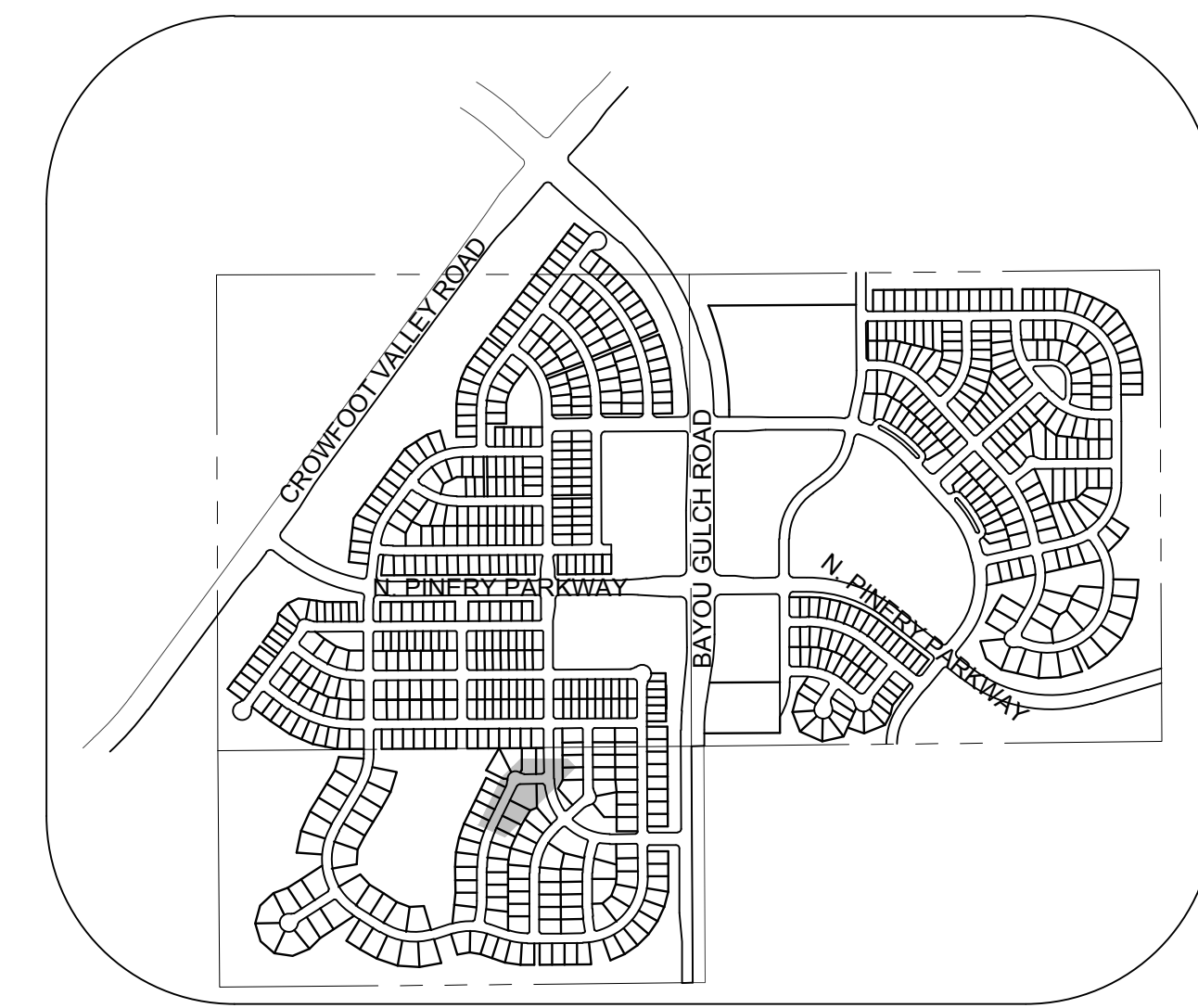
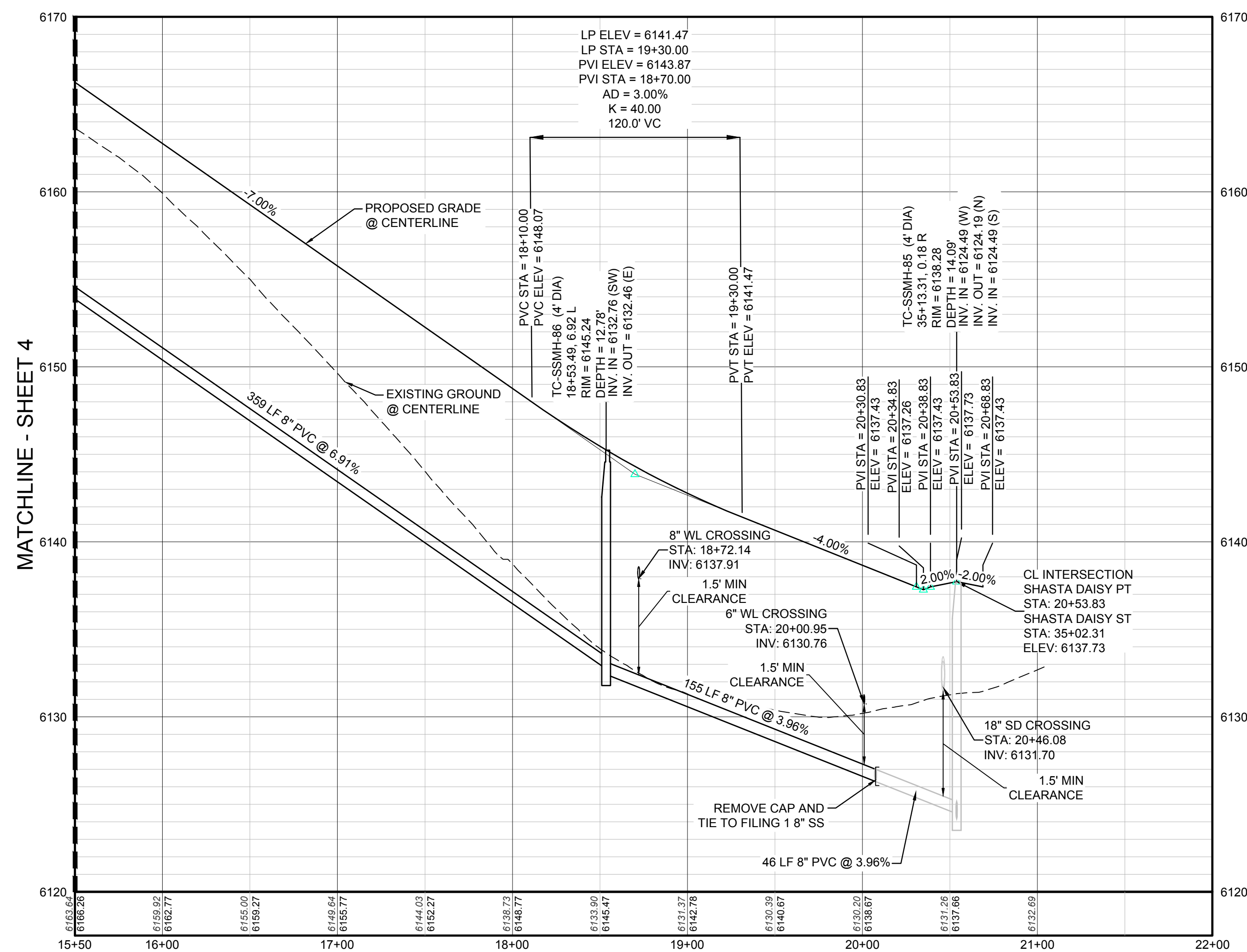


PLAN: SHASTA DAISY PT STA: 15+50.00 TO 22+00.00
HORIZONTAL SCALE: 1" = 50'



KEYMAP
N.T.S.
LEGEND

②	BLOCK NUMBER	△	PROPOSED RANGE POINT
Ⓐ	LOT TYPE	---	CENTERLINE
6	LOT NUMBER	---	RIGHT-OF-WAY
⊗	PROPOSED BUTTERFLY VALVE	---	PROPERTY LINE
⌋	PROPOSED CAP WITH END OF LINE BLOWOFF	---	EDGE OF PAVEMENT
⊗	PROPOSED REDUCER	→	PROPOSED DIRECTION OF FLOW
⊗	PROPOSED VALVE	1.0%	PROPOSED SLOPE & DIRECTION
⊗	PROPOSED FIRE HYDRANT	5615	EXISTING 5' CONTOUR
⊗	PROPOSED WL FITTING WITH THRUST BLOCK	5616	EXISTING 1' CONTOUR
⊗	PROPOSED FLARED END SECTION	5620	PROPOSED 5' CONTOUR
⊗	PROPOSED LOW POINT BLOW-OFF	5607	PROPOSED 1' CONTOUR
⊗	PROPOSED AIR VALVE	---	PROPOSED STORM DRAIN
⊗	FUTURE PHASE VALVE	---	PROPOSED SEWER LINE WITH MANHOLE
⊗	FUTURE FIRE HYDRANT	---	PROPOSED SEWER LATERAL
⊗	PROPOSED LIGHT POLE	---	PROPOSED WATER LINE
⊗	PROPOSED SIDEWALK	---	PROPOSED WATER LATERAL W/ METER
⊗	PROPOSED SIDEWALK RAMP	---	SECTION LINE
10.00	EXISTING ELEVATION	---	FILING BOUNDARY
10.00	PROPOSED DESIGN ELEVATION	---	EXISTING FIBER OPTIC LINE
⊗	PROPOSED STORM DRAIN INLET	---	EXISTING OVERHEAD POWER
⊗	PROPOSED STORM DRAIN MANHOLE	---	EXISTING TELEPHONE LINE



PROFILE: SHASTA DAISY PT STA: 15+50.00 TO 22+00.00
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
AV	AIR VAC RELEASE VALVE	N.T.S.	NOT TO SCALE
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CRR	CURB RETURN RADIUS	ROBC	REINFORCED CONCRETE BOX CULVERT
ELEVATION	ELEVATION	RCP	REINFORCED CONCRETE PIPE
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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

N:\PROJECTS\SSR\CHAD\ENGINEERING\SSR\SSR SET\CD\SP\PARKER WATER AND SANITATION\SANITARY PLAN AND PROFILE\7 SHASTA DAISY TERRACE SANITARY DWG. CODYA. 3/26/2018.4:32 PM

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UTILITY NOTIFICATION
CENTER OF COLORADO

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

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

PREPARED UNDER THE SUPERVISION OF

BRIAN P. WILSON
COLORADO P.E. 0050067

APPROVED
Feb 20 2020
PARKER WATER AND
SANITATION DISTRICT

10339 E. Dry Creek Rd., Suite 6410, Englewood, CO 80110
Tel: (720) 482-9526 Fax: (720) 482-9546

CVL CONSULTANTS

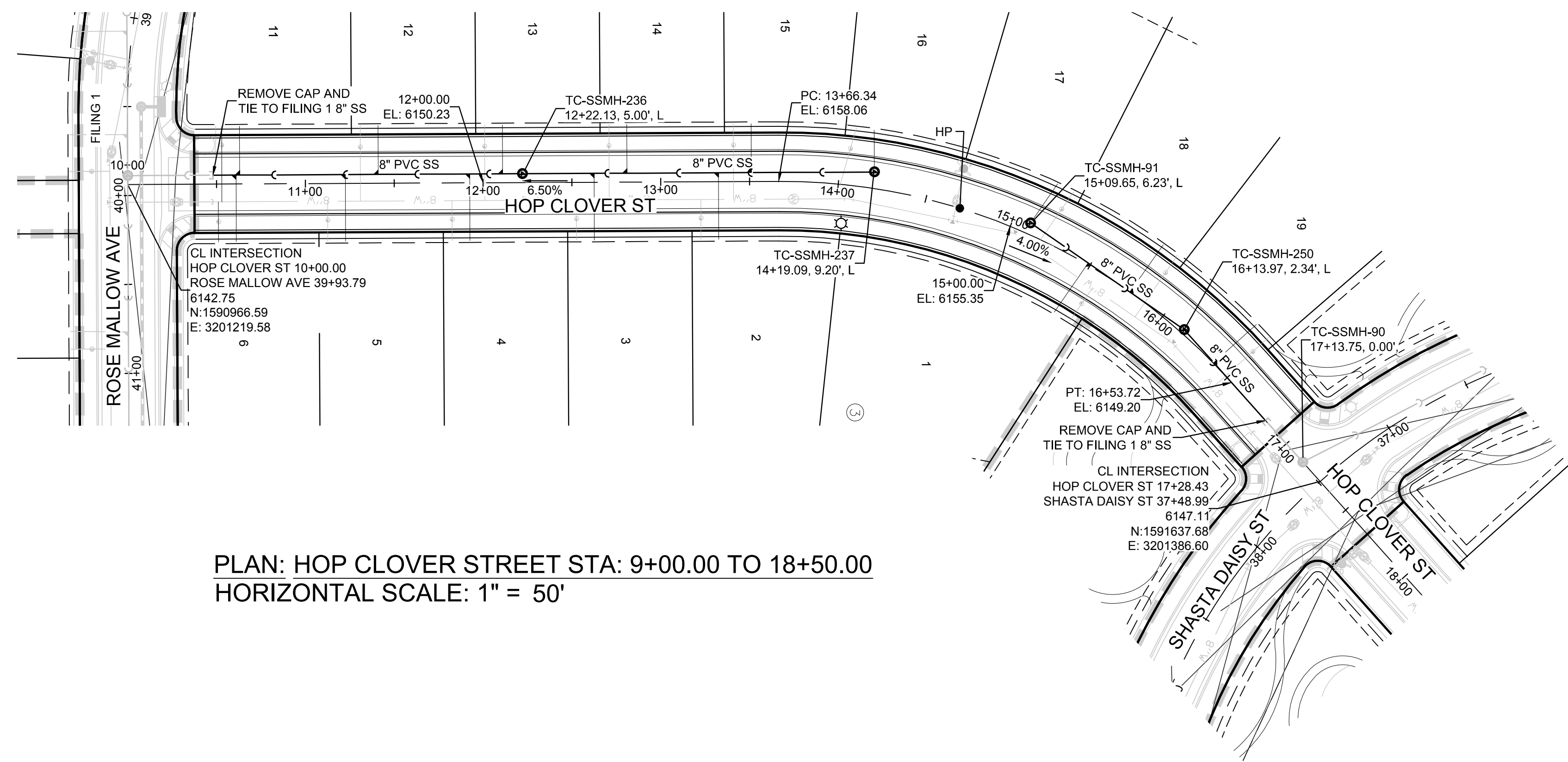
HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 7 CONSTRUCTION DRAWINGS
SANITARY SEWER PLAN AND PROFILE
SHASTA DAISY POINT

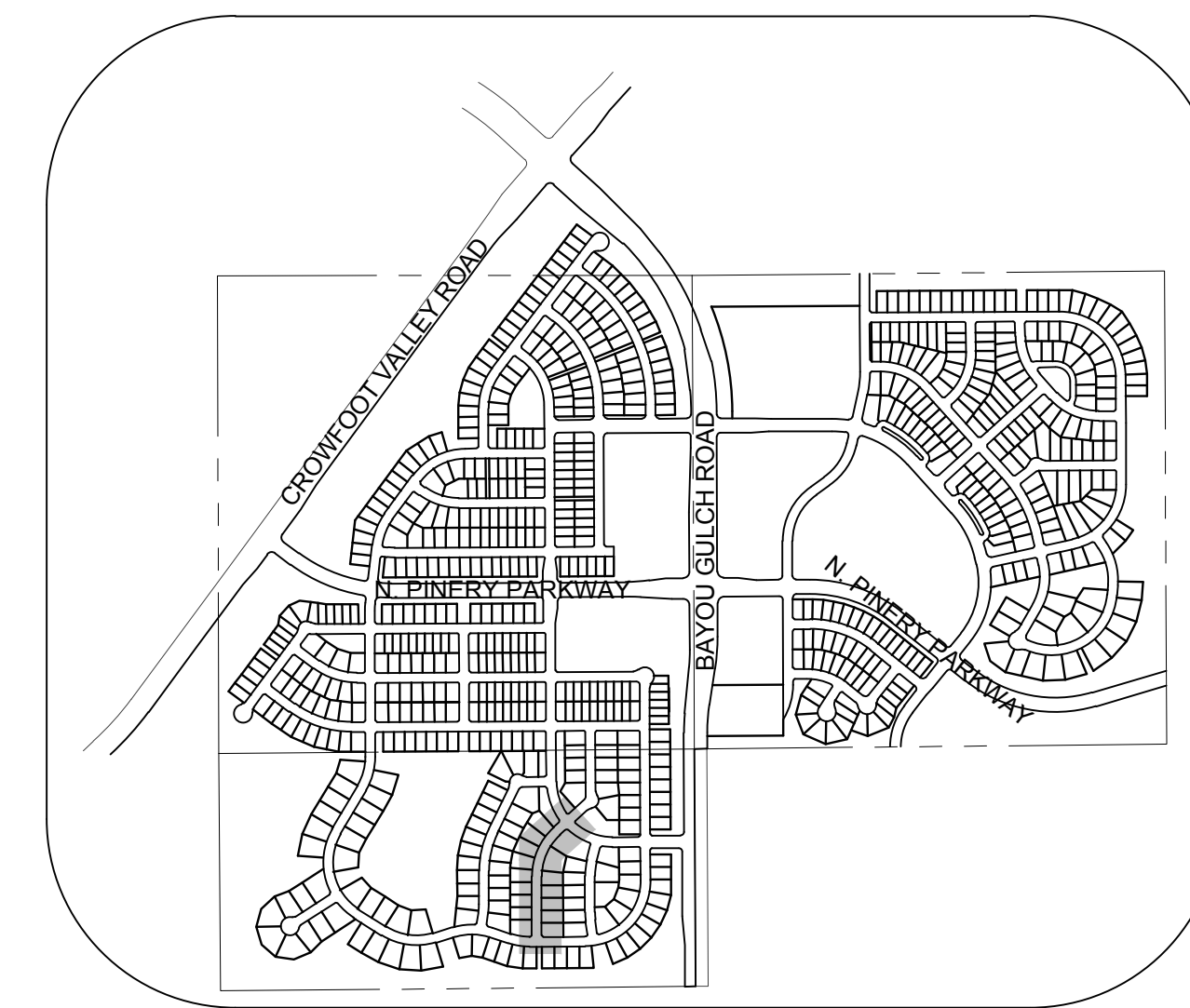
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DATE: AUGUST 2017
FILE NO: 8130283701

SHEET NUMBER 5

No.	Revisions	Date	Appr.	Date

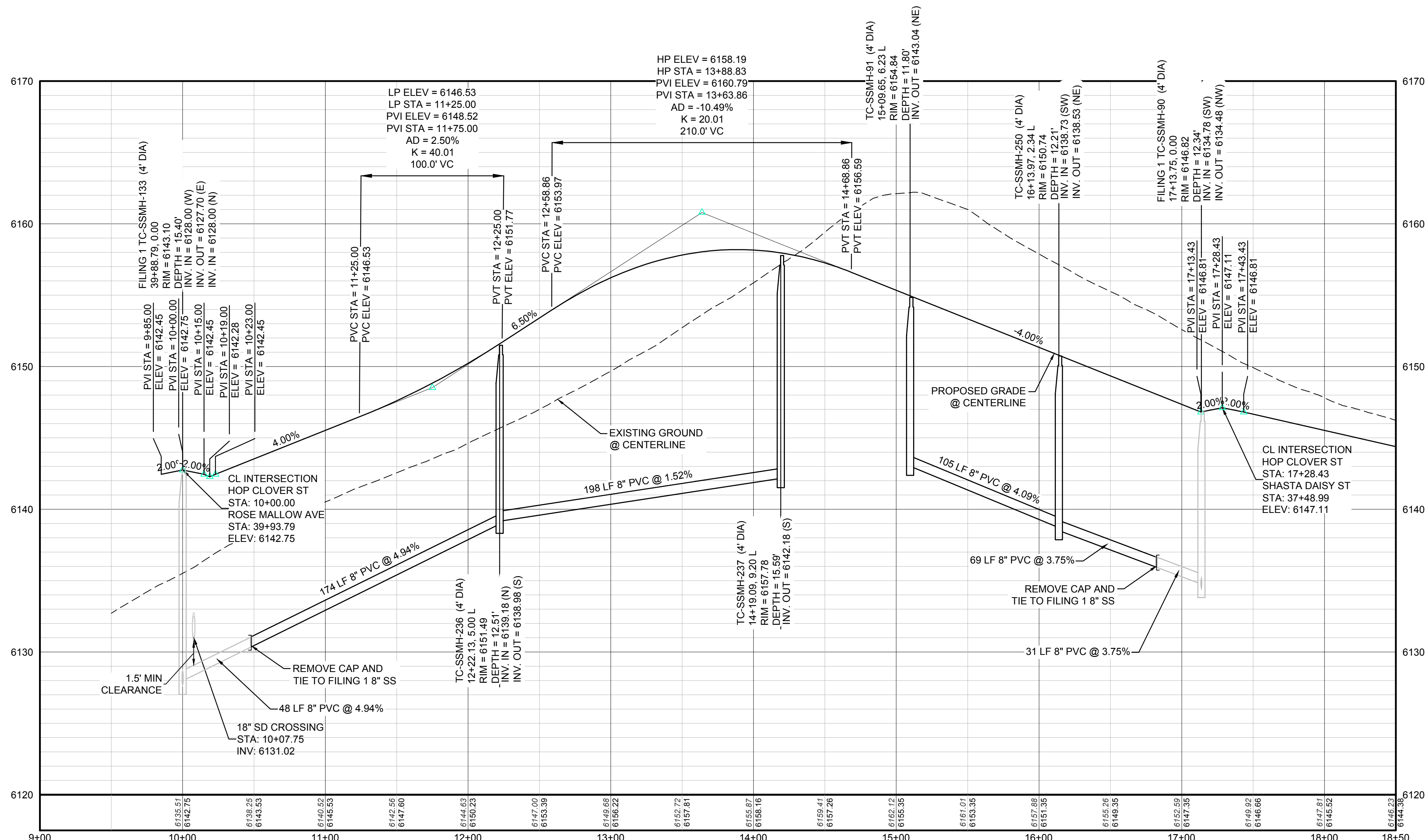


PLAN: HOP CLOVER STREET STA: 9+00.00 TO 18+50.00
HORIZONTAL SCALE: 1" = 50'



KEYMAP
N.T.S.
LEGEND

⊙	BLOCK NUMBER	△	PROPOSED RANGE POINT
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6	LOT NUMBER	---	RIGHT-OF-WAY
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⌋	PROPOSED CAP WITH END OF LINE BLOWOFF	---	EDGE OF PAVEMENT
⊗	PROPOSED REDUCER	→	PROPOSED DIRECTION OF FLOW
⊕	PROPOSED VALVE	1.0%	PROPOSED SLOPE & DIRECTION
⚡	PROPOSED FIRE HYDRANT	---	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
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⊕	FUTURE PHASE VALVE	---	PROPOSED SEWER LINE WITH MANHOLE
⊕	FUTURE FIRE HYDRANT	---	PROPOSED SEWER LATERAL
⊕	PROPOSED LIGHT POLE	---	PROPOSED WATER LINE
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10.00	EXISTING ELEVATION	---	FILING BOUNDARY
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PROFILE: HOP CLOVER ST STA: 9+00.00 TO 18+50.00
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N:\PROJECTS\SSR\BENCHM\ENGINEERING\SSR\BENCHM\WATER AND SANITATION\SANITARY PLAN AND PROFILE\TRAILS AT CROWFOOT PARKER WATER AND SANITATION DISTRICT SANITARY PLAN AND PROFILE.DWG, ANDREW.P. 3/20/20 4:28 PM

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BENCHMARK
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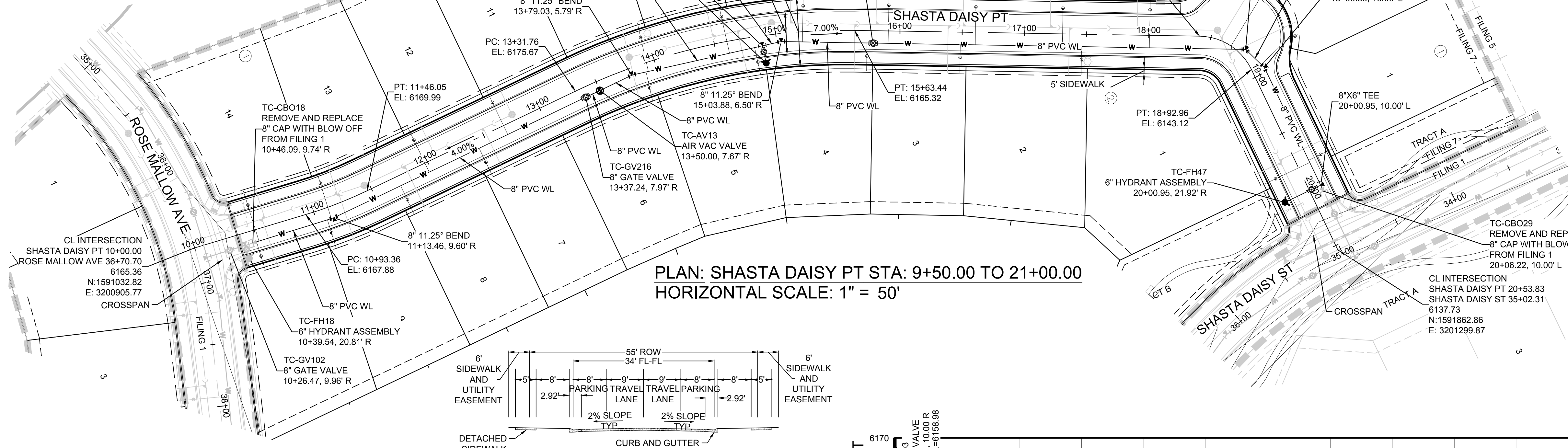
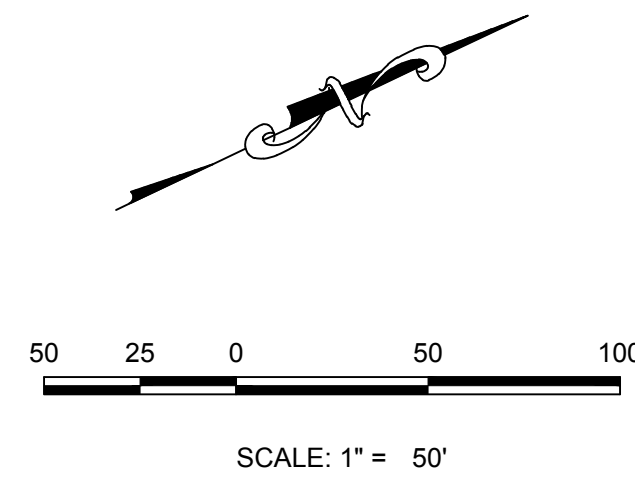
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PREPARED UNDER THE SUPERVISION OF

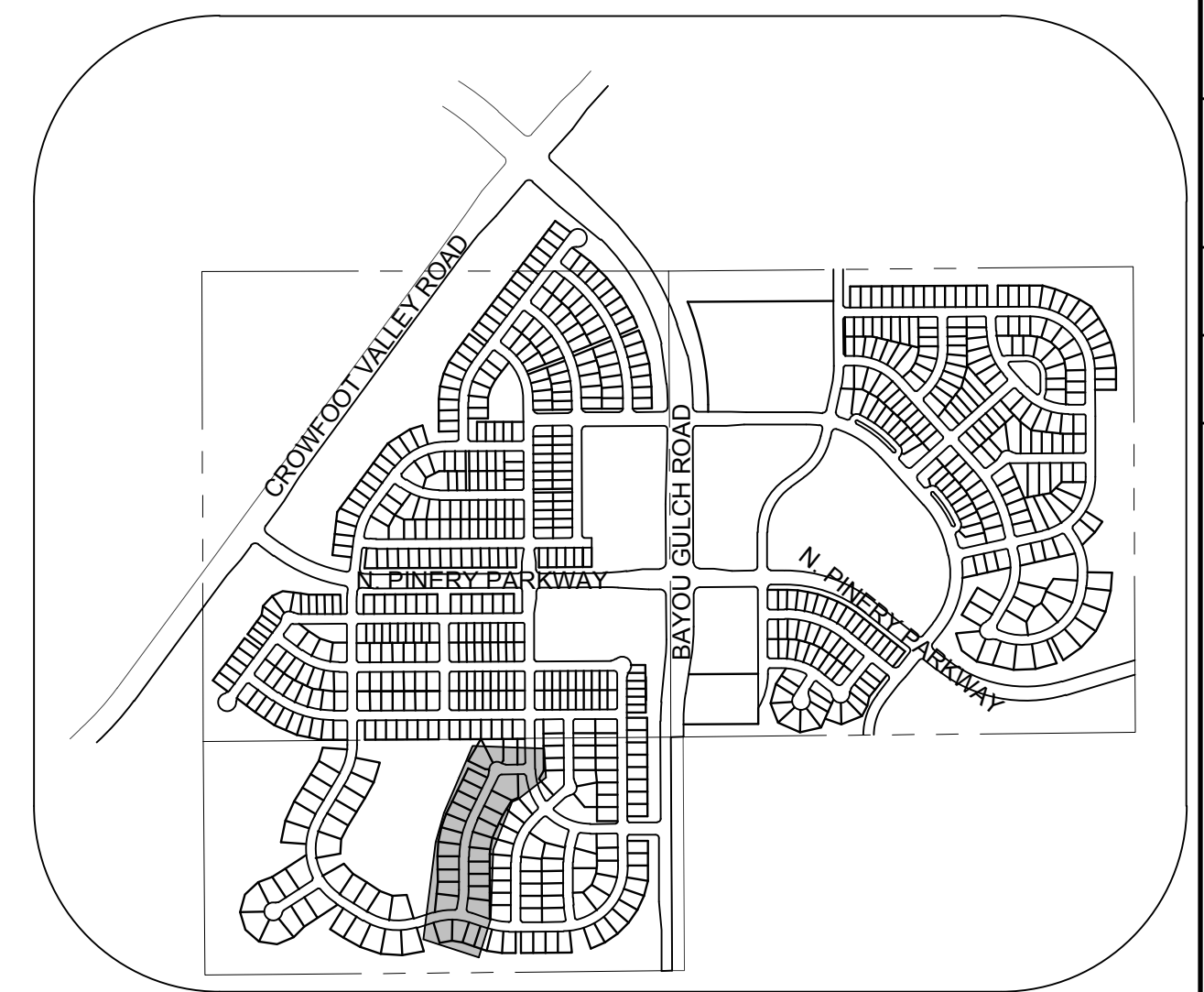
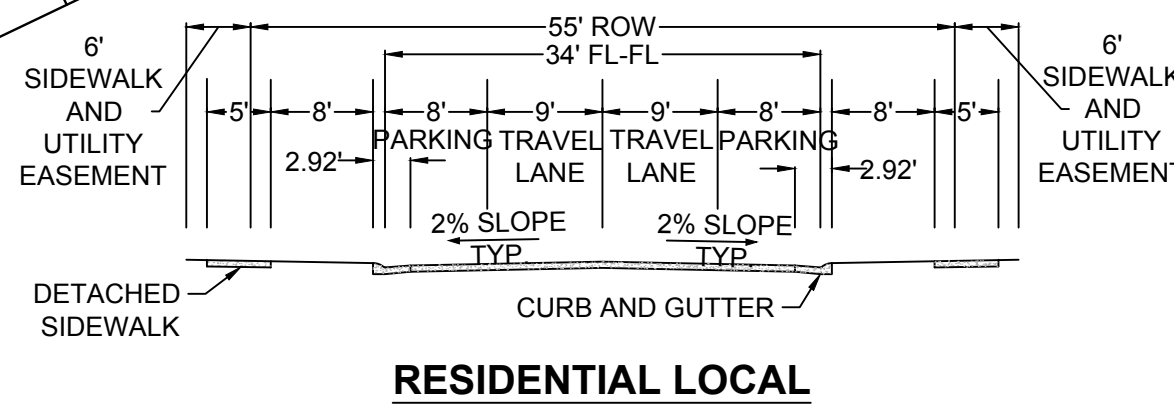
BRIAN P. WILSON
COLORADO P.E. 0050067

APPROVED
Feb 20 2020
PARKER WATER AND SANITATION DISTRICT

SHEET NUMBER	DRAWN BY: KJD	SCALE:	AS SHOWN	DATE:	AUGUST 2017
		CHECKED BY: JU	FILE NO:	8130283701	
6	DATE:	TRAILS AT CROWFOOT FILING 7 CONSTRUCTION DRAWINGS SANITARY SEWER PLAN AND PROFILE HOP CLOVER STREET		Revisions	Date
		HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112		No.	Appr.
10333 E. Dry Creek Rd. Suite 6410 Englewood, CO 80150 Tel: (720) 482-9526 Fax: (720) 482-9548		CVL CONSULTANTS		Date	Date



PLAN: SHASTA DAISY PT STA: 9+50.00 TO 21+00.00
HORIZONTAL SCALE: 1" = 50'

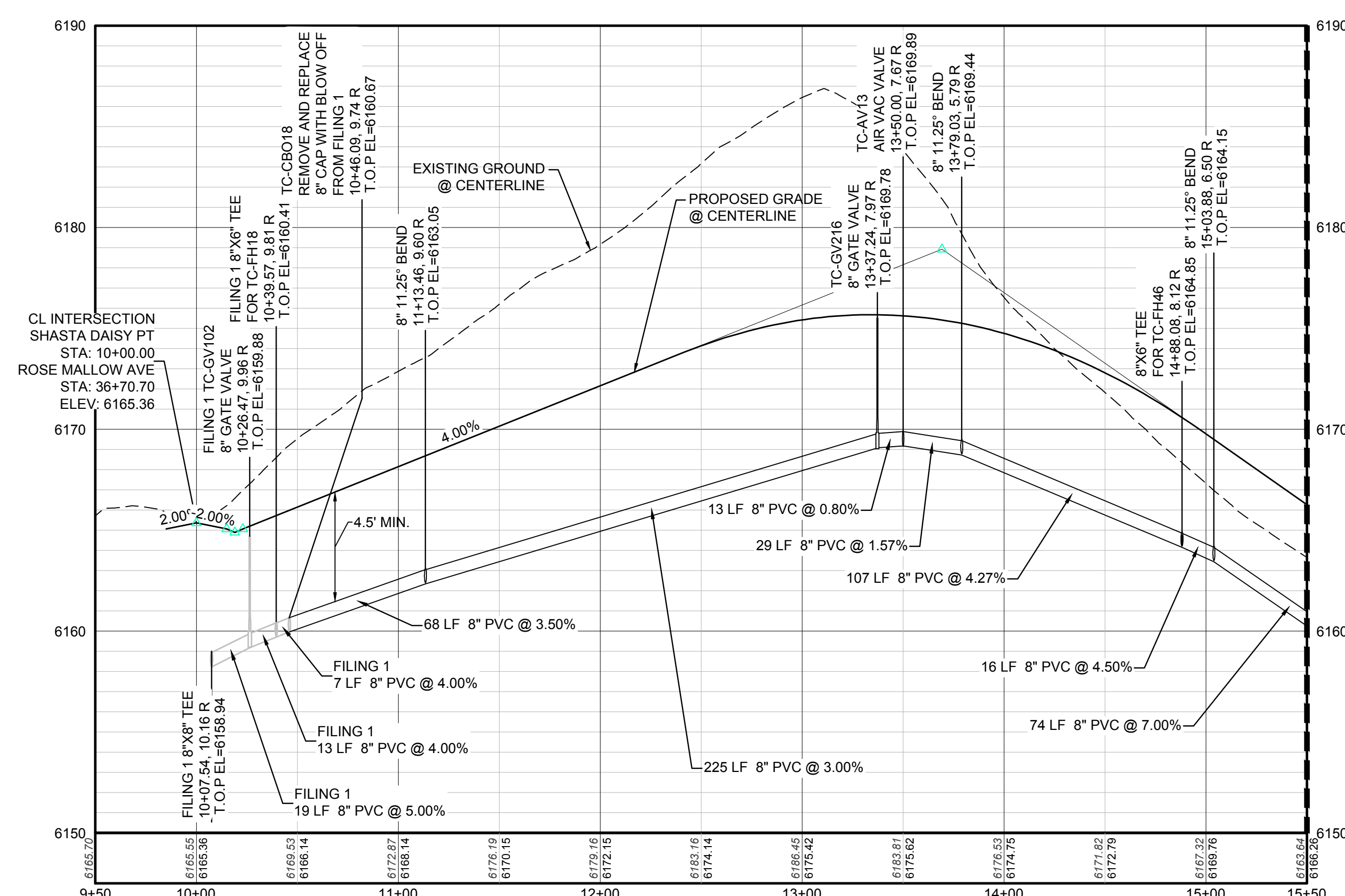


KEYMAP
N.T.S.
LEGEND

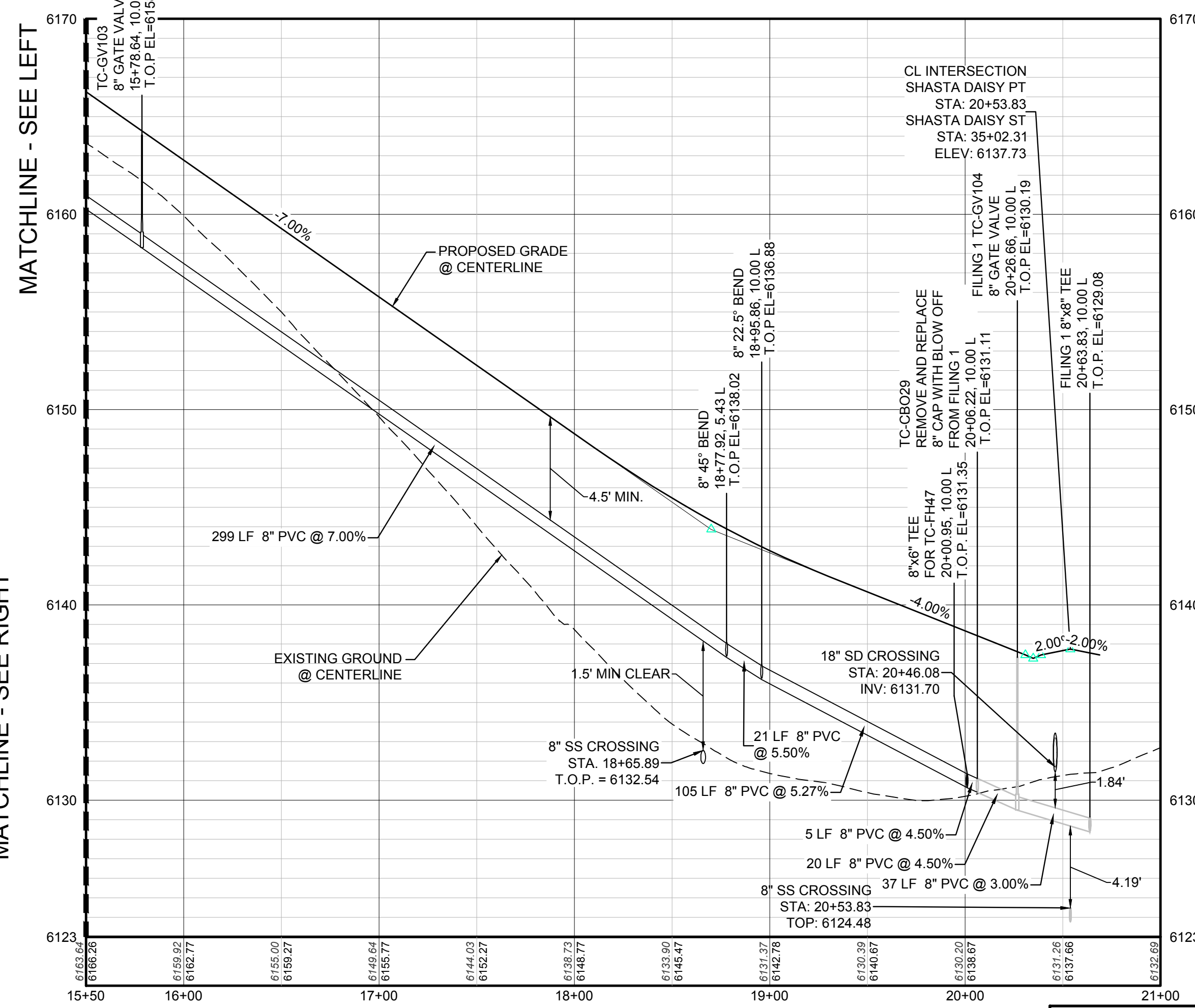
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⊗	PROPOSED REDUCER	→	PROPOSED DIRECTION OF FLOW
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10.00	EXISTING ELEVATION	---	FILING BOUNDARY
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PROFILE: SHASTA DAISY PT STA: 9+50.00 TO 15+50.00
HORIZONTAL: 1" = 50'
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PREPARED UNDER THE SUPERVISION OF

 BRIAN P. WILSON
 COLORADO P.E. 0050067

APPROVED
Feb 20 2020
SANITARY WATER AND SANITATION DISTRICT

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NO.	REVISIONS	DATE	INIT.	APPR.	DATE

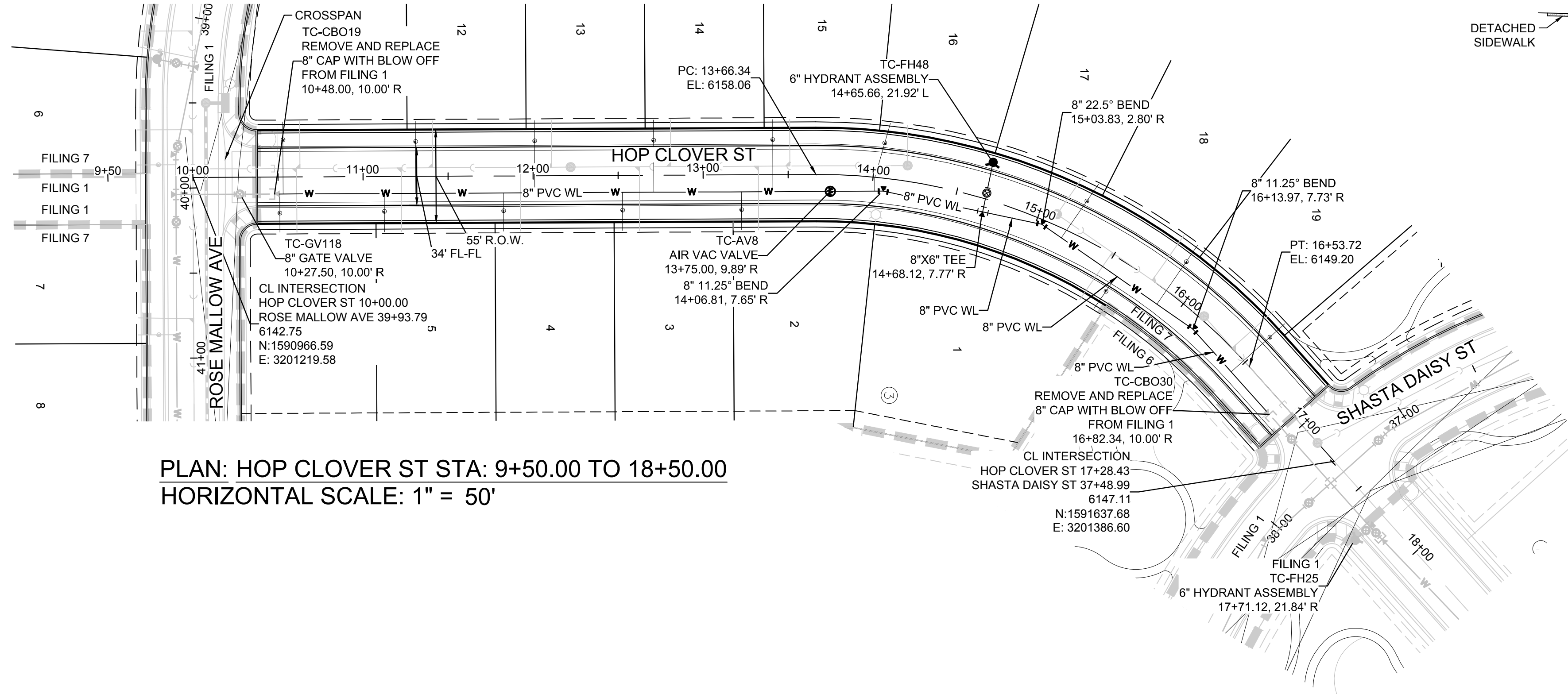
10333 E. Dry Creek Rd.
 Suite 6110
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 Tel: (720) 482-9526
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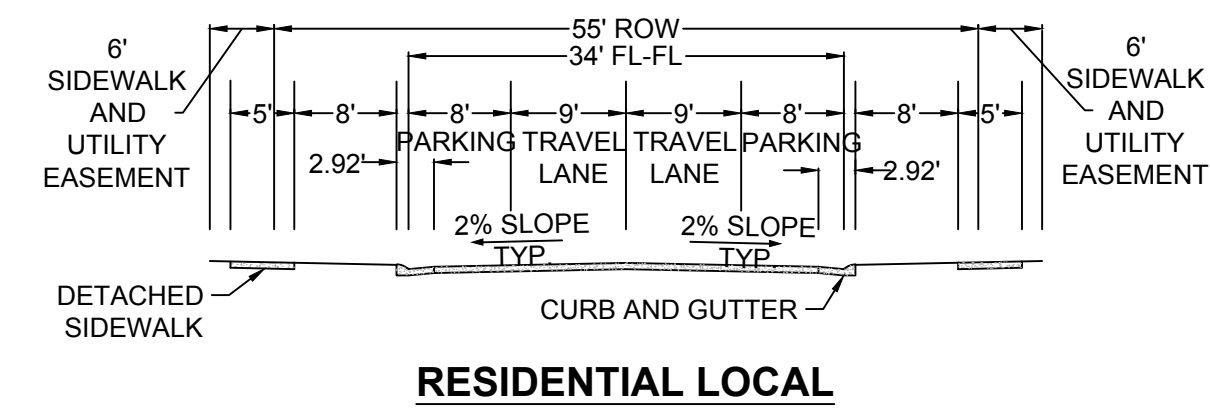
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 7353 South Alton Way
 CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 7 CONSTRUCTION DRAWINGS
 WATER PLAN & PROFILE
 SHASTA DAISY POINT

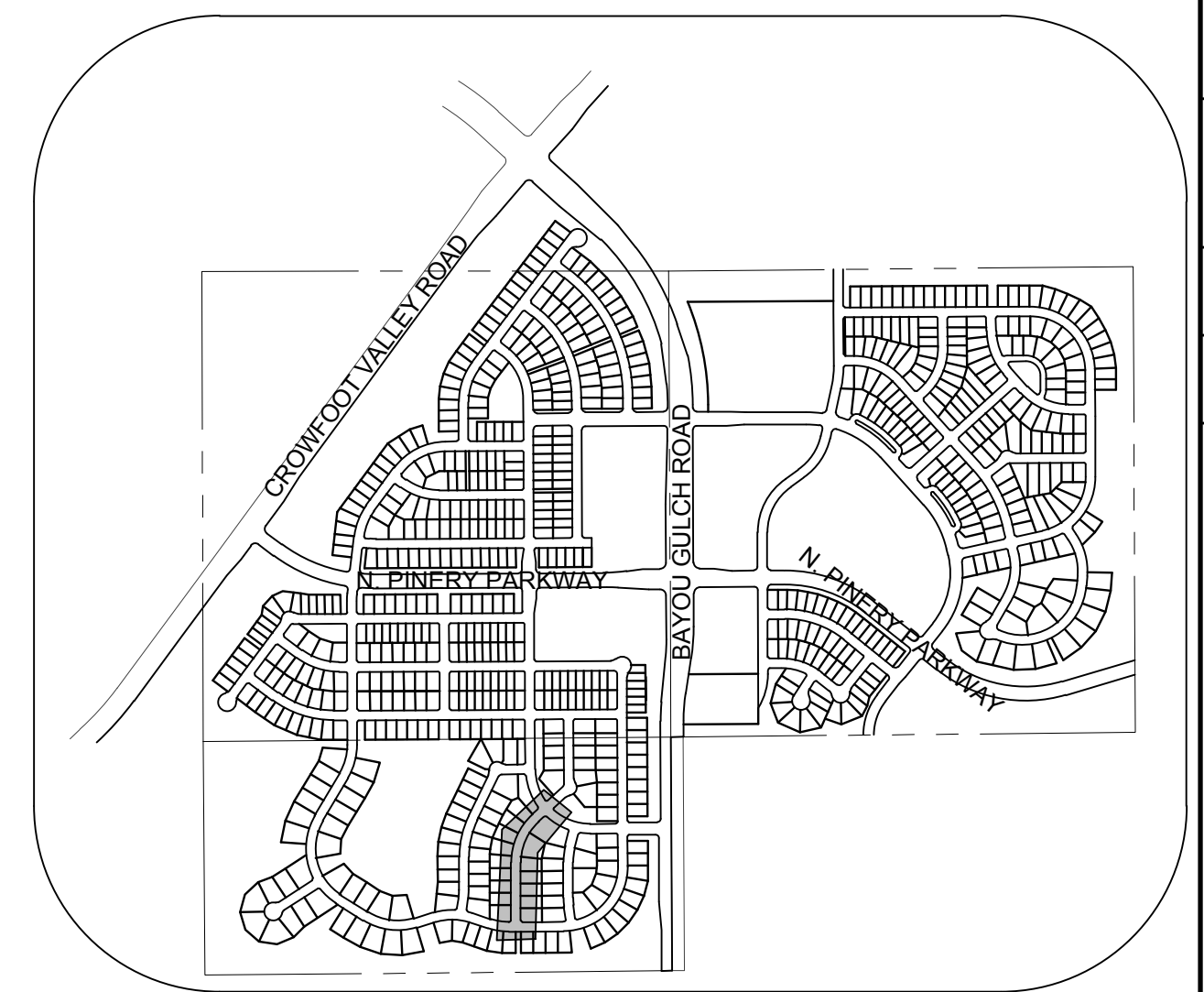
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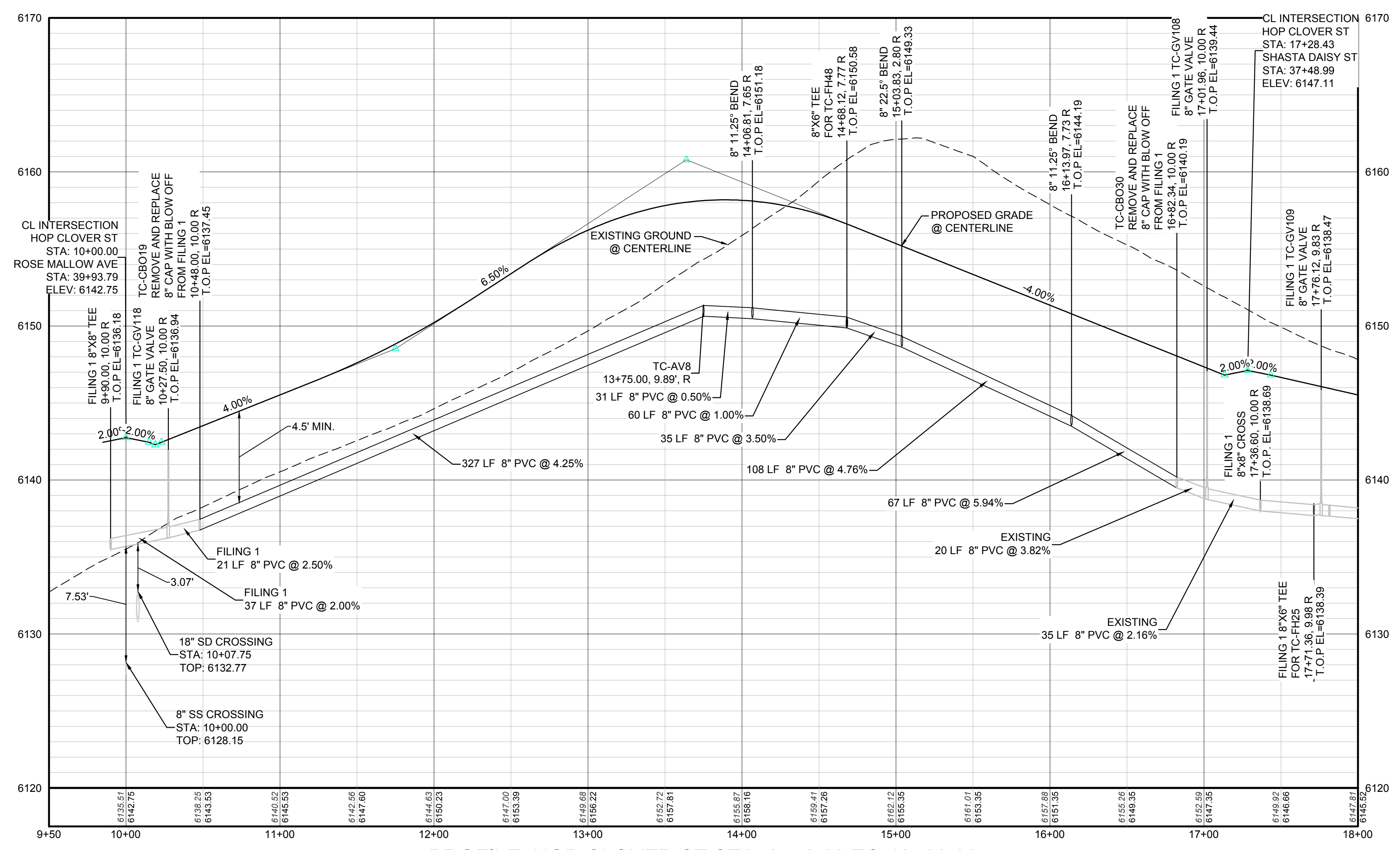
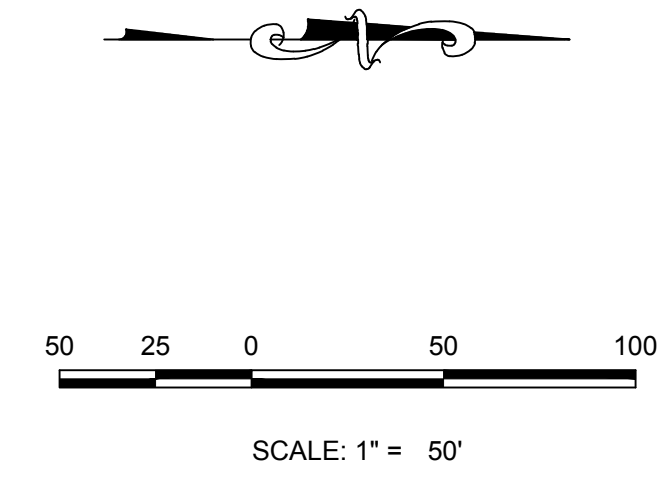
PLAN: HOP CLOVER ST STA: 9+50.00 TO 18+50.00
HORIZONTAL SCALE: 1" = 50'



RESIDENTIAL LOCAL



KEYMAP
N.T.S.



PROFILE: HOP CLOVER ST STA: 9+50.00 TO 18+00.00
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APPROVED
Feb 20 2020
PARKER WATER AND
SANITATION DISTRICT

SHEET NUMBER	DRAWN BY: RHR	SCALE: AS SHOWN	CHECKED BY: JJ	DATE: AUGUST 2017	FILE NO: 8130283701	Revisions	Date
							Appr.
8						Date	
						Appr.	

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
FILM 7 CONSTRUCTION DRAWINGS
WATER PLAN & PROFILE
HOP CLOVER STREET

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:

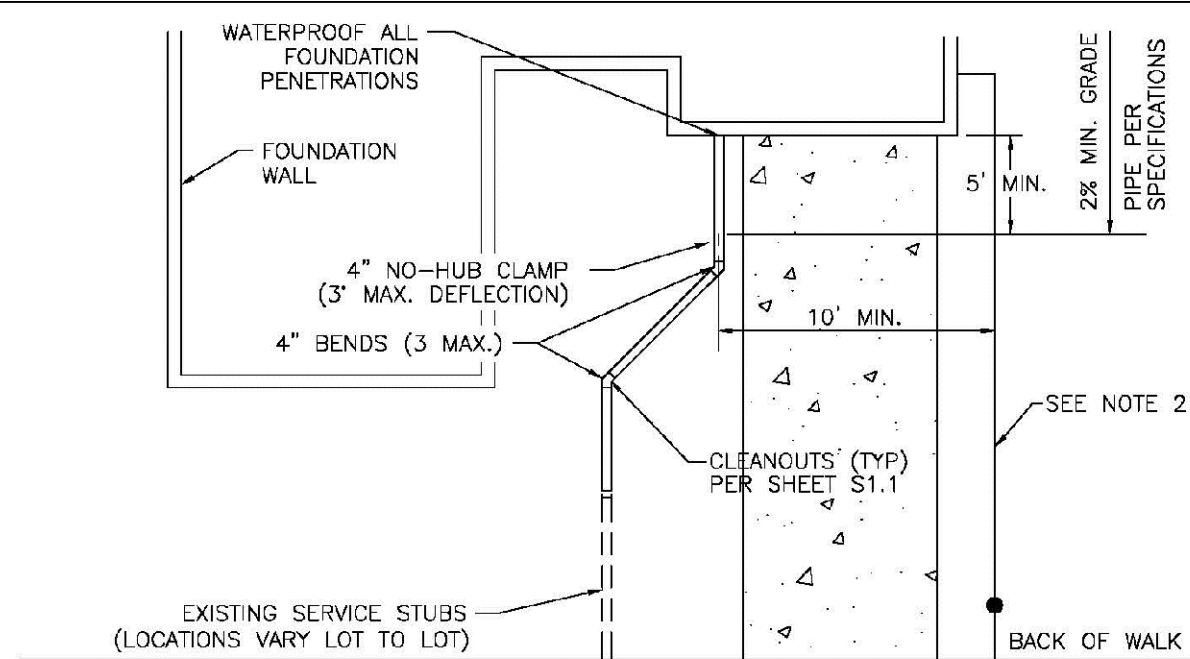
SEWER

1. ACCEPTABLE PIPE MATERIALS ARE TO BE SDR 35 PVC PIPE, ABS PIPE AND PVC SCHD 40 PIPE. APPROVED BEDDING IS TO BE SQUEEGEE.
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

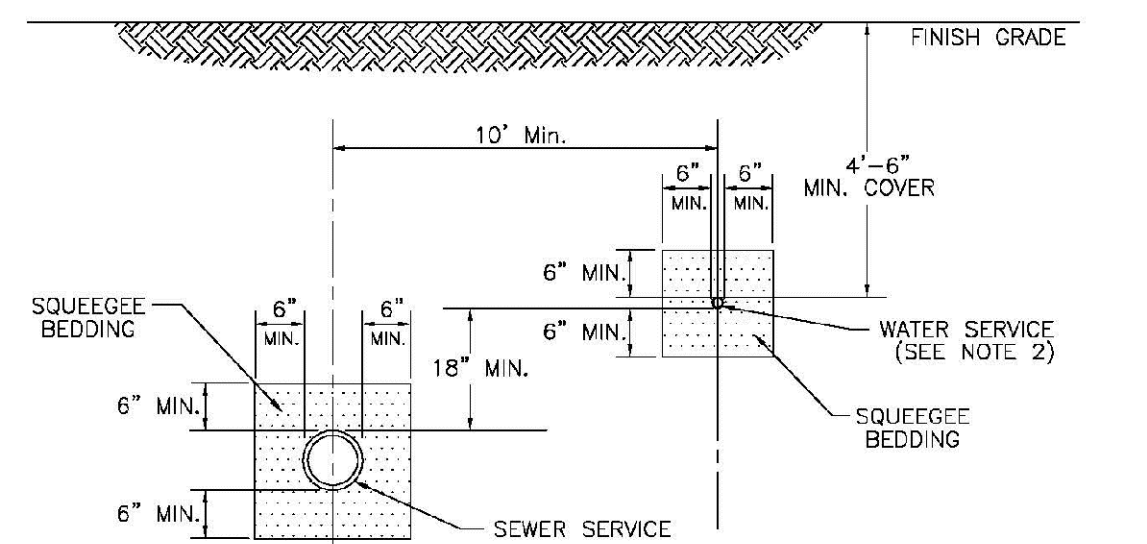
PARKER WATER & SANITATION DISTRICT
DISTRICT POLICIES & INSTALLATION NOTES FOR SEWER SERVICES

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

SHEET S1.1



TYPICAL SERVICES PLAN VIEW



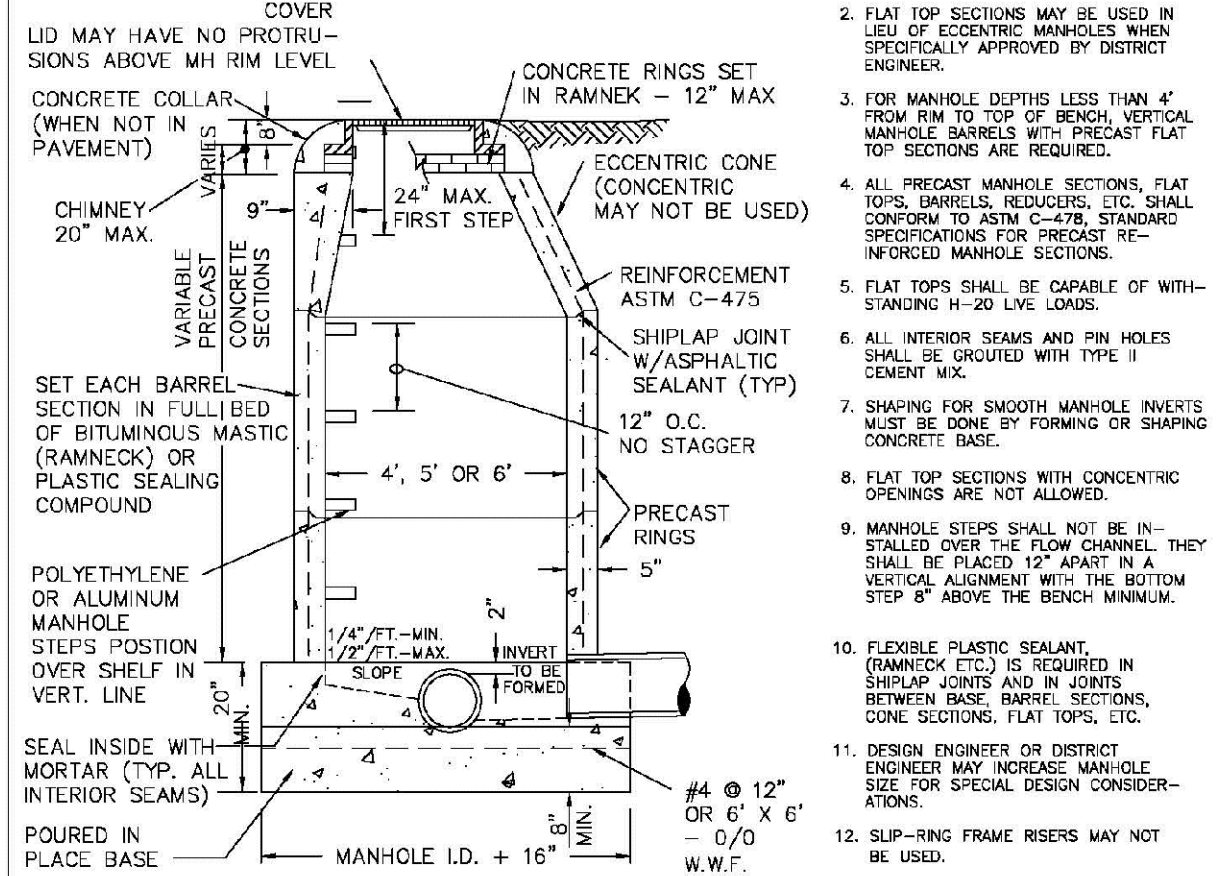
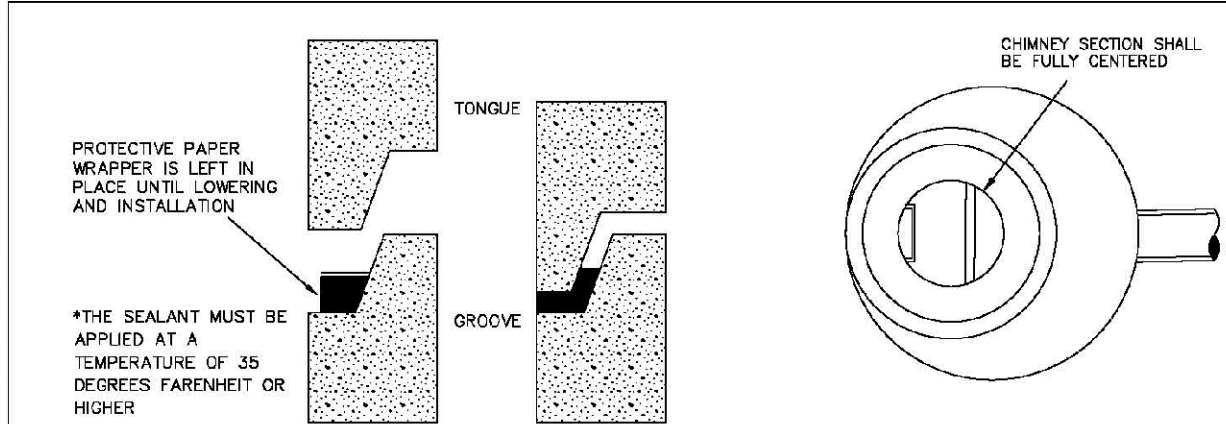
TYPICAL SERVICES SECTION

- NOTE:**
1. SEE SHEET S1.1 FOR DISTRICT POLICIES AND INSTALLATION NOTES.
 2. TYPICAL WATER SERVICES SHOWN ON SHEET W1.2 IN WATER DETAILS.

PARKER WATER & SANITATION DISTRICT
TYPICAL SEWER SERVICES

SCALE: NONE	DATE: 2/96
APPROVED: PVR	2/90 01/02
	01/16 10/18
DIRECTOR OF ENGINEERING	

SHEET S1.2

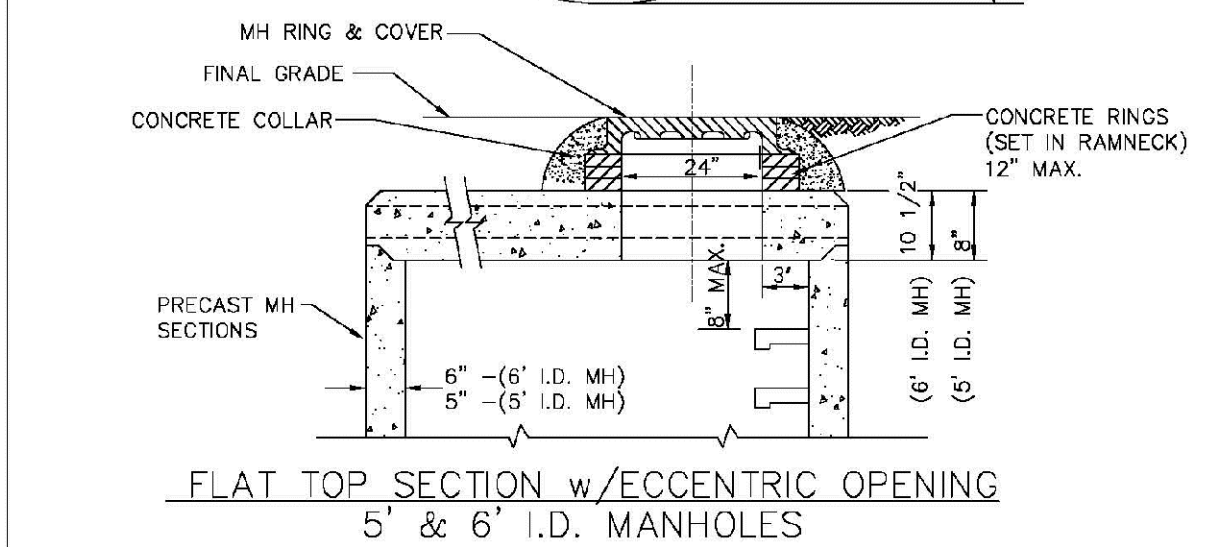
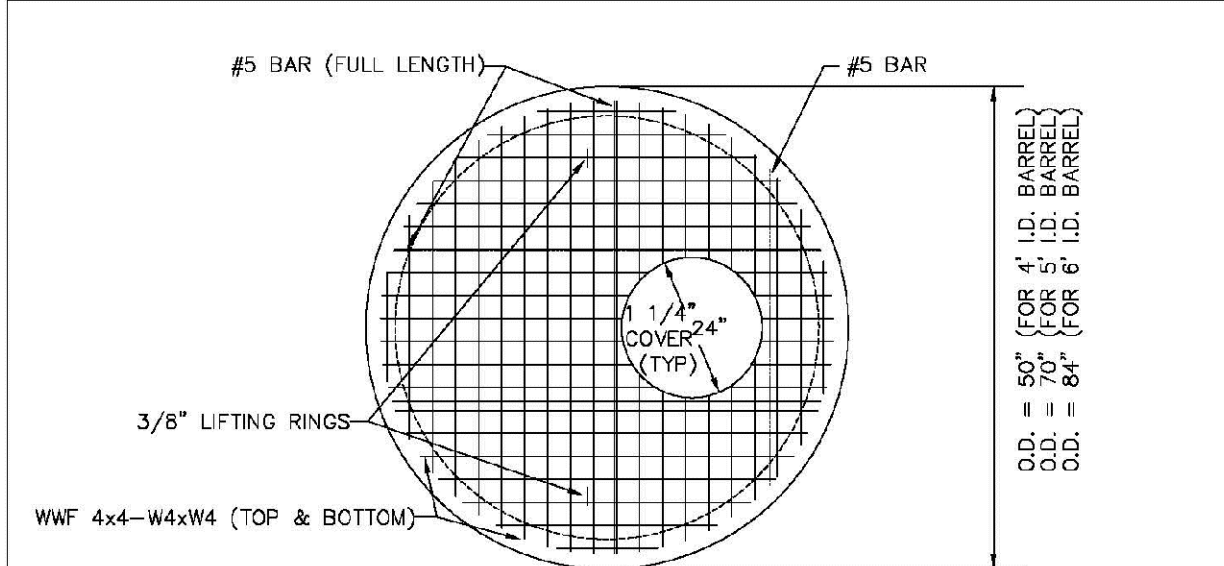


PIPE I.D.	MANHOLE I.D.
18" & SMALLER	4'-0"
21" TO 48"	5'-0"
54"	6'-0"
60" & LARGER	SPECIAL DESIGN

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	1/16

SHEET S3.1

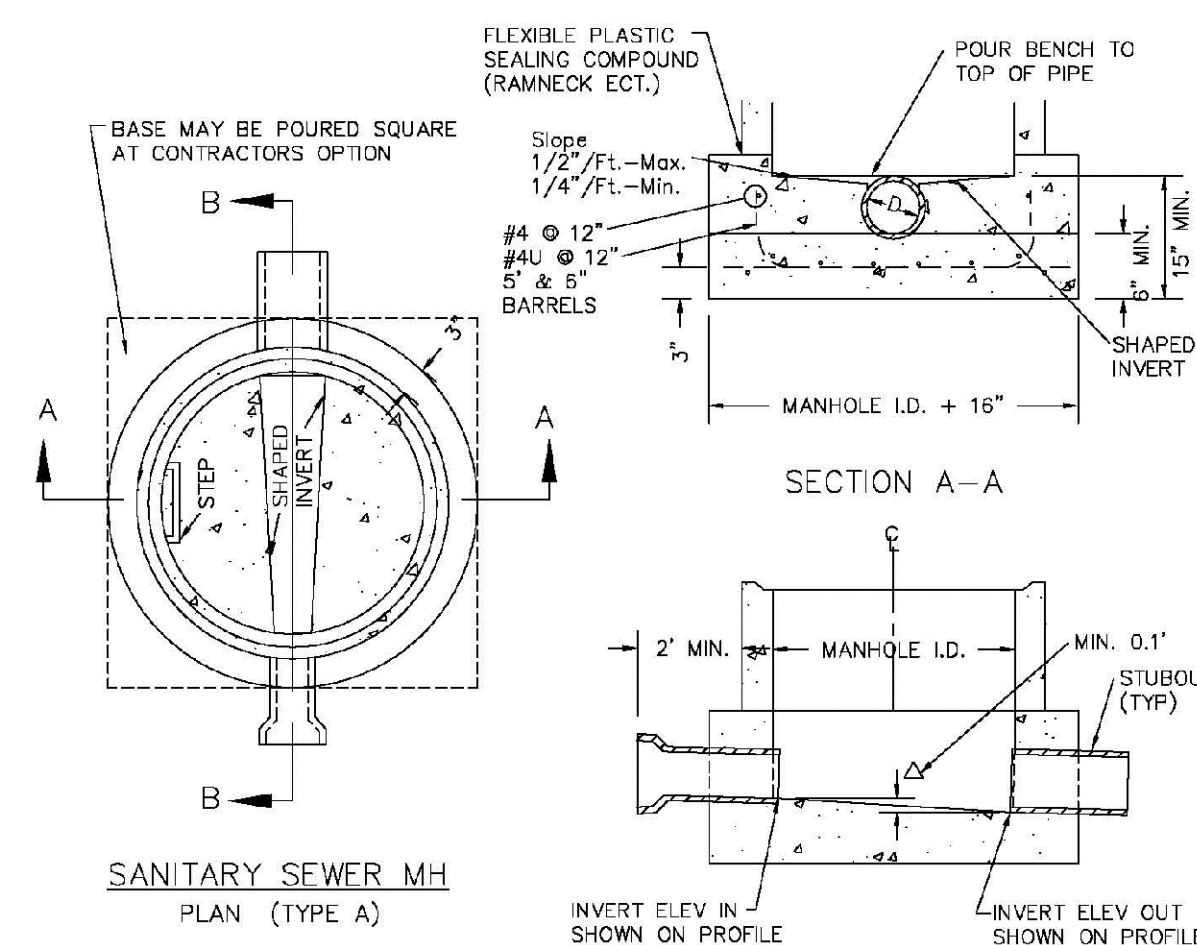


SECTION (NON-ADJUSTABLE RING & COVER TO BE CAST IN FLAT TOP)
ALTERNATE RING & COVER
(TO BE USED ONLY WHEN SPECIFICALLY AUTHORIZED.)

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

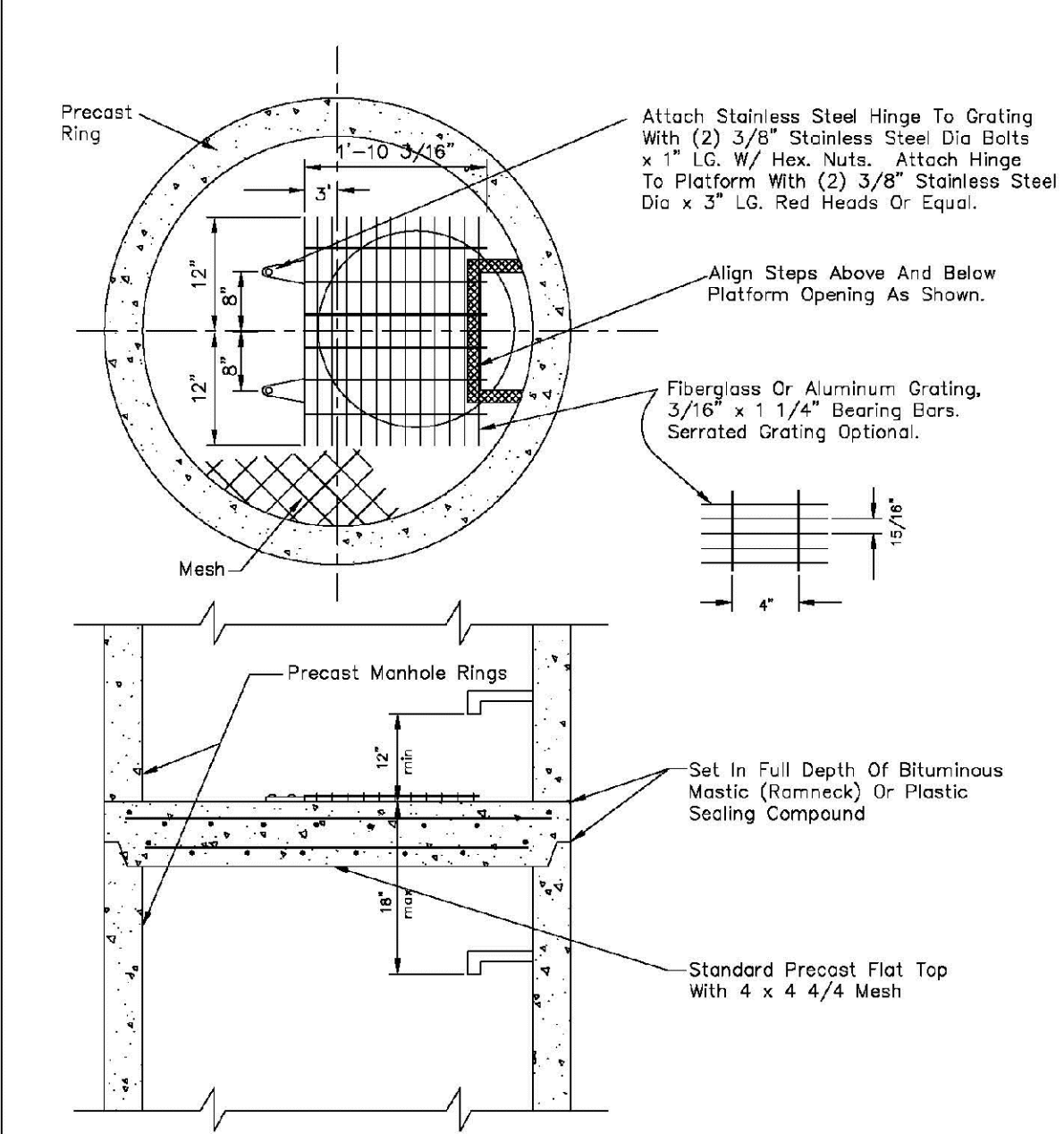


- NOTES:**
1. Manhole barrel min. thickness to be 5".
 2. Shaping for smooth manhole inverts may be done by forming or shaping with cement mortar (San. Sewer).
 3. The manhole steps shall conform to District Standards and Specifications.
 4. Precast sections to conform to A.S.T.M C-478.
 5. All dead-end manholes, that call out a stub out, shall be thru at 0.40% minimum slope.
 6. Stub outs shall extend 2'-3" minimum past manhole O.D. and be satisfactorily plugged.
 7. Reinforcing in base required for manhole.
 8. Slope of bench = 1/2" / FT. - Max. 1/4" / FT. - Min.
 9. Δ = Invert drop thru MH (If Δ > 18", outside drop MH required). Min. D.1" for all straight through MH and 0.2" for all angled MH.

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

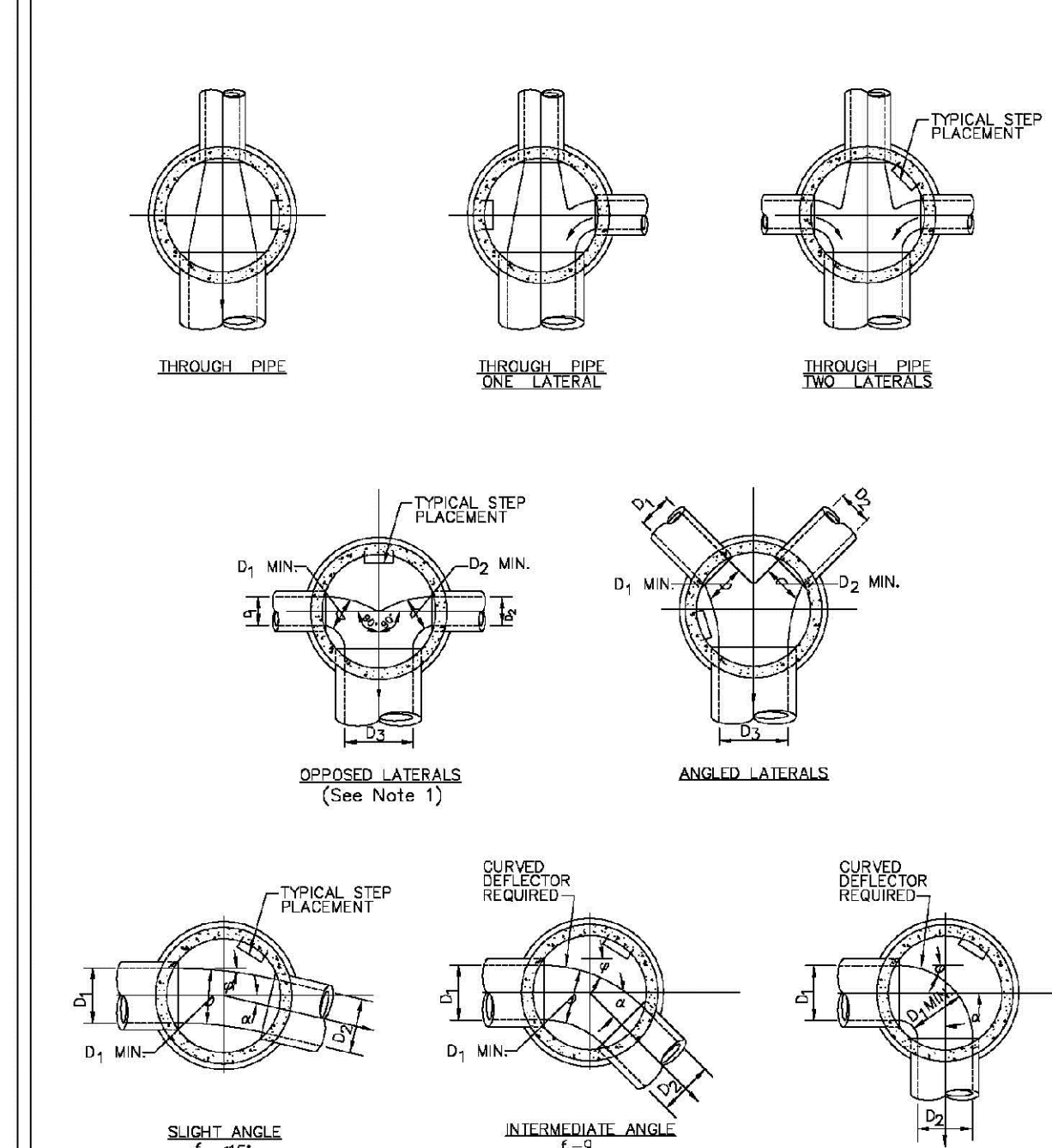


- NOTES:**
- 1.1 Maximum distance between platforms shall be 15' vertically.
 - 1.2 All hardware used inside a manhole shall be stainless steel.
 - 1.3 Manholes over 20' deep shall submit structural calculations on base and wall sizing.

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

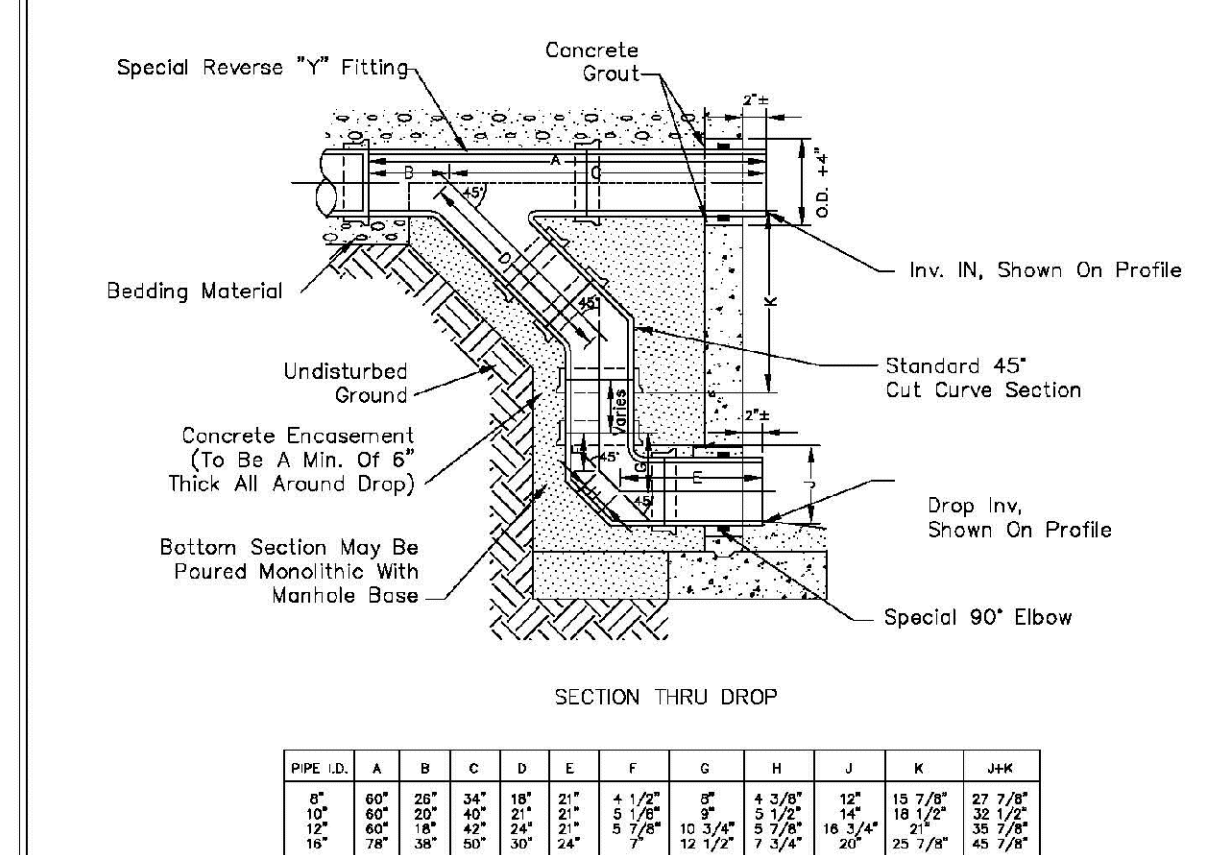


- NOTES:**
1. Manhole shall be coated using bituminous mastic (ramneck) or plastic sealing compound.

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

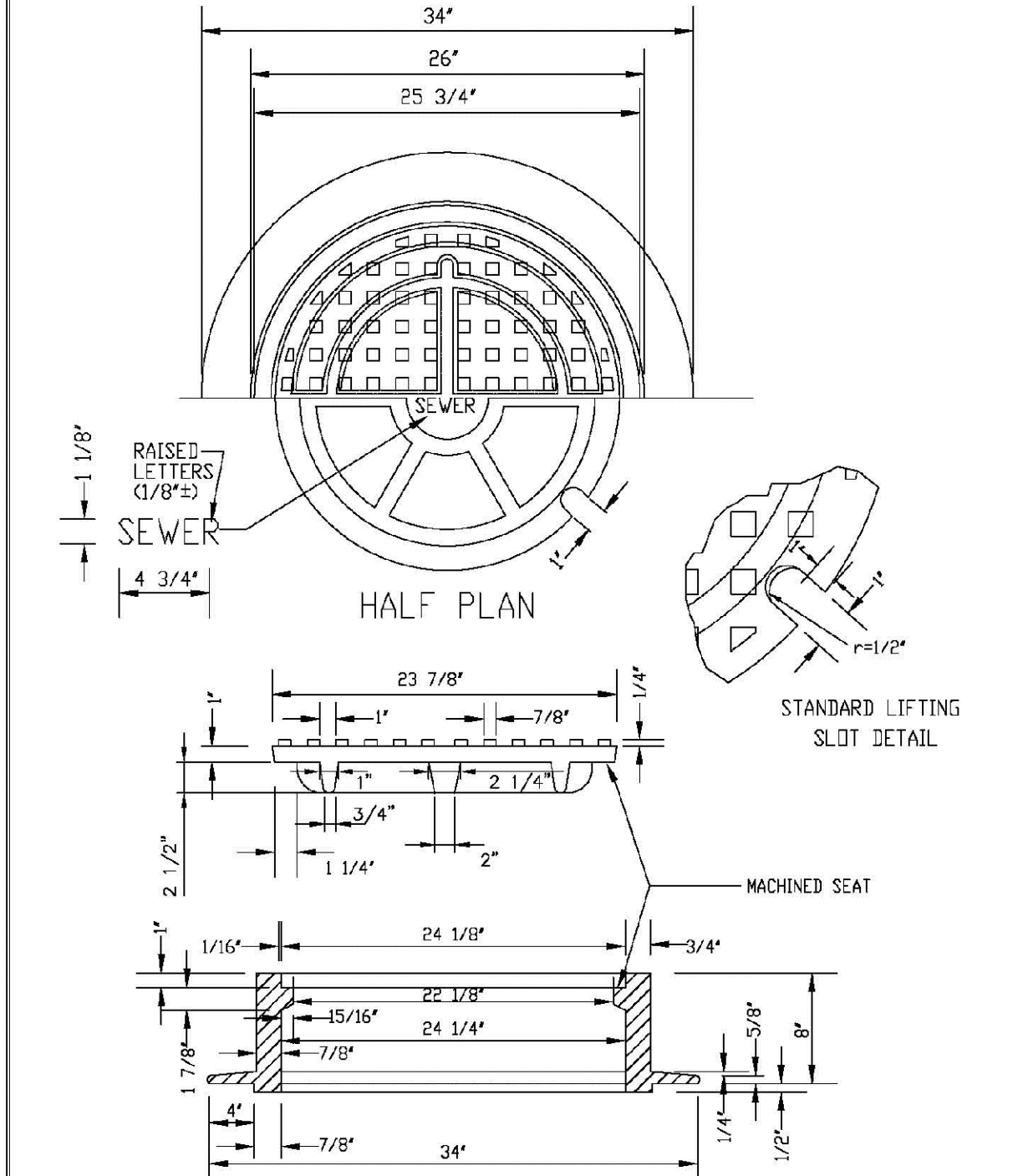


- NOTES:**
1. Vlt Clay Pipe & fittings (A.S.T.M. C-700) shown, details similar for all other pipe.
 2. Diameter of drop shall not be less than the line pipe diameter.
 3. For 18" diameter and larger, outside drop detail shall be a special design.
 4. Manhole shall be coated using bituminous mastic (ramneck)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

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



- NOTE:**
1. Casting Specifications: ASTM A-48 With A Minimum Tensile Strength Of 25 KSI (Class 25)
 2. All Coating To Be Dipped In Asphalt Base Paint (Or Approved Equal).
 3. No other manhole lids will be accepted without prior approval from the District Engineer.

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

APPROVED
Feb 20 2020
PARKER WATER AND SANITATION DISTRICT

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 7 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAILS

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

SHEET NUMBER **9**

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

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=2.3 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.

TABLE I

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

PARKER WATER & SANITATION DISTRICT
STANDARD EXTRUDED ALUMINUM MANHOLE STEP

SHEET 53.10

POLYPROPYLENE REINFORCED PLASTIC STEP

NOTES:

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

TABLE I

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

PARKER WATER & SANITATION DISTRICT
POLYPROPYLENE REINFORCED PLASTIC MANHOLE STEP

SHEET 53.11

CAST ALUMINUM MANHOLE STEP

NOTES:

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

TABLE I

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

PARKER WATER & SANITATION DISTRICT
CAST ALUMINUM MANHOLE STEP

SHEET 53.12

MARKER POST DETAIL

CONCRETE CAP
STANDARD 4" STEEL PIPE
PAINTED FIRE HYDRANT YELLOW
OR
4" X 4" REDWOOD POST

DIRT FILL

GROUND LEVEL

12" CONCRETE

NOTES:

- 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.

TABLE I

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

PARKER WATER & SANITATION DISTRICT
MARKER POST DETAIL

SHEET 53.13

TYPICAL TRENCH DETAIL

Original Ground Surface of Final Grade Elevation

max. limits of excavation

Backfill to be placed and compacted in accordance with backfill method specified

Bedding to be placed and compacted in accordance with bedding method specified

Bedding to be placed and compacted in accordance with bedding method specified

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

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 or shoring shall be removed, replaced or relocated or cut and gutter, utility, structure, etc. outside the maximum limits of excavation as shown on the contractor shall be responsible for protection of same.)
- If dimension T_b is $\leq 4'$, then existing sheet piling shall be removed and replaced up to the gutter. Maximum asphalt pipe width, B_p & B_c shall then be based on this actual width.

TABLE I

STREET WIDTH	ASPHALT BASE COURSE	ASPHALTIC WEARING SURFACE	TOTAL THICKNESS
UP TO 36'	4"	2"	6"
36' TO 44'	4"	3"	7"
44' TO 48'	5"	3"	8"
WIDER THAN 48'	6"	3"	9"

TABLE II

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

PARKER WATER & SANITATION DISTRICT
SEWER TRENCHING AND BEDDING DETAIL

SHEET 54.1

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)

TABLE II

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

TABLE III

SCALE	NONE	DATE	2/98
APPROVED:	PVR	7/98	10/16
DIRECTOR OF ENGINEERING			

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

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, HAND-TAMPED IN 6" LIFTS

TABLE IV

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"

TABLE V

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.

TABLE I

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

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

SHEET 54.3

ROCK EXCAVATION

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

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

TABLE IV

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.

TABLE I

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

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

SHEET 54.4

CLASS "B" BEDDING

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

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

GEOTEXTILE FILTER CLOTH

LARGE STONES, BROKEN CONCRETE, ETC IF REQUIRED

UNSTABLE SUBGRADE CONDITION

TABLE IV

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.

TABLE I

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

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

SHEET 54.5

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))

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 TO 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, II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
 - TYPE I OR TYPE II ENCASEMENT SHALL BE REQUIRED FOR SANITARY SEWER CROSSING OVER OR UNDER WATER MAINS.
 - WATER MAINS AND $d_s \leq 24"$ ($d_s \leq 18"$)
 - TYPE III IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS, REGARDLESS OF DIMENSION d_s .
 - EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSING OR UNDER UNUSUAL SOIL CONDITIONS ARE ENCOURAGED. 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 $d_s \leq 4'$ & $d_s \leq 6'$
 - CONCRETE CLASS "B" BEDDING IF $d_s > 4'$ & $d_s > 6'$ (IF $d_s > 6'$ 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 THE REQUIRED DIMENSION T_b IS EXTREMELY LARGE. PIER SUPPORTS ON EACH SIDE OF SANITARY SEWER MAY BE REQUIRED, IF REQUIRED, SUPPORTS SHALL BE SPECIFIED AND DETAILED SEPARATELY ON PLAN AND PROFILE DRAWINGS.

TABLE I

SCALE	NONE	DATE	2/98
APPROVED:	JFN	5/98	1/16
DISTRICT ENGINEER			

PARKER WATER & SANITATION DISTRICT
CONCRETE ENCASEMENT TYPE I

SHEET 6

2016 REVISION

SHEET 54.2

2016 REVISION

SHEET 54.3

2016 REVISION

SHEET 54.4

2016 REVISION

SHEET 54.5

2008 REVISION

SHEET 6

CALL 811
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UTILITY NOTIFICATION CENTER OF COLORADO

APPROVED
Feb 20 2020
PARKER WATER AND
SANITATION DISTRICT

10333 E. Dry Creek Rd.
Denver, CO 80231
Tel: (720) 482-9526
Fax: (720) 482-9548

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILMING 7 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAILS

SCALE: AS SHOWN
CHECKED BY: JFN
DATE: AUGUST 2017

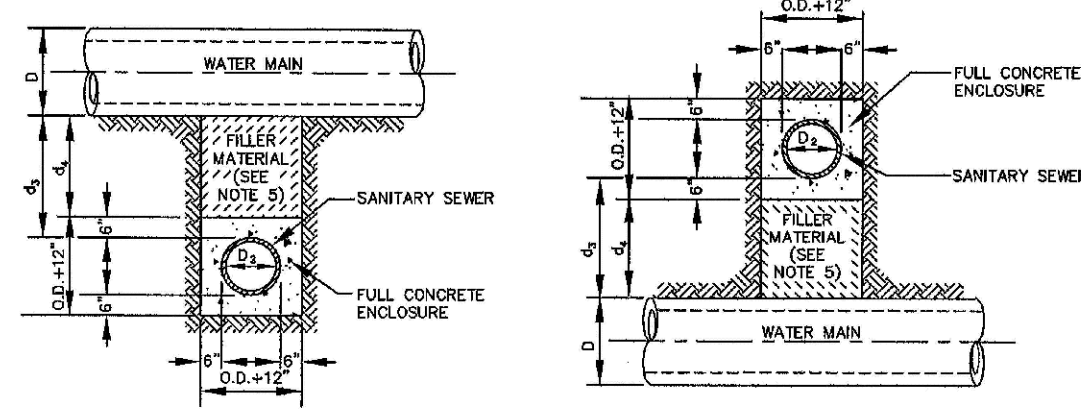
FILE NO: 8130283701

SHEET NUMBER: 10

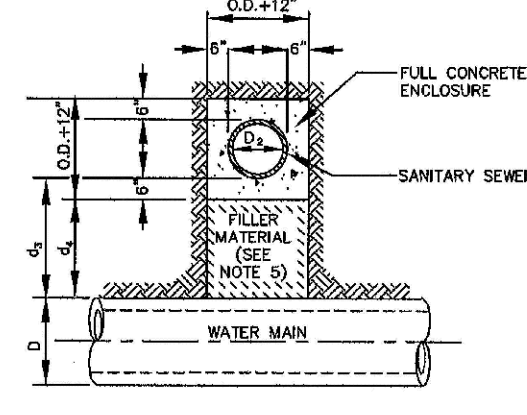
DATE: AUGUST 2017

NO. REVISIONS

DATE INIT. APPR. DATE



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



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

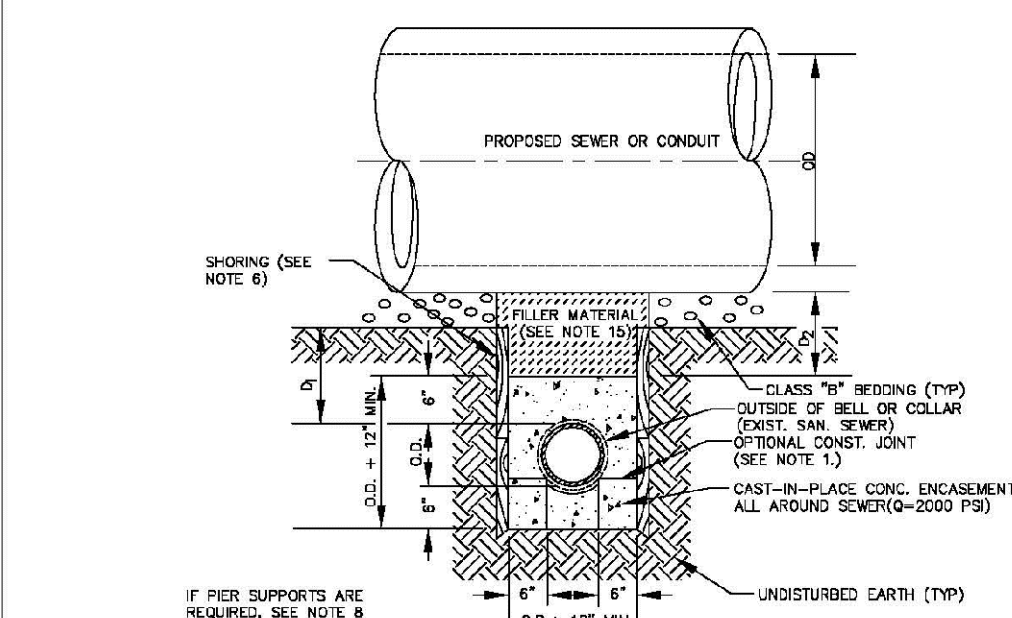
TYPE II
CONCRETE ENCASEMENT FOR SANITARY SEWERS
CROSSING OVER OR UNDER WATER MAIN

GENERAL NOTES FOR TYPE IIa & IIb ENCASEMENT

- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING. IF OPTIONAL CONSTRUCTION JOINT IS USED & BOTTOM HALF OF ENCASEMENT IS POURED SEPARATELY, A ONE INCH LAYER OF SAND OR MORTAR SHALL BE PLACED BETWEEN BOTTOM OF SANITARY SEWER AND TOP OF CONCRETE.
- LENGTH OF ENCASEMENT FOR:
 - TYPE I & 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 OR II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
 - TYPE I OR II IF $d_s \leq 18"$ ($d_s \leq 12"$ EXCEPT FOR SANITARY SEWER CROSSING OVER OR UNDER WATER MAINS).
 - TYPE III IF $d_s \leq 24"$ ($d_s \leq 18"$).
 - TYPE III IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS REGARDLESS OF DIMENSION d_s .
 - EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSINGS OF WELDED STEEL PIPE OR CONDUITS ARE UNDESIRABLE. TYPE I ENCASEMENT WILL NORMALLY BE SATISFACTORY.
 - IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF DUCTILE IRON PIPE (AWWA C-150 OR C-151), CONCRETE ENCASEMENT MAY NOT BE REQUIRED.
- FILLER MATERIAL BETWEEN CONDUITS TO BE:
 - APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC. IF $d_s \leq 4"$ & $d_c \leq 7"$.
 - COMPACTED CLASS "B" BEDDING IF $d_s \leq 4"$ & $d_c \leq 7"$ (IF $d_s > 4"$ FOR TYPE III ENCASEMENT POUR CONCRETE ON UNDISTURBED SOIL).
- SHORING OR SKEWING, 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



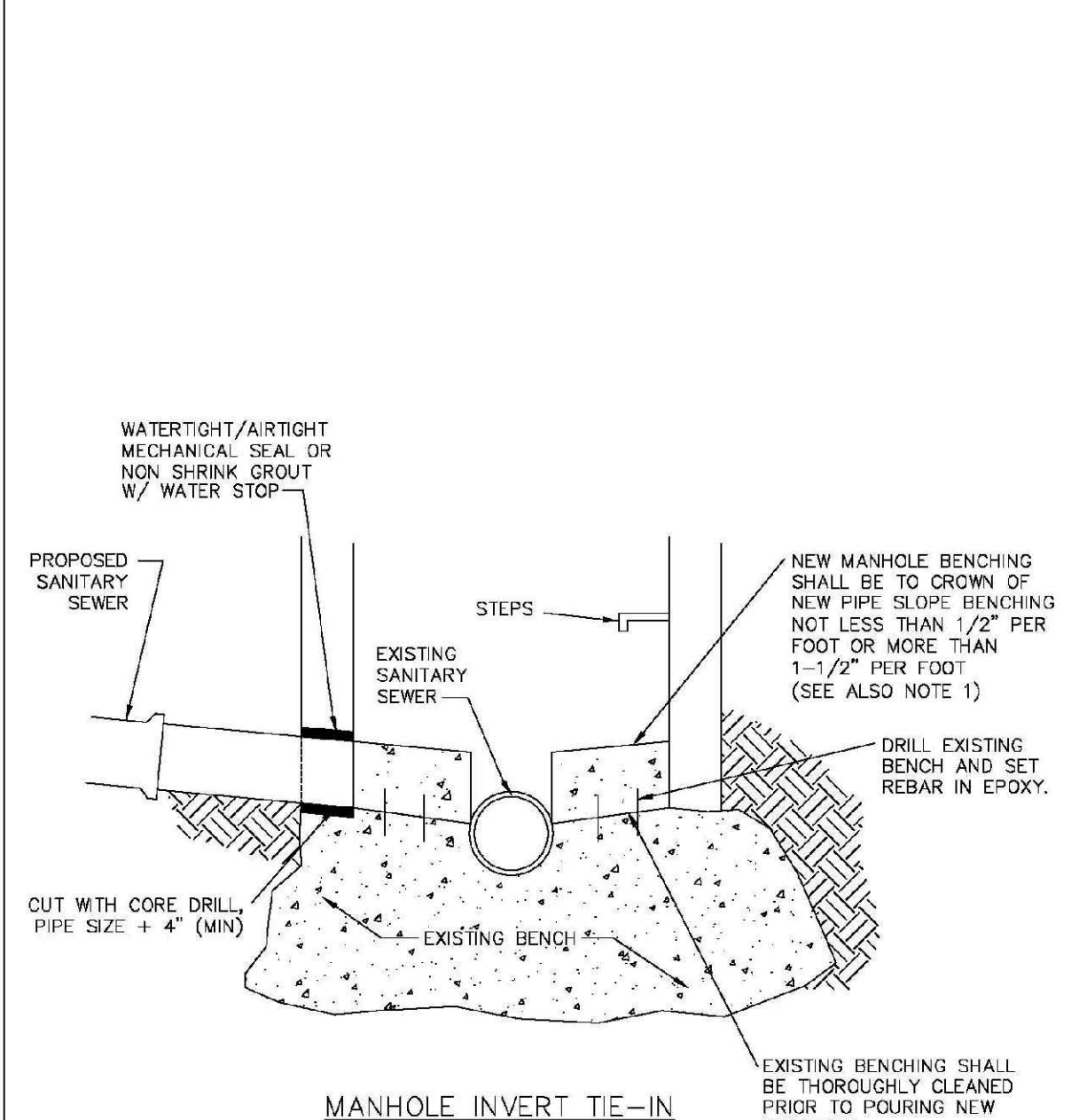
TYPE III
CONCRETE ENCASEMENT FOR SANITARY SEWERS
(FULL ENCASEMENT) NO SCALE

GENERAL NOTES FOR TYPE IIIa & IIIb ENCASEMENT

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

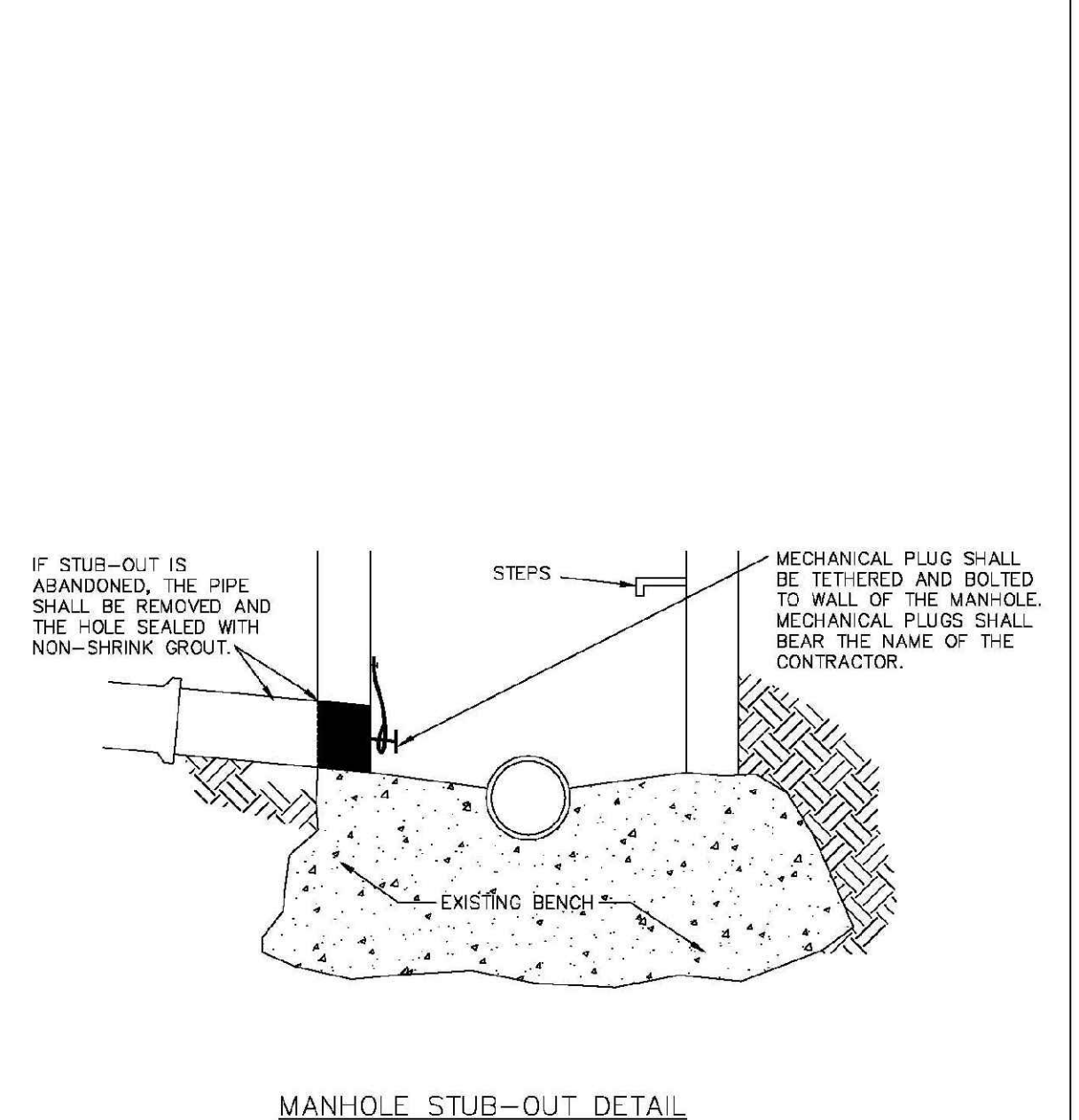


MANHOLE INVERT TIE-IN

- NOTES**
- NEW BENCH SHALL INCLUDE REINFORCEMENT TO CONTROL CONCRETE CRACKING.

PARKER WATER & SANITATION DISTRICT	
MANHOLE INVERT TIE-IN DETAIL	
SCALE: NONE	DATE: 2/98
APPROVED: PVR	1/98 12/98
DIRECTOR OF ENGINEERING	

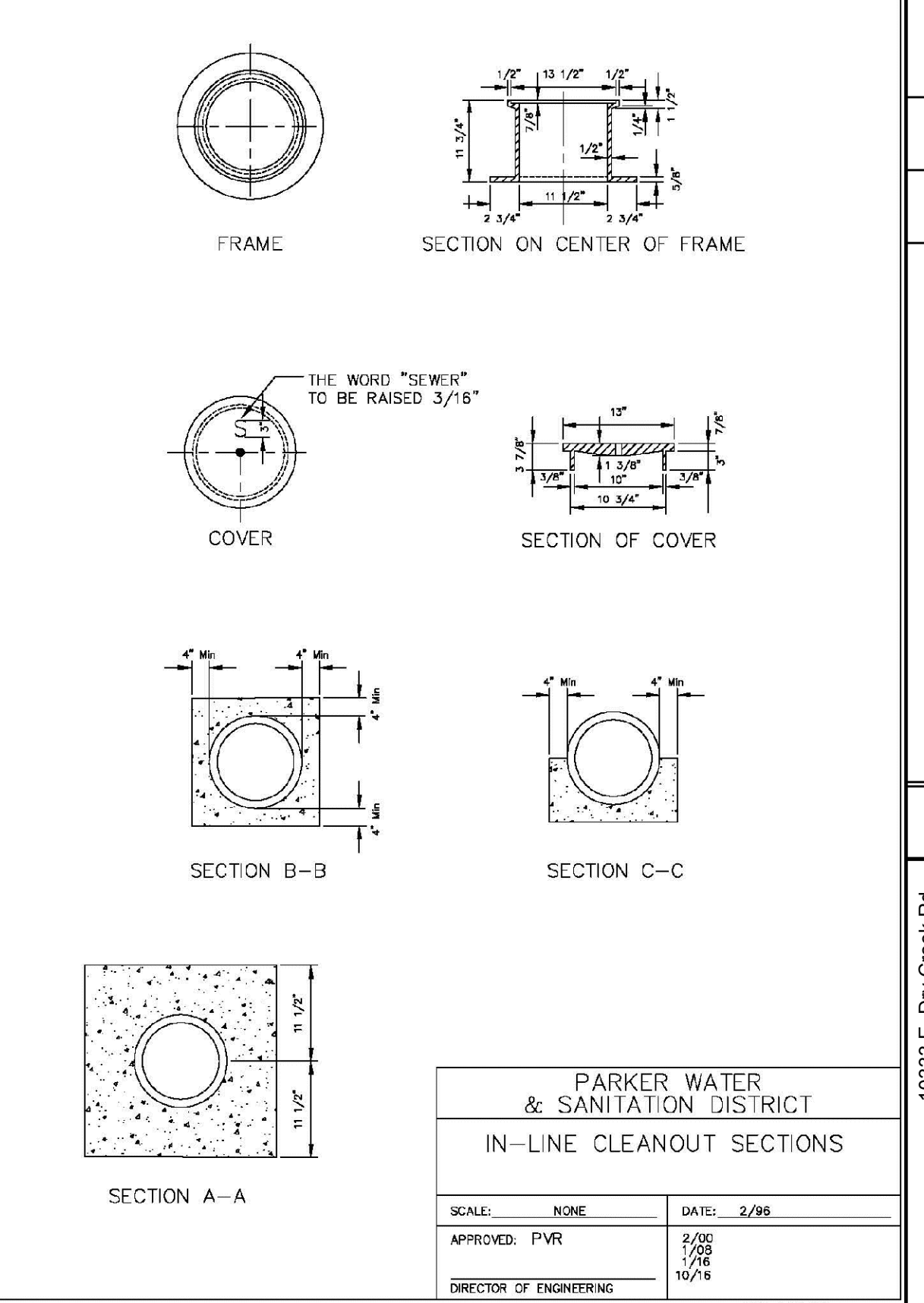
2016 REVISION SHEET S4.9



MANHOLE STUB-OUT DETAIL

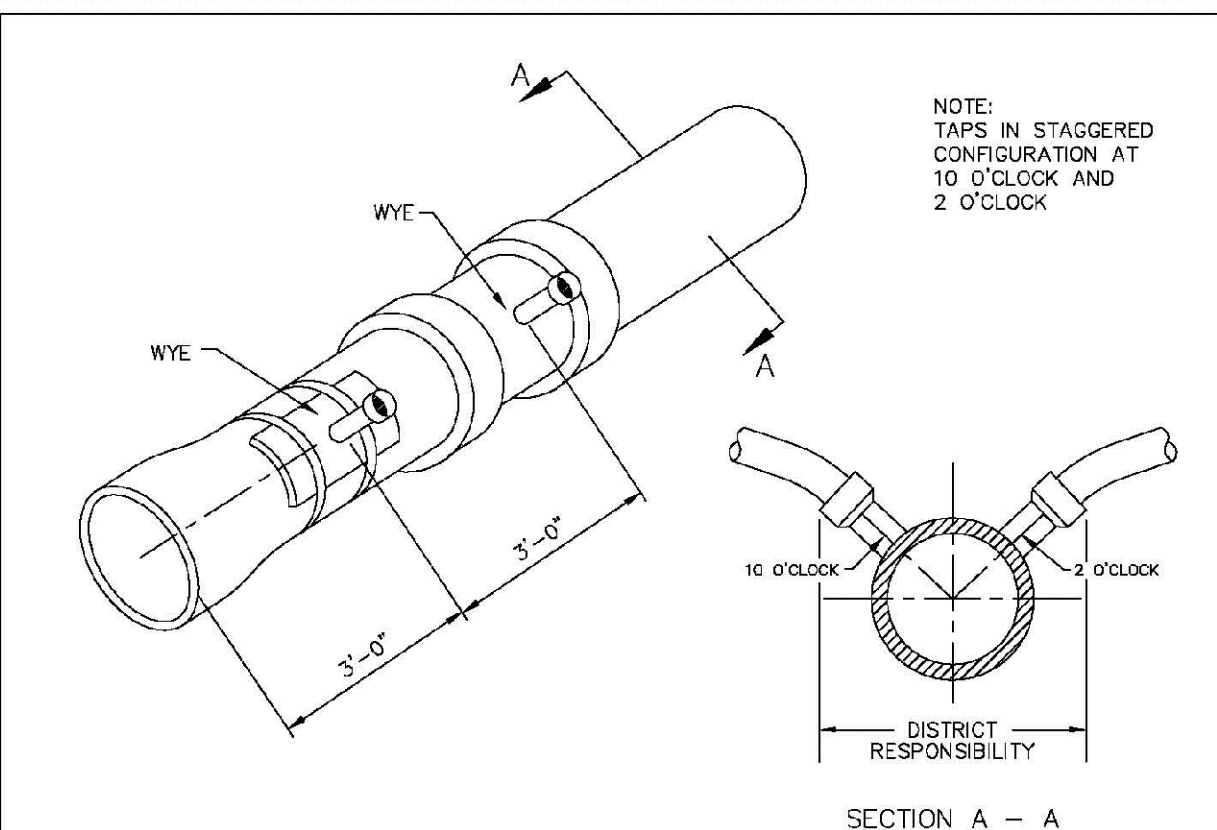
PARKER WATER & SANITATION DISTRICT	
MANHOLE STUB-OUT DETAIL	
SCALE: NONE	DATE: 2/98
APPROVED: PVR	1/98 10/98
DIRECTOR OF ENGINEERING	

2016 REVISION SHEET S4.10



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

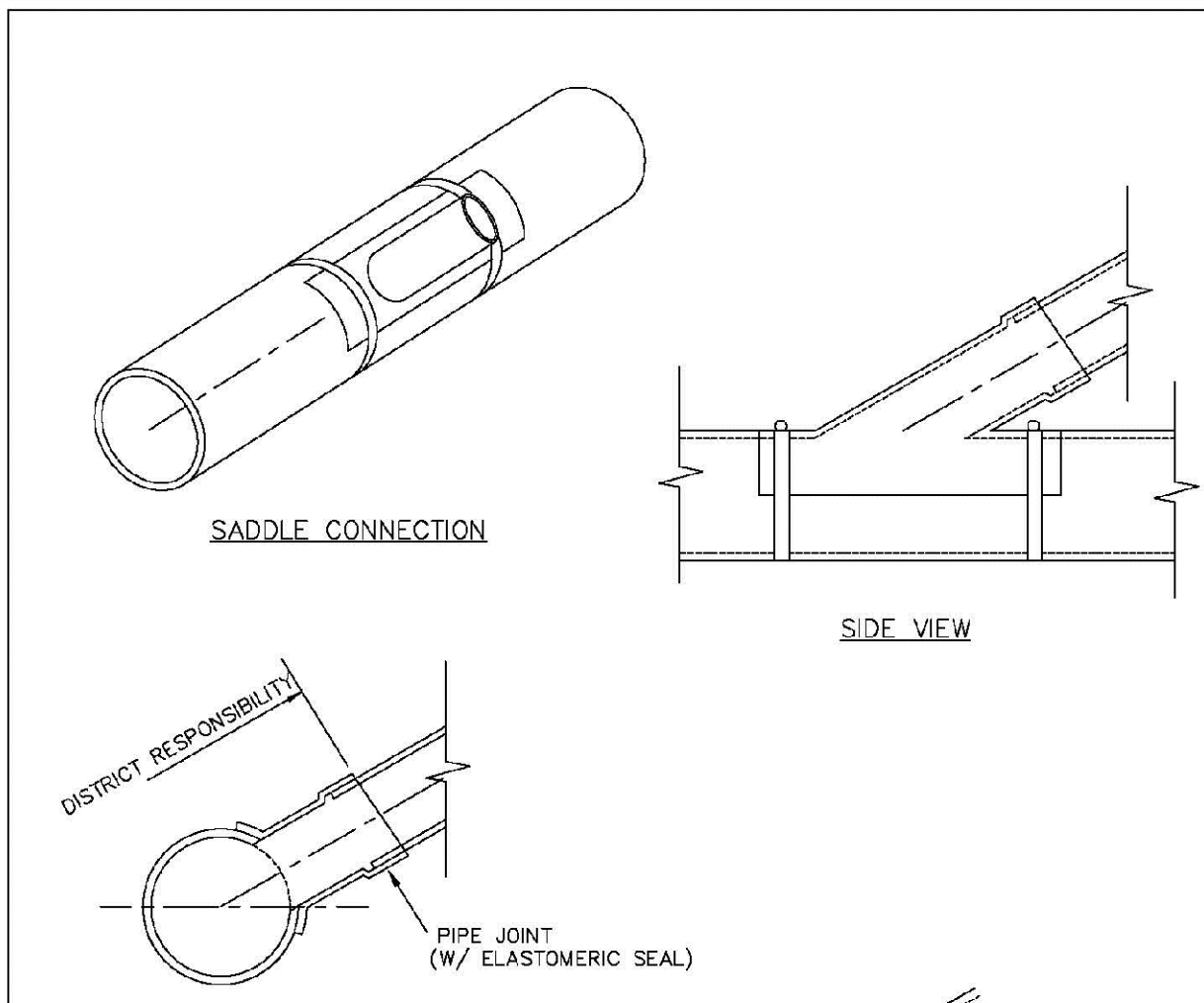


- NOTES:**
- TAPS IN STAGGERED CONFIGURATION AT 10 O'CLOCK AND 2 O'CLOCK

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



NOTES:

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

PARKER WATER & SANITATION DISTRICT	
P.V.C. SADDLE CONNECTION DETAIL	
SCALE: NONE	DATE: 2/98
APPROVED: PVR	1/98 10/98
DIRECTOR OF ENGINEERING	

2016 REVISION SHEET S4.14

APPROVED
Feb 20 2020
PARKER WATER AND
SANITATION DISTRICT

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Engineered, Constructed
Tel: (720) 482-9526
Fax: (720) 482-9546

CVL CONSULTANTS

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 7 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAILS

SCALE: AS SHOWN
FILE NO: 8130283701

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

SHEET NUMBER 11

Revisions: No. Date Init. Appr. Date

MECHANICAL JOINT RESTRAINT

WEDGE DETAIL BOLT HOLE DETAIL

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

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

**PARKER WATER & SANITATION DISTRICT
MECHANICAL JOINT RESTRAINT DETAILS**

SCALE: NONE DATE: 2/96

APPROVED: 2/90
PVR 12/07
DIRECTOR OF ENGINEERING 1/16

2016 REVISION SHEET W3.17

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

TEE

TYPICAL CROSS SECTION

MINIMUM BEARING SURFACE AREA (IN SQUARE FEET)

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

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

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

SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W3.18

HALF PLAN

TYPICAL CROSS SECTION

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

SCALE: NONE DATE: 6/20

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

2016 REVISION SHEET W3.19

ACCESS MANHOLE

ACCESS MANHOLE AND AIR VALVE ASSEMBLY

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

SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W3.20

STANDARD TRENCH SECTION

STREET CUT PATCH

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

SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W4.1

PIPE BEDDING

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

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

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

**PARKER WATER & SANITATION DISTRICT
PIPE BEDDING**

SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W4.2

PLAN VIEW PROFILE

TYPICAL SECTION

**PARKER WATER & SANITATION DISTRICT
WATERLINE ENCASEMENT**

SCALE: NONE DATE: 5/20

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

2016 REVISION SHEET W4.3

PLAN FOR PERPENDICULAR CROSSING PLAN FOR ANGLE CROSSING

PROFILE

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

FORMULA FOR FINDING L:
 $L = \frac{C}{\sin \phi}$

**PARKER WATER & SANITATION DISTRICT
BORED CROSSINGS BENEATH CONDUITS**

SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W4.4

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APPROVED
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PARKER WATER AND SANITATION DISTRICT

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Tel: (720) 482-9526
Fax: (720) 482-9548

CVL CONSULTANTS

HR 935 LLC
7253 South Alton Way
CENTENNIAL, CO 80112

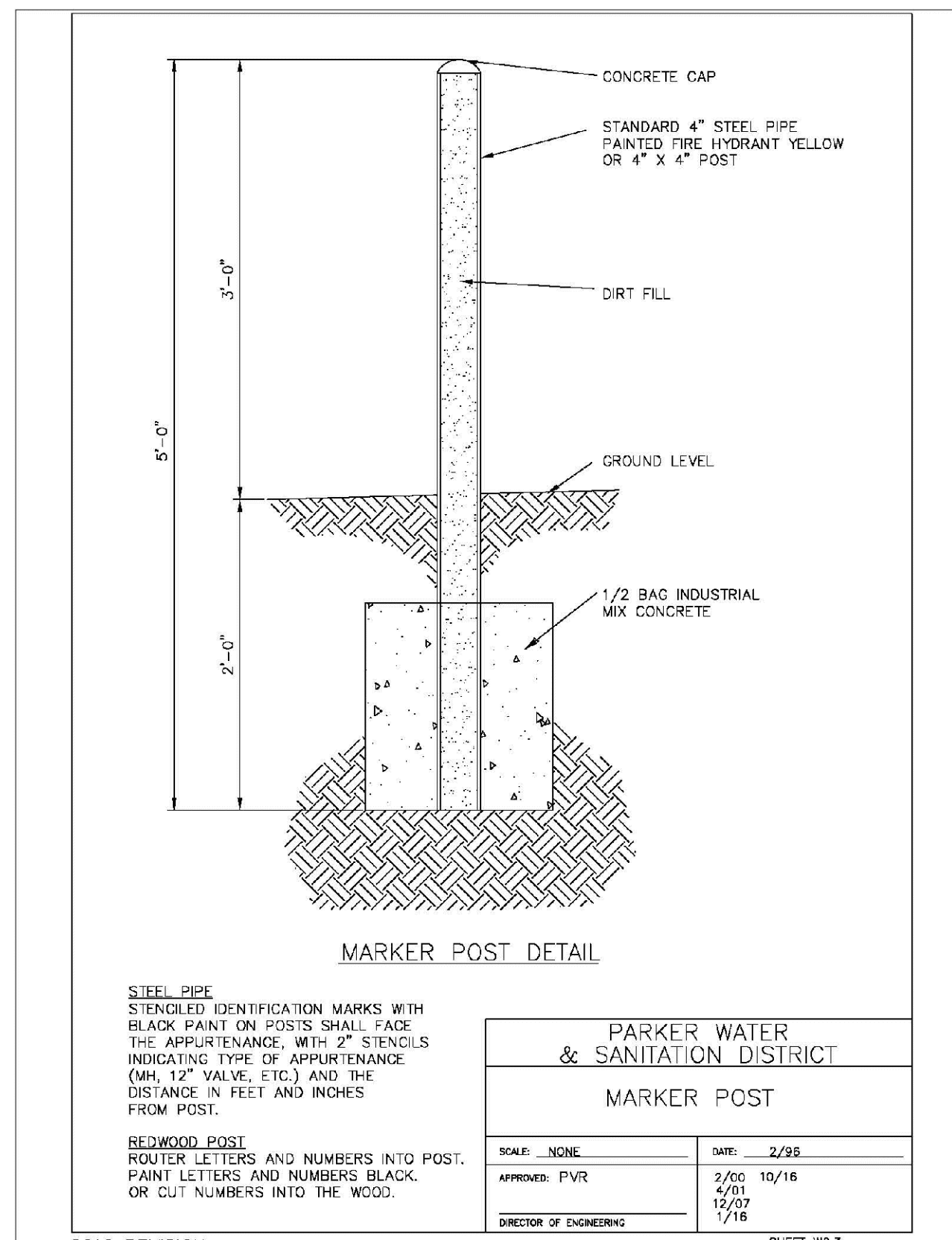
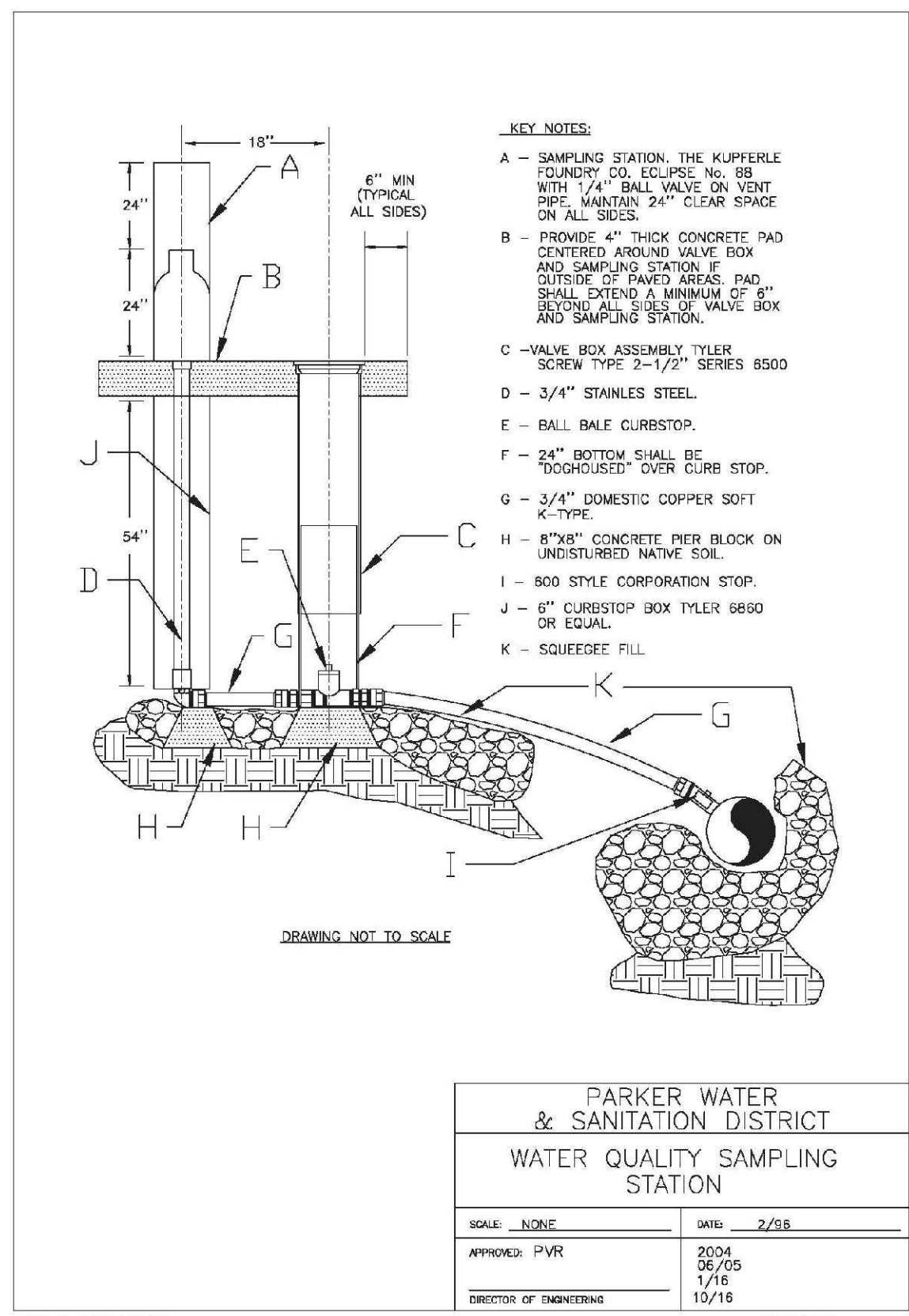
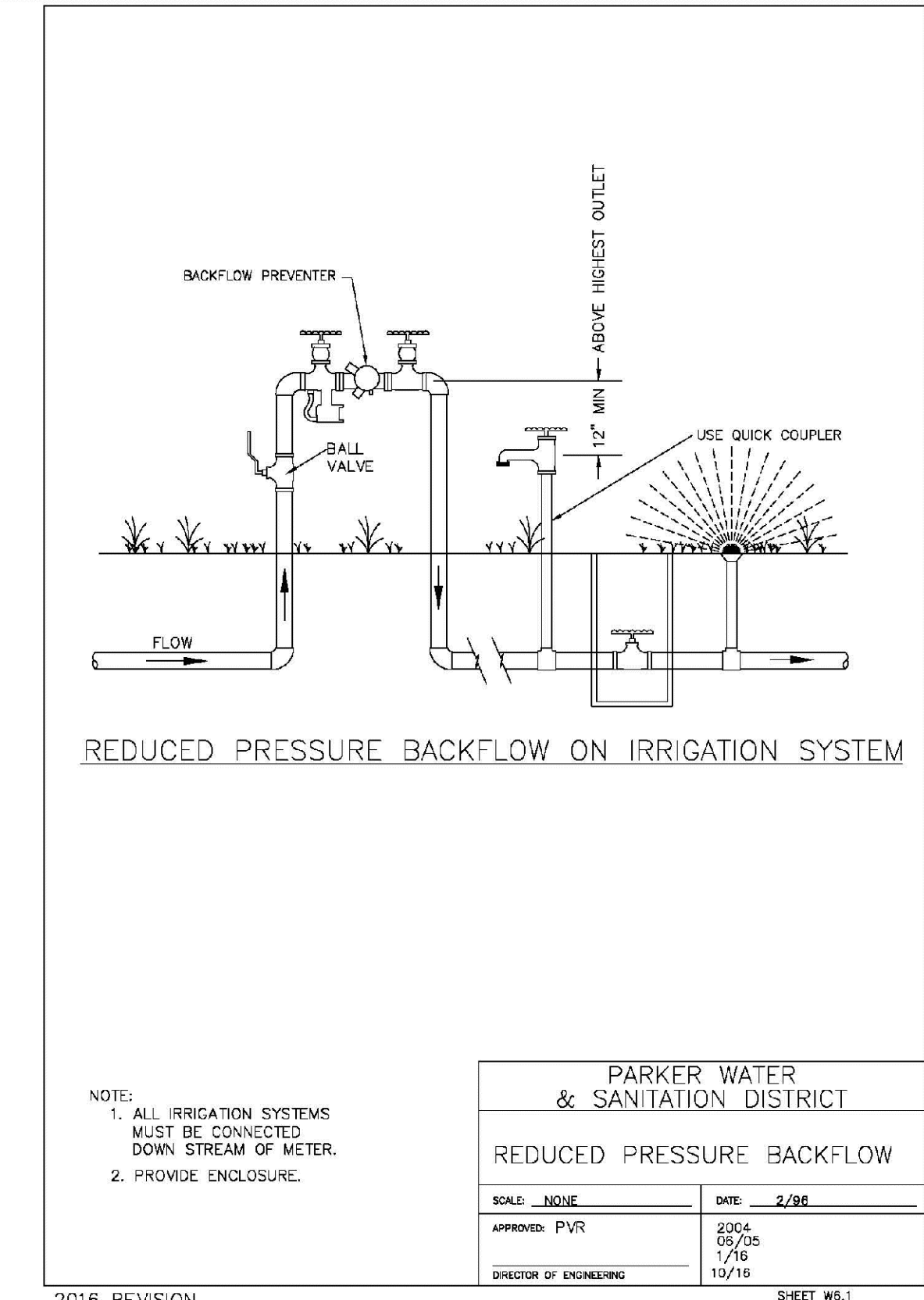
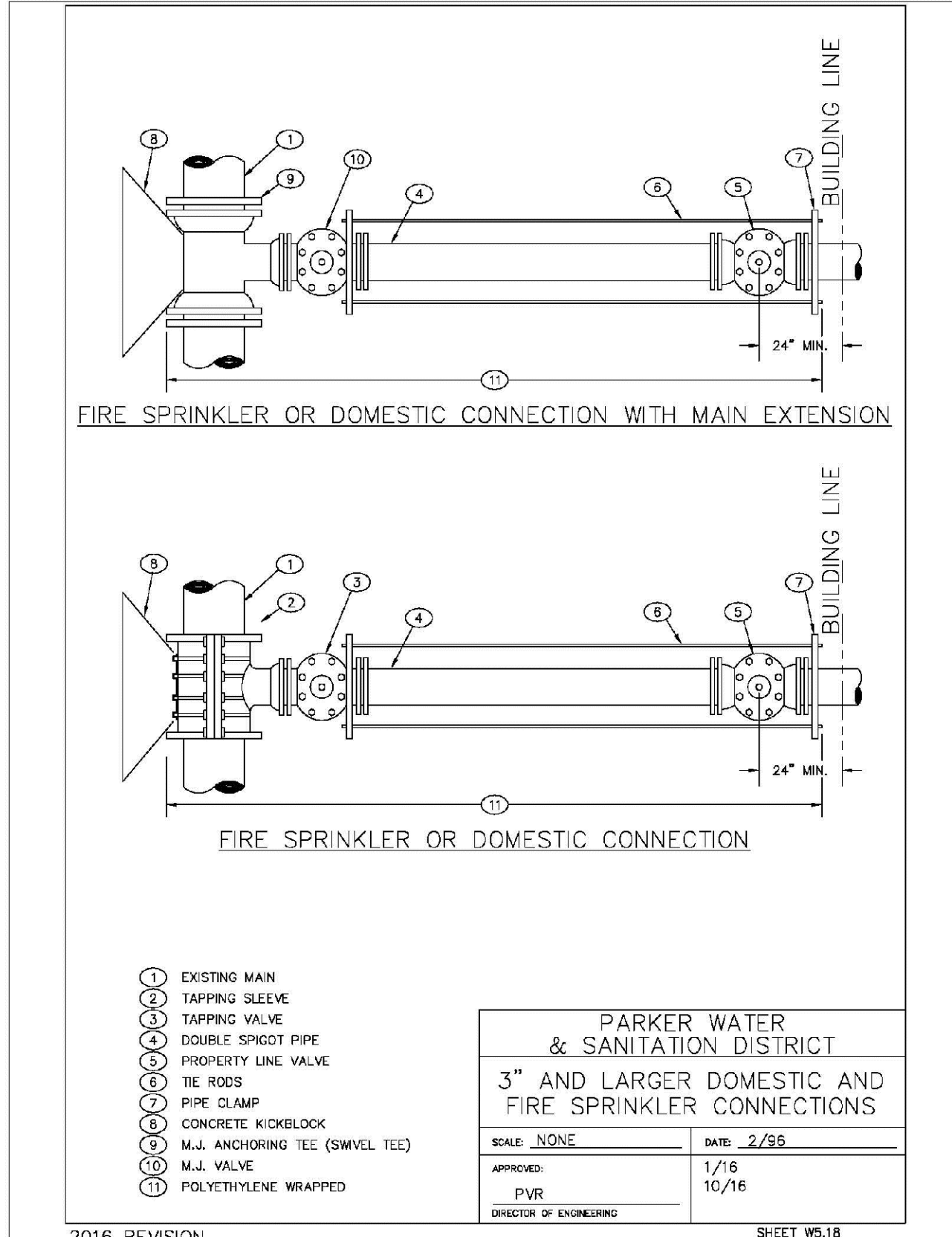
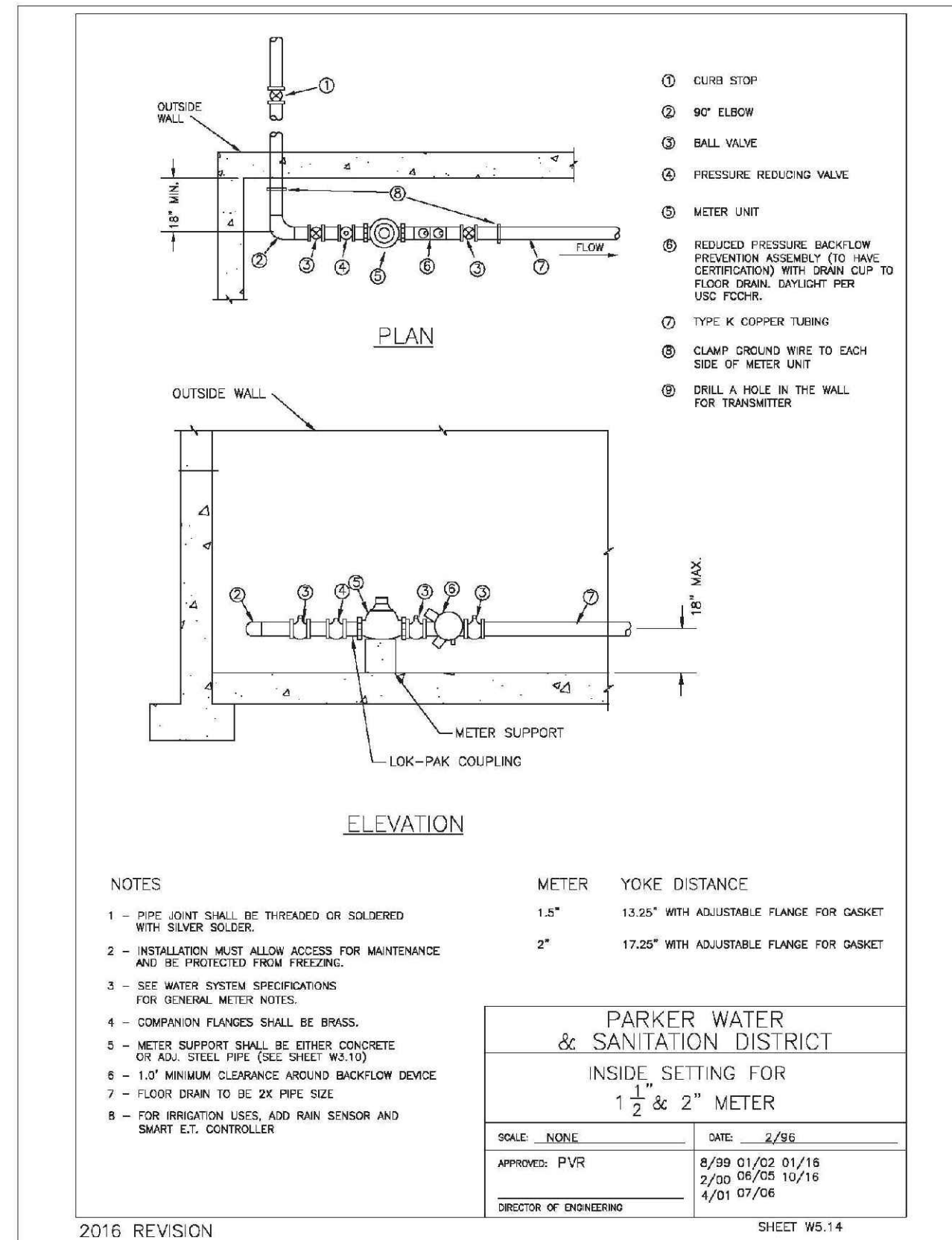
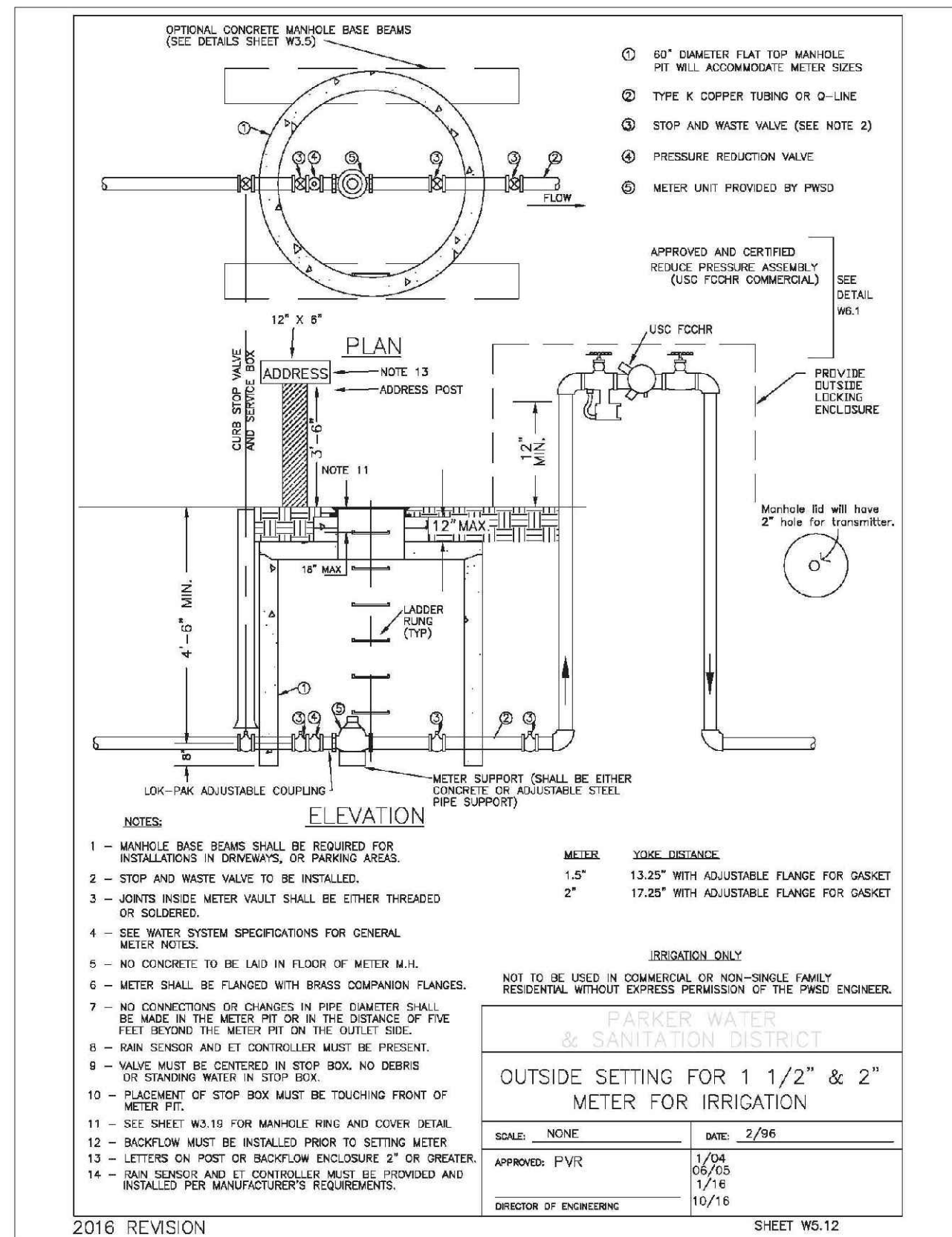
TRAILS AT CROWFOOT
FILM 7 CONSTRUCTION DRAWINGS
WATER DETAILS

SCALE: AS SHOWN
FILE NO: 8130283701

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

SHEET NUMBER: 15

Revisions: No. Date Init. Appr. Date



APPROVED
Feb 20 2020
PARKER WATER AND SANITATION DISTRICT

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SHEET NUMBER	DRAWN BY: JF	SCALE: AS SHOWN	CHECKED BY: JJ	DATE: AUGUST 2017	FILE NO: 8130283701	TRAILS AT CROWFOOT FILING 7 CONSTRUCTION DRAWINGS WATER DETAILS	HR 935 LLC 7353 South Alton Way CENTENNIAL, CO 80112		10338 E. Dry Creek Rd. Suite 410 Englewood, CO 80150 Tel: (720) 482-9526 Fax: (720) 482-9546	Revisions	Appr.	Date
										No.	Date	Date