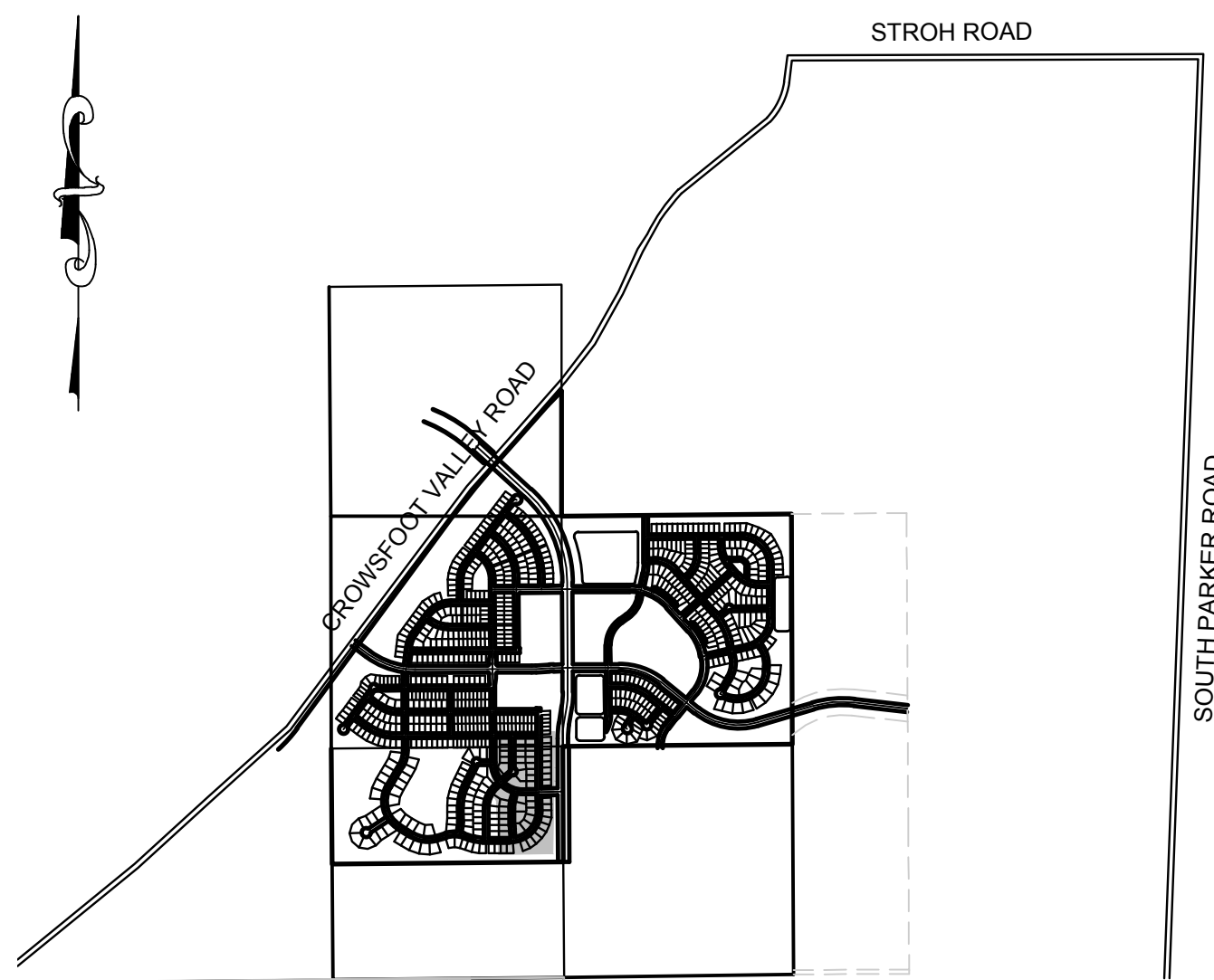


# TRAILS AT CROWFOOT FILING 6

## 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	SANITARY P&P HOP CLOVER TRAIL
5	SANITARY P&P HOP CLOVER STREET
6	SANITARY P&P SHASTA DAISY LANE
7	WATER P&P HOP CLOVER TRAIL
8	WATER P&P HOP CLOVER STREET
9	WATER P&P SHASTA DAISY LANE
10	SANITARY SEWER DETAILS
11	SANITARY SEWER DETAILS
12	SANITARY SEWER DETAILS
13	WATER DETAILS
14	WATER DETAILS
15	WATER DETAILS
16	WATER DETAILS
17	WATER DETAILS
18	WATER DETAILS
19	WATER DETAILS



VICINITY MAP  
SCALE: 1" = 2000'

MATERIALS LIST		
DESCRIPTION	QUANTITY	UNIT
8" WATERPIPE (C900)	1,527	L.F.
8" BEND	3	EA.
AIR/VAC VALVE	1	EA.
WATER SERVICE LATERAL W/ WATER METER AND PIT	51	EA.
CONNECTION TO EXISTING MAIN	6	EA.
8" SEWER (SDR-35 PVC)	1,367	L.F.
4' DIA. MANHOLE	6	EA.
SEWER SERVICE LATERAL W/ WYE TAP	51	EA.
CONNECTION TO EXISTING MAIN	5	EA.

### 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.

*[Signature]* 02/12/2020  
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.

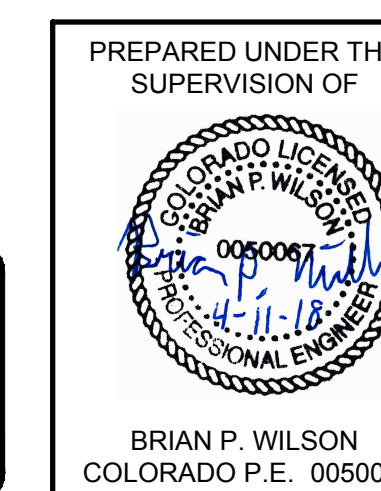
BY: \_\_\_\_\_  
(DISTRICT REPRESENTATIVE)

DATE SIGNED: \_\_\_\_\_

APPROVED FOR CONSTRUCTION:  
PARKER WATER AND SANITATION DISTRICT

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

DATE SIGNED: \_\_\_\_\_



**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.

### 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 CONSULTANTS  
OF COLORADO, INC.  
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



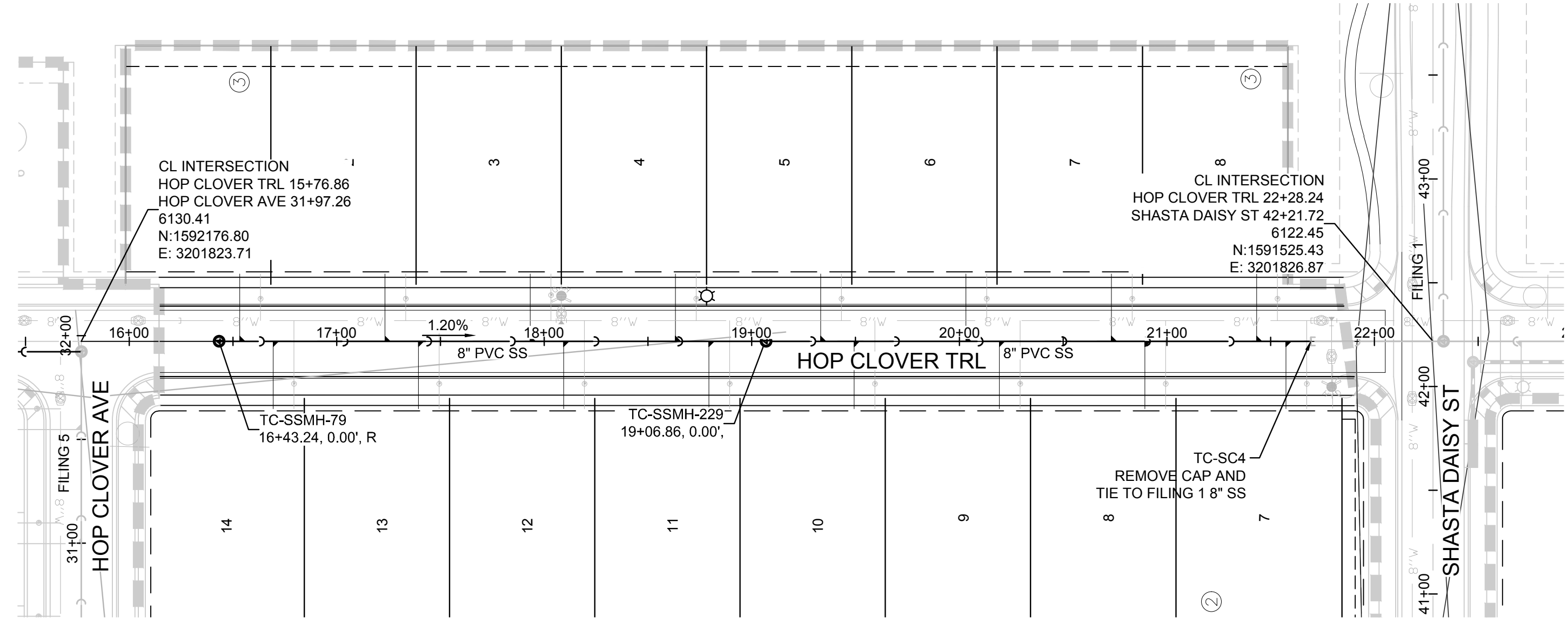
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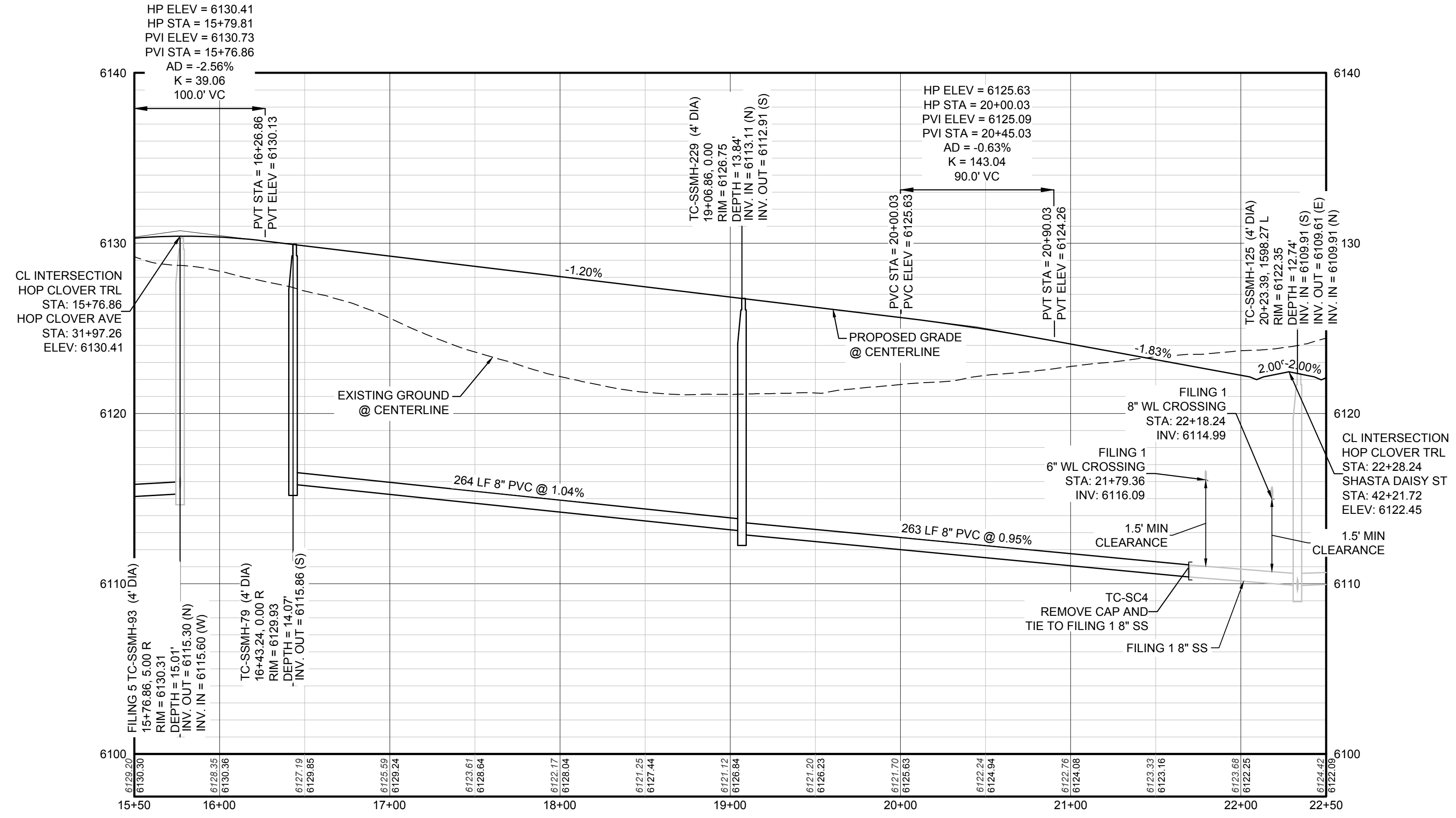




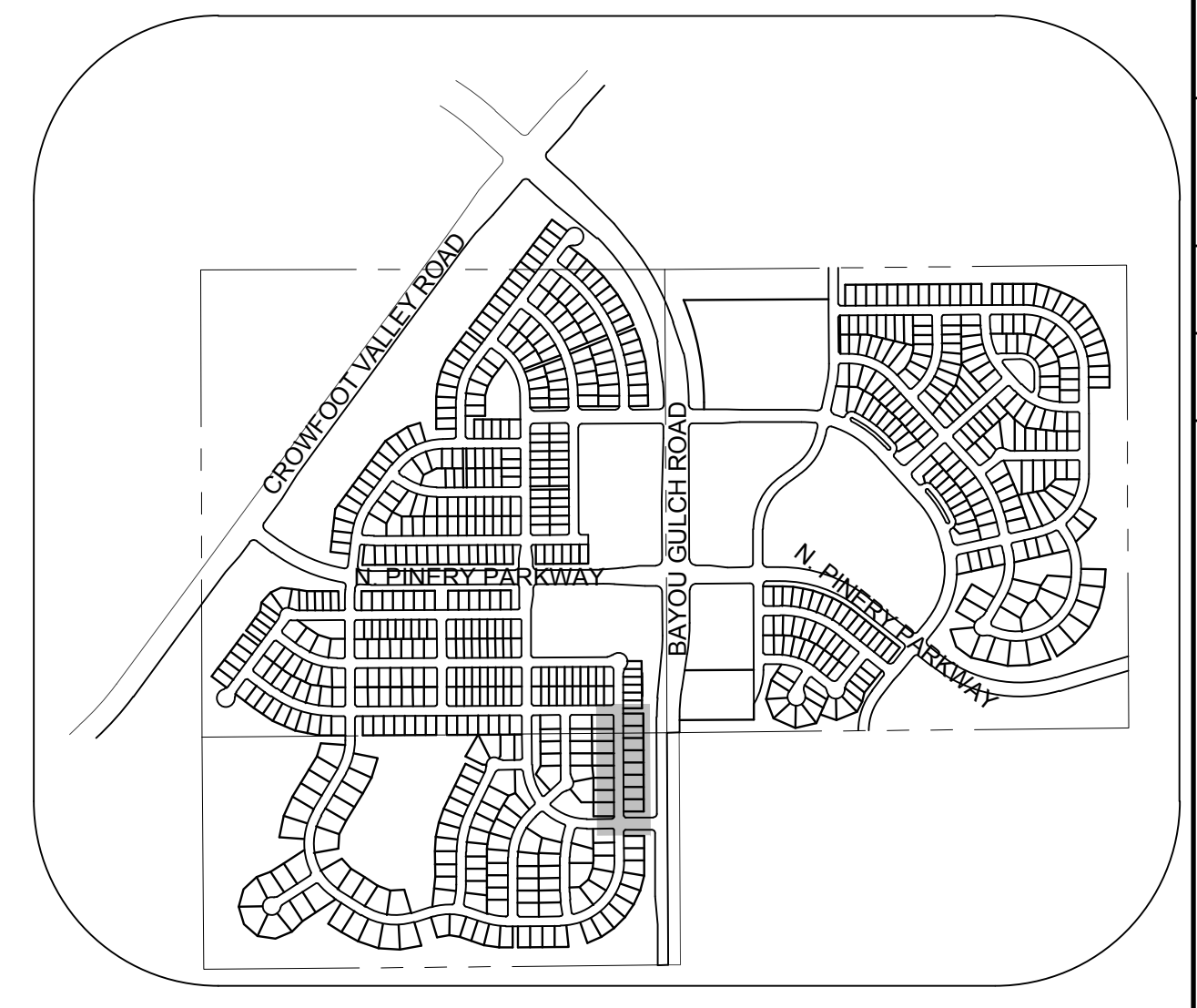
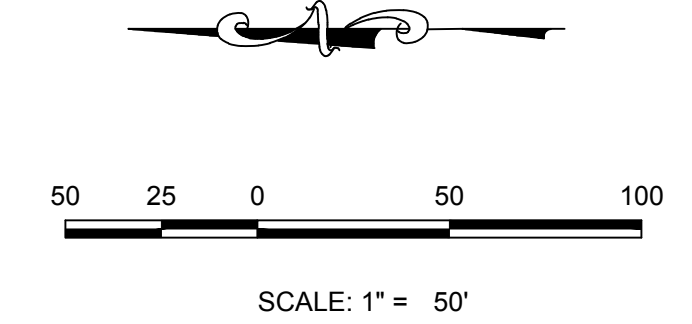




PLAN: HOP CLOVER TRL STA: 15+50.00 TO 22+50.00  
HORIZONTAL SCALE: 1" = 50'



PROFILE: HOP CLOVER TRL STA: 15+50.00 TO 22+50.00  
HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'



KEYMAP  
N.T.S.  
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
⊗	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

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
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CBO	CAP WITH BLOW OFF	PVT	POINT OF VERTICAL TANGENT
CRR	CURB RETURN RADIUS	ROCB	REINFORCED CONCRETE BOX CULVERT
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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

SEE SHEET 3 - AREA UTILITY PLAN FOR SANITARY SERVICE STATION TABLE.

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

**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.

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

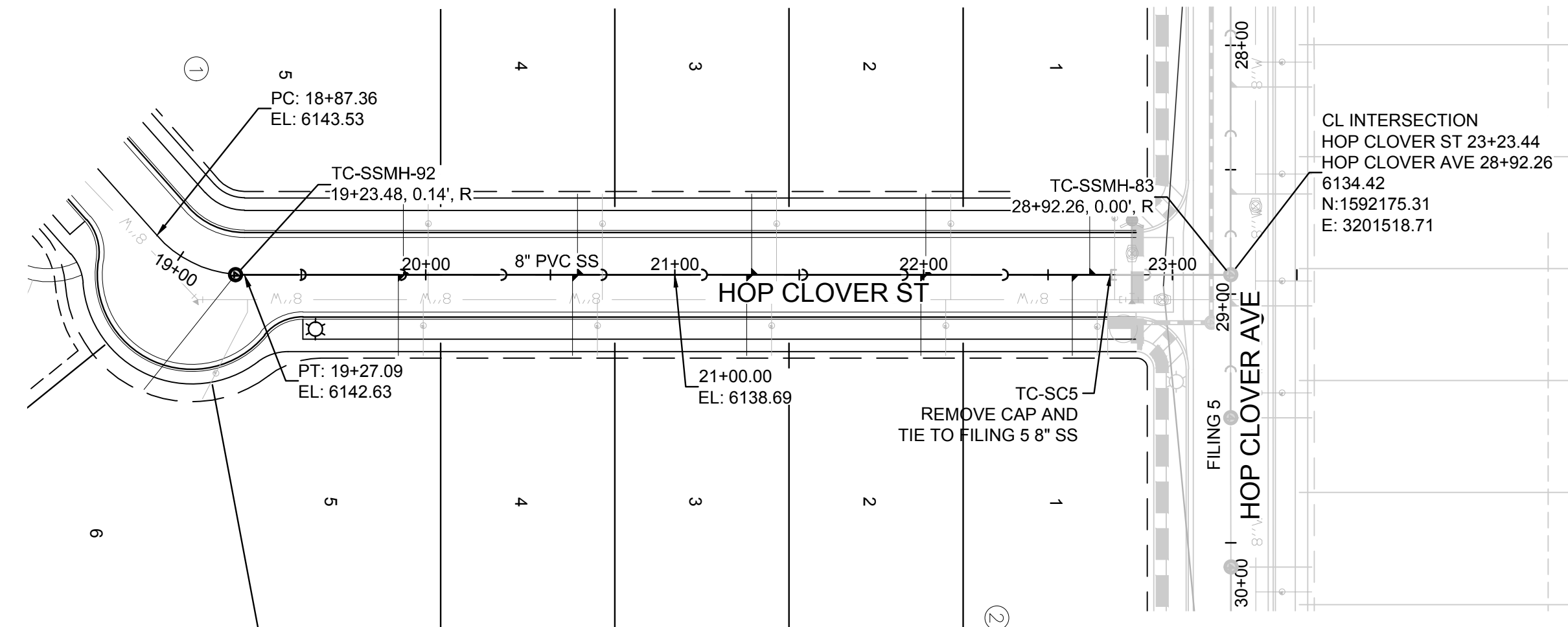
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10339 E. Dry Creek Rd.  
Suite 6410  
Englewood, CO 80150  
Tel: (720) 482-9526  
Fax: (720) 482-9546

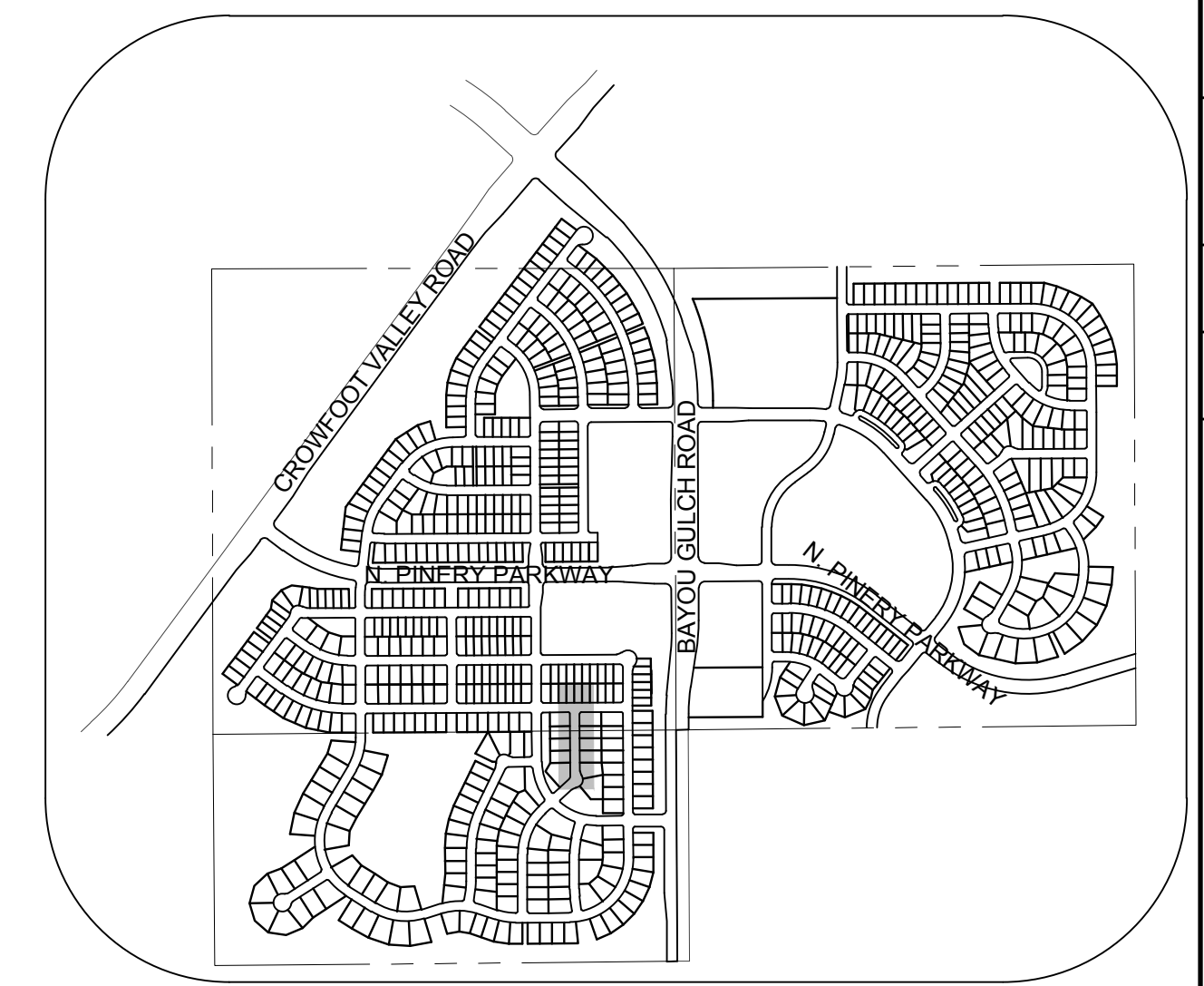
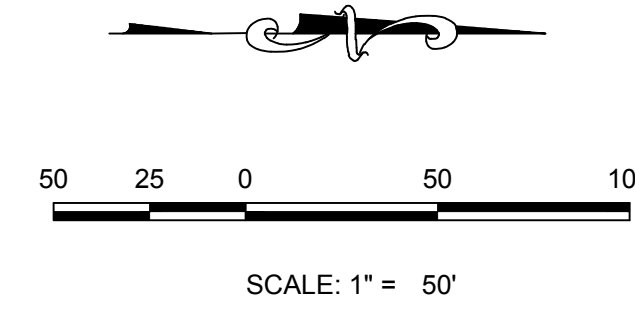
**CVL CONSULTANTS**

HR 935 LLC  
7353 South Alton Way  
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT  
FILING 6 CONSTRUCTION DRAWINGS  
SANITARY SEWER PLAN AND PROFILE  
HOP CLOVER TRAIL

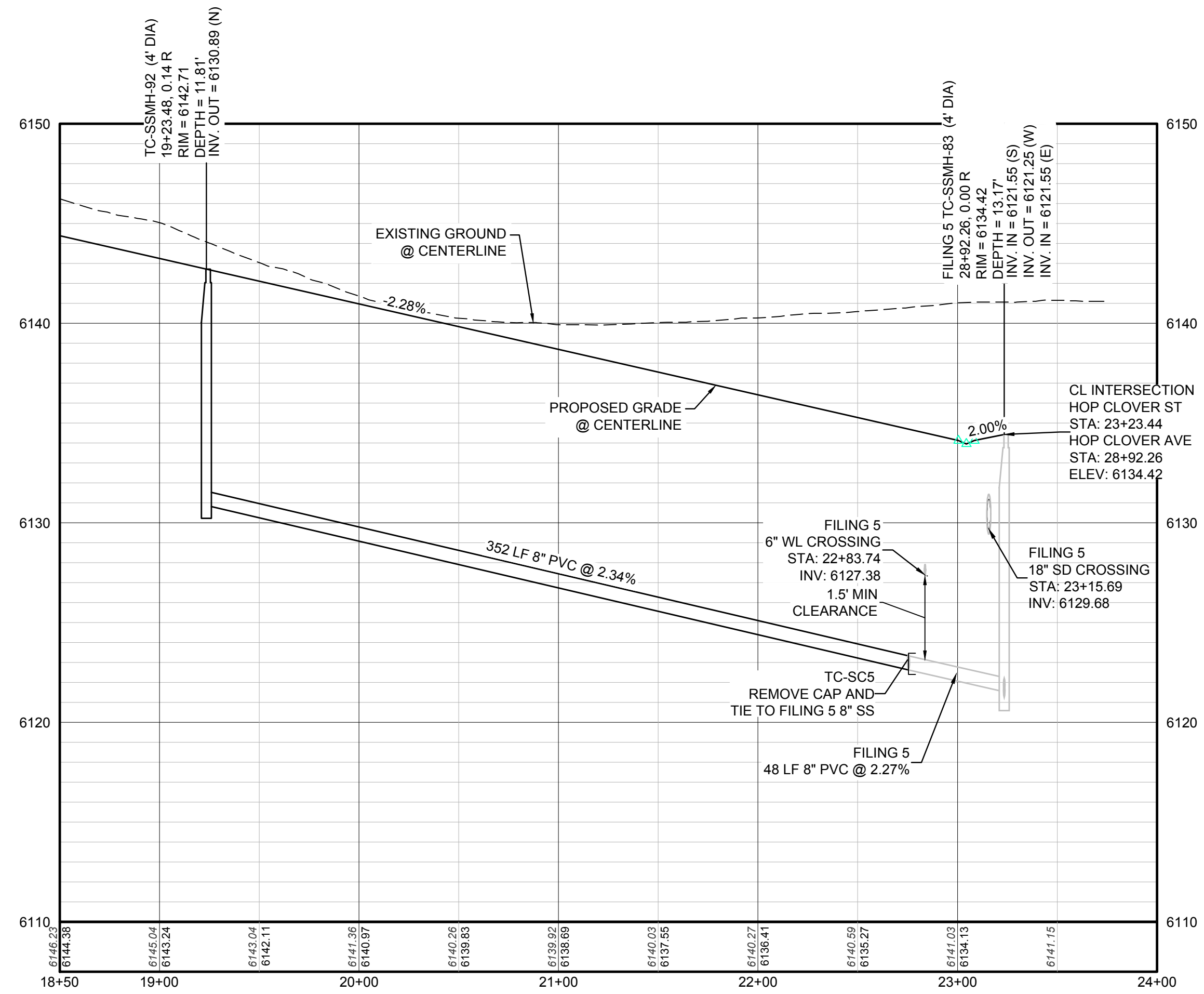


PLAN: HOP CLOVER ST STA: 18+50.00 TO 24+00.00  
HORIZONTAL SCALE: 1" = 50'



KEYMAP  
N.T.S.  
LEGEND

②	BLOCK NUMBER	△	PROPOSED RANGE POINT
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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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SEE SHEET 3 - AREA UTILITY PLAN FOR SANITARY SERVICE STATION TABLE.

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UTILITY NOTIFICATION CENTER OF COLORADO

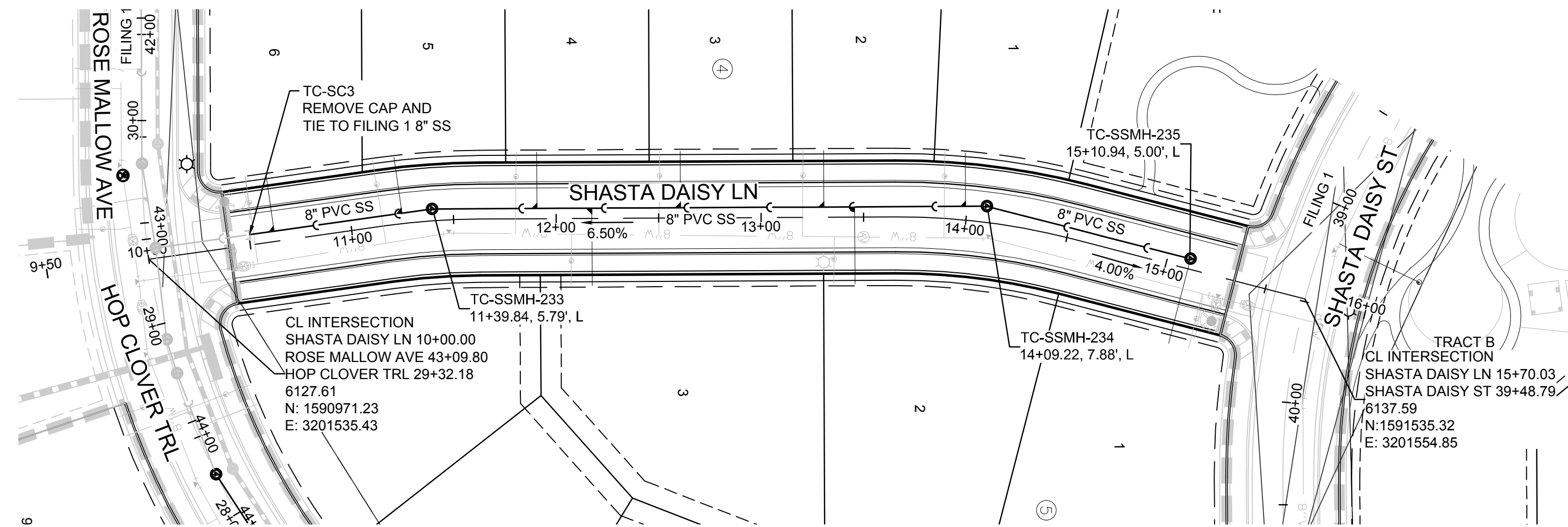
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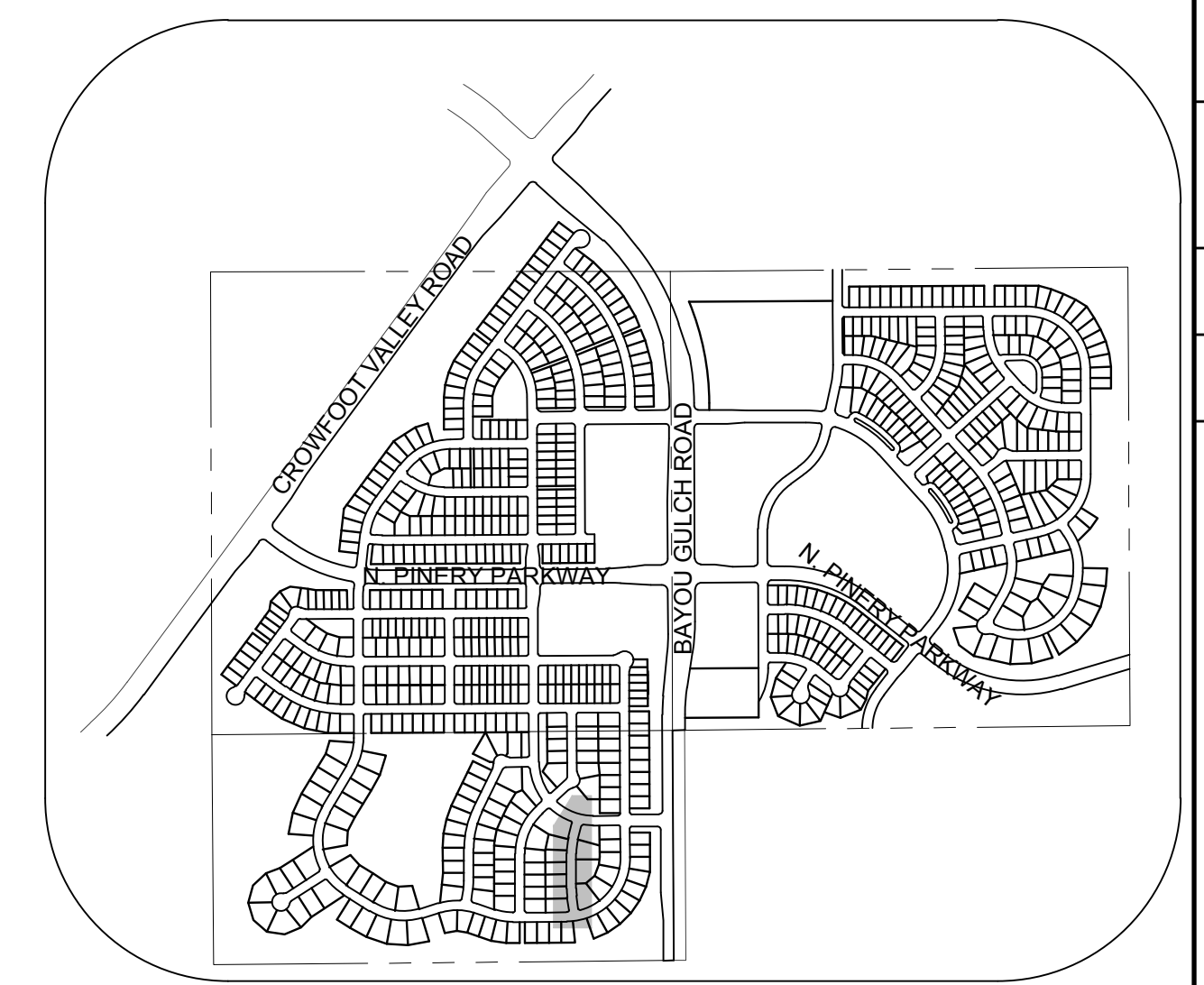
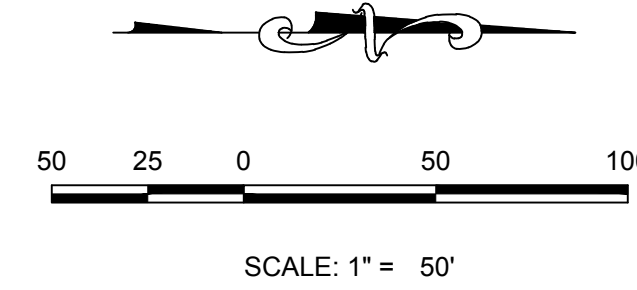
PREPARED UNDER THE SUPERVISION OF

BRIAN P. WILSON  
COLORADO P.E. 0050067

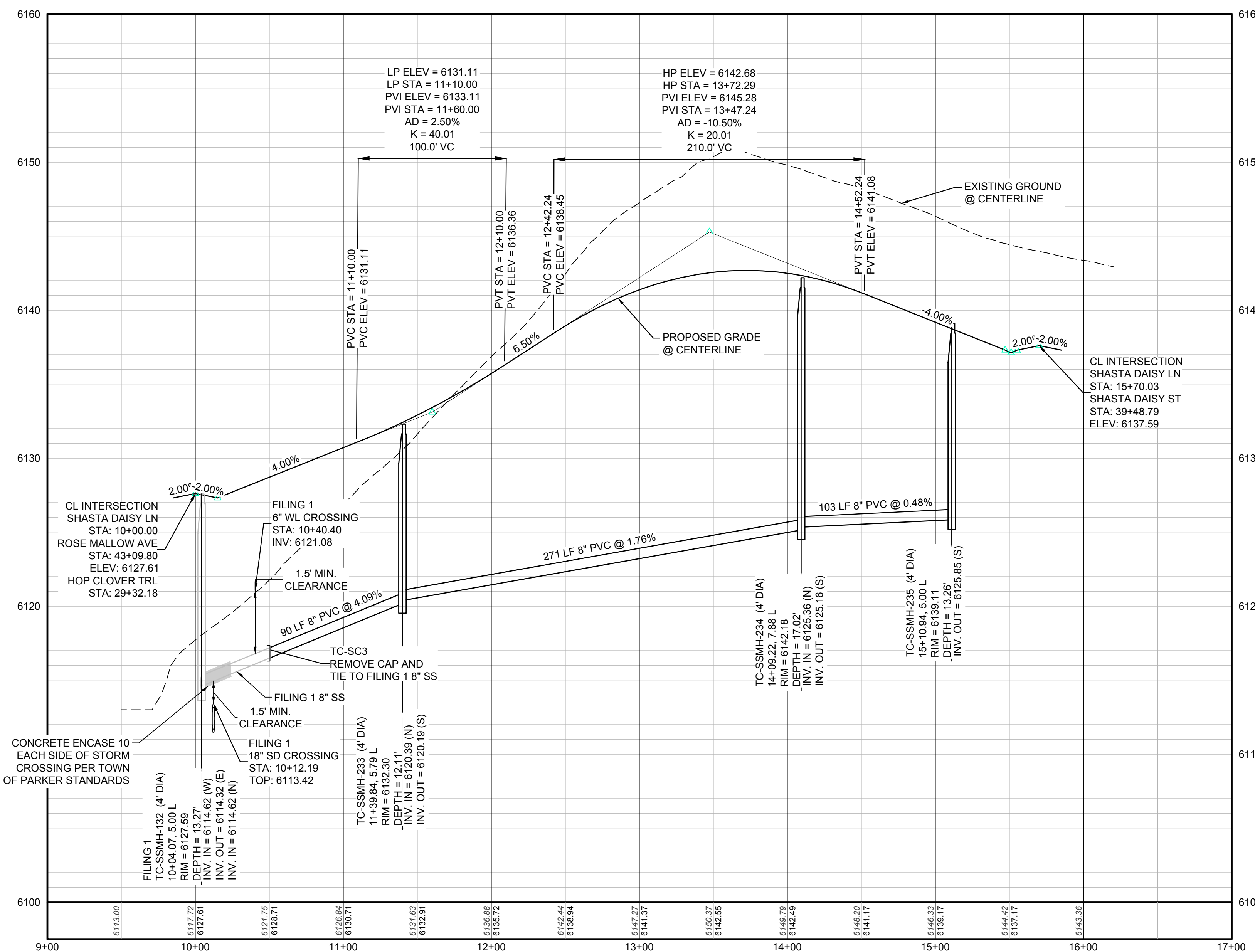
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				TRAILS AT CROWFOOT	FILING 6 CONSTRUCTION DRAWINGS	SANITARY SEWER PLAN AND PROFILE	HOP CLOVER STREET											
5	10339 E. Dry Creek Rd., Suite 6410, Englewood, CO 80151 Tel: (720) 482-9526 Fax: (720) 482-9546																	
	HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112			<table border="1"> <tr><td>No.</td><td>Revisions</td><td>Date</td><td>Init.</td><td>Appr.</td><td>Date</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>				No.	Revisions	Date	Init.	Appr.	Date					
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PLAN: SHASTA DAISY LN STA: 9+00.00 TO 17+00.00  
HORIZONTAL SCALE: 1" = 50'



KEYMAP  
N.T.S.



PROFILE: SHASTA DAISY LN STA: 9+00.00 TO 17+00.00  
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N:\PROJECTS\SS\BENCHM\ENGINEERING\SS\BENCHM\WATER AND SANITATION\SANITARY PLAN AND PROFILES\SHASTA DAISY LANE SANITARY DWG. BRIAN.W. 3/20/18 3:42 PM

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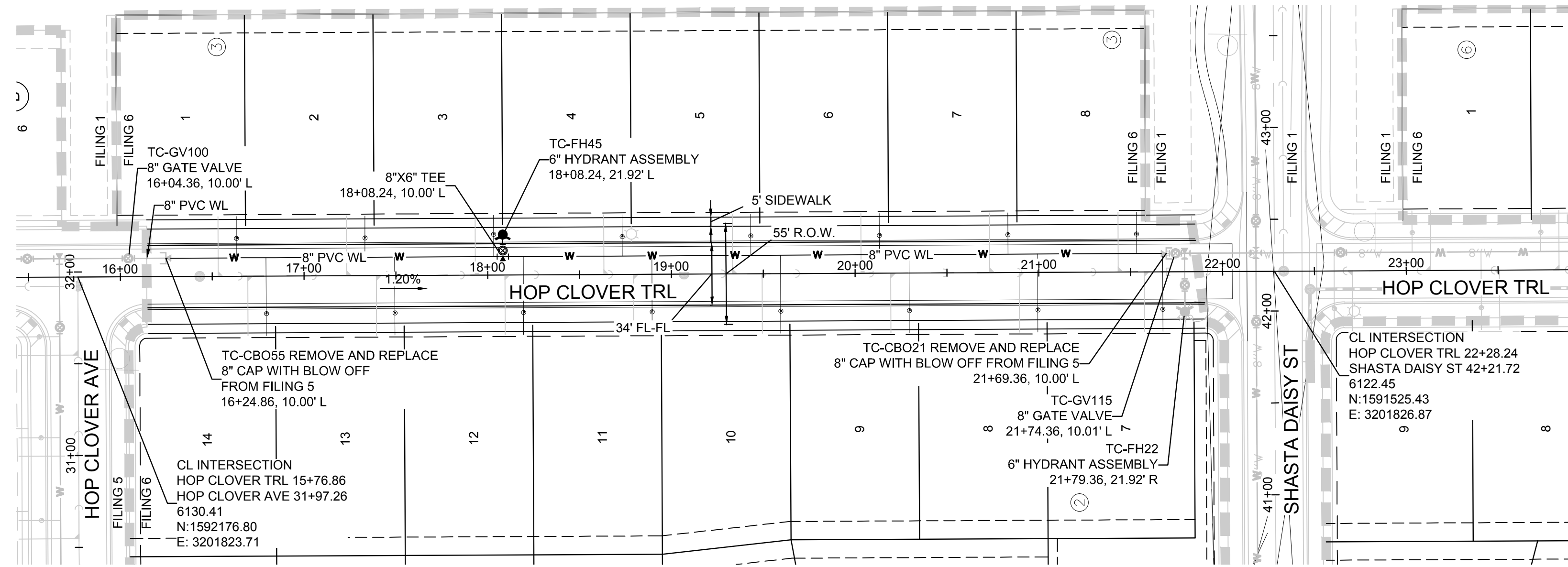
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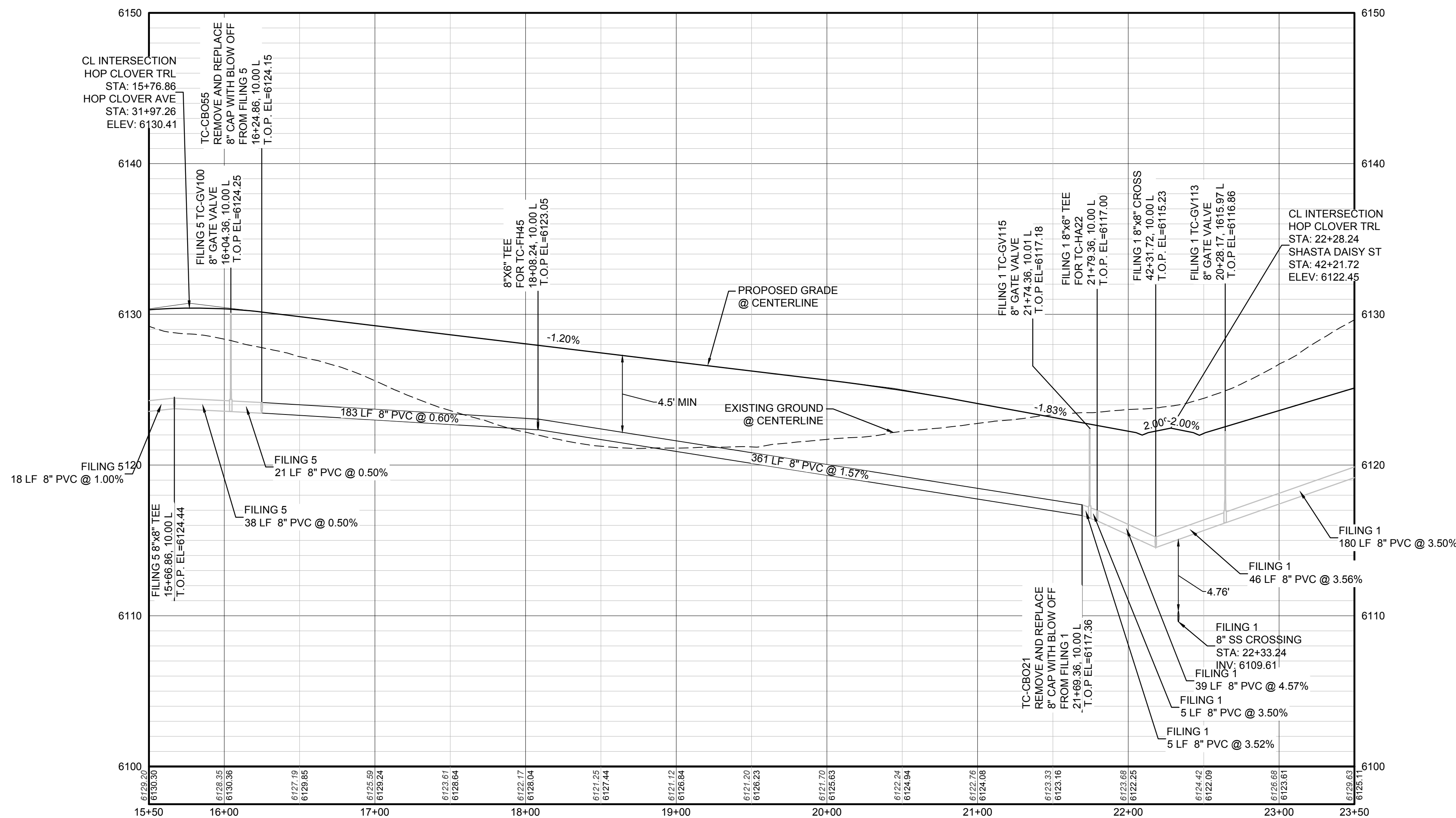
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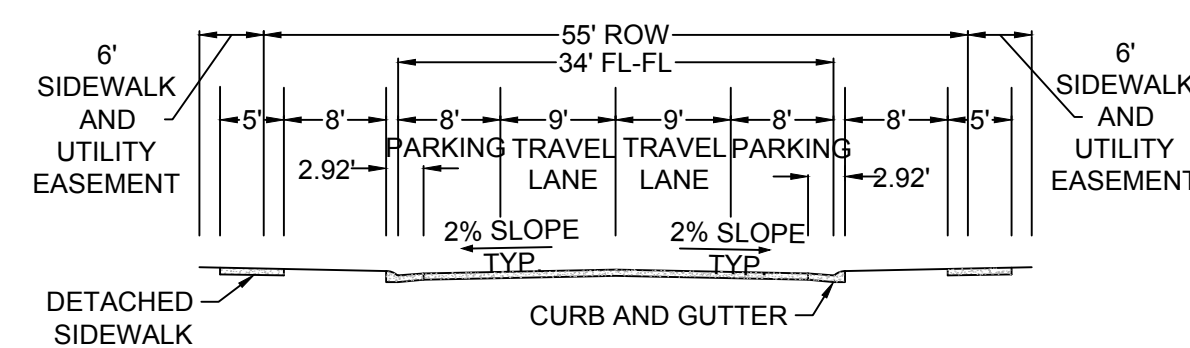
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	SHASTA DAISY LANE		
HR 935 LLC	7353 South Alton Way CENTENNIAL, CO 80112		
CVL CONSULTANTS	10333 E. Dry Creek Rd. Suite 410 Englewood, CO 80110 Tel: (720) 482-9526 Fax: (720) 482-9548		
No.	Revisions	Date	Appr.



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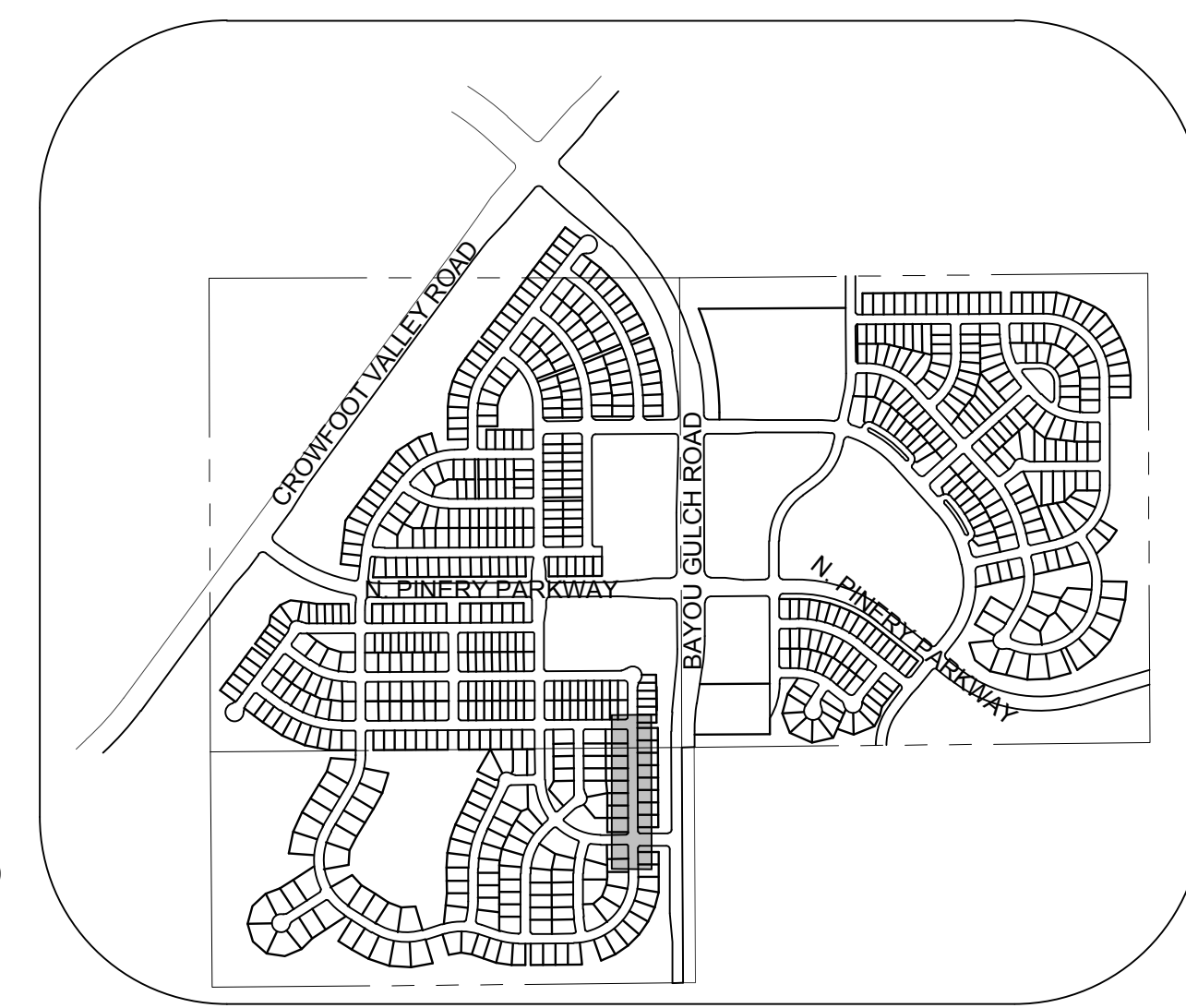
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HORIZONTAL: 1" = 50'  
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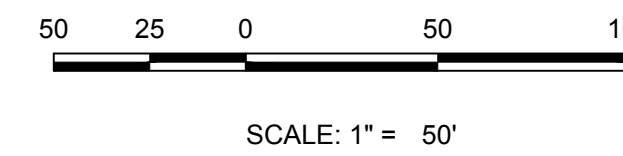
RESIDENTIAL LOCAL

**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.



KEYMAP  
N.T.S.



SCALE: 1" = 50'

LEGEND			
②	BLOCK NUMBER	△	PROPOSED RANGE POINT
Ⓐ	LOT TYPE	---	CENTERLINE
6	LOT NUMBER	---	RIGHT-OF-WAY
⊕	PROPOSED BUTTERFLY VALVE	---	PROPERTY LINE
⌈	PROPOSED CAP WITH END OF LINE BLOWOFF	---	EDGE OF PAVEMENT
⊘	PROPOSED REDUCER	→	PROPOSED DIRECTION OF FLOW
⊕	PROPOSED VALVE	1.0%	PROPOSED SLOPE & DIRECTION
⊕	PROPOSED FIRE HYDRANT	5615	EXISTING 5' CONTOUR
⊕	PROPOSED WL FITTING WITH THRUST BLOCK	5616	EXISTING 1' CONTOUR
⊕	PROPOSED FLARED END SECTION	5620	PROPOSED 5' CONTOUR
⊕	PROPOSED LOW POINT BLOW-OFF	5607	PROPOSED 1' CONTOUR
⊕	PROPOSED AIR VALVE	---	PROPOSED STORM DRAIN
⊕	FUTURE PHASE VALVE	---	PROPOSED SEWER LINE WITH MANHOLE
⊕	FUTURE FIRE HYDRANT	---	PROPOSED SEWER LATERAL
⊕	PROPOSED LIGHT POLE	---	PROPOSED WATER LINE
⊕	PROPOSED SIDEWALK	---	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	ROBC	REINFORCED CONCRETE BOX CULVERT
ELEVATION	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

SEE SHEET 3 - AREA UTILITY PLAN FOR WATER SERVICE STATION TABLE.

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

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

No.	Revisions	Date	Init.	Appr.	Date

10338 E. Dry Creek Rd.  
Suite 6410  
Englewood, CO 80110  
Tel: (720) 482-9526  
Fax: (720) 482-9546

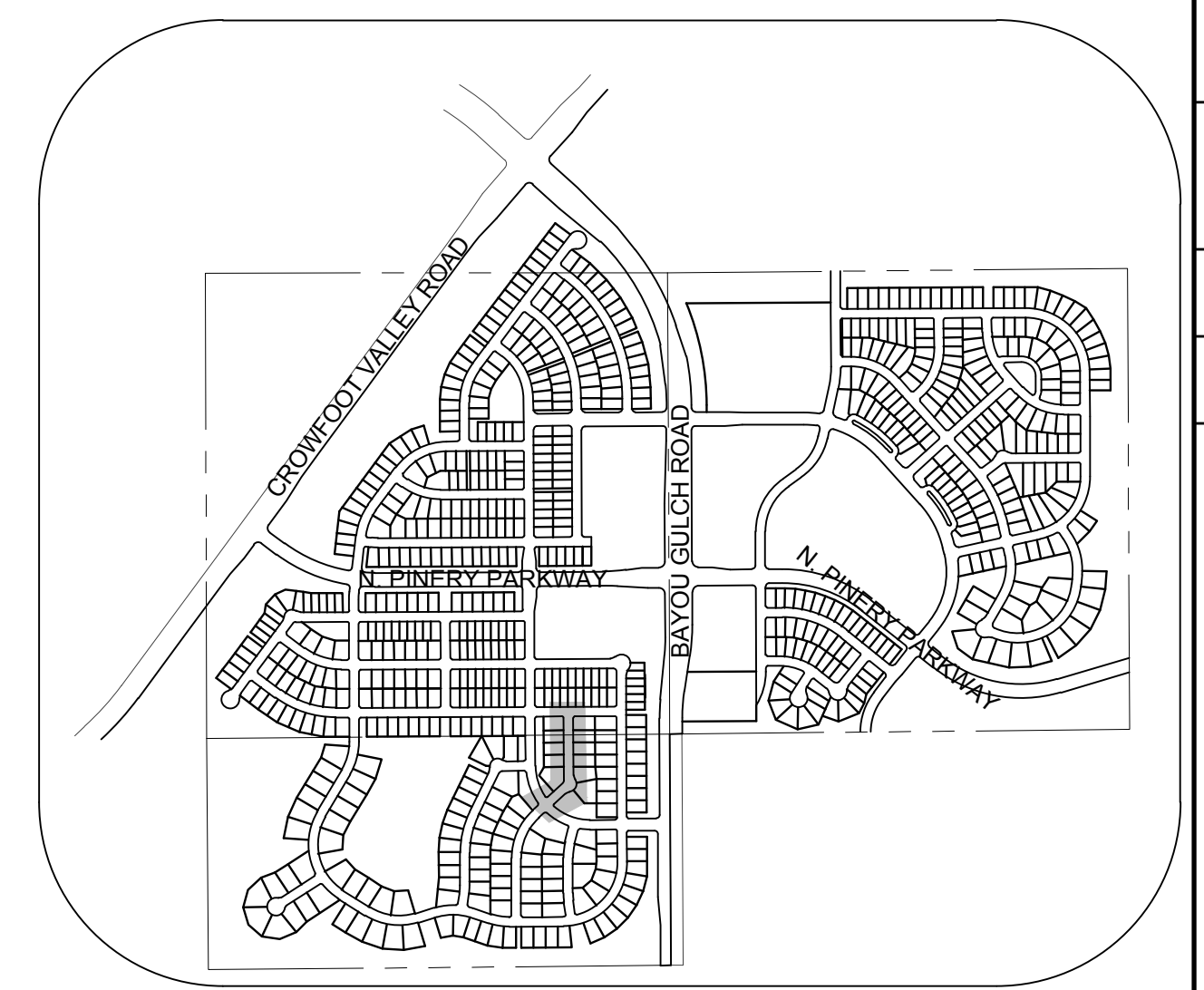
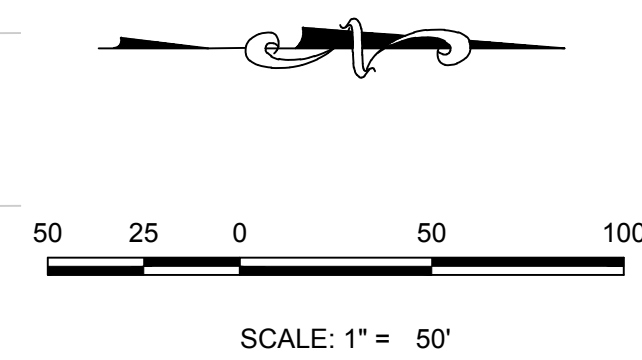
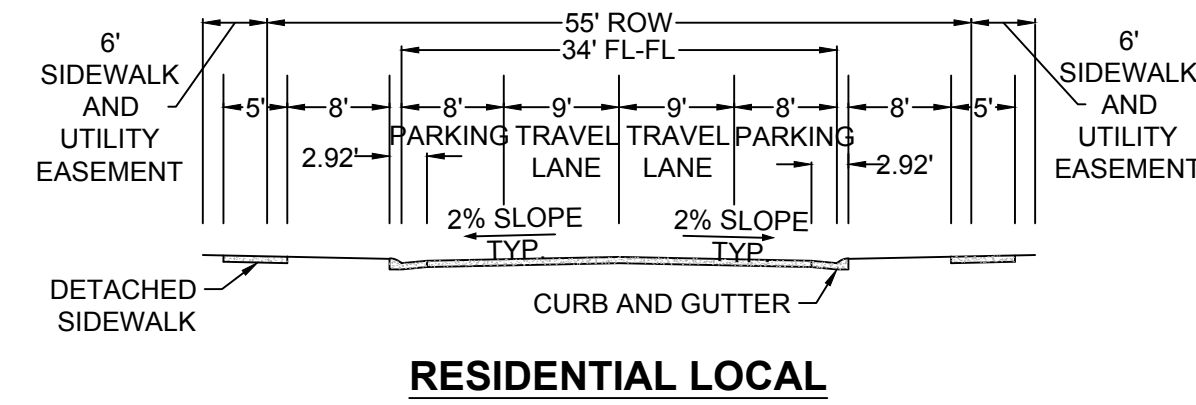
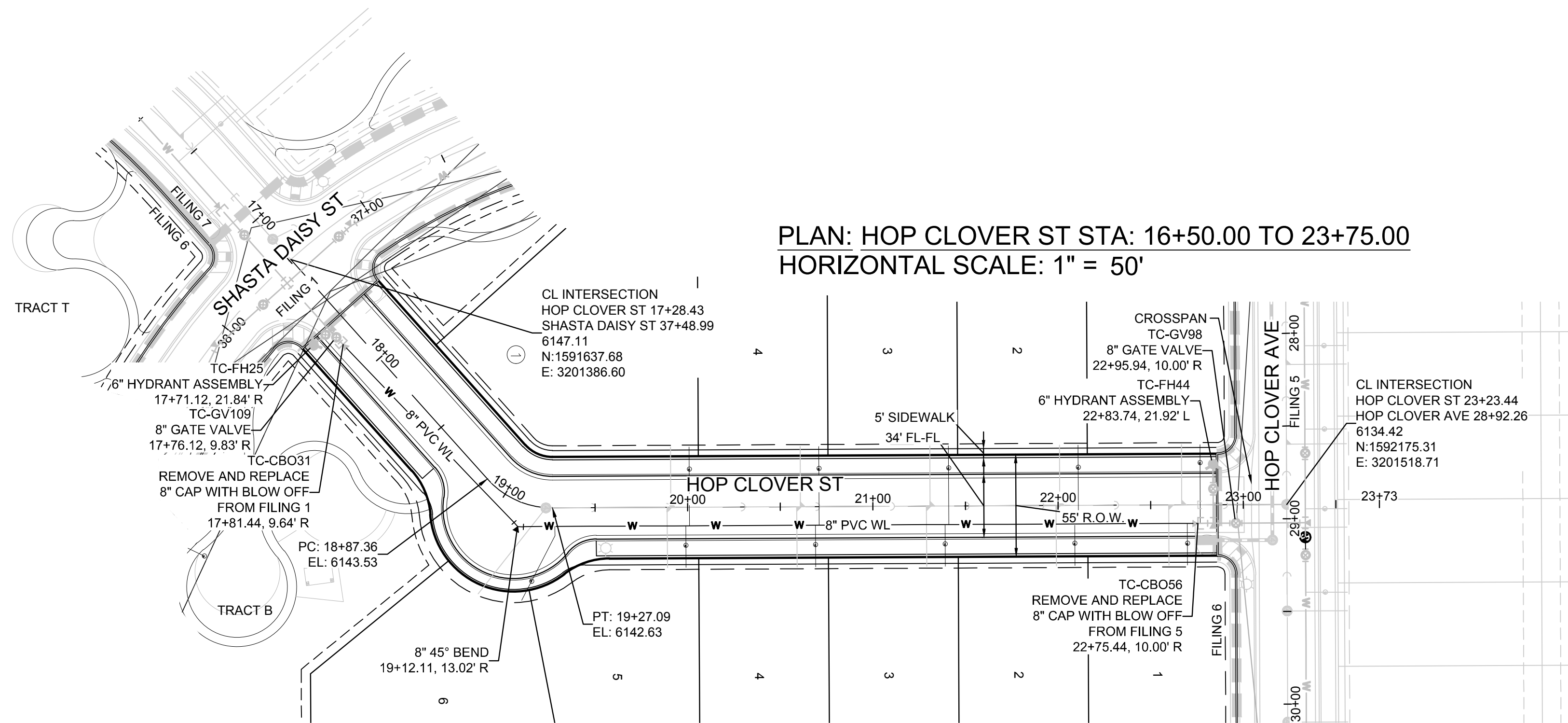
**CVL CONSULTANTS**

HR 935 LLC  
7353 South Alton Way  
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT  
FILM 6 CONSTRUCTION DRAWINGS  
WATER PLAN & PROFILE  
HOP CLOVER TRAIL

SCALE: AS SHOWN  
FILE NO: 8130283701  
DRAWN BY: RHR  
CHECKED BY: JJ  
DATE: AUGUST 2017

SHEET NUMBER **7**



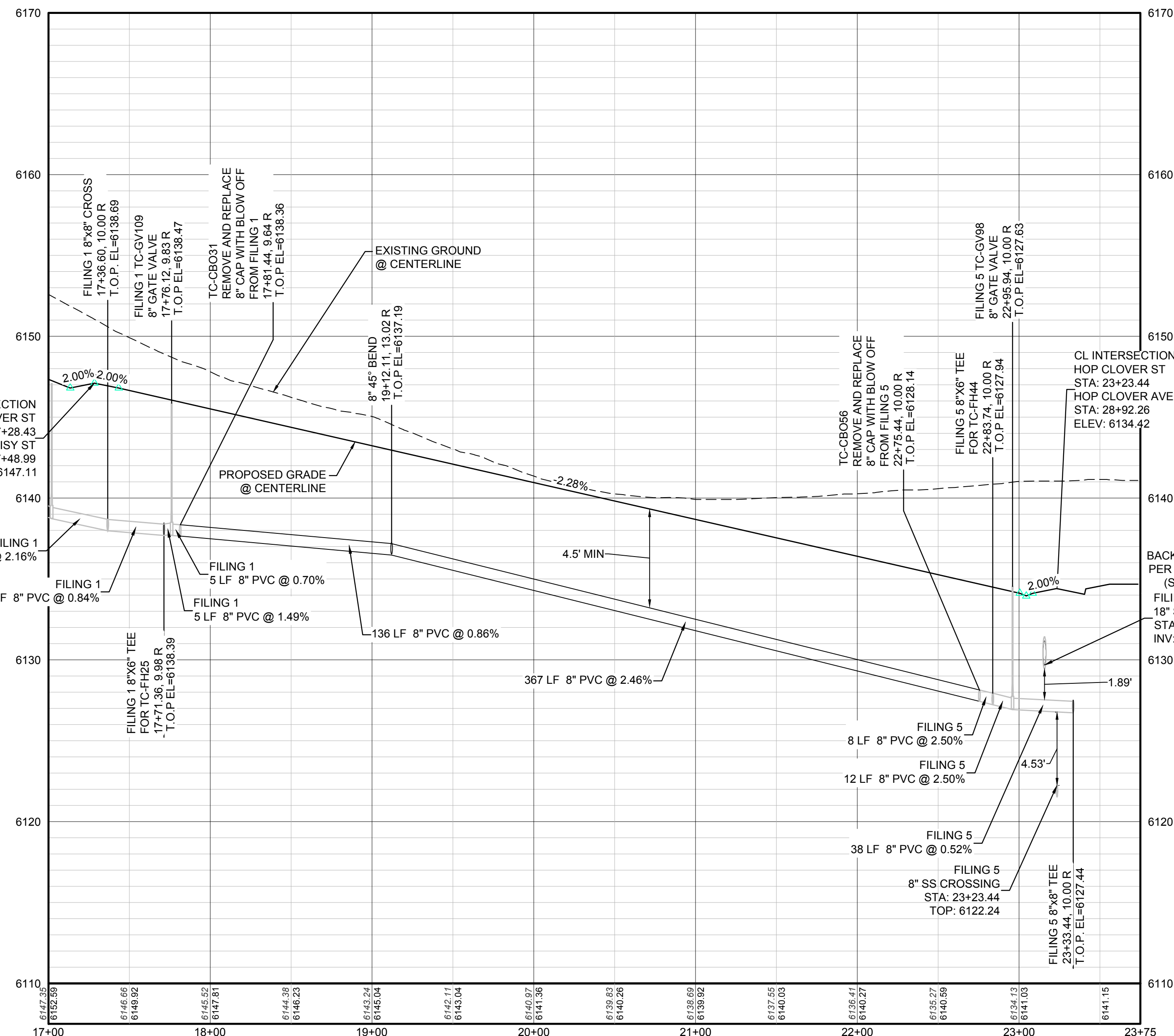
**KEYMAP**  
N.T.S.  
**LEGEND**

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
⊗	PROPOSED LIGHT POLE	---	PROPOSED WATER LINE
⊗	PROPOSED SIDEWALK	---	PROPOSED WATER LATERAL W/ METER
10.00	EXISTING ELEVATION	---	SECTION LINE
10.00	PROPOSED DESIGN ELEVATION	---	FILING BOUNDARY
⊗	PROPOSED STORM DRAIN INLET	---	EXISTING FIBER OPTIC LINE
⊗	PROPOSED STORM DRAIN MANHOLE	---	EXISTING OVERHEAD POWER
		---	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
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EL	ELEVATION	RCP	REINFORCED CONCRETE PIPE
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INV	INVERT	WL	WATER LINE
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LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION

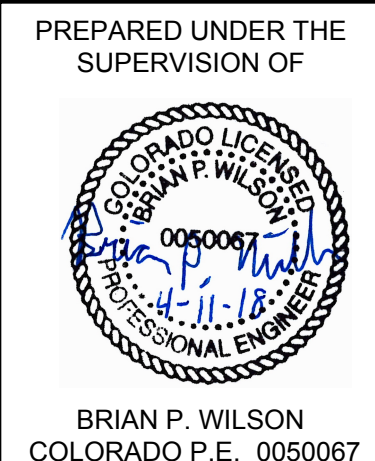
SEE SHEET 3 - AREA UTILITY PLAN FOR WATER SERVICE STATION TABLE.



**PROFILE: HOP CLOVER ST STA: 17+00.00 TO 23+75.00**  
HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'

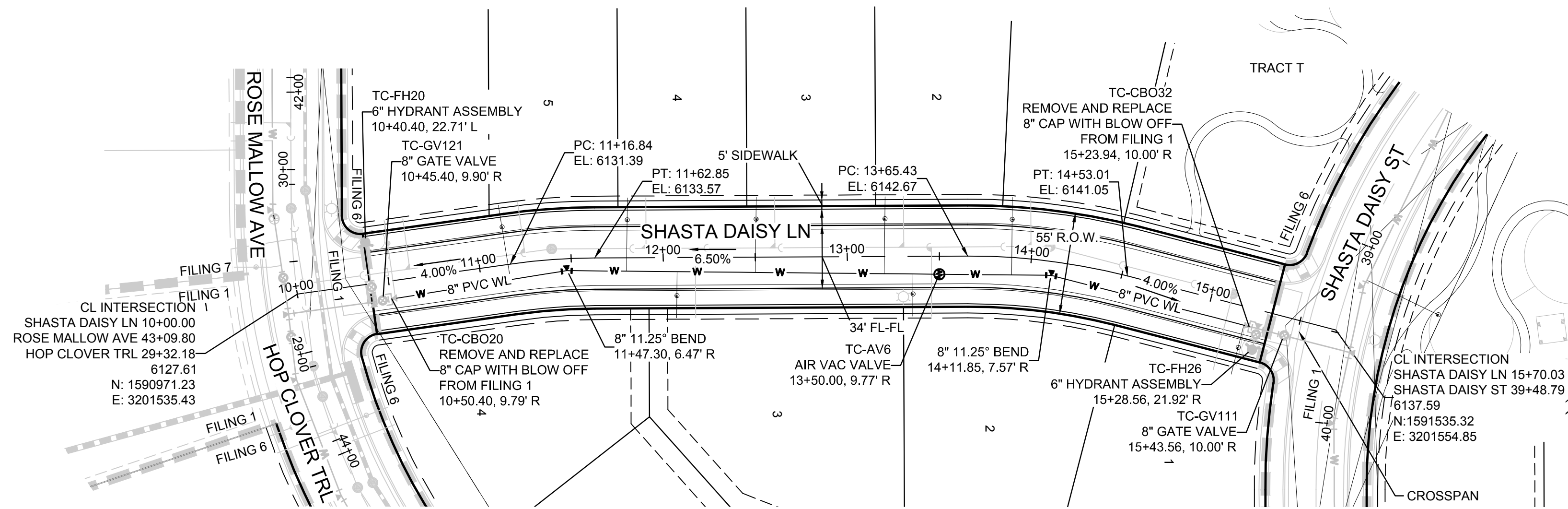
**BENCHMARK**  
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.069032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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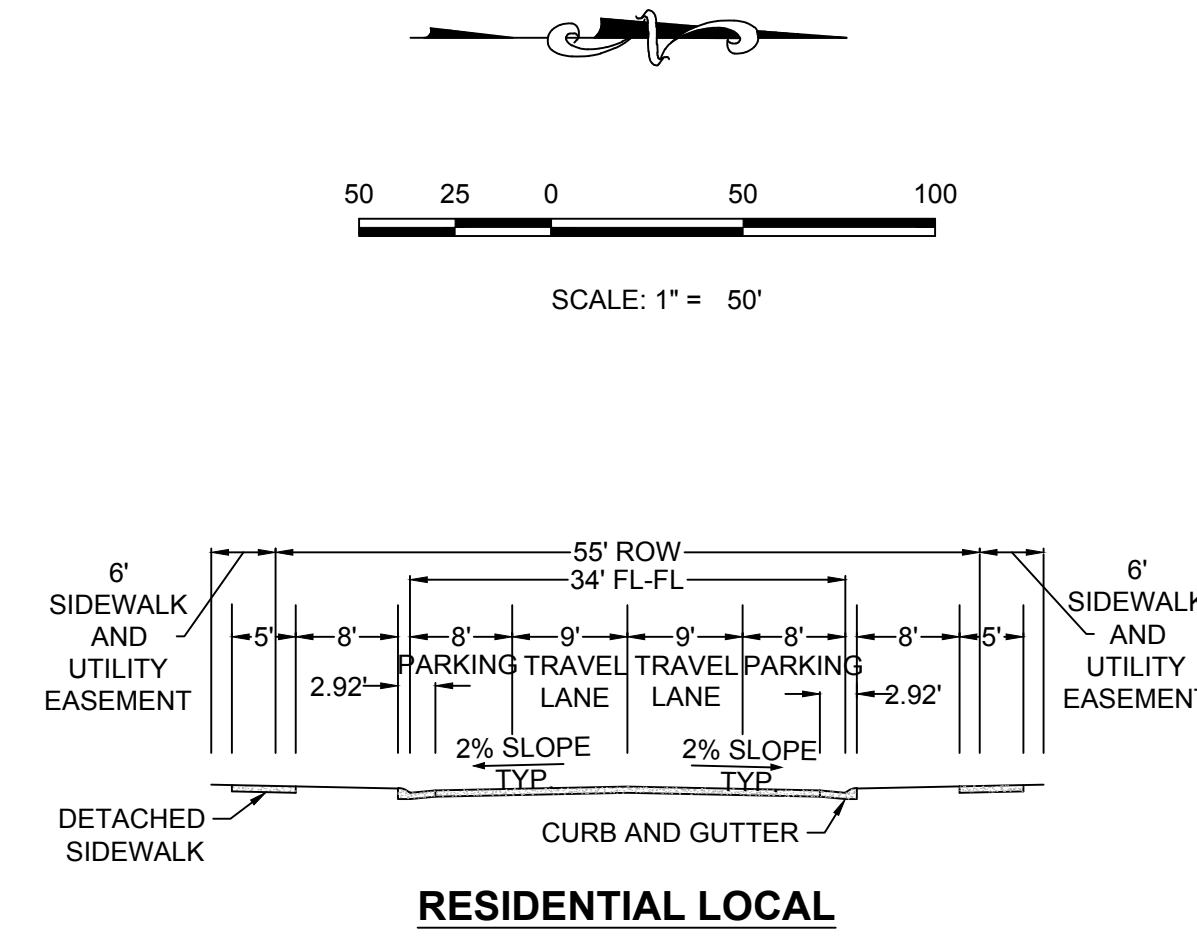


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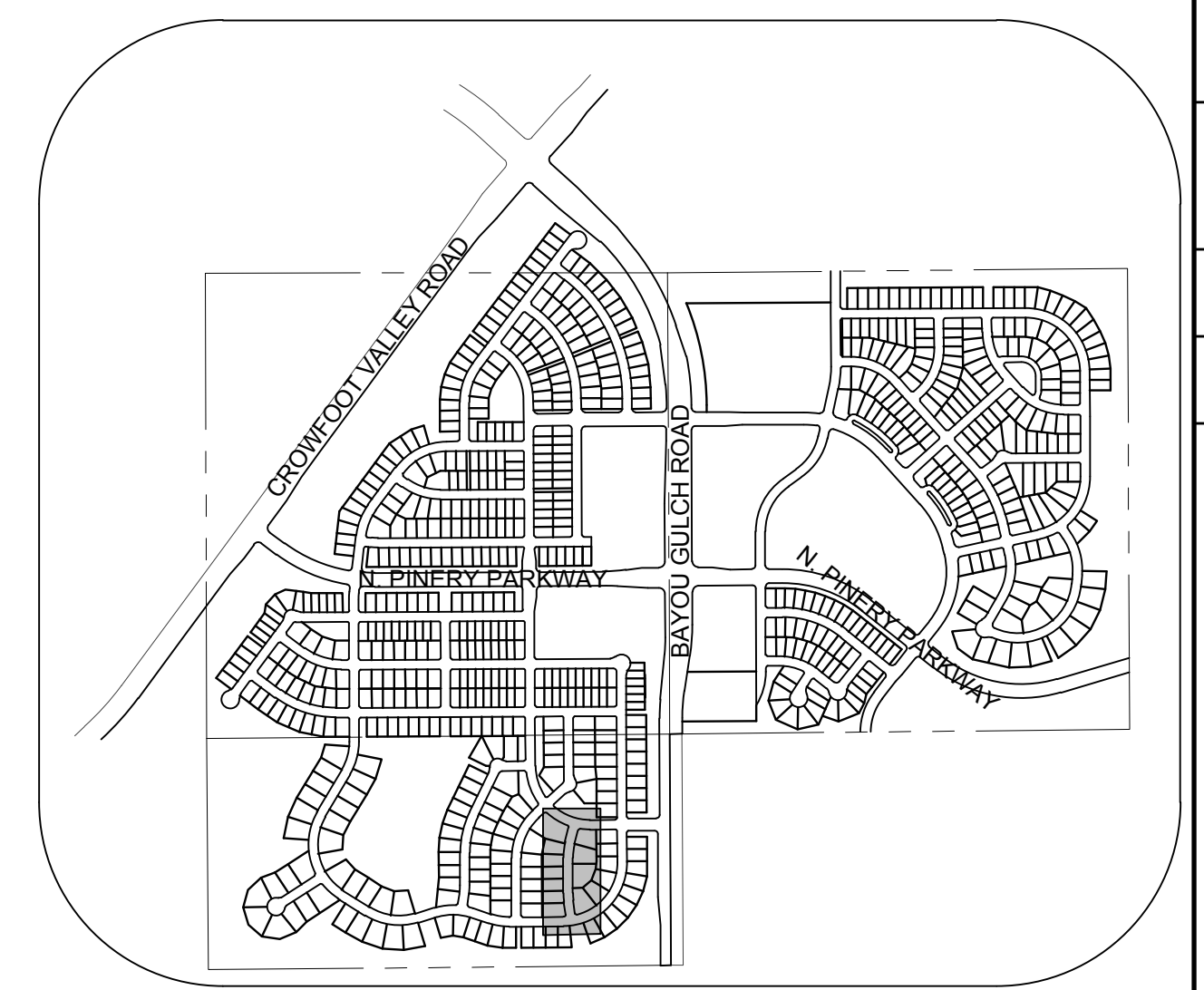
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				TRAILS AT CROWFOOT FILING 6 CONSTRUCTION DRAWINGS WATER PLAN & PROFILE HOP CLOVER STREET							
<p>10338 E. Dry Creek Rd. Suite 6410 Englewood, Colorado 80150 Tel: (720) 482-9526 Fax: (720) 482-9546</p> <p><b>CVL</b> CONSULTANTS</p> <p>HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112</p>											



PLAN: SHASTA DAISY LN STA: 10+00.00 TO 16+50.00  
HORIZONTAL SCALE: 1" = 50'



RESIDENTIAL LOCAL



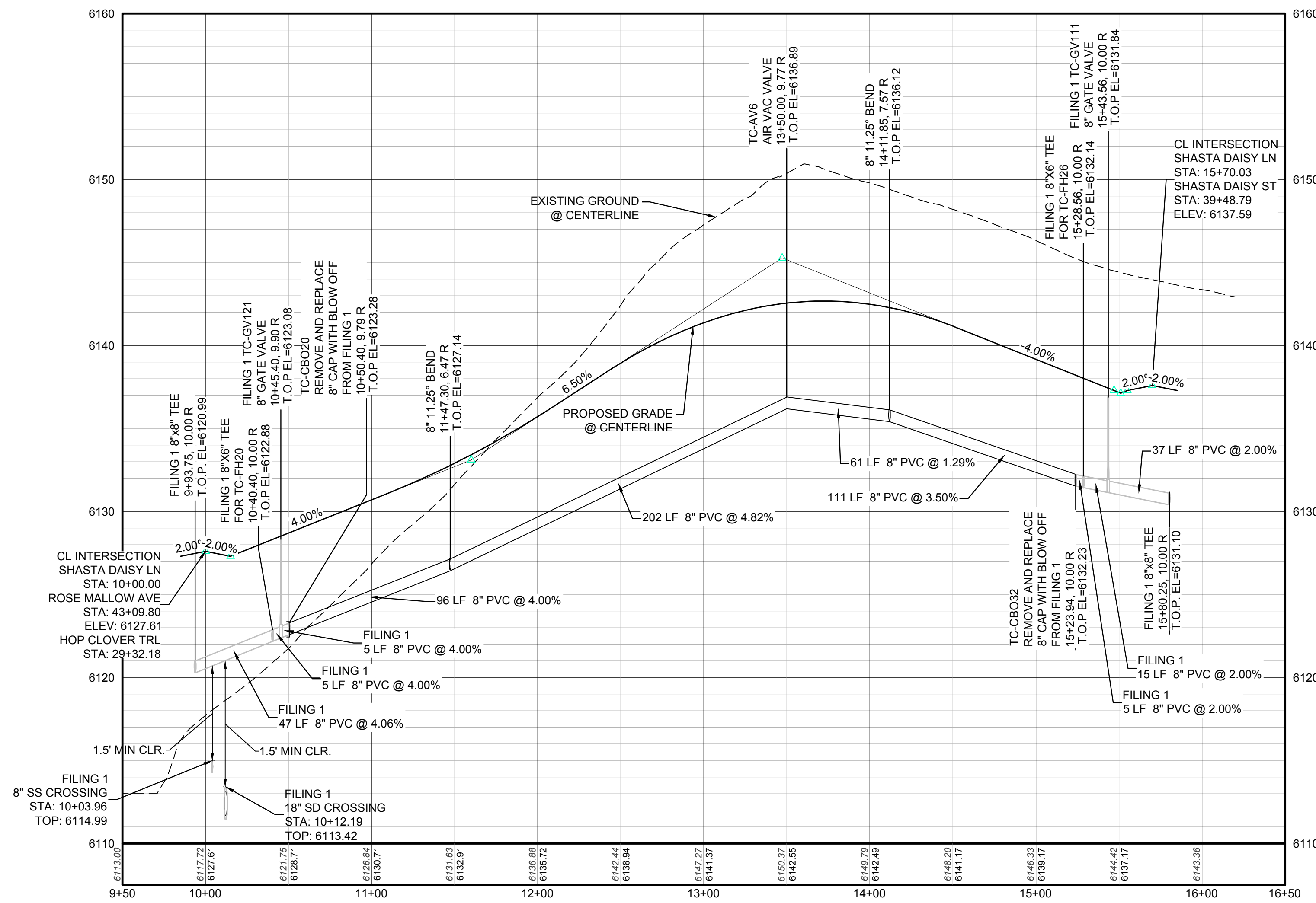
KEYMAP  
N.T.S.  
LEGEND

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⊕	PROPOSED STORM DRAIN INLET	---	FO
⊕	PROPOSED STORM DRAIN MANHOLE	---	OH
		---	TEL

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PROFILE: SHASTA DAISY LN STA: 9+50.00 TO 16+50.00  
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PREPARED UNDER THE SUPERVISION OF  
  
BRIAN P. WILSON  
COLORADO P.E. 0050067

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UNCC 1-800-922-1987

SCALE:	AS SHOWN	FILE NO:	8130283701
DRAWN BY:	RHR	CHECKED BY:	JU
SHEET NUMBER	9		DATE: AUGUST 2017
TRAILS AT CROWFOOT	FILING 6 CONSTRUCTION DRAWINGS		
	WATER PLAN & PROFILE		
	SHASTA DAISY LANE		
HR 935 LLC	7353 South Alton Way CENTENNIAL, CO 80112		
CVL CONSULTANTS	10338 E. Dry Creek Rd. Suite 6410 Englewood, CO 80110 Tel: (720) 482-9526 Fax: (720) 482-9548		
No.	Revisions	Date	Appr.

**INSPECTION POLICY:**

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

**INSTALLATION NOTES:**

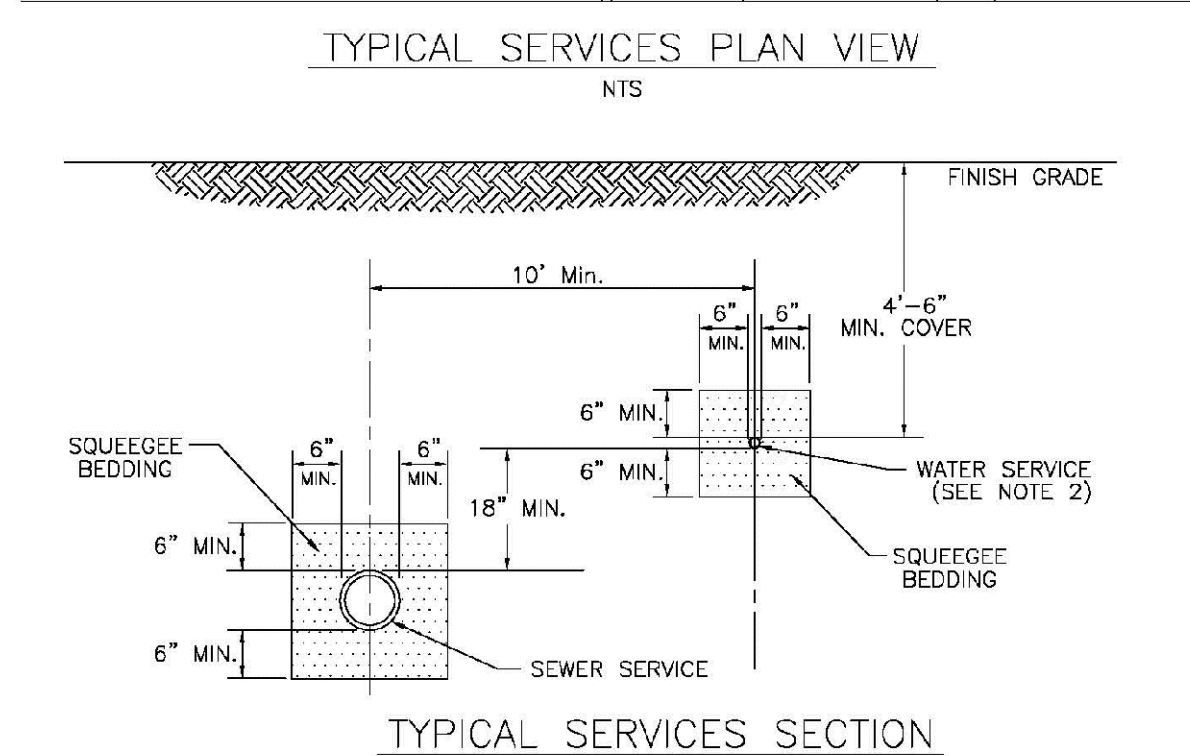
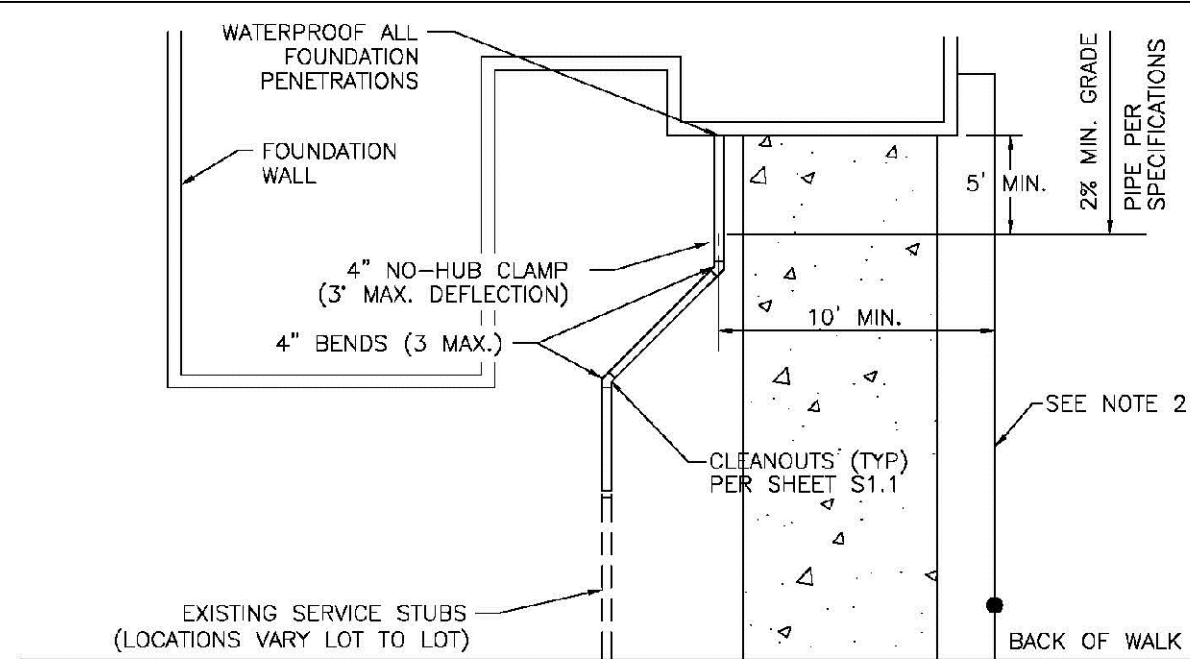
**SEWER**

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

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

SCALE: NONE	DATE: 2/96
APPROVED: PVR	01/02 12/16
	1/08 01/02
	1/16 10/16
DIRECTOR OF ENGINEERING	

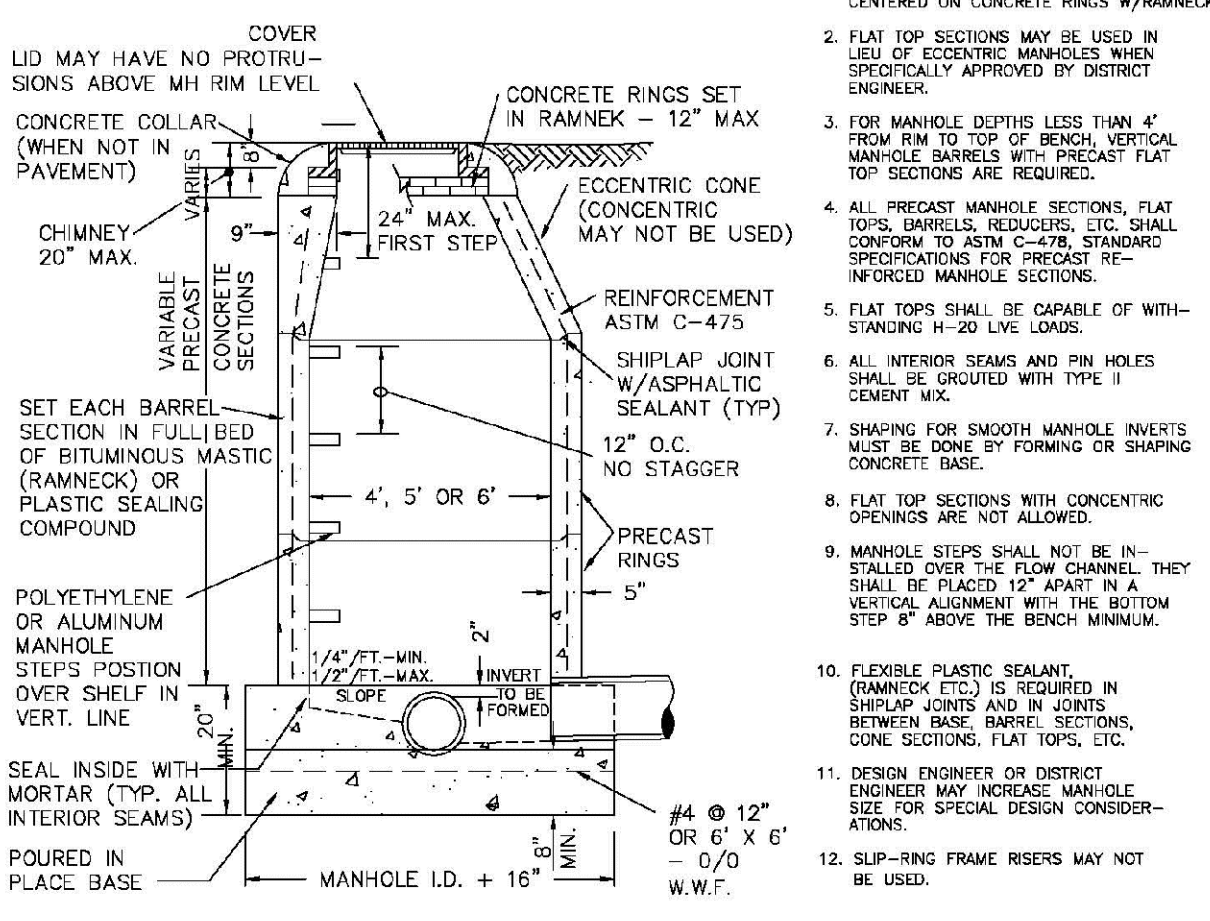
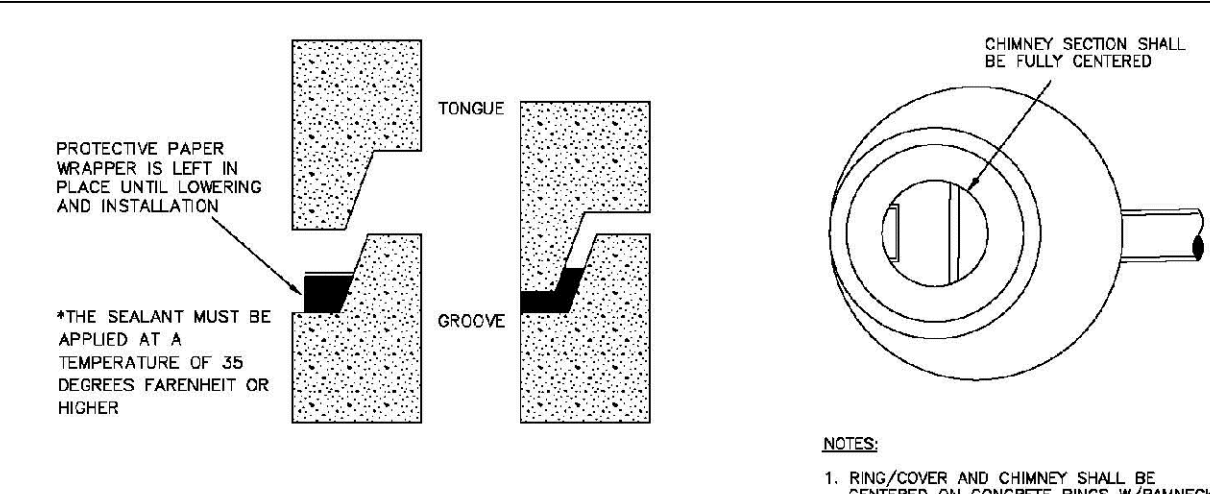
SHEET S1.1



**PARKER WATER & SANITATION DISTRICT**  
TYPICAL SEWER SERVICES

SCALE: NONE	DATE: 2/96
APPROVED: PVR	2/90 01/02
	01/16 10/16
DIRECTOR OF ENGINEERING	

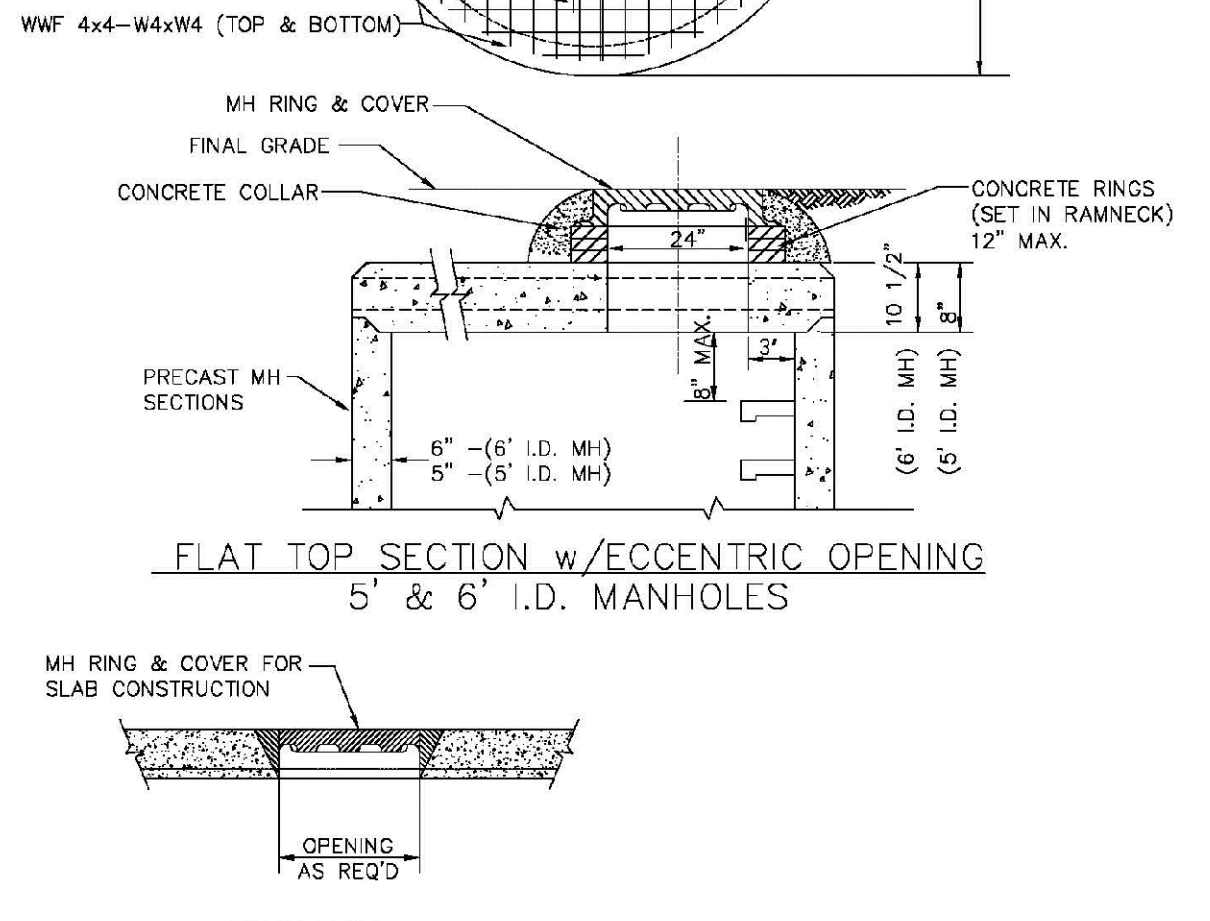
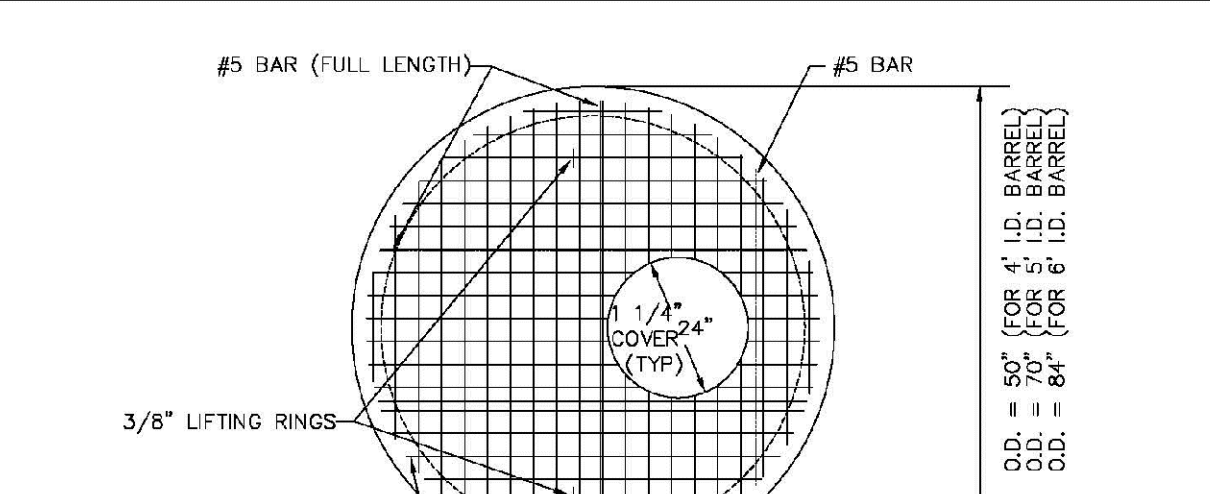
SHEET S1.2



**PARKER WATER & SANITATION DISTRICT**  
PARKER MANHOLE ECCENTRIC CONE

SCALE: NONE	DATE: 2/96
APPROVED: PVR	4/01 10/16
	01/02 1/08
DIRECTOR OF ENGINEERING	

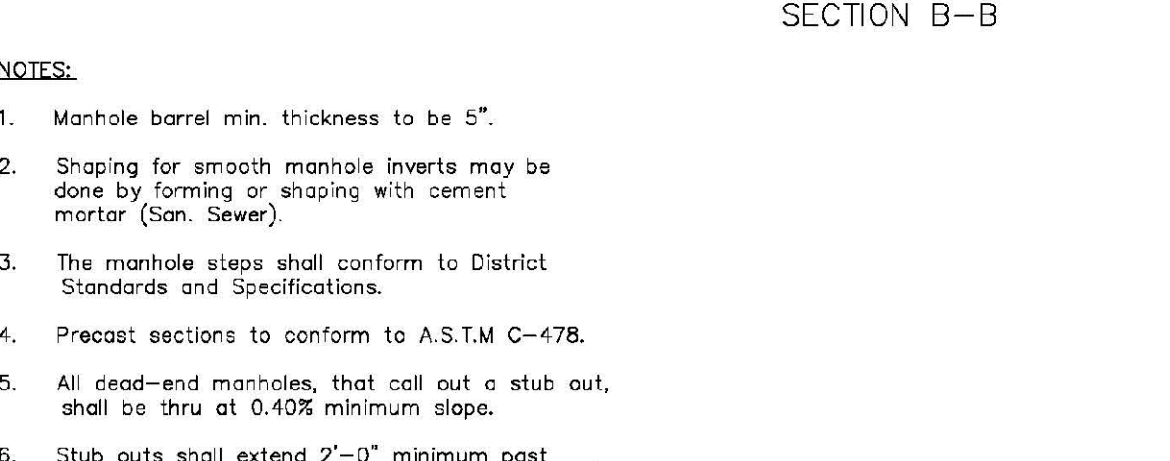
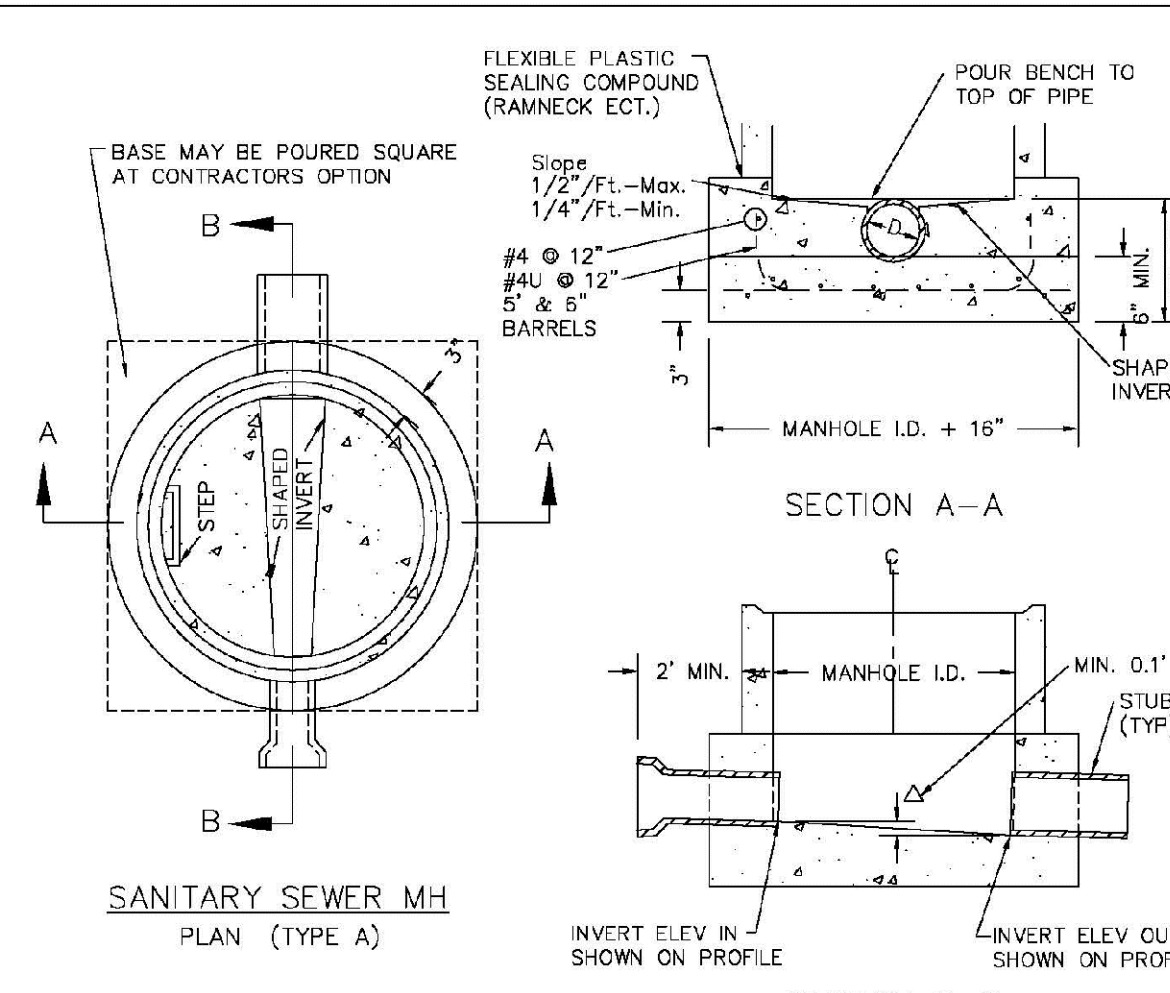
SHEET S3.1



**PARKER WATER & SANITATION DISTRICT**  
PRECAST MANHOLE - 5' & 6' I.D. WITH ECCENTRIC CONE

SCALE: NONE	DATE: 2/96
APPROVED: PVR	01/02 01/16
	10/16
DIRECTOR OF ENGINEERING	

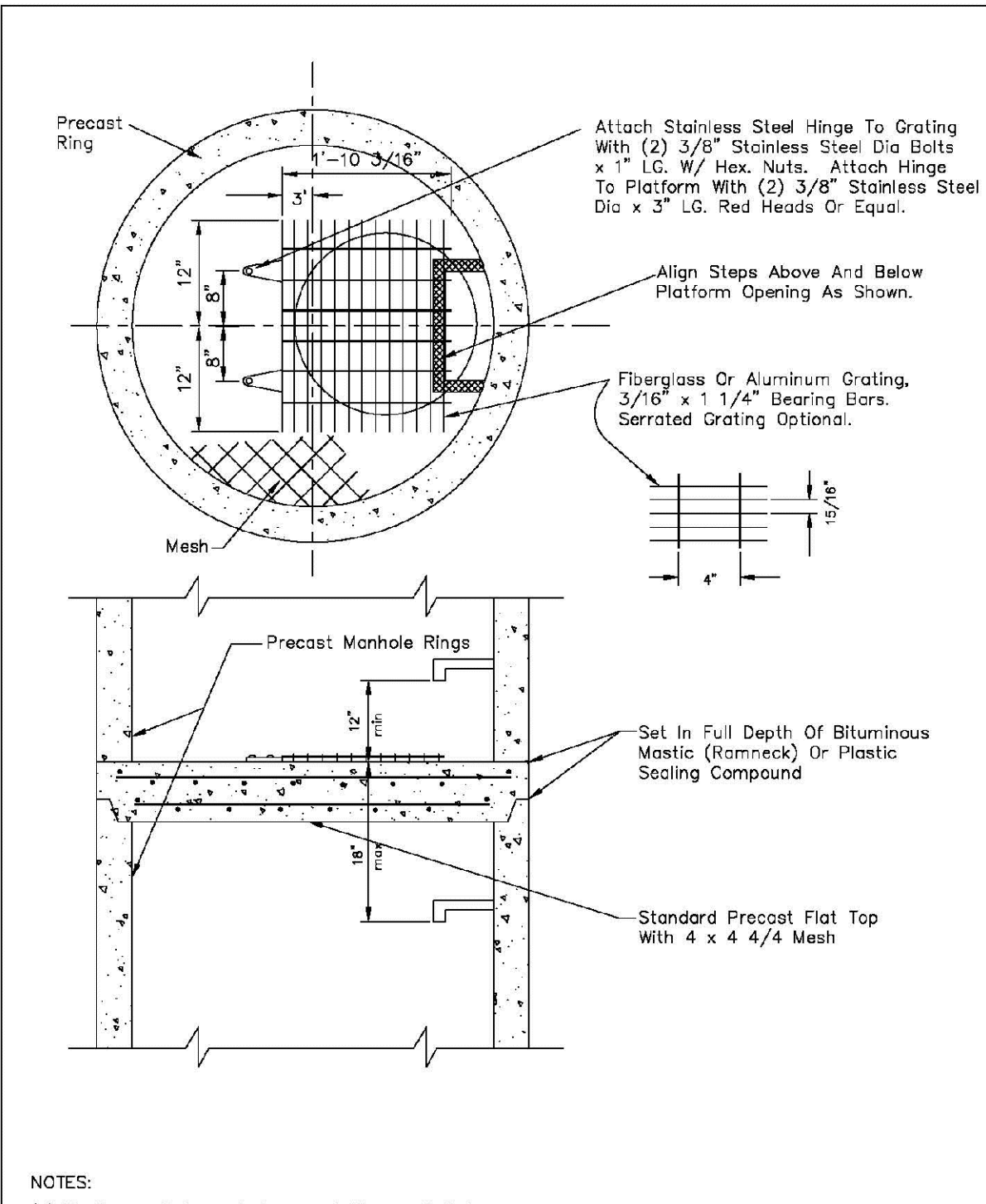
SHEET S3.3



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

SCALE: NONE	DATE: 2/96
APPROVED: PVR	01/02 01/16
	10/16
DIRECTOR OF ENGINEERING	

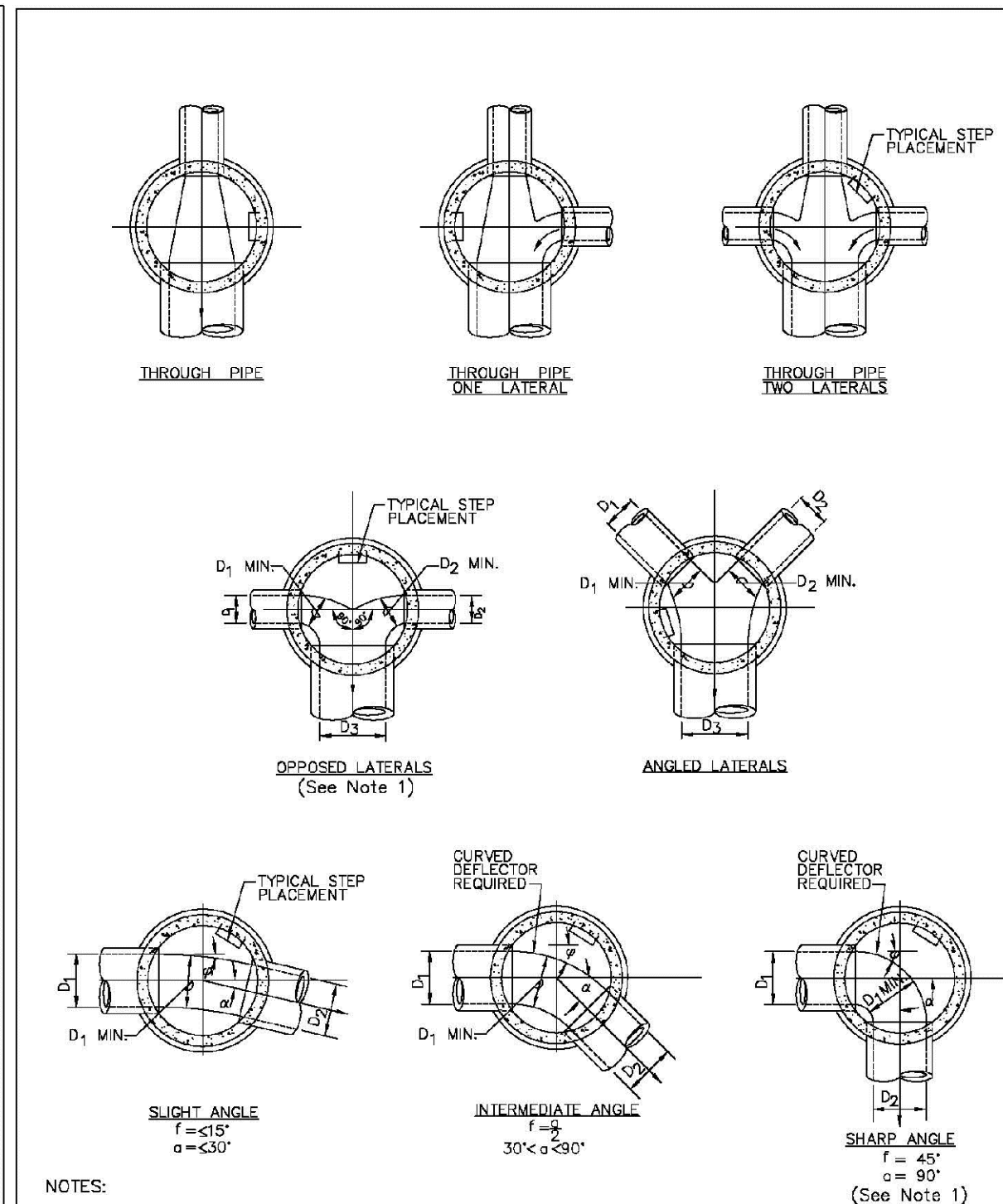
SHEET S3.5



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

SCALE: NONE	DATE: 2/96
APPROVED: PVR	2/90 01/16
	10/16
DIRECTOR OF ENGINEERING	

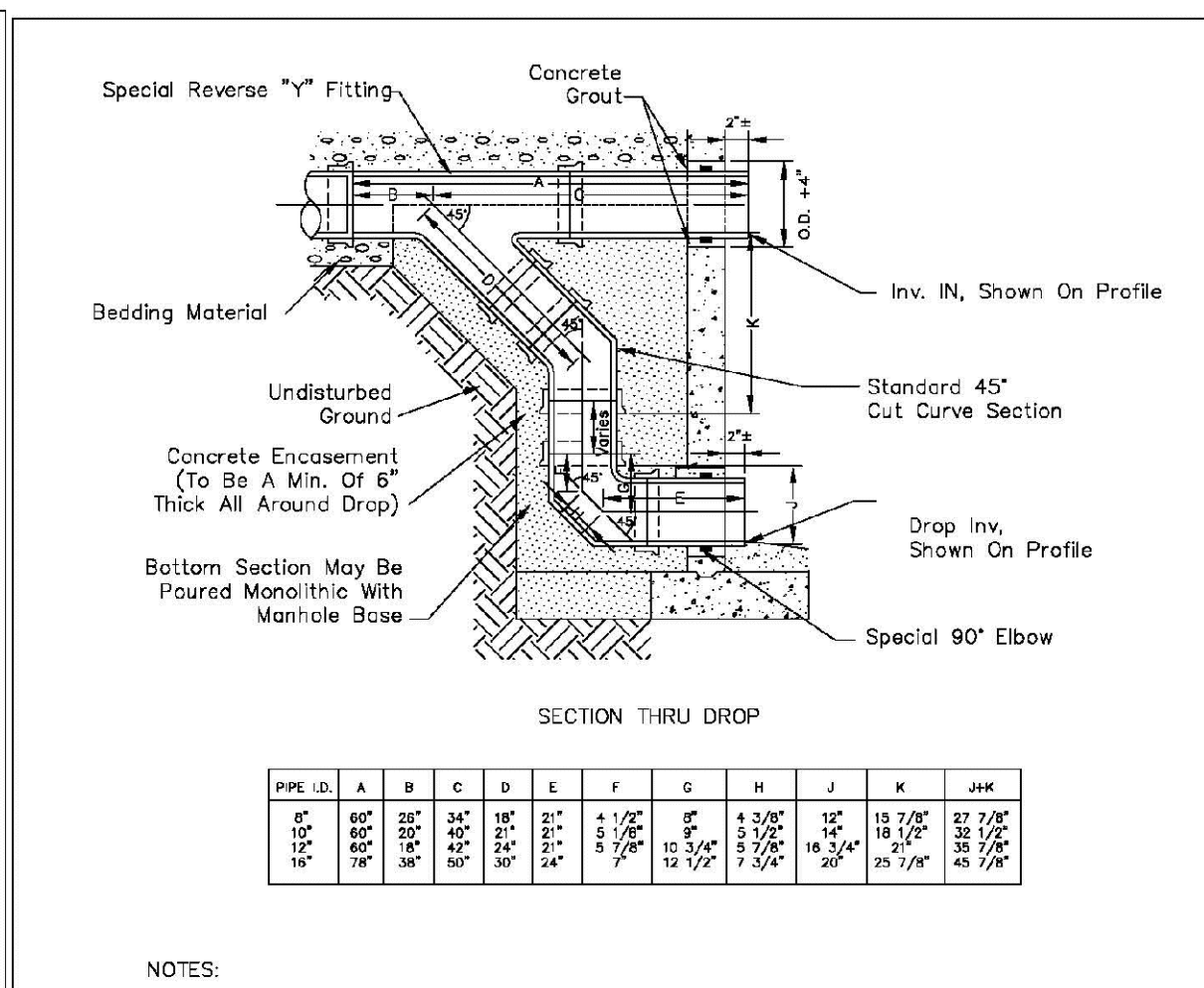
SHEET S3.6



**PARKER WATER & SANITATION DISTRICT**  
TYPICAL BASE CHANNELIZATION DETAILS

SCALE: NONE	DATE: 2/96
APPROVED: PVR	01/16 10/16
DIRECTOR OF ENGINEERING	

SHEET S3.7



NOTES:

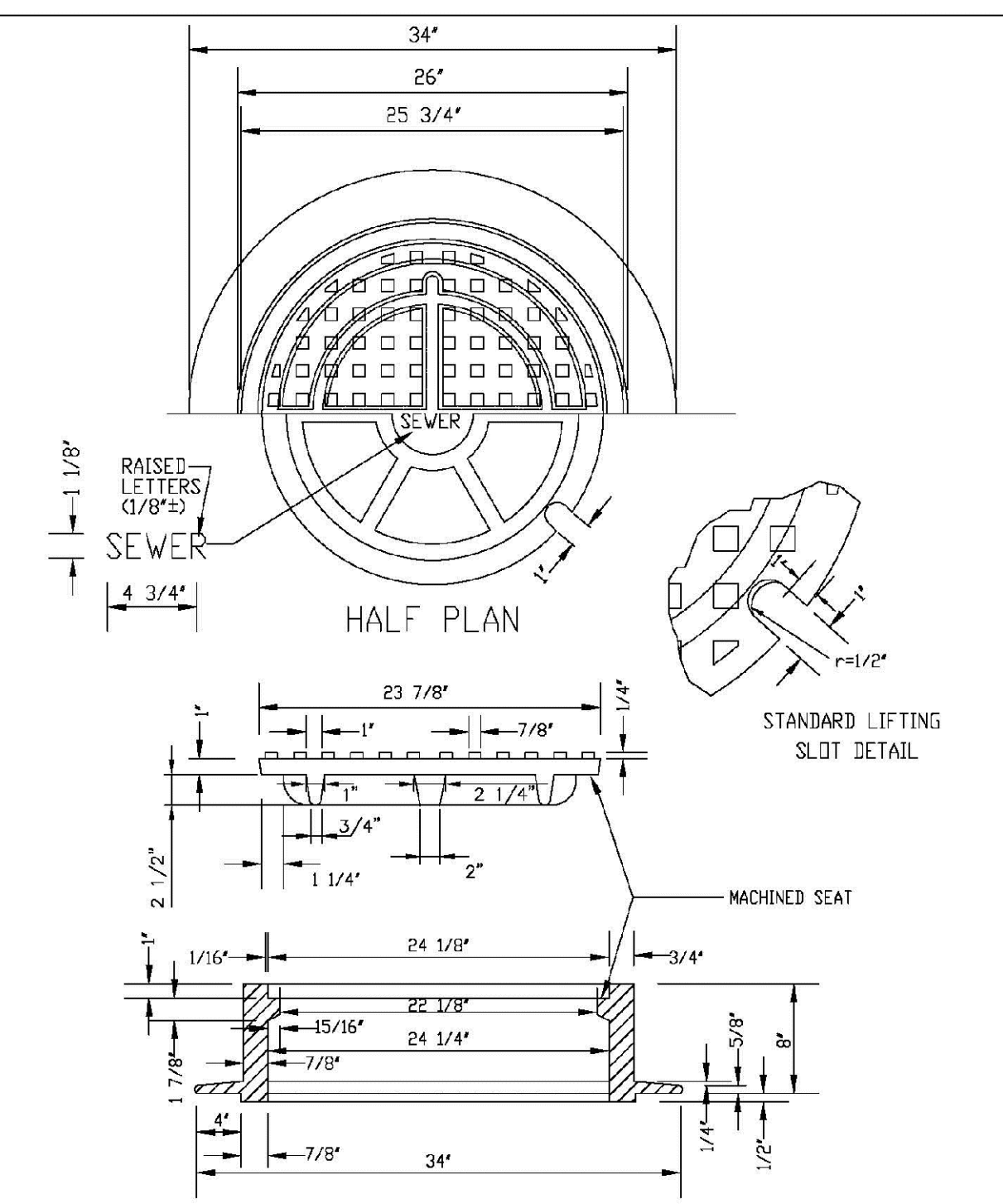
1. Vlt Clay Pipe & fittings (A.S.T.M. C-700) shown, details similar for all other pipe.
2. Diameter of drop shall not be less than the line pipe diameter.
3. For 18" diameter and larger, outside drop detail shall be a special design.
4. Manhole shall be coated using bituminous mastic (ramneck) or plastic sealing compound.

PIPE I.D.	A	B	C	D	E	F	G	H	J	K	MIN.
18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"	18"
24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
30"	30"	30"	30"	30"	30"	30"	30"	30"	30"	30"	30"
36"	36"	36"	36"	36"	36"	36"	36"	36"	36"	36"	36"
42"	42"	42"	42"	42"	42"	42"	42"	42"	42"	42"	42"
48"	48"	48"	48"	48"	48"	48"	48"	48"	48"	48"	48"
54"	54"	54"	54"	54"	54"	54"	54"	54"	54"	54"	54"
60"	60"	60"	60"	60"	60"	60"	60"	60"	60"	60"	60"

**PARKER WATER & SANITATION DISTRICT**  
OUTSIDE DROP MANHOLE CONSTRUCTION

SCALE: NONE	DATE: 2/96
APPROVED: PVR	01/16 10/16
DIRECTOR OF ENGINEERING	

SHEET S3.8



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

SCALE: NONE	DATE: 2/96
APPROVED: PVR	01/16 10/16
DIRECTOR OF ENGINEERING	

SHEET S3.9

10338 E. Dry Creek Rd.  
Suite 410  
Englewood, CO 80150  
Tel: (720) 482-9526  
Fax: (720) 482-9548

**CVL CONSULTANTS**

HR 935 LLC  
7353 South Alton Way  
CENTENNIAL, CO 80112

**TRAILS AT CROWFOOT**  
FILM 6 CONSTRUCTION DRAWINGS  
SANITARY SEWER DETAILS

DRAWN BY: JF	SCALE: AS SHOWN	FILE NO: 8130283701
CHECKED BY: JJ		
DATE: AUGUST 2017		

**10**

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

**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**

**PIN FOR PRESS STEP**

**NOTES:**

- ASTM SPECIFICATIONS:
  - ASTM C-476
  - ASTM A-615 GRADE 60 (STEEL ROD)
  - ASTM D146-96, TYPE I, GRADE 100 (POLYPROPYLENE)
- STEPS INSTALLED IN MANHOLE BARREL SECTIONS OR VERTICAL WALLS OF STRUCTURE SHALL HAVE A 9-3/4" INCH LEG AND SHALL PROJECT FROM THE WALL 5-5/8" INCHES.
- STEPS INSTALLED IN MANHOLE CONE SECTIONS SHALL HAVE AN 8-1/4" INCH 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 TAPERED 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 GROUDED IN PLACE.

**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**

**REINFORCING**

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

**NOTES:**

- THE CAST ALUMINUM MANHOLE STEP SHALL ONLY BE USED WHEN SPECIFIED ON THE DRAWINGS.
- ALUMINUM ALLOY SPECIFICATIONS:
  - ALLOY DESIGNATION: A136, 35
  - 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**  
CAST ALUMINUM MANHOLE STEP

SCALE: NONE DATE: 2/98  
APPROVED: PVR 01/16 10/16  
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**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 soil test 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,  $B_b$  &  $B_c$  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.

**TABLE III**

NOMINAL DIMENSION (D)	MINIMUM THICKNESS (t)	MIN. WIDTH OF CRADLE ( $B_c$ )
18" & smaller	6"	$B_c + 6"$
21" to 24"	6"	$B_c + 6"$
27" to 33"	8"	$B_c + 6"$
36" to 42"	10"	1.25 $B_c$
48" & larger	1/4 D	1.25 $B_c$

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

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

**CLASS "B" BEDDING**

LIMIT OF SLOPING OR BENCHING OF TRENCH WALLS  
TRENCH BACKFILL MATERIAL, HAND-TAMPED IN 6" LIFTS  
GRANULAR CLASS "B" BEDDING, HAND-TAMPED IN 6" LIFTS

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

PIPE SIZE - D	MIN. DEPTH OF BEDDING MATL. BELOW BOTTOM OF PIPE
18" & SMALLER	6"
21" TO 36"	6"
42" TO 60"	6"
66" TO 96"	8"
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.
- BELL HOLES SHALL BE EXCAVATED AT ALL BELL AND SPOT JOINTS.
- 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 CLASS "B"

SCALE: NONE DATE: 2/98  
APPROVED: PVR 3/98 2/02 1/16 10/16  
DIRECTOR OF ENGINEERING

**ROCK EXCAVATION**

HAND-TAMPED BACKFILL (TYP) FOR SIZE 18" AND LARGER  
GRANULAR CLASS "B" BEDDING MATERIAL, HAND-TAMPED IN 6" LIFTS

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

PIPE SIZE - D	MIN. DEPTH OF BEDDING MATL. BELOW BOTTOM OF PIPE
18" & SMALLER	6"
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66" TO 96"	8"
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.
- BELL HOLES SHALL BE EXCAVATED AT ALL BELL AND SPOT JOINTS.
- 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 CLASS "B"

SCALE: NONE DATE: 2/98  
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DIRECTOR OF ENGINEERING

**CLASS "B" BEDDING**

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

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

PIPE SIZE - D	MIN. DEPTH OF BEDDING MATL. BELOW BOTTOM OF PIPE
18" & SMALLER	6"
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**GENERAL NOTES:**

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- BELL HOLES SHALL BE EXCAVATED AT ALL BELL AND SPOT JOINTS.
- 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 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**

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 & TYPE II ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
  - TYPE III ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
  - UNLESS OTHERWISE NOTED ON PLAN/PROFILE DRAWINGS, TYPE I & II ENCASEMENTS NEED NOT BE REINFORCED. REINFORCEMENT, IF REQUIRED, SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN & PROFILE DRAWINGS.
- TYPE I OR II ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
  - TYPE I OR II ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
  - IF  $B_c$  IS 6" OR GREATER, TYPE I OR II ENCASEMENT SHALL BE REINFORCED. REINFORCEMENT, IF REQUIRED, SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN & PROFILE DRAWINGS.
  - TYPE II IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAIN, REGARDLESS OF DIMENSION  $L_c$ .
  - EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSING OR THESE UNUSUAL SOIL CONDITIONS ARE ENCOUNTERED, TYPE I ENCASEMENT WILL NORMALLY BE SATISFACTORY.
  - IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF EXISTING PIPE (LAW: D-150 OR C-151), CONCRETE ENCASEMENT MAY NOT BE REQUIRED.
- FILLER MATERIAL BETWEEN CONDUITS TO BE:
  - APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC. IF  $D_c$  &  $L_c \leq 6'$ .
  - CONCRETE CLASS "B" BEDDING IF  $D_c$  &  $L_c > 6'$  (IF  $L_c > 6'$  FOR TYPE III 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 THESE REQUIREMENTS MAY BE SATISFACTORY IF EXTREMELY LARGE PIER SUPPORTS ON EACH SIDE OF SANITARY SEWER MAY BE USED. IF REQUIRED, SUPPORTS SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN AND PROFILE DRAWINGS.

**PARKER WATER & SANITATION DISTRICT**  
CONCRETE ENCASEMENT TYPE I

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

2016 REVISION

SHEET 54.2

2016 REVISION

SHEET 54.3

2016 REVISION

SHEET 54.4

2016 REVISION

SHEET 54.5

2008 REVISION

SHEET 6

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UNCC 1-800-922-1987  
UTILITY NOTIFICATION CENTER OF COLORADO

10333 E. Dry Creek Rd.  
Denver, CO 80110  
Engineered: 508.6110  
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**CVL CONSULTANTS**

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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**  
FILMING 6 CONSTRUCTION DRAWINGS  
SANITARY SEWER DETAILS

SCALE: AS SHOWN  
FILE NO: 8130283701  
DRAWN BY: JF  
CHECKED BY: JJ  
DATE: AUGUST 2017

SHEET NUMBER: 11

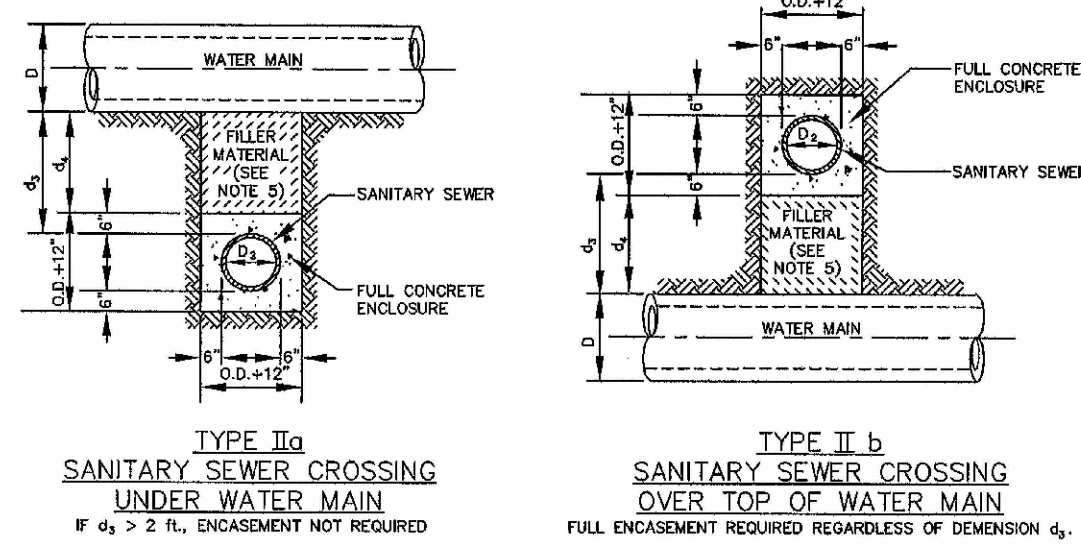
DATE: 10/16

APPR. DATE: 10/16

INIT. DATE: 10/16

REVISIONS:

No. Revisions



**TYPE IIa**  
SANITARY SEWER CROSSING  
UNDER WATER MAIN  
IF  $d_1 > 2$  FT., ENCASEMENT NOT REQUIRED

**TYPE IIb**  
SANITARY SEWER CROSSING  
OVER TOP OF WATER MAIN  
FULL ENCASEMENT REQUIRED REGARDLESS OF DIMENSION  $d_1$ .

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

**GENERAL NOTES FOR TYPE IIa & IIb ENCASEMENT**

- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING. IF OPTIONAL CONSTRUCTION JOINT IS USED & BOTTOM HALF OF ENCASEMENT IS POURED SEPARATELY, A ONE INCH LAYER OF SAND OR MORTAR SHALL BE PLACED BETWEEN BOTTOM OF SANITARY SEWER AND TOP OF CONCRETE.
- LENGTH OF ENCASEMENT FOR:
  - TYPE I & TYPE II ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
  - TYPE III ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
- UNLESS OTHERWISE NOTED ON PLAN/PROFILE DRAWINGS, TYPE I, II & III ENCASEMENTS NEED NOT BE REINFORCED. REINFORCEMENT, IF REQUIRED, SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN & PROFILE DRAWINGS.
- TYPE I, II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
  - TYPE I OR TYPE II IF  $d_1 \leq 18"$  ( $d_1 \leq 12"$  EXCEPT FOR SANITARY SEWER CROSSING OVER OR UNDER WATER MAINS).
  - TYPE III IF  $d_1 \leq 24"$  ( $d_1 \leq 18"$ ).
  - TYPE III IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS REGARDLESS OF DIMENSION  $d_1$ .
  - EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSINGS OR UNDER UNUSUAL SOIL CONDITIONS ARE UNREINFORCED. TYPE I ENCASEMENT WILL NORMALLY BE SATISFACTORY.
  - IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF DUCTILE IRON PIPE (AWWA C-150 OR C-151), CONCRETE ENCASEMENT MAY NOT BE REQUIRED.
- FILLER MATERIAL BETWEEN CONDUITS TO BE:
  - APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC. IF  $d_1 \leq 4"$  &  $d_2 \leq 7"$ .
  - COMPACTED CLASS "D" BEDDING IF  $d_1 \leq 4"$  &  $d_2 \leq 7"$  (IF  $d_2 > 7"$  FOR TYPE II ENCASEMENT POUR CONCRETE ON UNDISTURBED SOIL).
- SHORING OR SHIELDING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT.
- THESE ENCASEMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS.
- IN CERTAIN SITUATIONS WHERE CONDUIT DIAMETER "D" IS EXTREMELY LARGE, PER SUPPORTS ON EACH SIDE OF SANITARY SEWER MAY ALSO BE REQUIRED. IF REQUIRED, SUPPORTS SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN AND PROFILE DRAWINGS.

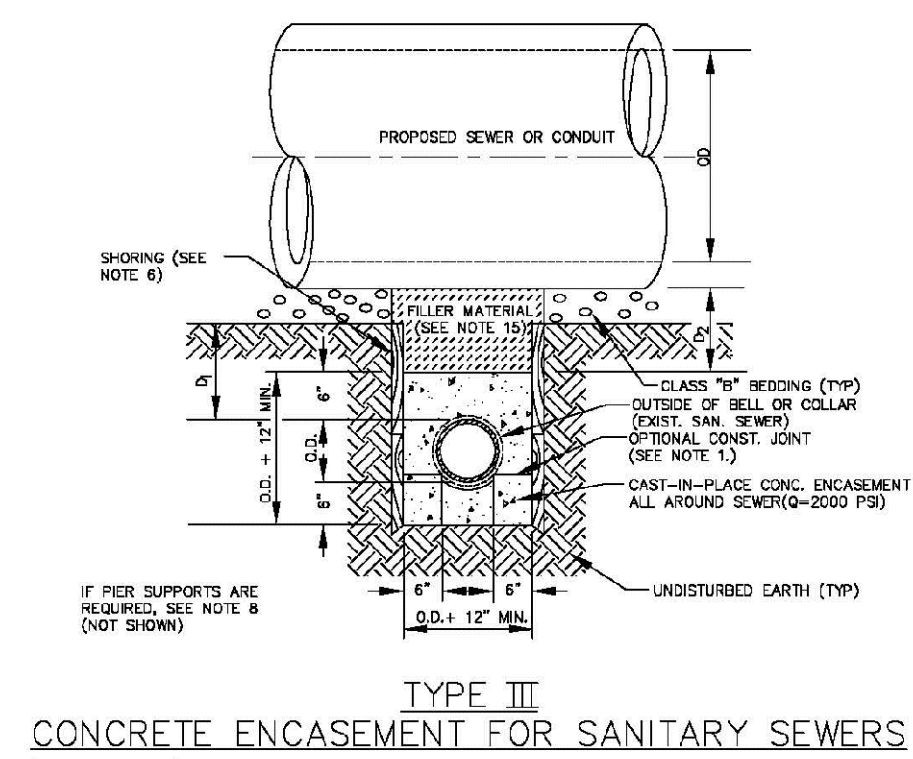
PARKER WATER & SANITATION DISTRICT  
CONCRETE ENCASEMENT  
TYPE II

SCALE: NONE DATE: 2/98

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

DISTRICT ENGINEER

2008 REVISION SHEET 7



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

**GENERAL NOTES FOR TYPE III ENCASEMENT**

- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING. IF OPTIONAL CONSTRUCTION JOINT IS USED & BOTTOM HALF OF ENCASEMENT IS POURED SEPARATELY, A ONE INCH LAYER OF SAND OR MORTAR SHALL BE PLACED BETWEEN BOTTOM OF SANITARY SEWER AND TOP OF CONCRETE.
- LENGTH OF ENCASEMENT FOR:
  - TYPE I & TYPE II ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
  - TYPE III ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
- UNLESS OTHERWISE NOTED ON PLAN/PROFILE DRAWINGS, TYPE I & II ENCASEMENTS NEED NOT BE REINFORCED. REINFORCEMENT, IF REQUIRED, TO BE SPECIFIED AND DETAILED SEPARATELY ON PLAN & PROFILE DRAWINGS.
- TYPE I, II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
  - TYPE I OR TYPE II IF  $d_1 \leq 18"$  ( $d_1 \leq 12"$  EXCEPT FOR SANITARY SEWER CROSSING OVER OR UNDER WATER MAINS).
  - TYPE III IS REQUIRED FOR SANITARY SEWERS CROSSING UNDER WATER MAINS WATER MAINS AND  $d_1 \leq 24"$  ( $d_1 \leq 18"$ ).
  - TYPE III IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS REGARDLESS OF DIMENSION  $d_1$ .
  - EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSINGS OR UNDER UNUSUAL SOIL CONDITIONS ARE UNREINFORCED. TYPE I ENCASEMENT WILL NORMALLY BE SATISFACTORY.
  - IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF DUCTILE IRON PIPE (AWWA C-150 OR C-151), CONCRETE ENCASEMENT MAY NOT BE REQUIRED.
- FILLER MATERIAL BETWEEN CONDUITS TO BE:
  - APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC. IF  $d_1 \leq 4"$  &  $d_2 \leq 7"$ .
  - COMPACTED CLASS "D" BEDDING IF  $d_1 \leq 4"$  &  $d_2 \leq 7"$  (IF  $d_2 > 7"$  FOR TYPE III ENCASEMENT POUR CONCRETE ON UNDISTURBED SOIL).
- SHORING OR SHIELDING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT.
- THESE ENCASEMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS.
- IN CERTAIN SITUATIONS WHERE CONDUIT DIAMETER "D" IS EXTREMELY LARGE, PER SUPPORTS ON EACH SIDE OF SANITARY SEWER MAY ALSO BE REQUIRED. IF REQUIRED, SUPPORTS SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN AND PROFILE DRAWINGS.
- CONCRETE ENCASED PIPING SHALL BE UNID WITH FILL LAYER.

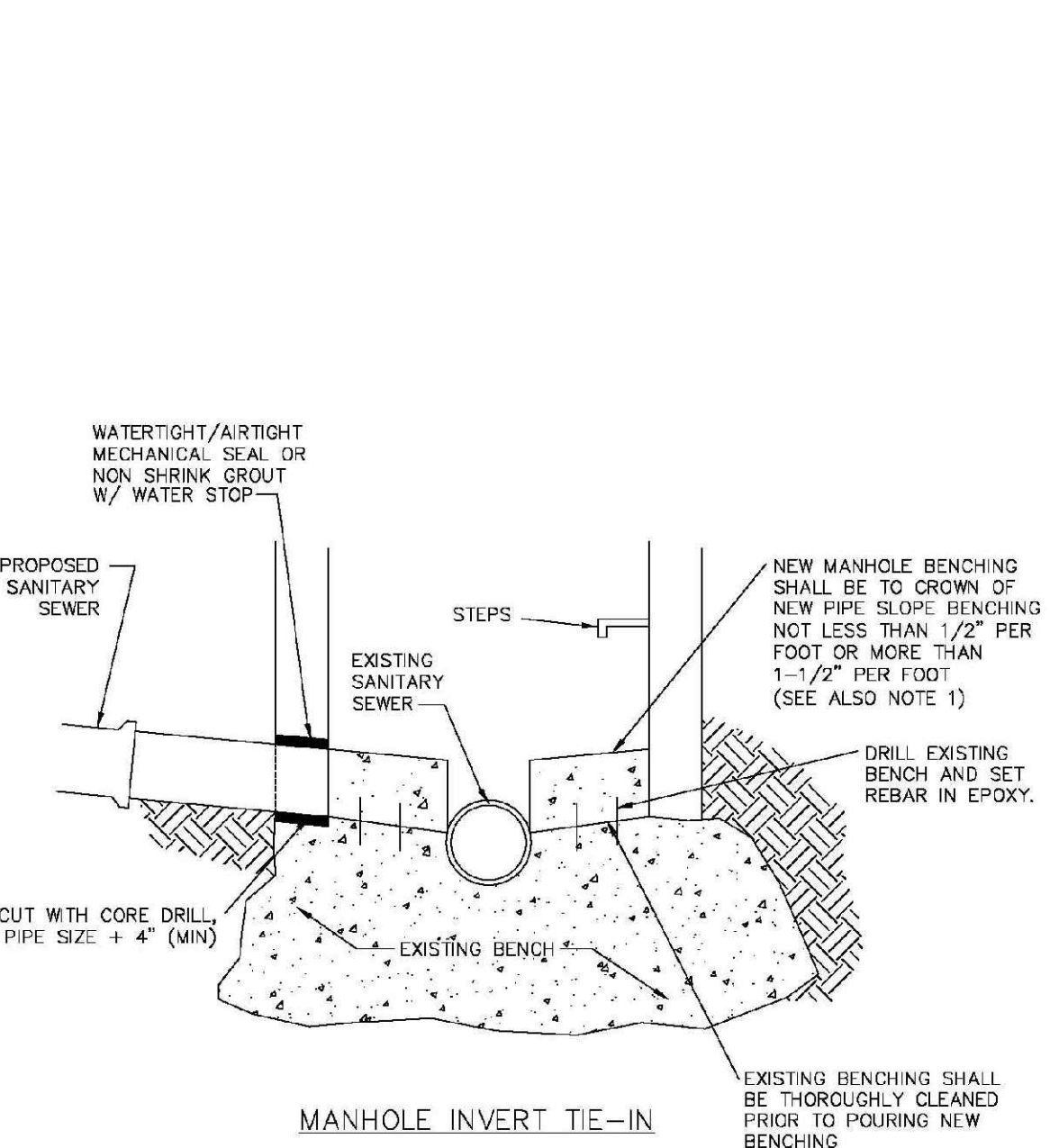
PARKER WATER & SANITATION DISTRICT  
CONCRETE ENCASEMENT  
TYPE III

SCALE: NONE DATE: 2/98

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

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.8



**MANHOLE INVERT TIE-IN**

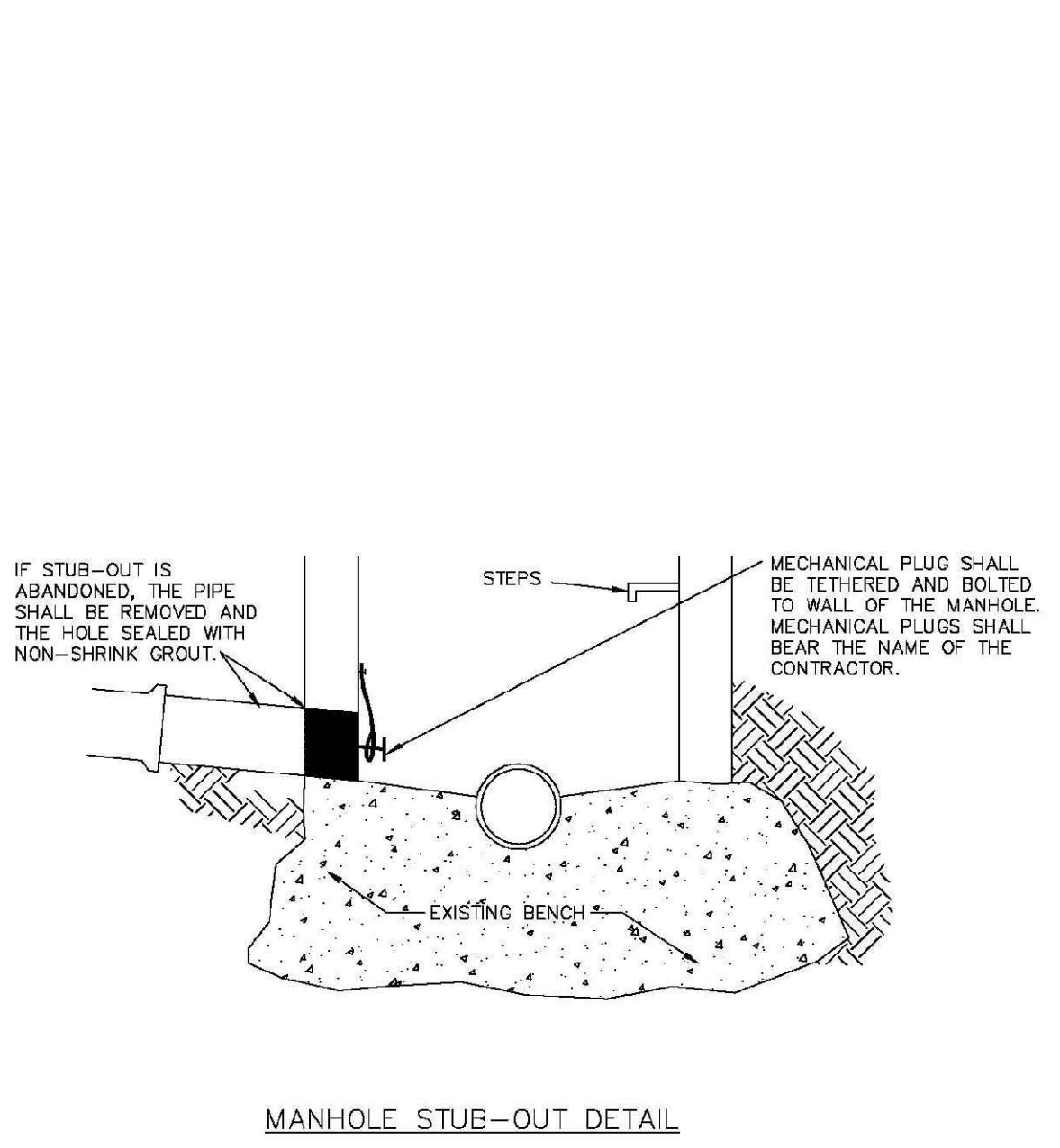
PARKER WATER & SANITATION DISTRICT  
MANHOLE INVERT TIE-IN DETAIL

SCALE: NONE DATE: 2/98

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

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.9



**MANHOLE STUB-OUT DETAIL**

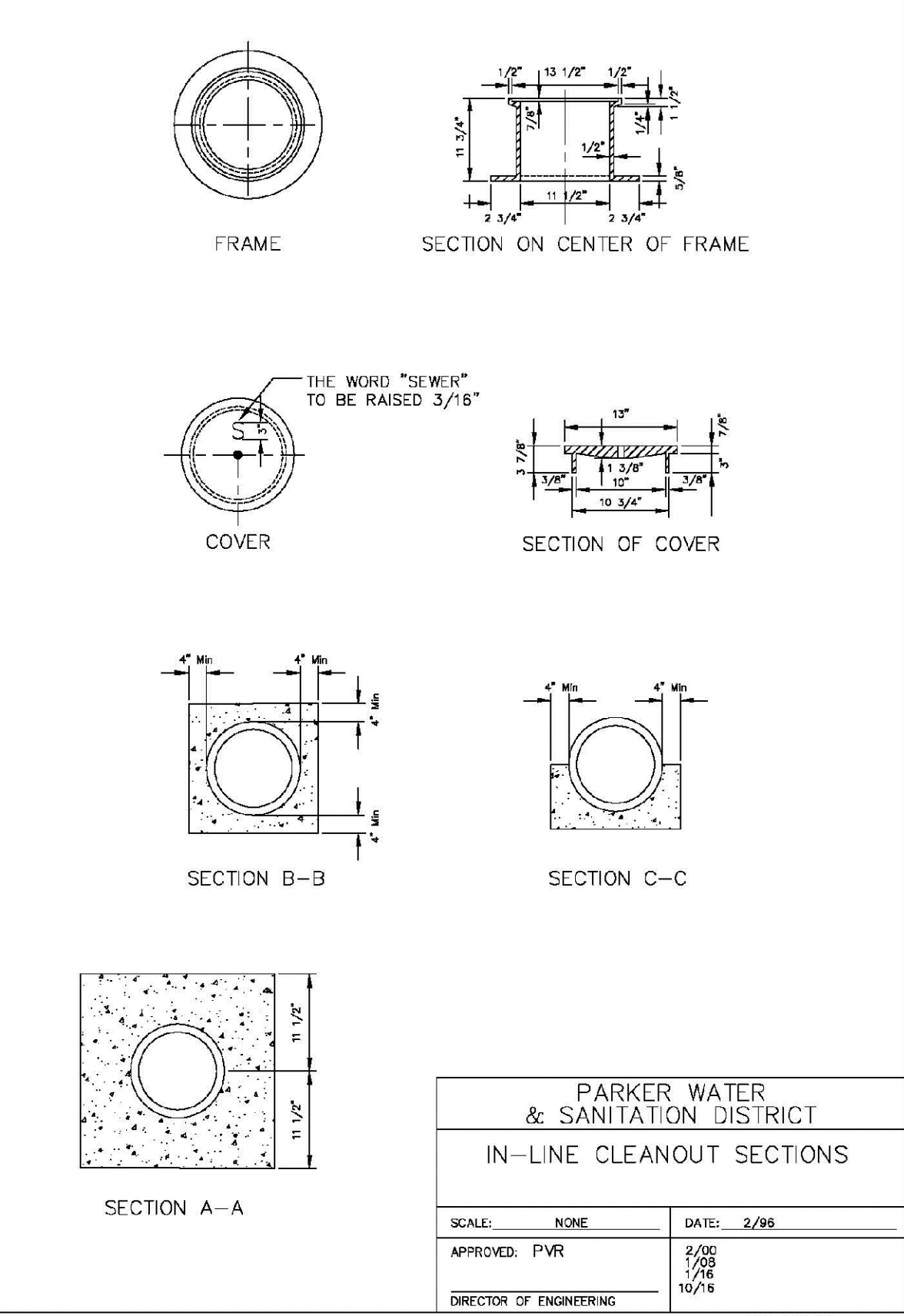
PARKER WATER & SANITATION DISTRICT  
MANHOLE STUB-OUT DETAIL

SCALE: NONE DATE: 2/98

APPROVED: PVR 1/98  
10/98

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.10



**IN-LINE CLEANOUT SECTIONS**

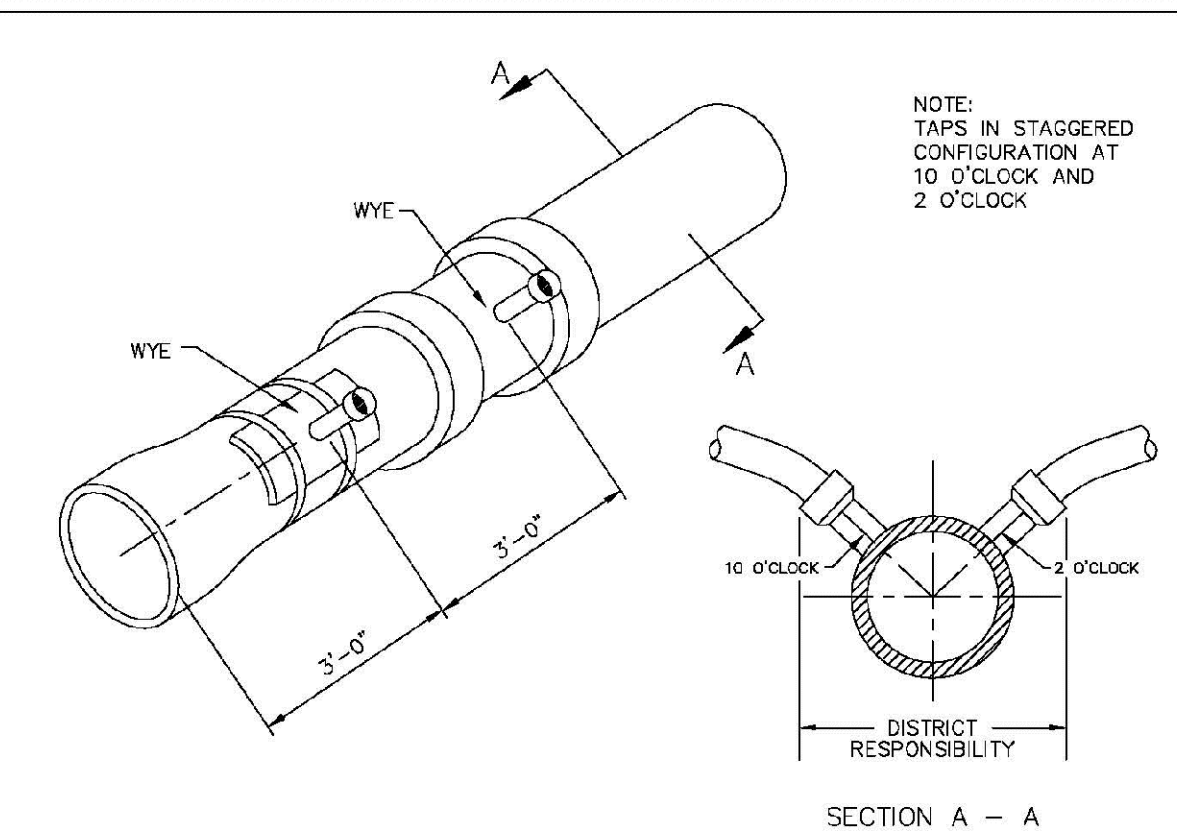
PARKER WATER & SANITATION DISTRICT  
IN-LINE CLEANOUT SECTIONS

SCALE: NONE DATE: 2/98

APPROVED: PVR 2/00  
7/98  
10/98

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.12



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

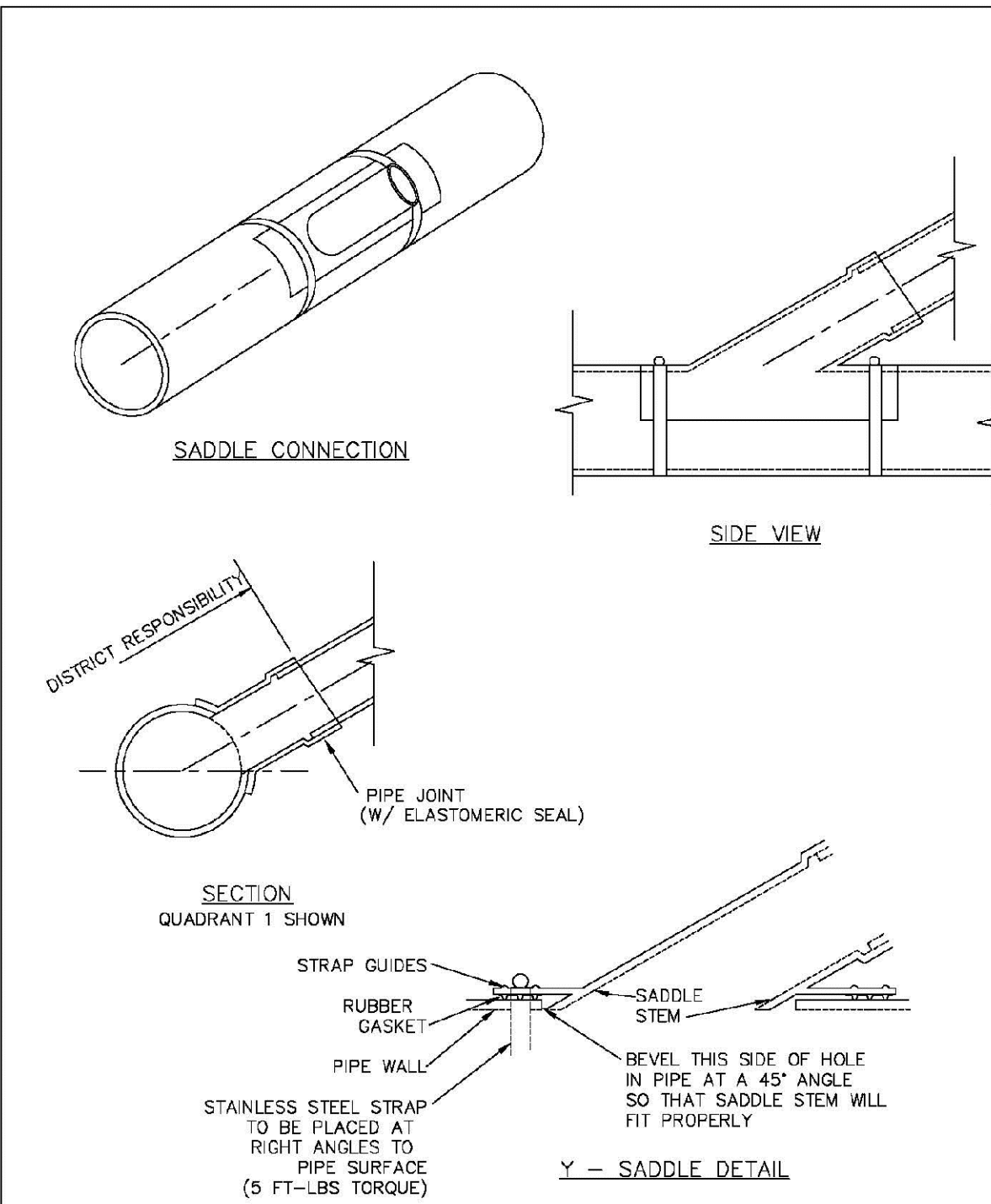
PARKER WATER & SANITATION DISTRICT  
DOMESTIC SEWER TAPPING DETAIL

SCALE: NONE DATE: 2/98

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

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.13



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

SCALE: NONE DATE: 2/98

APPROVED: PVR 1/98  
10/98

DIRECTOR OF ENGINEERING

2016 REVISION SHEET S4.14

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CONSULTANTS

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7353 South Alton Way  
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT  
FILING 6 CONSTRUCTION DRAWINGS  
SANITARY SEWER DETAILS

SCALE: AS SHOWN  
FILE NO: 8130283701

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

SHEET NUMBER **12**

Revisions	No.	Date	Init.	Appr.	Date

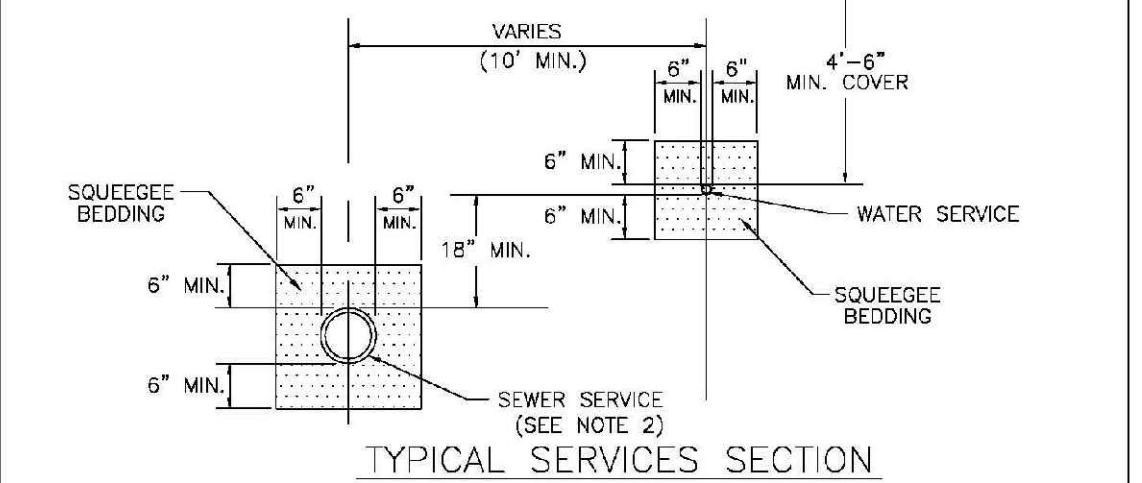
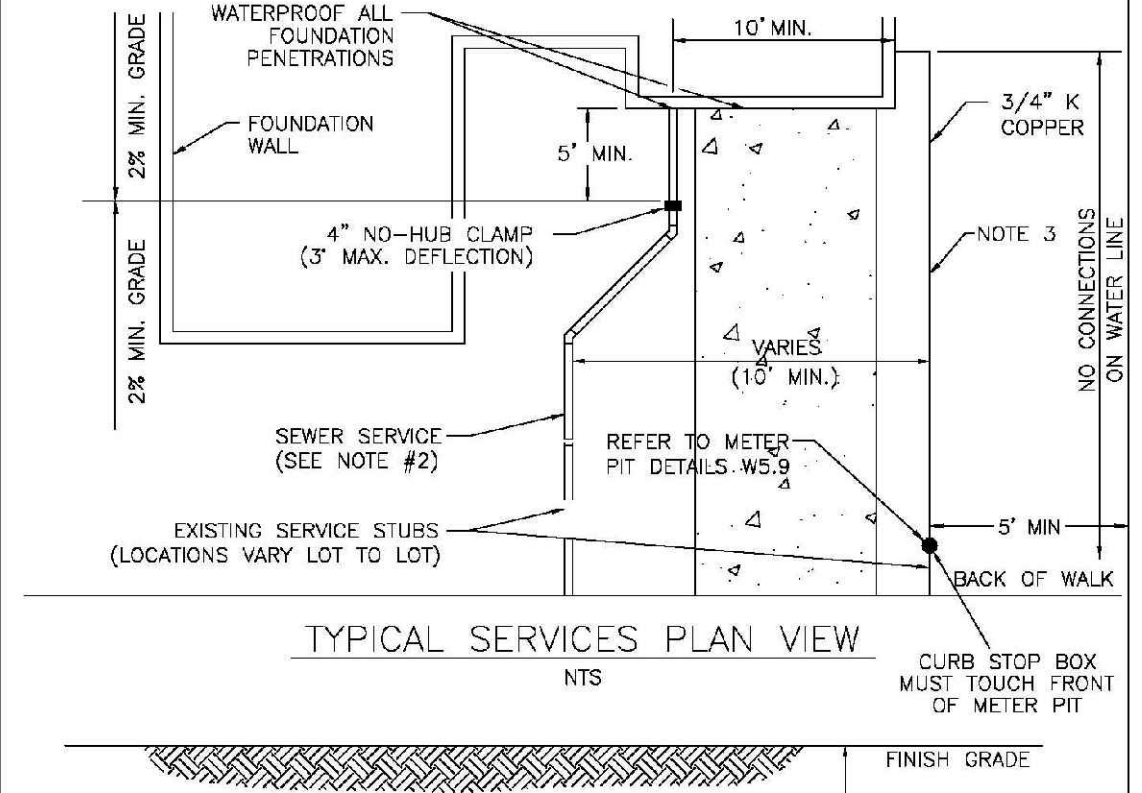
- INSPECTION POLICY:**
1. ALL SERVICE INSPECTIONS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
  2. SERVICE INSPECTIONS WILL OCCUR BETWEEN 1:00 P.M. AND 3:00 P.M. SPECIFIC INSPECTION TIMES ARE NOT AVAILABLE.
  3. IF THE CONTRACTOR IS NOT READY FOR INSPECTION WHEN THE INSPECTOR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

- INSTALLATION NOTES:**
- WATER**
1. ACCEPTABLE PIPE MATERIALS SHALL BE K-COPPER TUBING, (3/4" MIN.)
  2. APPROVED BEDDING TO BE SQUEEGEE.
  3. ONLY ONE COUPLING WILL BE ALLOWED BETWEEN THE SUB-IN AND BUILDING. COMPRESSION COUPLINGS WILL NOT BE ALLOWED ON NEW CONSTRUCTION. SILVER SOLDERED JOINTS MUST BE USED ON SERVICES LARGER THAN 3/4". SILVER SOLDERED JOINTS MUST BE INSPECTED BY PWS BEFORE BURIAL. FLARED COUPLINGS WILL BE ALLOWED ON ALL SERVICES 3/4" AND SMALLER.
  4. A WATER SERVICE WHICH CROSSES A SEWER SERVICE CAN DO SO ONLY AT A 45-90° ANGLE. WATER SERVICES SHALL BE LOCATED A MINIMUM OF 18" ABOVE SEWER SERVICE.
  5. WATER SERVICE FOUNDATION PENETRATIONS SHALL BE WATERPROOFED USING MASTIC OR OTHER APPROVED METHOD. CRAWL SPACE REQUIRES CONTINUOUS COPPER WITH A 1" BURY.
  6. CURB STOP MUST BE PLUMB AND CENTERED OVER THE NUT. IT SHOULD BE STRAPPED TO THE METER PIT (RESIDENTIAL INSTALLATIONS) OR CENTERED OVER THE EASEMENT LINE (COMMERCIAL INSTALLATIONS). THE ASSEMBLY MUST BE AT OR SLIGHTLY ABOVE FINISHED GRADE.
  7. MOVED CURB BOXES MUST BE INSPECTED BY PWS PRIOR TO BURIAL.
  8. WATERLINE MUST BE ATTACHED TO A SUPPORT BOARD THAT IS MOUNTED TO THE WALL.
  9. NO VOIDS ALLOWED UNDER WATERLINES FROM STOP BOX TO FOUNDATION.
  10. CURBSTOP BOXES AND METER PITS CANNOT BE IN DRIVEWAYS.
  11. ONLY 3/4" (JUMPER) PIPES (RESIDENCES) ARE ALLOWED. (JUMPER) PIPES WILL BE REMOVED PRIOR TO METER SET DATE.
  12. ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:  
"X" FOR SANITARY SEWER SERVICE  
"W" FOR WATER SERVICES
  13. NO SPLICES OR FLARED COUPLINGS ALLOWED ON SERVICES LARGER THAN 3/4". SILVER SOLDERED JOINTS MUST BE USED 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	
PVR	1/16
DIRECTOR OF ENGINEERING	10/16

2016 REVISION

SHEET W1.1



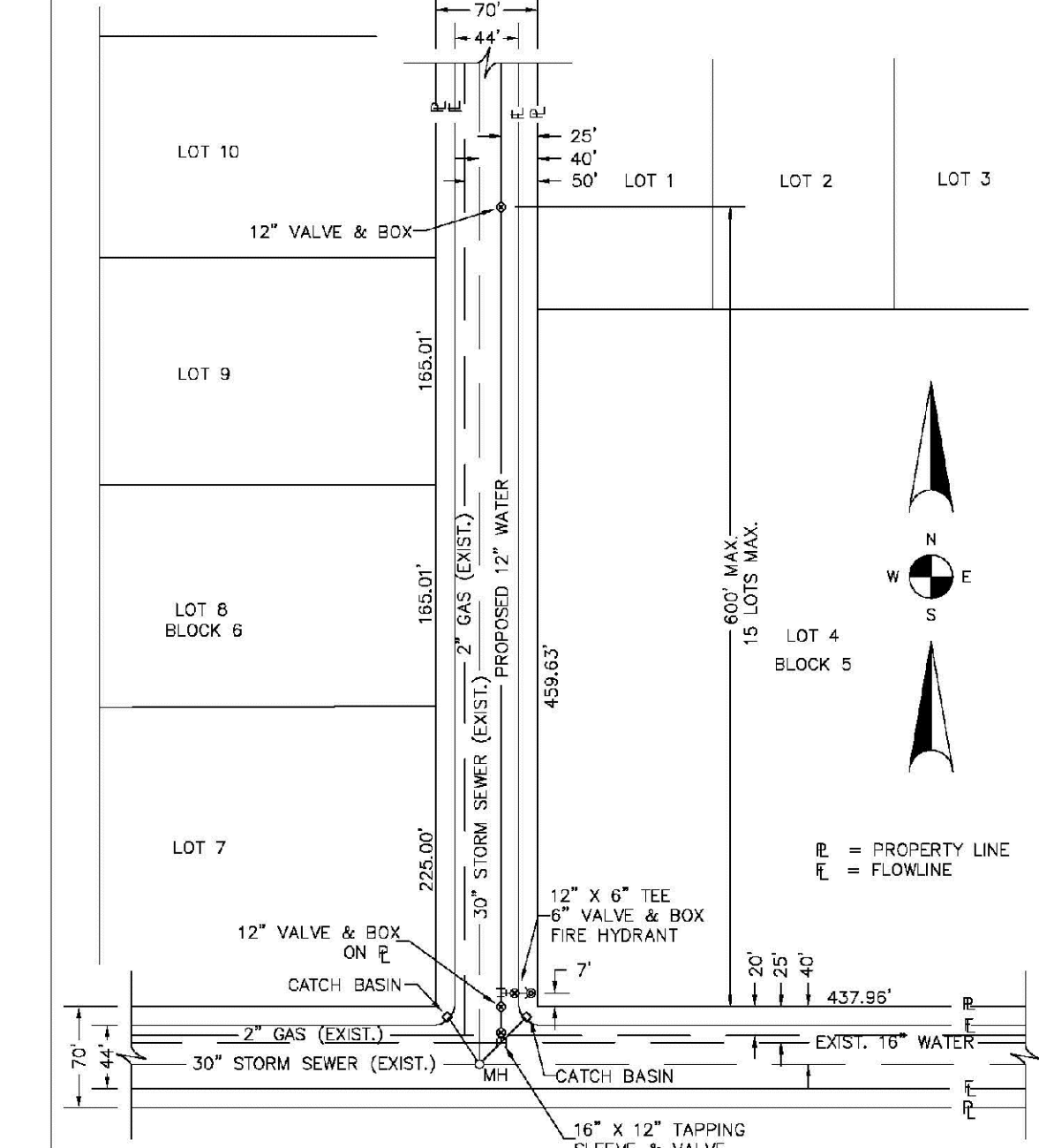
**NOTE:**

1. SEE SHEET W1.1 FOR DISTRICT POLICIES AND INSTALLATION NOTES.
2. REFER TO SEWER SERVICES DETAIL SHEET S1.2.
3. 4" PVC SLEEVES REQUIRED FOR SERVICE LINES UNDER CONCRETE SURFACE.

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

2016 REVISION

SHEET W1.2



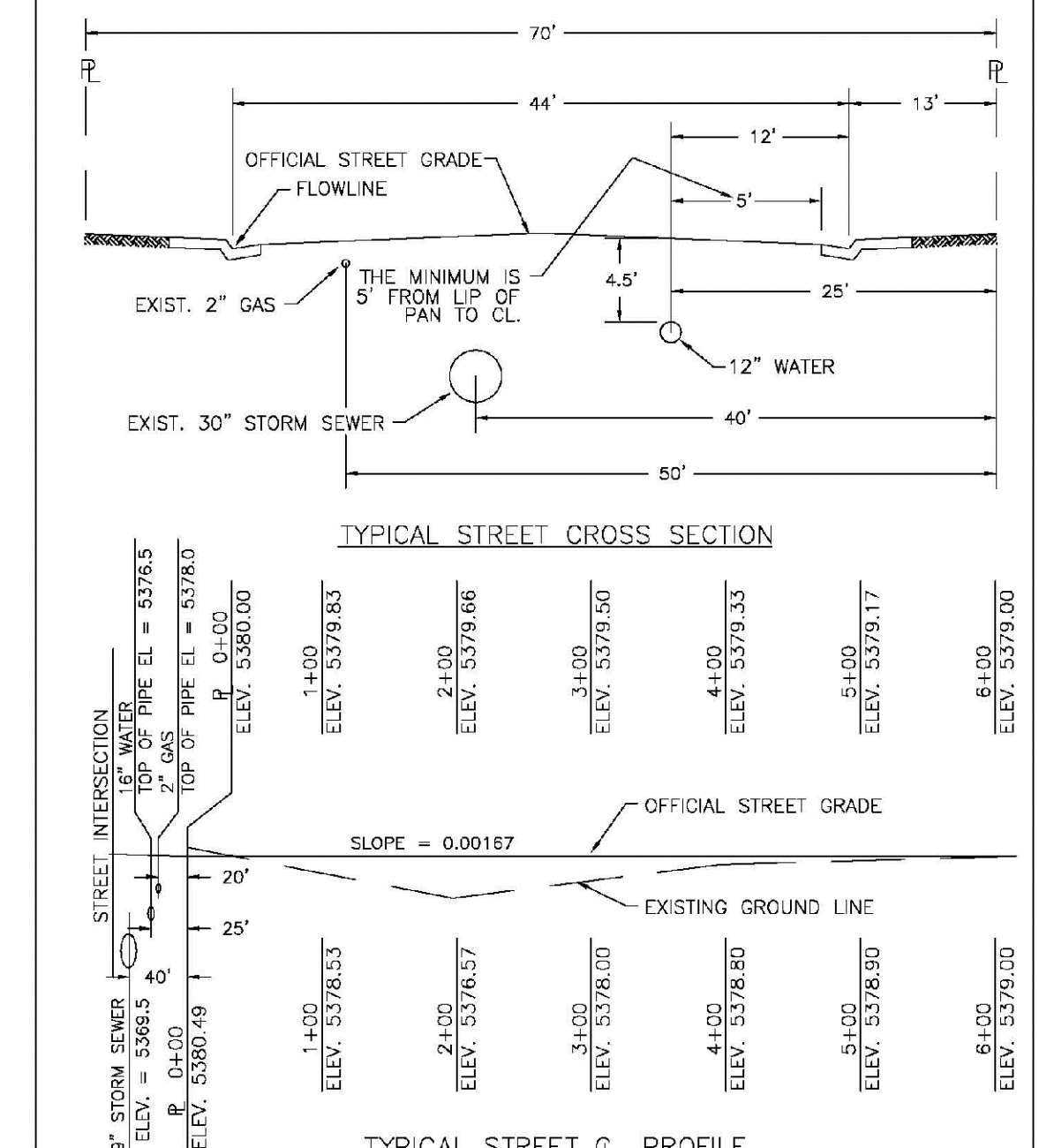
**NOTES:**

1. SEE "TYPICAL STREET CROSS SECTION - TYPICAL STREET CL PROFILE" DRAWING.
2. ALL FIRE HYDRANTS TO BE LOCATED AT POINTS OTHER THAN CORNER INTERSECTIONS SHALL BE INSTALLED AT A LOT LINE EXTENDED.

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

2016 REVISION

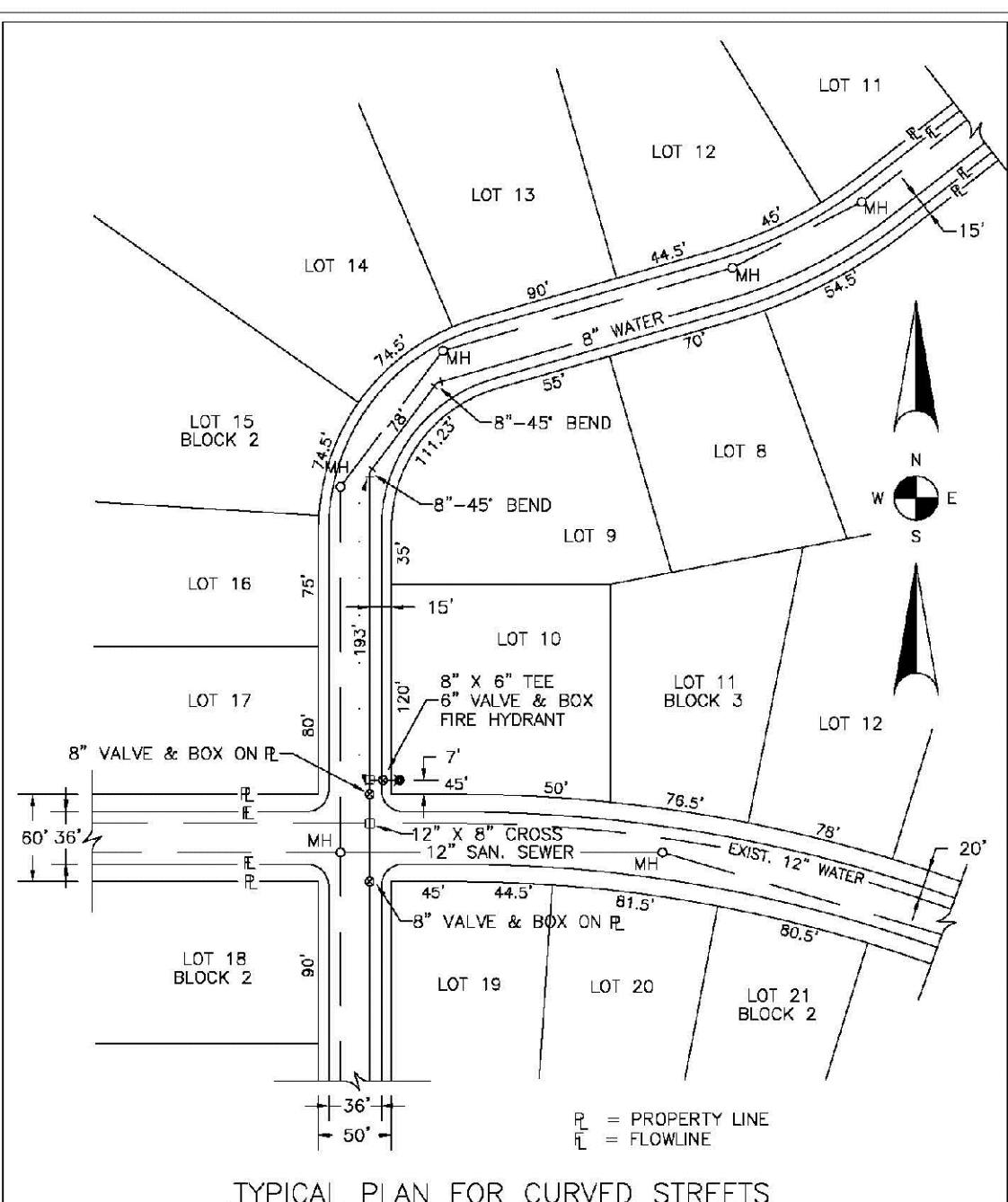
SHEET W2.1



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

2016 REVISION

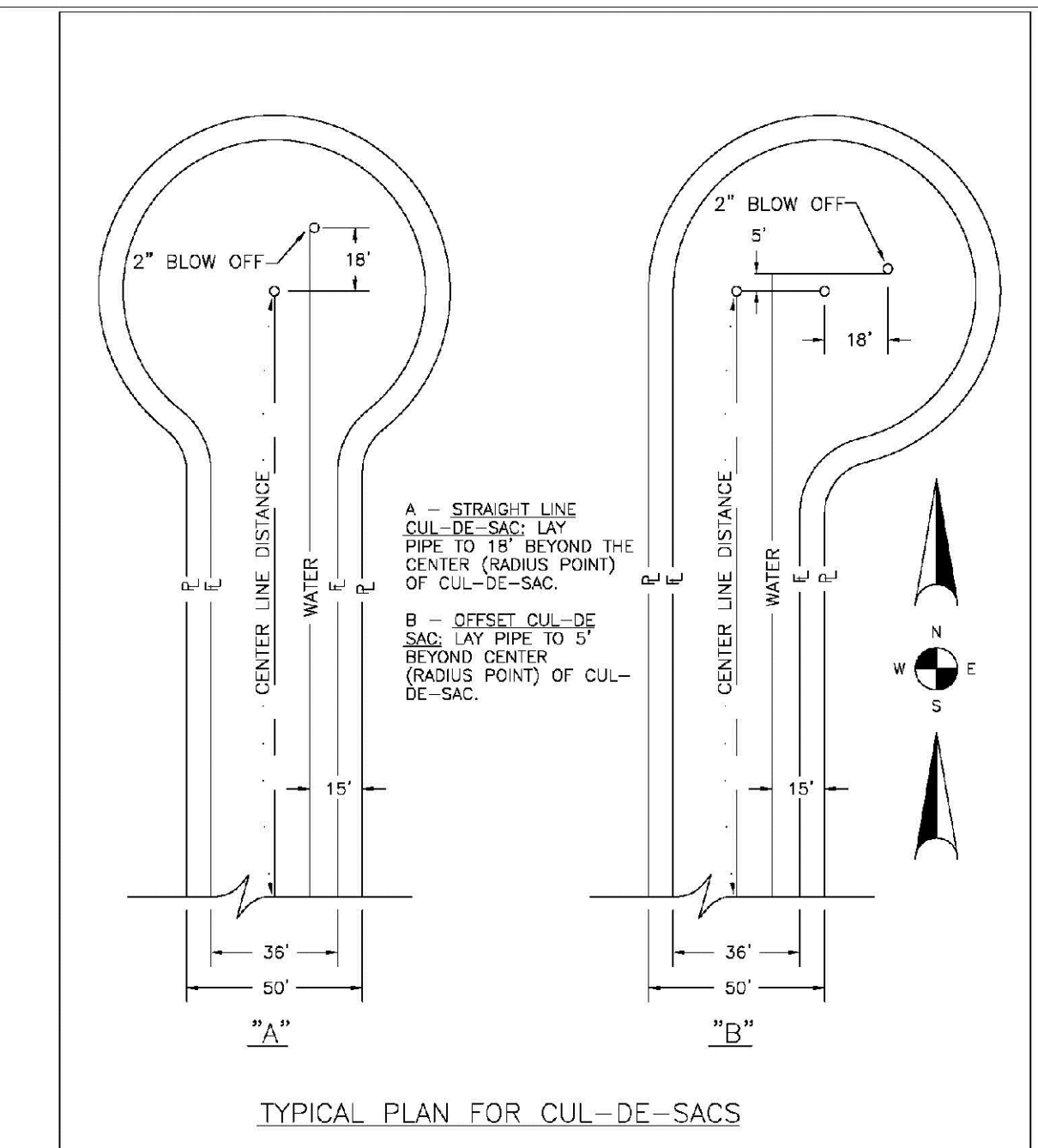
SHEET W2.2



<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	
PVR	10/16
DIRECTOR OF ENGINEERING	

2016 REVISION

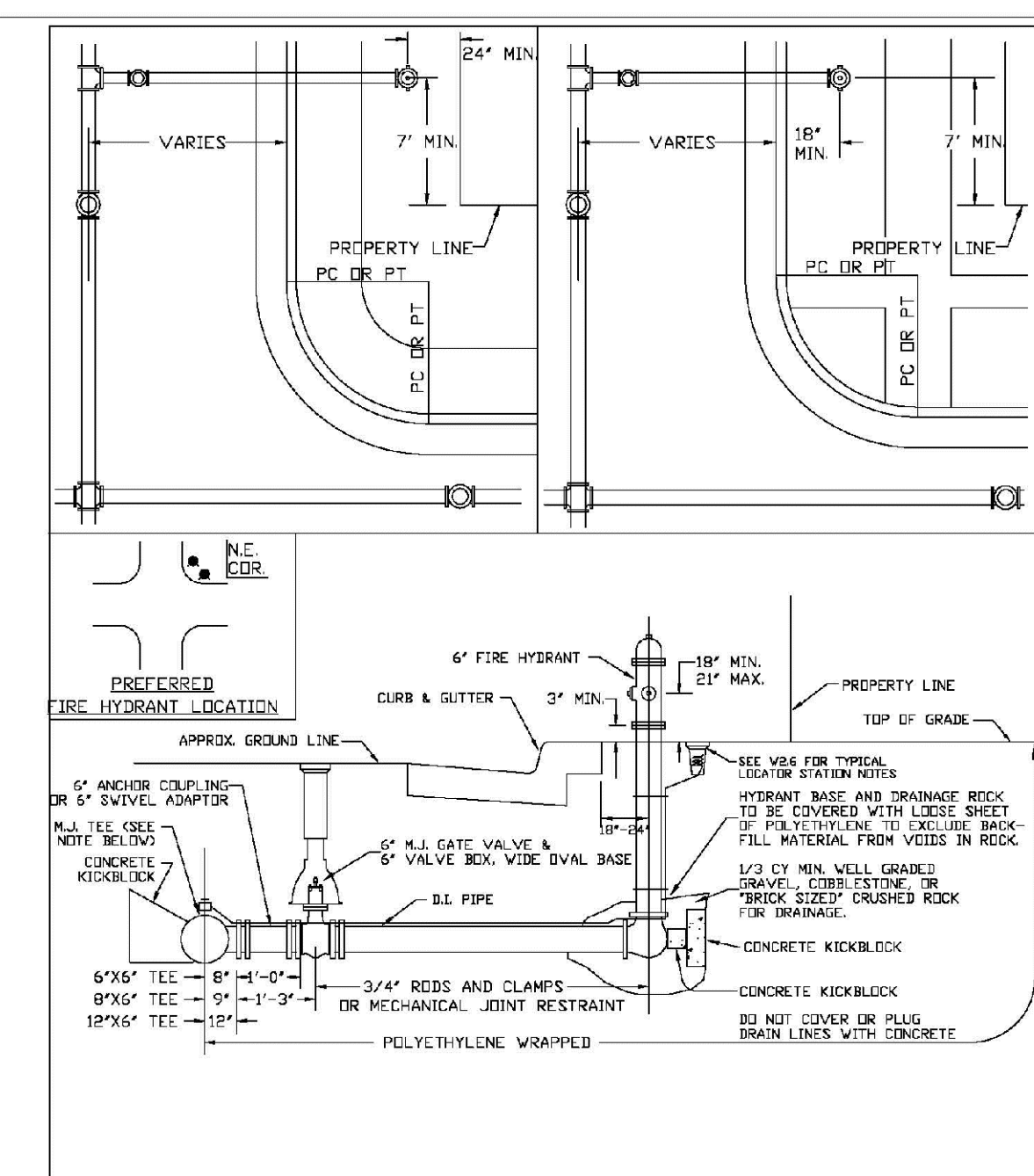
SHEET W2.3



<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	
PVR	10/16
DIRECTOR OF ENGINEERING	

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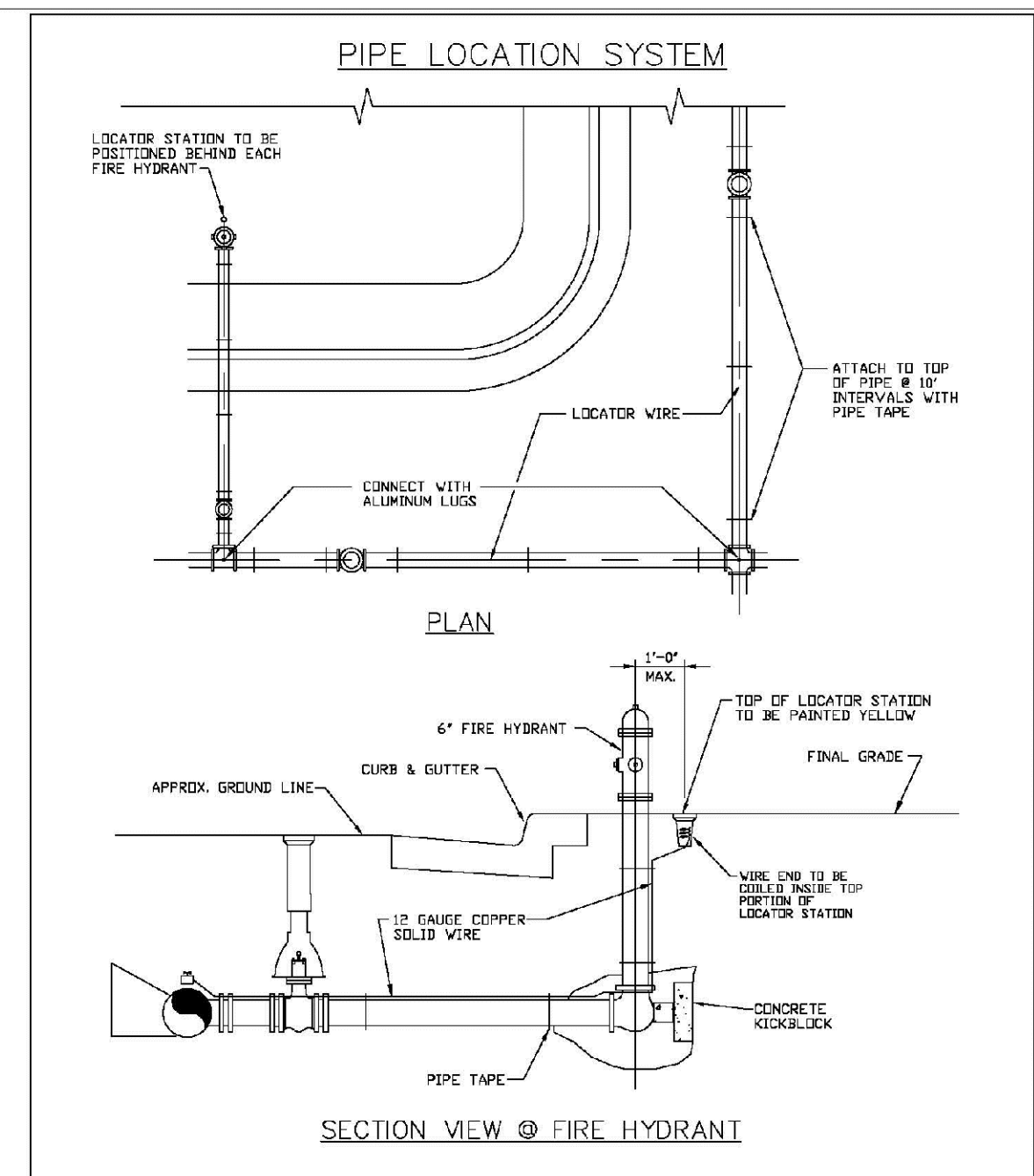
SHEET W2.4



<b>PARKER WATER &amp; SANITATION DISTRICT</b>	
<b>FIRE HYDRANTS LOCATION &amp; INSTALLATION</b>	
SCALE: NONE	DATE: 2/96
APPROVED: 4/01	
PVR	01/02
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SHEET W2.5



<b>PARKER WATER &amp; SANITATION DISTRICT</b>	
<b>LOCATOR WIRE DETAILS</b>	
SCALE: NONE	DATE: 2/96
APPROVED: 4/01	
PVR	01/02
DIRECTOR OF ENGINEERING	10/16

2016 REVISION

SHEET W2.6

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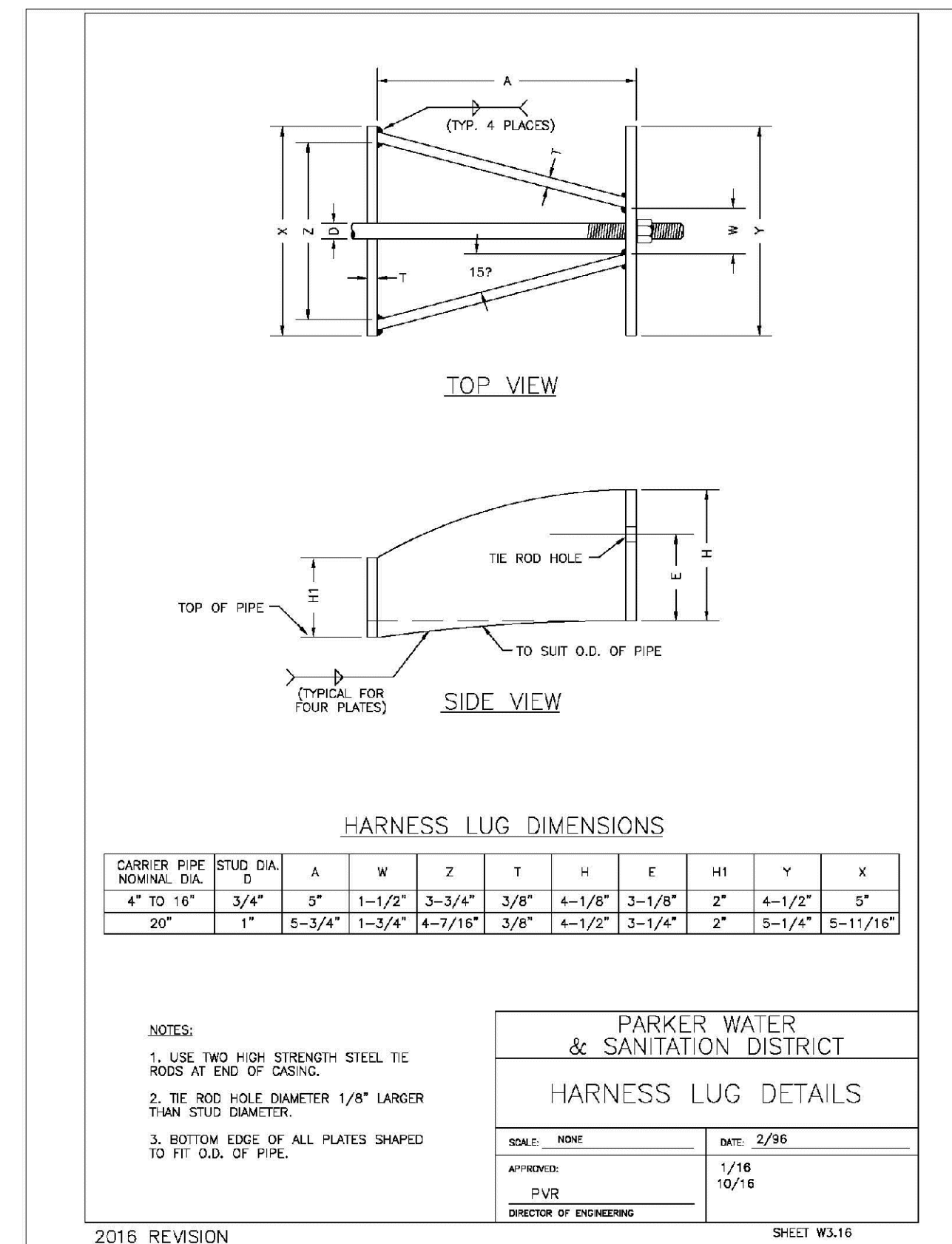
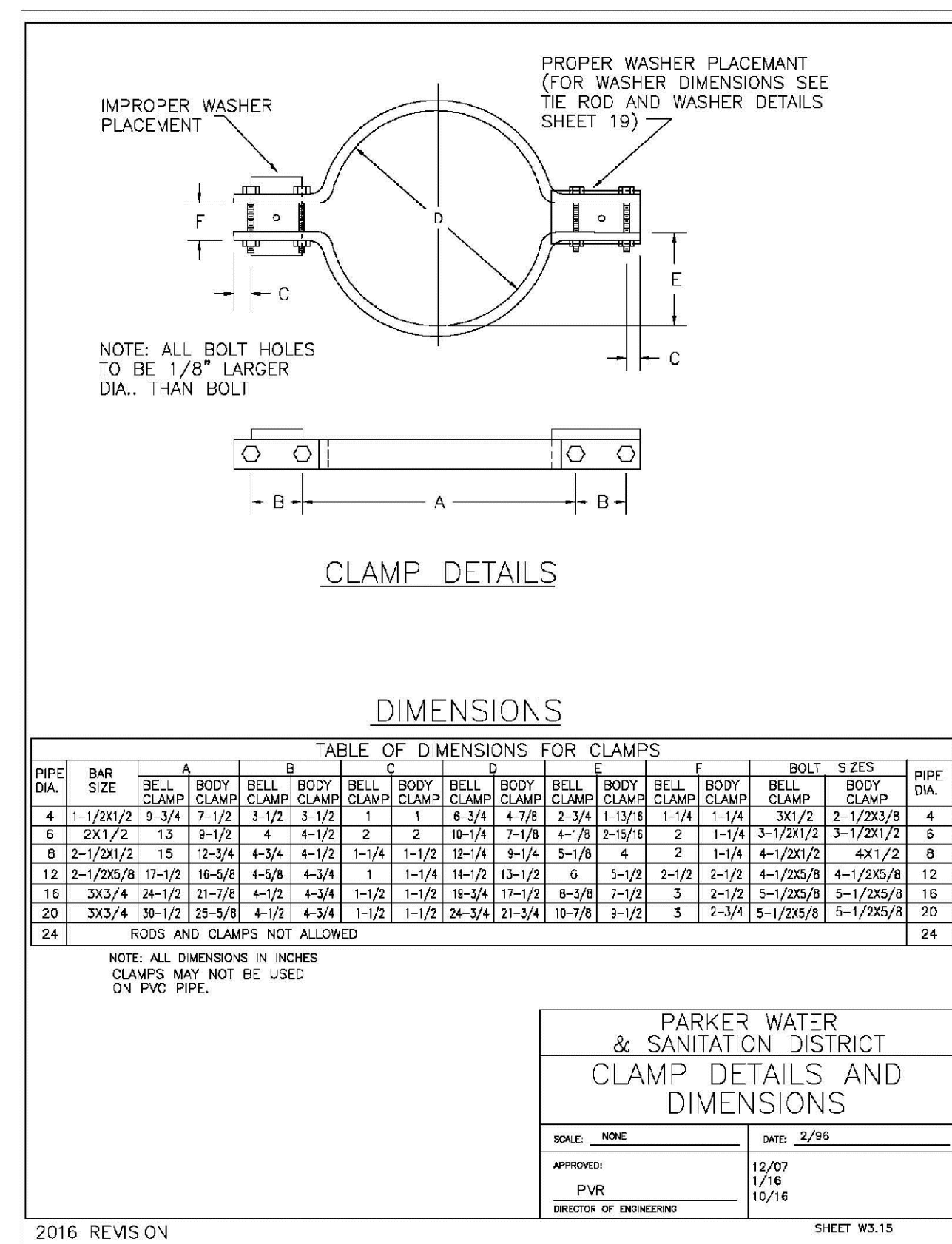
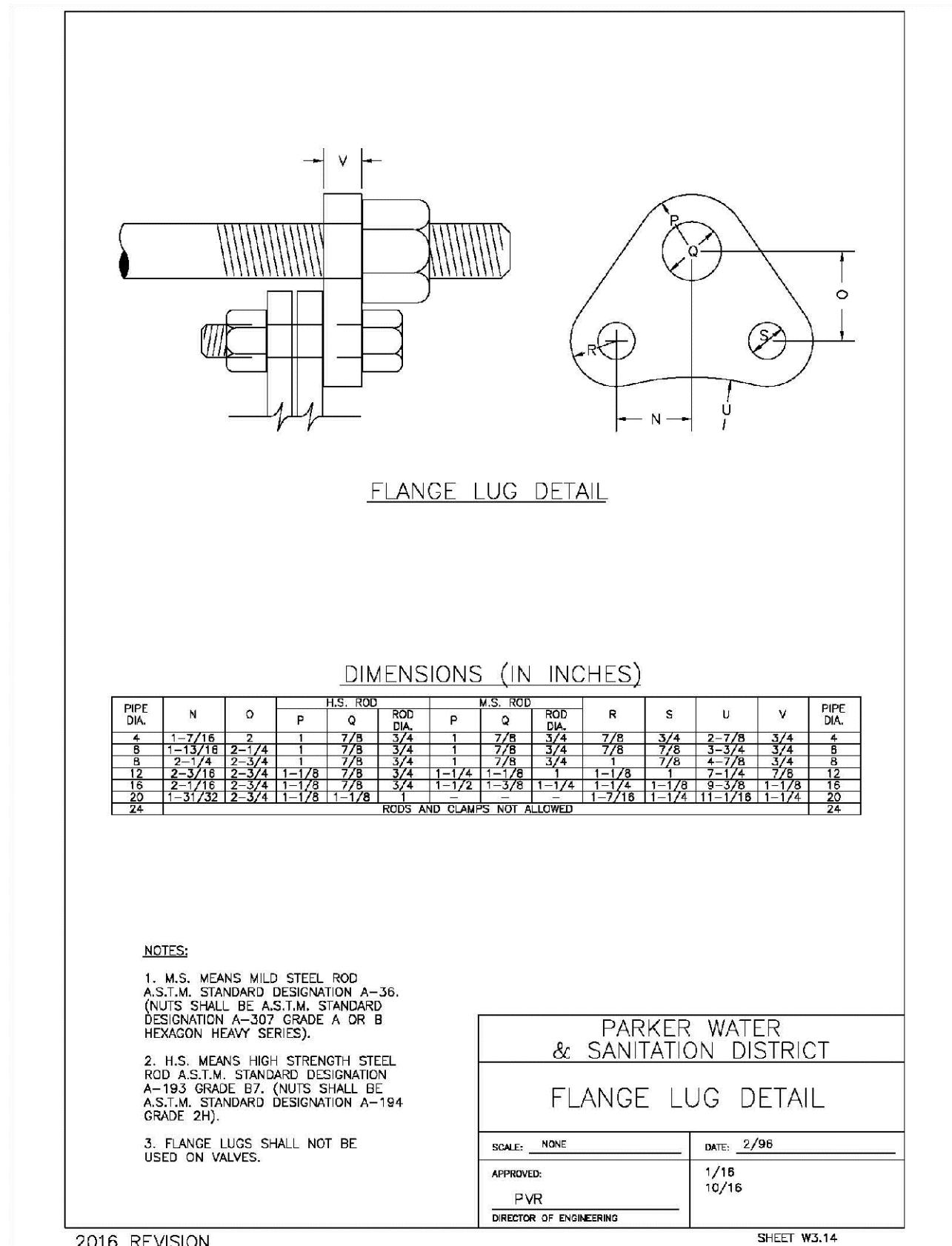
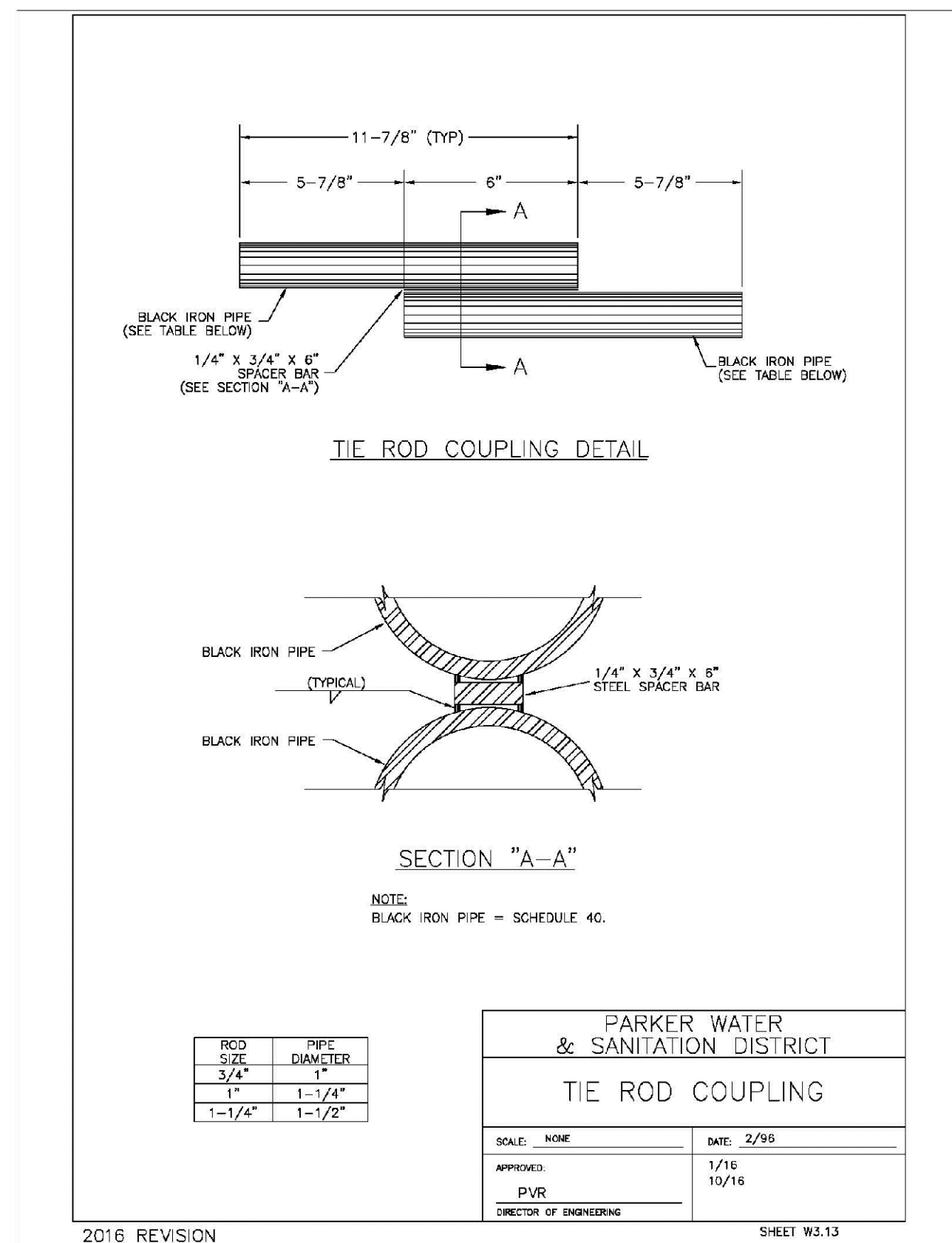
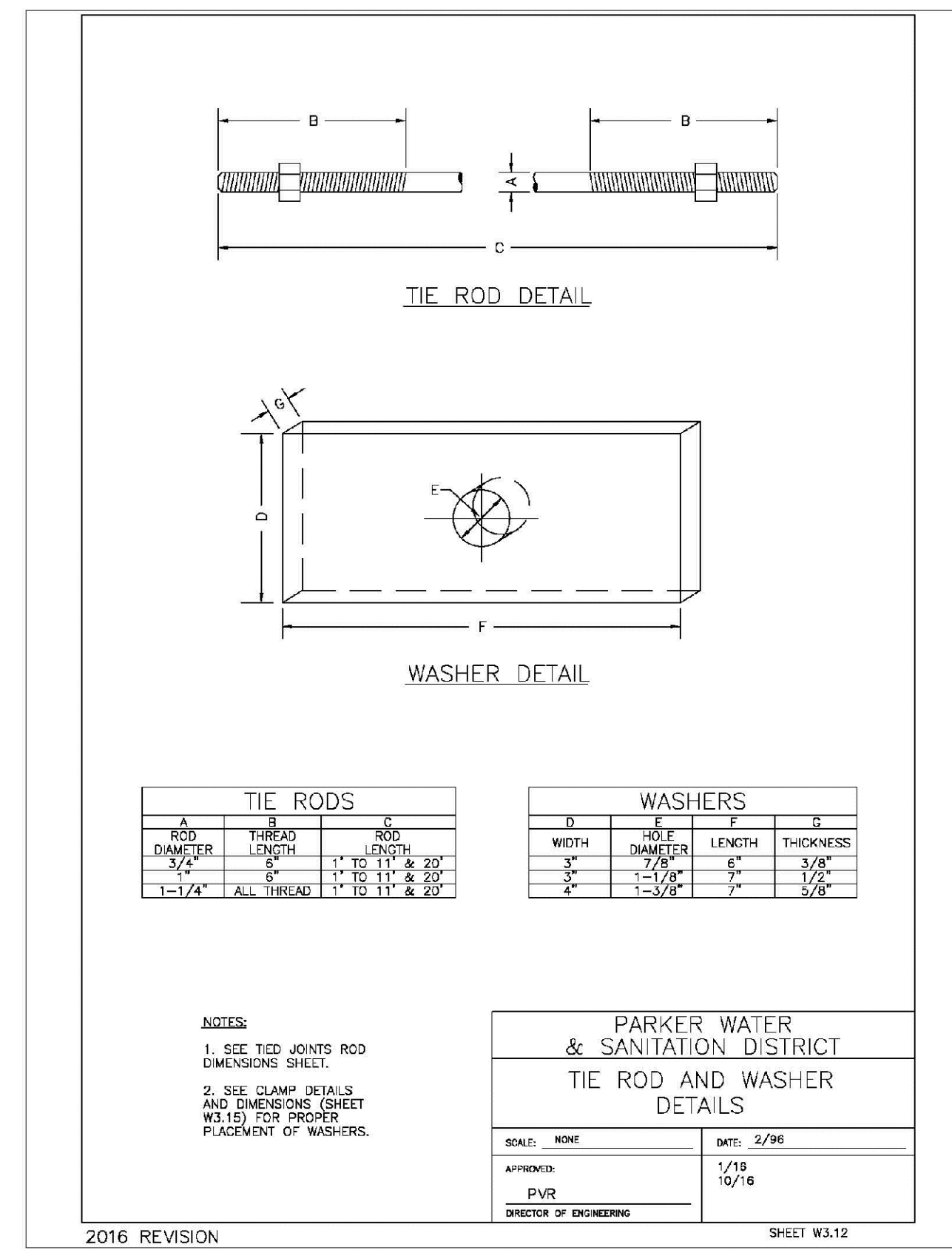
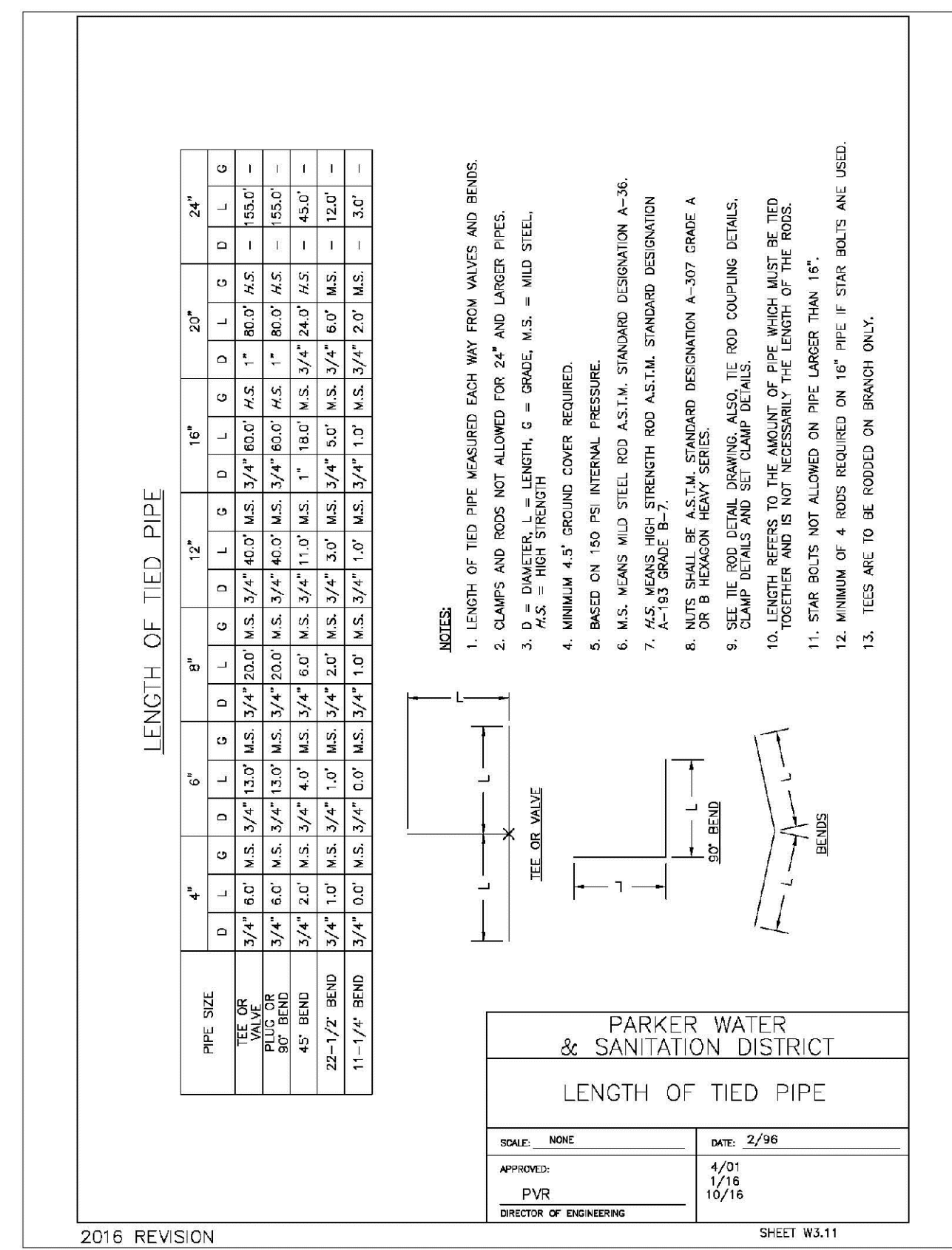
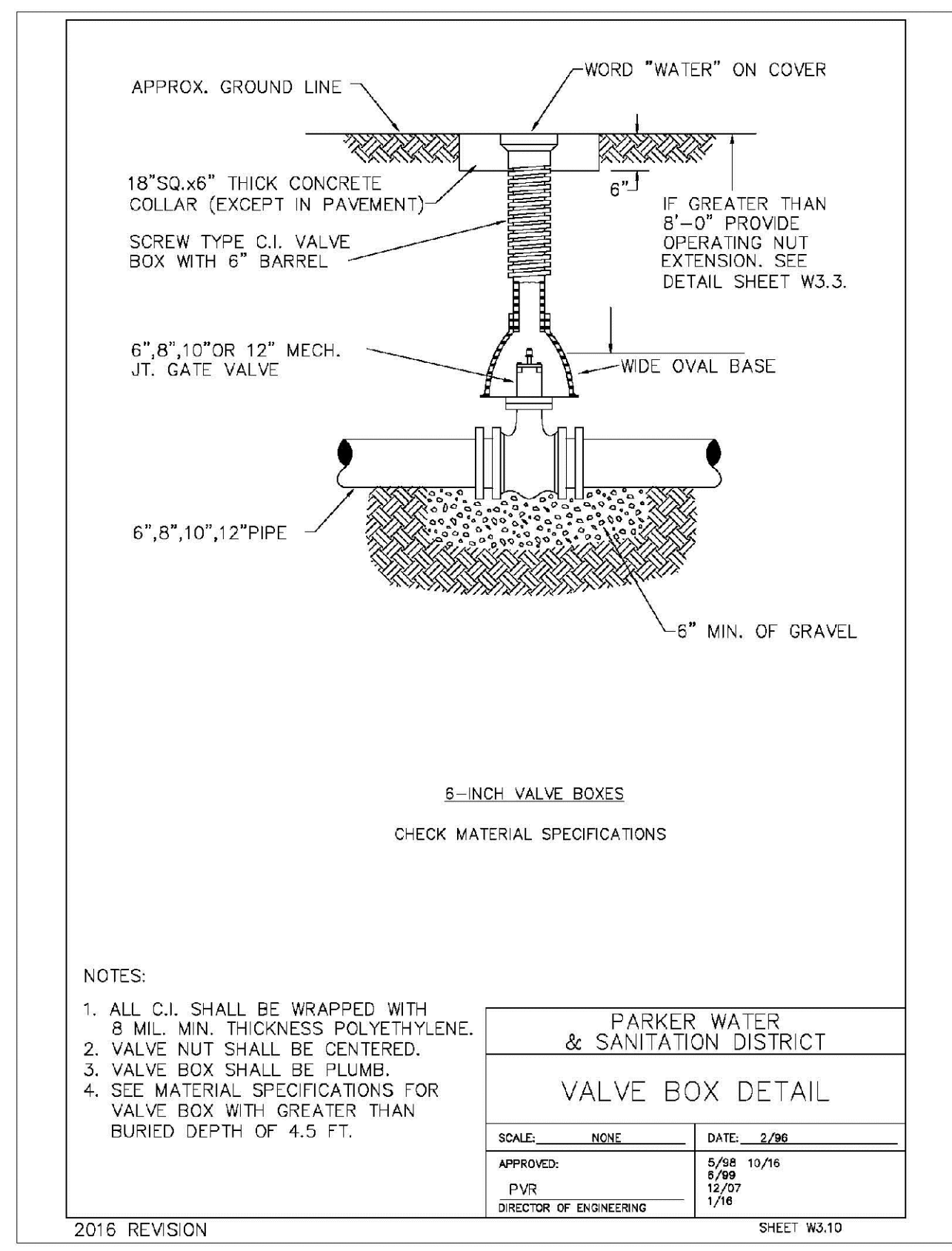
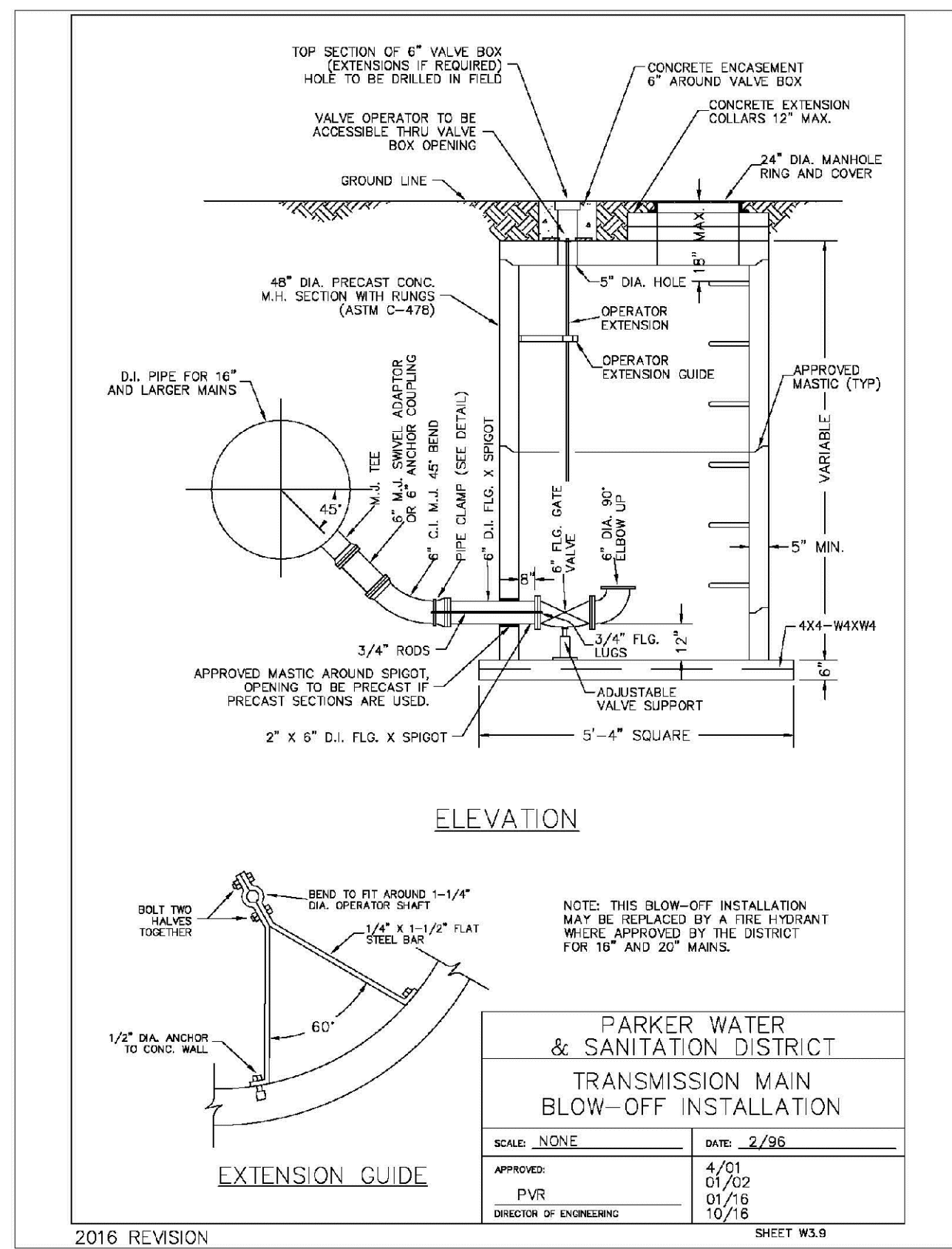
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**TRAILS AT CROWFOOT**  
FILING 6 CONSTRUCTION DRAWINGS  
WATER DETAILS

SCALE: AS SHOWN  
FILE NO: 8130283701  
DRAWN BY: JF  
CHECKED BY: JJ  
DATE: AUGUST 2017

SHEET NUMBER **13**





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TRAILS AT CROWFOOT  
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WATER DETAILS

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FILE NO: 8130283701

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DATE: AUGUST 2017

SHEET NUMBER: 15

No.	Revisions	Date	Init.	Appr.	Date







