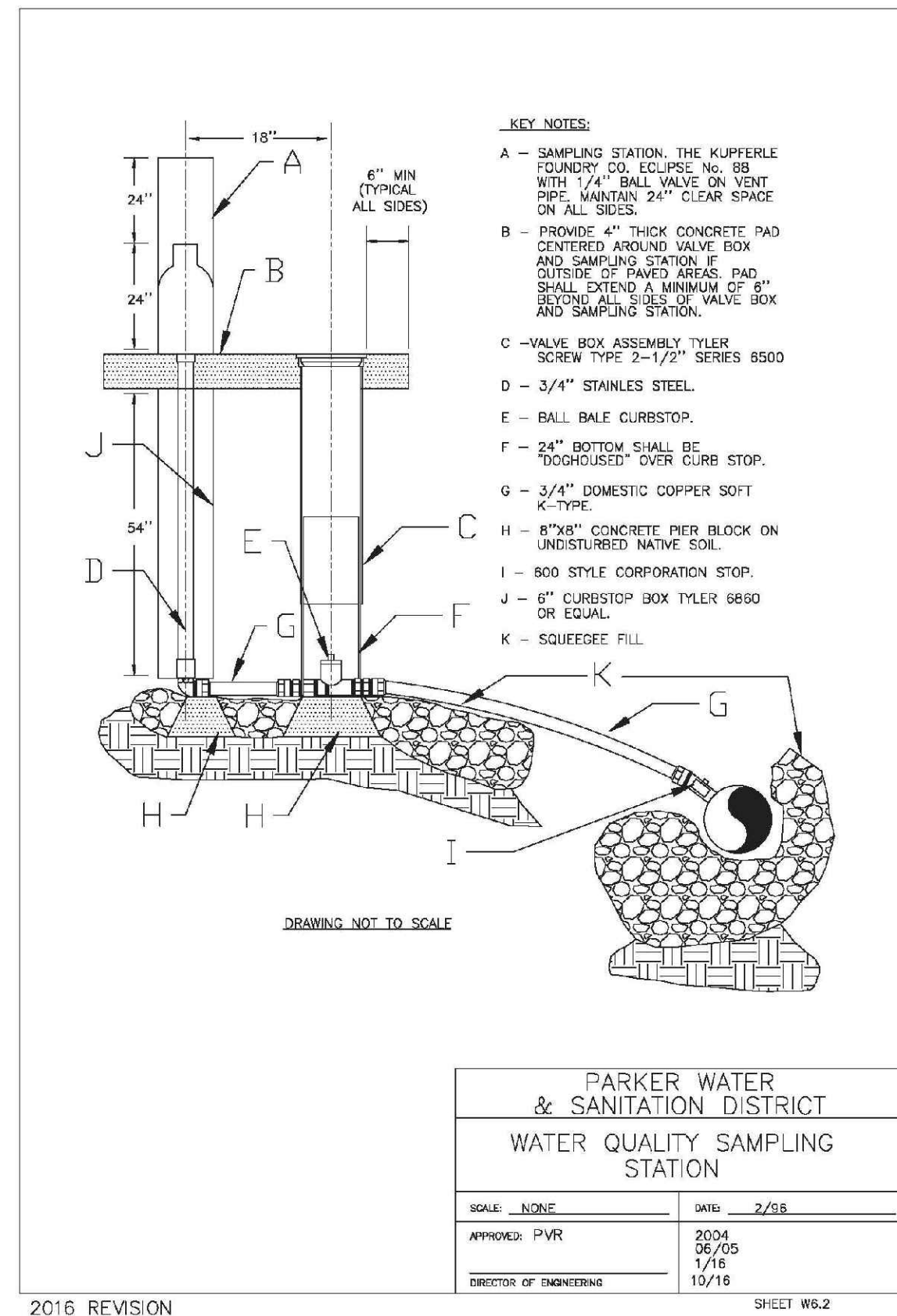
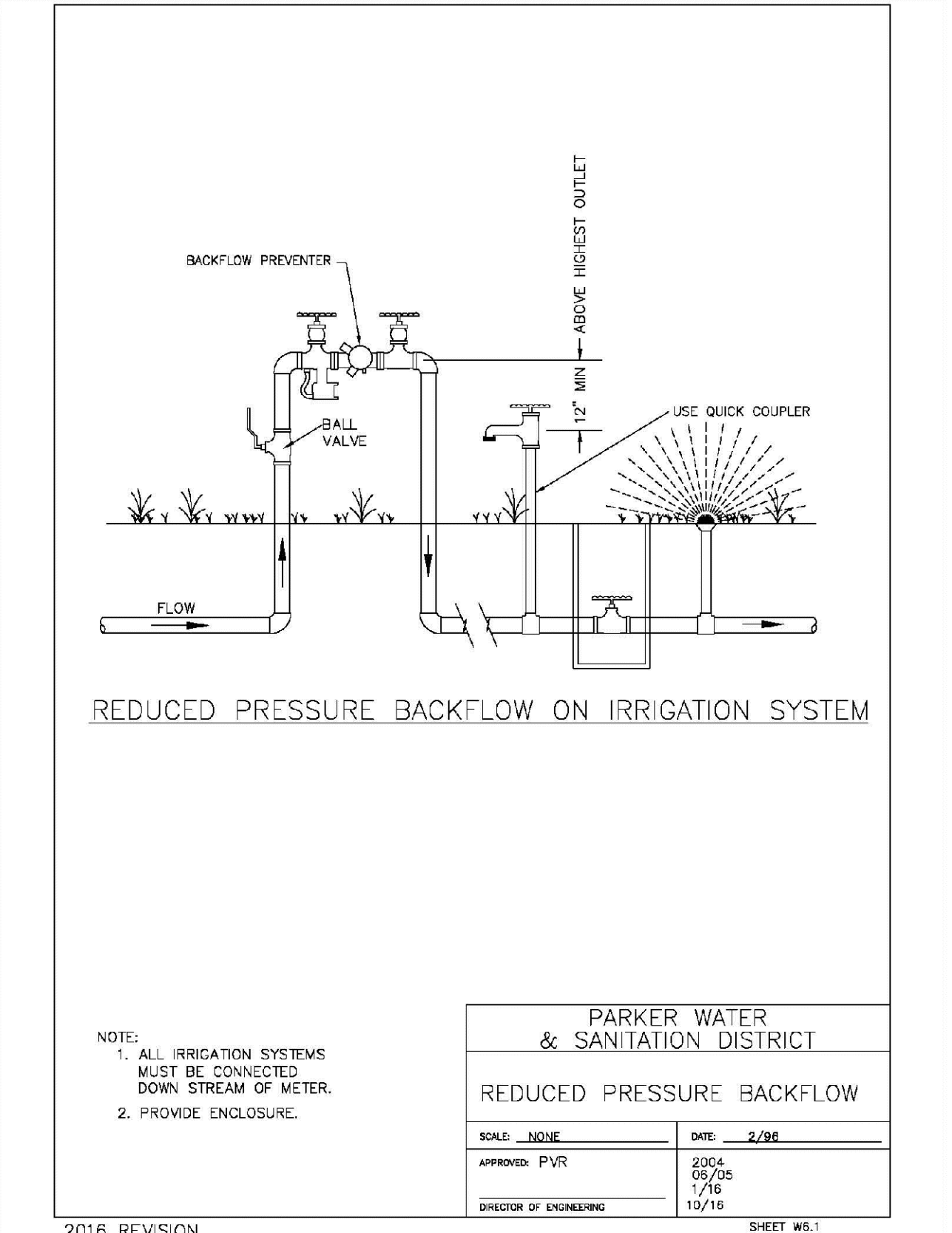
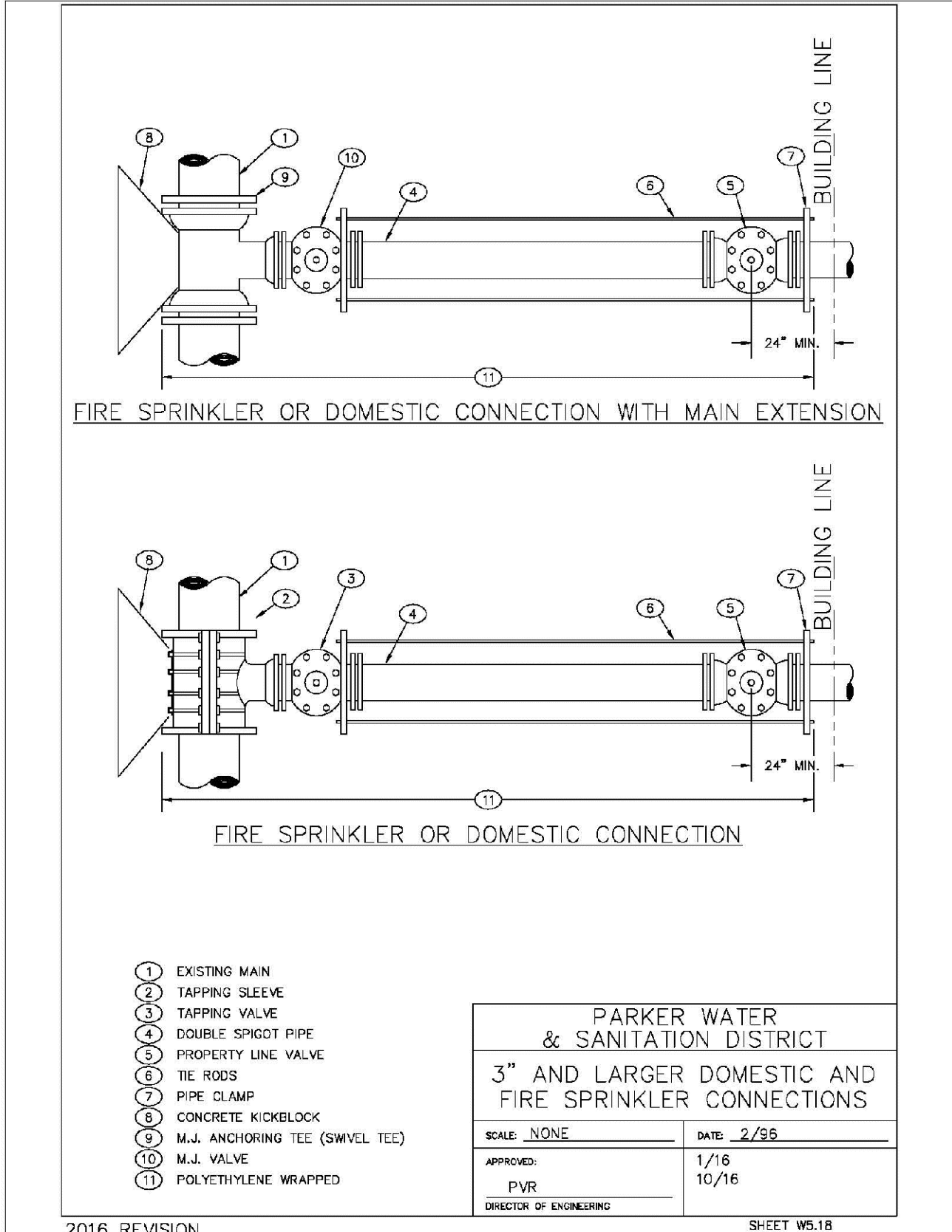
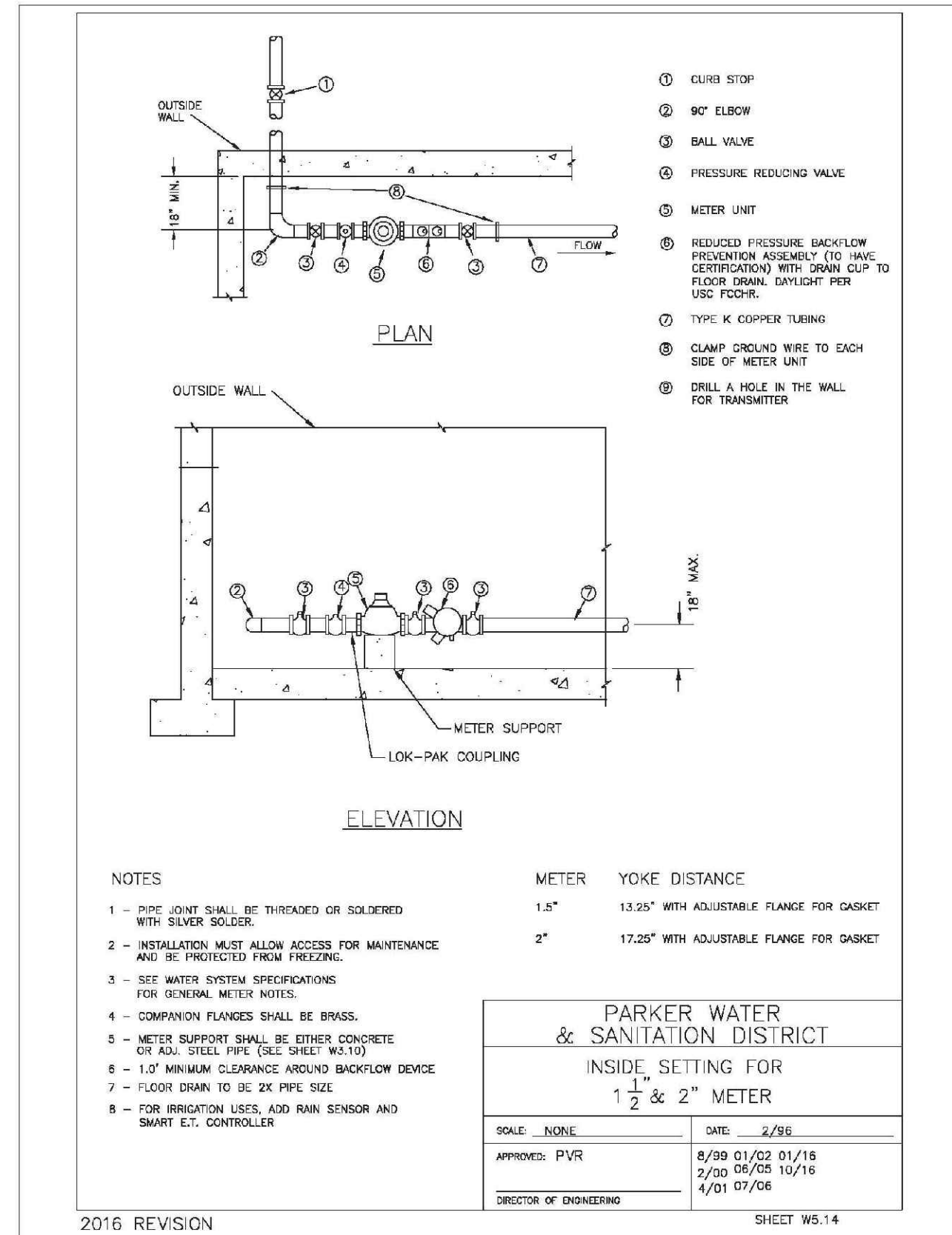
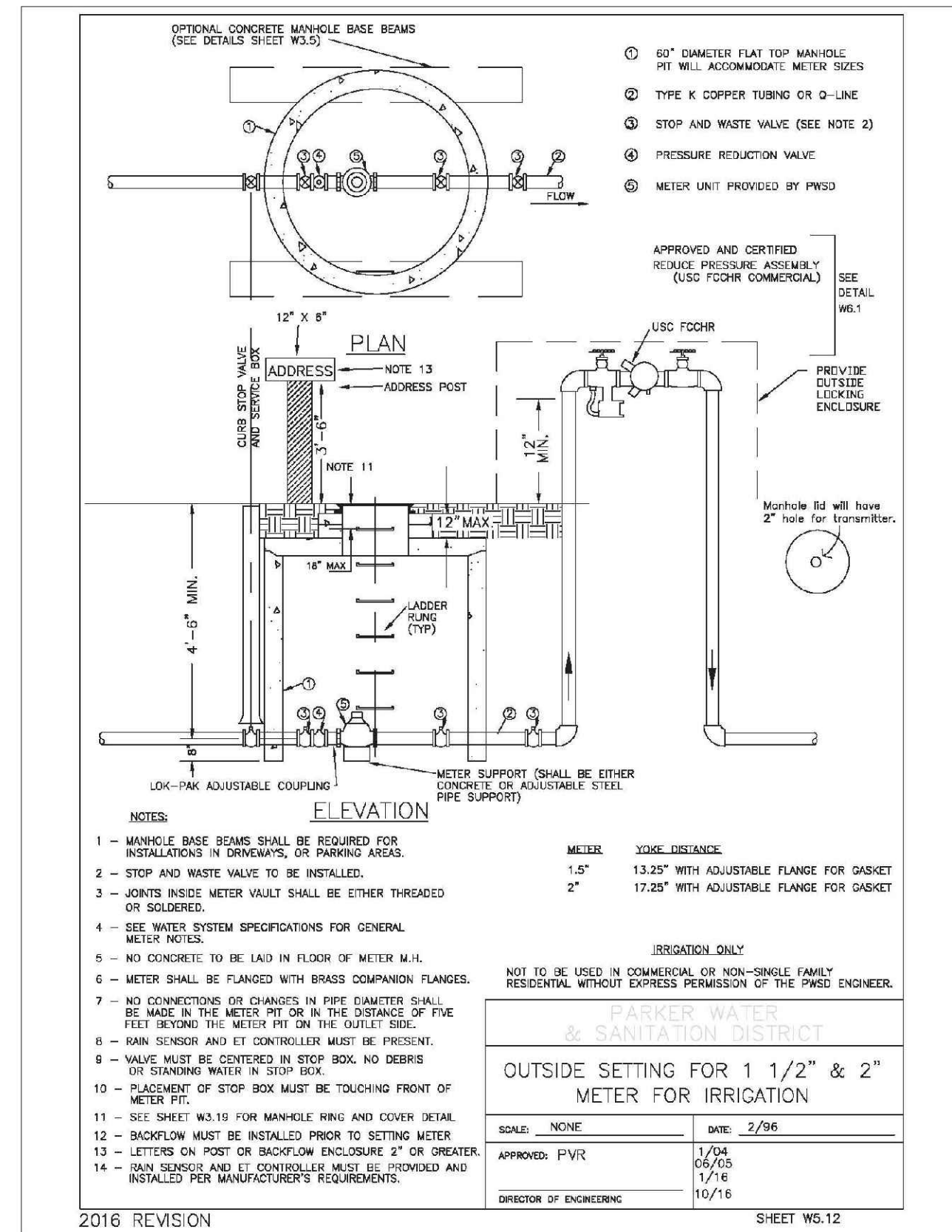
SCALE: AS SHOWN
FILE NO: 8130283701

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

SHEET NUMBER: 19

DATE: APPR. DATE

Revisions



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Revisions	Revisions	Revisions	Revisions	Revisions	Revisions
No.	No.	No.	No.	No.	No.
Date	Date	Date	Date	Date	Date
Init.	Init.	Init.	Init.	Init.	Init.
Appr.	Appr.	Appr.	Appr.	Appr.	Appr.

TRAILS AT CROWFOOT
FILING 16 CONSTRUCTION DRAWINGS
WATER DETAILS

SCALE: AS SHOWN
 FILE NO: 8130283701

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

SHEET NUMBER: 22

Westwood team
 a Westwood team