TRAILS AT CROWFOOT FILING 12

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

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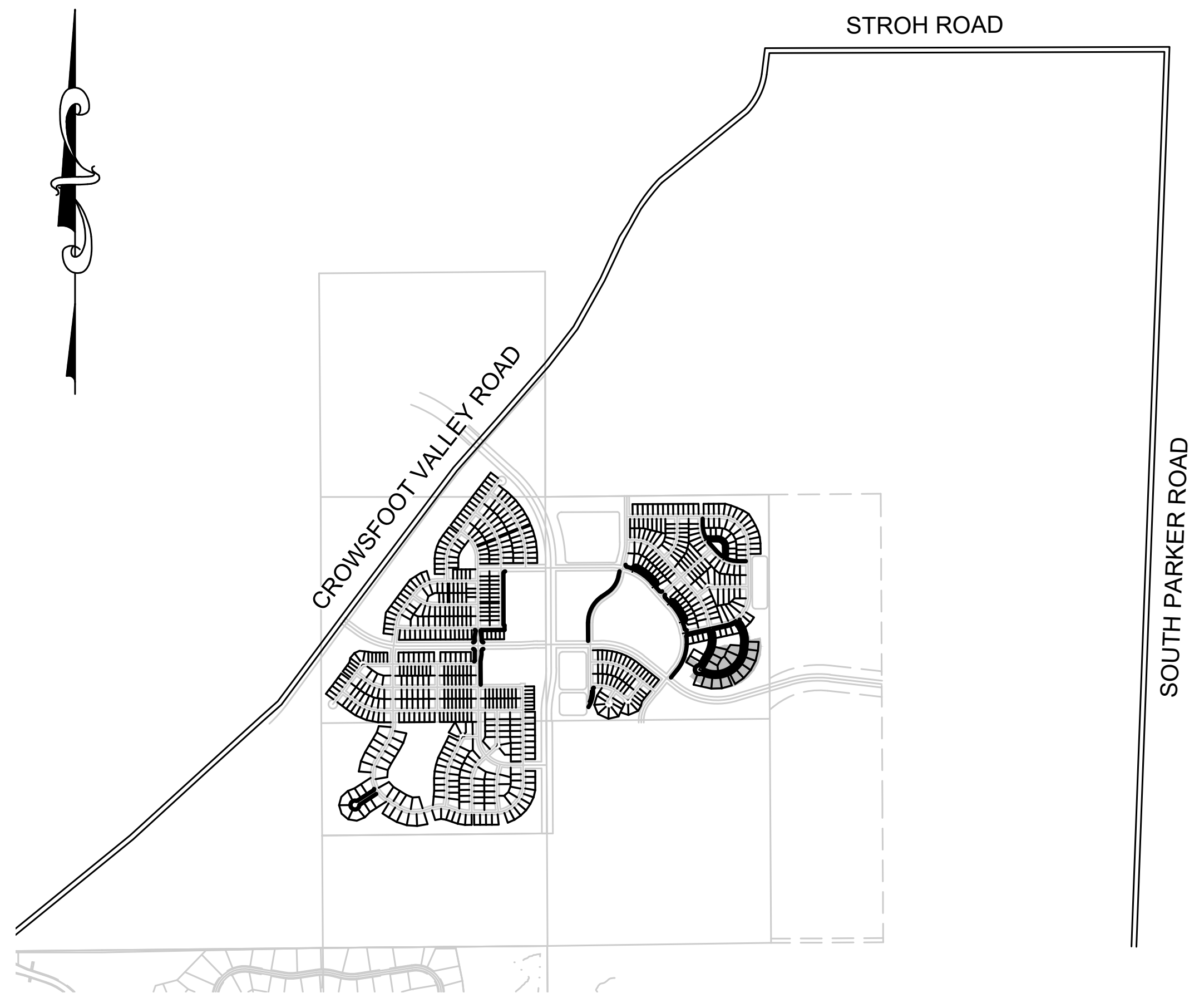
13	WATER DETAILS
14	WATER DETAILS
15	WATER DETAILS
16	WATER DETAILS
17	WATER DETAILS



VICINITY MAP
SCALE: 1" = 2000'

MATERIALS LIST

DESCRIPTION	QUANTITY	UNIT
8" SEWER (PVC)	1,266	L.F.
4' DIA. MANHOLE	9	EA.
4" SEWER SERVICE	18	EA.
CONNNECTION TO EXISTING MAIN	1	EA.
6" WATERPIPE (DIP)	40	L.F.
8" WATERPIPE (PVC)	1,494	L.F.
6" GATE VALVE	2	E.A.
8" GATE VALVE	2	EA.
8" MISC. FITTINGS	14	EA.
2" BLOW OFF VALVE (8" LINE-LOW POINT)	1	EA.
FIRE HYDRANT WITH 6" LEAD	2	EA.
DOMESTIC WATER SERVICE	18	EA.
CONNECTION TO EXISTING MAIN	2	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.

Randall L. Capra 07/02/2021
FIRE CODE OFFICIAL OR DESIGNATED REPRESENTATIVE DATE

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

THE DISTRICT INSPECTOR MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. CALL PARKER WATER AND SANITATION DISTRICT AT 303-841-4627. THE DISTRICT WILL PROVIDE PERIODIC INSPECTIONS OF THE WORK. 24 HOUR NOTICE TO THE INSPECTOR IS REQUIRED FOR SCHEDULINE 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: ____________________

DEVELOPER

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

PLANNER/ LANDSCAPE DESIGNER:

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

SURVEYOR/ ENGINEER:

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

UTILITY DISTRICT

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

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

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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

PREPARED UNDER THE SUPERVISION OF
0050067
6-30-21
Brian P. Wilson
BRIAN P. WILSON
COLORADO P.E. 0050067

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 COVER.DWG, RHROWLAND, 6/17/2021 9:36 AM

No.	Revisions	Date	Init.	Appr.	Date

CVL a Westwood team
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
COVER SHEET

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: KJD
CHECKED BY: JJJ
DATE: SEPTEMBER 2017
SHEET NUMBER 1

GENERAL NOTES

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

WATER SYSTEM NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE PWSD ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST REVISION.
2. ALL WATER MAINS SHALL BE PER PWSD MATERIALS SPECIFICATIONS. ALL MATERIALS IN CONTACT WITH POTABLE WATER SHALL BE SUITABLE FOR CHLORINATED AND CHLORAMINATED WATER.
3. ALL BENDS, PLUGS, REDUCERS, AND FIRE HYDRANTS TO BE RODDED OR MEGA-LUGGED. ALL FITTINGS SHALL BE WRAPPED PER PWSD MATERIALS SPECIFICATIONS.
4. THERE SHALL BE A MINIMUM COVER OF 4.5 FEET OVER ALL WATER MAINS.
5. FIRE HYDRANTS SHALL CONFORM TO AWWA C-502 "DRY BARREL FIRE HYDRANTS" PIPE HYDRANT ASSEMBLIES PER PWSD SPECIFICATIONS.
6. ALL BENDS, TEES, FIRE HYDRANTS, BLOW-OFFS, AND PLUGS AT DEAD-END MAINS SHALL BE PROTECTED FROM THRUST WITH CONCRETE THRUST BLOCKS.
7. PRECAUTIONS SHALL BE TAKEN TO PROTECT THE INTERIOR OF PIPES, FITTINGS, AND VALVES AGAINST CONTAMINATION. ALL OPENINGS IN THE PIPELINE SHALL BE CLOSED WITH WATERTIGHT PLUGS WHEN PIPE LAYING IS STOPPED AT THE CLOSE OF THE DAY’S WORK OR FOR OTHER REASONS, SUCH AS REST BREAKS OR MEAL PERIODS.
8. VALVES IN STREETS ARE TO BE LOCATED AT PROPERTY LINE EXTENSIONS EXCEPT FOR TAPPING TEES; WHERE AN ADDITIONAL VALVE SHALL BE PLACED ON THE TAPPING TEE. OTHER LOCATIONS SHOWN ON THE PLANS.
9. WHEN NECESSARY TO LOWER OR RAISE WATER LINES AT STORM DRAINS AND OTHER UTILITY CROSSING, A MINIMUM CLEARANCE OF 1.5 FEET SHALL BE MAINTAINED BETWEEN OUTSIDE OF PIPES.
10. THE CONTRACTOR SHALL NOTIFY THE PWSD AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION. IF WORK IS SUSPENDED FOR ANY PERIOD OF TIME AFTER INITIAL START-UP, THE CONTRACTOR MUST NOTIFY THE DISTRICT ENGINEER 48 HOURS PRIOR TO RE-START.
11. PIPE BEDDING SHALL BE A CLEAN, WELL-GRADED SAND OR SQUEEGEE SAND IN ACCORDANCE WITH PWSD STANDARDS AND SPECIFICATIONS, LATEST REVISION.
12. THE CONTRACTOR SHALL NOTIFY THE PUBLIC UTILITY COMPANIES AND DETERMINE THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO PROCEEDING WITH THE EXCAVATION. ALL WORK PERFORMED IN THE AREA OF THE PUBLIC UTILITIES SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS OF THESE AGENCIES.
13. COMPACTION OF ALL TRENCHES MUST BE ATTAINED IN ACCORDANCE WITH THE SOILS REPORTS AND COMPACTION TEST RESULTS SUBMITTED TO THE DISTRICT ENGINEER PRIOR TO PROBATIONARY ACCEPTANCE.
14. AT LEAST FIVE (5) DAYS PRIOR TO THE START OF CONSTRUCTION, A PRE-CONSTRUCTION MEETING WILL BE HELD AT THE OFFICE OF THE DISTRICT ENGINEER AND ATTENDED BY THE CONTRACTOR, DESIGN ENGINEER, AND REPRESENTATIVE OF OTHER APPROVING AGENCIES.
15. CHLORINATION AND FLUSHING: ALL WATER MAINS SHALL BE INSTALLED AND CHLORINATED PER PWSD SPECIFICATIONS. CHLORINATION OF FINISHED PIPELINE COMPLETED BEFORE HYDROSTATIC TESTING.
16. HYDROSTATIC TESTING: ALL WATER MAINS SHALL BE TESTED PER THE REQUIREMENTS OF THE PWSD SPECIFICATIONS UP TO MINIMUM OF 150 PSI IN THE PRESENCE OF A PWSD INSPECTOR/ENGINEER.

SANITARY SEWER NOTES

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

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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PREPARED UNDER THE
SUPERVISION OF

BRIAN P. WILSON
0050067
6-30-21

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COLORADO P.E. 0050067

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

SHEET NUMBER
2

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

SCALE: AS SHOWN
FILE NO: 8130283701

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
PARKER WATER AND SANITATION NOTES

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

CVL
a **Westwood** team

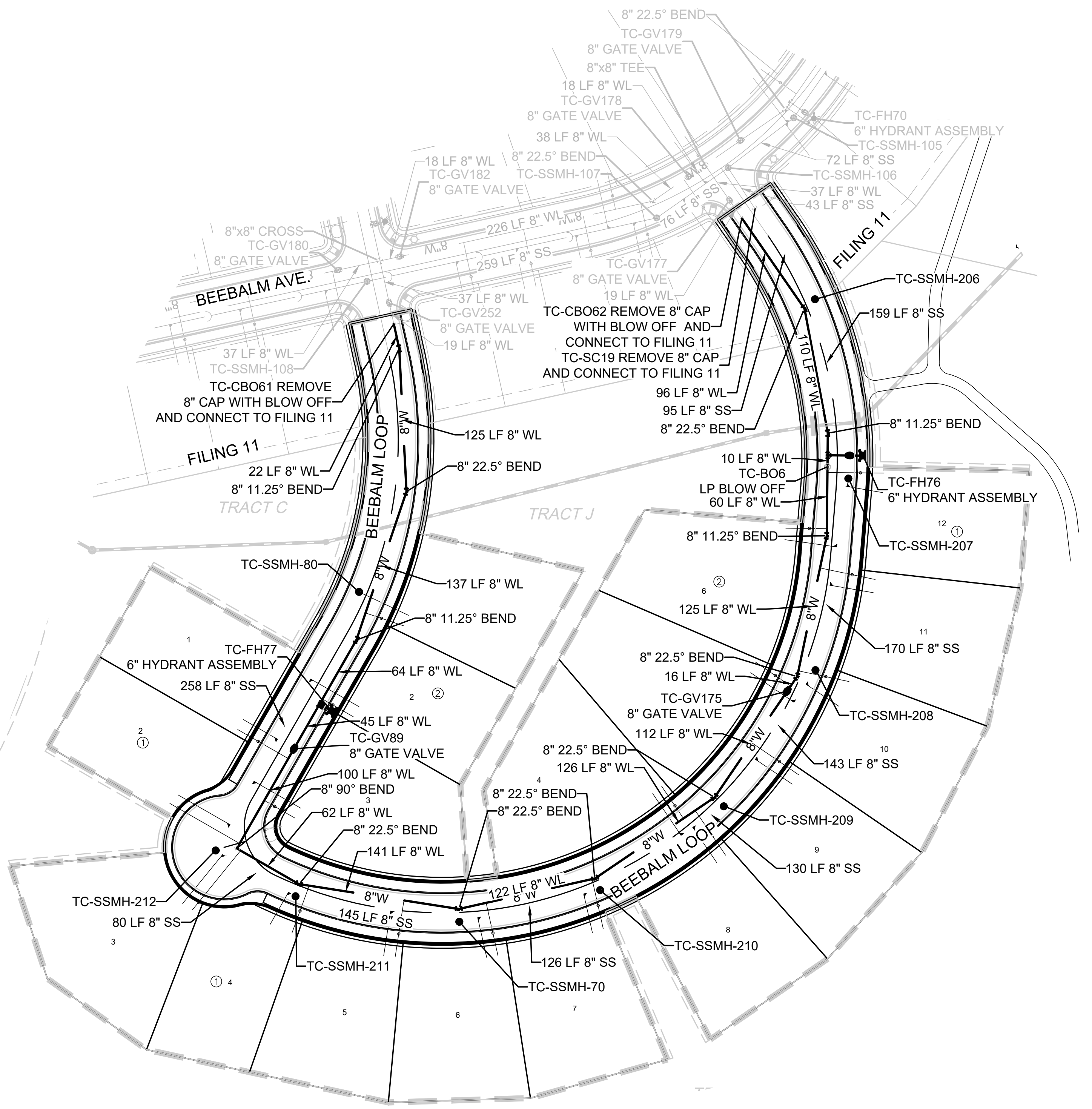
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

No.	Revisions	Date	Init.	Appr.	Date

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 COVER.DWG, RHROWLAND, 6/17/2021 9:36 AM

SERVICE TABLE

FILING, BLOCK, LOT	STREET	SANITARY STATIONING	WATER STATIONING
F12,B1,L1	BEEBALM LOOP	29+50.25	29+60.25
F12,B1,L2	BEEBALM LOOP	10+23.20	10+37.66
F12,B1,L3	BEEBALM LOOP	10+41.14	10+43.08
F12,B1,L4	BEEBALM LOOP	10+93.97	11+08.63
F12,B1,L5	BEEBALM LOOP	11+83.19	11+93.73
F12,B1,L6	BEEBALM LOOP	12+58.55	12+67.20
F12,B1,L7	BEEBALM LOOP	13+51.92	13+63.49
F12,B1,L8	BEEBALM LOOP	14+62.18	14+73.36
F12,B1,L9	BEEBALM LOOP	15+42.16	15+52.12
F12,B1,L10	BEEBALM LOOP	16+20.13	16+28.14
F12,B1,L11	BEEBALM LOOP	17+07.78	17+21.65
F12,B1,L12	BEEBALM LOOP	17+94.58	18+05.80
F12,B2,L1	BEEBALM LOOP	28+02.69	28+16.97
F12,B2,L2	BEEBALM LOOP	28+90.38	29+00.34
F12,B2,L3	BEEBALM LOOP	29+92.34	30+02.34
F12,B2,L4	BEEBALM LOOP	14+49.92	14+60.76
F12,B2,L5	BEEBALM LOOP	16+01.73	16+13.11
F12,B2,L6	BEEBALM LOOP	17+41.37	17+56.61


8" 22.5° BEND
TC-GV178
8" GATE VALVE
8"x8" TEE
18 LF 8" WL
TC-GV178
8" GATE VALVE
38 LF 8" WL
8" 22.5° BEND
TC-SSMH-107
18 LF 8" WL
TC-GV182
8" GATE VALVE
TC-FH70
6" HYDRANT ASSEMBLY
TC-SSMH-105
72 LF 8" SS
TC-SSMH-106
37 LF 8" WL
43 LF 8" SS
8"x8" CROSS
TC-GV180
8" GATE VALVE
228 LF 8" WL
259 LF 8" SS
BEEBALM AVE.
TC-GV177
8" GATE VALVE
19 LF 8" WL
37 LF 8" WL
TC-GV252
8" GATE VALVE
19 LF 8" WL
37 LF 8" WL
TC-SSMH-108
TC-CBO61 REMOVE
8" CAP WITH BLOW OFF
AND CONNECT TO FILING 11
TC-CBO62 REMOVE 8" CAP
WITH BLOW OFF AND
CONNECT TO FILING 11
TC-SC19 REMOVE 8" CAP
AND CONNECT TO FILING 11
96 LF 8" WL
95 LF 8" SS
8" 22.5° BEND
FILING 11
TC-SSMH-206
159 LF 8" SS
110 LF 8" WL
8" 11.25° BEND
FILING 11
22 LF 8" WL
8" 11.25° BEND
TRACT C
125 LF 8" WL
8" 22.5° BEND
TRACT J
10 LF 8" WL
TC-BO6
LP BLOW OFF
60 LF 8" WL
TC-FH76
6" HYDRANT ASSEMBLY
8" 11.25° BEND
TC-SSMH-207
BEEBALM LOOP
TC-SSMH-80
137 LF 8" WL
8" 11.25° BEND
125 LF 8" WL
170 LF 8" SS
TC-FH77
6" HYDRANT ASSEMBLY
258 LF 8" SS
64 LF 8" WL
8" 22.5° BEND
16 LF 8" WL
TC-GV175
8" GATE VALVE
112 LF 8" WL
TC-SSMH-208
45 LF 8" WL
TC-GV89
8" GATE VALVE
100 LF 8" WL
8" 90° BEND
8" 22.5° BEND
126 LF 8" WL
143 LF 8" SS
62 LF 8" WL
8" 22.5° BEND
8" 22.5° BEND
8" 22.5° BEND
TC-SSMH-209
141 LF 8" WL
130 LF 8" SS
TC-SSMH-212
80 LF 8" SS
8"W
145 LF 8" SS
122 LF 8" WL
BEEBALM LOOP
TC-SSMH-210
TC-SSMH-211
126 LF 8" SS
TC-SSMH-70
8"W
1
2
3
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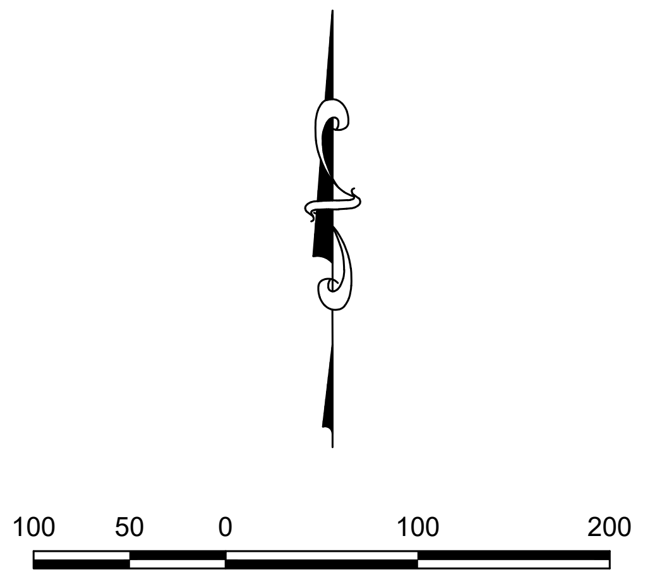
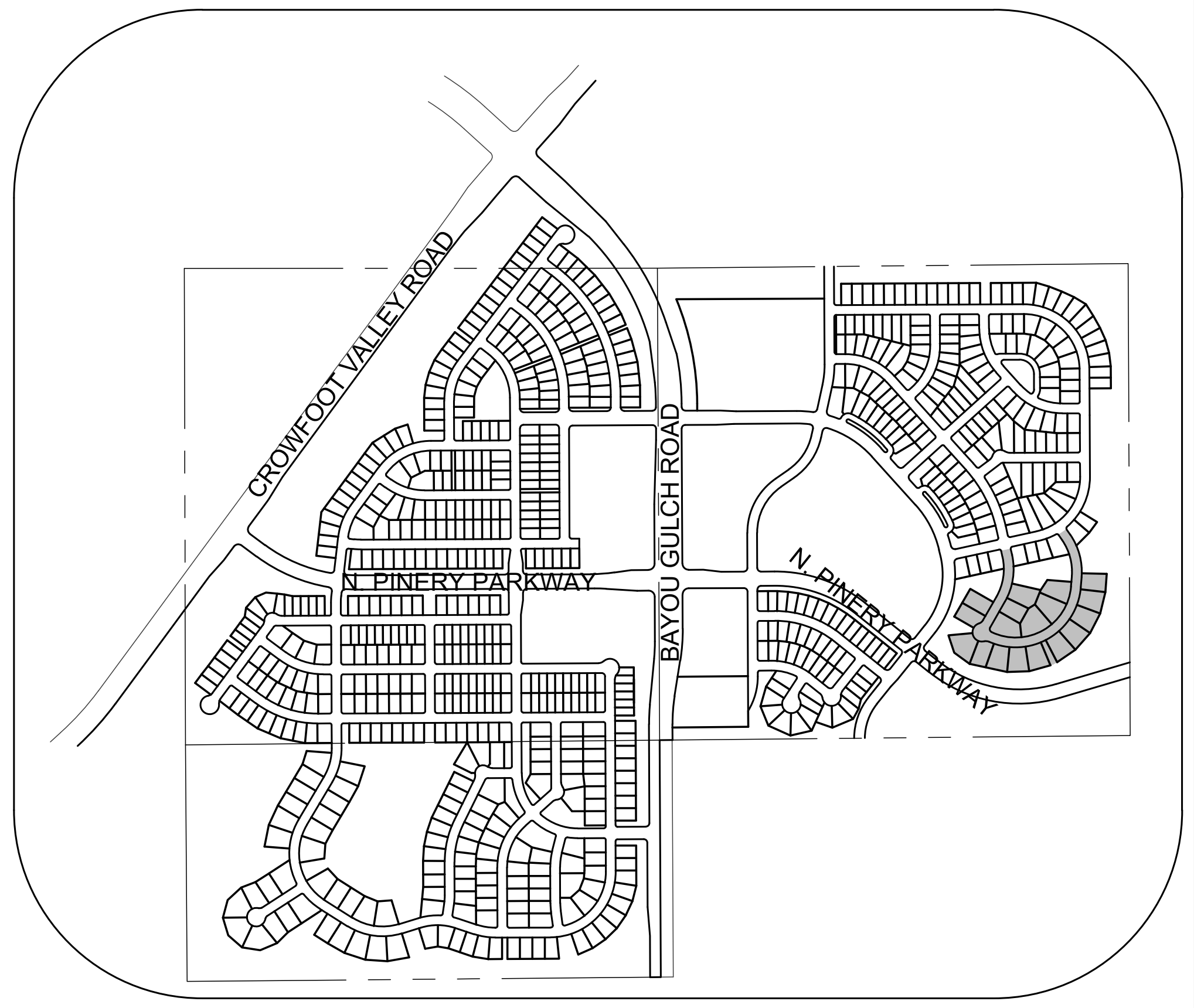

100
50
0
100
200

SCALE: 1" = 100'


CROWFOOT VALLEY ROAD
BAYOU GULCH ROAD
N. PINERY PARKWAY
N. PINERY PARKWAY

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
BO	PROPOSED LOW POINT BLOW-OFF	— 5607 —	PROPOSED 1' CONTOUR
AV	PROPOSED AIR VALVE	━━━	PROPOSED STORM DRAIN
⋈	FUTURE PHASE VALVE	——⊂—●	PROPOSED SEWER LINE WITH MANHOLE
○	FUTURE FIRE HYDRANT	——⊂——	PROPOSED SEWER LATERAL
☼	PROPOSED LIGHT POLE	— 8"W —	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	— FO —	EXISTING FIBER OPTIC LINE
▬	PROPOSED STORM DRAIN INLET	— OH —	EXISTING OVERHEAD POWER
④⑤⑥	PROPOSED STORM DRAIN MANHOLE	— TEL —	EXISTING TELEPHONE LINE
		━ ━ ━ ━	PWSD EASEMENT
		— — —	TYP. EASEMENT

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
AV	AIR VAC RELEASE VALVE	N.T.S.	NOT TO SCALE
BVC	BEGIN VERTICAL CURVE	PVC	POLYVINYL CHLORIDE
BVP	BEGIN VERTICAL PROFILE	PVI	PT. OF VERTICAL INTERSECTION
CBO	CAP WITH BLOW OFF	PVT	POINT OF VERTICAL TANGENT
CRR	CURB RETURN RADIUS	RCBC	REINFORCED CONCRETE BOX CULVERT
EL	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EVC	END VERTICAL CURVE	SC	SANITARY CAP
EVP	END VERTICAL PROFILE	SD	STORM DRAIN
FG	FINISHED GROUND	SL	SECTION LINE
FH	FIRE HYDRANT	SS	SANITARY SEWER
FL	FLOW LINE	STA	STATION
GV	GATE VALVE	T.O.P.	TOP OF PIPE
HCR	HANDICAP CURB RAMP	UE	UTILITY EASEMENT
HP	HIGH POINT	VC	VERTICAL CURVE
INV	INVERT	WL	WATER LINE
K	CURVATURE COEFFICIENT	WLC	WATER LINE CONNECTION
LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION

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

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

TOWN OF PARKER, DIRECTOR OF ENGINEERING DATE

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 SCHEDULINE 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

APPROVED FOR CONSTRUCTION:
PARKER WATER AND SANITATION DISTRICT

BY: ______________________ ________
(DISTRICT ENGINEER) DATE

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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

PREPARED UNDER THE SUPERVISION OF

0050067
6-30-21

BRIAN P. WILSON
COLORADO P.E. 0050067

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.

07/02/2021
FIRE CODE OFFICIAL OR DESIGNATED REPRESENTATIVE DATE

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

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

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 AREA UTILITY PLAN.DWG, RHROWLAND, 6/17/2021 9:38 AM

No.	Revisions	Date	Init.	Appr.	Date

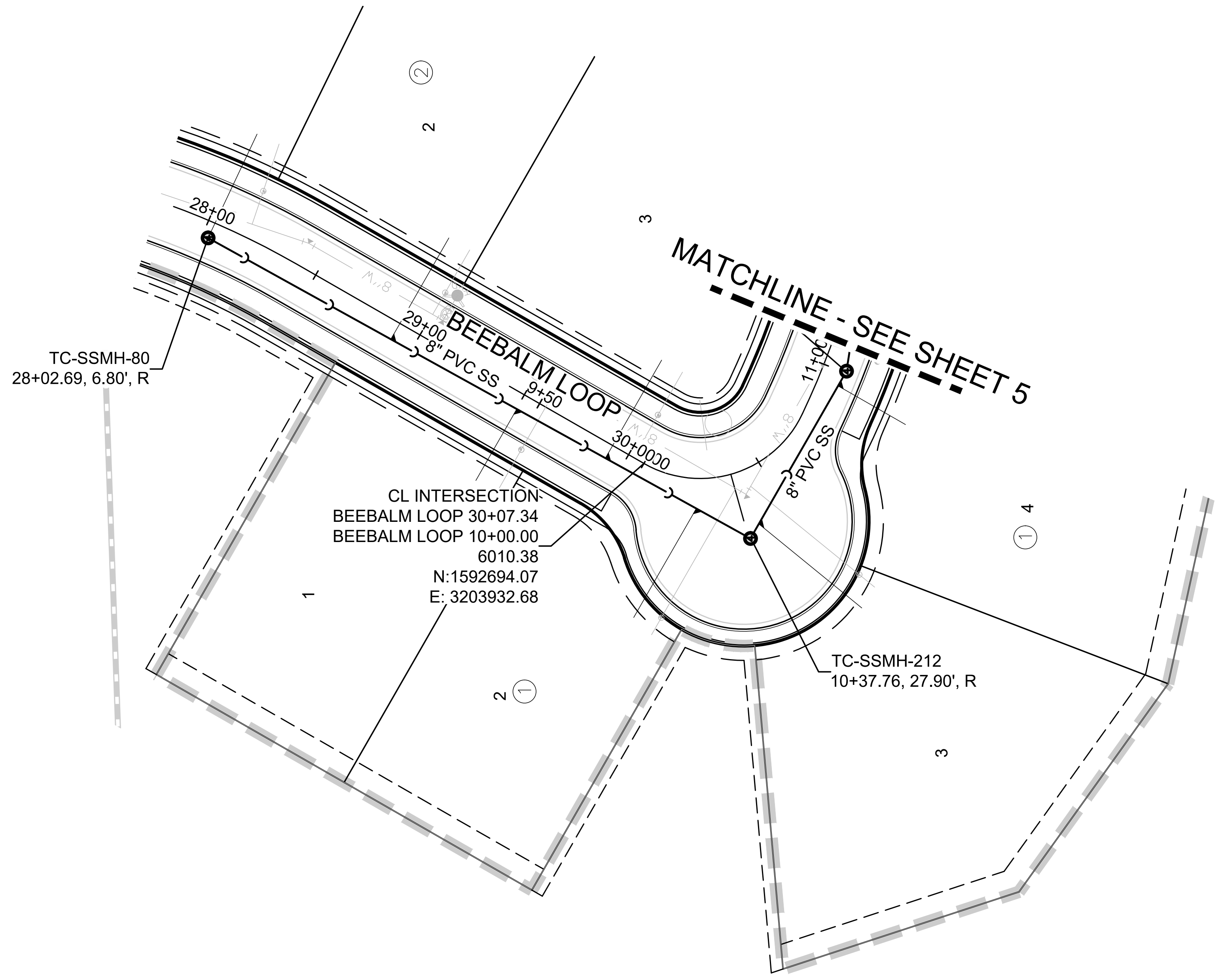
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

CVL a Westwood team

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

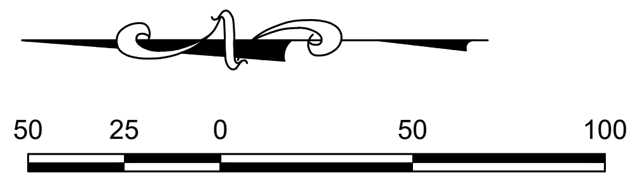
TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
AREA UTILITY PLAN

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: JLR
CHECKED BY: JJJ
DATE: SEPTEMBER 2017
SHEET NUMBER 3

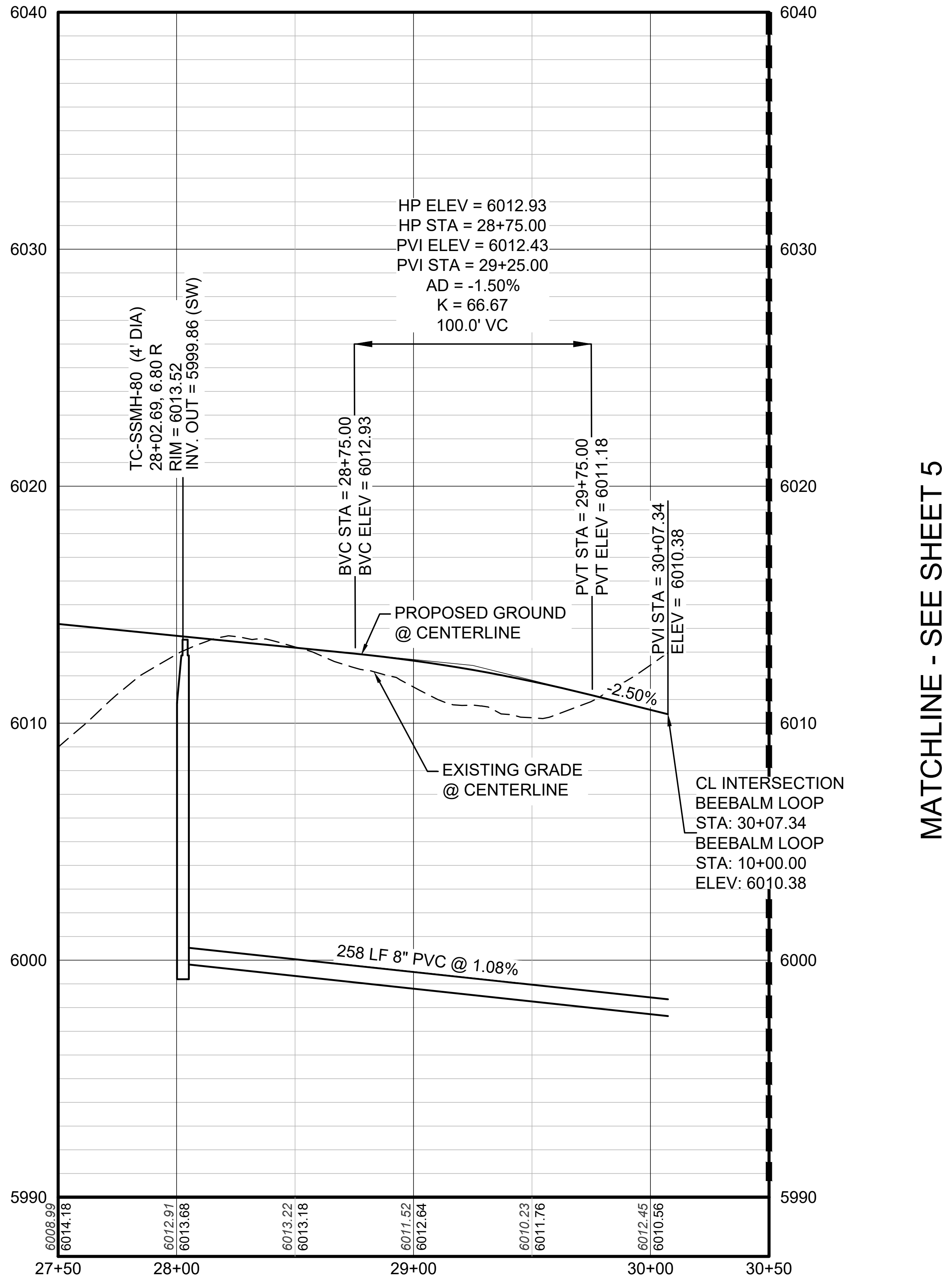


PLAN: BEEBALM LOOP STA: 28+00.00 TO 30+50.00

HORIZONTAL SCALE: 1" = 50'



SCALE: 1" = 50'

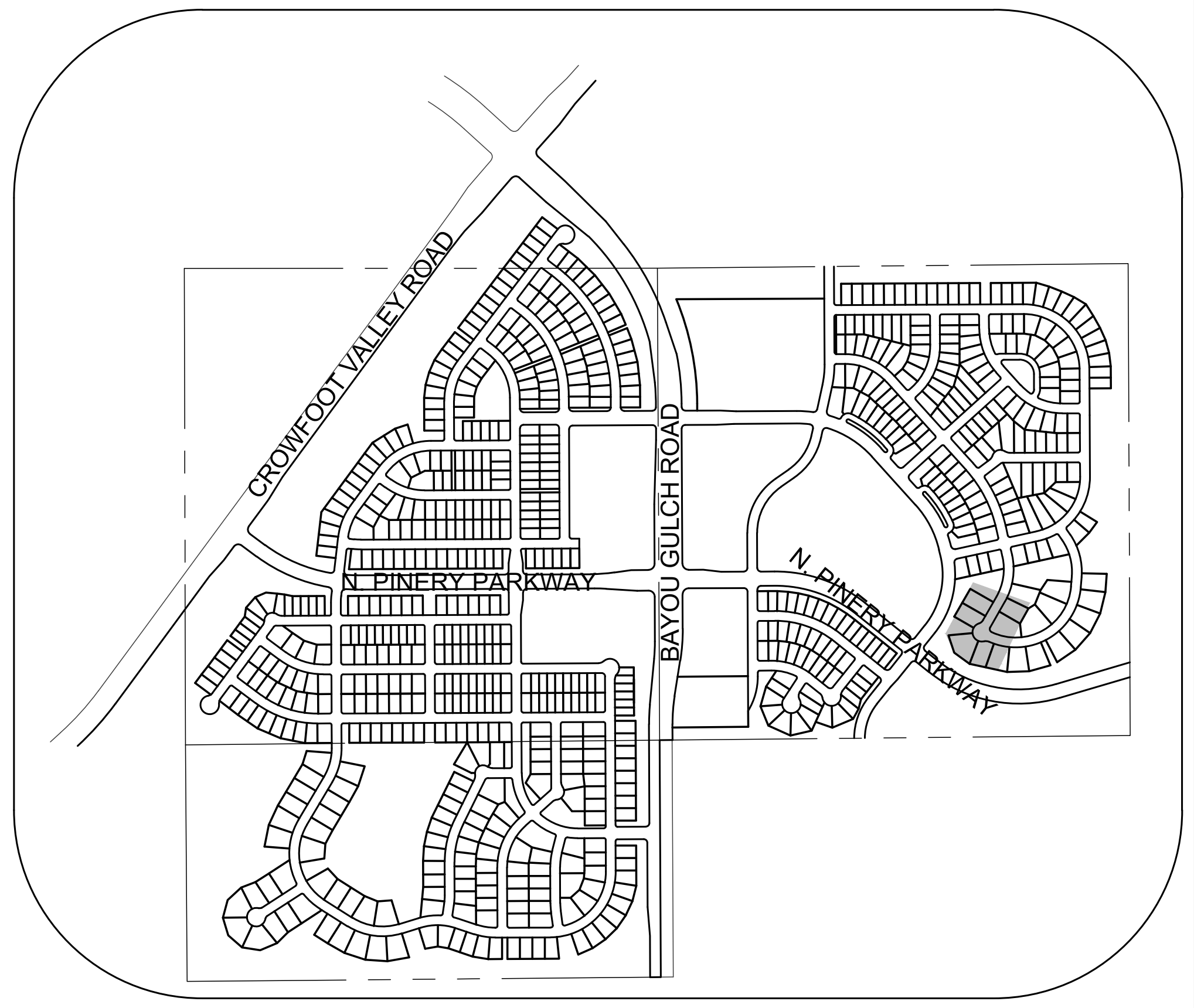


MATCHLINE - SEE SHEET 5

PROFILE: BEEBALMLOOPSTA: 27+50.00 TO 30+50.00

HORIZONTAL: 1" = 50'

VERTICAL: 1" = 5'



KEYMAP

N.T.S.

LEGEND

②	BLOCK NUMBER	△	PROPOSED RANGE POINT
Ⓐ	LOT TYPE	— - —	CENTERLINE
6	LOT NUMBER	━	RIGHT-OF-WAY
⊗	PROPOSED BUTTERFLY VALVE	—	PROPERTY LINE
⊓	PROPOSED CAP WITH END OF LINE BLOWOFF	—	EDGE OF PAVEMENT
⧓	PROPOSED REDUCER	➡	PROPOSED DIRECTION OF FLOW
⊗	PROPOSED VALVE	1.0% →	PROPOSED SLOPE & DIRECTION
●	PROPOSED FIRE HYDRANT	5615	EXISTING 5' CONTOUR
✢	PROPOSED WL FITTING WITH THRUST BLOCK	5616	EXISTING 1' CONTOUR
▽	PROPOSED FLARED END SECTION	5620	PROPOSED 5' CONTOUR
BO	PROPOSED LOW POINT BLOW-OFF	5607	PROPOSED 1' CONTOUR
AV	PROPOSED AIR VALVE	▬	PROPOSED STORM DRAIN
⋈	FUTURE PHASE VALVE	—④	PROPOSED SEWER LINE WITH MANHOLE
○	FUTURE FIRE HYDRANT	—	PROPOSED SEWER LATERAL
☼	PROPOSED LIGHT POLE	8"W	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	FO	EXISTING FIBER OPTIC LINE
▬	PROPOSED STORM DRAIN INLET	OH	EXISTING OVERHEAD POWER
④⑤⑥	PROPOSED STORM DRAIN MANHOLE	TEL	EXISTING TELEPHONE LINE
		- - - -	PWSD EASEMENT
		— — —	TYP. EASEMENT

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
AV	AIR VAC RELEASE VALVE	N.T.S.	NOT TO SCALE
BVC	BEGIN VERTICAL CURVE	PVC	POLYVINYL CHLORIDE
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1. SEE SHEET 3 FOR SANITARY SERVICE TABLES

BENCHMARK

DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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PREPARED UNDER THE SUPERVISION OF

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N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\SANITARY PLAN AND PROFILE\F12 BEEBALM WAY SANITARY.DWG, RHROWLAND, 6/17/2021 9:38 AM

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7353 South Alton Way
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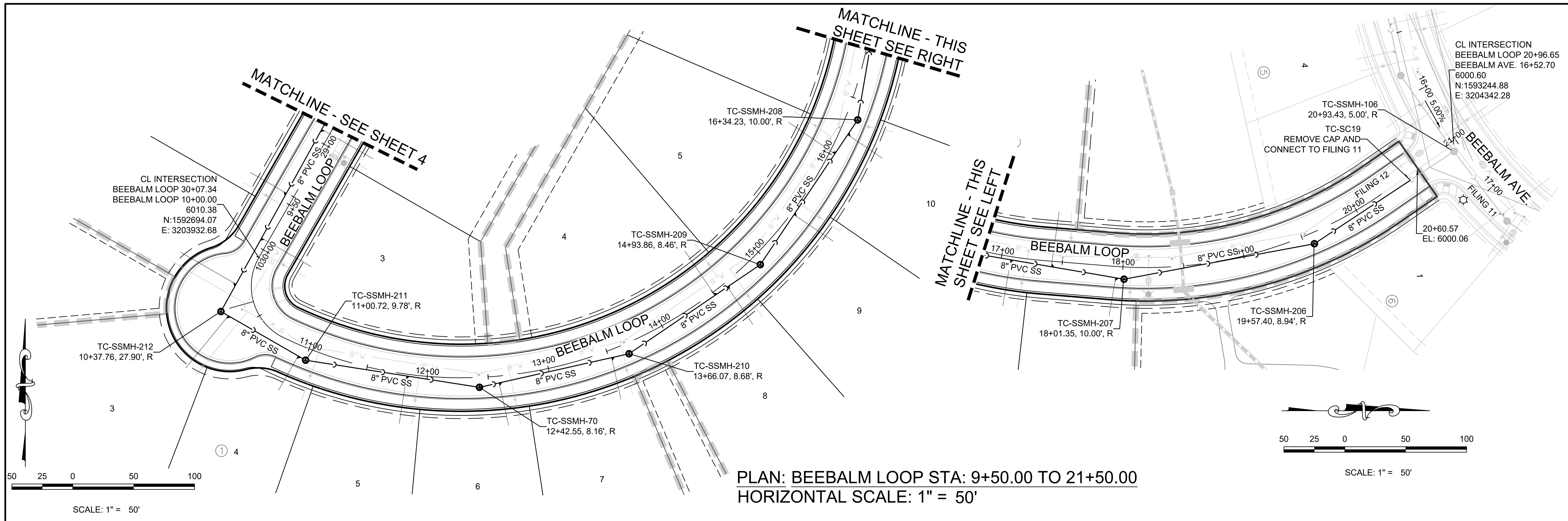
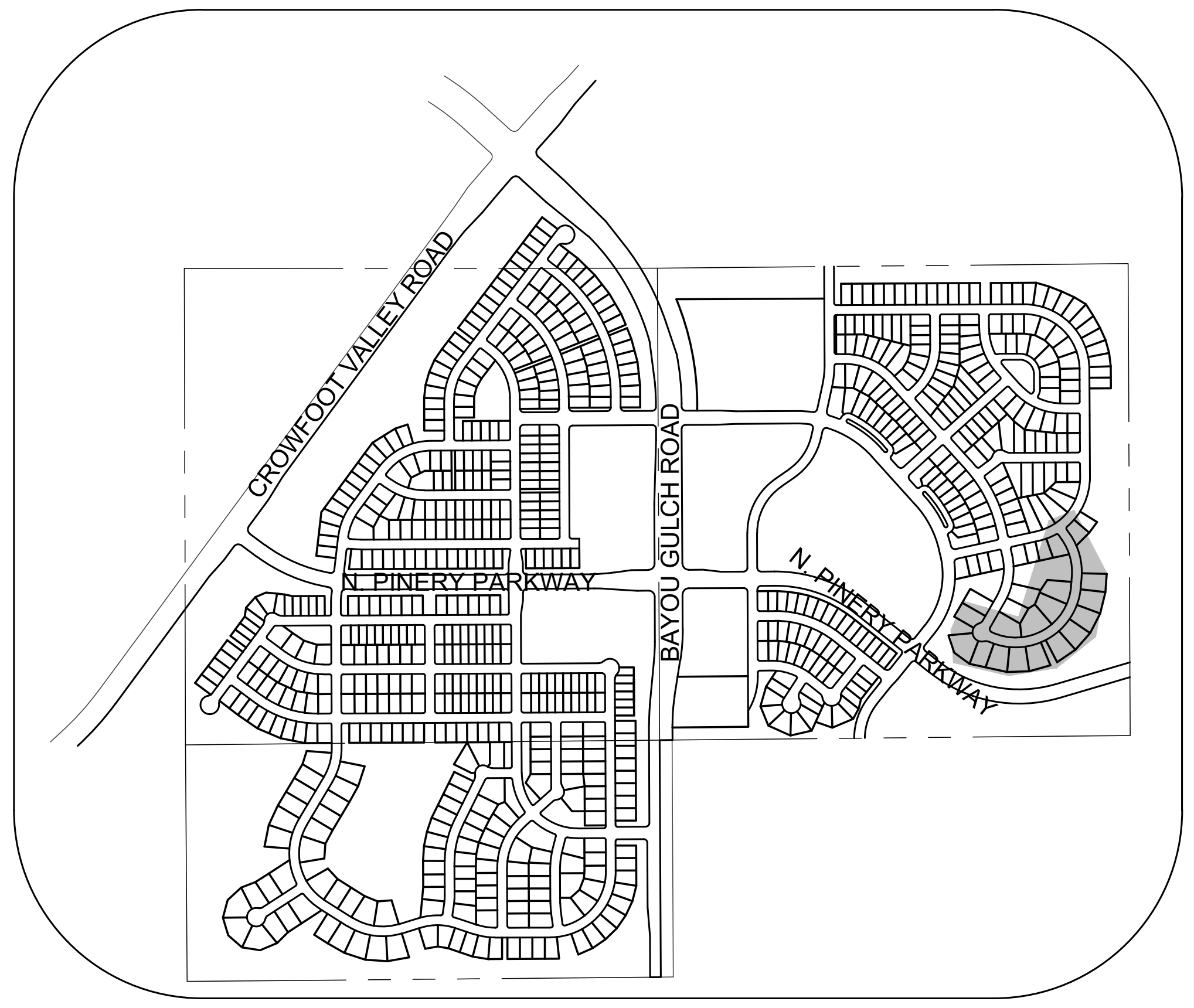
TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
SANITARY SEWER PLAN AND PROFILE
BEEBALM LOOP

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: JLR
CHECKED BY: JJJ
DATE: SEPTEMBER 2017
SHEET NUMBER 4


MATCHLINE - SEE SHEET 4
MATCHLINE - THIS SHEET SEE RIGHT
MATCHLINE - THIS SHEET SEE LEFT
CL INTERSECTION
BEEBALM LOOP 30+07.34
BEEBALM LOOP 10+00.00
6010.38
N:1592694.07
E: 3203932.68
BEEBALM LOOP
8" PVC SS
TC-SSMH-212
10+37.76, 27.90', R
TC-SSMH-211
11+00.72, 9.78', R
TC-SSMH-70
12+42.55, 8.16', R
TC-SSMH-210
13+66.07, 8.68', R
TC-SSMH-209
14+93.86, 8.46', R
TC-SSMH-208
16+34.23, 10.00', R
TC-SSMH-207
18+01.35, 10.00', R
TC-SSMH-206
19+57.40, 8.94', R
TC-SSMH-106
20+93.43, 5.00', R
TC-SC19
REMOVE CAP AND
CONNECT TO FILING 11
20+60.57
EL: 6000.06
CL INTERSECTION
BEEBALM LOOP 20+96.65
BEEBALM AVE. 16+52.70
6000.60
N:1593244.88
E: 3204342.28
BEEBALM AVE.
FILING 12
FILING 11
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00
1
2
3
4
5
6
7
8
9
10
50 25 0 50 100
SCALE: 1" = 50'

PLAN: BEEBALM LOOP STA: 9+50.00 TO 21+50.00

HORIZONTAL SCALE: 1" = 50'


CROWFOOT VALLEY ROAD
BAYOU GULCH ROAD
N. PINERY PARKWAY

KEYMAP

N.T.S.

LEGEND

②	BLOCK NUMBER	△	PROPOSED RANGE POINT
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⊓	PROPOSED CAP WITH END OF LINE BLOWOFF	——	EDGE OF PAVEMENT
⧓	PROPOSED REDUCER	➡	PROPOSED DIRECTION OF FLOW
⊗	PROPOSED VALVE	1.0% →	PROPOSED SLOPE & DIRECTION
●	PROPOSED FIRE HYDRANT	— 5615 —	EXISTING 5' CONTOUR
✢	PROPOSED WL FITTING WITH THRUST BLOCK	— 5616 —	EXISTING 1' CONTOUR
▽	PROPOSED FLARED END SECTION	— 5620 —	PROPOSED 5' CONTOUR
BO	PROPOSED LOW POINT BLOW-OFF	— 5607 —	PROPOSED 1' CONTOUR
AV	PROPOSED AIR VALVE	━━	PROPOSED STORM DRAIN
⋈	FUTURE PHASE VALVE	—●—	PROPOSED SEWER LINE WITH MANHOLE
○	FUTURE FIRE HYDRANT	———	PROPOSED SEWER LATERAL
☼	PROPOSED LIGHT POLE	— 8"W —	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	— FO —	EXISTING FIBER OPTIC LINE
▬	PROPOSED STORM DRAIN INLET	— OH —	EXISTING OVERHEAD POWER
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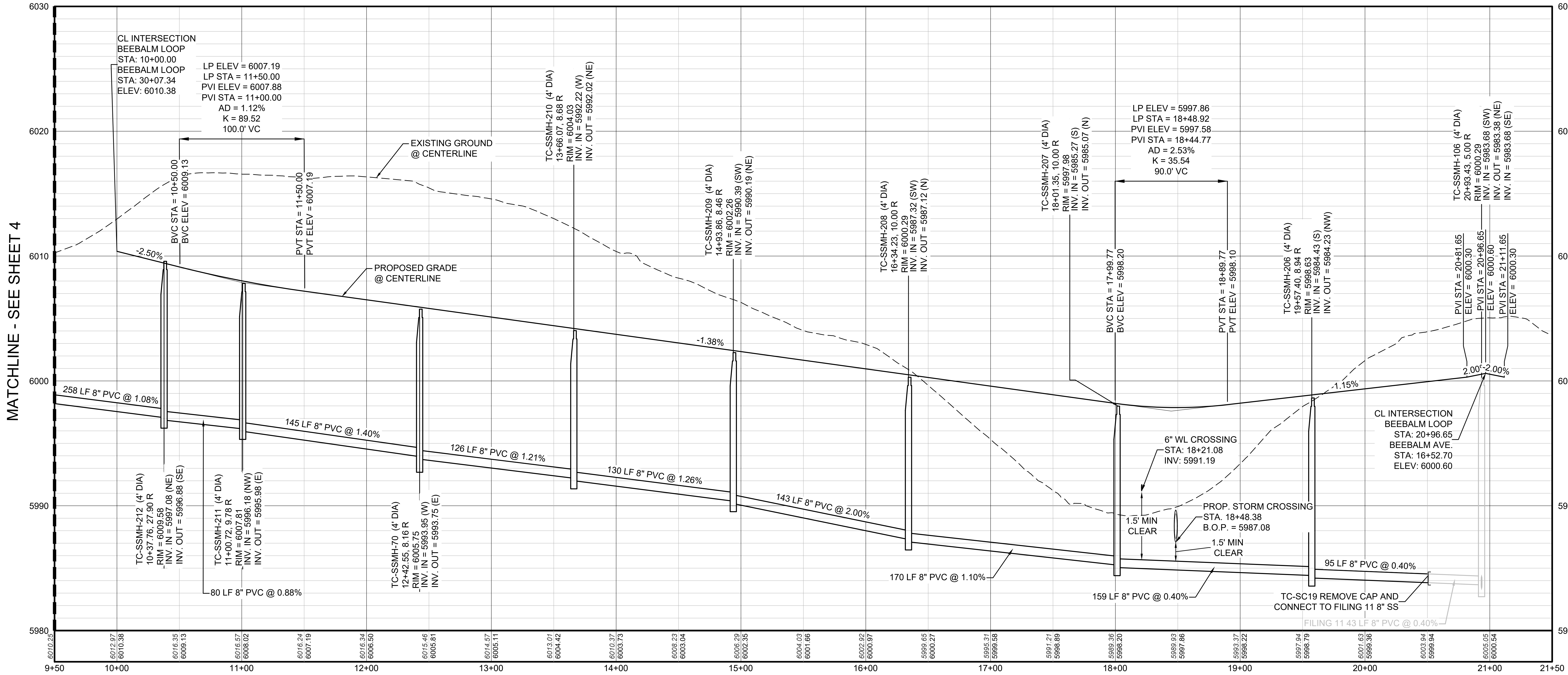
1. SEE SHEET 3 FOR SANITARY SERVICE TABLES


MATCHLINE - SEE SHEET 4
6030
6020
6010
6000
5990
5980
CL INTERSECTION
BEEBALM LOOP
STA: 10+00.00
BEEBALM LOOP
STA: 30+07.34
ELEV: 6010.38
LP ELEV = 6007.19
LP STA = 11+50.00
PVI ELEV = 6007.88
PVI STA = 11+00.00
AD = 1.12%
K = 89.52
100.0' VC
BVC STA = 10+50.00
BVC ELEV = 6009.13
PVT STA = 11+50.00
PVT ELEV = 6007.19
EXISTING GROUND
@ CENTERLINE
PROPOSED GRADE
@ CENTERLINE
-2.50%
-1.38%
-1.15%
2.00%
-2.00%
TC-SSMH-210 (4' DIA)
13+66.07, 8.68 R
RIM = 6004.03
INV. IN = 5992.22 (W)
INV. OUT = 5992.02 (NE)
TC-SSMH-209 (4' DIA)
14+93.86, 8.46 R
RIM = 6002.26
INV. IN = 5990.39 (SW)
INV. OUT = 5990.19 (NE)
TC-SSMH-208 (4' DIA)
16+34.23, 10.00 R
RIM = 6000.29
INV. IN = 5987.32 (SW)
INV. OUT = 5987.12 (N)
TC-SSMH-207 (4' DIA)
18+01.35, 10.00 R
RIM = 5997.98
INV. IN = 5985.27 (S)
INV. OUT = 5985.07 (N)
LP ELEV = 5997.86
LP STA = 18+48.92
PVI ELEV = 5997.58
PVI STA = 18+44.77
AD = 2.53%
K = 35.54
90.0' VC
BVC STA = 17+99.77
BVC ELEV = 5998.20
PVT STA = 18+89.77
PVT ELEV = 5998.10
TC-SSMH-206 (4' DIA)
19+57.40, 8.94 R
RIM = 5998.63
INV. IN = 5984.43 (S)
INV. OUT = 5984.23 (NW)
TC-SSMH-106 (4' DIA)
20+93.43, 5.00 R
RIM = 6000.29
INV. IN = 5983.68 (SW)
INV. OUT = 5983.38 (NE)
INV. IN = 5983.68 (SE)
PVI STA = 20+81.65
ELEV = 6000.30
PVI STA = 20+96.65
ELEV = 6000.60
PVI STA = 21+11.65
ELEV = 6000.30
CL INTERSECTION
BEEBALM LOOP
STA: 20+96.65
BEEBALM AVE.
STA: 16+52.70
ELEV: 6000.60
258 LF 8" PVC @ 1.08%
145 LF 8" PVC @ 1.40%
126 LF 8" PVC @ 1.21%
130 LF 8" PVC @ 1.26%
143 LF 8" PVC @ 2.00%
170 LF 8" PVC @ 1.10%
159 LF 8" PVC @ 0.40%
95 LF 8" PVC @ 0.40%
80 LF 8" PVC @ 0.88%
TC-SSMH-212 (4' DIA)
10+37.76, 27.90 R
RIM = 6009.58
INV. IN = 5997.08 (NE)
INV. OUT = 5996.88 (SE)
TC-SSMH-211 (4' DIA)
11+00.72, 9.78 R
RIM = 6007.81
INV. IN = 5996.18 (NW)
INV. OUT = 5995.98 (E)
TC-SSMH-70 (4' DIA)
12+42.55, 8.16 R
RIM = 6005.75
INV. IN = 5993.95 (W)
INV. OUT = 5993.75 (E)
6" WL CROSSING
STA: 18+21.08
INV: 5991.19
1.5' MIN
CLEAR
PROP. STORM CROSSING
STA. 18+48.38
B.O.P. = 5987.08
1.5' MIN
CLEAR
TC-SC19 REMOVE CAP AND
CONNECT TO FILING 11 8" SS
FILING 11 43 LF 8" PVC @ 0.40%
6010.25
6012.97 6010.38
6016.35 6009.13
6016.57 6008.02
6016.24 6007.19
6016.34 6006.50
6015.46 6005.81
6014.57 6005.11
6013.01 6004.42
6010.37 6003.73
6008.23 6003.04
6006.29 6002.35
6004.03 6001.66
6002.92 6000.97
5999.65 6000.27
5995.31 5999.58
5991.21 5998.89
5989.36 5998.20
5989.93 5997.86
5993.37 5998.22
5997.94 5998.79
6001.63 5999.36
6003.94 5999.94
6005.05 6000.54
9+50
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00
21+00
21+50

PROFILE: BEEBALM LOOP STA: 9+50.00 TO 21+50.00

HORIZONTAL: 1" = 50'

VERTICAL: 1" = 5'

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PREPARED UNDER THE SUPERVISION OF
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0050067
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FILING 12 CONSTRUCTION DRAWINGS
SANITARY SEWER PLAN AND PROFILE
BEEBALM LOOP

SCALE: AS SHOWN
FILE NO: 8130283701
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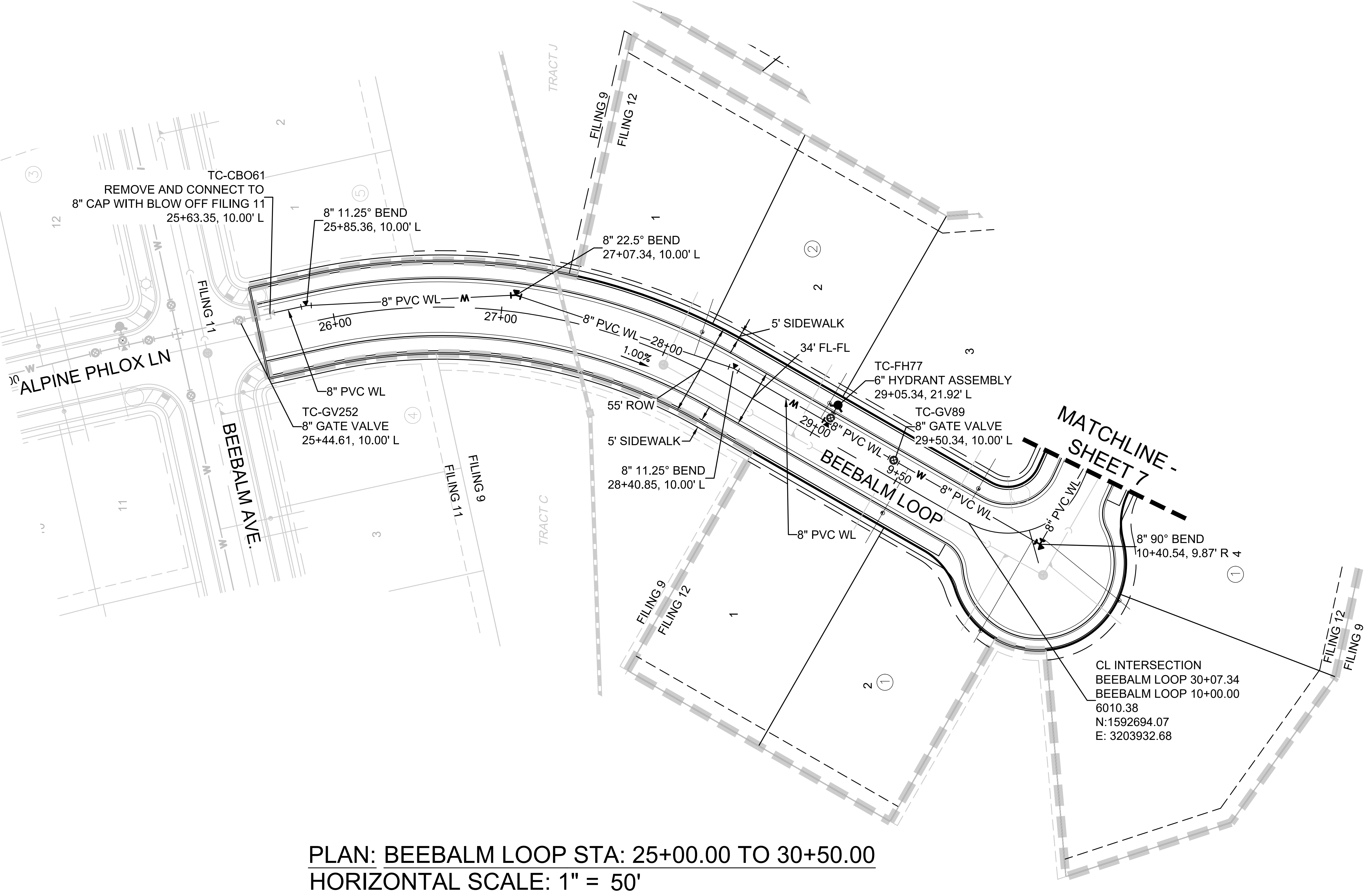
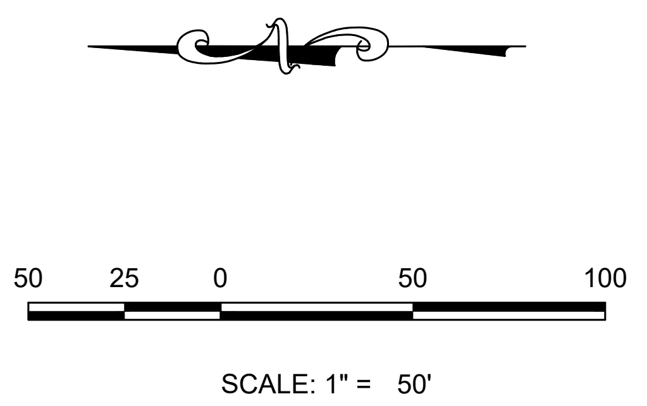
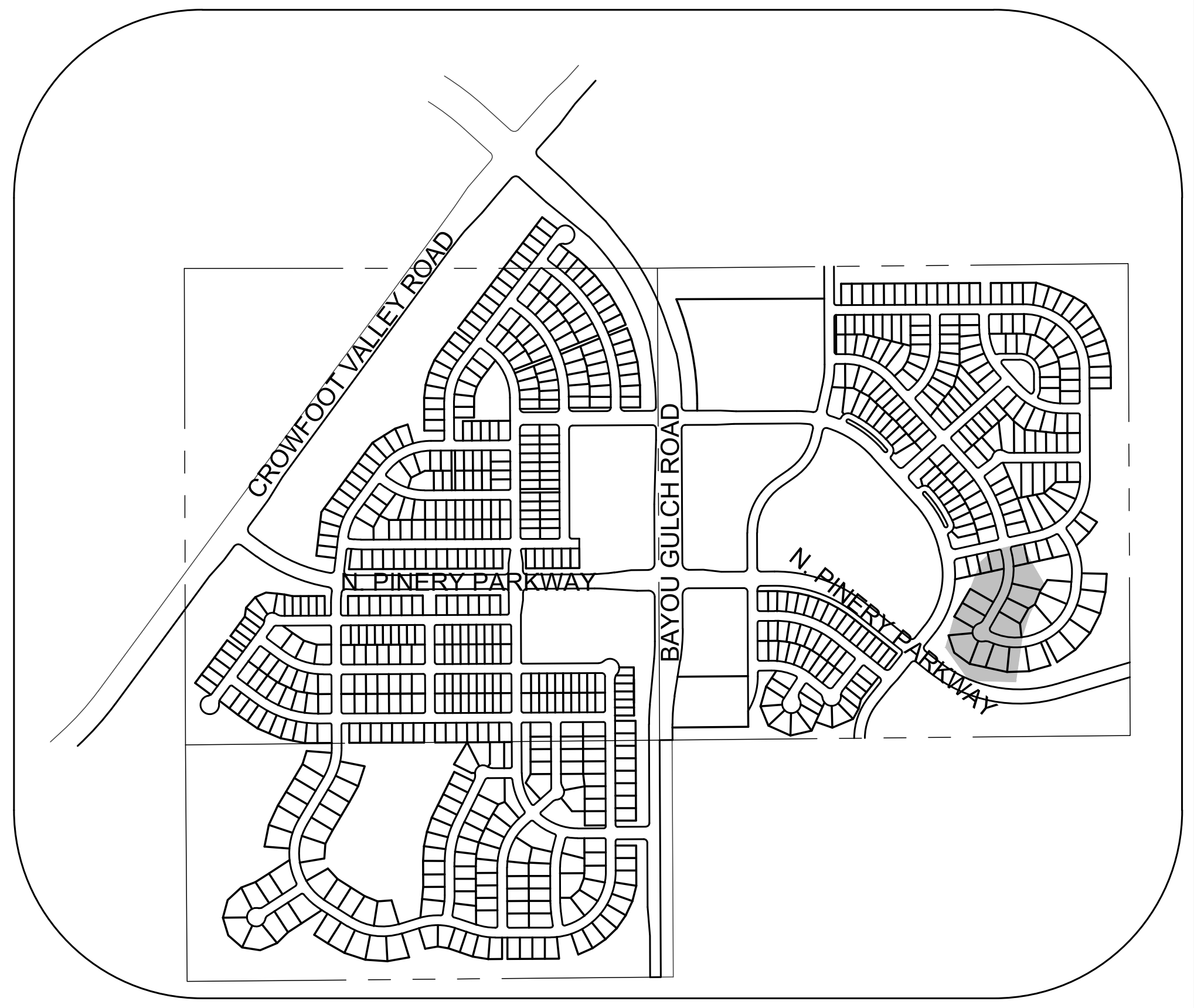
N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\SANITARY PLAN AND PROFILE\F12 BEEBALM WAY SANITARY.DWG, RHROWLAND, 6/17/2021 9:42 AM


TC-CBO61
REMOVE AND CONNECT TO
8" CAP WITH BLOW OFF FILING 11
25+63.35, 10.00' L
8" 11.25° BEND
25+85.36, 10.00' L
8" 22.5° BEND
27+07.34, 10.00' L
8" PVC WL
26+00
27+00
28+00
1.00%
5' SIDEWALK
34' FL-FL
TC-FH77
6" HYDRANT ASSEMBLY
29+05.34, 21.92' L
TC-GV89
8" GATE VALVE
29+50.34, 10.00' L
MATCHLINE - SHEET 7
55' ROW
5' SIDEWALK
8" 11.25° BEND
28+40.85, 10.00' L
29+00
9+50
BEEBALM LOOP
8" 90° BEND
10+40.54, 9.87' R
ALPINE PHLOX LN
BEEBALM AVE.
TC-GV252
8" GATE VALVE
25+44.61, 10.00' L
FILING 9
FILING 11
FILING 12
TRACT J
TRACT C
CL INTERSECTION
BEEBALM LOOP 30+07.34
BEEBALM LOOP 10+00.00
6010.38
N:1592694.07
E: 3203932.68

PLAN: BEEBALM LOOP STA: 25+00.00 TO 30+50.00

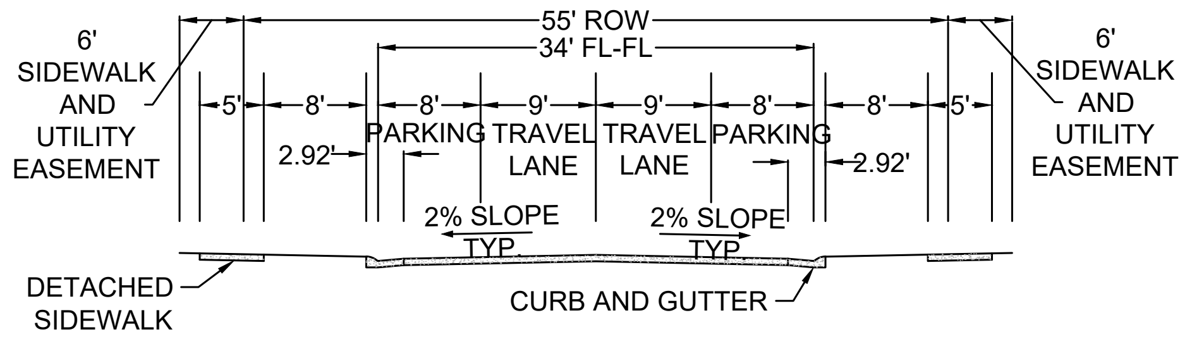
HORIZONTAL SCALE: 1" = 50'


50
25
0
50
100
SCALE: 1" = 50'


CROWFOOT VALLEY ROAD
N. PINERY PARKWAY
BAYOU GULCH ROAD
N. PINERY PARKWAY

KEYMAP

N.T.S.


55' ROW
34' FL-FL
6' SIDEWALK AND UTILITY EASEMENT
5'
8'
8'
9'
9'
8'
8'
5'
PARKING
TRAVEL LANE
TRAVEL LANE
PARKING
2.92'
2.92'
2% SLOPE TYP.
2% SLOPE TYP.
6' SIDEWALK AND UTILITY EASEMENT
DETACHED SIDEWALK
CURB AND GUTTER

RESIDENTIAL LOCAL

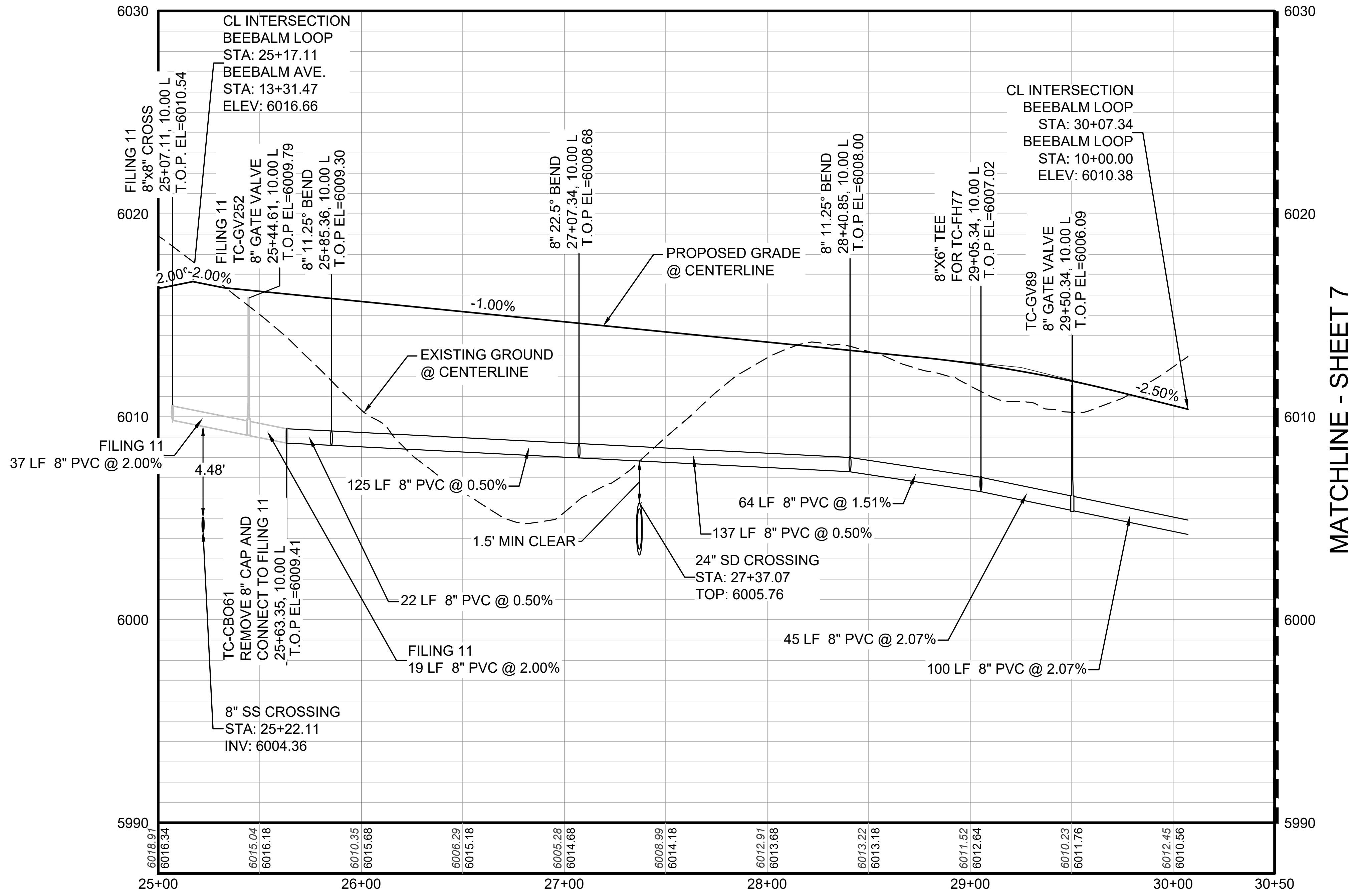
LEGEND

②	BLOCK NUMBER
Ⓐ	LOT TYPE
6	LOT NUMBER
⊗	PROPOSED BUTTERFLY VALVE
⊓	PROPOSED CAP WITH END OF LINE BLOWOFF
⧓	PROPOSED REDUCER
⊗	PROPOSED VALVE
●	PROPOSED FIRE HYDRANT
✢	PROPOSED WL FITTING WITH THRUST BLOCK
▽	PROPOSED FLARED END SECTION
BO	PROPOSED LOW POINT BLOW-OFF
AV	PROPOSED AIR VALVE
⋈	FUTURE PHASE VALVE
○	FUTURE FIRE HYDRANT
☼	PROPOSED LIGHT POLE
═	PROPOSED SIDEWALK
▭	PROPOSED SIDEWALK RAMP
10.00	EXISTING ELEVATION
10.00	PROPOSED DESIGN ELEVATION
▬	PROPOSED STORM DRAIN INLET
④⑤⑥	PROPOSED STORM DRAIN MANHOLE
△	PROPOSED RANGE POINT
— - —	CENTERLINE
━	RIGHT-OF-WAY
—	PROPERTY LINE
—	EDGE OF PAVEMENT
➡	PROPOSED DIRECTION OF FLOW
1.0% →	PROPOSED SLOPE & DIRECTION
5615	EXISTING 5' CONTOUR
5616	EXISTING 1' CONTOUR
5620	PROPOSED 5' CONTOUR
5607	PROPOSED 1' CONTOUR
━	PROPOSED STORM DRAIN
—④	PROPOSED SEWER LINE WITH MANHOLE
—	PROPOSED SEWER LATERAL
8"W	PROPOSED WATER LINE
—	PROPOSED WATER LATERAL W/ METER
— —	SECTION LINE
▬ ▬	FILING BOUNDARY
FO	EXISTING FIBER OPTIC LINE
OH	EXISTING OVERHEAD POWER
TEL	EXISTING TELEPHONE LINE
- - -	PWSD EASEMENT
— —	TYP. EASEMENT

ABBREVIATIONS

AD	ANGLE DIFFERENCE
AV	AIR VAC RELEASE VALVE
BVC	BEGIN VERTICAL CURVE
BVP	BEGIN VERTICAL PROFILE
CBO	CAP WITH BLOW OFF
CRR	CURB RETURN RADIUS
EL	ELEVATION
EP	EDGE OF PAVEMENT
EVC	END VERTICAL CURVE
EVP	END VERTICAL PROFILE
FG	FINISHED GROUND
FH	FIRE HYDRANT
FL	FLOW LINE
GV	GATE VALVE
HCR	HANDICAP CURB RAMP
HP	HIGH POINT
INV	INVERT
K	CURVATURE COEFFICIENT
LF	LINEAR FEET
MH	MANHOLE
N.T.S.	NOT TO SCALE
PVC	POLYVINYL CHLORIDE
PVI	PT. OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
RCBC	REINFORCED CONCRETE BOX CULVERT
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT OF WAY
SC	SANITARY CAP
SD	STORM DRAIN
SL	SECTION LINE
SS	SANITARY SEWER
STA	STATION
T.O.P.	TOP OF PIPE
UE	UTILITY EASEMENT
VC	VERTICAL CURVE
WL	WATER LINE
WLC	WATER LINE CONNECTION
WSE	WATER SURFACE ELEVATION

1. SEE SHEET 3 FOR WATER SERVICE TABLES



PROFILE: BEEBALMLOOPSTA: 25+00.00 TO 30+50.00

HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

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

0050067
6-30-21

Brian P. Wilson

BRIAN P. WILSON
COLORADO P.E. 0050067

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

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\WATER PLAN AND PROFILE\F12 BEEBALM WAY WATER.DWG, RHROWLAND, 6/17/2021 10:57 AM

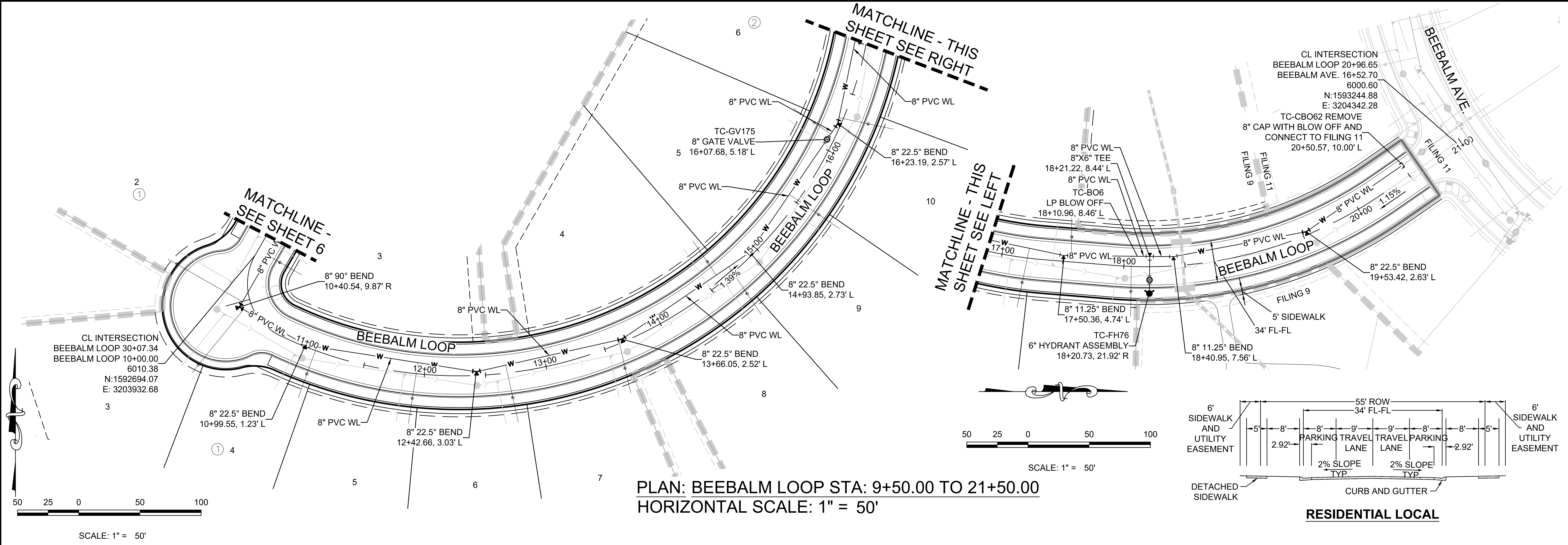
No.	Revisions	Date	Init.	Appr.	Date

CVL
a Westwood team
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
WATER PLAN & PROFILE
BEEBALM LOOP

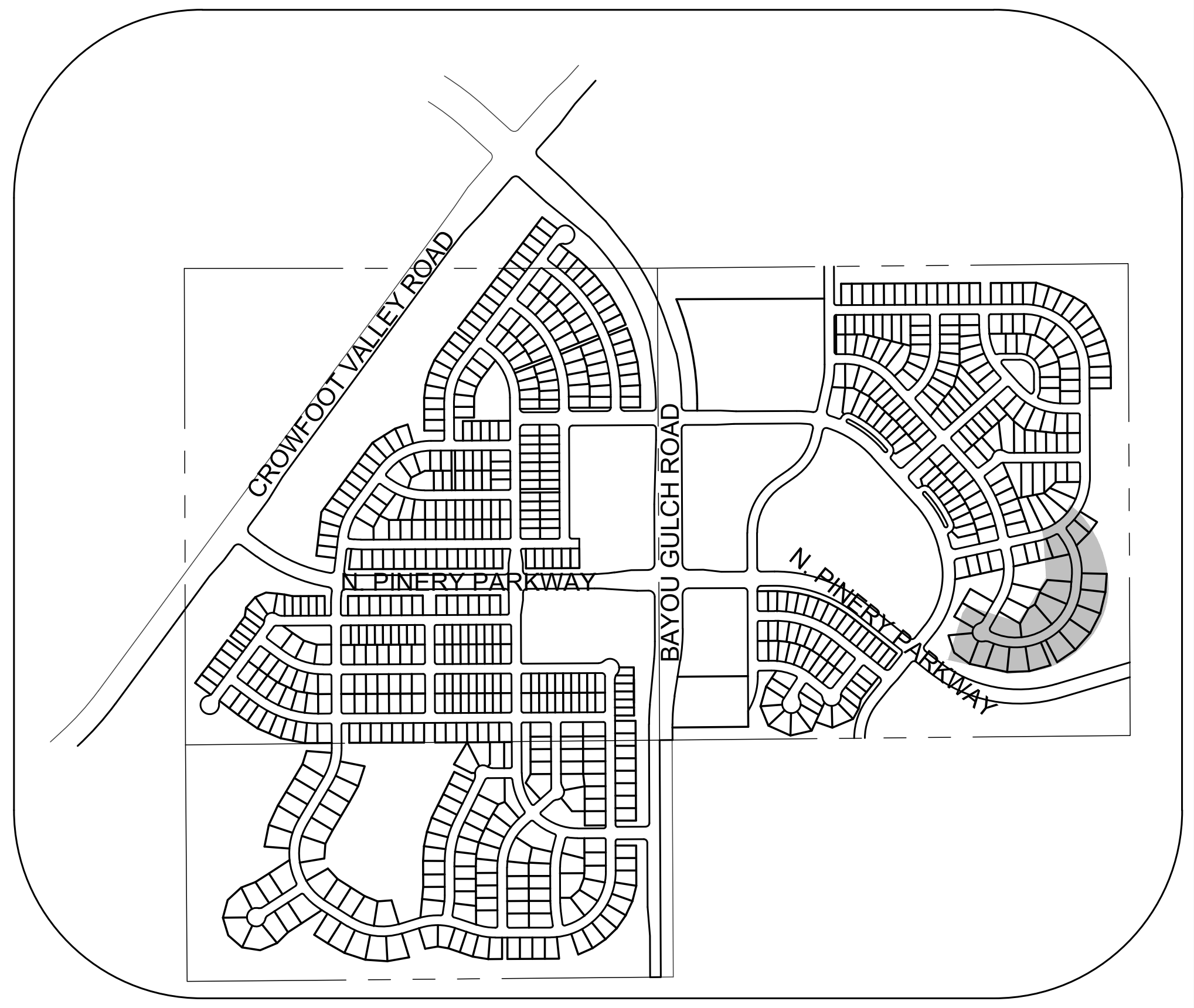
SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: RHR
CHECKED BY: JJJ
DATE: SEPTEMBER 2017
SHEET NUMBER
6


MATCHLINE - SEE SHEET 6
MATCHLINE - THIS SHEET SEE RIGHT
MATCHLINE - THIS SHEET SEE LEFT
BEEBALM LOOP
BEEBALM AVE.
CL INTERSECTION
BEEBALM LOOP 30+07.34
BEEBALM LOOP 10+00.00
6010.38
N:1592694.07
E: 3203932.68
8" 90° BEND
10+40.54, 9.87' R
8" 22.5° BEND
10+99.55, 1.23' L
8" 22.5° BEND
12+42.66, 3.03' L
8" 22.5° BEND
13+66.05, 2.52' L
8" 22.5° BEND
14+93.85, 2.73' L
TC-GV175
8" GATE VALVE
16+07.68, 5.18' L
8" 22.5° BEND
16+23.19, 2.57' L
8" PVC WL
1.39%
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
20+00
21+00
8" PVC WL
8"X6" TEE
18+21.22, 8.44' L
TC-BO6
LP BLOW OFF
18+10.96, 8.46' L
8" 11.25° BEND
17+50.36, 4.74' L
TC-FH76
6" HYDRANT ASSEMBLY
18+20.73, 21.92' R
8" 11.25° BEND
18+40.95, 7.56' L
8" 22.5° BEND
19+53.42, 2.63' L
1.15%
5' SIDEWALK
34' FL-FL
FILING 9
FILING 11
CL INTERSECTION
BEEBALM LOOP 20+96.65
BEEBALM AVE. 16+52.70
6000.60
N:1593244.88
E: 3204342.28
TC-CBO62 REMOVE
8" CAP WITH BLOW OFF AND
CONNECT TO FILING 11
20+50.57, 10.00' L
2
3
4
5
6
7
8
9
10
①
②
50 25 0 50 100
SCALE: 1" = 50'
55' ROW
34' FL-FL
6' SIDEWALK AND UTILITY EASEMENT
5'
8'
9'
PARKING
TRAVEL LANE
2.92'
2% SLOPE TYP.
DETACHED SIDEWALK
CURB AND GUTTER

PLAN: BEEBALM LOOP STA: 9+50.00 TO 21+50.00

HORIZONTAL SCALE: 1" = 50'

RESIDENTIAL LOCAL

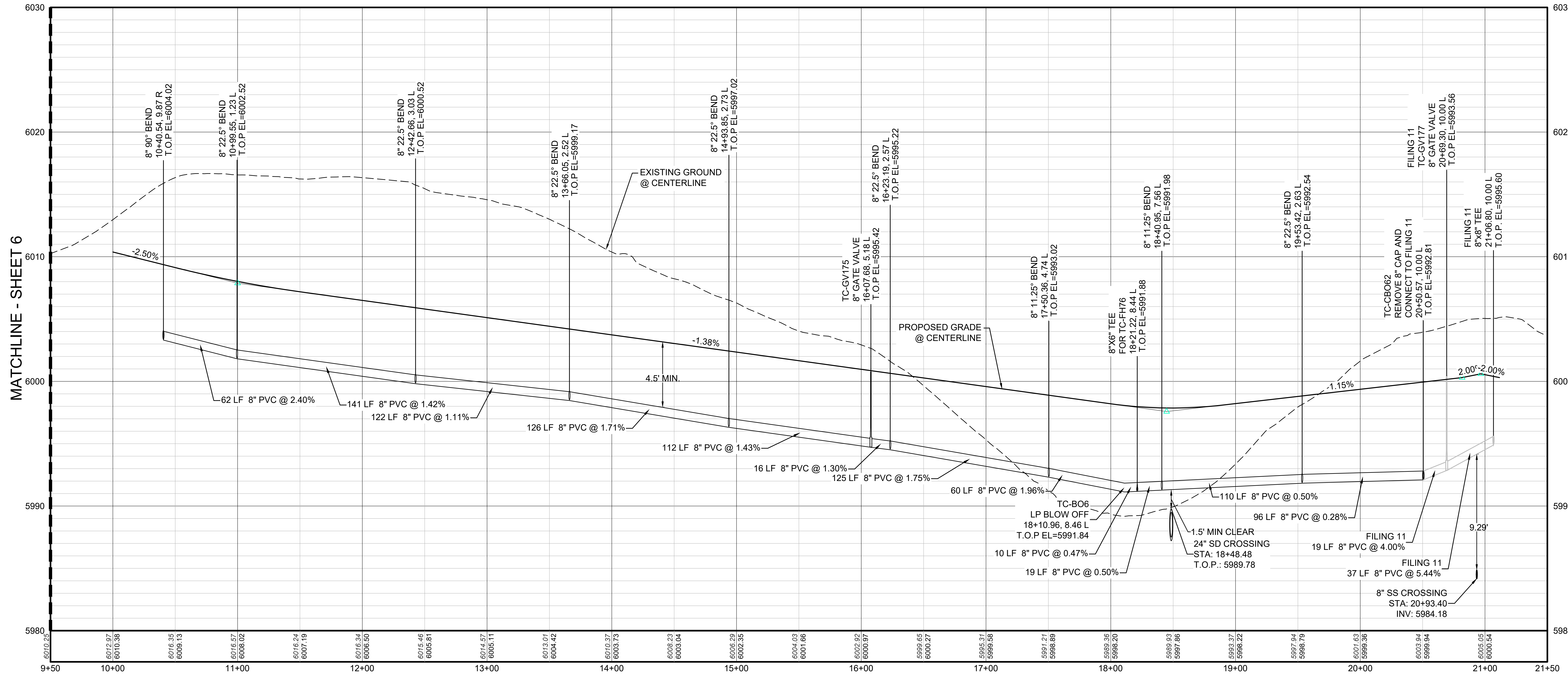

CROWFOOT VALLEY ROAD
N. PINERY PARKWAY
BAYOU GULCH ROAD

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
BO	PROPOSED LOW POINT BLOW-OFF	5607	PROPOSED 1' CONTOUR
AV	PROPOSED AIR VALVE	▬	PROPOSED STORM DRAIN
⋈	FUTURE PHASE VALVE	—●	PROPOSED SEWER LINE WITH MANHOLE
○	FUTURE FIRE HYDRANT	—	PROPOSED SEWER LATERAL
☼	PROPOSED LIGHT POLE	8"W	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	FO	EXISTING FIBER OPTIC LINE
▬	PROPOSED STORM DRAIN INLET	OH	EXISTING OVERHEAD POWER
④⑤⑥	PROPOSED STORM DRAIN MANHOLE	TEL	EXISTING TELEPHONE LINE
		- - - -	PWSD EASEMENT
		— — —	TYP. EASEMENT


MATCHLINE - SHEET 6
6030
6020
6010
6000
5990
5980
8" 90° BEND
10+40.54, 9.87 R
T.O.P EL=6004.02
8" 22.5° BEND
10+99.55, 1.23 L
T.O.P EL=6002.52
8" 22.5° BEND
12+42.66, 3.03 L
T.O.P EL=6000.52
8" 22.5° BEND
13+66.05, 2.52 L
T.O.P EL=5999.17
8" 22.5° BEND
14+93.85, 2.73 L
T.O.P EL=5997.02
EXISTING GROUND
@ CENTERLINE
TC-GV175
8" GATE VALVE
16+07.68, 5.18 L
T.O.P EL=5995.42
8" 22.5° BEND
16+23.19, 2.57 L
T.O.P EL=5995.22
PROPOSED GRADE
@ CENTERLINE
8" 11.25° BEND
17+50.36, 4.74 L
T.O.P EL=5993.02
8"X6" TEE
FOR TC-FH76
18+21.22, 8.44 L
T.O.P EL=5991.88
8" 11.25° BEND
18+40.95, 7.56 L
T.O.P EL=5991.98
8" 22.5° BEND
19+53.42, 2.63 L
T.O.P EL=5992.54
TC-CBO62
REMOVE 8" CAP AND
CONNECT TO FILING 11
20+50.57, 10.00 L
T.O.P EL=5992.81
FILING 11
TC-GV177
8" GATE VALVE
20+69.30, 10.00 L
T.O.P EL=5993.56
FILING 11
8"x8" TEE
21+06.80, 10.00 L
T.O.P. EL=5995.60
-2.50%
-1.38%
-1.15%
2.00%
-2.00%
4.5' MIN.
62 LF 8" PVC @ 2.40%
141 LF 8" PVC @ 1.42%
122 LF 8" PVC @ 1.11%
126 LF 8" PVC @ 1.71%
112 LF 8" PVC @ 1.43%
16 LF 8" PVC @ 1.30%
125 LF 8" PVC @ 1.75%
60 LF 8" PVC @ 1.96%
TC-BO6
LP BLOW OFF
18+10.96, 8.46 L
T.O.P EL=5991.84
10 LF 8" PVC @ 0.47%
19 LF 8" PVC @ 0.50%
1.5' MIN CLEAR
24" SD CROSSING
STA: 18+48.48
T.O.P.: 5989.78
110 LF 8" PVC @ 0.50%
96 LF 8" PVC @ 0.28%
FILING 11
19 LF 8" PVC @ 4.00%
FILING 11
37 LF 8" PVC @ 5.44%
9.29'
8" SS CROSSING
STA: 20+93.40
INV: 5984.18
6010.25
6012.97 6010.38
6016.35 6009.13
6016.57 6008.02
6016.24 6007.19
6016.34 6006.50
6015.46 6005.81
6014.57 6005.11
6013.01 6004.42
6010.37 6003.73
6008.23 6003.04
6006.29 6002.35
6004.03 6001.66
6002.92 6000.97
5999.65 6000.27
5995.31 5999.58
5991.21 5998.89
5989.36 5998.20
5989.93 5997.86
5993.37 5998.22
5997.94 5998.79
6001.63 5999.36
6003.94 5999.94
6005.05 6000.54
9+50
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00
21+00
21+50

PROFILE: BEEBALM LOOP STA: 9+50.00 TO 21+50.00

HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

ABBREVIATIONS

AD	ANGLE DIFFERENCE	MH	MANHOLE
AV	AIR VAC RELEASE VALVE	N.T.S.	NOT TO SCALE
BVC	BEGIN VERTICAL CURVE	PVC	POLYVINYL CHLORIDE
BVP	BEGIN VERTICAL PROFILE	PVI	PT. OF VERTICAL INTERSECTION
CBO	CAP WITH BLOW OFF	PVT	POINT OF VERTICAL TANGENT
CRR	CURB RETURN RADIUS	RCBC	REINFORCED CONCRETE BOX CULVERT
EL	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EVC	END VERTICAL CURVE	SC	SANITARY CAP
EVP	END VERTICAL PROFILE	SD	STORM DRAIN
FG	FINISHED GROUND	SL	SECTION LINE
FH	FIRE HYDRANT	SS	SANITARY SEWER
FL	FLOW LINE	STA	STATION
GV	GATE VALVE	T.O.P.	TOP OF PIPE
HCR	HANDICAP CURB RAMP	UE	UTILITY EASEMENT
HP	HIGH POINT	VC	VERTICAL CURVE
INV	INVERT	WL	WATER LINE
K	CURVATURE COEFFICIENT	WLC	WATER LINE CONNECTION
LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION

1. SEE SHEET 3 FOR WATER SERVICE TABLES

BENCHMARK

DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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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

6-30-21
0050067

BRIAN P. WILSON
COLORADO P.E. 0050067

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

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\WATER PLAN AND PROFILE\F12 BEEBALM WAY WATER.DWG, RHROWLAND, 6/17/2021 9:47 AM

No.	Revisions	Date	Init.	Appr.	Date

CVL a Westwood team
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
WATER PLAN & PROFILE
BEEBALM LOOP

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: RHR
CHECKED BY: JJJ
DATE: SEPTEMBER 2017
SHEET NUMBER 7

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 BULDING ADDRESSES OR LOT AND BLOCK NUMBERS BEFORE DISTRICT INSPECTION OR METER SET WILL FAIL AUTOMATICALLY.
7. CONTRACTOR MUST BE PRESSENT 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 PERMANANTELY MARKED ON CURB FACE AS FOLLOWS:
   "X" FOR SANITARY SEWER SERVICE
   "V" FOR WATER SERVICES

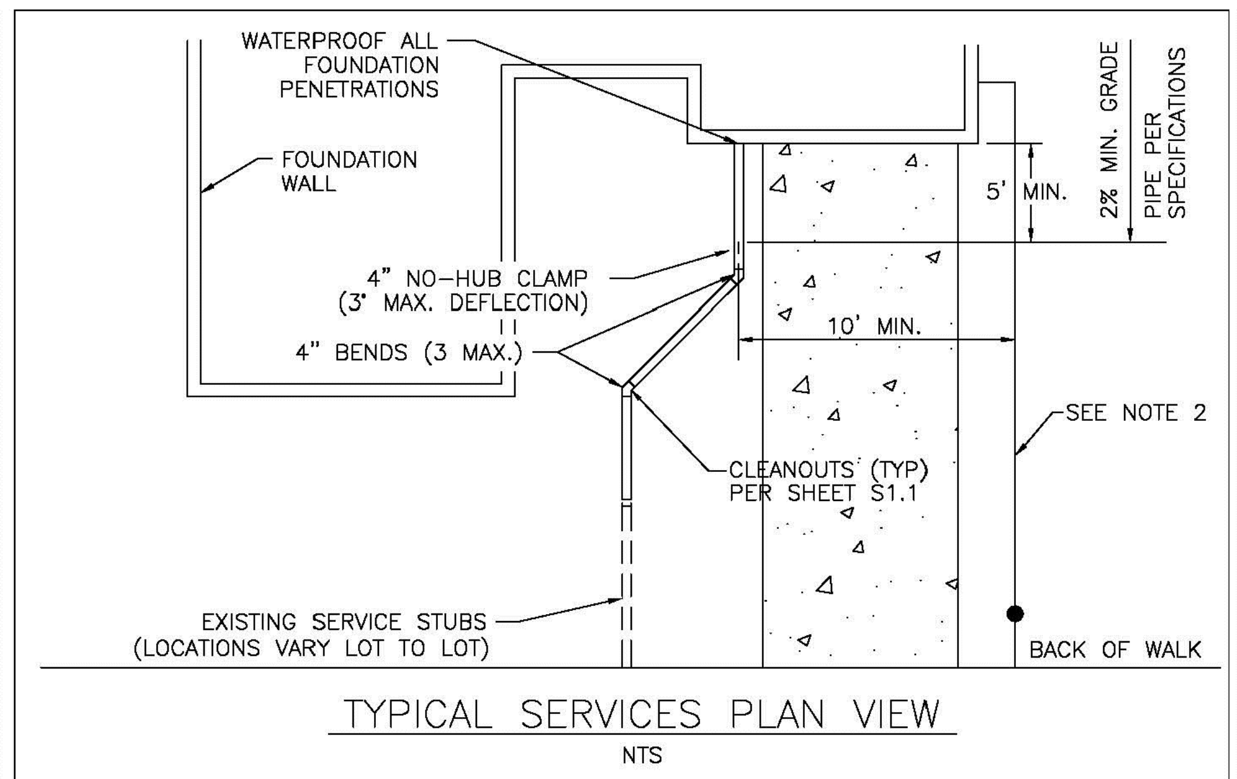
PARKER WATER
& SANITATION DISTRICT

DISTRICT POLICIES & INSTALLATION
NOTES FOR SEWER SERVICES

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

2016 REVISION

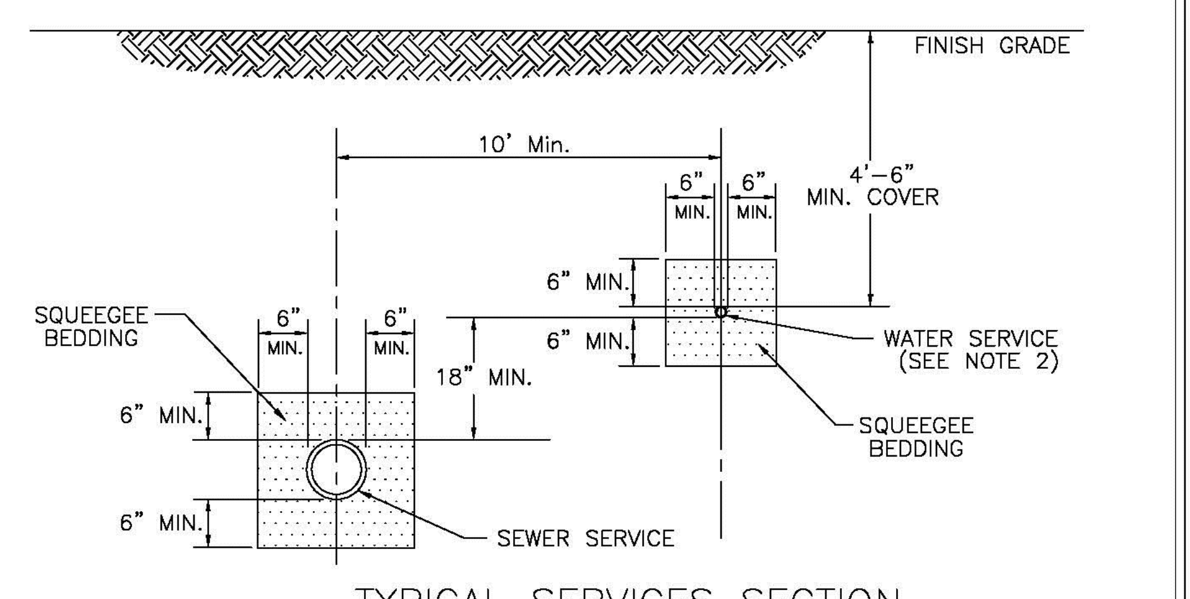
SHEET S1.1



WATERPROOF ALL FOUNDATION PENETRATIONS
FOUNDATION WALL
4" NO-HUB CLAMP (3° MAX. DEFLECTION)
4" BENDS (3 MAX.)
5' MIN.
2% MIN. GRADE PIPE PER SPECIFICATIONS
10' MIN.
SEE NOTE 2
CLEANOUTS (TYP) PER SHEET S1.1
EXISTING SERVICE STUBS (LOCATIONS VARY LOT TO LOT)
BACK OF WALK

TYPICAL SERVICES PLAN VIEW

NTS



FINISH GRADE
10' Min.
4'-6" MIN. COVER
6" MIN.
6" MIN.
6" MIN.
6" MIN.
18" MIN.
SQUEEGEE BEDDING
WATER SERVICE (SEE NOTE 2)
SQUEEGEE BEDDING
SEWER SERVICE

TYPICAL SERVICES SECTION

NTS

NOTE

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

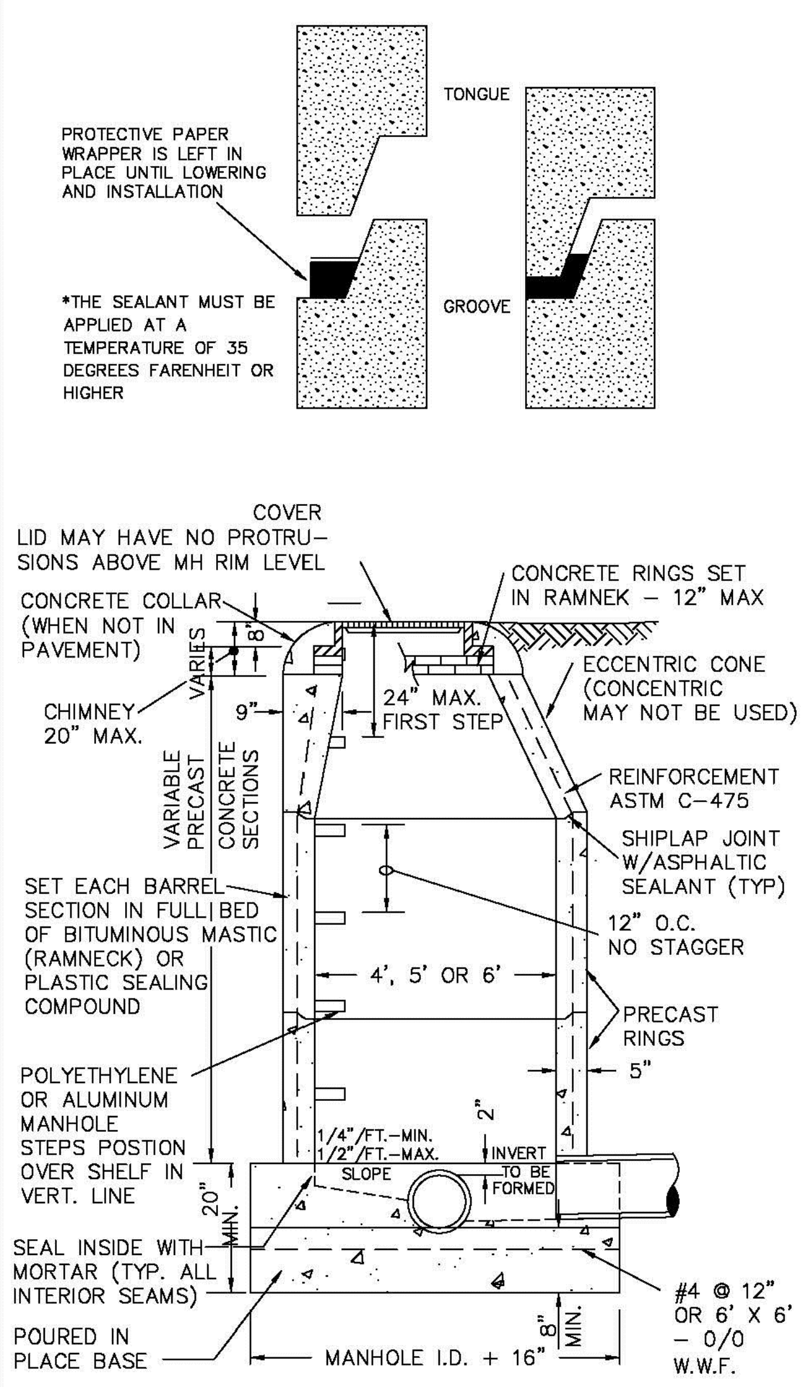
PARKER WATER
& SANITATION DISTRICT

TYPICAL SEWER SERVICES

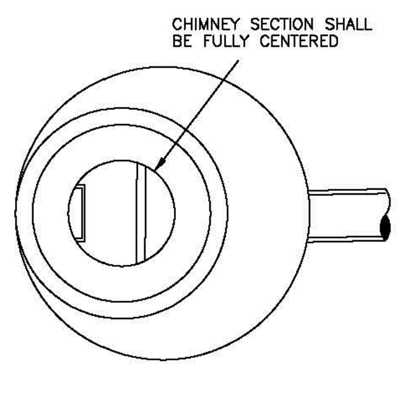
SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
2/00
01/02
01/16
10/16

2016 REVISION

SHEET S1.2



PROTECTIVE PAPER WRAPPER IS LEFT IN PLACE UNTIL LOWERING AND INSTALLATION
TONGUE
GROOVE
*THE SEALANT MUST BE APPLIED AT A TEMPERATURE OF 35 DEGREES FARENHEIT OR HIGHER
COVER
LID MAY HAVE NO PROTRUSIONS ABOVE MH RIM LEVEL
CONCRETE COLLAR (WHEN NOT IN PAVEMENT)
CHIMNEY 20" MAX.
CONCRETE RINGS SET IN RAMNEK - 12" MAX
24" MAX. FIRST STEP
ECCENTRIC CONE (CONCENTRIC MAY NOT BE USED)
VARIABLE PRECAST CONCRETE SECTIONS
REINFORCEMENT ASTM C-475
SHIPLAP JOINT W/ASPHALTIC SEALANT (TYP)
12" O.C. NO STAGGER
SET EACH BARREL SECTION IN FULL BED OF BITUMINOUS MASTIC (RAMNECK) OR PLASTIC SEALING COMPOUND
4', 5' OR 6'
PRECAST RINGS
POLYETHYLENE OR ALUMINUM MANHOLE STEPS POSTION OVER SHELF IN VERT. LINE
1/4"/FT.-MIN. 1/2"/FT.-MAX. SLOPE
INVERT TO BE FORMED
SEAL INSIDE WITH MORTAR (TYP. ALL INTERIOR SEAMS)
POURED IN PLACE BASE
MANHOLE I.D. + 16"
#4 @ 12" OR 6' X 6' - 0/0 W.W.F.
8" MIN.
20" MIN.



CHIMNEY SECTION SHALL BE FULLY CENTERED

NOTES:

1. RING/COVER AND CHIMNEY SHALL BE CENTERED ON CONCRETE RINGS W/RAMNECK.
2. FLAT TOP SECTIONS MAY BE USED IN LIEU OF ECCENTRIC MANHOLES WHEN SPECIFICALLY APPROVED BY DISTRICT ENGINEER.
3. FOR MANHOLE DEPTHS LESS THAN 4' FROM RIM TO TOP OF BENCH, VERTICAL MANHOLE BARRELS WITH PRECAST FLAT TOP SECTIONS ARE REQUIRED.
4. ALL PRECAST MANHOLE SECTIONS, FLAT TOPS, BARRELS, REDUCERS, ETC. SHALL CONFORM TO ASTM C-478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED MANHOLE SECTIONS.
5. FLAT TOPS SHALL BE CAPABLE OF WITHSTANDING H-20 LIVE LOADS.
6. ALL INTERIOR SEAMS AND PIN HOLES SHALL BE GROUTED WITH TYPE II CEMENT MIX.
7. SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING OR SHAPING CONCRETE BASE.
8. FLAT TOP SECTIONS WITH CONCENTRIC OPENINGS ARE NOT ALLOWED.
9. MANHOLE STEPS SHALL NOT BE INSTALLED OVER THE FLOW CHANNEL. THEY SHALL BE PLACED 12" APART IN A VERTICAL ALIGNMENT WITH THE BOTTOM STEP 8" ABOVE THE BENCH MINIMUM.
10. FLEXIBLE PLASTIC SEALANT, (RAMNECK ETC.) IS REQUIRED IN SHIPLAP JOINTS AND IN JOINTS BETWEEN BASE, BARREL SECTIONS, CONE SECTIONS, FLAT TOPS, ETC.
11. DESIGN ENGINEER OR DISTRICT ENGINEER MAY INCREASE MANHOLE SIZE FOR SPECIAL DESIGN CONSIDERATIONS.
12. SLIP-RING FRAME RISERS MAY NOT BE USED.

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

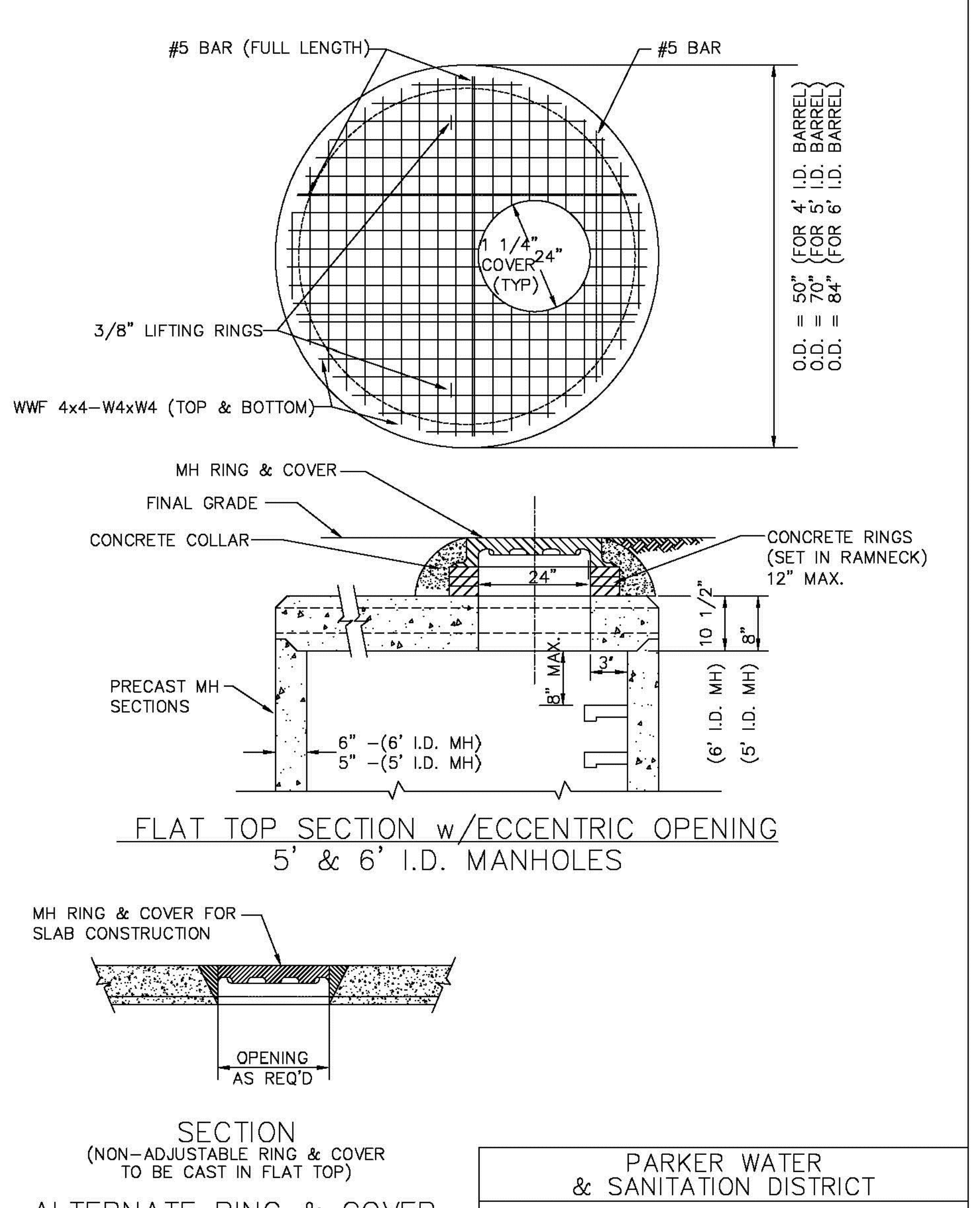
PARKER WATER
& SANITATION DISTRICT

PARKER MANHOLE
ECCENTRIC CONE

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

2016 REVISION

SHEET S3.1



#5 BAR (FULL LENGTH)
#5 BAR
1 1/4" COVER 24" (TYP)
3/8" LIFTING RINGS
WWF 4x4-W4xW4 (TOP & BOTTOM)
O.D. = 50" (FOR 4' I.D. BARREL)
O.D. = 60" (FOR 5' I.D. BARREL)
O.D. = 84" (FOR 6' I.D. BARREL)
MH RING & COVER
FINAL GRADE
CONCRETE COLLAR
24"
CONCRETE RINGS (SET IN RAMNECK) 12" MAX.
PRECAST MH SECTIONS
6" -(6' I.D. MH)
5" -(5' I.D. MH)
10 1/2"
(6' I.D. MH)
(5' I.D. MH)
MH RING & COVER FOR SLAB CONSTRUCTION
OPENING AS REQ'D

FLAT TOP SECTION w/ECCENTRIC OPENING

5' & 6' I.D. MANHOLES

SECTION
(NON-ADJUSTABLE RING & COVER TO BE CAST IN FLAT TOP)

ALTERNATE RING & COVER

(TO BE USED ONLY WHEN SPECIFICALLY AUTHORIZED.)

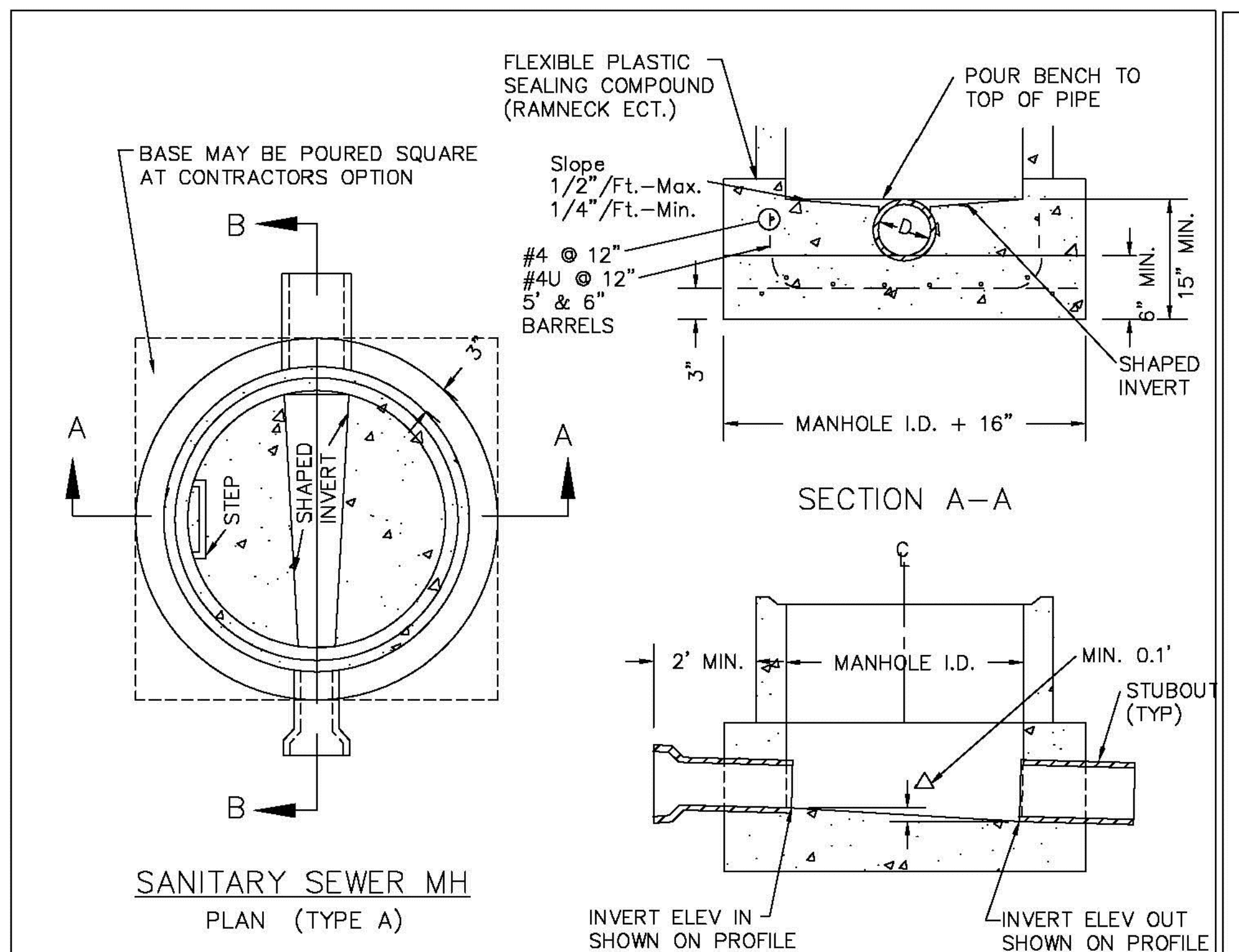
PARKER WATER
& SANITATION DISTRICT

PRECAST MANHOLE – 5' & 6' I.D.
WITH ECCENTRIC CONE

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

2016 REVISION

SHEET S3.3



FLEXIBLE PLASTIC SEALING COMPOUND (RAMNECK ECT.)
POUR BENCH TO TOP OF PIPE
BASE MAY BE POURED SQUARE AT CONTRACTORS OPTION
Slope 1/2"/Ft.-Max. 1/4"/Ft.-Min.
#4 @ 12"
#4U @ 12"
5' & 6' BARRELS
15" MIN.
5" MIN.
3"
MANHOLE I.D. + 16"
SHAPED INVERT
B
A
A
B
STEP
SHAPED INVERT
SECTION A-A
C
2" MIN.
MANHOLE I.D.
MIN. 0.1'
STUBOUT (TYP)
INVERT ELEV IN SHOWN ON PROFILE
INVERT ELEV OUT SHOWN ON PROFILE

SANITARY SEWER MH

PLAN (TYPE A)

SECTION B-B

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'-0" 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. △ = invert drop thru MH (if △ > 18", outside drop MH required). Min. 0.1' for all straight through MH and 0.2' for all angled MH.

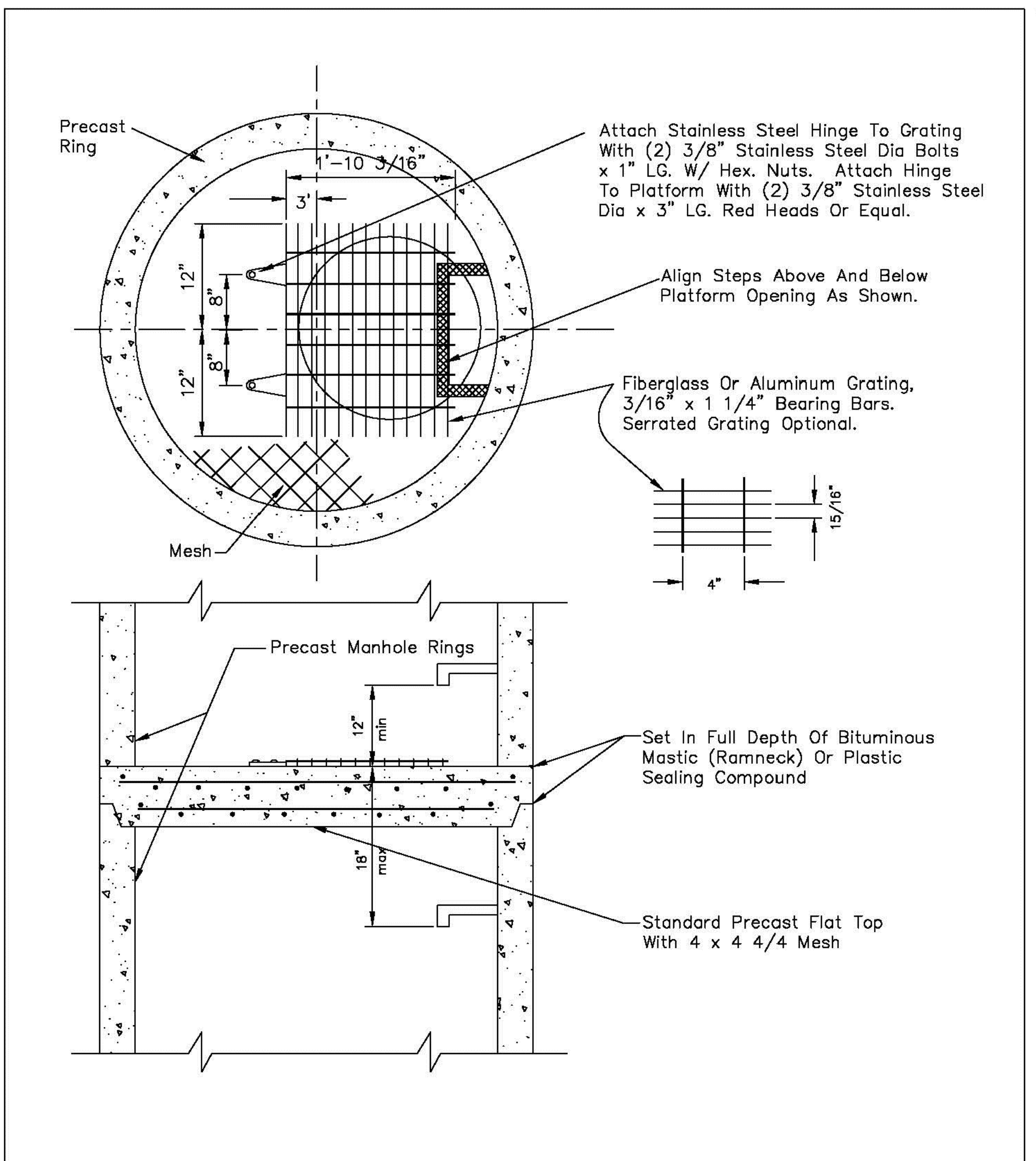
PARKER WATER
& SANITATION DISTRICT

CAST-IN-PLACE MANHOLE
BASE DETAIL

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

2016 REVISION

SHEET S3.5



Precast Ring
3' 10 3/16"
Attach Stainless Steel Hinge To Grating With (2) 3/8" Stainless Steel Dia Bolts x 1" LG. W/ Hex. Nuts. Attach Hinge To Platform With (2) 3/8" Stainless Steel Dia x 3" LG. Red Heads Or Equal.
Align Steps Above And Below Platform Opening As Shown.
Fiberglass Or Aluminum Grating, 3/16" x 1 1/4" Bearing Bars. Serrated Grating Optional.
Mesh
Precast Manhole Rings
Set In Full Depth Of Bituminous Mastic (Ramneck) Or Plastic Sealing Compound
Standard Precast Flat Top With 4 x 4 4/4 Mesh

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.

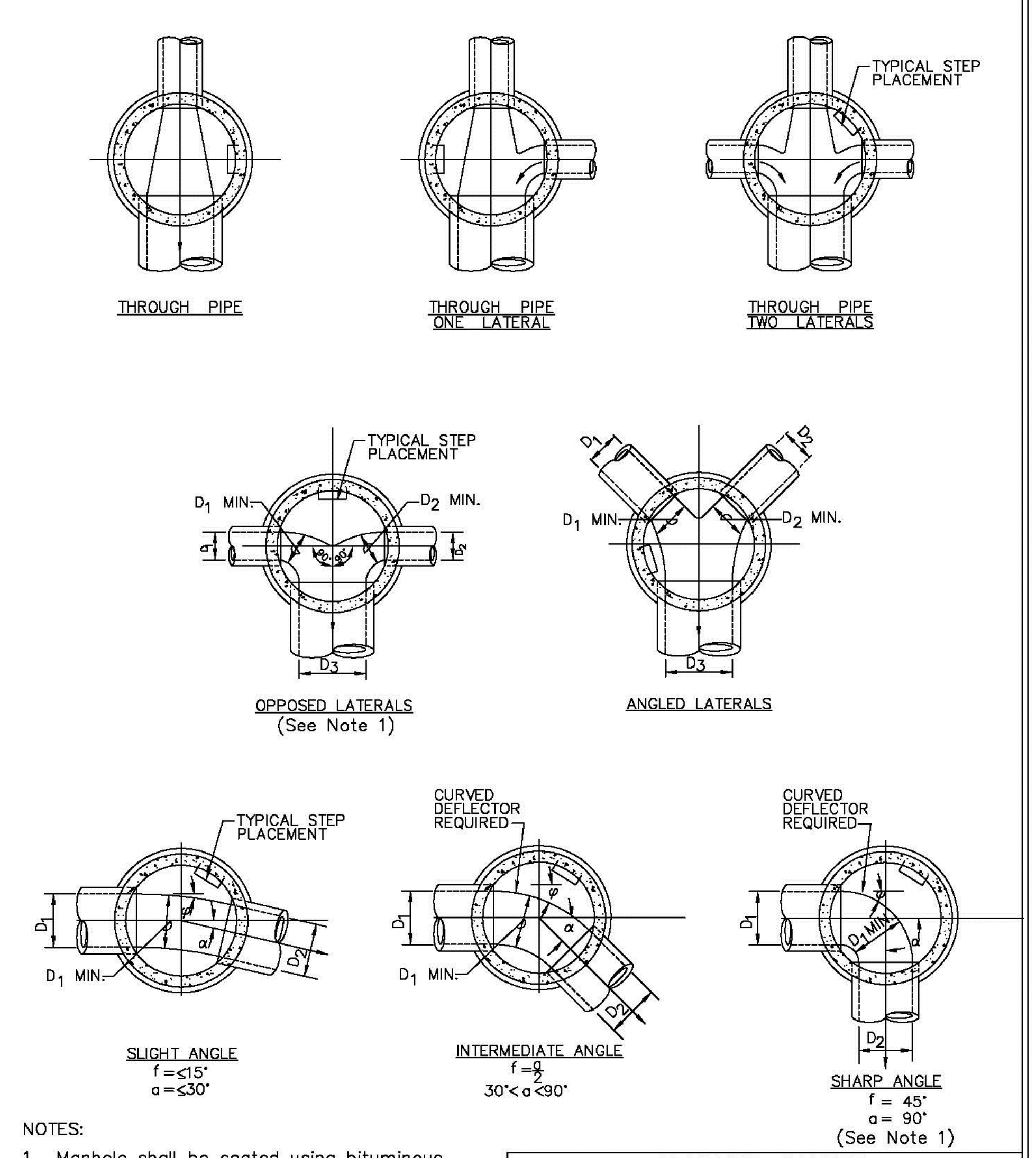
PARKER WATER
& SANITATION DISTRICT

INTERMEDIATE PLATFORM FOR
MANHOLES OVER 20' DEPTH

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
2/00
1/16
10/16

2016 REVISION

SHEET S3.6



TYPICAL STEP PLACEMENT
THROUGH PIPE
THROUGH PIPE ONE LATERAL
THROUGH PIPE TWO LATERALS
D1 MIN.
D2 MIN.
D3
OPPOSED LATERALS (See Note 1)
ANGLED LATERALS
CURVED DEFLECTOR REQUIRED
SLIGHT ANGLE
f =≤15°
a =≤30°
INTERMEDIATE ANGLE
f = a/2
30°< a <90°
SHARP ANGLE
f = 45°
a = 90°
(See Note 1)

NOTES:

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

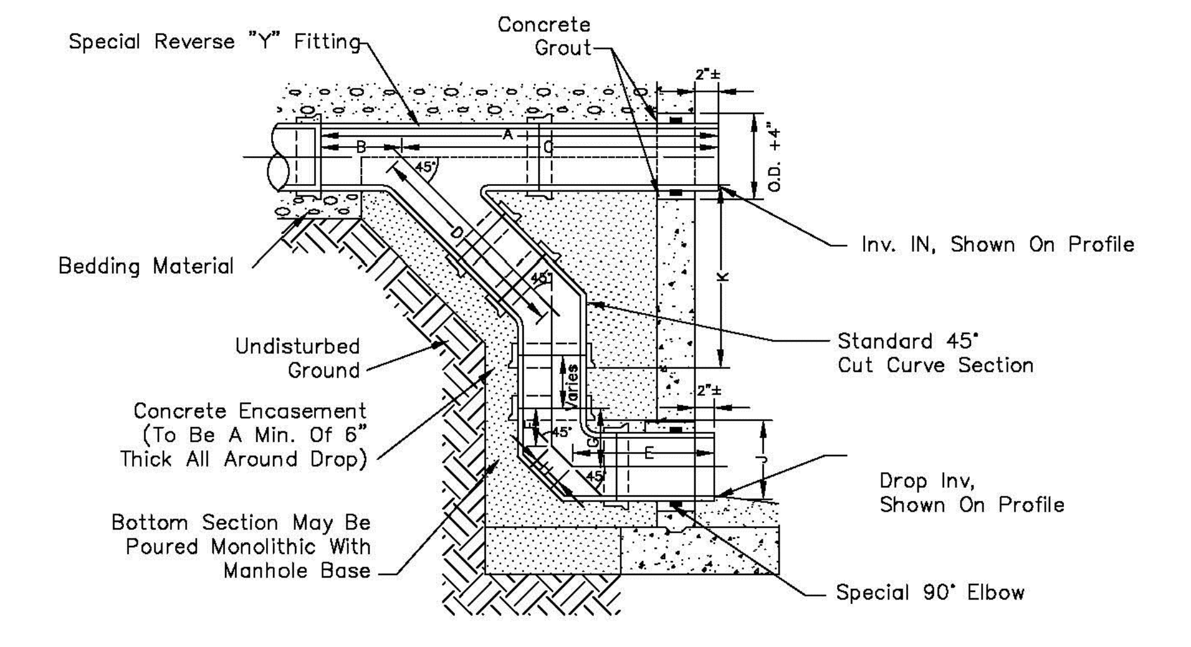
PARKER WATER
& SANITATION DISTRICT

TYPICAL BASE
CHANNELIZATION DETAILS

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

2016 REVISION

SHEET S3.7



Special Reverse "Y" Fitting
Concrete Grout
Bedding Material
Inv. IN, Shown On Profile
Undisturbed Ground
Standard 45° Cut Curve Section
Concrete Encasement (To Be A Min. Of 6" Thick All Around Drop)
Drop Inv, Shown On Profile
Bottom Section May Be Poured Monolithic With Manhole Base
Special 90° Elbow

SECTION THRU DROP

PIPE I.D.	A	B	C	D	E	F	G	H	J	K	J+K
8"	60"	26"	34"	18"	21"	4 1/2"	8"	4 3/8"	12"	15 7/8"	27 7/8"
10"	60"	20"	40"	21"	21"	5 1/8"	9"	5 1/2"	14"	18 1/2"	32 1/2"
12"	60"	18"	42"	24"	21"	5 7/8"	10 3/4"	5 7/8"	16 3/4"	21"	35 7/8"
16"	78"	38"	50"	30"	24"	7"	12 1/2"	7 3/4"	20"	25 7/8"	45 7/8"

NOTES:

1. Vit 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.

OUTSIDE DROP MANHOLE CONSTRUCTION

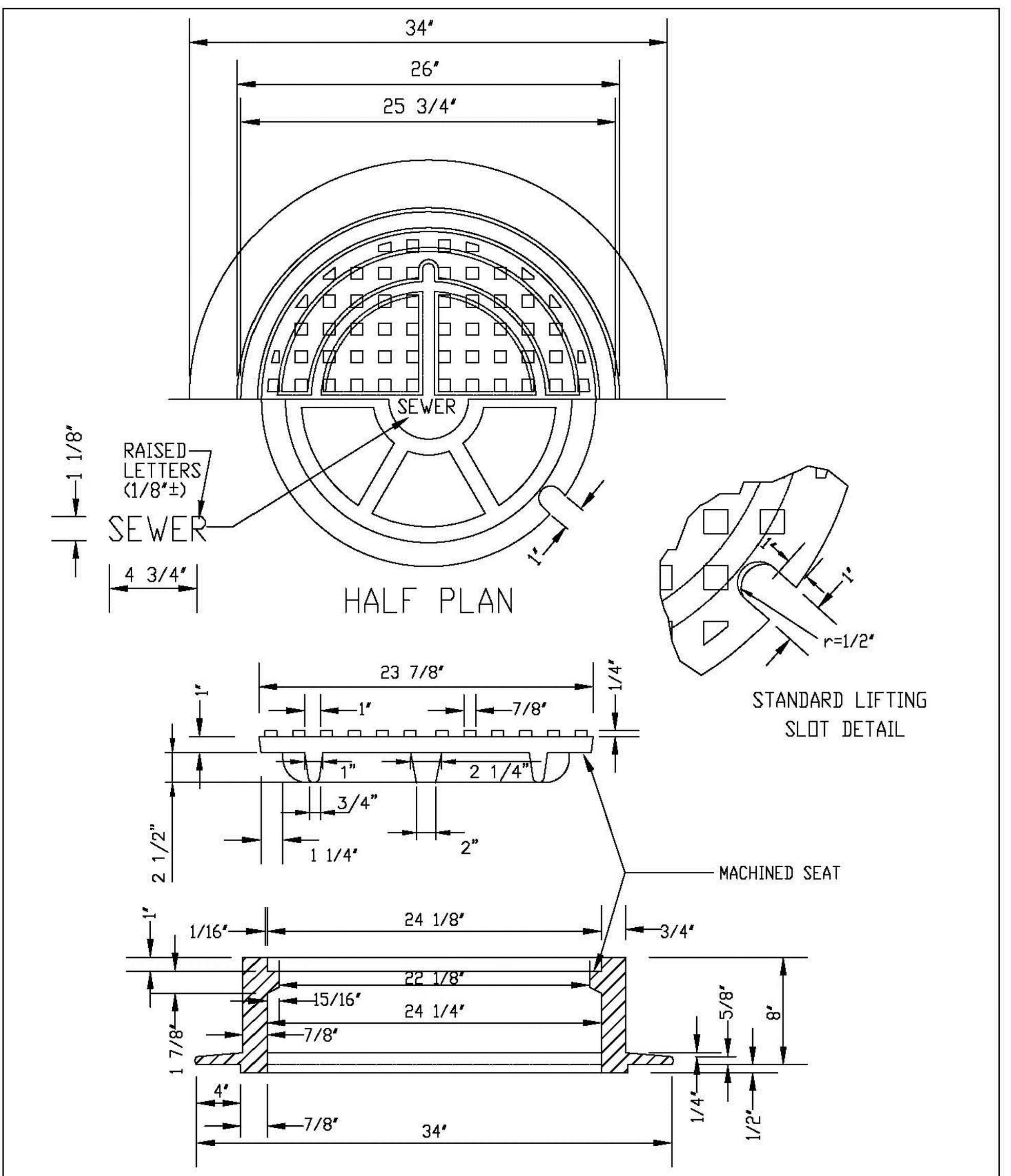
PARKER WATER
& SANITATION DISTRICT

OUTSIDE DROP MANHOLE
CONSTRUCTION

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

2016 REVISION

SHEET S3.8



34"
26"
25 3/4"
SEWER
RAISED LETTERS (1/8"±)
1 1/8"
SEWER
4 3/4"
HALF PLAN
r=1/2"
STANDARD LIFTING SLOT DETAIL
23 7/8"
1"
7/8"
1/4"
2 1/4"
3/4"
1 1/4"
2"
2 1/2"
MACHINED SEAT
24 1/8"
3/4"
1/16"
22 1/8"
15/16"
24 1/4"
7/8"
1 7/8"
4"
7/8"
34"
5/8"
8"
1/4"
1/2"

NOTE:

1. Casting Specifications: ASTM A-48 With A Minimum Tensile Strength Of 25 KSI (Class 25)
2. All Casting 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
DIRECTOR OF ENGINEERING
01/16
10/16

2016 REVISION

SHEET S3.9

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

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 SANITARY SEWER DETAILS.DWG, BRIANW, 6/17/2021 9:49 AM

No.	Revisions	Date	Init.	Appr.	Date

CVL
a Westwood team

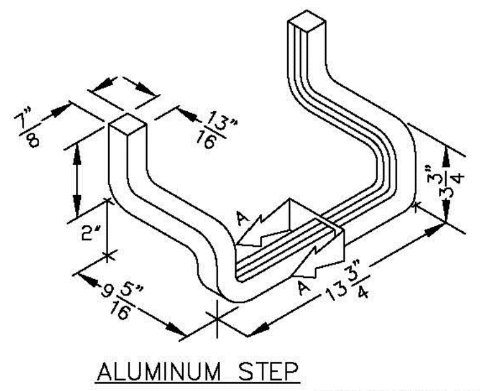
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

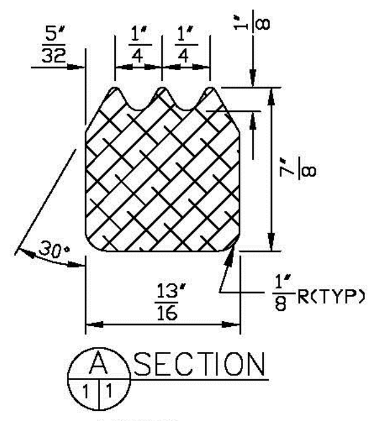
TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAIL

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: JF
CHECKED BY: JJJ
DATE: SEPTEMBER 2017

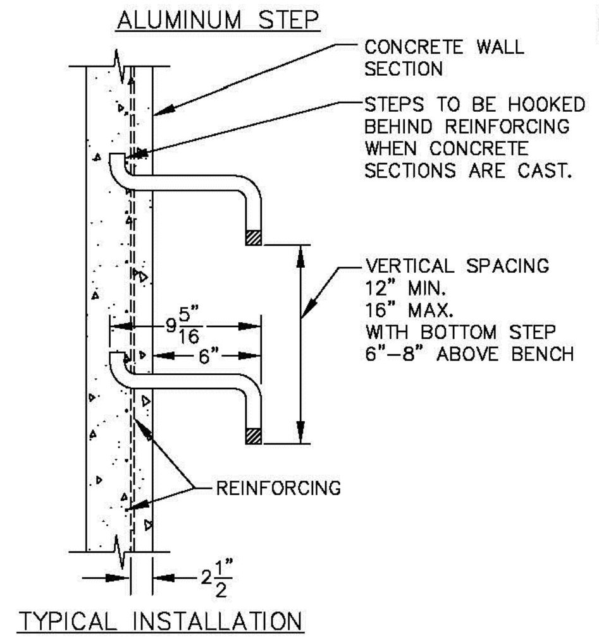
SHEET NUMBER
8


7"/8
13"/16
2"
3 3/4"
9 5/16"
13 3/4"
A
A

ALUMINUM STEP


5"/32
1"/4
1"/4
1"/8
7"/8
30°
13"/16
1"/8 R(TYP)

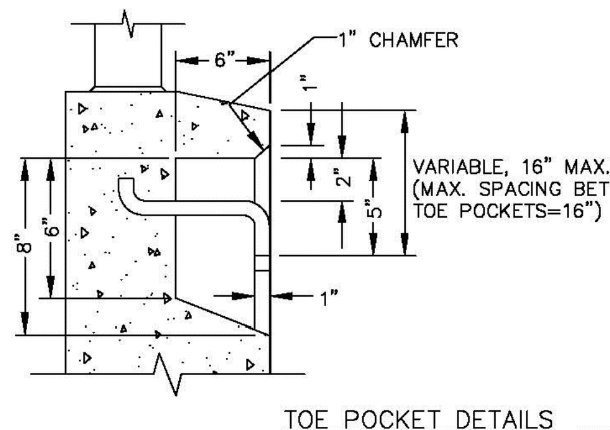
A 1|1 SECTION

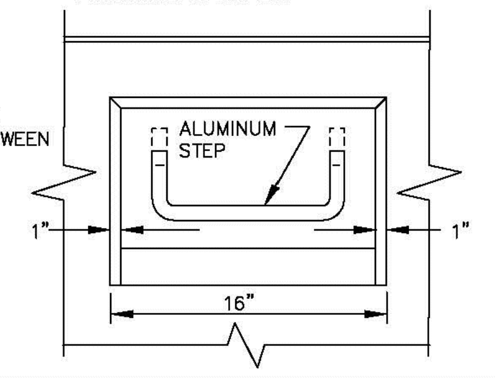

CONCRETE WALL SECTION
STEPS TO BE HOOKED BEHIND REINFORCING WHEN CONCRETE SECTIONS ARE CAST.
VERTICAL SPACING 12" MIN. 16" MAX. WITH BOTTOM STEP 6"–8" ABOVE BENCH
9 5/16"
6"
REINFORCING
2 1/2"

TYPICAL INSTALLATION

NOTES:

1.1 ALUMINUM ALLOY SPECIFICATIONS
  a. FED. SPEC. QQ–A–200/8 (ALUMINUM–MAGNESIUM–SILICATE ALLOY)
  b. MINIMUM TENSILE STRENGTH= 38,000 p.s.i.
  c. MINIMUM YIELD STRENGTH= 35,000 p.s.i.
  d. MINIMUM ELONGATION=10% IN 2
1.2 MINIMUM LOAD CAPACITY (APPLIED AT CENTER OF STEP
  a. 1000 lb. WITH 6" PROJECTION FROM WALL.
  b. 1500 lb. WITH 4" PROJECTION FROM WALL.
1.3 WEIGHT PER STEP=2.23 POUNDS
1.4 STEPS TO BE CAST, UNALTERED, IN MANHOLE WALL IN STRAIGHT LINE, VERTICALLY, AT THE SAME TIME THE BARREL OR CONE SECTIONS ARE CAST.
1.5 VERTICAL SPACING BETWEEN STEPS SHALL BE CONSISTENT IN EACH INDIVIDUAL MANHOLE.
1.6 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 MANHOLED UNLESS OTHERWISE SPECIFIED.


6"
1" CHAMFER
1"
2"
5"
VARIABLE, 16" MAX. (MAX. SPACING BETWEEN TOE POCKETS=16")
8"
6"
1"


ALUMINUM STEP
1"
1"
16"

TOE POCKET DETAILS

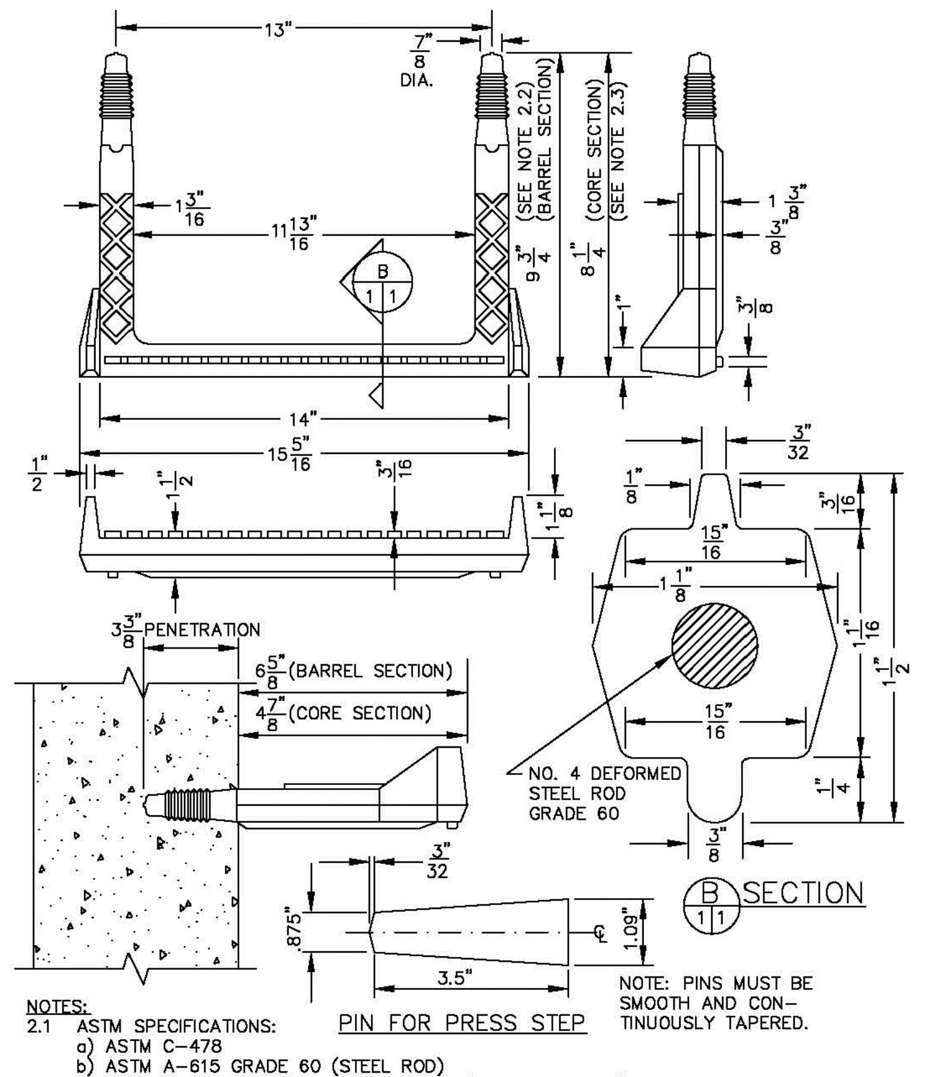
STANDARD EXTRUDED ALUMINUM MANHOLE STEP

PARKER WATER
& SANITATION DISTRICT

STANDARD EXTRUDED ALUMINUM
MANHOLE STEP

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

2016 REVISION
SHEET S3.10


13"
7"/8 DIA.
1 3/16"
11 13/16"
B 1|1
9 3/4" (SEE NOTE 2.2) (BARREL SECTION)
8 1/4" (CORE SECTION) (SEE NOTE 2.3)
1 3/8"
3/8"
1"
3/8"
14"
15 5/16"
1"/2
1 1/2"
3"/16
1 1/8"
3 3/8" PENETRATION
6 5/8" (BARREL SECTION)
4 7/8" (CORE SECTION)
3"/32
1"/8
15"/16
1 1/8"
3"/16
1 1/16"
1 1/2"
NO. 4 DEFORMED STEEL ROD GRADE 60
15"/16
1"/4
3"/8
B 1|1 SECTION
3"/32
.875"
1.09"
3.5"
NOTE: PINS MUST BE SMOOTH AND CONTINUOUSLY TAPERED.

PIN FOR PRESS STEP

NOTES:

2.1 ASTM SPECIFICATIONS:
  a) ASTM C–478
  b) ASTM A–615 GRADE 60 (STEEL ROD)
  c) ASTM 2146–69, TYPE II, GRADE 16906 (POLYPROPYLENE)
2.2 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 6–5/8 INCHES.
2.3 STEPS INSTALLED IN MANHOLE CONE SECTIONS SHALL HAVE AN 8–1/4 INCH LEG AND SHALL PROJECT FROM THE WALL 4–7/8 INCHES.
2.4 ALL STEPS SHALL HAVE A PENETRATION DEPTH INTO THE WALL OF 3–3/8 INCHES.
2.5 STEPS SHALL BE INSTALLED BY THE "PRESS–FIT" METHOD UTILIZING A SPECIALLY TAPERED PIN TO FORM THE INSERT HOLE AS SHOWN.
2.6 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.
2.7 STEPS SHALL BE INSTALLED BY THE "PRESS–FIT" METHOD EXCLUSIVELY FOLLOWING MANUFACTURER'S RECOMMENDED PROCEDURE AND SHALL NOT BE GROUTED IN PLACE.

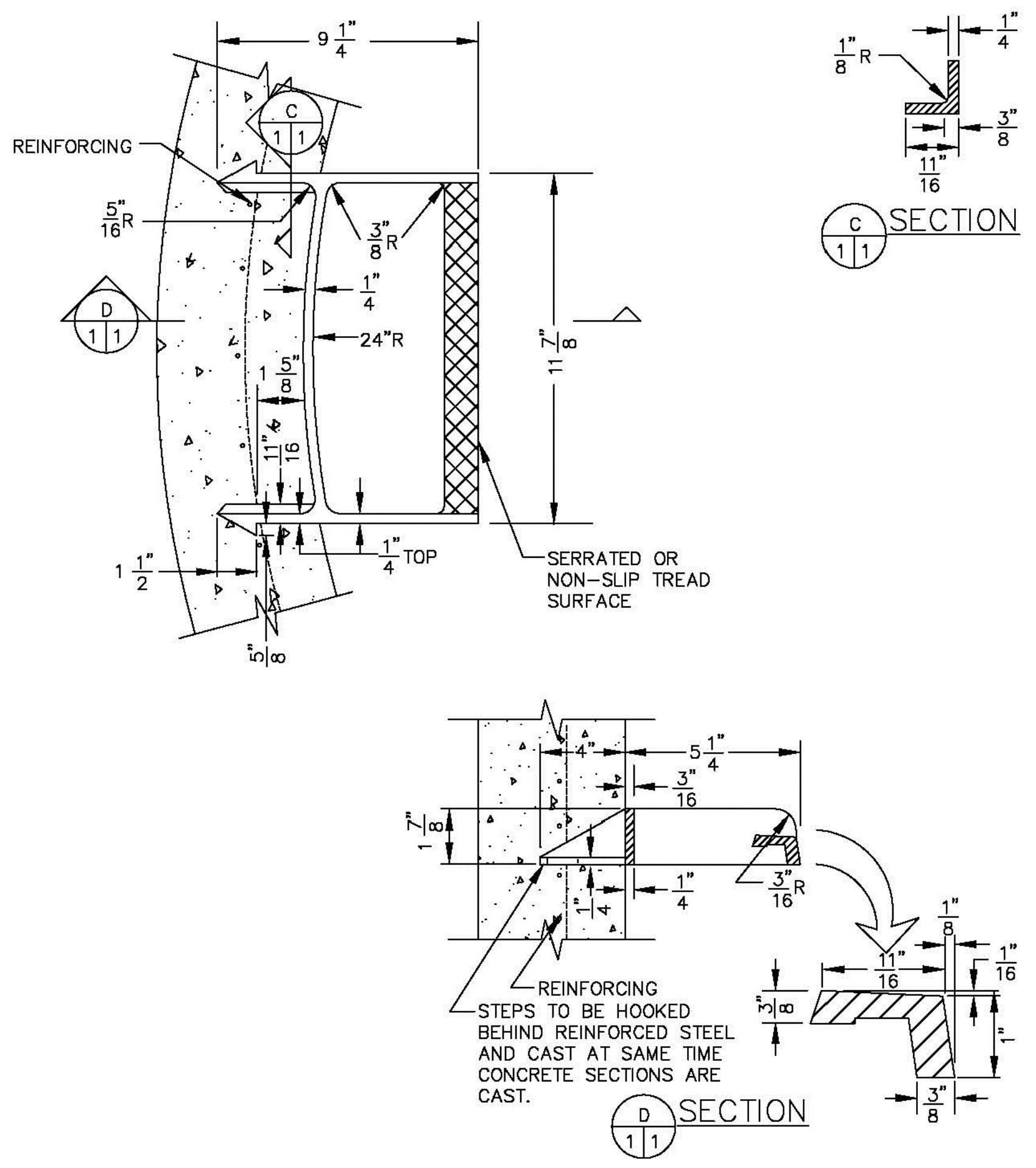
POLYPROPYLENE REINFORCED PLASTIC STEP

PARKER WATER
& SANITATION DISTRICT

POLYPROPYLENE REINFORCED
PLASTIC MANHOLE STEP

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

2016 REVISION
SHEET S3.11


9 1/4"
C 1|1
REINFORCING
5"/16 R
3"/8 R
1"/4
24"R
D 1|1
1 5/8"
11"/16
11 7/8"
1 1/2"
1"/4 TOP
5"/8
SERRATED OR NON–SLIP TREAD SURFACE
1"/8 R
1"/4
3"/8
11"/16
C 1|1 SECTION
4"
5 1/4"
3"/16
1 7/8"
1"/4
3"/16 R
1"/8
1"/16
11"/16
3"/8
1"
3"/8
REINFORCING
STEPS TO BE HOOKED BEHIND REINFORCED STEEL AND CAST AT SAME TIME CONCRETE SECTIONS ARE CAST.
D 1|1 SECTION

CAST ALUMINUM MANHOLE STEP

NOTES:

3.1 THE CAST ALUMINUM MANHOLE STEP SHALL ONLY BE USED WHEN SPECIFIED ON THE DRAWINGS.
3.2 ALUMINUM ALLOY SPECIFICATIONS:
  a. ALLOY DESIGNATION ALMAG 35
  b. MIN. TENSILE STRENGTH= 40 K.S.I.
  c. MIN. YIELD STRENGTH= 20 K.S.I.
  d. MIN. SHEAR STRENGTH= 27.45 K.S.I.
  e. ELONGATION= 10% IN 2
  f. BRINELL HARDNESS= 70
3.3 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.
3.4 MIN. WT. = 2.0 lb.

PARKER WATER
& SANITATION DISTRICT

CAST ALUMINUM
MANHOLE STEP

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

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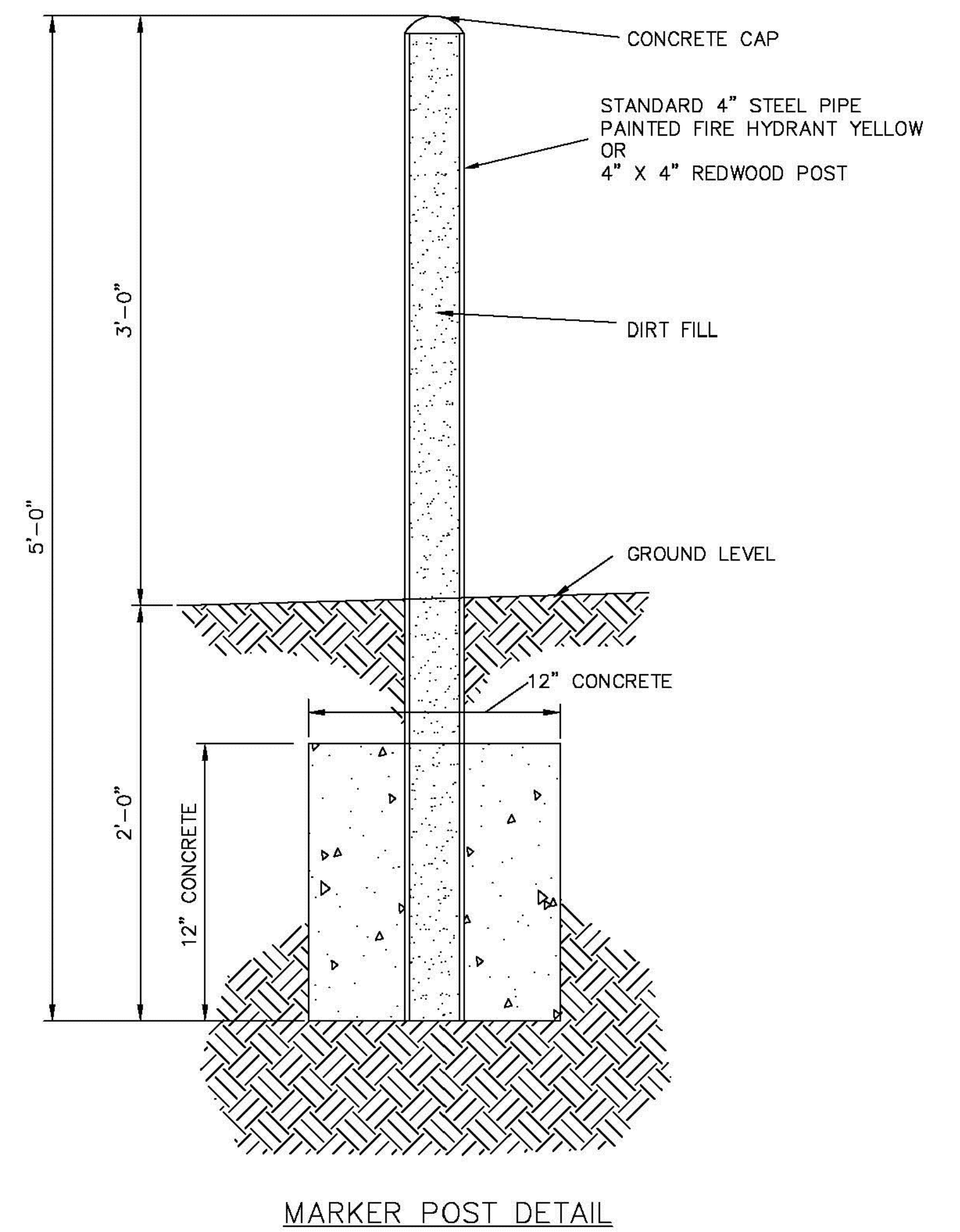
SHEET S3.12


CONCRETE CAP
STANDARD 4" STEEL PIPE PAINTED FIRE HYDRANT YELLOW OR 4" X 4" REDWOOD POST
3'–0"
5'–0"
DIRT FILL
GROUND LEVEL
12" CONCRETE
2'–0"
12" CONCRETE

MARKER POST DETAIL

STEEL PIPE
STENCILED IDENTIFICATION MARKS ON POSTS SHALL FACE THE APPURTENANCE WITH 2" STENCILS INDICATING TYPE OF APPURTENANCE (MH, 12" VALVE, ETC.) AND THE DISTANCE IN FEET AND INCHES FROM POST.

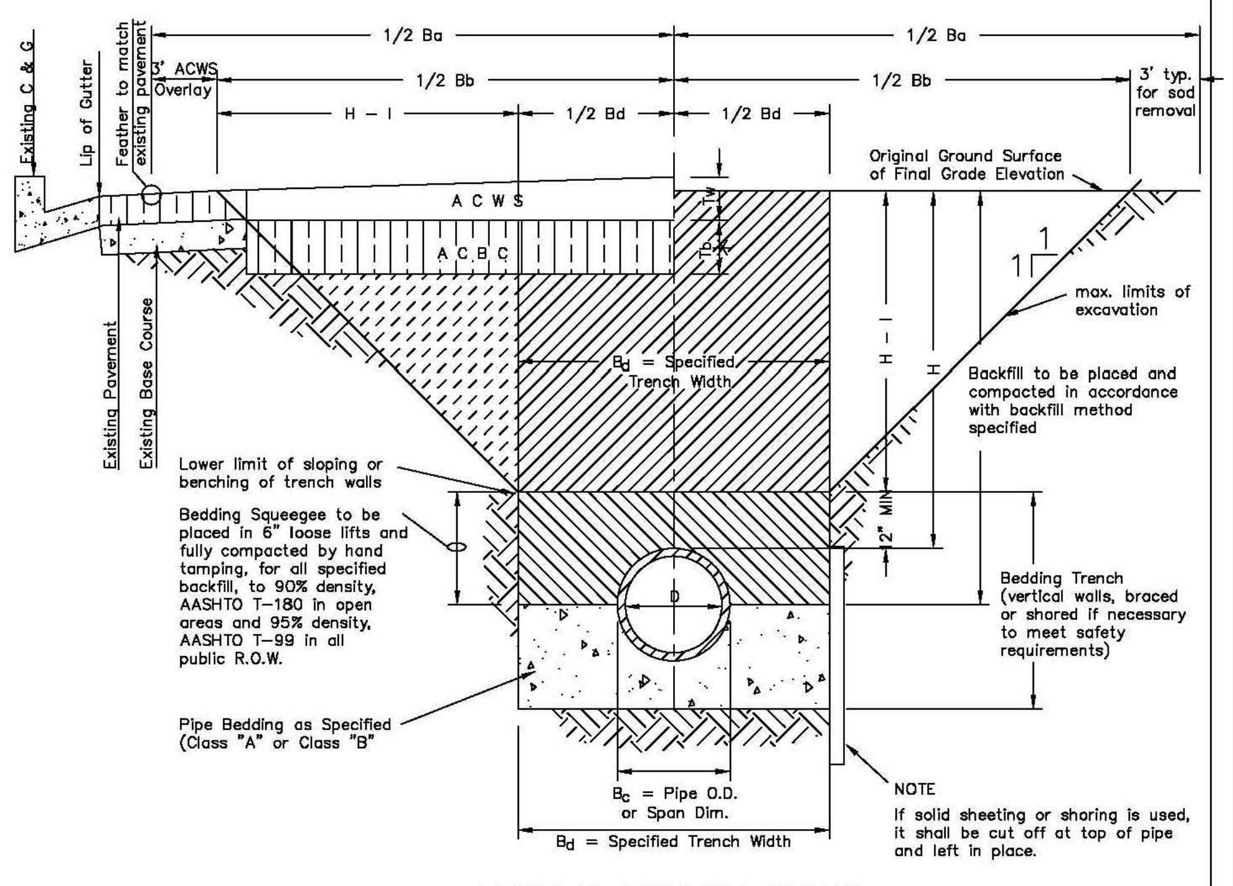
REDWOOD POST
ROUTER LETTERS AND NUMBERS INTO POST. PAINT LETTERS AND NUMBERS BLACK.

PARKER WATER
& SANITATION DISTRICT

MARKER POST
DETAIL

SCALE: NONE
DATE: 2/96
APPROVED: PVR
2/00 10/16
4/01
1/08
1/16
DIRECTOR OF ENGINEERING

2016 REVISION
SHEET S3.13


Existing C & G
Lip of Gutter
Feather to match existing pavement
3' ACWS Overlay
1/2 Ba
1/2 Bb
H – I
1/2 Bd
1/2 Bd
3' typ. for sod removal
Original Ground Surface of Final Grade Elevation
A C W S
A C B C
Tw
Tb
1
1
max. limits of excavation
Existing Pavement
Existing Base Course
Bd = Specified Trench Width
H – I
H
Backfill to be placed and compacted in accordance with backfill method specified
Lower limit of sloping or benching of trench walls
Bedding Squeegee to be placed in 6" loose lifts and fully compacted by hand tamping, for all specified backfill, to 90% density, AASHTO T–180 in open areas and 95% density, AASHTO T–99 in all public R.O.W.
12" MIN
D
Bedding Trench (vertical walls, braced or shored if necessary to meet safety requirements)
Pipe Bedding as Specified (Class "A" or Class "B"
Bc = Pipe O.D. or Span Dim.
Bd = Specified Trench Width
NOTE
If solid sheeting or shoring is used, it shall be cut off at top of pipe and left in place.

TYPICAL TRENCH DETAIL

T_b = Thickness of Asphaltic Concrete Base Course (A C B C)

T_w = Thickness of Asphaltic Concrete Wearing Surface (A C W S)

T_o = Total Asphalt Thickness (T_b + T_w)

B_c = Outside Pipe or Conduit Span Dimension

B_d = Specified Bedding Trench Width and Max Bedding Trench Width at a point 12" above Top of Pipe (See Note 2)

B_b = Max. Pay Width of Asphaltic Concrete Base Course (or Asphaltic Concrete Cold Mix) (See Note 3)

B_a = Max. Pay Width of Asphaltic Concrete Wearing Surface or Sod Replacement (See Note 3)

H = Depth of Surface to Top of Pipe

H–I= Depth from Surface to 1 ft. above Top of Pipe

TABLE II
ASPHALT AMD BASE COURSE REPLACEMENT SCHEDULE

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

NOTES

1. *Sloping or benching of trench side walls, where permitted shall be in accordance with applicable Federal, State and Local safety regulations.*
2. *Trench shall be braced and shored as necessary to afford safe working conditions or to protect adjacent utilities, structures, etc.. Unless otherwise specified on the plans, no pavement will be made for removal, replacement or relocation of curb and gutter, utilities, sidewalk, structures, etc. outside the maximum limits of excavation as shown and the contractor shall be responsible for protection of same.*
3. *If dimension "B_a" is ≤ 5', then existing asphalt pavement shall be removed and replaced up to the gutter. Maximum asphalt pay widths, B_a & B_b shall then be based upon this actual width.*

PARKER WATER
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SEWER TRENCHING AND
BEDDING DETAIL

SCALE: NONE
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10/16
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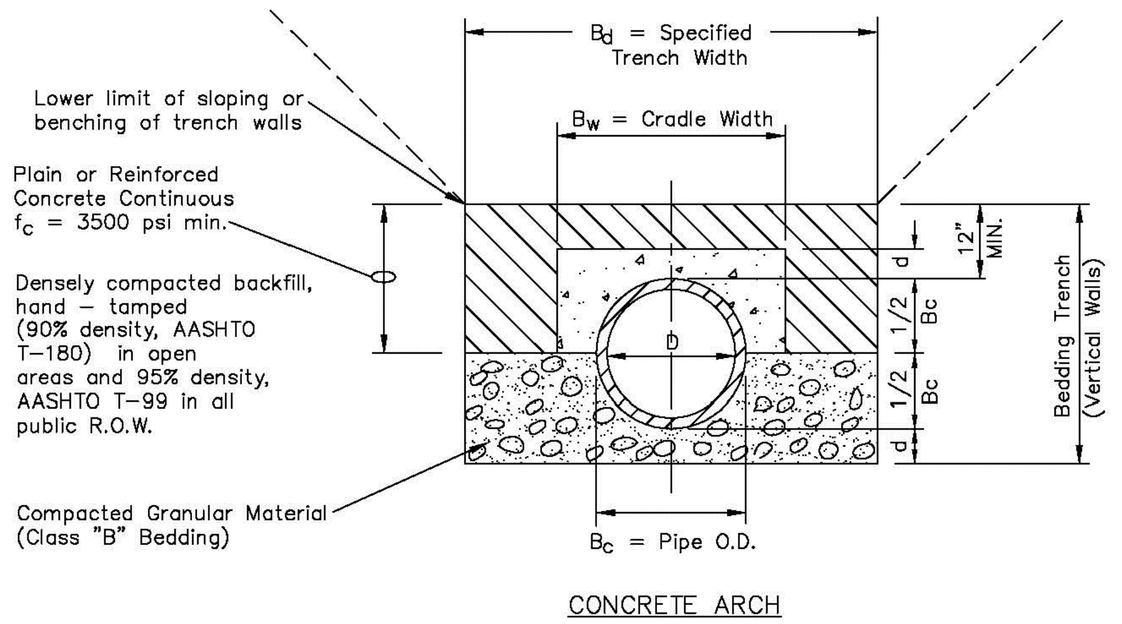
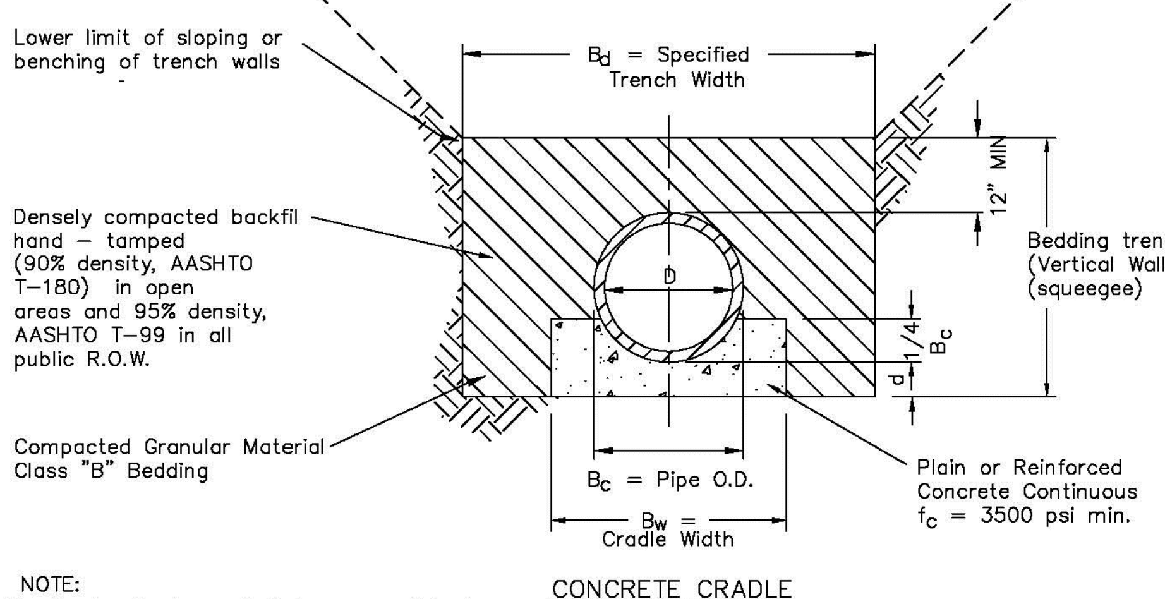

Bd = Specified Trench Width
Bw = Cradle Width
Lower limit of sloping or benching of trench walls
Plain or Reinforced Concrete Continuous fc = 3500 psi min.
Densely compacted backfill, hand – tamped (90% density, AASHTO T–180) in open areas and 95% density, AASHTO T–99 in all public R.O.W.
Compacted Granular Material (Class "B" Bedding)
D
d
1/2 Bc
1/2 Bc
d
12" MIN.
Bedding Trench (Vertical Walls)
Bc = Pipe O.D.

CONCRETE ARCH


Bd = Specified Trench Width
Lower limit of sloping or benching of trench walls
Densely compacted backfil 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
D
12" MIN
Bedding trench (Vertical Walls) (squeegee)
1/4 Bc
d
Bc = Pipe O.D.
Bw = Cradle Width
Plain or Reinforced Concrete Continuous fc = 3500 psi min.

CONCRETE CRADLE
CLASS "A" BEDDING

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

TABLE III

NOMINAL DIAMETER (D)	MINIMUM THICKNESS (d)	MIN. WIDTH OF CRADLE (B_w)
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

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TRENCHING AND BEDDING
DETAIL – CLASS "A"

SCALE: NONE
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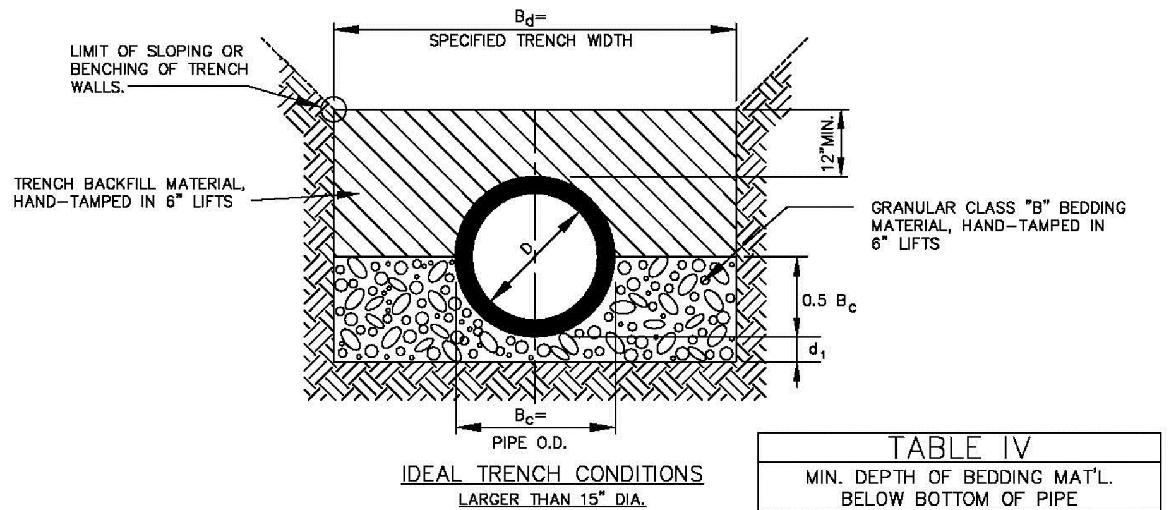
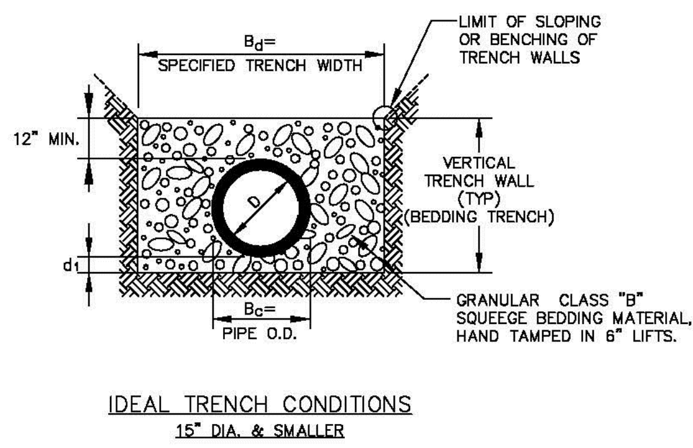

Bd= SPECIFIED TRENCH WIDTH
LIMIT OF SLOPING OR BENCHING OF TRENCH WALLS.
TRENCH BACKFILL MATERIAL, HAND–TAMPED IN 6" LIFTS
12"MIN.
GRANULAR CLASS "B" BEDDING MATERIAL, HAND–TAMPED IN 6" LIFTS
D
0.5 Bc
d1
Bc= PIPE O.D.

IDEAL TRENCH CONDITIONS
LARGER THAN 15" DIA.

TABLE IV
MIN. DEPTH OF BEDDING MAT'L. BELOW BOTTOM OF PIPE

PIPE SIZE–D*	d_1
18" & SMALLER	6"
21" TO 36"	6"
42" TO 60"	6"
66" TO 96"	9"
104" & LARGER	12"

*FOR ARCH OR ELLIPTICAL PIPE, D=SPAN DIMENSION


Bd= SPECIFIED TRENCH WIDTH
LIMIT OF SLOPING OR BENCHING OF TRENCH WALLS
12" MIN.
VERTICAL TRENCH WALL (TYP) (BEDDING TRENCH)
D
d1
Bc= PIPE O.D.
GRANULAR CLASS "B" SQUEEGE BEDDING MATERIAL, HAND TAMPED IN 6" LIFTS.

IDEAL TRENCH CONDITIONS
15" DIA. & SMALLER

B_d=SPECIFIED TRENCH WIDTH AT A POINT 12" ABOVE CROWN (MAX. ALLOWANCE)
B_c=PIPE O.D.
D =PIPE I.D. (OR SPAN DIMENSION FOR ARCH OR ELLIPTICAL PIPE.)
d =DEPTH OF BEDDING MATERIAL BELOW BOTTOM OF PIPE.

NOTES:

3.1 BELL HOLES SHALL BE EXCAVATED AT ALL BELL AND SPIGOT JOINTS.
3.2 BEDDING TRENCH BACKFILL TO BE COMPACTED TO 90% DENSITY, AASHTO T–180 IN OPEN AREAS AND 95% DENSITY AASHTO T–99 IN ALL PUBLIC R.O.W.

CLASS 'B' BEDDING

GENERAL NOTES:

G–1 THESE DETAILS ARE TYPICAL FOR NORMAL TRENCH CONDITIONS. FOR INSTALLATIONS OTHER THAN THESE (SUCH AS EMBANKMENT OR TUNNEL INSTALLATIONS, ETC.) EXCAVATION, BEDDING AND BACKFILL REQUIREMENTS SHALL BE DETAILED ON THE CONSTRUCTION DRAWINGS. FOR UNUSUAL OR UNSTABLE SOIL CONDITIONS, TRENCH AND BEDDING DETAILS SHALL BE A SPECIAL DESIGN.

PARKER WATER
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TRENCHING AND BEDDING
CLASS "B"

SCALE: NONE
DATE: 2/96
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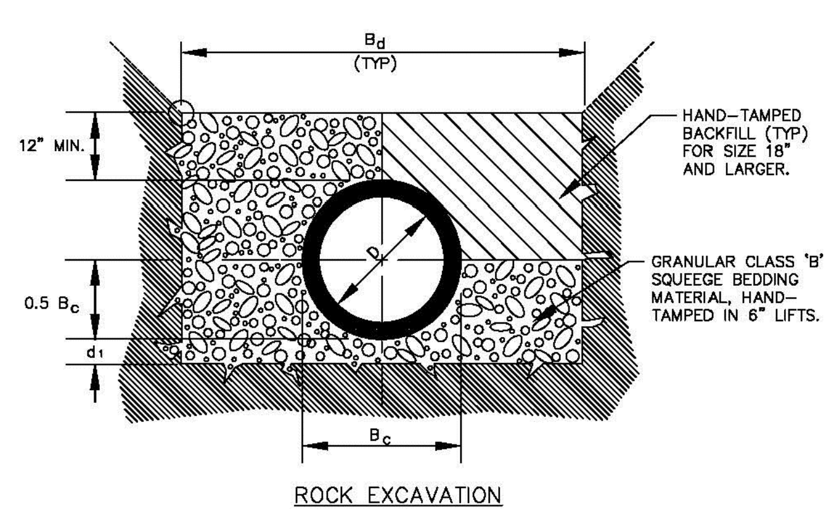
Bd (TYP)
12" MIN.
HAND–TAMPED BACKFILL (TYP) FOR SIZE 18" AND LARGER.
D
GRANULAR CLASS 'B' SQUEEGE BEDDING MATERIAL, HAND–TAMPED IN 6" LIFTS.
0.5 Bc
d1
Bc

ROCK EXCAVATION

TABLE IV
MIN. DEPTH OF BEDDING MAT'L. BELOW BOTTOM OF PIPE

PIPE SIZE–D*	d_1
18" & SMALLER	6"
21" TO 36"	6"
42" TO 60"	6"
66" TO 96"	9"
104" & LARGER	12"

*FOR ARCH OR ELLIPTICAL PIPE, D=SPAN DIMENSION

B_d=SPECIFIED TRENCH WIDTH AT A POINT 12" ABOVE CROWN (MAX. ALLOWANCE)
B_c=PIPE O.D.
D =PIPE I.D. (OR SPAN DIMENSION FOR ARCH OR ELLIPTICAL PIPE.)
d =DEPTH OF BEDDING MATERIAL BELOW BOTTOM OF PIPE.

NOTES:

3.1 BELL HOLES SHALL BE EXCAVATED AT ALL BELL AND SPIGOT JOINTS.
3.2 BEDDING TRENCH BACKFILL TO BE COMPACTED TO 90% DENSITY, AASHTO T–180 IN OPEN AREAS AND 95% DENSITY AASHTO T–99 IN ALL PUBLIC R.O.W.

CLASS 'B' BEDDING

GENERAL NOTES:

G–1 THESE DETAILS ARE TYPICAL FOR NORMAL TRENCH CONDITIONS. FOR INSTALLATIONS OTHER THAN THESE (SUCH AS EMBANKMENT OR TUNNEL INSTALLATIONS, ETC.) EXCAVATION, BEDDING AND BACKFILL REQUIREMENTS SHALL BE DETAILED ON THE CONSTRUCTION DRAWINGS. FOR UNUSUAL OR UNSTABLE SOIL CONDITIONS, TRENCH AND BEDDING DETAILS SHALL BE A SPECIAL DESIGN.

PARKER WATER
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TRENCHING AND BEDDING
CLASS "B"

SCALE: NONE
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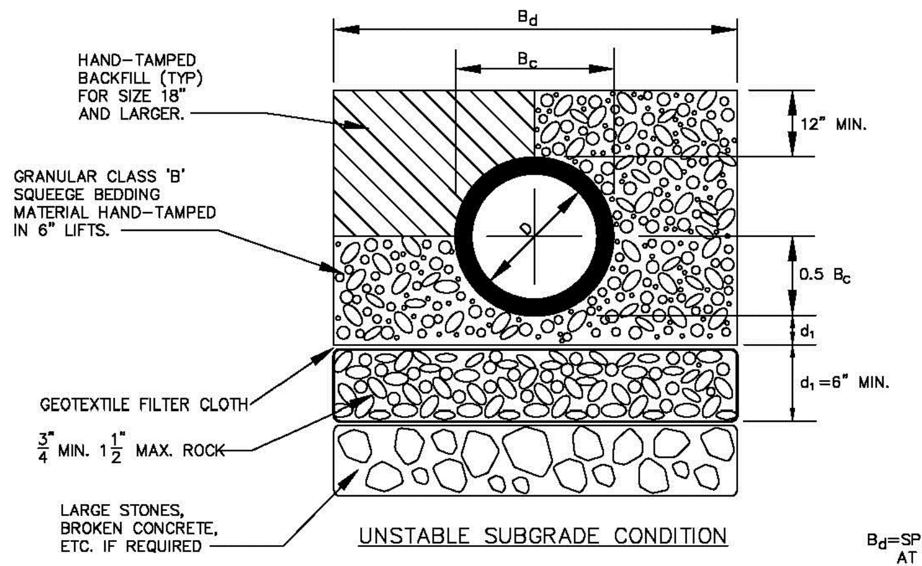
Bd
Bc
HAND–TAMPED BACKFILL (TYP) FOR SIZE 18" AND LARGER.
12" MIN.
GRANULAR CLASS 'B' SQUEEGE BEDDING MATERIAL HAND–TAMPED IN 6" LIFTS.
D
0.5 Bc
d1
d1 =6" MIN.
GEOTEXTILE FILTER CLOTH
3"/4 MIN. 1 1/2" MAX. ROCK
LARGE STONES, BROKEN CONCRETE, ETC. IF REQUIRED

UNSTABLE SUBGRADE CONDITION

TABLE IV
MIN. DEPTH OF BEDDING MAT'L. BELOW BOTTOM OF PIPE

PIPE SIZE–D*	d_1
18" & SMALLER	6"
21" TO 36"	6"
42" TO 60"	6"
66" TO 96"	9"
104" & LARGER	12"

*FOR ARCH OR ELLIPTICAL PIPE, D=SPAN DIMENSION

B_d=SPECIFIED TRENCH WIDTH AT A POINT 12" ABOVE CROWN (MAX. ALLOWANCE)
B_c=PIPE O.D.
D =PIPE I.D. (OR SPAN DIMENSION FOR ARCH OR ELLIPTICAL PIPE.)
d =DEPTH OF BEDDING MATERIAL BELOW BOTTOM OF PIPE.

NOTES:

3.1 BELL HOLES SHALL BE EXCAVATED AT ALL BELL AND SPIGOT JOINTS.
3.2 BEDDING TRENCH BACKFILL TO BE COMPACTED TO 90% DENSITY, AASHTO T–180 IN OPEN AREAS AND 95% DENSITY AASHTO T–99 IN ALL PUBLIC R.O.W.

CLASS 'B' BEDDING

GENERAL NOTES:

G–1 THESE DETAILS ARE TYPICAL FOR NORMAL TRENCH CONDITIONS. FOR INSTALLATIONS OTHER THAN THESE (SUCH AS EMBANKMENT OR TUNNEL INSTALLATIONS, ETC.) EXCAVATION, BEDDING AND BACKFILL REQUIREMENTS SHALL BE DETAILED ON THE CONSTRUCTION DRAWINGS. FOR UNUSUAL OR UNSTABLE SOIL CONDITIONS, TRENCH AND BEDDING DETAILS SHALL BE A SPECIAL DESIGN.

PARKER WATER
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TRECHING AND BEDDING
CLASS "B"

SCALE: NONE
DATE: 2/96
APPROVED: PVR
5/98
2/00
1/16
10/16
DIRECTOR OF ENGINEERING

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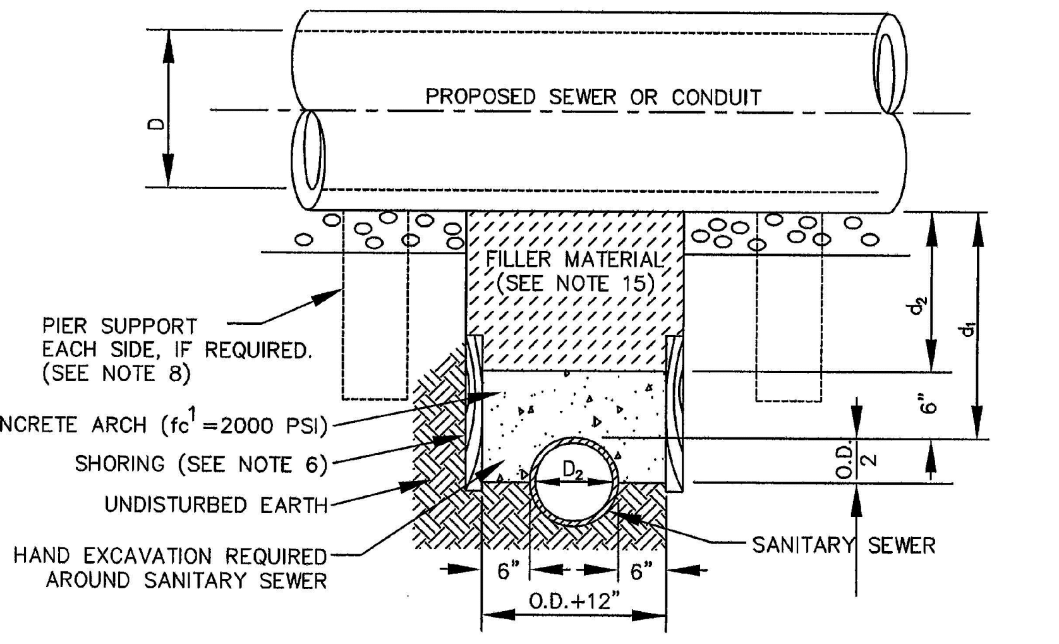
PROPOSED SEWER OR CONDUIT
D
FILLER MATERIAL (SEE NOTE 15)
PIER SUPPORT EACH SIDE, IF REQUIRED. (SEE NOTE 8)
CONCRETE ARCH (fc1 =2000 PSI)
SHORING (SEE NOTE 6)
UNDISTURBED EARTH
HAND EXCAVATION REQUIRED AROUND SANITARY SEWER
D2
d2
d1
6"
O.D./2
SANITARY SEWER
6"
6"
O.D.+12"

TYPE I
CONCRETE ENCASEMENT FOR SANITARY SEWERS

(CONCRETE ARCH)

GENERAL NOTES FOR TYPE I,II& III ENCASEMENT

1. 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.
2. LENGTH OF ENCASEMENT FOR:
   (a) TYPE I & TYPE III ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
   (b) TYPE II ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
3. 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.
4. TYPE I, II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
   (a) TYPE I OR TYPE III IF d ≮ 18" (d ≤ 12") EXCEPT FOR SANITARY SEWER CROSSING OVER OR UNDER WATER MAINS.

   WATER MAINS AND d_3 ≤ 24" (d_4 ≤ 18")
   (c) TYPE IIb IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS, REGARDLESS OF DIMENSION "d_3".
   (d) EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSINGS, OR WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, TYPE I ENCASEMENT WILL NORMALLY BE SATISFACTORY.
   (e) IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF DUCTILE IRON PIPE (AWWA C–150 OR C–151), CONCRETE ENCASEMENT MAY NOT BE REQUIRED.
5. FILLER MATERIAL BETWEEN CONDUITS TO BE:
   (a) APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC IF d_2 & d_4 ≤ 6".
   (b) COMPACTED CLASS "B" BEDDING IF d_2 & d_4 > 6" (IF d_4 > 6" FOR TYPE IIb ENCASEMENT POUR CONCRETE ON UNDISTURBED SOIL)
6. SHORING OR SHEETING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT.
7. THESE ENCASEMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS.
8. IN CERTAIN SITUATIONS WHERE CONDUIT DIAMETER "D" IS EXTREMELY LARGE, PIER 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
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CONCRETE ENCASEMENT
TYPE I

SCALE: NONE
DATE: 2/96
APPROVED: JFN
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N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 SANITARY SEWER DETAILS.DWG, BRIANW, 6/17/2021 9:49 AM

No.	Revisions	Date	Init.	Appr.	Date

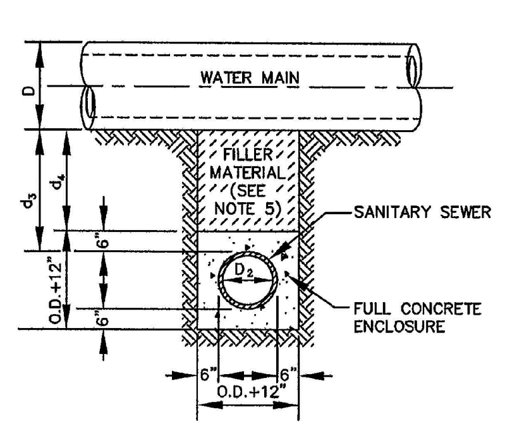
CVL a Westwood team
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

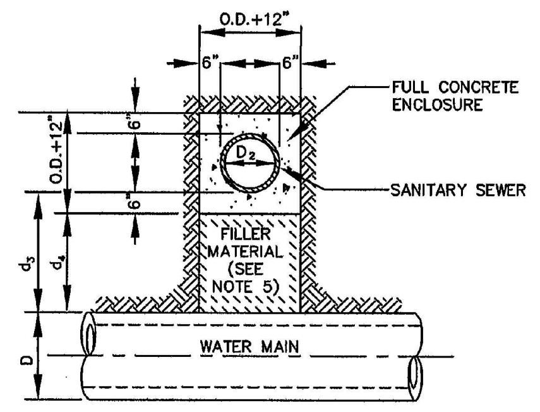
TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAIL

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: JF
CHECKED BY: JJJ
DATE: SEPTEMBER 2017

SHEET NUMBER
9


WATER MAIN
D
d3
d4
FILLER MATERIAL (SEE NOTE 5)
SANITARY SEWER
FULL CONCRETE ENCLOSURE
D2
O.D.+12"
6"
6"

TYPE IIa
SANITARY SEWER CROSSING
UNDER WATER MAIN
IF d_3 > 2 ft., ENCASEMENT NOT REQUIRED


O.D.+12"
6"
6"
FULL CONCRETE ENCLOSURE
SANITARY SEWER
D2
FILLER MATERIAL (SEE NOTE 5)
d3
d4
WATER MAIN
D

TYPE II b
SANITARY SEWER CROSSING
OVER TOP OF WATER MAIN
FULL ENCASEMENT REQUIRED REGARDLESS OF DEMENSION d_3.

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

GENERAL NOTES FOR TYPE I,II& III ENCASEMENT

1. 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.
2. LENGTH OF ENCASEMENT FOR:
   (a) TYPE I & TYPE III ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
   (b) TYPE II ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
3. 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.
4. TYPE I, II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
   (a) TYPE I OR TYPE III IF d ≮ 18" (d ≤ 12") EXCEPT FOR SANITARY SEWER CROSSING OVER OR UNDER WATER MAINS.
   WATER MAINS AND $d_3 \leq 24"$ ($d_4 \leq 18"$)
   (c) TYPE IIb IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS, REGARDLESS OF DIMENSION "d_3".
   (d) EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSINGS, OR WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, TYPE I ENCASEMENT WILL NORMALLY BE SATISFACTORY.
   (e) IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF DUCTILE IRON PIPE (AWWA C-150 OR C-151), CONCRETE ENCASEMENT MAY NOT BE REQUIRED.
5. FILLER MATERIAL BETWEEN CONDUITS TO BE:
   (a) APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC IF d_2 & $d_4 \leq 6"$.
   (b) COMPACTED CLASS "B" BEDDING IF d_2 & d_4 > 6" (IF d_4 > 6" FOR TYPE IIb ENCASEMENT POUR CONCRETE ON UNDISTURBED SOIL)
6. SHORING OR SHEETING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT.
7. THESE ENCASEMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS.
8. IN CERTAIN SITUATIONS WHERE CONDUIT DIAMETER "D" IS EXTREMELY LARGE, PIER 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
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CONCRETE ENCASEMENT
TYPE II
SCALE: NONE
DATE: 2/96
APPROVED: JFN
5/98
4/01
1/08
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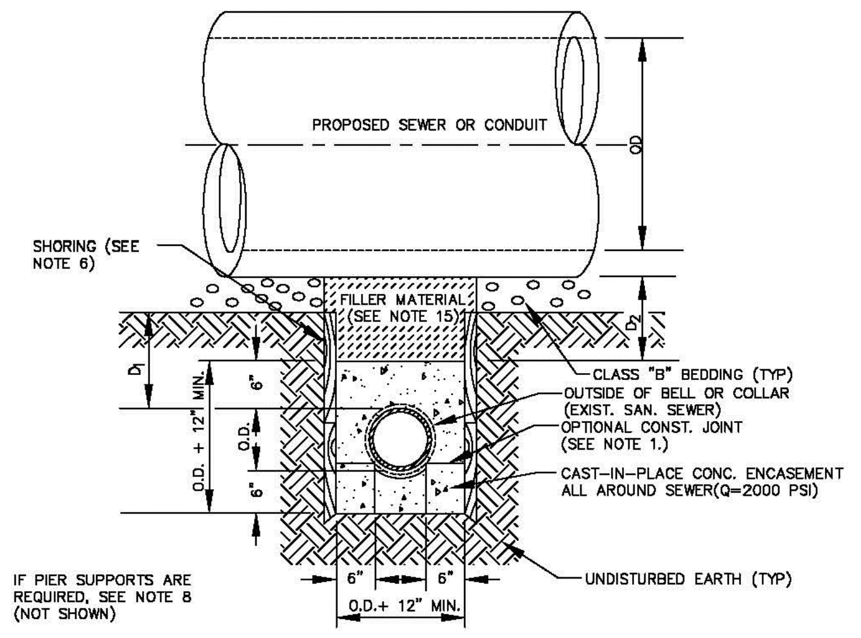
PROPOSED SEWER OR CONDUIT
OD
SHORING (SEE NOTE 6)
FILLER MATERIAL (SEE NOTE 15)
D2
D1
O.D. + 12" MIN.
6"
O.D.
6"
CLASS "B" BEDDING (TYP)
OUTSIDE OF BELL OR COLLAR (EXIST. SAN. SEWER)
OPTIONAL CONST. JOINT (SEE NOTE 1.)
CAST-IN-PLACE CONC. ENCASEMENT ALL AROUND SEWER(Q=2000 PSI)
UNDISTURBED EARTH (TYP)
6"
6"
O.D.+ 12" MIN.

IF PIER SUPPORTS ARE REQUIRED, SEE NOTE 8 (NOT SHOWN)

TYPE III
CONCRETE ENCASEMENT FOR SANITARY SEWERS

(FULL ENCASEMENT) NO SCALE

GENERAL NOTES FOR TYPE I,II& III ENCASEMENT

1. 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.
2. LENGTH OF ENCASEMENT FOR:
   (a) TYPE I & TYPE III ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT.
   (b) TYPE II ENCASEMENT SHALL EXTEND AT LEAST 10 FEET EACH SIDE OF WATER MAIN.
3. 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.
4. TYPE I, II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS:
   (a) TYPE I OR TYPE III IF $D_1 \leq 18"$ ($D_2 \leq 12"$) EXCEPT FOR SANITARY SEWER CROSSING OVER OR UNDER WATER MAINS.
   (b) TYPE IIa REQUIRED FOR SANITARY SEWERS CROSSING UNDER WATER MAINS WATER MAINS AND $D_3 \leq 24"$ ($D_4 \leq 18"$)
   (c) TYPE IIb IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS, REGARDLESS OF DIMENSION "D_3".
   (d) EXCEPT FOR UNUSUAL CIRCUMSTANCES, WATER MAIN CROSSINGS, OR WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, TYPE I ENCASEMENT WILL NORMALLY BE SATISFACTORY.
   (e) IF THE SANITARY SEWER IS REPLACED OR CONSTRUCTED OF DUCTILE IRON PIPE (AWWA C-150 OR C-151), CONCRETE ENCASEMENT MAY NOT BE REQUIRED.
5. FILLER MATERIAL BETWEEN CONDUITS TO BE:
   (a) APPROVED COMPRESSIBLE MATERIAL SUCH AS STYROFOAM, ETC IF D_2 & $D_4 \leq 6"$.
   (b) COMPACTED CLASS "B" BEDDING IF D_2 & D_4 > 6" (IF D_4 > 6" FOR TYPE IIb ENCASEMENT POUR CONCRETE ON UNDISTURBED SOIL)
6. SHORING OR SHEETING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT.
7. THESE ENCASEMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS.
8. IN CERTAIN SITUATIONS WHERE CONDUIT DIAMETER "D" IS EXTREMELY LARGE, PIER 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.
9. CONCRETE ENCASED PIPING SHALL BE LINED WITH FELT LAYER.

PARKER WATER
& SANITATION DISTRICT
CONCRETE ENCASEMENT
TYPE III
SCALE: NONE
DATE: 2/96
APPROVED: PVR
5/98
1/16
10/16
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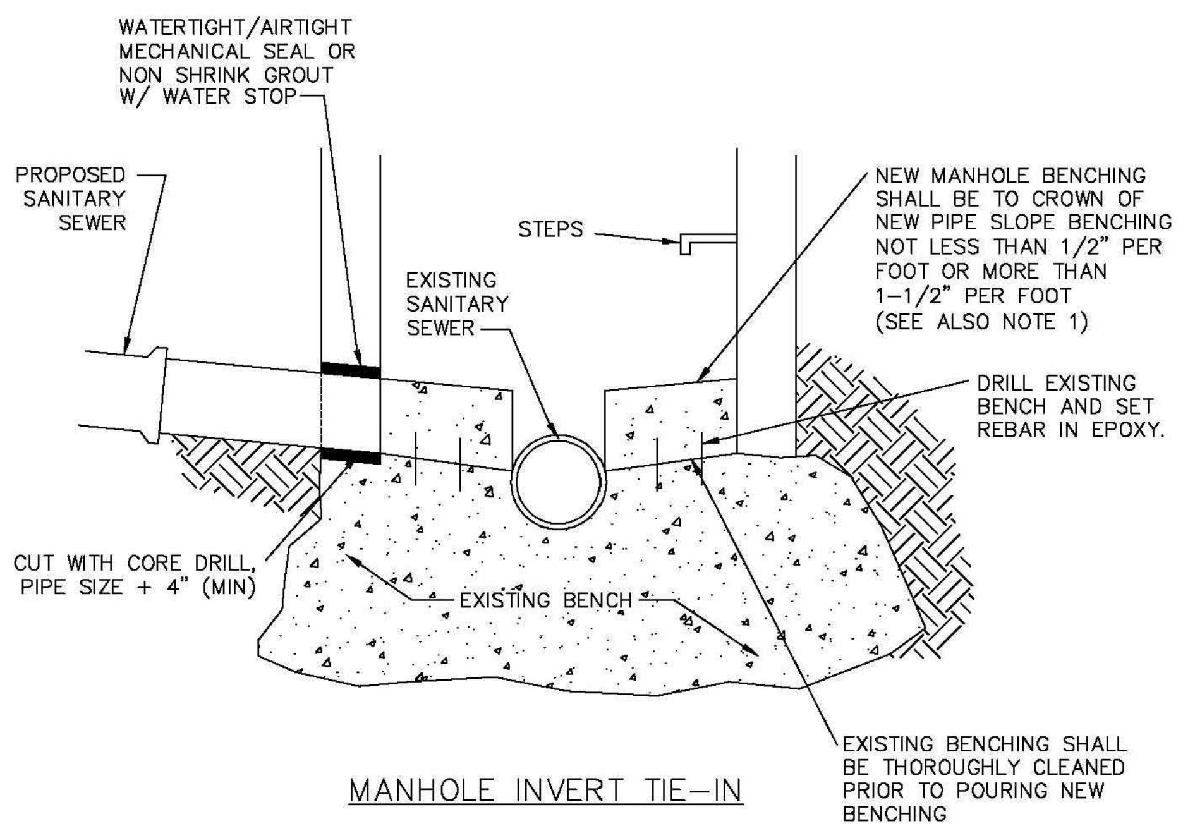
SHEET S4.8


WATERTIGHT/AIRTIGHT MECHANICAL SEAL OR NON SHRINK GROUT W/ WATER STOP
PROPOSED SANITARY SEWER
STEPS
EXISTING SANITARY SEWER
NEW MANHOLE BENCHING SHALL BE TO CROWN OF NEW PIPE SLOPE BENCHING NOT LESS THAN 1/2" PER FOOT OR MORE THAN 1-1/2" PER FOOT (SEE ALSO NOTE 1)
DRILL EXISTING BENCH AND SET REBAR IN EPOXY.
CUT WITH CORE DRILL, PIPE SIZE + 4" (MIN)
EXISTING BENCH
EXISTING BENCHING SHALL BE THOROUGHLY CLEANED PRIOR TO POURING NEW BENCHING

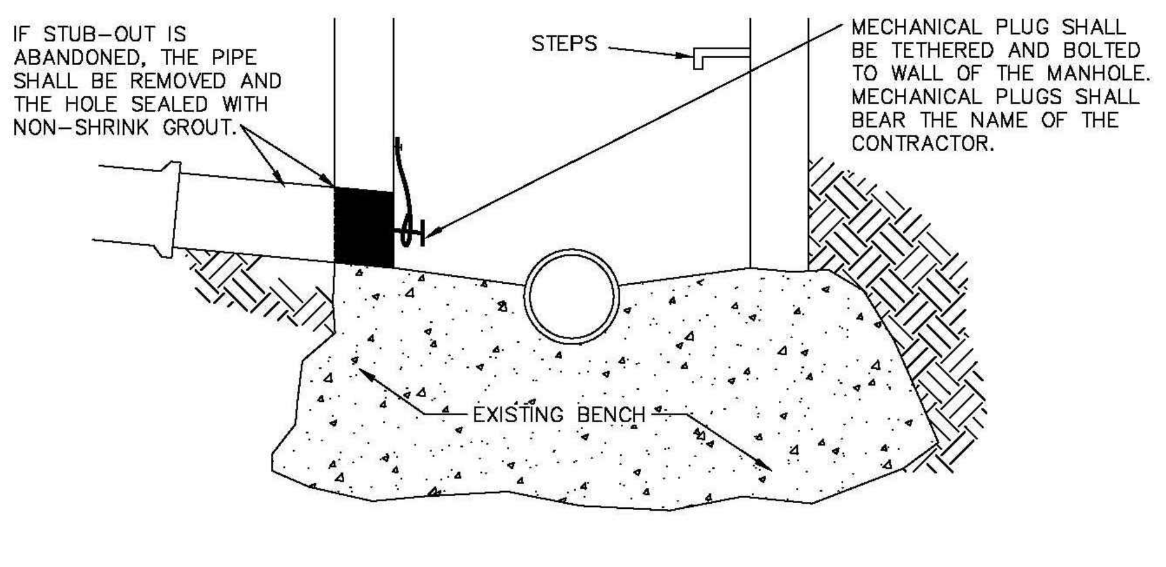
MANHOLE INVERT TIE-IN

NOTES

1 - NEW BENCH SHALL INCLUDE REINFORCEMENT TO CONTROL CONCRETE CRACKING.

PARKER WATER
& SANITATION DISTRICT
MANHOLE INVERT
TIE-IN DETAIL
SCALE: NONE
DATE: 2/96
APPROVED: PVR
1/16
10/16
DIRECTOR OF ENGINEERING

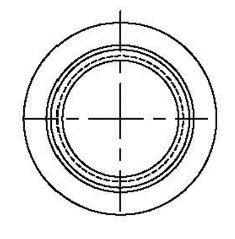
2016 REVISION
SHEET S4.9


IF STUB-OUT IS ABANDONED, THE PIPE SHALL BE REMOVED AND THE HOLE SEALED WITH NON-SHRINK GROUT.
STEPS
MECHANICAL PLUG SHALL BE TETHERED AND BOLTED TO WALL OF THE MANHOLE. MECHANICAL PLUGS SHALL BEAR THE NAME OF THE CONTRACTOR.
EXISTING BENCH

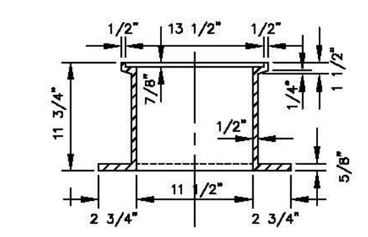
MANHOLE STUB-OUT DETAIL

PARKER WATER
& SANITATION DISTRICT
MANHOLE STUB-OUT
DETAIL
SCALE: NONE
DATE: 2/96
APPROVED: PVR
1/16
10/16
DIRECTOR OF ENGINEERING

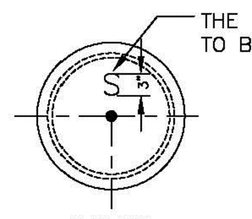
2016 REVISION
SHEET S4.10



FRAME

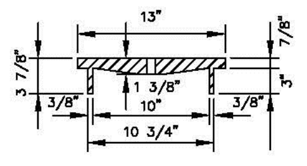

1/2"
13 1/2"
1/2"
11 3/4"
7/8"
1/4"
1 1/2"
1/2"
5/8"
11 1/2"
2 3/4"
2 3/4"

SECTION ON CENTER OF FRAME

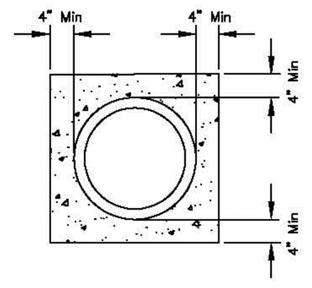


THE WORD "SEWER" TO BE RAISED 3/16"

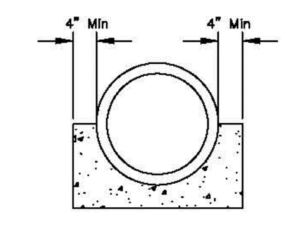
COVER


13"
7/8"
3 7/8"
3"
1 3/8"
3/8"
10"
3/8"
10 3/4"

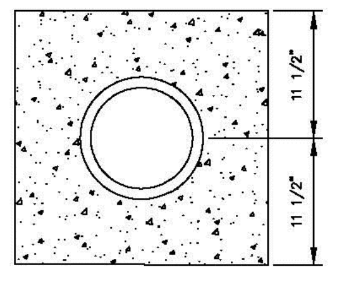
SECTION OF COVER


4" Min
4" Min
4" Min
4" Min

SECTION B-B



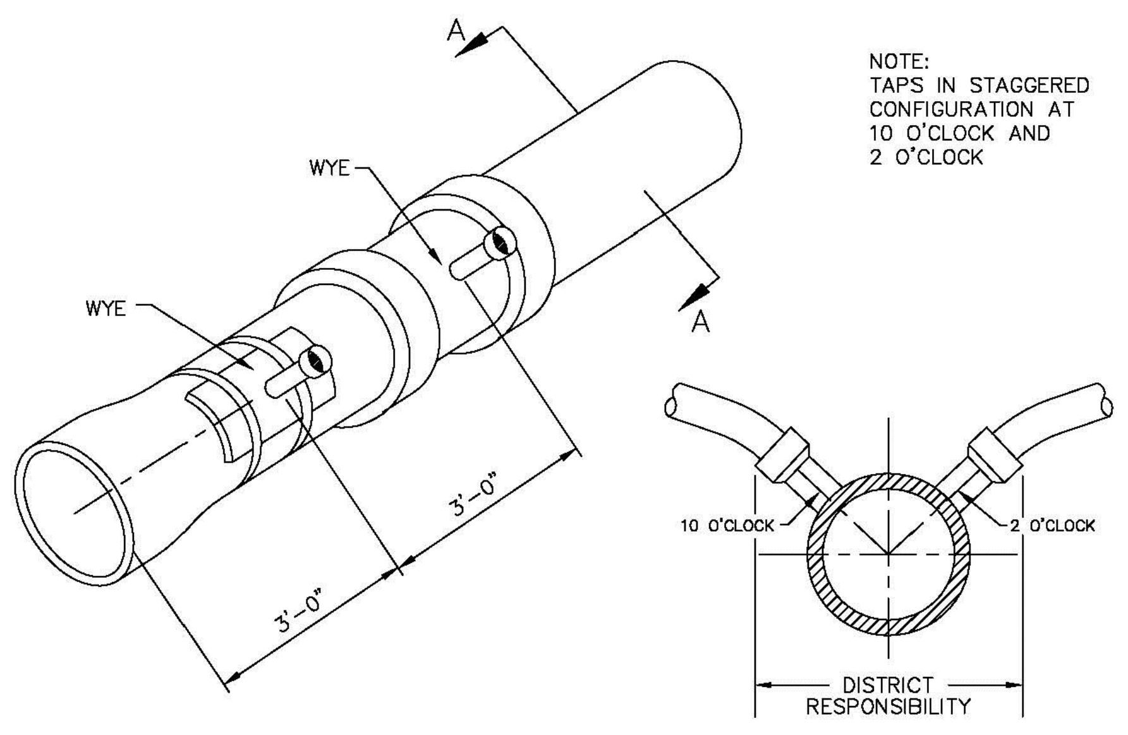
SECTION C-C



SECTION A-A

PARKER WATER
& SANITATION DISTRICT
IN-LINE CLEANOUT SECTIONS
SCALE: NONE
DATE: 2/96
APPROVED: PVR
2/00
1/08
1/16
10/16
DIRECTOR OF ENGINEERING

2016 REVISION
SHEET S4.12


A
A
WYE
WYE
3'-0"
3'-0"
10 O'CLOCK
2 O'CLOCK
DISTRICT RESPONSIBILITY

NOTE:
TAPS IN STAGGERED CONFIGURATION AT 10 O'CLOCK AND 2 O'CLOCK

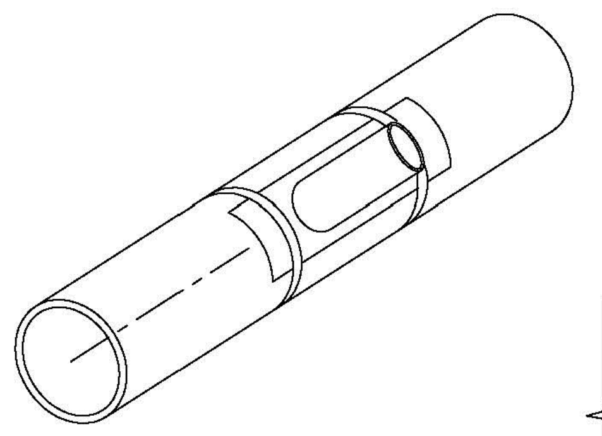
SECTION A - A

Sewer service connections shall be positioned at either the 2 o'clock or the 10 o'clock postion 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.

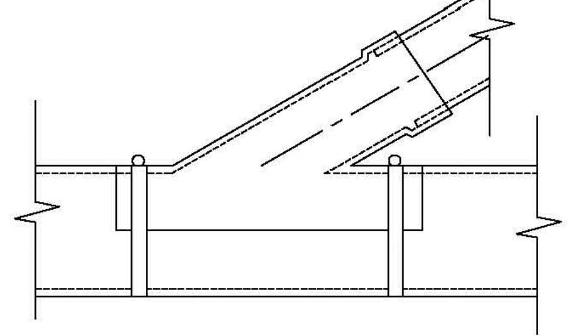
DOMESTIC SEWER TAPPING DETAIL

PARKER WATER
& SANITATION DISTRICT
DOMESTIC SEWER
TAPPING DETAIL
SCALE: NONE
DATE: 2/96
APPROVED: PVR
4/01
1/08
1/16
10/16
DIRECTOR OF ENGINEERING

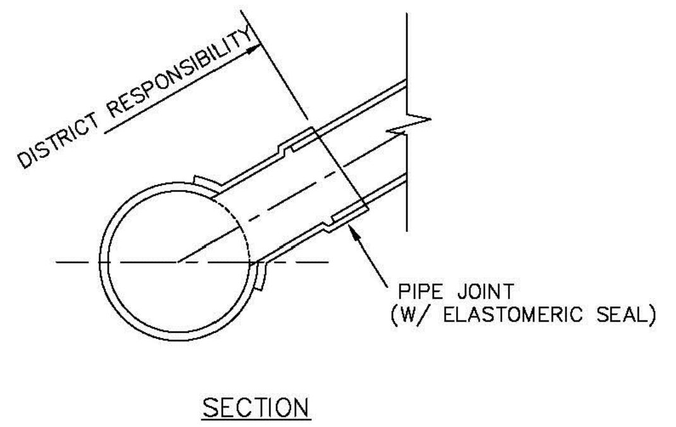
2016 REVISION
SHEET S4.13



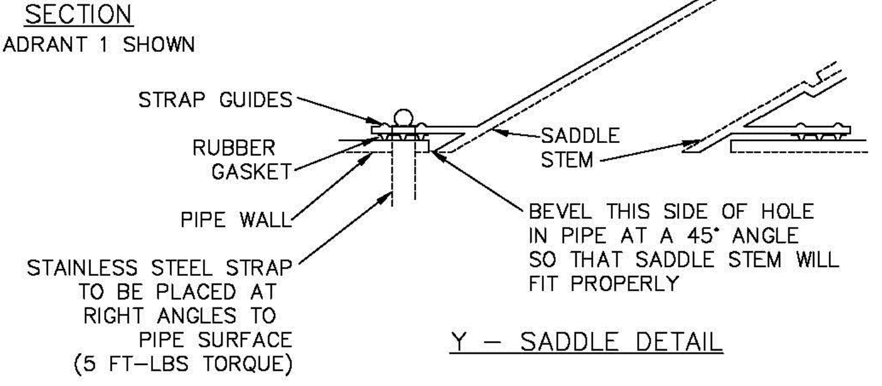
SADDLE CONNECTION



SIDE VIEW


DISTRICT RESPONSIBILITY
PIPE JOINT (W/ ELASTOMERIC SEAL)

SECTION
QUADRANT 1 SHOWN


STRAP GUIDES
RUBBER GASKET
PIPE WALL
STAINLESS STEEL STRAP TO BE PLACED AT RIGHT ANGLES TO PIPE SURFACE (5 FT-LBS TORQUE)
SADDLE STEM
BEVEL THIS SIDE OF HOLE IN PIPE AT A 45° ANGLE SO THAT SADDLE STEM WILL FIT PROPERLY

Y - SADDLE DETAIL

NOTES:

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

PARKER WATER
& SANITATION DISTRICT
P.V.C. SADDLE
CONNECTION DETAIL
SCALE: NONE
DATE: 2/96
APPROVED: PVR
1/16
10/16
DIRECTOR OF ENGINEERING

2016 REVISION
SHEET S4.14

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

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 SANITARY SEWER DETAILS.DWG, BRIANW, 6/17/2021 9:49 AM

No.	Revisions	Date	Init.	Appr.	Date

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Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

CVL a Westwood team

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
SANITARY SEWER DETAIL

DRAWN BY: JF
CHECKED BY: JJJ
DATE: SEPTEMBER 2017
SCALE: AS SHOWN
FILE NO: 8130283701
SHEET NUMBER 10

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 STUB–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 PWSD PRIOR TO 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 CONTINOUS 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 PWSD 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
    "V" FOR WATER SERVICES
13. NO SPLICES OR FLARED COUPLINGS ALLOWED ON SERVICES LARGER THAN 3/4". SILVER SOLDIERED JOINTS MUST BE USED IN MOVING STOPBOXES ON SERVICES LARGER THAN 3/4". SILVER SOLDIERED JOINTS MUST BE INSPECTED BY PWSD PRIOR TO BURIAL. FLARED COUPLINGS WILL BE ALLOWED ON ALL SERVICES 3/4" AND SMALLER.

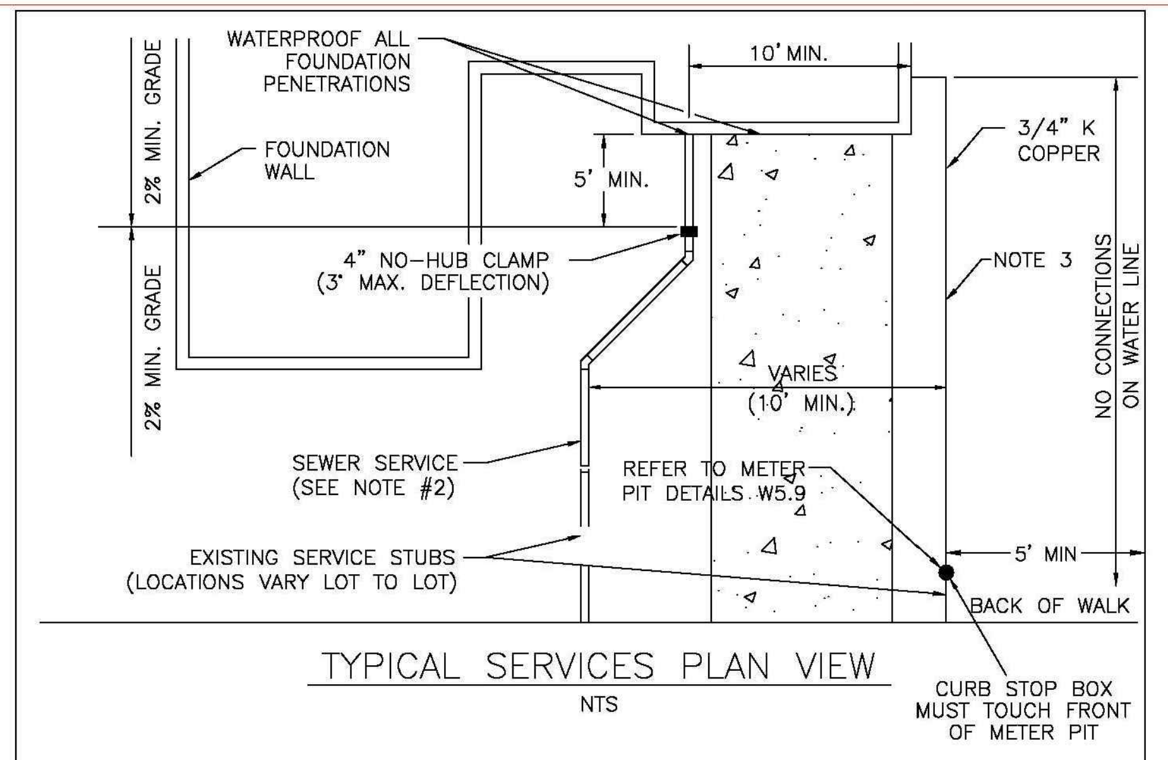
PARKER WATER
& SANITATION DISTRICT

DISTRICT POLICIES & INSTALLATION
NOTES FOR WATER SERVICES

SCALE: NONE	DATE: 2/96
APPROVED: PVR DIRECTOR OF ENGINEERING	1/04 1/16 10/16

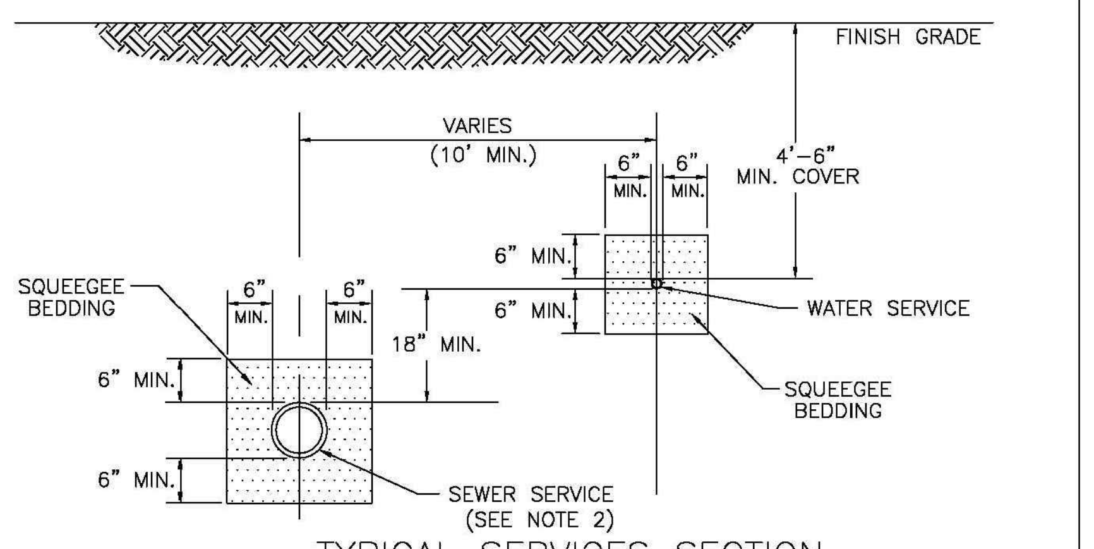
2016 REVISION

SHEET W1.1


2% MIN. GRADE
2% MIN. GRADE
WATERPROOF ALL FOUNDATION PENETRATIONS
10' MIN.
3/4" K COPPER
FOUNDATION WALL
5' MIN.
4" NO–HUB CLAMP (3° MAX. DEFLECTION)
NOTE 3
NO CONNECTIONS ON WATER LINE
VARIES (10' MIN.)
SEWER SERVICE (SEE NOTE #2)
REFER TO METER PIT DETAILS W5.9
EXISTING SERVICE STUBS (LOCATIONS VARY LOT TO LOT)
5' MIN
BACK OF WALK
CURB STOP BOX MUST TOUCH FRONT OF METER PIT

TYPICAL SERVICES PLAN VIEW

NTS


FINISH GRADE
VARIES (10' MIN.)
6" MIN.
6" MIN.
4'–6" MIN. COVER
6" MIN.
6" MIN.
WATER SERVICE
SQUEEGEE BEDDING
6" MIN.
6" MIN.
18" MIN.
6" MIN.
6" MIN.
SQUEEGEE BEDDING
SEWER SERVICE (SEE NOTE 2)

TYPICAL SERVICES SECTION

NTS

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.

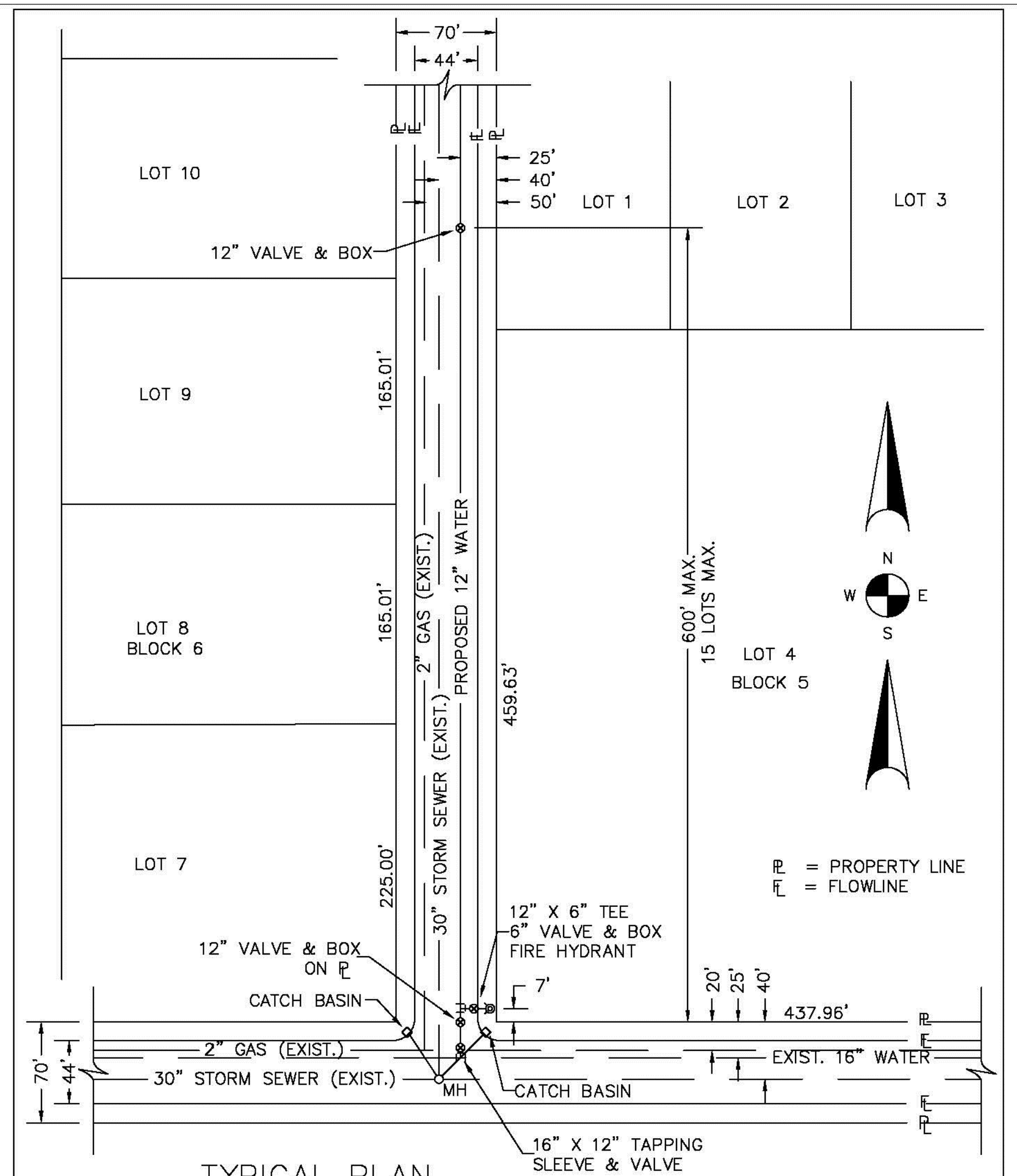
PARKER WATER
& SANITATION DISTRICT

TYPICAL WATER SERVICES

SCALE: NONE	DATE: 2/96
APPROVED: PVR DIRECTOR OF ENGINEERING	1/04 10/16 06/05 12/07 1/16

2016 REVISION

SHEET W1.2


70'
44'
25'
40'
50'
LOT 10
LOT 1
LOT 2
LOT 3
12" VALVE & BOX
LOT 9
165.01'
LOT 8
BLOCK 6
165.01'
2" GAS (EXIST.)
PROPOSED 12" WATER
30" STORM SEWER (EXIST.)
459.63'
600' MAX.
15 LOTS MAX.
LOT 4
BLOCK 5
N
W
E
S
LOT 7
225.00'
℗ = PROPERTY LINE
F̲L = FLOWLINE
12" X 6" TEE
6" VALVE & BOX
FIRE HYDRANT
12" VALVE & BOX ON ℗
CATCH BASIN
7'
20'
25'
40'
437.96'
70'
44'
2" GAS (EXIST.)
30" STORM SEWER (EXIST.)
MH
EXIST. 16" WATER
CATCH BASIN
16" X 12" TAPPING SLEEVE & VALVE

TYPICAL PLAN

NOTES:

1. SEE "TYPICAL STREET CROSS SECTION – TYPICAL STREET ℄ PROFILE" DRAWING.

2. ALL FIRE HYDRANTS TO BE LOCATED AT POINTS OTHER THAN CORNER INTERSECTIONS SHALL BE INSTALLED AT A LOT LINE EXTENDED.

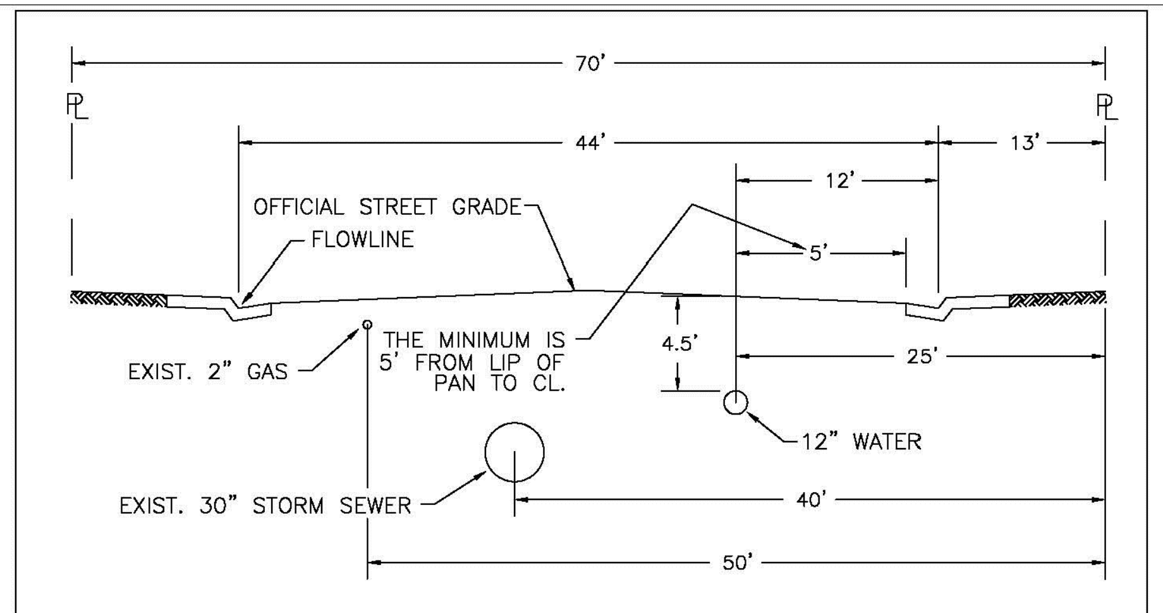
PARKER WATER
& SANITATION DISTRICT

WATER DISTRIBUTION SYSTEM
TYPICAL PLAN

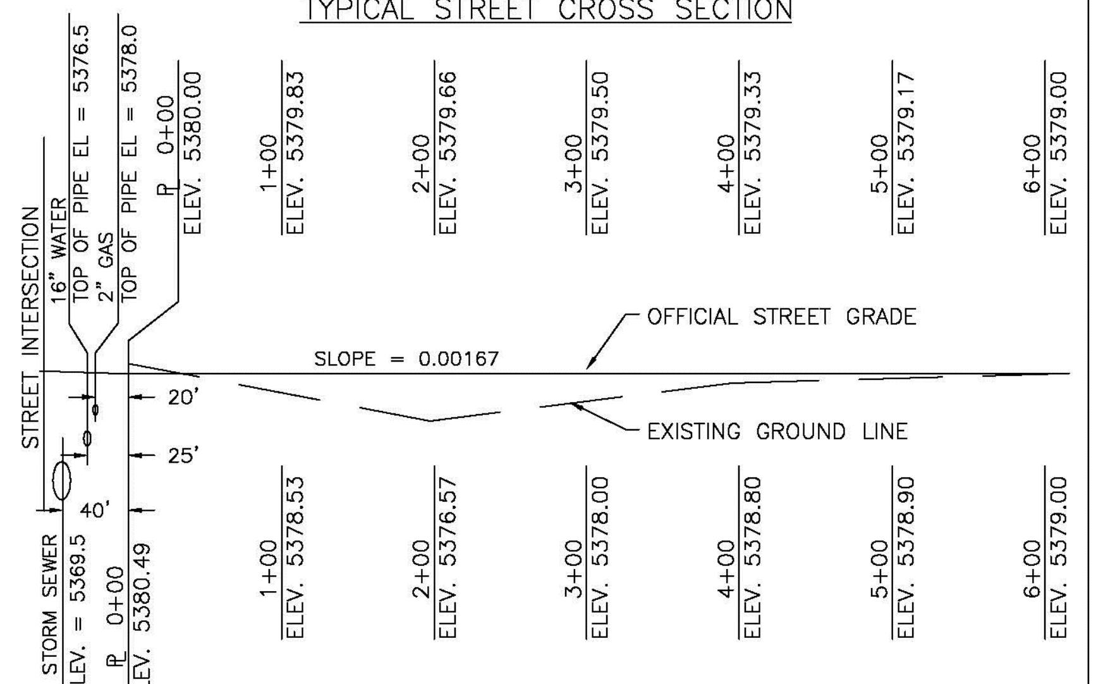
SCALE: NONE	DATE: 2/96
APPROVED: PVR DIRECTOR OF ENGINEERING	1/16 10/16

2016 REVISION

SHEET W2.1


70'
℗
℗
44'
13'
12'
OFFICIAL STREET GRADE
FLOWLINE
5'
EXIST. 2" GAS
THE MINIMUM IS 5' FROM LIP OF PAN TO CL.
4.5'
25'
12" WATER
EXIST. 30" STORM SEWER
40'
50'

TYPICAL STREET CROSS SECTION


STREET INTERSECTION
16" WATER
TOP OF PIPE EL = 5376.5
2" GAS
TOP OF PIPE EL = 5378.0
℗ 0+00
ELEV. 5380.00
1+00
ELEV. 5379.83
2+00
ELEV. 5379.66
3+00
ELEV. 5379.50
4+00
ELEV. 5379.33
5+00
ELEV. 5379.17
6+00
ELEV. 5379.00
OFFICIAL STREET GRADE
SLOPE = 0.00167
20'
25'
EXISTING GROUND LINE
40'
℄ 39" STORM SEWER
INV. ELEV. = 5369.5
℗ 0+00
ELEV. 5380.49
1+00
ELEV. 5378.53
2+00
ELEV. 5376.57
3+00
ELEV. 5378.00
4+00
ELEV. 5378.80
5+00
ELEV. 5378.90
6+00
ELEV. 5379.00

TYPICAL STREET ℄ PROFILE

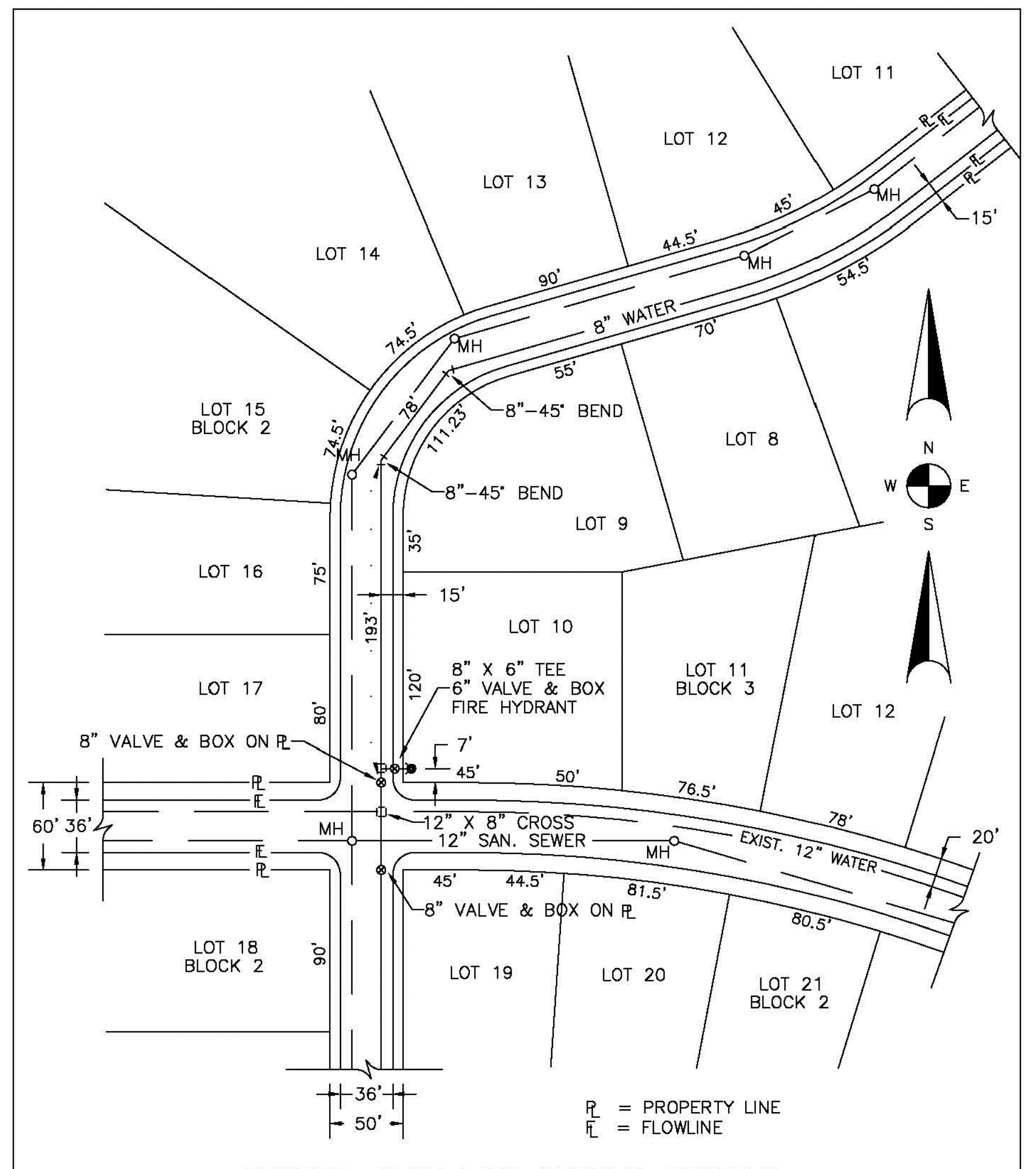
PARKER WATER
& SANITATION DISTRICT

TYPICAL STREET CROSS SECTION
TYPICAL STREET ℄ PROFILE

SCALE: NONE	DATE: 2/96
APPROVED: PVR DIRECTOR OF ENGINEERING	1/16 10/16

2016 REVISION

SHEET W2.2


LOT 11
LOT 12
LOT 13
LOT 14
45'
44.5'
90'
MH
MH
15'
54.5'
8" WATER
70'
74.5'
MH
55'
8"–45° BEND
LOT 15
BLOCK 2
74.5'
78'
111.23'
LOT 8
MH
8"–45° BEND
N
W
E
S
LOT 9
LOT 16
75'
35'
15'
193'
LOT 10
LOT 17
80'
120'
8" X 6" TEE
6" VALVE & BOX
FIRE HYDRANT
LOT 11
BLOCK 3
LOT 12
8" VALVE & BOX ON ℗
7'
45'
50'
76.5'
78'
60'
36'
12" X 8" CROSS
12" SAN. SEWER
MH
MH
EXIST. 12" WATER
20'
45'
44.5'
81.5'
80.5'
8" VALVE & BOX ON ℗
LOT 18
BLOCK 2
90'
LOT 19
LOT 20
LOT 21
BLOCK 2
36'
50'
℗ = PROPERTY LINE
F̲L = FLOWLINE

TYPICAL PLAN FOR CURVED STREETS

NOTE: WATER AND SEWER MAY NEVER BE CLOSER THAN 10' HORIZONTALLY AND MUST MAINTAIN A MINIMUM OF 5' FROM THE LIP OF PAN ON THE GUTTER.

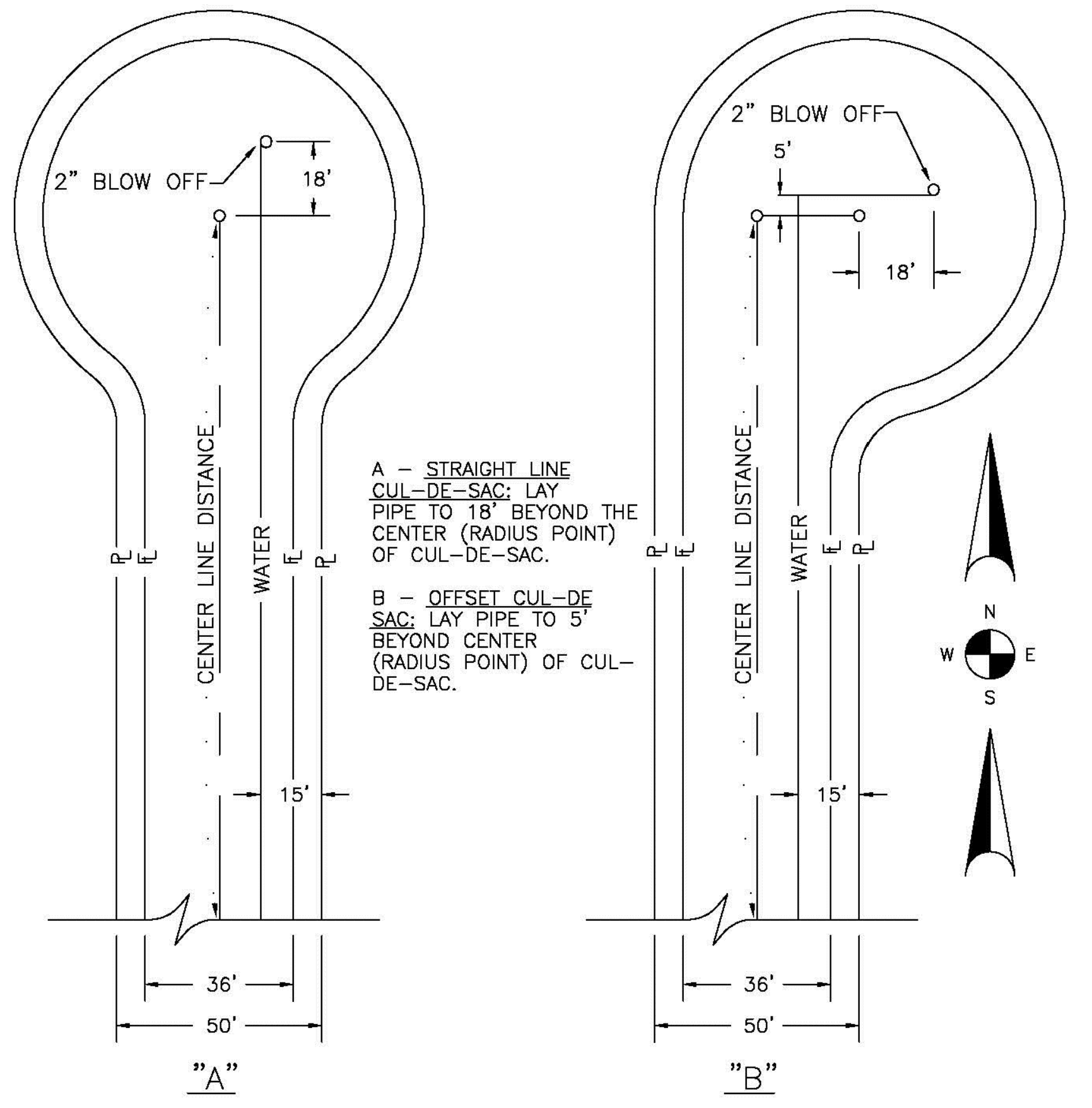
PARKER WATER
& SANITATION DISTRICT

WATER DISTRIBUTION SYSTEM
TYPICAL PLAN FOR CURVED STREETS

SCALE: NONE	DATE: 2/96
APPROVED: PVR DIRECTOR OF ENGINEERING	1/16 10/16

2016 REVISION

SHEET W2.3


2" BLOW OFF
18'
CENTER LINE DISTANCE
WATER
15'
36'
50'
"A"
2" BLOW OFF
5'
18'
CENTER LINE DISTANCE
WATER
15'
36'
50'
"B"
N
W
E
S

A – STRAIGHT LINE CUL–DE–SAC: LAY PIPE TO 18' BEYOND THE CENTER (RADIUS POINT) OF CUL–DE–SAC.

B – OFFSET CUL–DE SAC: LAY PIPE TO 5' BEYOND CENTER (RADIUS POINT) OF CUL–DE–SAC.

TYPICAL PLAN FOR CUL–DE–SACS

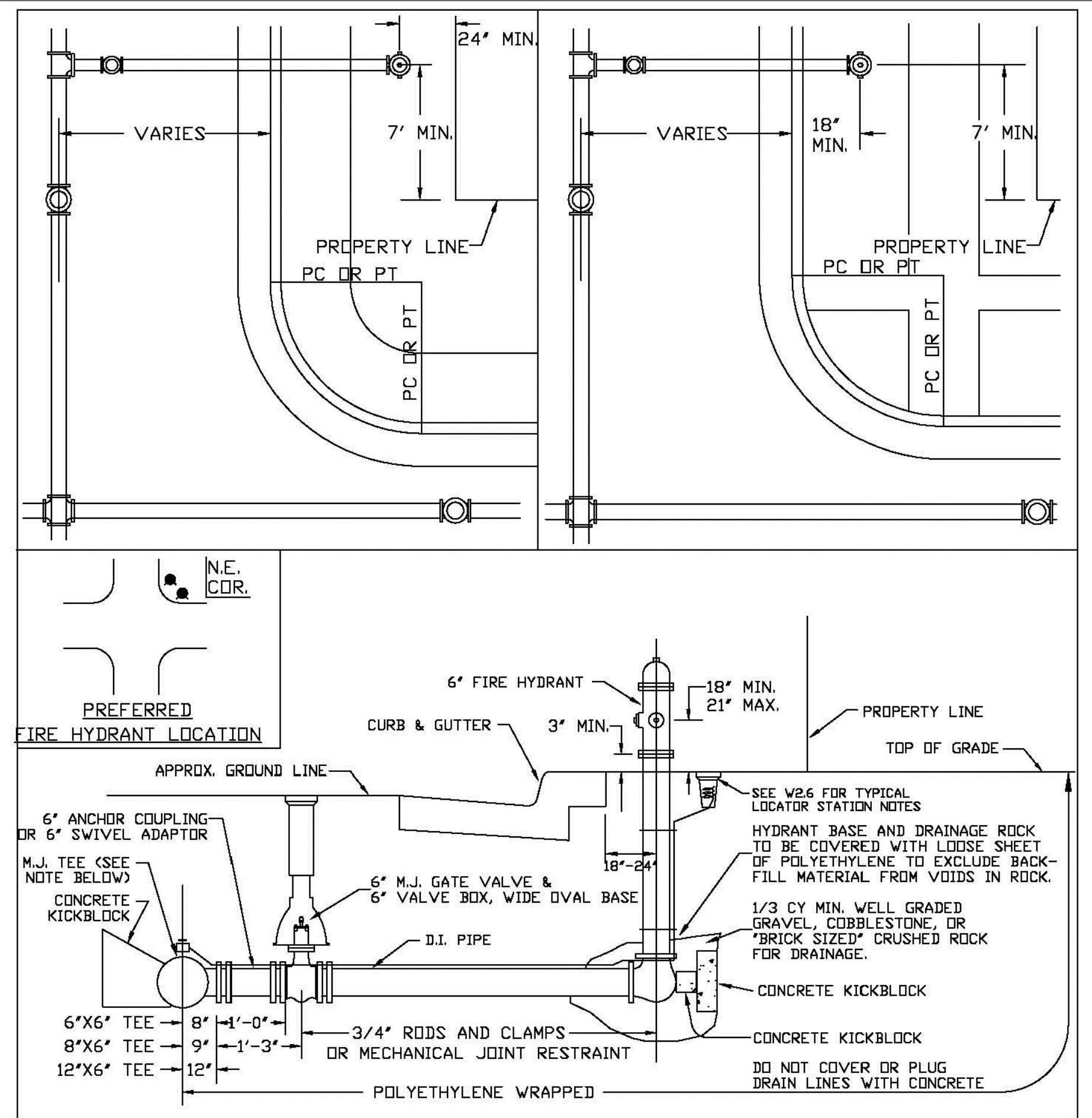
PARKER WATER
& SANITATION DISTRICT

WATER DISTRIBUTION SYSTEM
TYPICAL PLAN FOR CUL–DE–SACS

SCALE: NONE	DATE: 2/96
APPROVED: PVR DIRECTOR OF ENGINEERING	1/16 10/16

2016 REVISION

SHEET W2.4


24" MIN.
VARIES
7' MIN.
PROPERTY LINE
PC OR PT
PC OR PT
VARIES
18" MIN.
7' MIN.
PROPERTY LINE
PC OR PT
PC OR PT
N.E. COR.
PREFERRED FIRE HYDRANT LOCATION
6' FIRE HYDRANT
18" MIN.
21" MAX.
PROPERTY LINE
CURB & GUTTER
3" MIN.
TOP OF GRADE
APPROX. GROUND LINE
SEE W2.6 FOR TYPICAL LOCATOR STATION NOTES
6' ANCHOR COUPLING OR 6' SWIVEL ADAPTOR
HYDRANT BASE AND DRAINAGE ROCK TO BE COVERED WITH LOOSE SHEET OF POLYETHYLENE TO EXCLUDE BACK–FILL MATERIAL FROM VOIDS IN ROCK.
M.J. TEE (SEE NOTE BELOW)
18"–24"
CONCRETE KICKBLOCK
6' M.J. GATE VALVE & 6' VALVE BOX, WIDE OVAL BASE
1/3 CY MIN. WELL GRADED GRAVEL, COBBLESTONE, OR 'BRICK SIZED' CRUSHED ROCK FOR DRAINAGE.
D.I. PIPE
CONCRETE KICKBLOCK
6"X6" TEE
8"X6" TEE
12"X6" TEE
8"
9"
12"
1'–0"
1'–3"
3/4" RODS AND CLAMPS OR MECHANICAL JOINT RESTRAINT
CONCRETE KICKBLOCK
DO NOT COVER OR PLUG DRAIN LINES WITH CONCRETE
POLYETHYLENE WRAPPED

NOTES:

1. ALTERNATE TO THE ABOVE: FASTEN M.J. VALVE DIRECTLY TO A M.J. ANCHOR TEE (ALSO CALLED SWIVEL TEE.)
2. NO HORIZONTAL OR VERTICAL BENDS ARE ALLOWED IN FIRE HYDRANT BRANCH
4. NO PORTION OF FIRE HYDRANT MAY PROTRUDE INTO SIDEWALK AREA.
5. FIRE HYDRANT EXTENSIONS MAY NOT BE MORE THAN 18".

PARKER WATER
& SANITATION DISTRICT

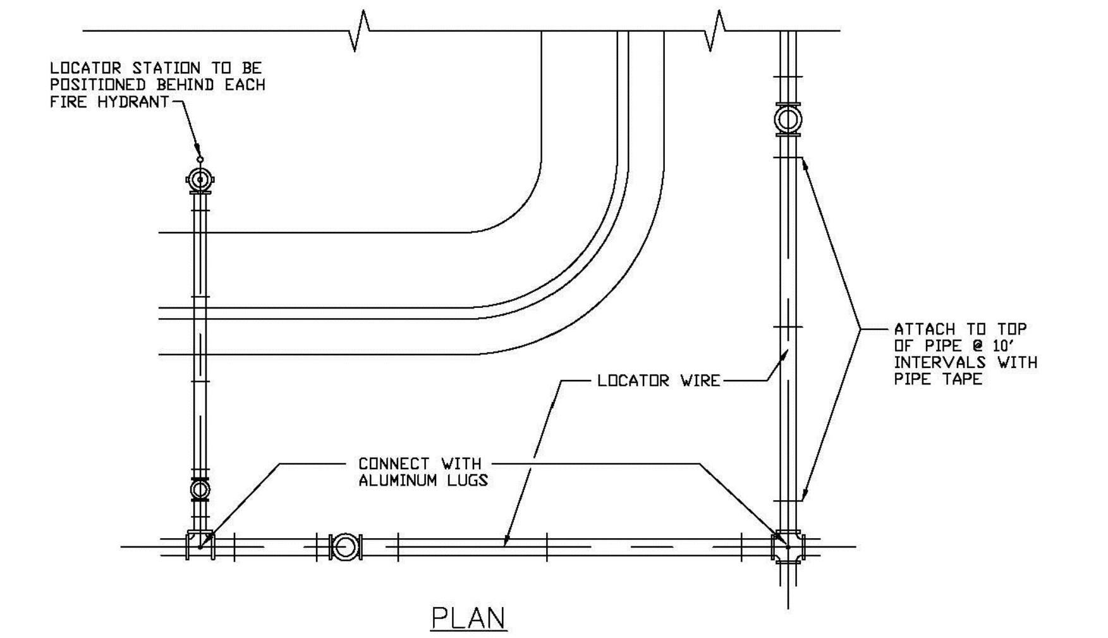
FIRE HYDRANTS
LOCATION & INSTALLATION

SCALE: NONE	DATE: 2/96
APPROVED: PVR DIRECTOR OF ENGINEERING	4/01 10/16 01/02 12/07 1/16

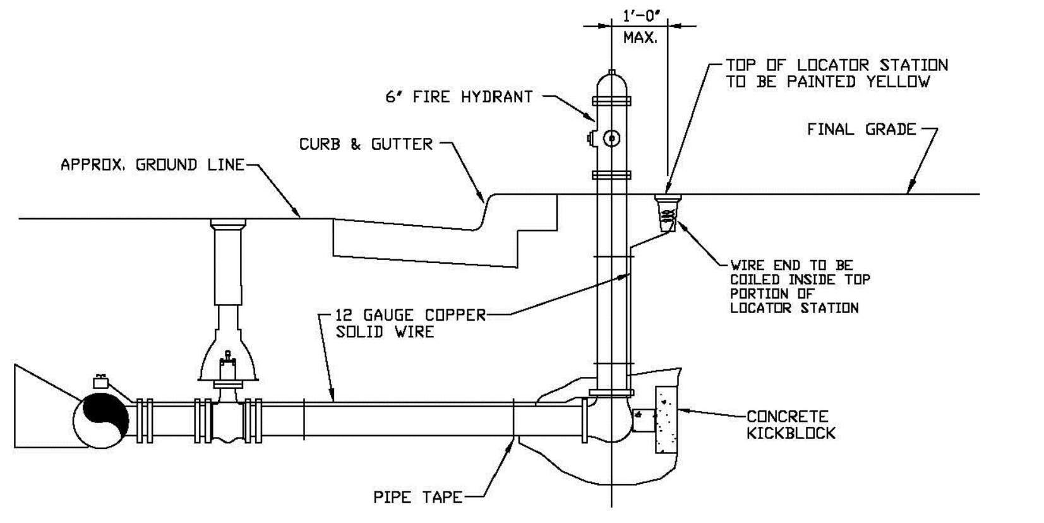
2016 REVISION

SHEET W2.5

PIPE LOCATION SYSTEM


LOCATOR STATION TO BE POSITIONED BEHIND EACH FIRE HYDRANT
ATTACH TO TOP OF PIPE @ 10' INTERVALS WITH PIPE TAPE
LOCATOR WIRE
CONNECT WITH ALUMINUM LUGS

PLAN


1'–0" MAX.
TOP OF LOCATOR STATION TO BE PAINTED YELLOW
6' FIRE HYDRANT
FINAL GRADE
CURB & GUTTER
APPROX. GROUND LINE
WIRE END TO BE COILED INSIDE TOP PORTION OF LOCATOR STATION
12 GAUGE COPPER SOLID WIRE
CONCRETE KICKBLOCK
PIPE TAPE

SECTION VIEW @ FIRE HYDRANT

NOTES:

1. FOR USE ON ALL DUCTILE IRON AND PVC WATER MAINS.
2. LOCATOR STATION POSITION MAY BE MODIFIED AT THE DIRECTION OF THE DISTRICT ENGINEER.
3. A CONTINUITY TEST WILL BE REQUIRED PRIOR TO PROBATIONARY ACCEPTANCE.

PARKER WATER
& SANITATION DISTRICT

LOCATOR WIRE DETAILS

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

2016 REVISION

SHEET W2.6

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 WATER DETAILS.DWG, CODYA, 6/17/2021 9:50 AM

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No.	Revisions	Date	Init.	Appr.	Date

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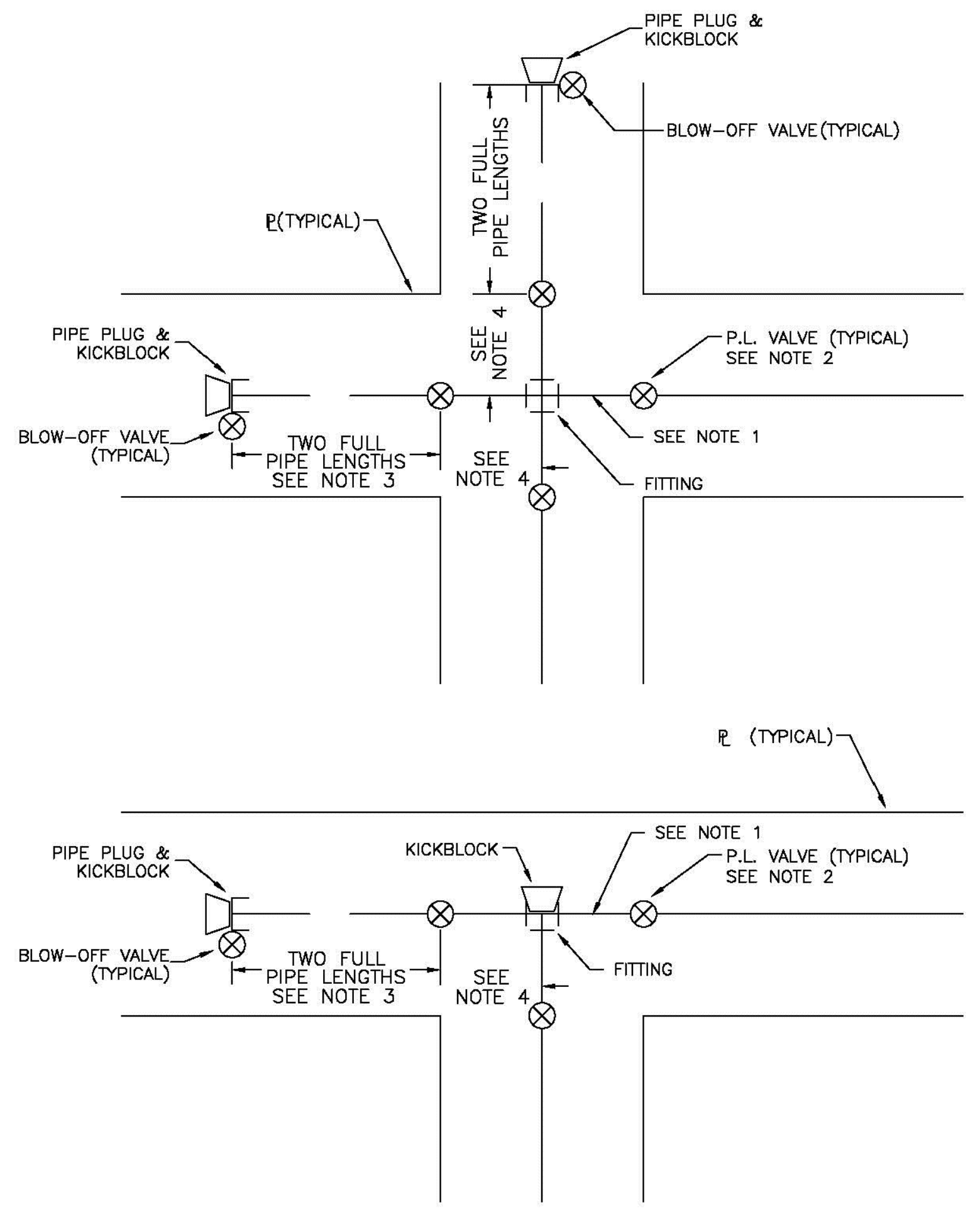
westwoodps.com

CVL
a Westwood team

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
WATER DETAILS

SHEET NUMBER 11	DRAWN BY: JF CHECKED BY: JJJ DATE: SEPTEMBER 2017	SCALE: AS SHOWN FILE NO: 8130283701


PIPE PLUG & KICKBLOCK
BLOW-OFF VALVE (TYPICAL)
TWO FULL PIPE LENGTHS
℞(TYPICAL)
PIPE PLUG & KICKBLOCK
SEE NOTE 4
P.L. VALVE (TYPICAL) SEE NOTE 2
BLOW-OFF VALVE (TYPICAL)
TWO FULL PIPE LENGTHS SEE NOTE 3
SEE NOTE 4
SEE NOTE 1
FITTING
℞ (TYPICAL)
PIPE PLUG & KICKBLOCK
KICKBLOCK
SEE NOTE 1
P.L. VALVE (TYPICAL) SEE NOTE 2
BLOW-OFF VALVE (TYPICAL)
TWO FULL PIPE LENGTHS SEE NOTE 3
SEE NOTE 4
FITTING

NOTES:

1. LAY PIPE FROM FITTING TO P_L
2. INSTALL VALVE AT P_L
3. STUB OUT TWO FULL PIPE LENGTHS FROM VALVE AND BLOW-OFF VALVE. PLUG END OF PIPE AND INSTALL KICKBLOCK.
4. ALTERNATIVE TO NOTE 3: ROD OR MECHANICAL JOINT RESTRAINT FROM VALVE TO FITTING AND ELIMINATE THE TWO FULL LENGTHS OF PIPE OUT OF VALVE AND TEMPORARY BLOW-OFF.

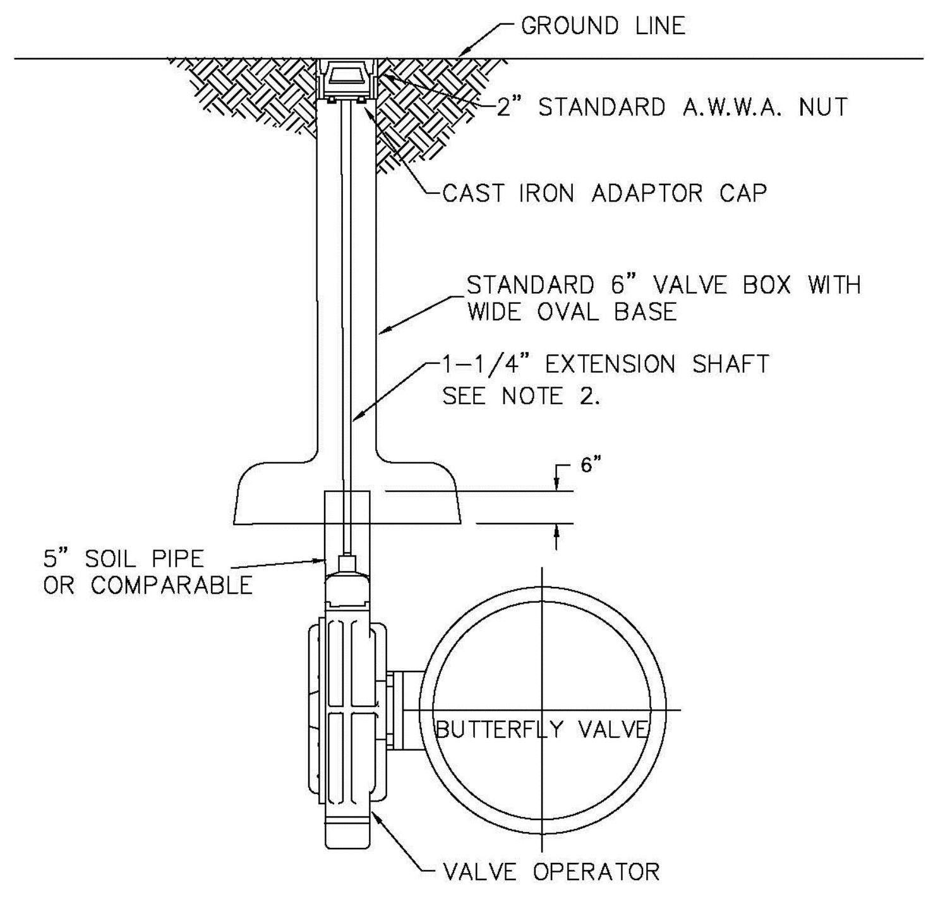
PARKER WATER
& SANITATION DISTRICT

PIPING AT STREET INTERSECTIONS
FUTURE CONNECTIONS

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

2016 REVISION

SHEET W2.7


GROUND LINE
2" STANDARD A.W.W.A. NUT
CAST IRON ADAPTOR CAP
STANDARD 6" VALVE BOX WITH WIDE OVAL BASE
1-1/4" EXTENSION SHAFT SEE NOTE 2.
6"
5" SOIL PIPE OR COMPARABLE
BUTTERFLY VALVE
VALVE OPERATOR

1. THE VALVE BOX SHALL NOT BE PLACED DIRECTLY ON SOIL PIPE.

2. VALVE EXTENSIONS ONLY ALLOWED FOR VALVES DEEPER THAN 9 FT, SEE DETAIL W3.2.

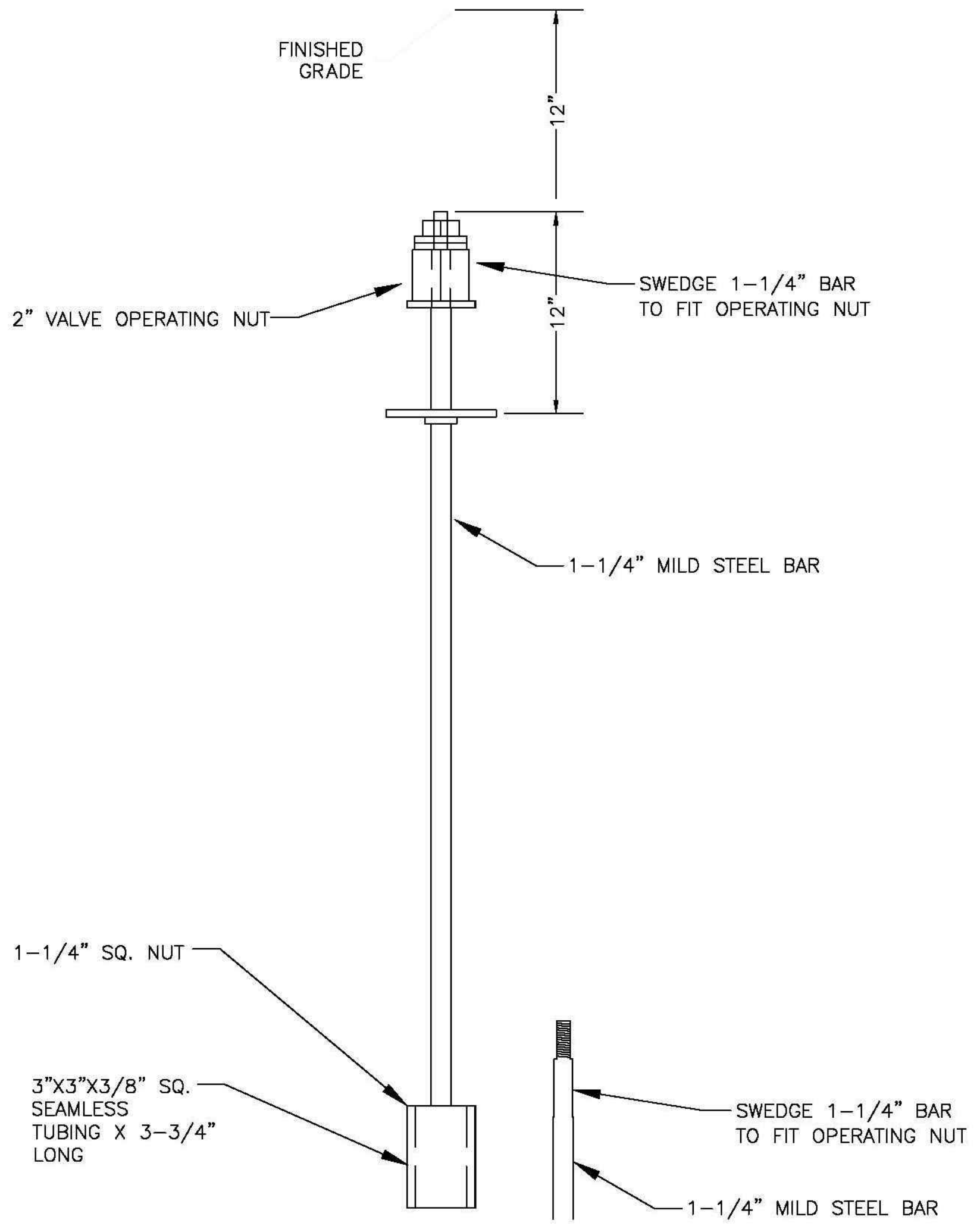
PARKER WATER
& SANITATION DISTRICT

TRANSMISSION MAIN
BUTTERFLY VALVE INSTALLATION

SCALE: NONE	DATE: 2/96
APPROVED: PVR DIRECTOR OF ENGINEERING	1/16 10/16

2016 REVISION

SHEET W3.1


FINISHED GRADE
12"
12"
2" VALVE OPERATING NUT
SWEDGE 1-1/4" BAR TO FIT OPERATING NUT
1-1/4" MILD STEEL BAR
1-1/4" SQ. NUT
3"X3"X3/8" SQ. SEAMLESS TUBING X 3-3/4" LONG
SWEDGE 1-1/4" BAR TO FIT OPERATING NUT
1-1/4" MILD STEEL BAR

NOTES:

1. VALVE EXTENSIONS ONLY ALLOWED ON VALVES DEEPER THAN 9 FEET.

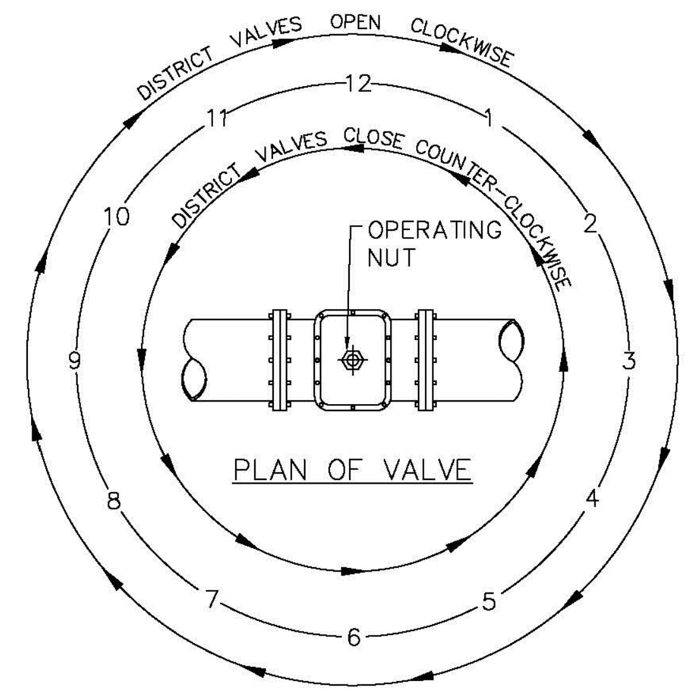
PARKER WATER
& SANITATION DISTRICT

VALVE OPERATOR EXTENSION

SCALE: NONE	DATE: 5/98
APPROVED: PVR DIRECTOR OF ENGINEERING	2/00 12/07 1/16 10/16

2016 REVISION

SHEET W3.3


DISTRICT VALVES OPEN CLOCKWISE
DISTRICT VALVES CLOSE COUNTER-CLOCKWISE
OPERATING NUT
12
1
2
3
4
5
6
7
8
9
10
11
PLAN OF VALVE

NOTE:
ONLY RIGHT HAND OPENING VALVES ALLOWED.

VALVE OPENING & CLOSING PROCEDURE

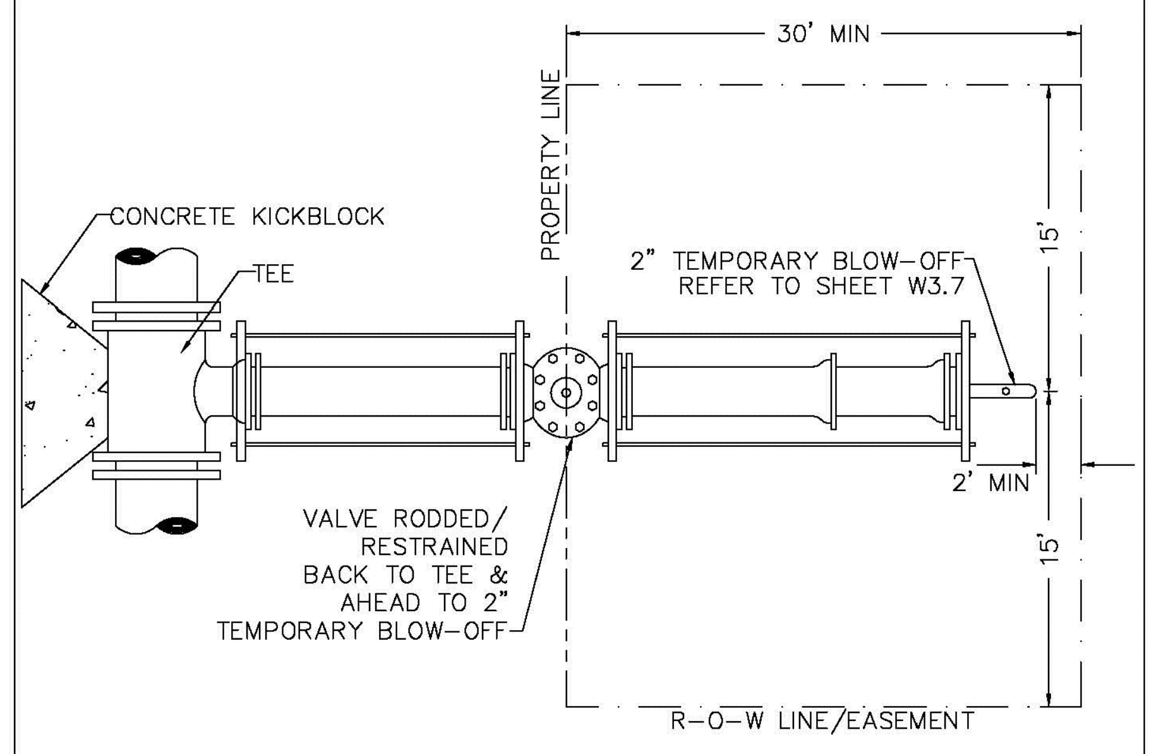
PARKER WATER
& SANITATION DISTRICT

VALVE OPERATION

SCALE: NONE	DATE: 2/96
APPROVED: PVR DIRECTOR OF ENGINEERING	1/16 10/16

2016 REVISION

SHEET W3.4


30' MIN
PROPERTY LINE
CONCRETE KICKBLOCK
TEE
2" TEMPORARY BLOW-OFF REFER TO SHEET W3.7
15'
2' MIN
15'
VALVE RODDED/ RESTRAINED BACK TO TEE & AHEAD TO 2" TEMPORARY BLOW-OFF
R-O-W LINE/EASEMENT

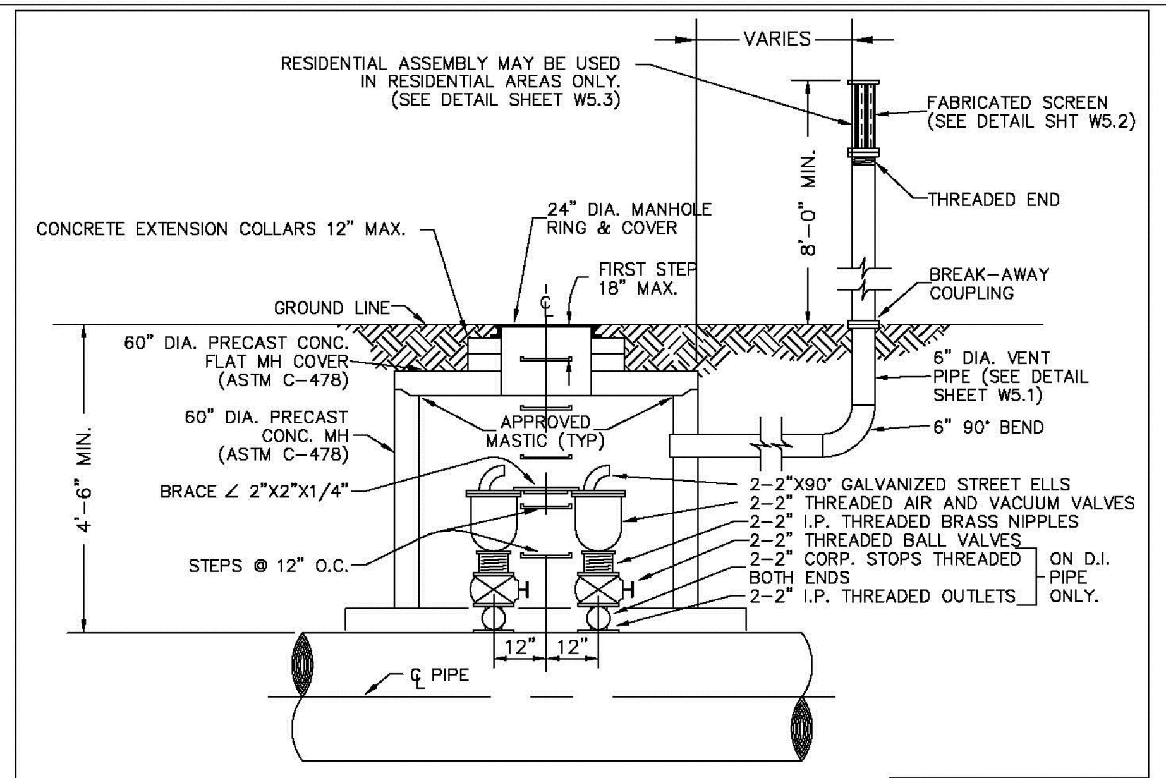
PARKER WATER
& SANITATION DISTRICT

STUB-OUT CONFIGURATIONS

SCALE: NONE	DATE: 2/96
APPROVED: PVR DIRECTOR OF ENGINEERING	1/16 10/16

2016 REVISION

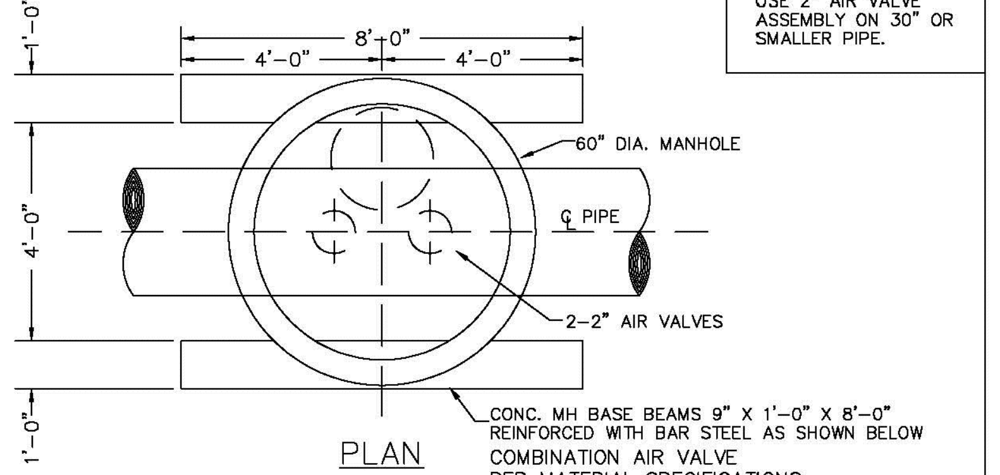
SHEET W3.5


VARIES
RESIDENTIAL ASSEMBLY MAY BE USED IN RESIDENTIAL AREAS ONLY. (SEE DETAIL SHEET W5.3)
FABRICATED SCREEN (SEE DETAIL SHT W5.2)
THREADED END
8'-0" MIN.
CONCRETE EXTENSION COLLARS 12" MAX.
24" DIA. MANHOLE RING & COVER
FIRST STEP 18" MAX.
BREAK-AWAY COUPLING
GROUND LINE
60" DIA. PRECAST CONC. FLAT MH COVER (ASTM C-478)
6" DIA. VENT PIPE (SEE DETAIL SHEET W5.1)
60" DIA. PRECAST CONC. MH (ASTM C-478)
APPROVED MASTIC (TYP)
6" 90° BEND
4'-6" MIN.
BRACE ∠ 2"X2"X1/4"
2-2"X90° GALVANIZED STREET ELLS
2-2" THREADED AIR AND VACUUM VALVES
2-2" I.P. THREADED BRASS NIPPLES
2-2" THREADED BALL VALVES
STEPS @ 12" O.C.
2-2" CORP. STOPS THREADED BOTH ENDS
2-2" I.P. THREADED OUTLETS
ON D.I. PIPE ONLY.
12"
12"
℄ PIPE

ELEVATION

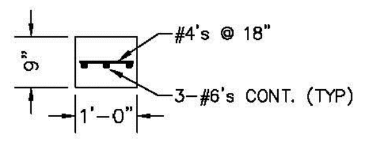
NOTE:

USE 2" AIR VALVE ASSEMBLY ON 30" OR SMALLER PIPE.


1'-0"
8'-0"
4'-0"
4'-0"
60" DIA. MANHOLE
4'-0"
℄ PIPE
2-2" AIR VALVES
1'-0"

CONC. MH BASE BEAMS 9" X 1'-0" X 8'-0" REINFORCED WITH BAR STEEL AS SHOWN BELOW
COMBINATION AIR VALVE PER MATERIAL SPECIFICATIONS

PLAN


#4's @ 18"
9"
3-#6's CONT. (TYP)
1'-0"

FOOTING DETAIL

PARKER WATER
& SANITATION DISTRICT

AIR AND VACUUM
VALVE INSTALLATION

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

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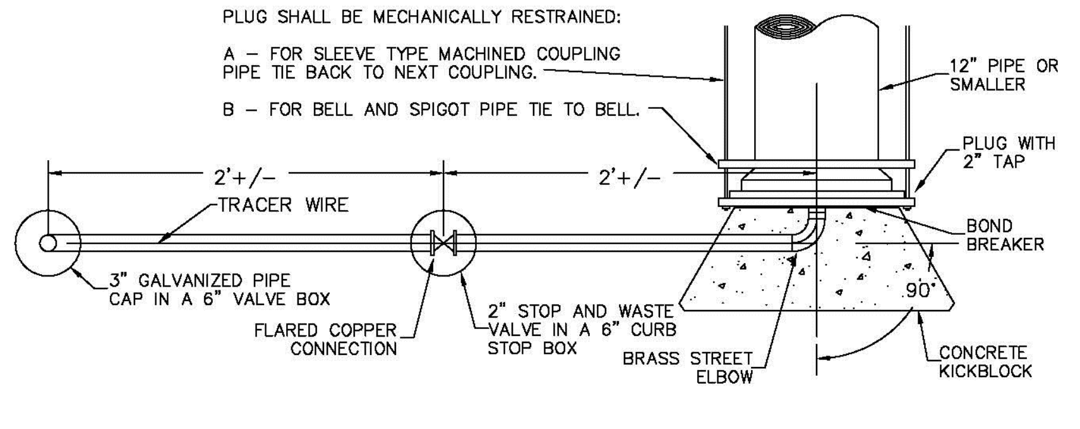
SHEET W3.6

NOTE:

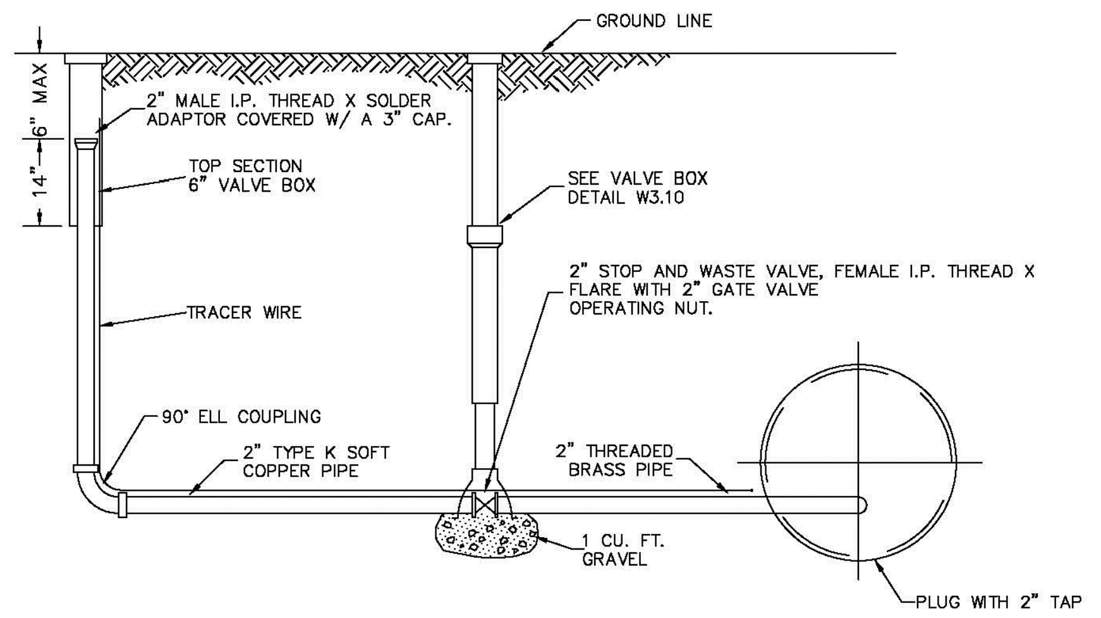
PLUG SHALL BE MECHANICALLY RESTRAINED:

A – FOR SLEEVE TYPE MACHINED COUPLING PIPE TIE BACK TO NEXT COUPLING.

B – FOR BELL AND SPIGOT PIPE TIE TO BELL.


12" PIPE OR SMALLER
PLUG WITH 2" TAP
2'+/-
2'+/-
TRACER WIRE
BOND BREAKER
3" GALVANIZED PIPE CAP IN A 6" VALVE BOX
FLARED COPPER CONNECTION
2" STOP AND WASTE VALVE IN A 6" CURB STOP BOX
BRASS STREET ELBOW
90°
CONCRETE KICKBLOCK

PLAN


GROUND LINE
14"
6"
MAX
2" MALE I.P. THREAD X SOLDER ADAPTOR COVERED W/ A 3" CAP.
TOP SECTION 6" VALVE BOX
SEE VALVE BOX DETAIL W3.10
2" STOP AND WASTE VALVE, FEMALE I.P. THREAD X FLARE WITH 2" GATE VALVE OPERATING NUT.
TRACER WIRE
90° ELL COUPLING
2" TYPE K SOFT COPPER PIPE
2" THREADED BRASS PIPE
1 CU. FT. GRAVEL
PLUG WITH 2" TAP

ELEVATION

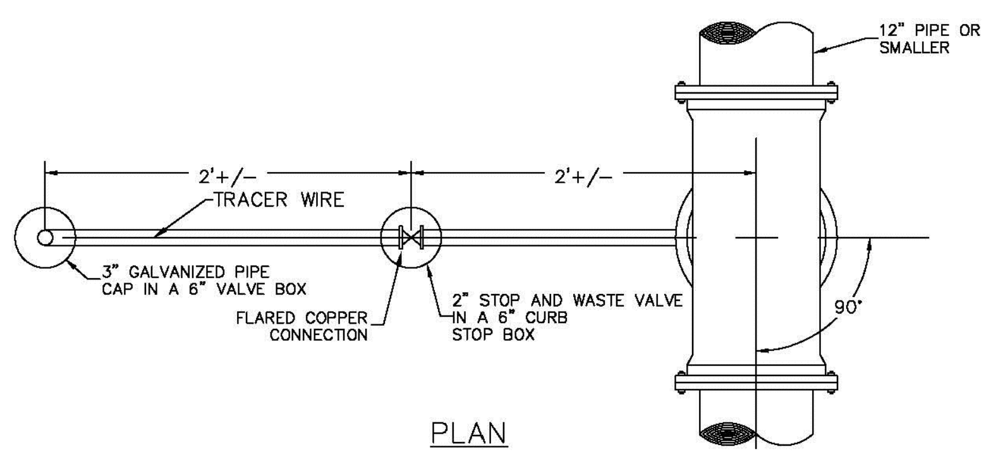
PARKER WATER
& SANITATION DISTRICT

BLOW-OFF INSTALLATION
FOR 12" & SMALLER PIPE

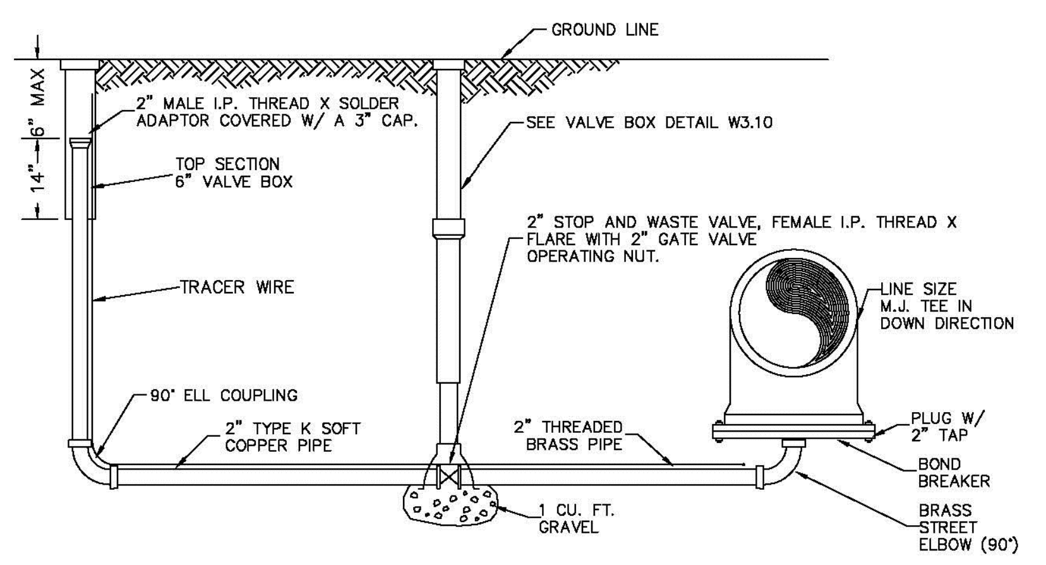
SCALE: NONE	DATE: 2/96
APPROVED: PVR DIRECTOR OF ENGINEERING	4/01 1/16 10/16

2016 REVISION

SHEET W3.7


12" PIPE OR SMALLER
2'+/-
2'+/-
TRACER WIRE
3" GALVANIZED PIPE CAP IN A 6" VALVE BOX
FLARED COPPER CONNECTION
2" STOP AND WASTE VALVE IN A 6" CURB STOP BOX
90°

PLAN


GROUND LINE
14"
6"
MAX
2" MALE I.P. THREAD X SOLDER ADAPTOR COVERED W/ A 3" CAP.
SEE VALVE BOX DETAIL W3.10
TOP SECTION 6" VALVE BOX
2" STOP AND WASTE VALVE, FEMALE I.P. THREAD X FLARE WITH 2" GATE VALVE OPERATING NUT.
TRACER WIRE
LINE SIZE M.J. TEE IN DOWN DIRECTION
90° ELL COUPLING
2" TYPE K SOFT COPPER PIPE
2" THREADED BRASS PIPE
PLUG W/ 2" TAP
BOND BREAKER
1 CU. FT. GRAVEL
BRASS STREET ELBOW (90°)

ELEVATION

NOTE: PLUG SHALL BE MECHANICALLY RESTRAINED.

PARKER WATER
& SANITATION DISTRICT

LOW POINT BLOW-OFF
WITH SAND TRAP

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

2016 REVISION

SHEET W3.8

No.	Revisions	Date	Init.	Appr.	Date

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westwoodps.com

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7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
WATER DETAILS

SHEET NUMBER 12	DRAWN BY: JF CHECKED BY: JJJ DATE: SEPTEMBER 2017	SCALE: AS SHOWN FILE NO: 8130283701

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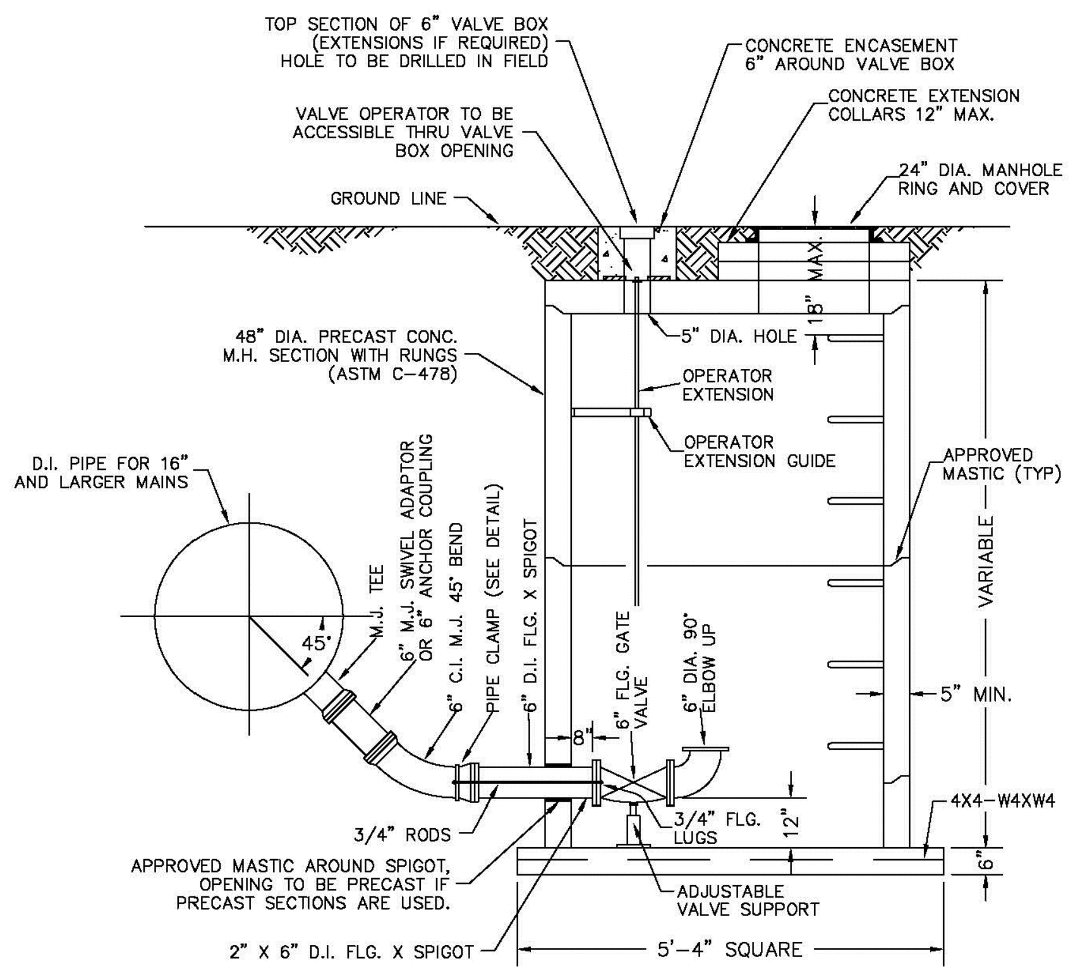
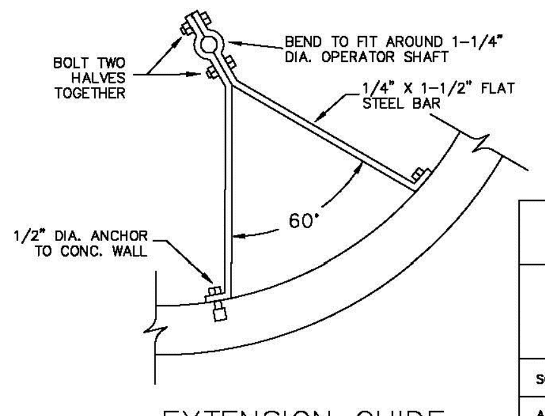

TOP SECTION OF 6" VALVE BOX (EXTENSIONS IF REQUIRED) HOLE TO BE DRILLED IN FIELD
CONCRETE ENCASEMENT 6" AROUND VALVE BOX
CONCRETE EXTENSION COLLARS 12" MAX.
VALVE OPERATOR TO BE ACCESSIBLE THRU VALVE BOX OPENING
24" DIA. MANHOLE RING AND COVER
GROUND LINE
18" MAX.
5" DIA. HOLE
48" DIA. PRECAST CONC. M.H. SECTION WITH RUNGS (ASTM C-478)
OPERATOR EXTENSION
OPERATOR EXTENSION GUIDE
D.I. PIPE FOR 16" AND LARGER MAINS
APPROVED MASTIC (TYP)
VARIABLE
M.J. TEE
6" M.J. SWIVEL ADAPTOR OR 6" ANCHOR COUPLING
6" C.I. M.J. 45° BEND
PIPE CLAMP (SEE DETAIL)
6" D.I. FLG. X SPIGOT
6" FLG. GATE VALVE
6" DIA. 90° ELBOW UP
45°
8"
5" MIN.
4X4-W4XW4
3/4" FLG. LUGS
12"
6"
3/4" RODS
APPROVED MASTIC AROUND SPIGOT, OPENING TO BE PRECAST IF PRECAST SECTIONS ARE USED.
ADJUSTABLE VALVE SUPPORT
2" X 6" D.I. FLG. X SPIGOT
5'-4" SQUARE

ELEVATION


BOLT TWO HALVES TOGETHER
BEND TO FIT AROUND 1-1/4" DIA. OPERATOR SHAFT
1/4" X 1-1/2" FLAT STEEL BAR
60°
1/2" DIA. ANCHOR TO CONC. WALL

EXTENSION GUIDE

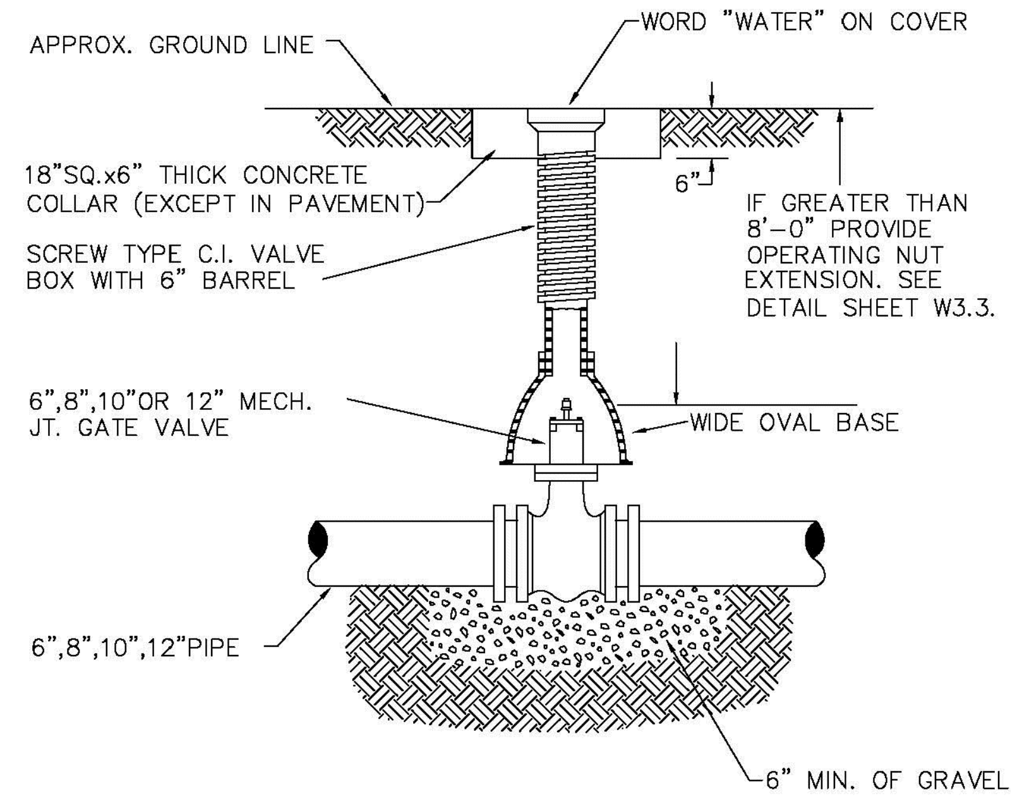
NOTE: THIS BLOW-OFF INSTALLATION MAY BE REPLACED BY A FIRE HYDRANT WHERE APPROVED BY THE DISTRICT FOR 16" AND 20" MAINS.

PARKER WATER
& SANITATION DISTRICT

TRANSMISSION MAIN
BLOW-OFF INSTALLATION

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

2016 REVISION
SHEET W3.9


APPROX. GROUND LINE
WORD "WATER" ON COVER
18"SQ.x6" THICK CONCRETE COLLAR (EXCEPT IN PAVEMENT)
6"
IF GREATER THAN 8'-0" PROVIDE OPERATING NUT EXTENSION. SEE DETAIL SHEET W3.3.
SCREW TYPE C.I. VALVE BOX WITH 6" BARREL
6",8",10"OR 12" MECH. JT. GATE VALVE
WIDE OVAL BASE
6",8",10",12"PIPE
6" MIN. OF GRAVEL

6-INCH VALVE BOXES

CHECK MATERIAL SPECIFICATIONS

NOTES:

1. ALL C.I. SHALL BE WRAPPED WITH 8 MIL. MIN. THICKNESS POLYETHYLENE.
2. VALVE NUT SHALL BE CENTERED.
3. VALVE BOX SHALL BE PLUMB.
4. SEE MATERIAL SPECIFICATIONS FOR VALVE BOX WITH GREATER THAN BURIED DEPTH OF 4.5 FT.

PARKER WATER
& SANITATION DISTRICT

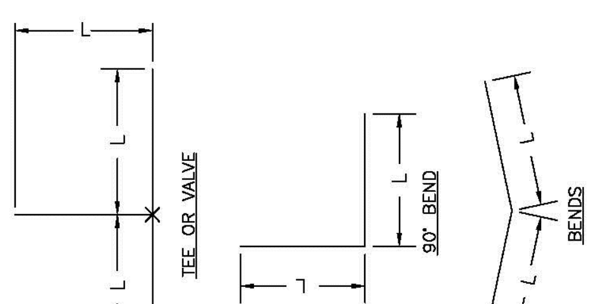
VALVE BOX DETAIL

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
5/98 10/16
6/99
12/07
1/16

2016 REVISION
SHEET W3.10

LENGTH OF TIED PIPE

PIPE SIZE	4"			6"			8"			12"			16"			20"			24"		
	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G
TEE OR VALVE	3/4"	6.0'	M.S.	3/4"	13.0'	M.S.	3/4"	20.0'	M.S.	3/4"	40.0'	M.S.	3/4"	60.0'	*H.S.*	1"	80.0'	*H.S.*	–	155.0'	–
PLUG OR 90° BEND	3/4"	6.0'	M.S.	3/4"	13.0'	M.S.	3/4"	20.0'	M.S.	3/4"	40.0'	M.S.	3/4"	60.0'	*H.S.*	1"	80.0'	*H.S.*	–	155.0'	–
45° BEND	3/4"	2.0'	M.S.	3/4"	4.0'	M.S.	3/4"	6.0'	M.S.	3/4"	11.0'	M.S.	1"	18.0'	M.S.	3/4"	24.0'	*H.S.*	–	45.0'	–
22-1/2° BEND	3/4"	1.0'	M.S.	3/4"	1.0'	M.S.	3/4"	2.0'	M.S.	3/4"	3.0'	M.S.	3/4"	5.0'	M.S.	3/4"	6.0'	M.S.	–	12.0'	–
11-1/4° BEND	3/4"	0.0'	M.S.	3/4"	0.0'	M.S.	3/4"	1.0'	M.S.	3/4"	1.0'	M.S.	3/4"	1.0'	M.S.	3/4"	2.0'	M.S.	–	3.0'	–


L
L
L
TEE OR VALVE
L
L
90° BEND
L
L
BENDS

NOTES:

1. LENGTH OF TIED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
2. CLAMPS AND RODS NOT ALLOWED FOR 24" AND LARGER PIPES.
3. D = DIAMETER, L = LENGTH, G = GRADE, M.S. = MILD STEEL, *H.S.* = HIGH STRENGTH
4. MINIMUM 4.5' GROUND COVER REQUIRED.
5. BASED ON 150 PSI INTERNAL PRESSURE.
6. M.S. MEANS MILD STEEL ROD A.S.T.M. STANDARD DESIGNATION A-36.
7. *H.S.* MEANS HIGH STRENGTH ROD A.S.T.M. STANDARD DESIGNATION A-193 GRADE B-7.
8. NUTS SHALL BE A.S.T.M. STANDARD DESIGNATION A-307 GRADE A OR B HEXAGON HEAVY SERIES.
9. SEE TIE ROD DETAIL DRAWING. ALSO, TIE ROD COUPLING DETAILS, CLAMP DETAILS AND SET CLAMP DETAILS.
10. LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE TIED TOGETHER AND IS NOT NECESSARILY THE LENGTH OF THE RODS.
11. STAR BOLTS NOT ALLOWED ON PIPE LARGER THAN 16".
12. MINIMUM OF 4 RODS REQUIRED ON 16" PIPE IF STAR BOLTS ANE USED.
13. TEES ARE TO BE RODDED ON BRANCH ONLY.

PARKER WATER
& SANITATION DISTRICT

LENGTH OF TIED PIPE

SCALE: NONE
DATE: 2/96
APPROVED: PVR
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4/01
1/16
10/16

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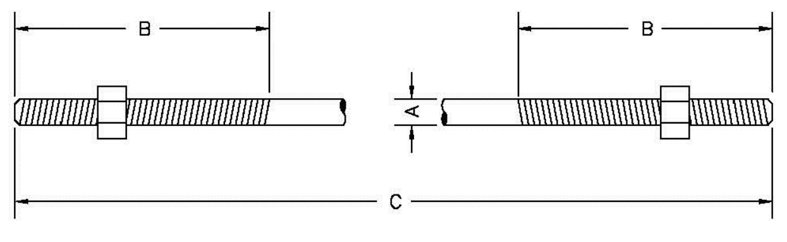
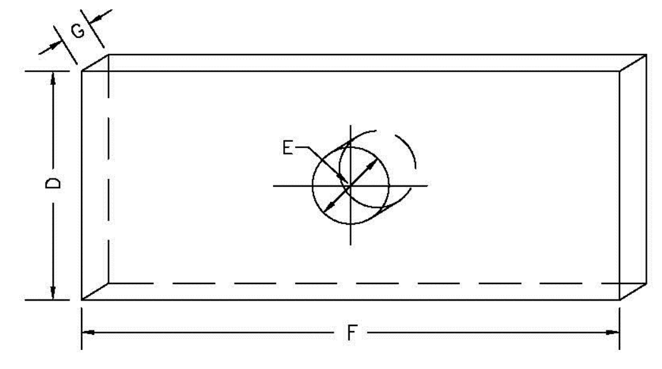
SHEET W3.11



TIE ROD DETAIL



WASHER DETAIL

TIE RODS		
A	B	C
ROD DIAMETER	THREAD LENGTH	ROD LENGTH
3/4"	6"	1' TO 11' & 20'
1"	6"	1' TO 11' & 20'
1-1/4"	ALL THREAD	1' TO 11' & 20'

WASHERS			
D	E	F	G
WIDTH	HOLE DIAMETER	LENGTH	THICKNESS
3"	7/8"	6"	3/8"
3"	1-1/8"	7"	1/2"
4"	1-3/8"	7"	5/8"

NOTES:

1. SEE TIED JOINTS ROD DIMENSIONS SHEET.

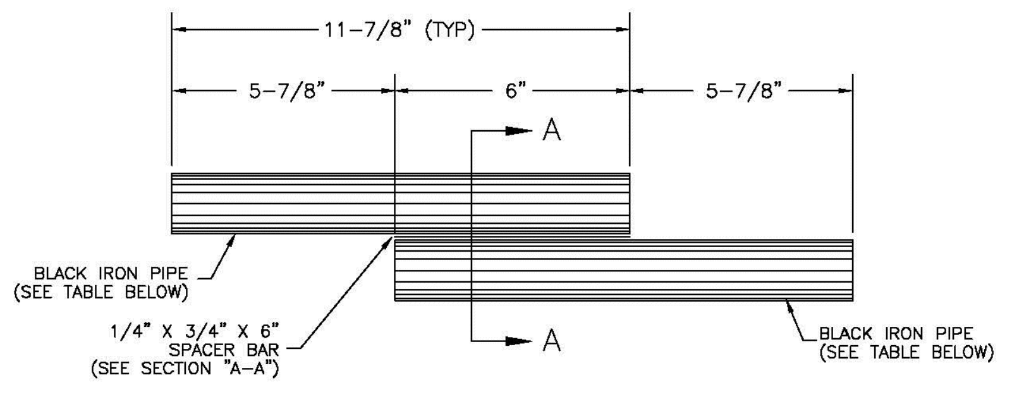
2. SEE CLAMP DETAILS AND DIMENSIONS (SHEET W3.15) FOR PROPER PLACEMENT OF WASHERS.

PARKER WATER
& SANITATION DISTRICT

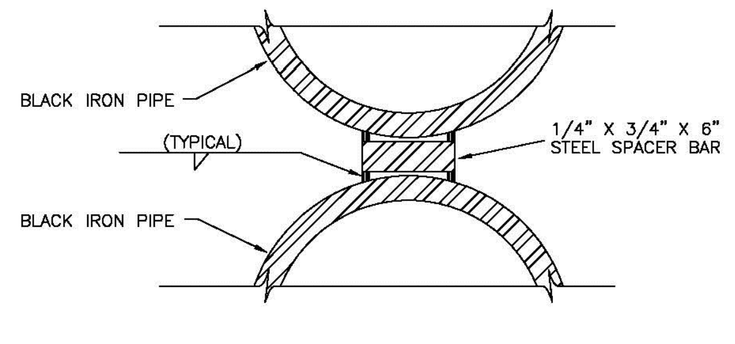
TIE ROD AND WASHER
DETAILS

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION
SHEET W3.12


11-7/8" (TYP)
5-7/8"
6"
5-7/8"
A
A
BLACK IRON PIPE (SEE TABLE BELOW)
1/4" X 3/4" X 6" SPACER BAR (SEE SECTION "A-A")
BLACK IRON PIPE (SEE TABLE BELOW)

TIE ROD COUPLING DETAIL


BLACK IRON PIPE
(TYPICAL)
1/4" X 3/4" X 6" STEEL SPACER BAR
BLACK IRON PIPE

SECTION "A-A"

NOTE:
BLACK IRON PIPE = SCHEDULE 40.

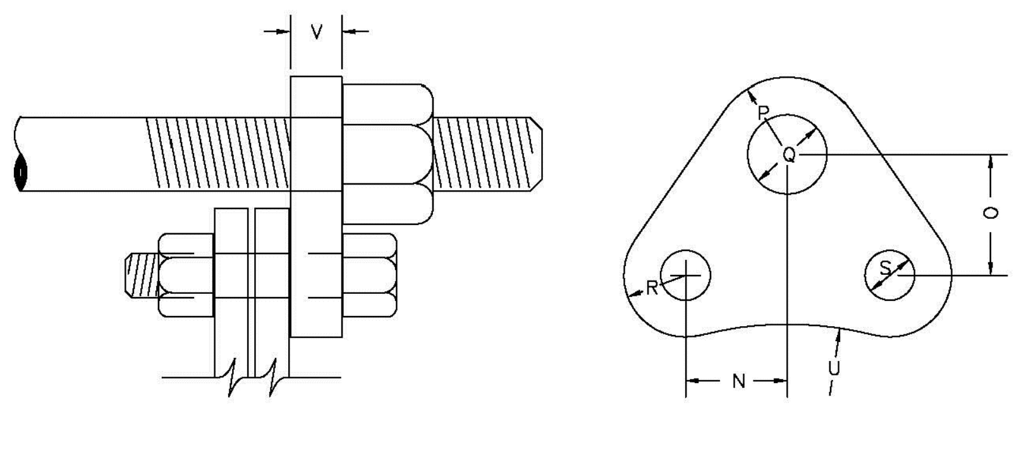
ROD SIZE	PIPE DIAMETER
3/4"	1"
1"	1-1/4"
1-1/4"	1-1/2"

PARKER WATER
& SANITATION DISTRICT

TIE ROD COUPLING

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION
SHEET W3.13



FLANGE LUG DETAIL

DIMENSIONS (IN INCHES)

PIPE DIA.	N	O	H.S. ROD			M.S. ROD			R	S	U	V	PIPE DIA.
			P	Q	ROD DIA.	P	Q	ROD DIA.					
4	1-7/16	2	1	7/8	3/4	1	7/8	3/4	7/8	3/4	2-7/8	3/4	4
6	1-13/16	2-1/4	1	7/8	3/4	1	7/8	3/4	7/8	7/8	3-3/4	3/4	6
8	2-1/4	2-3/4	1	7/8	3/4	1	7/8	3/4	1	7/8	4-7/8	3/4	8
12	2-3/16	2-3/4	1-1/8	7/8	3/4	1-1/4	1-1/8	1	1-1/8	1	7-1/4	7/8	12
16	2-1/16	2-3/4	1-1/8	7/8	3/4	1-1/2	1-3/8	1-1/4	1-1/4	1-1/8	9-3/8	1-1/8	16
20	1-31/32	2-3/4	1-1/8	1-1/8	1	–	–	–	1-7/16	1-1/4	11-1/16	1-1/4	20
24	RODS AND CLAMPS NOT ALLOWED												24

NOTES:

1. M.S. MEANS MILD STEEL ROD A.S.T.M. STANDARD DESIGNATION A-36. (NUTS SHALL BE A.S.T.M. STANDARD DESIGNATION A-307 GRADE A OR B HEXAGON HEAVY SERIES).

2. H.S. MEANS HIGH STRENGTH STEEL ROD A.S.T.M. STANDARD DESIGNATION A-193 GRADE B7. (NUTS SHALL BE A.S.T.M. STANDARD DESIGNATION A-194 GRADE 2H).

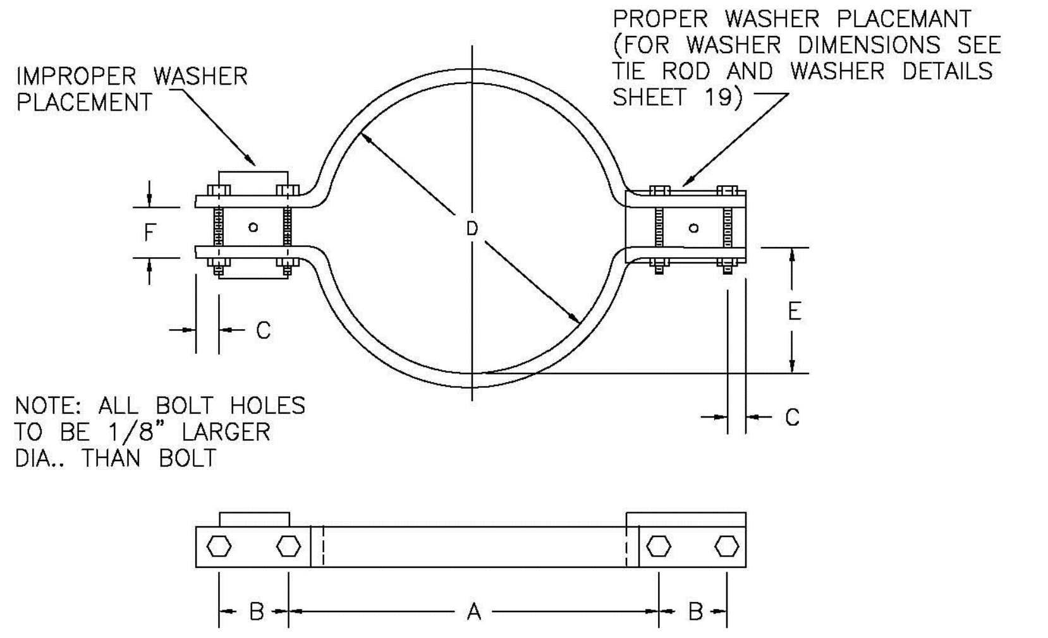
3. FLANGE LUGS SHALL NOT BE USED ON VALVES.

PARKER WATER
& SANITATION DISTRICT

FLANGE LUG DETAIL

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION
SHEET W3.14


IMPROPER WASHER PLACEMENT
PROPER WASHER PLACEMANT (FOR WASHER DIMENSIONS SEE TIE ROD AND WASHER DETAILS SHEET 19)
F
D
C
E
C
B
A
B

NOTE: ALL BOLT HOLES TO BE 1/8" LARGER DIA.. THAN BOLT

CLAMP DETAILS

DIMENSIONS

TABLE OF DIMENSIONS FOR CLAMPS

PIPE DIA.	BAR SIZE	A		B		C		D		E		F		BOLT SIZES		PIPE DIA.
		BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	
4	1-1/2X1/2	9-3/4	7-1/2	3-1/2	3-1/2	1	1	6-3/4	4-7/8	2-3/4	1-13/16	1-1/4	1-1/4	3X1/2	2-1/2X3/8	4
6	2X1/2	13	9-1/2	4	4-1/2	2	2	10-1/4	7-1/8	4-1/8	2-15/16	2	1-1/4	3-1/2X1/2	3-1/2X1/2	6
8	2-1/2X1/2	15	12-3/4	4-3/4	4-1/2	1-1/4	1-1/2	12-1/4	9-1/4	5-1/8	4	2	1-1/4	4-1/2X1/2	4X1/2	8
12	2-1/2X5/8	17-1/2	16-5/8	4-5/8	4-3/4	1	1-1/4	14-1/2	13-1/2	6	5-1/2	2-1/2	2-1/2	4-1/2X5/8	4-1/2X5/8	12
16	3X3/4	24-1/2	21-7/8	4-1/2	4-3/4	1-1/2	1-1/2	19-3/4	17-1/2	8-3/8	7-1/2	3	2-1/2	5-1/2X5/8	5-1/2X5/8	16
20	3X3/4	30-1/2	25-5/8	4-1/2	4-3/4	1-1/2	1-1/2	24-3/4	21-3/4	10-7/8	9-1/2	3	2-3/4	5-1/2X5/8	5-1/2X5/8	20
24	RODS AND CLAMPS NOT ALLOWED															24

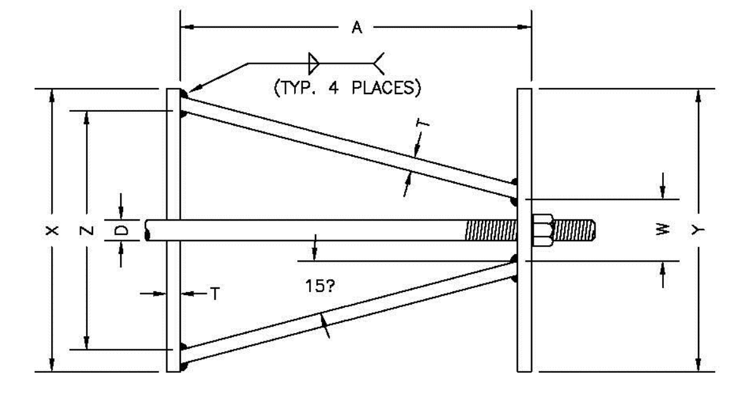
NOTE: ALL DIMENSIONS IN INCHES
CLAMPS MAY NOT BE USED ON PVC PIPE.

PARKER WATER
& SANITATION DISTRICT

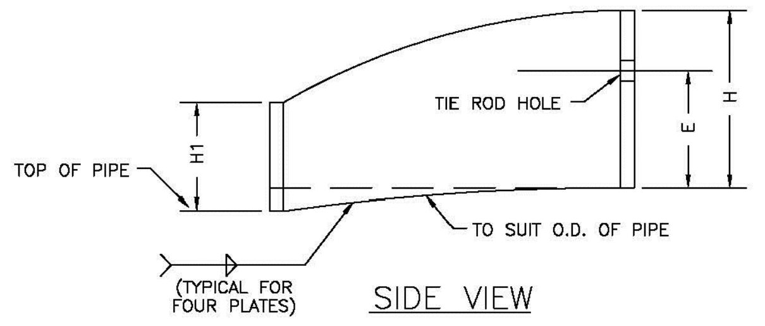
CLAMP DETAILS AND
DIMENSIONS

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
12/07
1/16
10/16

2016 REVISION
SHEET W3.15


A
(TYP. 4 PLACES)
T
X
Z
D
T
15?
W
Y

TOP VIEW


TIE ROD HOLE
H1
E
H
TOP OF PIPE
TO SUIT O.D. OF PIPE
(TYPICAL FOR FOUR PLATES)

SIDE VIEW

HARNESS LUG DIMENSIONS

CARRIER PIPE NOMINAL DIA.	STUD DIA. D	A	W	Z	T	H	E	H1	Y	X
4" TO 16"	3/4"	5"	1-1/2"	3-3/4"	3/8"	4-1/8"	3-1/8"	2"	4-1/2"	5"
20"	1"	5-3/4"	1-3/4"	4-7/16"	3/8"	4-1/2"	3-1/4"	2"	5-1/4"	5-11/16"

NOTES:

1. USE TWO HIGH STRENGTH STEEL TIE RODS AT END OF CASING.

2. TIE ROD HOLE DIAMETER 1/8" LARGER THAN STUD DIAMETER.

3. BOTTOM EDGE OF ALL PLATES SHAPED TO FIT O.D. OF PIPE.

PARKER WATER
& SANITATION DISTRICT

HARNESS LUG DETAILS

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION
SHEET W3.16

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

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 WATER DETAILS.DWG, CODYA, 6/17/2021 9:50 AM

No.	Revisions	Date	Init.	Appr.	Date

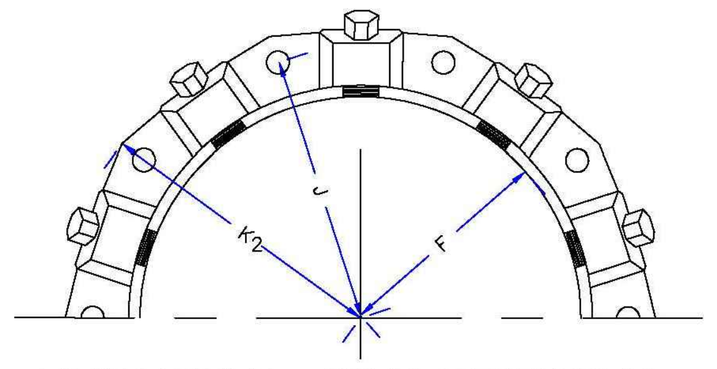
CVL
a Westwood team

10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

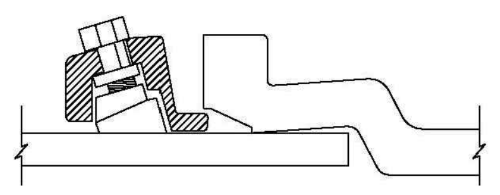
HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
WATER DETAILS

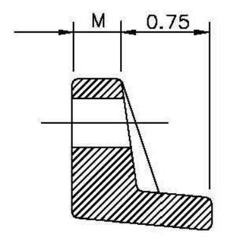
SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: JF
CHECKED BY: JJJ
DATE: SEPTEMBER 2017
SHEET NUMBER 13



MECHANICAL JOINT RESTRAINT



WEDGE DETAIL



BOLT HOLE DETAIL

	NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	K2 INCHES	J INCHES	F INCHES	M INCHES	
P V C	4"	2	2					P V C
	6"	6	3	11.12	9.5	7.00	0.88	
	8"	6	4	13.37	11.75	9.15	1.00	
	10"	8	6	15.62	14.00	11.20	1.00	
	12"	8	8	17.88	16.25	13.30	1.25	
D I	4"	4	2					D I
	6"	6	3	11.12	9.5	7.00	0.88	
	8"	6	4	13.37	11.75	9.15	1.00	
	10"	8	6	15.62	14.00	11.20	1.00	
	12"	8	8	17.88	16.25	13.30	1.25	

NOTES:

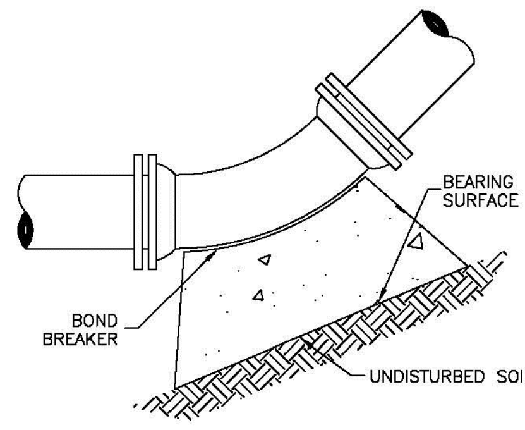
1. DIMENSIONS FOR 16" AND 20" D.I. PIPE NOT SHOWN.

PARKER WATER
& SANITATION DISTRICT

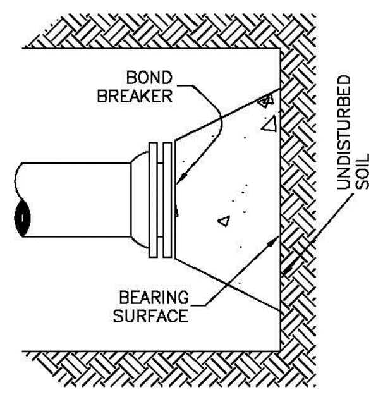
MECHANICAL JOINT
RESTRAINT DETAILS

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
2/00
12/07
1/16
10/16

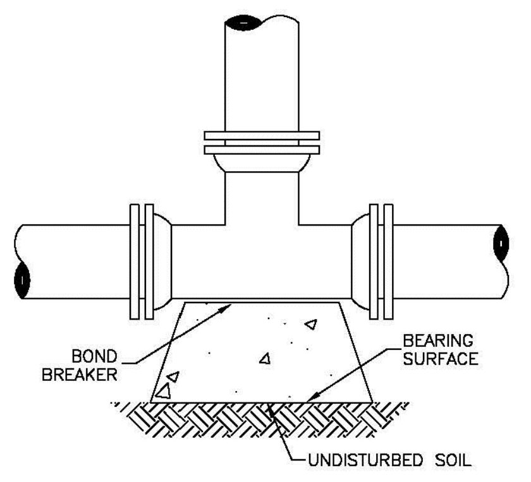
2016 REVISION
SHEET W3.17


BEARING SURFACE
BOND BREAKER
UNDISTURBED SOIL

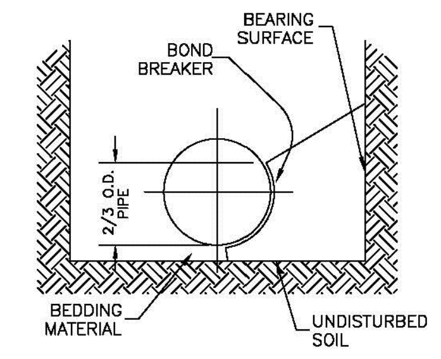
11-1/4°,22-1/2°,45° & 90° BENDS


BOND BREAKER
UNDISTURBED SOIL
BEARING SURFACE

DEAD END


BOND BREAKER
BEARING SURFACE
UNDISTURBED SOIL

TEE


BEARING SURFACE
BOND BREAKER
2/3 O.D. PIPE
BEDDING MATERIAL
UNDISTURBED SOIL

TYPICAL CROSS SECTION

MINIMUM BEARING SURFACE AREA
(IN SQUARE FEET)

SIZE OF PIPE	BENDS				TEE OR DEAD END
	11-1/4°	22-1/2°	45°	90°	
4"	1.00	1.00	1.00	1.80	1.50
6"	1.00	1.25	2.25	4.00	3.00
8"	1.00	2.00	4.00	7.50	5.25
12"	2.00	4.25	8.25	15.25	11.00
16"	3.50	6.50	12.50	23.00	16.50
20"	5.00	10.00	19.50	35.50	25.00
24"	6.50	13.00	26.00	47.00	33.00

NOTES:

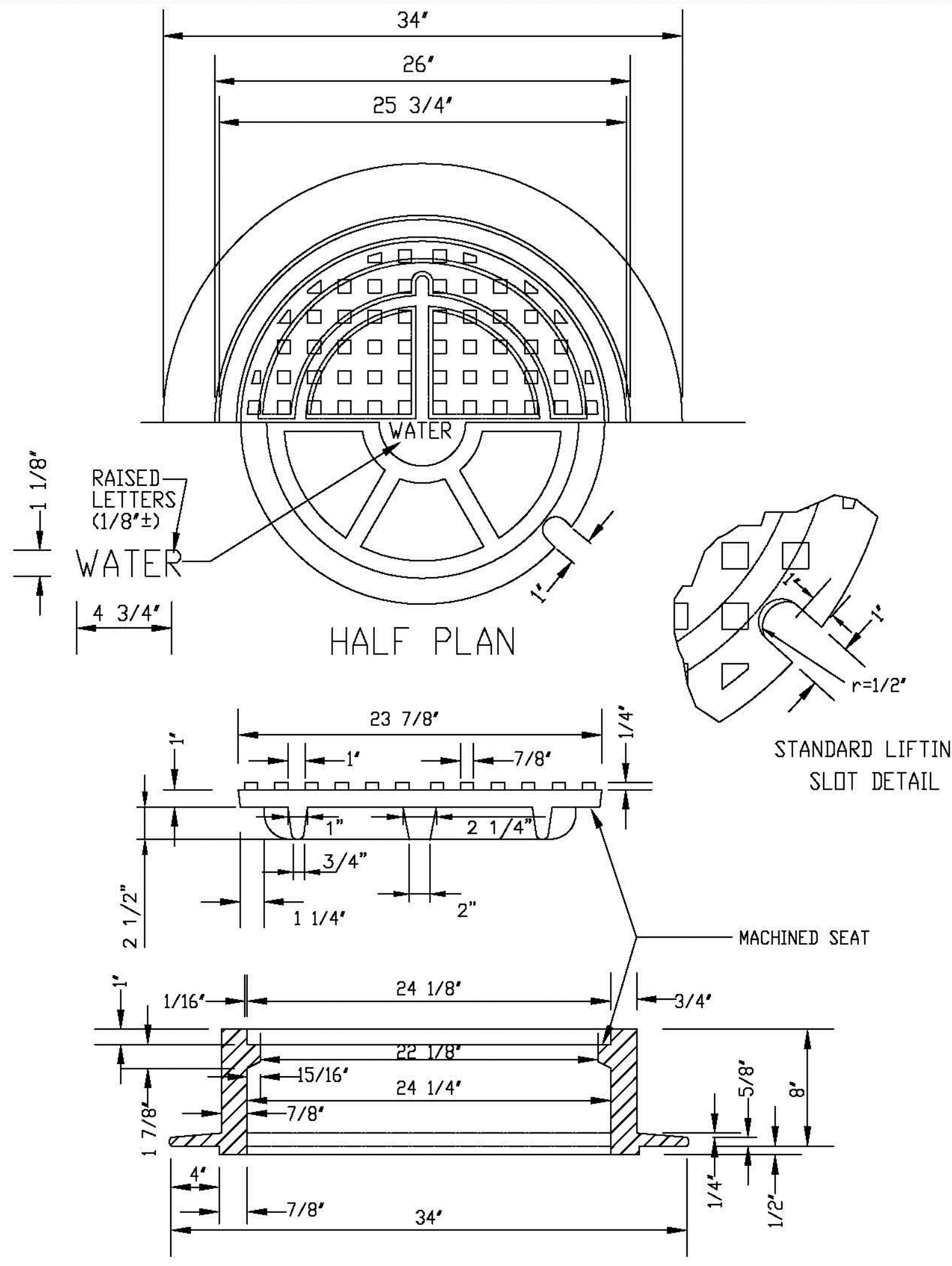
1. ALL VALVES, TEES, BENDS AND PLUGS SHALL BE RESTRAINED AND KICKBLOCKED.
2. BEARING SURFACES SHOWN IN CHART ARE MINIMUM.
3. BASED ON 150 PSI PIPE PRESSURE PLUS WATER HAMMER:
   4", 6" AND 8" WATER HAMMER = 120 PSI.
   12" WATER HAMMER = 110 PSI
   16", 20" AND 24" WATER HAMMER = 70 PSI.
4. SOIL BEARING CAPACITY = 3,000 LBS./SQ. FT.

PARKER WATER
& SANITATION DISTRICT

CONCRETE KICKBLOCKS
BEARING SURFACES AND INSTALLATION

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

2016 REVISION
SHEET W3.18


34"
26"
25 3/4"
1 1/8"
RAISED LETTERS (1/8"±)
WATER
WATER
4 3/4"
1"
1"
1"
r=1/2"
23 7/8"
1"
1"
7/8"
1/4"
1"
2 1/4"
3/4"
1 1/4"
2"
2 1/2"
MACHINED SEAT
1"
1/16"
24 1/8"
3/4"
22 1/8"
15/16"
24 1/4"
7/8"
1 7/8"
5/8"
8"
4"
7/8"
34"
1/4"
1/2"

HALF PLAN

STANDARD LIFTING SLOT DETAIL

NOTE:

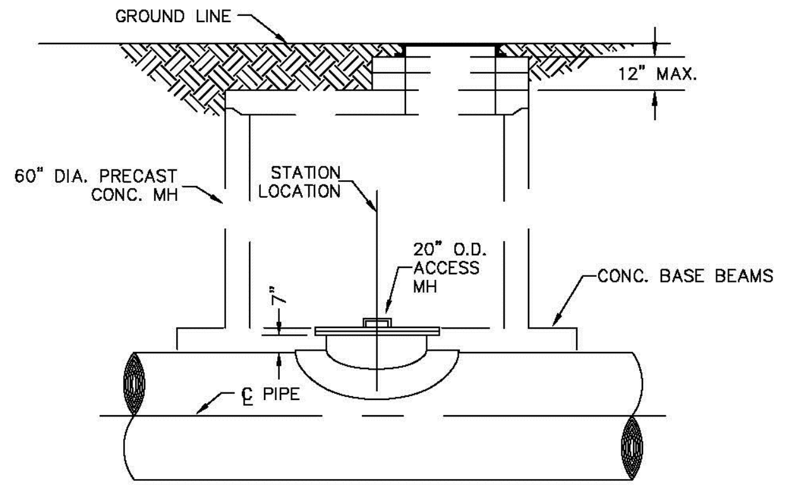
1. Casting Specifications: ASTM A-48 With A Minimum Tensile Strength Of 25 KSI (Class 25)
2. All Casting To Be Dipped In Asphalt Base Paint (Or Approved Equal).

PARKER WATER
& SANITATION DISTRICT

24" DIAMETER RING
AND COVER

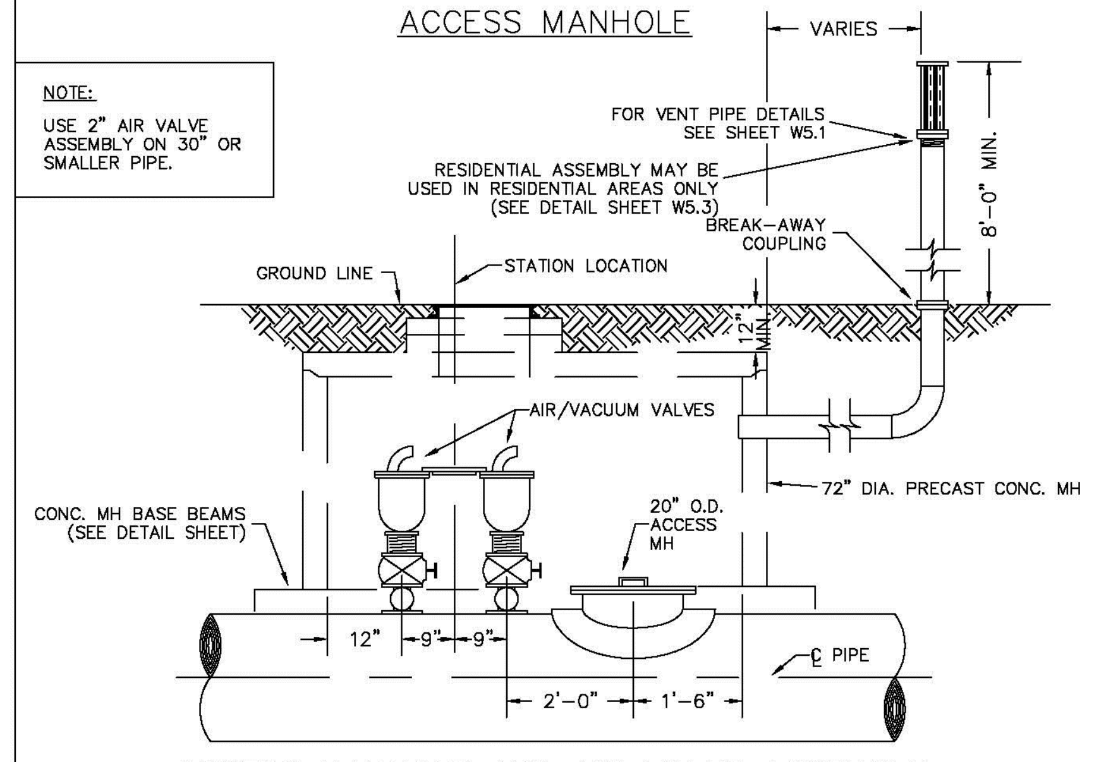
SCALE: NONE
DATE: 6/05
APPROVED: PVR
DIRECTOR OF ENGINEERING
12/07
1/16
10/16

2016 REVISION
SHEET W3.19


GROUND LINE
12" MAX.
60" DIA. PRECAST CONC. MH
STATION LOCATION
20" O.D. ACCESS MH
CONC. BASE BEAMS
7"
℄ PIPE

ACCESS MANHOLE

NOTE:
USE 2" AIR VALVE ASSEMBLY ON 30" OR SMALLER PIPE.


VARIES
FOR VENT PIPE DETAILS SEE SHEET W5.1
RESIDENTIAL ASSEMBLY MAY BE USED IN RESIDENTIAL AREAS ONLY (SEE DETAIL SHEET W5.3)
BREAK-AWAY COUPLING
8'-0" MIN.
GROUND LINE
STATION LOCATION
12" MIN.
AIR/VACUUM VALVES
72" DIA. PRECAST CONC. MH
CONC. MH BASE BEAMS (SEE DETAIL SHEET)
20" O.D. ACCESS MH
12"
9"
9"
℄ PIPE
2'-0"
1'-6"

ACCESS MANHOLE AND AIR VALVE ASSEMBLY

NOTE:

SEE SHEET W3.6 FOR CONCRETE MANHOLE BASE BEAMS AND AIR/VACUUM VALVE DETAILS.

PARKER WATER
& SANITATION DISTRICT

ACCESS MANHOLE ASSEMBLY

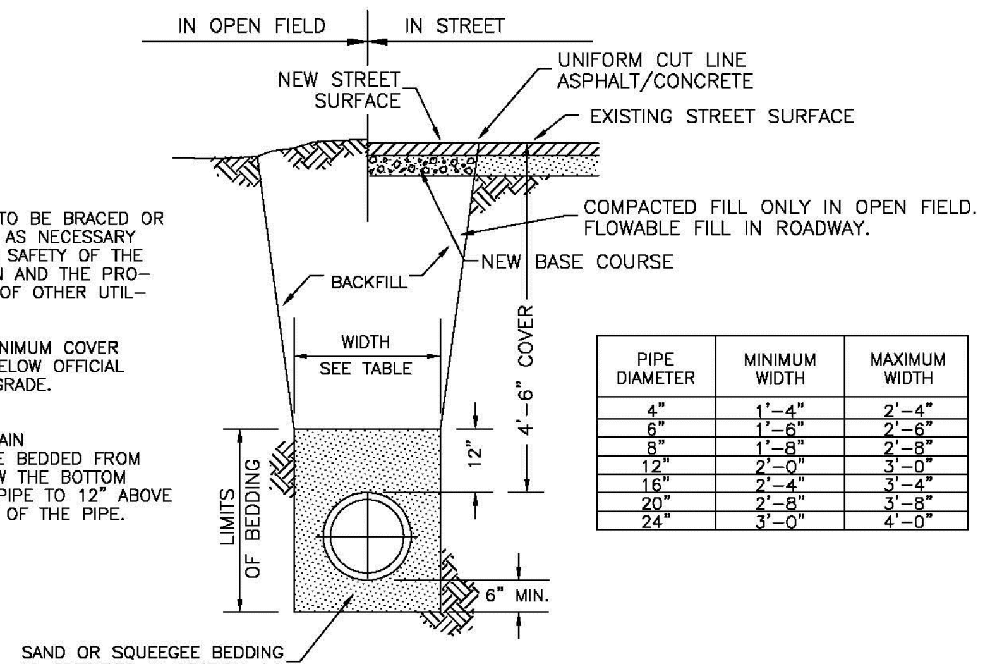
SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
4/01
1/16
10/16

2016 REVISION
SHEET W3.20

TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND THE PROTECTION OF OTHER UTILITIES.

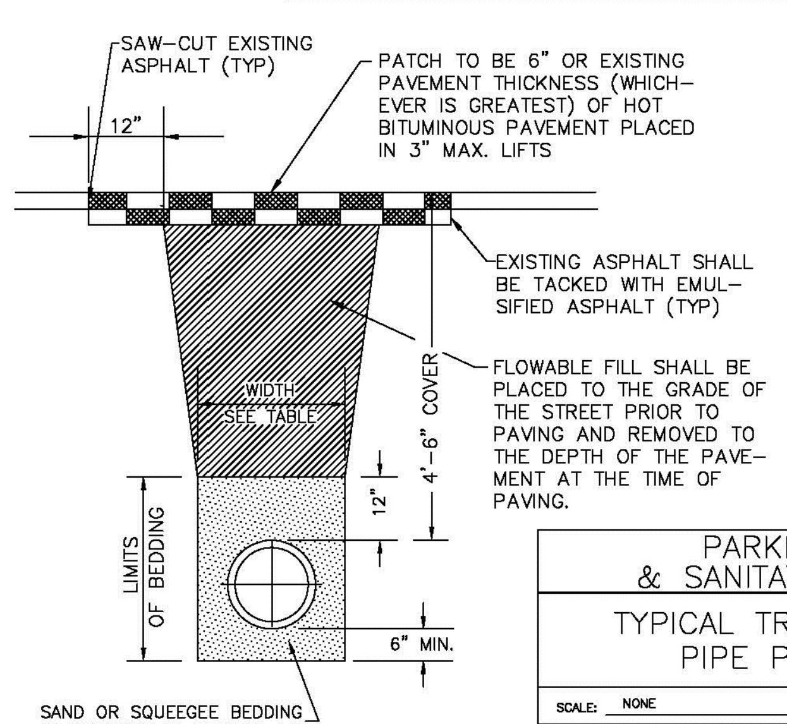
NOTE: MINIMUM COVER TO BE BELOW OFFICIAL STREET GRADE.

WATER MAIN SHALL BE BEDDED FROM 6" BELOW THE BOTTOM OF THE PIPE TO 12" ABOVE THE TOP OF THE PIPE.


IN OPEN FIELD
IN STREET
NEW STREET SURFACE
UNIFORM CUT LINE ASPHALT/CONCRETE
EXISTING STREET SURFACE
COMPACTED FILL ONLY IN OPEN FIELD. FLOWABLE FILL IN ROADWAY.
NEW BASE COURSE
BACKFILL
WIDTH
SEE TABLE
4'-6" COVER
12"
LIMITS OF BEDDING
6" MIN.
SAND OR SQUEEGEE BEDDING AS SPECIFIED IN SECTION 4.0

PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	1'-4"	2'-4"
6"	1'-6"	2'-6"
8"	1'-8"	2'-8"
12"	2'-0"	3'-0"
16"	2'-4"	3'-4"
20"	2'-8"	3'-8"
24"	3'-0"	4'-0"

STANDARD TRENCH SECTION


SAW-CUT EXISTING ASPHALT (TYP)
12"
PATCH TO BE 6" OR EXISTING PAVEMENT THICKNESS (WHICHEVER IS GREATEST) OF HOT BITUMINOUS PAVEMENT PLACED IN 3" MAX. LIFTS
EXISTING ASPHALT SHALL BE TACKED WITH EMULSIFIED ASPHALT (TYP)
FLOWABLE FILL SHALL BE PLACED TO THE GRADE OF THE STREET PRIOR TO PAVING AND REMOVED TO THE DEPTH OF THE PAVEMENT AT THE TIME OF PAVING.
WIDTH
SEE TABLE
4'-6" COVER
12"
LIMITS OF BEDDING
6" MIN.
SAND OR SQUEEGEE BEDDING AS SPECIFIED IN SECTION 4.0

STREET CUT PATCH

PARKER WATER
& SANITATION DISTRICT

TYPICAL TRENCH SECTION
PIPE PROTECTION

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION
SHEET W4.1

PIPE BEDDING:

(a) Installation of Bedding and Pipe: 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. Bell holes shall be dug deep enough to provide a mimimum of two inches (2") of clearance between the bell and bedding material. All pipe shall be installed in such a manner as to insure full support of the pipe barrel over its entire length. After the pipe is adjusted for line and grade, and the joint is made, the bedding material shall be carefully placed and tamped under the haunches of the pipe and in the previously dug bell holes.

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

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

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

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

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

Sieve Size	Total Percent Passing by Weight
3/8 inch	100
No. 4	70-100
No. 8	36-93
No. 16	20-80
No. 30	8-65
No. 50	2-30
No. 100	1-10
No. 200	0-3

Squeegee Sand
for use with 20-inch or smaller

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

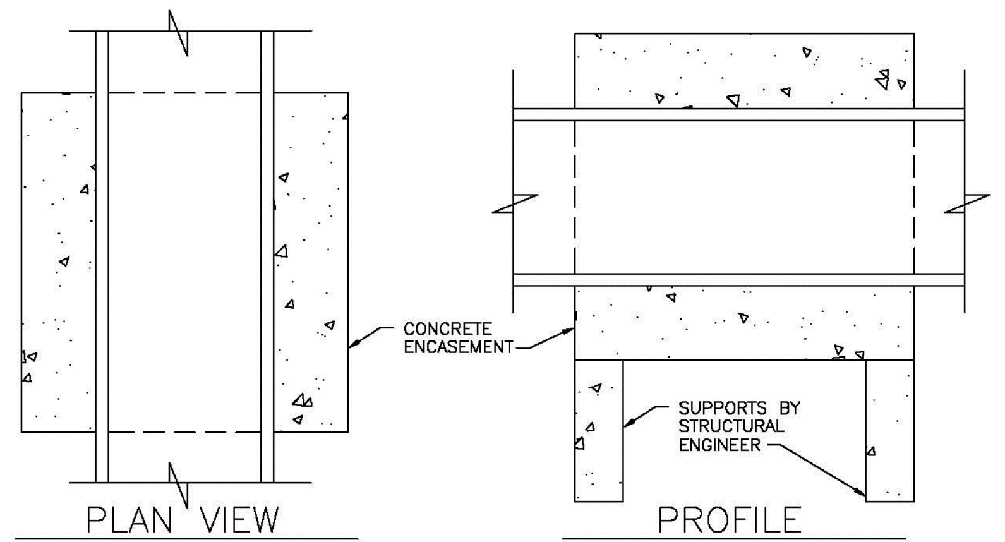
If approved by the District, fines form the trench walls and spoils pile may be used to provide uniform support for the pipe. No rock or stone larger than that allowed by the sieve analysis, or any other detrimental substance, shall be placed closer to the pipe than six inches (6"). Approved bedding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

PARKER WATER
& SANITATION DISTRICT

PIPE BEDDING

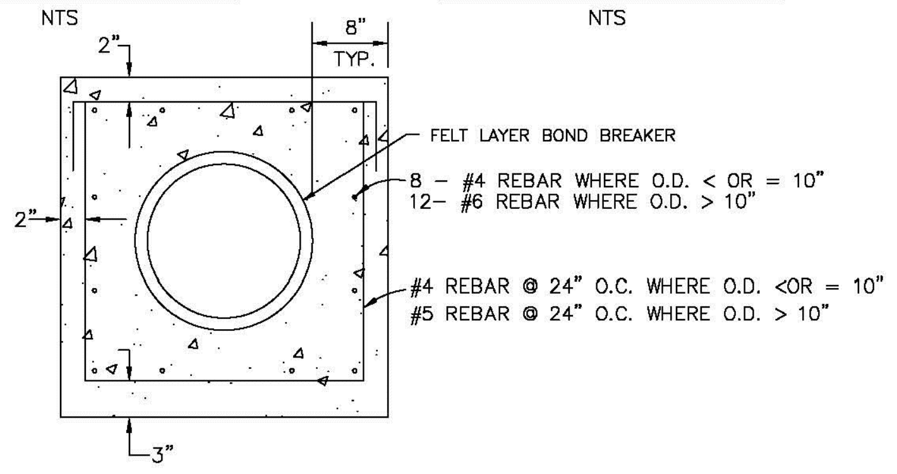
SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
5/98
2/00
1/16
10/16

2016 REVISION
SHEET W4.2


CONCRETE ENCASEMENT
SUPPORTS BY STRUCTURAL ENGINEER

PLAN VIEW
NTS

PROFILE
NTS


8" TYP.
2"
2"
3"
FELT LAYER BOND BREAKER
8 - #4 REBAR WHERE O.D. < OR = 10"
12- #6 REBAR WHERE O.D. > 10"
#4 REBAR @ 24" O.C. WHERE O.D. <OR = 10"
#5 REBAR @ 24" O.C. WHERE O.D. > 10"

TYPICAL SECTION
NTS

NOTES:

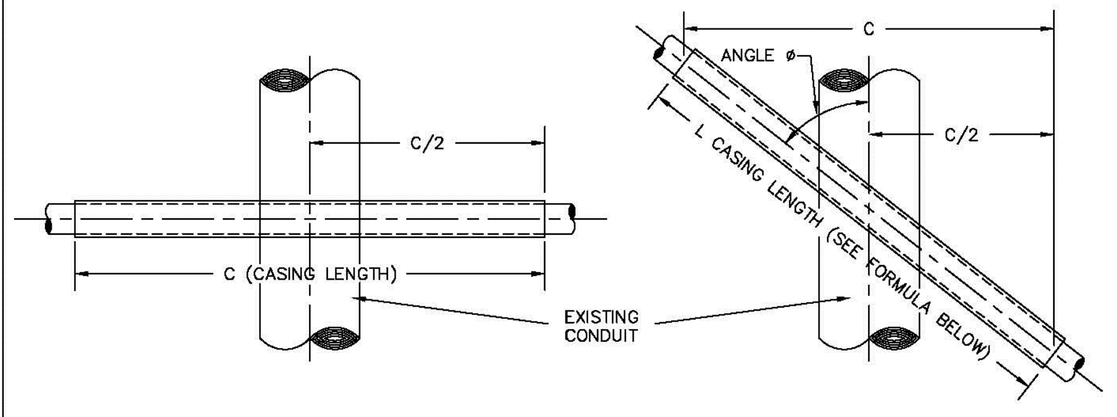
1. ALL CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3,000 PSI USING TYPE I PORTLAND CEMENT AND 3/4" AGGREGATE. ALL CONCRETE SHALL HAVE 5-7% ENTRAINED AIR CONTENT AND A MAXIMUM SLUMP OF 4".
2. ALL REINFORCEMENT SHALL CONFORM TO ASTM A615,GRADE 60.
3. ALL REINFORCEMENT SHALL HAVE 2" MIN. CONCRETE COVER.
4. THE SUBGRADE SHALL BE COMPACTED TO 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY PRIOR TO FORMING THE STRUCTURE.
5. PIPE SHALL BE WRAPPED WITH FELT LAYER BEFORE ENCASING.

PARKER WATER
& SANITATION DISTRICT

WATERLINE ENCASEMENT

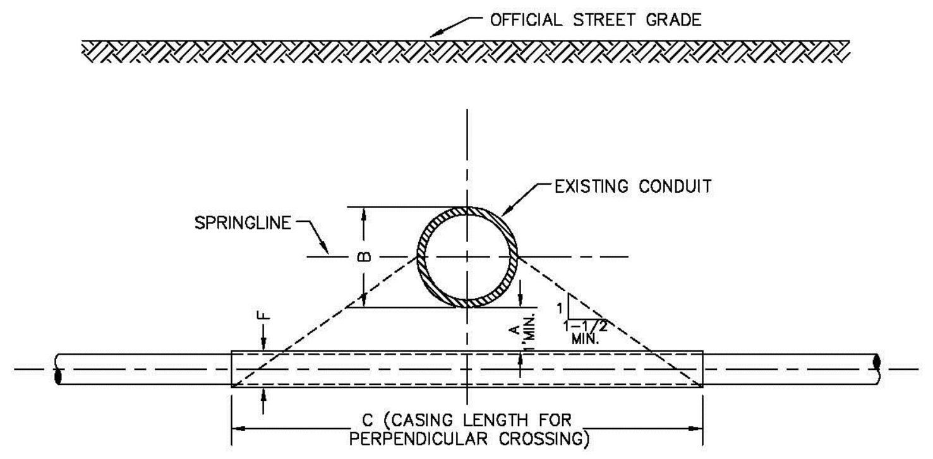
SCALE: NONE
DATE: 5/98
APPROVED: PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION
SHEET W4.3


C/2
C (CASING LENGTH)
EXISTING CONDUIT
C
ANGLE ø
C/2
L CASING LENGTH (SEE FORMULA BELOW)

PLAN
FOR PERPENDICULAR CROSSING

PLAN
FOR ANGLE CROSSING


OFFICIAL STREET GRADE
EXISTING CONDUIT
SPRINGLINE
B
F
A
1' MIN.
1
1-1/2 MIN.
C (CASING LENGTH FOR PERPENDICULAR CROSSING)

PROFILE

FORMULA FOR FINDING C:

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

C — PERPENDICULAR CROSSING CASING LENGTH
B — O.D. WATER DEPARTMENT CONDUIT
2 — CONSTANT
1.5 — RATIO OF MIN. SLOPE
B/2 — 1/2 O.D. WATER DEPARTMENT CONDUIT
A — VERTICAL DISTANCE BETWEEN CASING AND WATER DEPARTMENT CONDUIT
F — CASING O.D.

FORMULA FOR FINDING L:

$$L = \frac{C}{\sin ø}$$

NOTES:

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

PARKER WATER
& SANITATION DISTRICT

BORED CROSSINGS
BENEATH CONDUITS

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
2/00
1/16
10/16

2016 REVISION
SHEET W4.4

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 WATER DETAILS.DWG, CODYA, 6/17/2021 9:50 AM

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

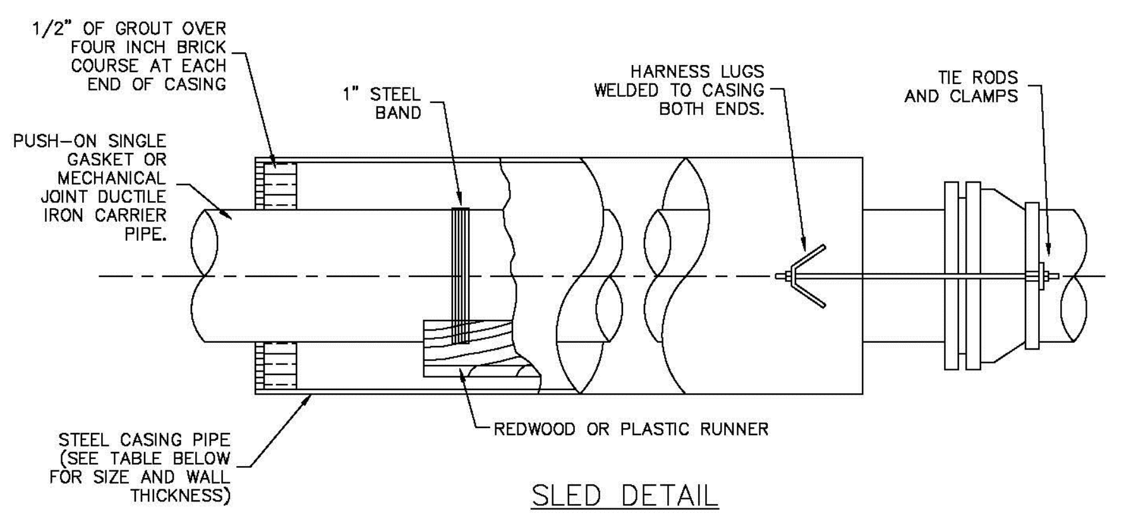
No.	Revisions	Date	Init.	Appr.	Date

CVL a Westwood team
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
WATER DETAILS

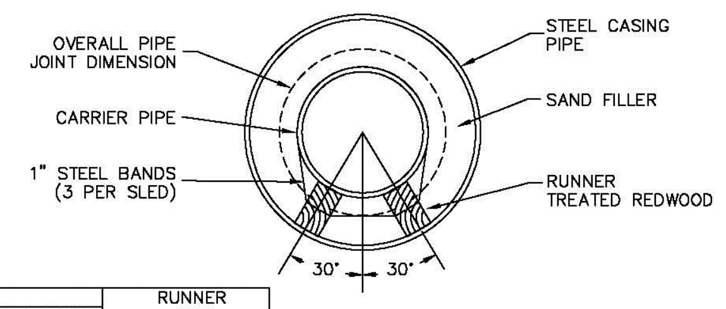
SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: JF
CHECKED BY: JJJ
DATE: SEPTEMBER 2017
SHEET NUMBER
14


1/2" OF GROUT OVER FOUR INCH BRICK COURSE AT EACH END OF CASING
PUSH-ON SINGLE GASKET OR MECHANICAL JOINT DUCTILE IRON CARRIER PIPE.
1" STEEL BAND
HARNESS LUGS WELDED TO CASING BOTH ENDS.
TIE RODS AND CLAMPS
STEEL CASING PIPE (SEE TABLE BELOW FOR SIZE AND WALL THICKNESS)
REDWOOD OR PLASTIC RUNNER

SLED DETAIL

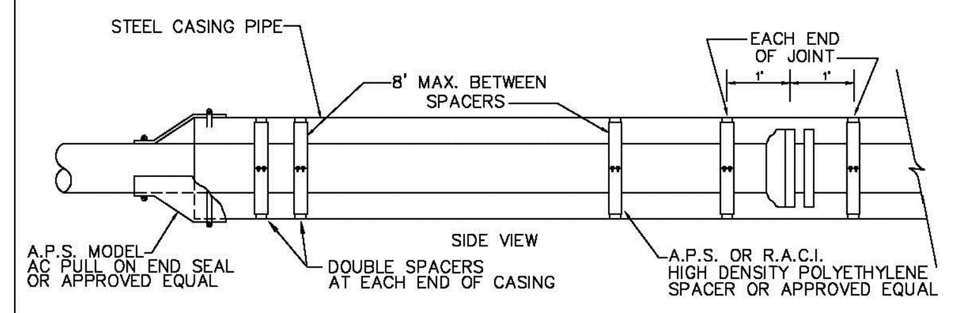
NOTES:

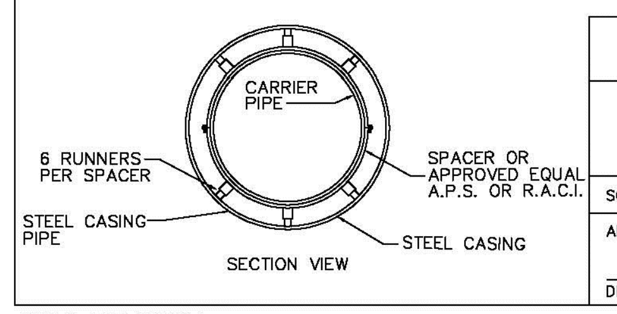
1. REDWOOD RUNNER LENGTH TO BE 75% OF LAYING LENGTH.
2. SEE SHEET W4.4 FOR CASING LENGTH.


OVERALL PIPE JOINT DIMENSION
CARRIER PIPE
1" STEEL BANDS (3 PER SLED)
STEEL CASING PIPE
SAND FILLER
RUNNER TREATED REDWOOD
30°
30°

PIPE CASING DETAIL

CARRIER PIPE NOMINAL DIA.	CASING PIPE		RUNNER SIZE
	MIN. O.D.	MIN. WALL THICK.	
4"	12"	0.188"	2" X 4"
6"	16"	0.250"	2" X 4"
8"	18"	0.282"	2" X 4"
12"	22"	0.344"	2" X 4"
16"	28"	0.406"	2" X 6"
20"	32"	0.469"	2" X 6"


STEEL CASING PIPE
8' MAX. BETWEEN SPACERS
EACH END OF JOINT
1'
1'
SIDE VIEW
A.P.S. MODEL AC PULL ON END SEAL OR APPROVED EQUAL
DOUBLE SPACERS AT EACH END OF CASING
A.P.S. OR R.A.C.I. HIGH DENSITY POLYETHYLENE SPACER OR APPROVED EQUAL


CARRIER PIPE
6 RUNNERS PER SPACER
SPACER OR APPROVED EQUAL A.P.S. OR R.A.C.I.
STEEL CASING PIPE
STEEL CASING
SECTION VIEW

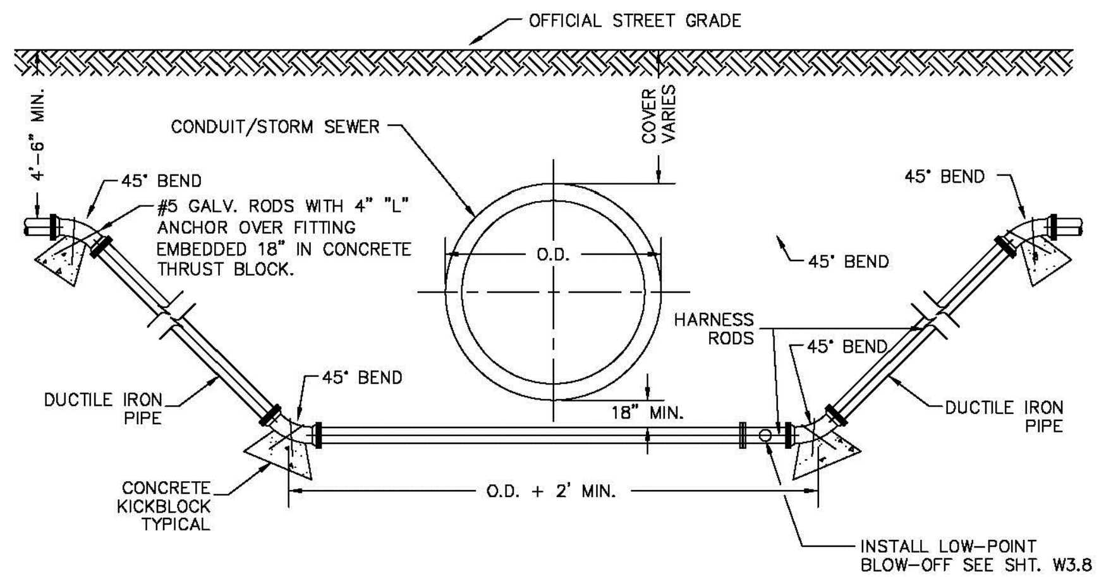
PARKER WATER
& SANITATION DISTRICT

BORE CASING DETAILS

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
2/00
1/16
10/16

2016 REVISION

SHEET W4.5


OFFICIAL STREET GRADE
4'-6" MIN.
CONDUIT/STORM SEWER
COVER VARIES
45° BEND
#5 GALV. RODS WITH 4" "L" ANCHOR OVER FITTING EMBEDDED 18" IN CONCRETE THRUST BLOCK.
O.D.
45° BEND
45° BEND
HARNESS RODS
45° BEND
45° BEND
DUCTILE IRON PIPE
18" MIN.
DUCTILE IRON PIPE
CONCRETE KICKBLOCK TYPICAL
O.D. + 2' MIN.
INSTALL LOW-POINT BLOW-OFF SEE SHT. W3.8

NOTES:

1. LENGTH OF EXTENSION OF PIPE AND HARNESS RODS SHALL BE IN ACCORDANCE WITH THESE ENGINEERING STANDARDS.
2. ALL WATER MAINS TWELVE (12") INCHES OR SMALLER, WHICH CROSS UNDER CONDUITS/STORM SEWER SHALL BE DUCTILE IRON OR PVC PER SPECIFICATIONS.
3. A BORED CROSSING MAY BE REQUIRED BY THE ENGINEER.
4. CONCRETE KICKBLOCKS PER SHEET W3.18.

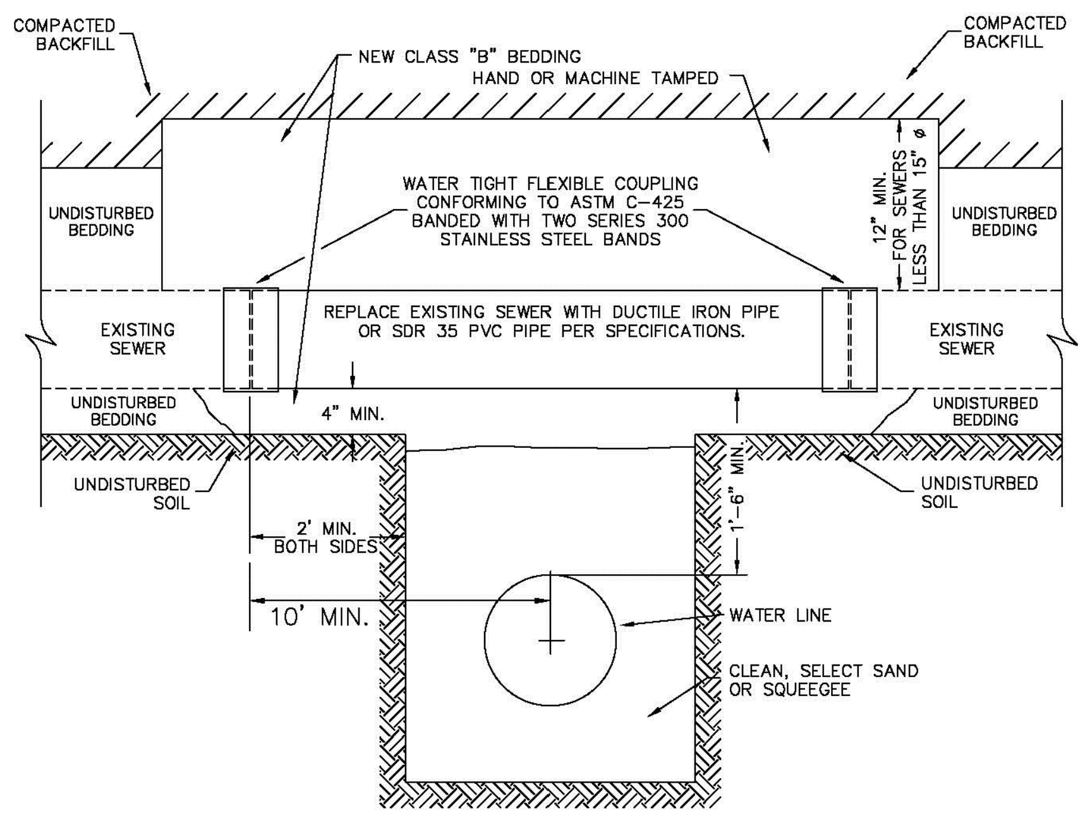
PARKER WATER
& SANITATION DISTRICT

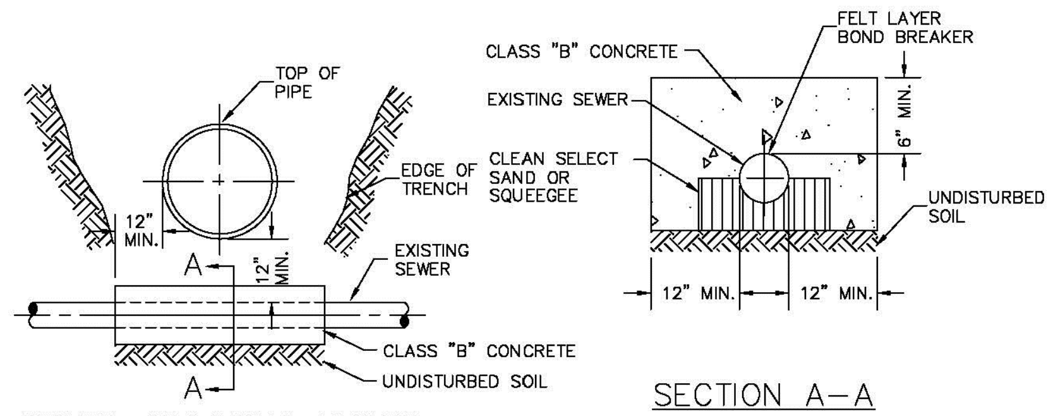
CONDUIT OR STORM
SEWER CROSSING

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
5/98 10/16
2/00
12/07
1/16

2016 REVISION

SHEET W4.6


COMPACTED BACKFILL
NEW CLASS "B" BEDDING
HAND OR MACHINE TAMPED
COMPACTED BACKFILL
UNDISTURBED BEDDING
WATER TIGHT FLEXIBLE COUPLING CONFORMING TO ASTM C-425 BANDED WITH TWO SERIES 300 STAINLESS STEEL BANDS
12" MIN. FOR SEWERS LESS THAN 15" ø
UNDISTURBED BEDDING
EXISTING SEWER
REPLACE EXISTING SEWER WITH DUCTILE IRON PIPE OR SDR 35 PVC PIPE PER SPECIFICATIONS.
EXISTING SEWER
UNDISTURBED BEDDING
4" MIN.
UNDISTURBED BEDDING
UNDISTURBED SOIL
1'-6" MIN.
UNDISTURBED SOIL
2' MIN. BOTH SIDES
10' MIN.
WATER LINE
CLEAN, SELECT SAND OR SQUEEGEE


TOP OF PIPE
EDGE OF TRENCH
12" MIN.
12" MIN.
A
A
EXISTING SEWER
CLASS "B" CONCRETE
UNDISTURBED SOIL
CLASS "B" CONCRETE
FELT LAYER BOND BREAKER
EXISTING SEWER
CLEAN SELECT SAND OR SQUEEGEE
6" MIN.
UNDISTURBED SOIL
12" MIN.
12" MIN.

SECTION A–A

SEWER CROSSING UNDER
LESS THAN 18" BETWEEN PIPES

1. PIPE SHALL BE WRAPPED WITH FELT LAYER BEFORE ENCASING.

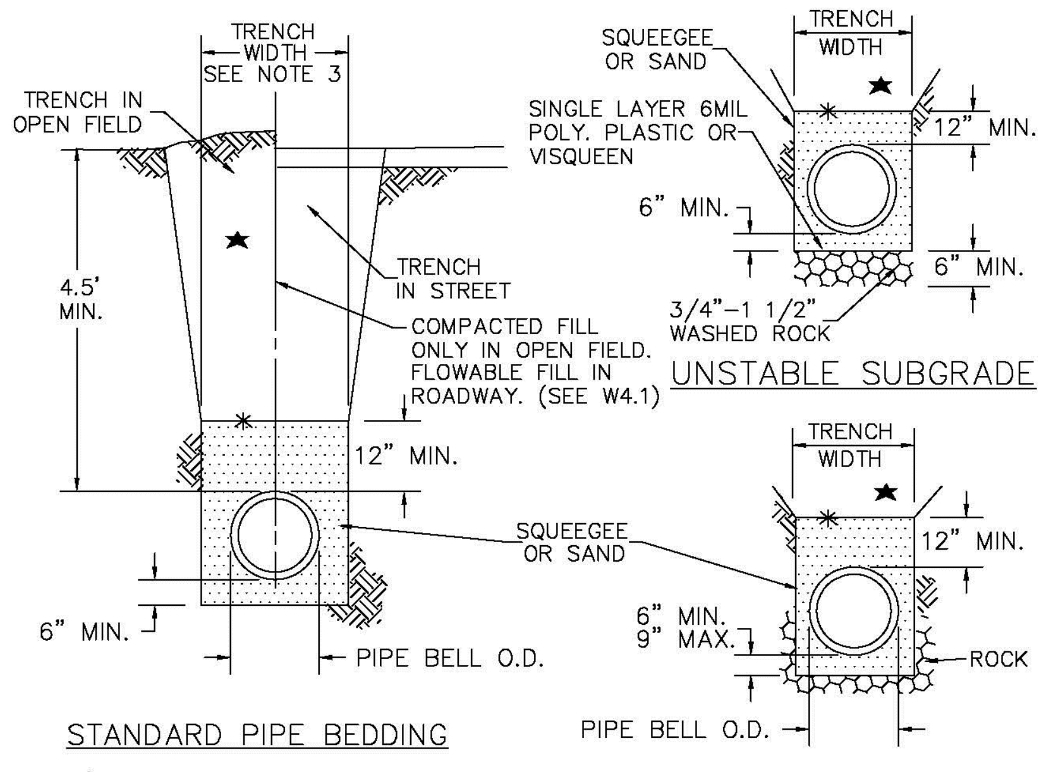
PARKER WATER
& SANITATION DISTRICT

CROSSING
STORM & SANITARY SEWERS

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION

SHEET W4.7


TRENCH WIDTH SEE NOTE 3
TRENCH IN OPEN FIELD
4.5' MIN.
TRENCH IN STREET
COMPACTED FILL ONLY IN OPEN FIELD. FLOWABLE FILL IN ROADWAY. (SEE W4.1)
12" MIN.
6" MIN.
PIPE BELL O.D.
SQUEEGEE OR SAND
TRENCH WIDTH
SQUEEGEE OR SAND
SINGLE LAYER 6MIL POLY. PLASTIC OR VISQUEEN
12" MIN.
6" MIN.
6" MIN.
3/4"-1 1/2" WASHED ROCK
TRENCH WIDTH
12" MIN.
6" MIN.
9" MAX.
ROCK
PIPE BELL O.D.

STANDARD PIPE BEDDING

UNSTABLE SUBGRADE

PIPE BEDDING
IN ROCK

★ MACHINE COMPACTED TRENCH BACKFILL

✳ LIMIT OF SLOPING OR BENCHING OF TRENCH WALLS

▨ UNDISTURBED GROUND

NOTES:

1. MIN .COVER TO BE BELOW FINAL STREET GRADE CONSTRUCTION OF WATER MAIN MAY NOT START UNTIL FINAL GRADE WITHIN 1 FOOT.
2. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE PROTECTION OF OTHER UTILITIES AND TO MEET OSHA SAFETY REQUIREMENT.
3. TRENCH WIDTH SHALL NOT BE MORE THAN 16" NOR LESS THAN 12" WIDER THAN THE LARGEST OUTSIDE DIAMETER OF THE PIPE LAID THEREIN (BELL OR COUPLING O.D. IF APPLICABLE). REFER TO SHEET W4.1 FOR DIMENSIONS.

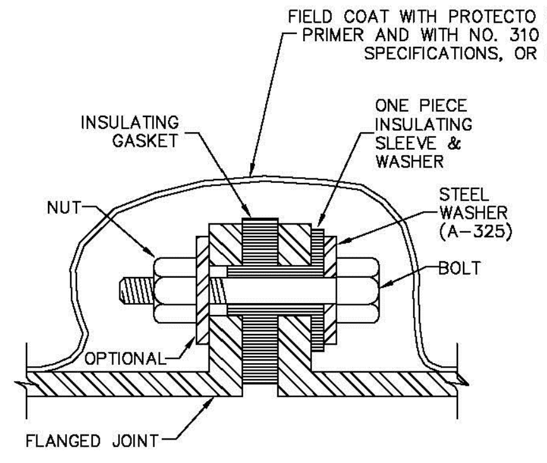
PARKER WATER
& SANITATION DISTRICT

BEDDING DETAILS

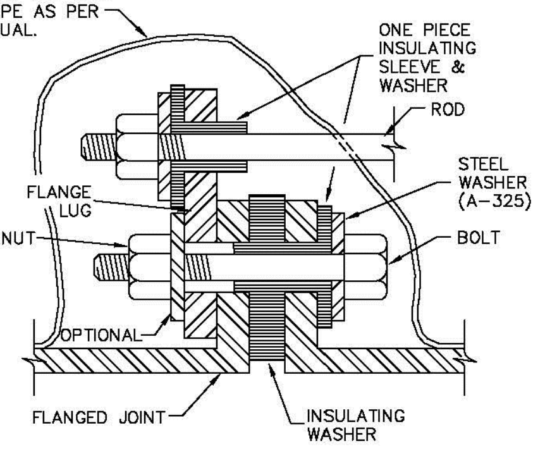
SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION

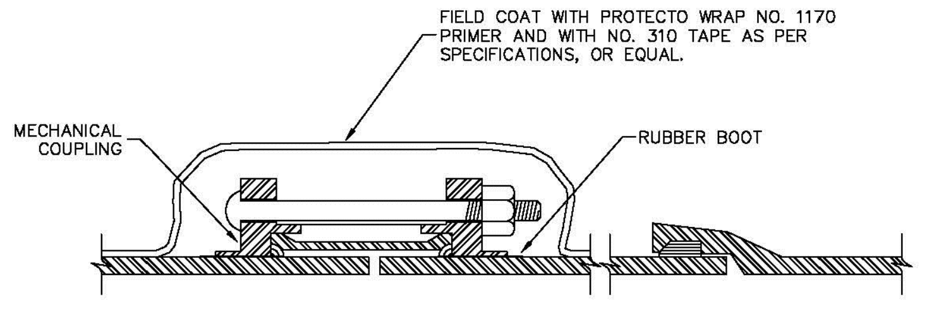
SHEET W4.8


FIELD COAT WITH PROTECTO WRAP NO. 1170 PRIMER AND WITH NO. 310 TAPE AS PER SPECIFICATIONS, OR EQUAL.
INSULATING GASKET
ONE PIECE INSULATING SLEEVE & WASHER
NUT
STEEL WASHER (A-325)
BOLT
OPTIONAL
FLANGED JOINT

INSULATED JOINT


ONE PIECE INSULATING SLEEVE & WASHER
ROD
STEEL WASHER (A-325)
FLANGE LUG
NUT
BOLT
OPTIONAL
FLANGED JOINT
INSULATING WASHER

INSULATED ROD


FIELD COAT WITH PROTECTO WRAP NO. 1170 PRIMER AND WITH NO. 310 TAPE AS PER SPECIFICATIONS, OR EQUAL.
MECHANICAL COUPLING
RUBBER BOOT

INSULATED MECHANICAL COUPLING

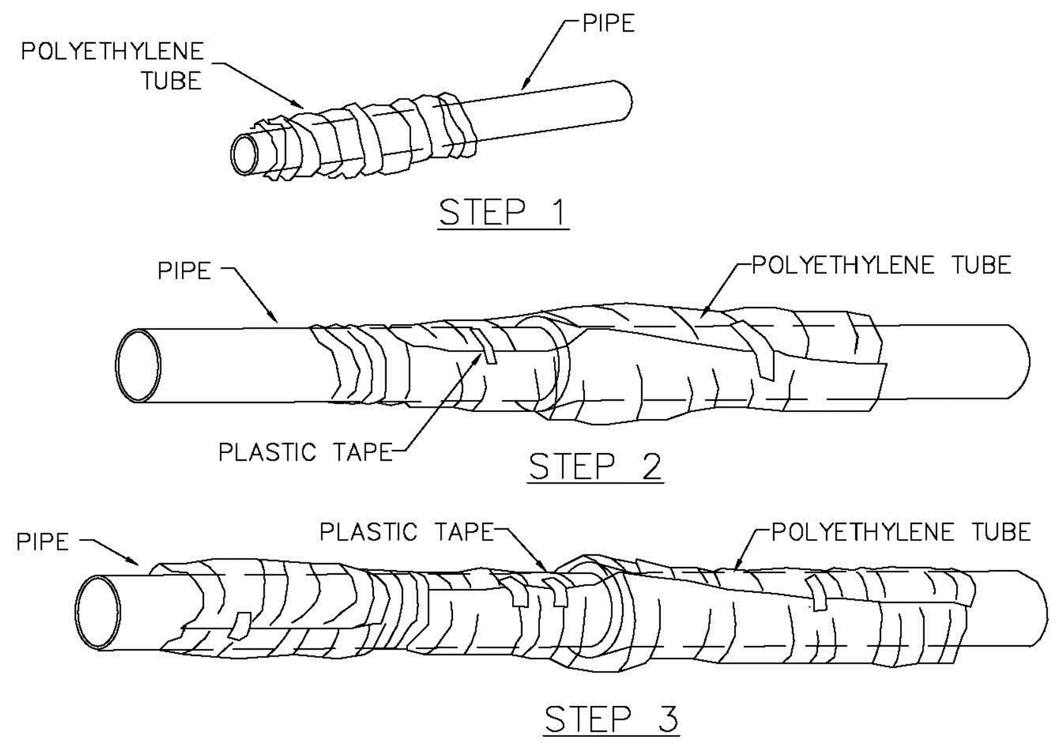
PARKER WATER
& SANITATION DISTRICT

INSULATED JOINTS, RODS
AND MECHANICAL COUPLINGS

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION

SHEET W4.10


POLYETHYLENE TUBE
PIPE
STEP 1
PIPE
POLYETHYLENE TUBE
PLASTIC TAPE
STEP 2
PIPE
PLASTIC TAPE
POLYETHYLENE TUBE
STEP 3

FIELD INSTALLATION – POLYETHYLENE WRAP

STEP 1 – PLACE TUBE OF POLYETHYLENE MATERIAL ON PIPE PRIOR TO LOWERING IT INTO TRENCH.

STEP 2 – PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH TAPE TO HOLD THE PLASTIC TUBE IN PLACE.

STEP 3 – OVERLAP FIRST TUBE WITH ADJACENT TUBE AND SECURE WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE SHALL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED ON TOP OF PIPE AND TAPED IN PLACE.

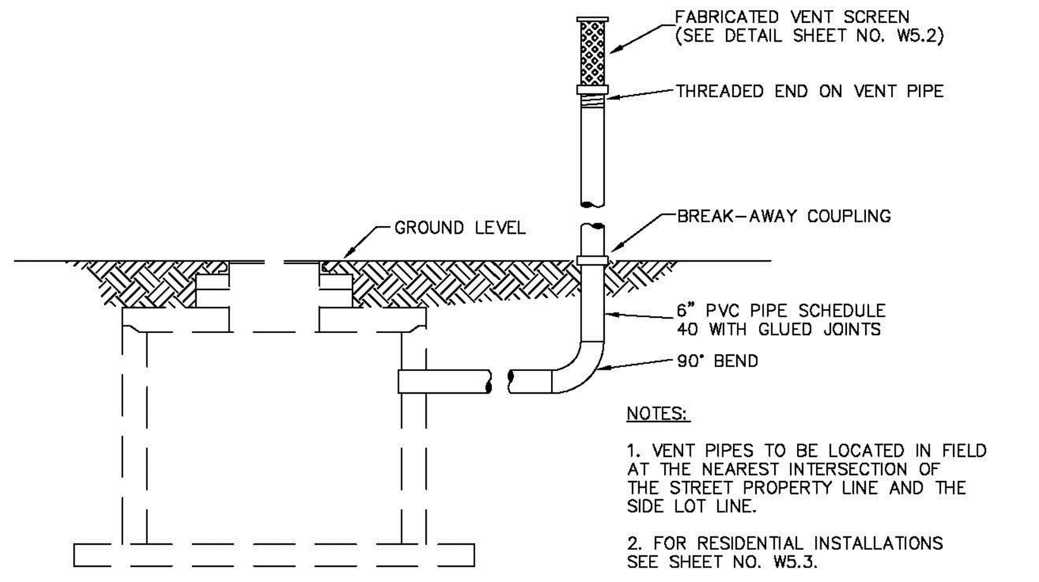
PARKER WATER
& SANITATION DISTRICT

POLYETHYLENE WRAP

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION

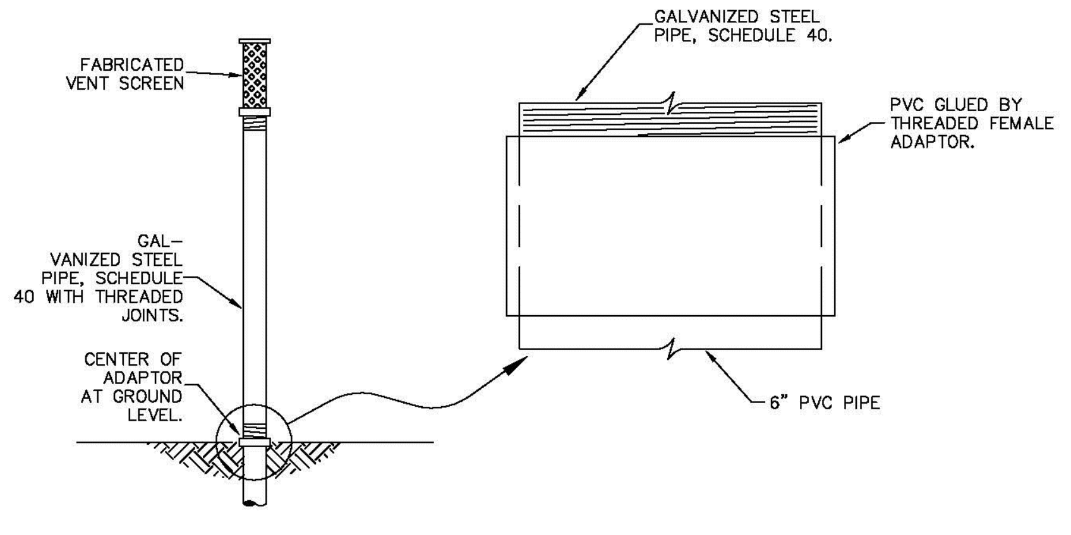
SHEET W4.11


FABRICATED VENT SCREEN (SEE DETAIL SHEET NO. W5.2)
THREADED END ON VENT PIPE
GROUND LEVEL
BREAK-AWAY COUPLING
6" PVC PIPE SCHEDULE 40 WITH GLUED JOINTS
90° BEND

NOTES:

1. VENT PIPES TO BE LOCATED IN FIELD AT THE NEAREST INTERSECTION OF THE STREET PROPERTY LINE AND THE SIDE LOT LINE.
2. FOR RESIDENTIAL INSTALLATIONS SEE SHEET NO. W5.3.

VENT PIPE INSTALLATION


GALVANIZED STEEL PIPE, SCHEDULE 40.
FABRICATED VENT SCREEN
PVC GLUED BY THREADED FEMALE ADAPTOR.
GALVANIZED STEEL PIPE, SCHEDULE 40 WITH THREADED JOINTS.
CENTER OF ADAPTOR AT GROUND LEVEL.
6" PVC PIPE

VENT PIPE AND BREAK–AWAY COUPLING DETAILS

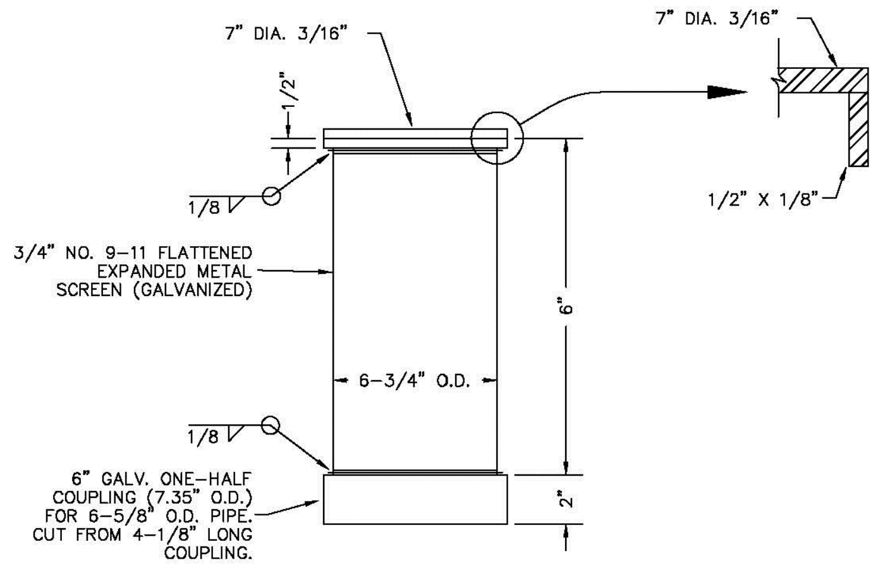
PARKER WATER
& SANITATION DISTRICT

VENT PIPE
INSTALLATION AND DETAILS

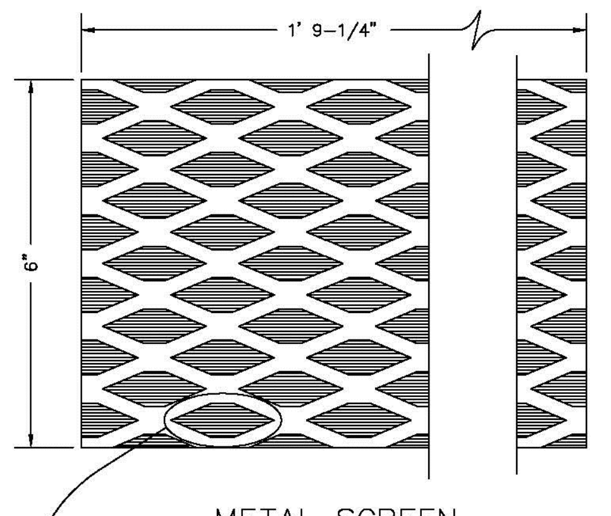
SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION

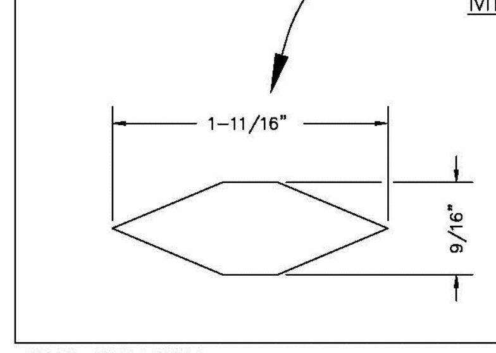
SHEET W5.1


7" DIA. 3/16"
1/2"
1/8
3/4" NO. 9-11 FLATTENED EXPANDED METAL SCREEN (GALVANIZED)
6-3/4" O.D.
1/8
6" GALV. ONE-HALF COUPLING (7.35" O.D.) FOR 6-5/8" O.D. PIPE. CUT FROM 4-1/8" LONG COUPLING.
6"
2"
7" DIA. 3/16"
1/2" X 1/8"

ELEVATION
SCREEN FOR 6" VENT PIPE



METAL SCREEN



PARKER WATER
& SANITATION DISTRICT

6" DIA. VENT PIPE SCREEN

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION

SHEET W5.2

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

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 WATER DETAILS.DWG, CODYA, 6/17/2021 9:50 AM

No.	Revisions	Date	Init.	Appr.	Date

CVL
a Westwood team

10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

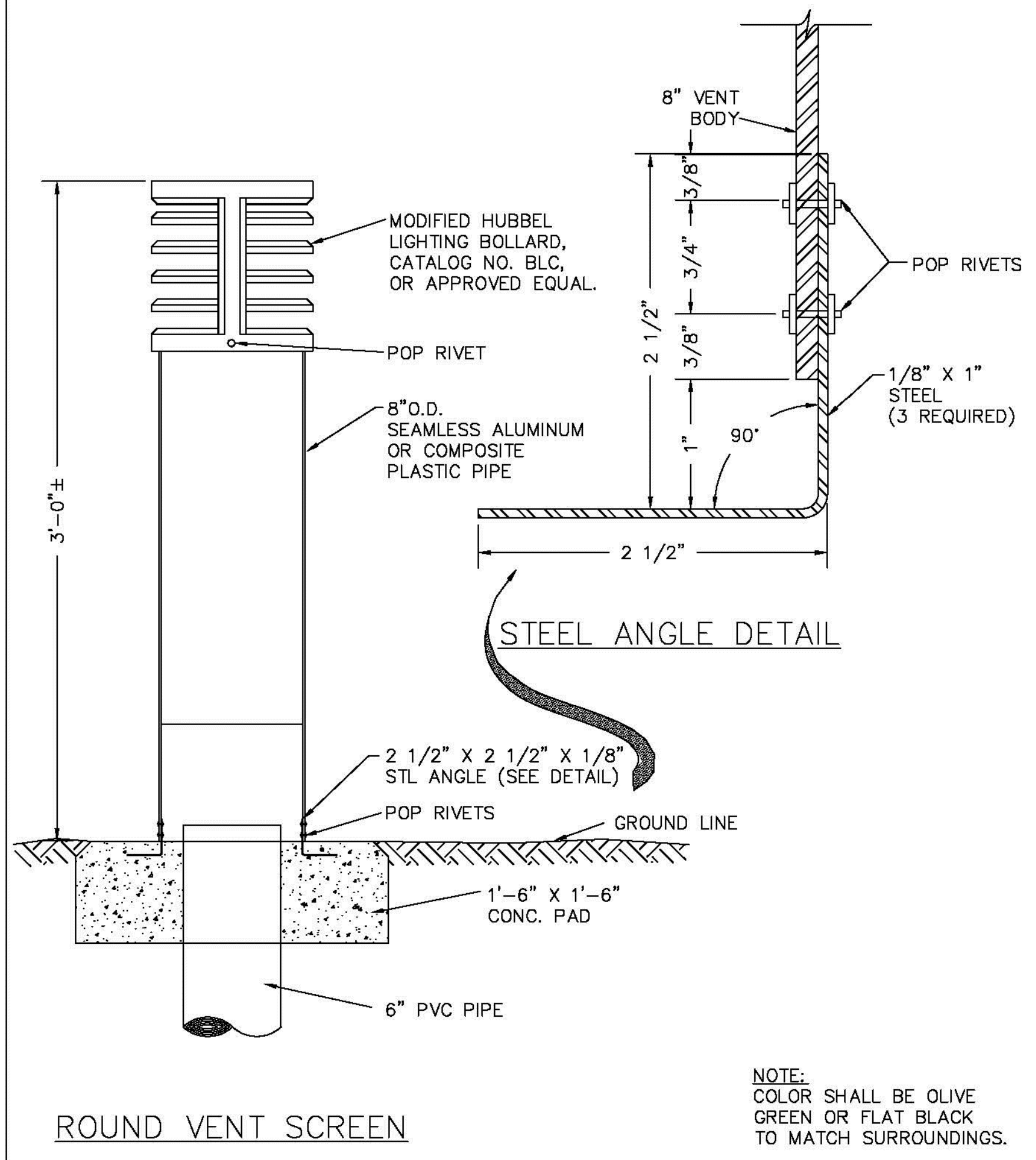
HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
WATER DETAILS

SCALE:
AS SHOWN
FILE NO:
8130283701

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

SHEET NUMBER
15


8" VENT BODY
MODIFIED HUBBEL LIGHTING BOLLARD, CATALOG NO. BLC, OR APPROVED EQUAL.
POP RIVET
8"O.D. SEAMLESS ALUMINUM OR COMPOSITE PLASTIC PIPE
3'-0"±
3/8"
3/4"
3/8"
2 1/2"
1"
90°
POP RIVETS
1/8" X 1" STEEL (3 REQUIRED)
2 1/2"
STEEL ANGLE DETAIL
2 1/2" X 2 1/2" X 1/8" STL ANGLE (SEE DETAIL)
POP RIVETS
GROUND LINE
1'-6" X 1'-6" CONC. PAD
6" PVC PIPE
ROUND VENT SCREEN

NOTE:
COLOR SHALL BE OLIVE GREEN OR FLAT BLACK TO MATCH SURROUNDINGS.

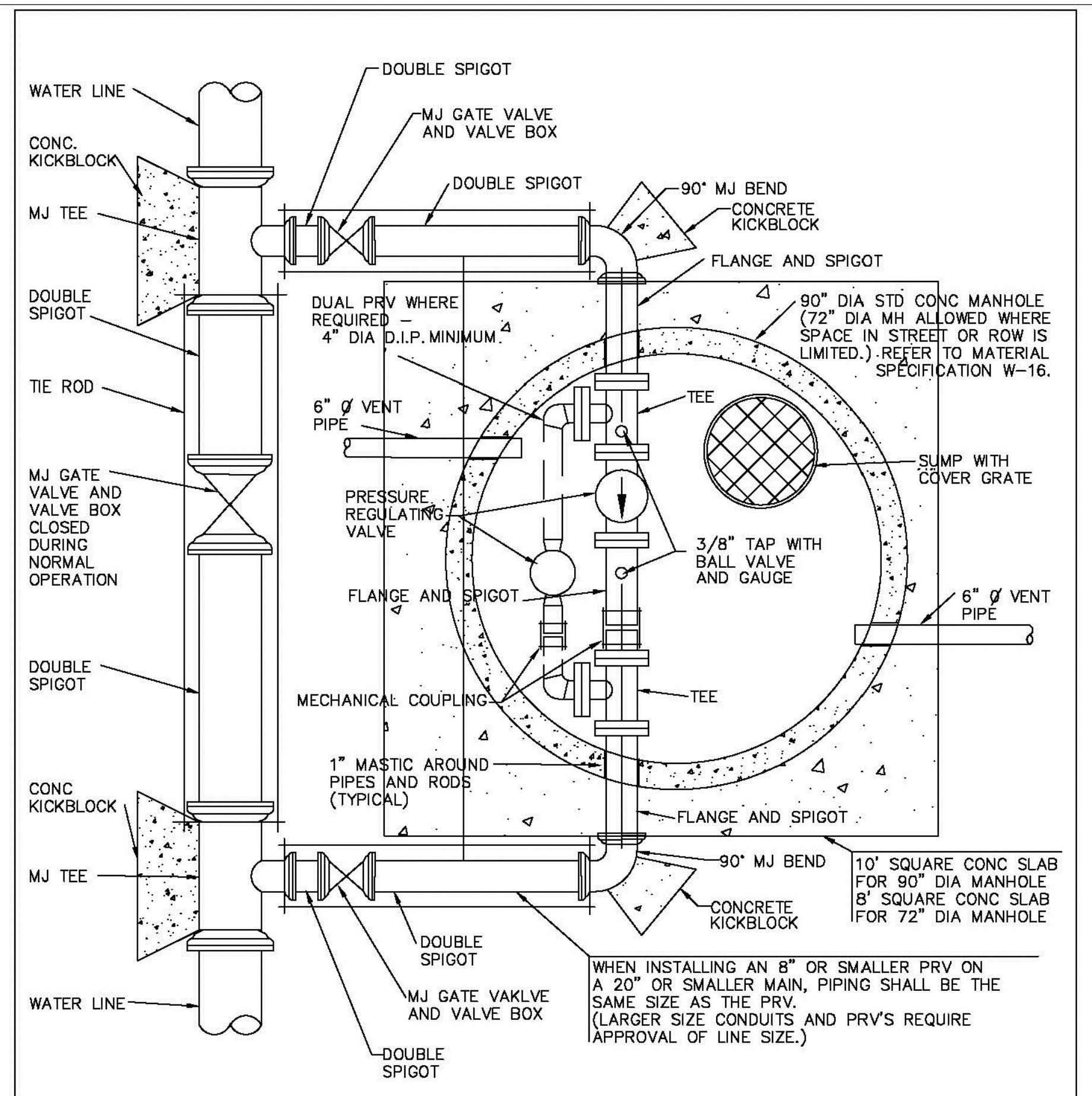
PARKER WATER
& SANITATION DISTRICT

RESIDENTIAL ONLY
VENT ASSEMBLY

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION

SHEET W5.3


WATER LINE
CONC. KICKBLOCK
MJ TEE
DOUBLE SPIGOT
TIE ROD
MJ GATE VALVE AND VALVE BOX CLOSED DURING NORMAL OPERATION
DOUBLE SPIGOT
CONC KICKBLOCK
MJ TEE
WATER LINE
DOUBLE SPIGOT
MJ GATE VALVE AND VALVE BOX
DOUBLE SPIGOT
90° MJ BEND
CONCRETE KICKBLOCK
FLANGE AND SPIGOT
DUAL PRV WHERE REQUIRED – 4" DIA D.I.P. MINIMUM
90" DIA STD CONC MANHOLE (72" DIA MH ALLOWED WHERE SPACE IN STREET OR ROW IS LIMITED.) REFER TO MATERIAL SPECIFICATION W-16.
6" Ø VENT PIPE
TEE
SUMP WITH COVER GRATE
PRESSURE REGULATING VALVE
3/8" TAP WITH BALL VALVE AND GAUGE
FLANGE AND SPIGOT
6" Ø VENT PIPE
MECHANICAL COUPLING
TEE
1" MASTIC AROUND PIPES AND RODS (TYPICAL)
FLANGE AND SPIGOT
90° MJ BEND
CONCRETE KICKBLOCK
10' SQUARE CONC SLAB FOR 90" DIA MANHOLE 8' SQUARE CONC SLAB FOR 72" DIA MANHOLE
DOUBLE SPIGOT
MJ GATE VAKLVE AND VALVE BOX
DOUBLE SPIGOT
WHEN INSTALLING AN 8" OR SMALLER PRV ON A 20" OR SMALLER MAIN, PIPING SHALL BE THE SAME SIZE AS THE PRV. (LARGER SIZE CONDUITS AND PRV'S REQUIRE APPROVAL OF LINE SIZE.)

NOTES:

1 – A RECTANGULAR VAULT IS REQUIRED WHERE TELEMETRY OR ELECTRICAL EQUIPMENT IS ANTICIPATED INSIDE THE VAULT.

2 – ACCESS STAIRS WITH DOOR OUTSIDE OF PAVEMENT MAY BE REQUIRED ON STREETS WITH HEAVY TRAFFIC.

3 – FOR ELEVATION VIEW SEE CROSS SECTION DWG SHEET NO. W5.5.

4 – DO NOT PLACE SUMP DIRECTLY UNDER MANHOLE.

5 – POLYETHENE STEPS SHALL BE INSTALLED.

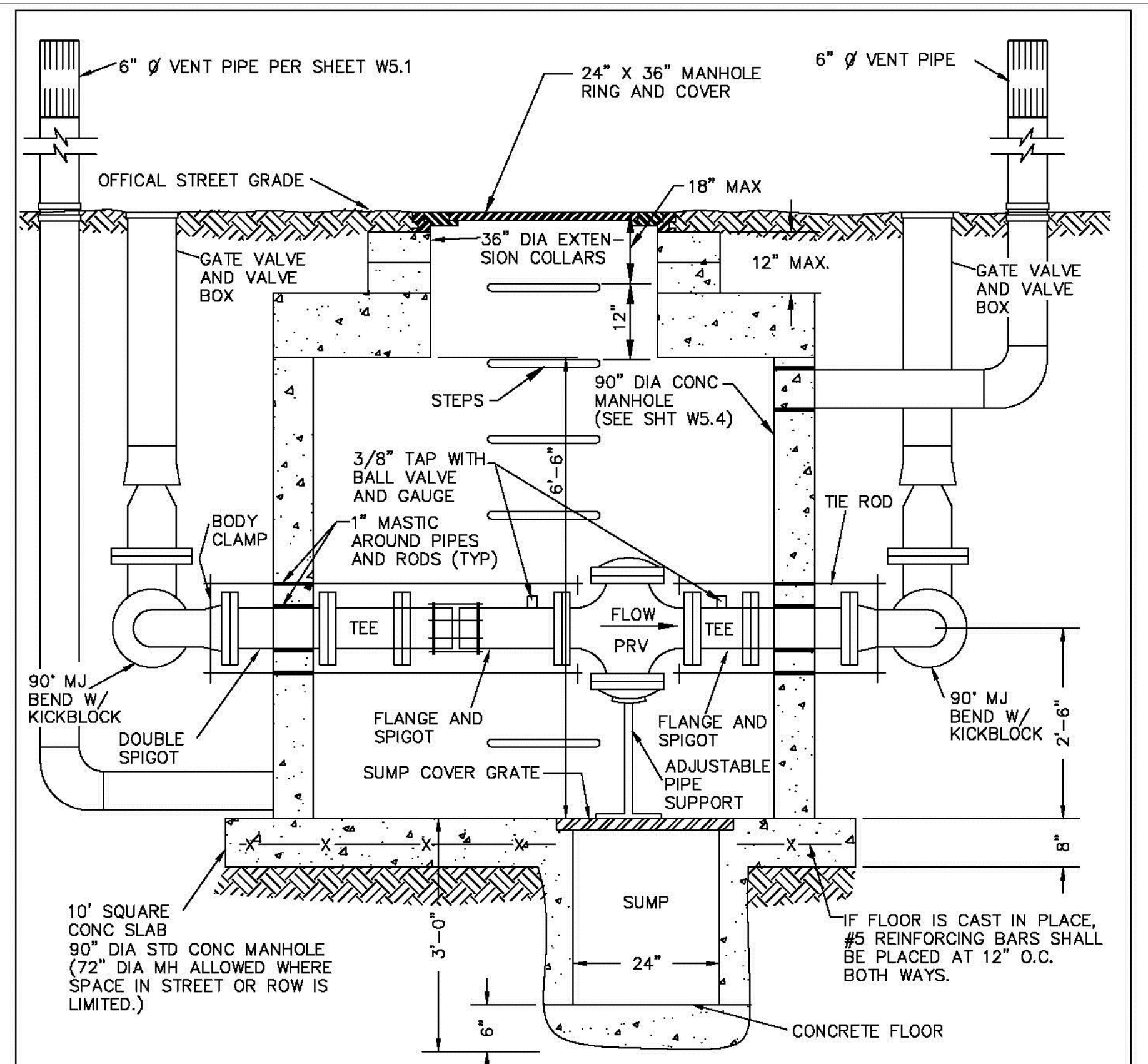
PARKER WATER
& SANITATION DISTRICT

PRESSURE REGULATING VALVE
MANHOLE INSTALLATION
TYPICAL PLAN

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
2/00
3/03
1/16
10/16

2016 REVISION

SHEET W5.4


6" Ø VENT PIPE PER SHEET W5.1
24" X 36" MANHOLE RING AND COVER
6" Ø VENT PIPE
OFFICAL STREET GRADE
18" MAX
36" DIA EXTENSION COLLARS
12" MAX.
GATE VALVE AND VALVE BOX
GATE VALVE AND VALVE BOX
12"
STEPS
90" DIA CONC MANHOLE (SEE SHT W5.4)
3/8" TAP WITH BALL VALVE AND GAUGE
6'-6"
BODY CLAMP
1" MASTIC AROUND PIPES AND RODS (TYP)
TIE ROD
TEE
FLOW
PRV
TEE
90° MJ BEND W/ KICKBLOCK
DOUBLE SPIGOT
FLANGE AND SPIGOT
FLANGE AND SPIGOT
ADJUSTABLE PIPE SUPPORT
90° MJ BEND W/ KICKBLOCK
2'-6"
SUMP COVER GRATE
8"
10' SQUARE CONC SLAB 90" DIA STD CONC MANHOLE (72" DIA MH ALLOWED WHERE SPACE IN STREET OR ROW IS LIMITED.)
SUMP
24"
3'-0"
6"
IF FLOOR IS CAST IN PLACE, #5 REINFORCING BARS SHALL BE PLACED AT 12" O.C. BOTH WAYS.
CONCRETE FLOOR

NOTES:

1 – SEE SHT. W5.4 FOR PLAN VIEW AND ADDITIONAL NOTES.

2 – POLYETHENE STEPS SHALL BE INSTALLED.
AND ANY STEPS IN CHIMNEY SECTION SHALL BE INSTALLED AS A HANDHOLD & SHALL NOT IMPEDE ACCESS THRU THE CHIMNEY.

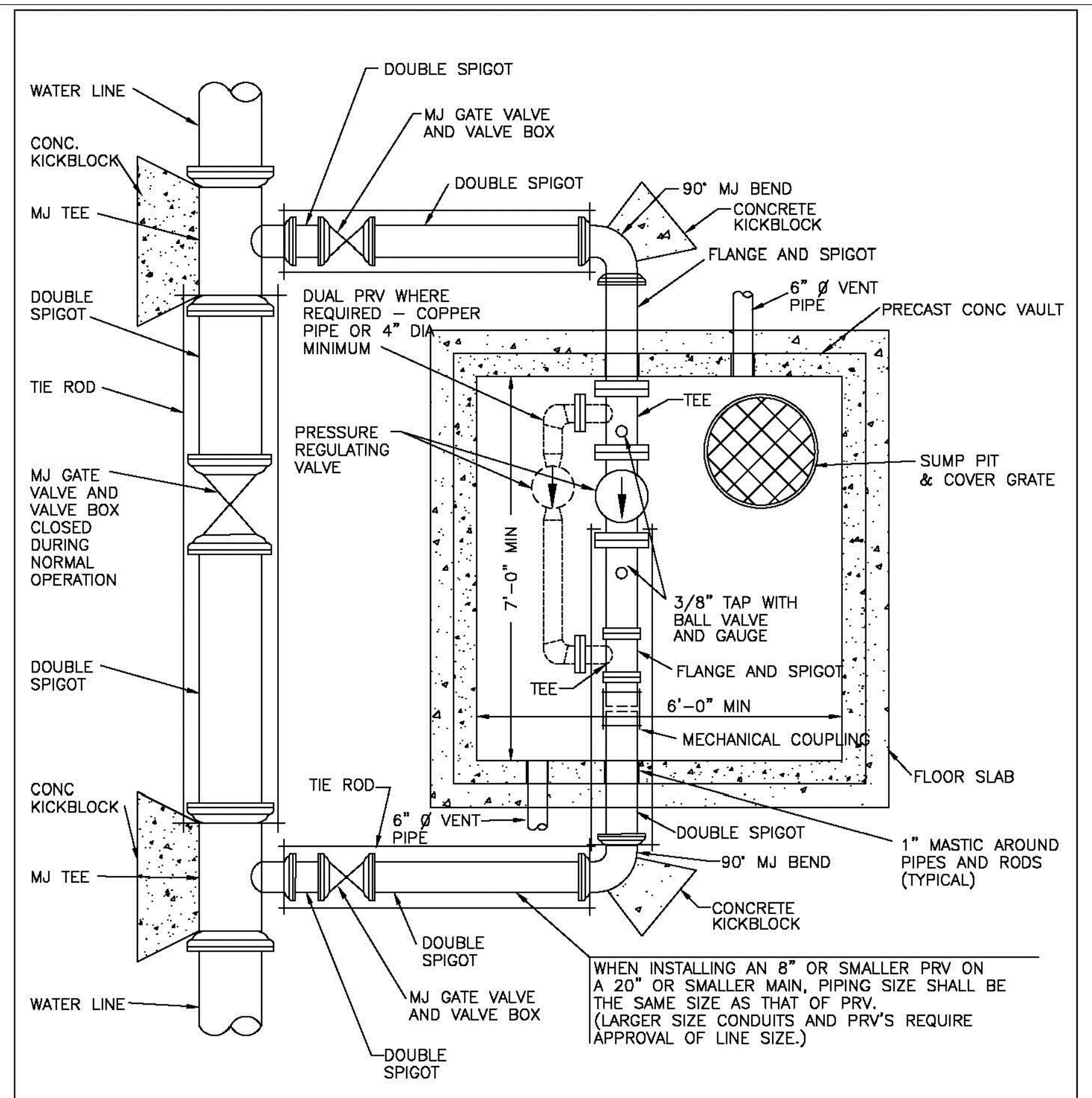
PARKER WATER
& SANITATION DISTRICT

PRESSURE REGULATING VALVE
MANHOLE INSTALLATION CROSS SECTION

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
4/01
3/03
1/16
10/16

2016 REVISION

SHEET W5.5


WATER LINE
CONC. KICKBLOCK
MJ TEE
DOUBLE SPIGOT
TIE ROD
MJ GATE VALVE AND VALVE BOX CLOSED DURING NORMAL OPERATION
DOUBLE SPIGOT
CONC KICKBLOCK
MJ TEE
WATER LINE
DOUBLE SPIGOT
MJ GATE VALVE AND VALVE BOX
DOUBLE SPIGOT
90° MJ BEND
CONCRETE KICKBLOCK
FLANGE AND SPIGOT
DUAL PRV WHERE REQUIRED – COPPER PIPE OR 4" DIA MINIMUM
6" Ø VENT PIPE
PRECAST CONC VAULT
TEE
PRESSURE REGULATING VALVE
SUMP PIT & COVER GRATE
7'-0" MIN
3/8" TAP WITH BALL VALVE AND GAUGE
FLANGE AND SPIGOT
TEE
6'-0" MIN
MECHANICAL COUPLING
FLOOR SLAB
TIE ROD
6" Ø VENT PIPE
DOUBLE SPIGOT
90° MJ BEND
1" MASTIC AROUND PIPES AND RODS (TYPICAL)
CONCRETE KICKBLOCK
DOUBLE SPIGOT
MJ GATE VALVE AND VALVE BOX
DOUBLE SPIGOT
WHEN INSTALLING AN 8" OR SMALLER PRV ON A 20" OR SMALLER MAIN, PIPING SIZE SHALL BE THE SAME SIZE AS THAT OF PRV. (LARGER SIZE CONDUITS AND PRV'S REQUIRE APPROVAL OF LINE SIZE.)

NOTES:

1 – A RECTANGULAR VAULT IS REQUIRED WHERE TELEMETRY OR ELECTRICAL EQUIPMENT INSIDE THE VAULT IS ANTICIPATED.

2 – ACCESS STAIRS WITH DOOR OUTSIDE OF PAVEMENT MAY BE REQUIRED ON STREETS WITH HEAVY TRAFFIC.

3 – FOR ELEVATION VIEW SEE CROSS SECTION DWG SHEET NO. W5.7.

4 – SUMP PUMP AND VENT FAN REQUIRED IN VAULTS WITH ELECTRICAL OR TELEMETRY EQUIPMENT.

5 – POLYETHENE STEPS SHALL BE INSTALLED.

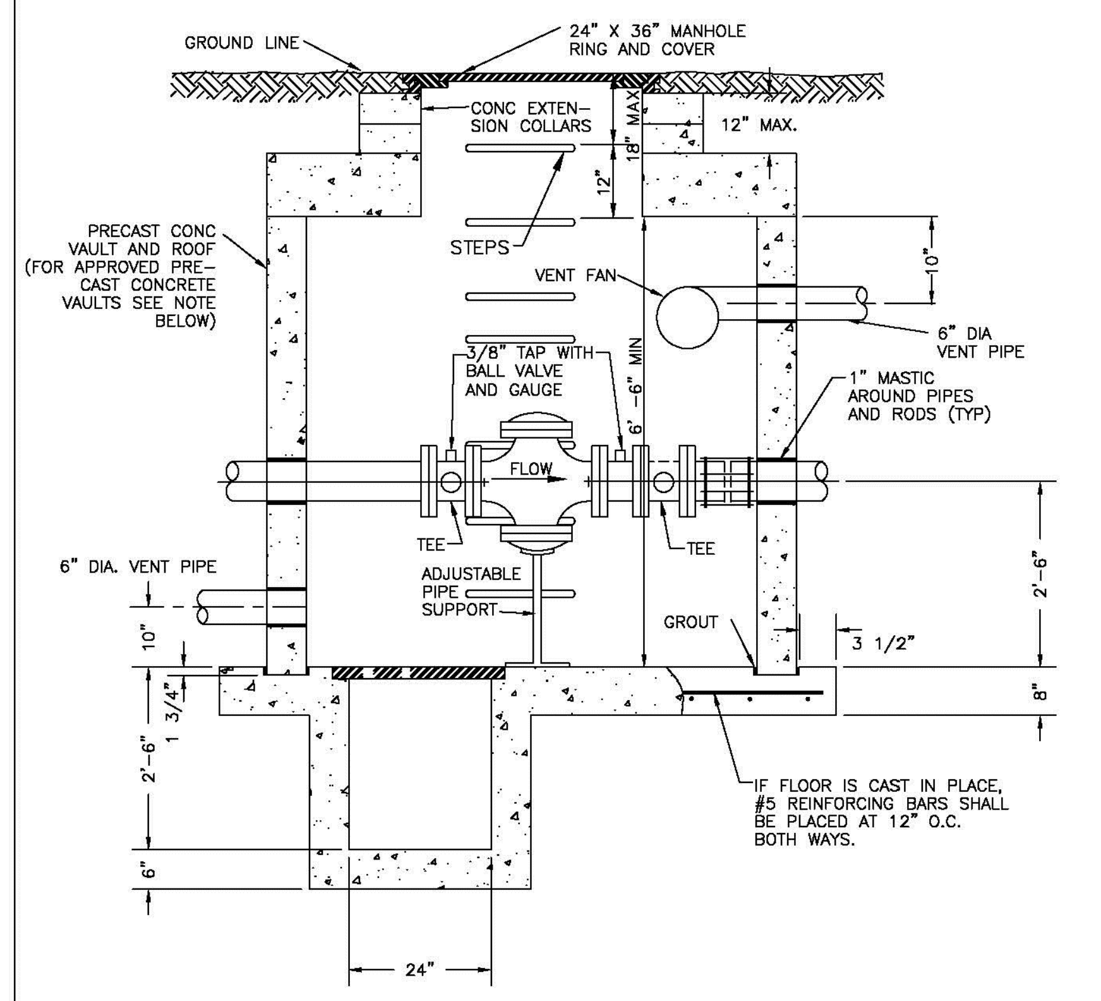
PARKER WATER
& SANITATION DISTRICT

PRESSURE REGULATING VALVE
RECTANGULAR VAULT
TYPICAL PLAN

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
2/00
3/03
1/16
10/16

2016 REVISION

SHEET W5.6


GROUND LINE
24" X 36" MANHOLE RING AND COVER
CONC EXTENSION COLLARS
18" MAX
12" MAX.
12"
PRECAST CONC VAULT AND ROOF (FOR APPROVED PRECAST CONCRETE VAULTS SEE NOTE BELOW)
STEPS
VENT FAN
10"
6" DIA VENT PIPE
3/8" TAP WITH BALL VALVE AND GAUGE
6'-6" MIN
1" MASTIC AROUND PIPES AND RODS (TYP)
FLOW
TEE
TEE
6" DIA. VENT PIPE
ADJUSTABLE PIPE SUPPORT
GROUT
3 1/2"
2'-6"
10"
1 3/4"
2'-6"
8"
6"
24"
IF FLOOR IS CAST IN PLACE, #5 REINFORCING BARS SHALL BE PLACED AT 12" O.C. BOTH WAYS.

NOTES:

1 – APPROVED PRECAST CONCRETE VAULTS PER MATERIAL SPECIFICATIONS W-16.

2 – A PERMIT IS REQUIRED FOR SUMP PUMP DISCHARGE TO STORM SEWERS.

3 – SEE SHEET W5.6 FOR PLAN VIEW AND ADDITIONAL NOTES.

4 – POLYETHENE STEPS SHALL BE INSTALLED.

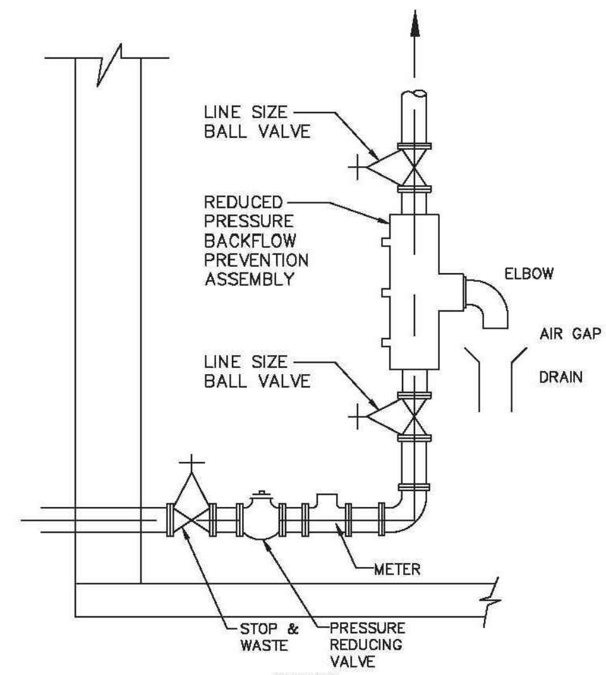
PARKER WATER
& SANITATION DISTRICT

PRESSURE REGULATING VALVE
RECTANGULAR VAULT
CROSS SECTION

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
4/01
3/03
1/16
10/16

2016 REVISION

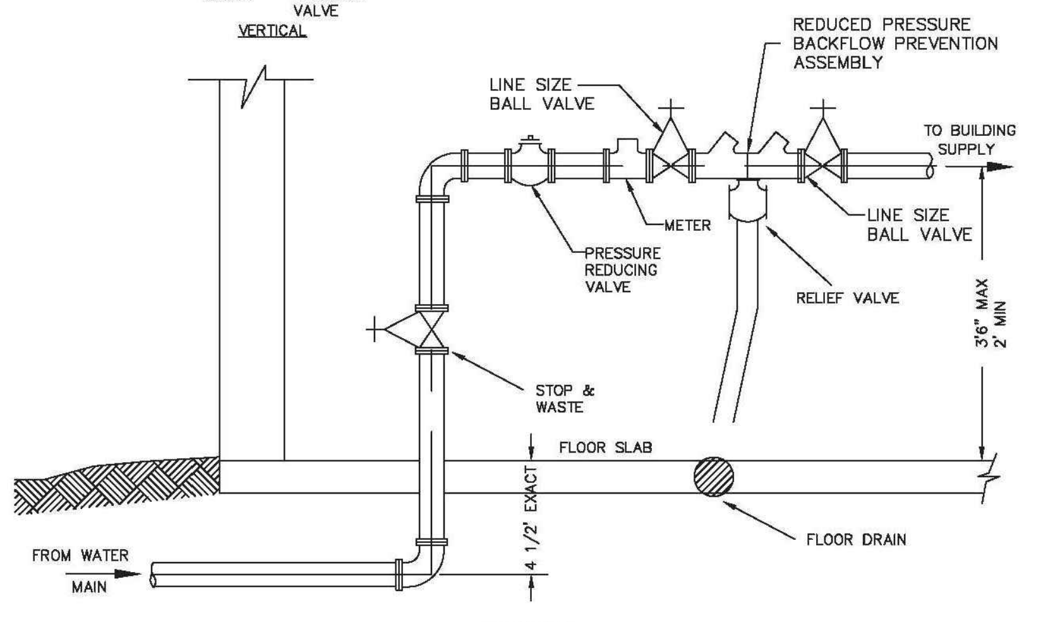
SHEET W5.7


LINE SIZE BALL VALVE
REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY
ELBOW
AIR GAP
DRAIN
LINE SIZE BALL VALVE
METER
STOP & WASTE
PRESSURE REDUCING VALVE

VERTICAL

NOTES:

1. METER TO BE LOCATED IN AN UNOBSTRUCTED & ACCESSIBLE PLACE. (NOT IN CRAWL SPACE)
2. SEE WATER SYSTEM SPECIFICATIONS, IN CHAPTER ONE, FOR GENERAL METER NOTES.
3. VERTICAL AND HORIZONTAL REDUCED PRESSURE BACKFLOW CONFIGURATION ALLOWABLE PER AWWA C511.
4. APPROVED REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY WHICH MUST BE CERTIFIED.
5. 1.0' MINIMUM CLEARANCE AROUND BACKFLOW ASSEMBLY
6. FLOOR DRAIN TO BE 2X THE DIAMETER OF PIPE
7. SUPPORTED FIRMLY TO THE WALL.
8. FOR IRRIGATION APPLICATIONS, IRRIGATION MUST BE TAPPED AFTER THE METER AND MUST USE AN APPROVED RAIN SENSOR AND SMART ET CONTROLLER PER MATERIAL SPECIFICATIONS.
9. NO BYPASSES ALLOWED.
10. ALL PIPING MUST BE COPPER AND SAME SIZE AS TAP.
11. ALL FITTINGS MUST BE NO-LEAD BRASS PER MATERIAL SPECIFICATIONS.


REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY
LINE SIZE BALL VALVE
TO BUILDING SUPPLY
METER
LINE SIZE BALL VALVE
PRESSURE REDUCING VALVE
RELIEF VALVE
3'6" MAX 2' MIN
STOP & WASTE
FLOOR SLAB
4 1/2' EXACT
FROM WATER MAIN
FLOOR DRAIN

HORIZONTAL

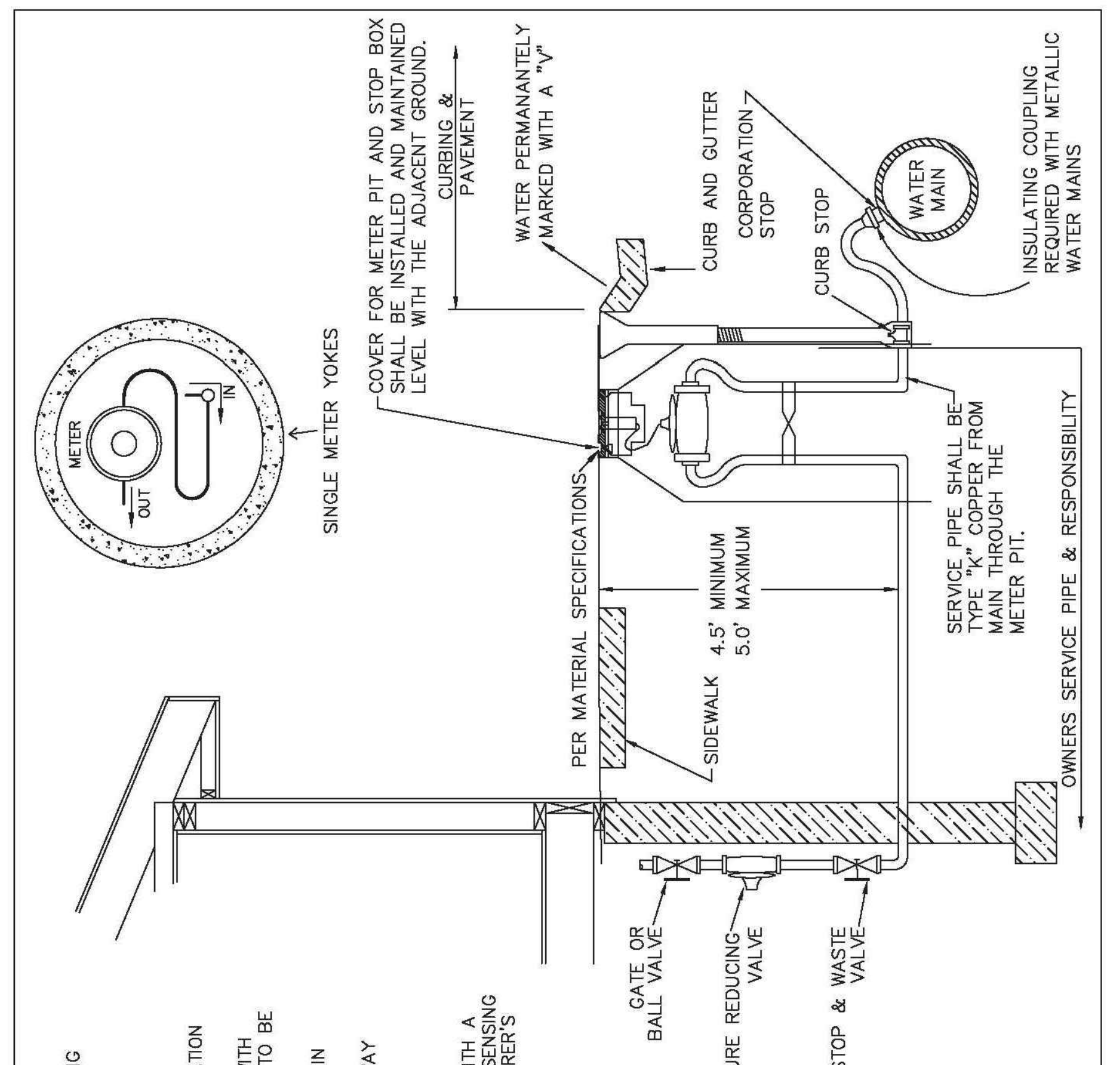
PARKER WATER
& SANITATION DISTRICT

INSIDE COMMERCIAL METER INSTALLATION
FOR 6" & SMALLER PIPE

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
8/99 1/16
2/00 10/16
4/01
01/02
06/05

2016 REVISION

SHEET W5.8


METER
IN
OUT
SINGLE METER YOKES
COVER FOR METER PIT AND STOP BOX SHALL BE INSTALLED AND MAINTAINED LEVEL WITH THE ADJACENT GROUND.
CURBING & PAVEMENT
WATER PERMANANTELY MARKED WITH A "V"
CURB AND GUTTER
CORPORATION STOP
CURB STOP
WATER MAIN
INSULATING COUPLING REQUIRED WITH METALLIC WATER MAINS
PER MATERIAL SPECIFICATIONS
SIDEWALK
4.5' MINIMUM 5.0' MAXIMUM
SERVICE PIPE SHALL BE TYPE "K" COPPER FROM MAIN THROUGH THE METER PIT.
OWNERS SERVICE PIPE & RESPONSIBILITY
GATE OR BALL VALVE
PRESSURE REDUCING VALVE
STOP & WASTE VALVE

NOTES

1 – PLACEMENT OF CURB STOP MUST BE TOUCHING FRONT OF METER PITS.

2 – OWNER'S RESPONSIBILITY SHALL BE FROM THE CURBSTOP TO THE BUILDING.

3 – THE DISTRICT'S RESPONSIBILITY SHALL BE THE WATER MAIN, TAPPING SADDLE, CORPORATION STOP, TO THE CURBSTOP VALVE.

4 – PIGTAIL TO SERVICE LINE IS ONLY ALLOWED WITH FLARED COUPLING. ALL OTHER CONNECTIONS TO BE SILVER SOLDER.

5 – METER PITS AND CURB STOPS NOT ALLOWED IN PARKING AREAS OR DRIVEWAYS.

6 – SERVICE LINE MAY BE ROUTED UNDER DRIVEWAY ONLY IF SLEEVED WITH 4" SLEEVE.

7 – CONTROLLER WITH RAIN SENSOR MUST BE INSTALLED PRIOR TO METER.

8 – SINGLE FAMILY HOMES SHALL BE EQUIPPED WITH A PROPERLY INSTALLED PWSD APPROVED RAIN SENSING DEVICE. MUST BE INSTALLED PER MANUFACTURER'S REQUIREMENTS.

PARKER WATER
& SANITATION DISTRICT

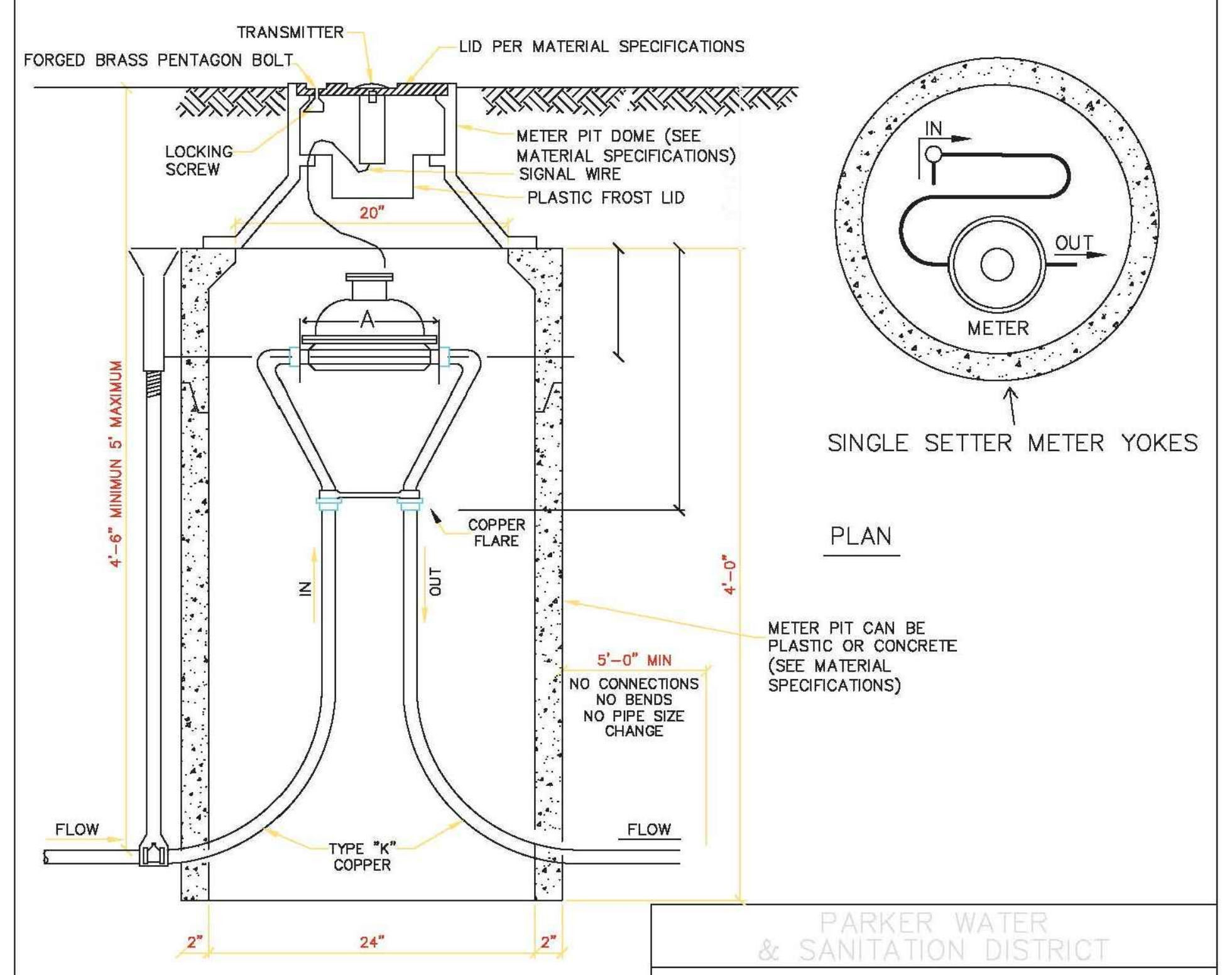
RESIDENTIAL SERVICE LINE, STOP BOX
AND OUTSIDE METER INSTALLATION

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
2/00 5/05
4/01 1/12
01/02 1/16
12/03 10/16

2016 REVISION

SHEET W5.10

1. INSTALLATION IN ROADWAYS, PARKING AREAS OR DRIVEWAYS IS PROHIBITED.
2. IF SURFACE IS NOT TO FINAL GRADE AT TIME OF INSTALLATION OF METER, OWNER MUST RAISE OR LOWER PIT WHEN SURFACE IS GRADED.
3. METER SETTING MUST BE INSPECTED BY THE DISTRICT BEFORE BACKFILLING.
4. LOCATION OF METER TO BE ESTABLISHED BY A DISTRICT REPRESENTATIVE.
5. NO CONCRETE FLOOR TO BE LAID IN METER PIT.
6. 8" FROM BOTTOM OF DOME TO YOKE SPREAD FOR METER
7. NO CONNECTIONS OR CHANGES IN PIPE DIAMETER SHALL BE MADE IN THE METER PIT OR IN THE DISTANCE OF FIVE FEET BEYOND THE METER PIT WALL ON THE OUTLET SIDE.
8. LAWN SPRINKLER CONNECTION SHALL BE A MINIMUM OF FIVE FEET FROM THE METER PIT WALL ON THE OUTLET SIDE.
9. A COPY OF THE PERMIT CARD MUST BE ONSITE AT TIME OF METER SET.


TRANSMITTER
FORGED BRASS PENTAGON BOLT
LID PER MATERIAL SPECIFICATIONS
LOCKING SCREW
METER PIT DOME (SEE MATERIAL SPECIFICATIONS)
SIGNAL WIRE
PLASTIC FROST LID
20"
A
4'-6" MINIMUN 5' MAXIMUM
COPPER FLARE
IN
OUT
4'-0"
METER PIT CAN BE PLASTIC OR CONCRETE (SEE MATERIAL SPECIFICATIONS)
5'-0" MIN
NO CONNECTIONS NO BENDS NO PIPE SIZE CHANGE
FLOW
FLOW
TYPE "K" COPPER
2"
24"
2"
IN
OUT
METER
SINGLE SETTER METER YOKES
PLAN

METER SIZE	A
3/4"	7 1/2"
1"	10 3/4"

PARKER WATER
& SANITATION DISTRICT

RESIDENTIAL ALL OUTSIDE SETTINGS FOR
3/4" & 1" METERS

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
01/04 01/16
06/05 10/16
01/08
01/12

2016 REVISION

SHEET W5.11

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

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 WATER DETAILS.DWG, CODYA, 6/17/2021 9:50 AM

No.	Revisions	Date	Init.	Appr.	Date

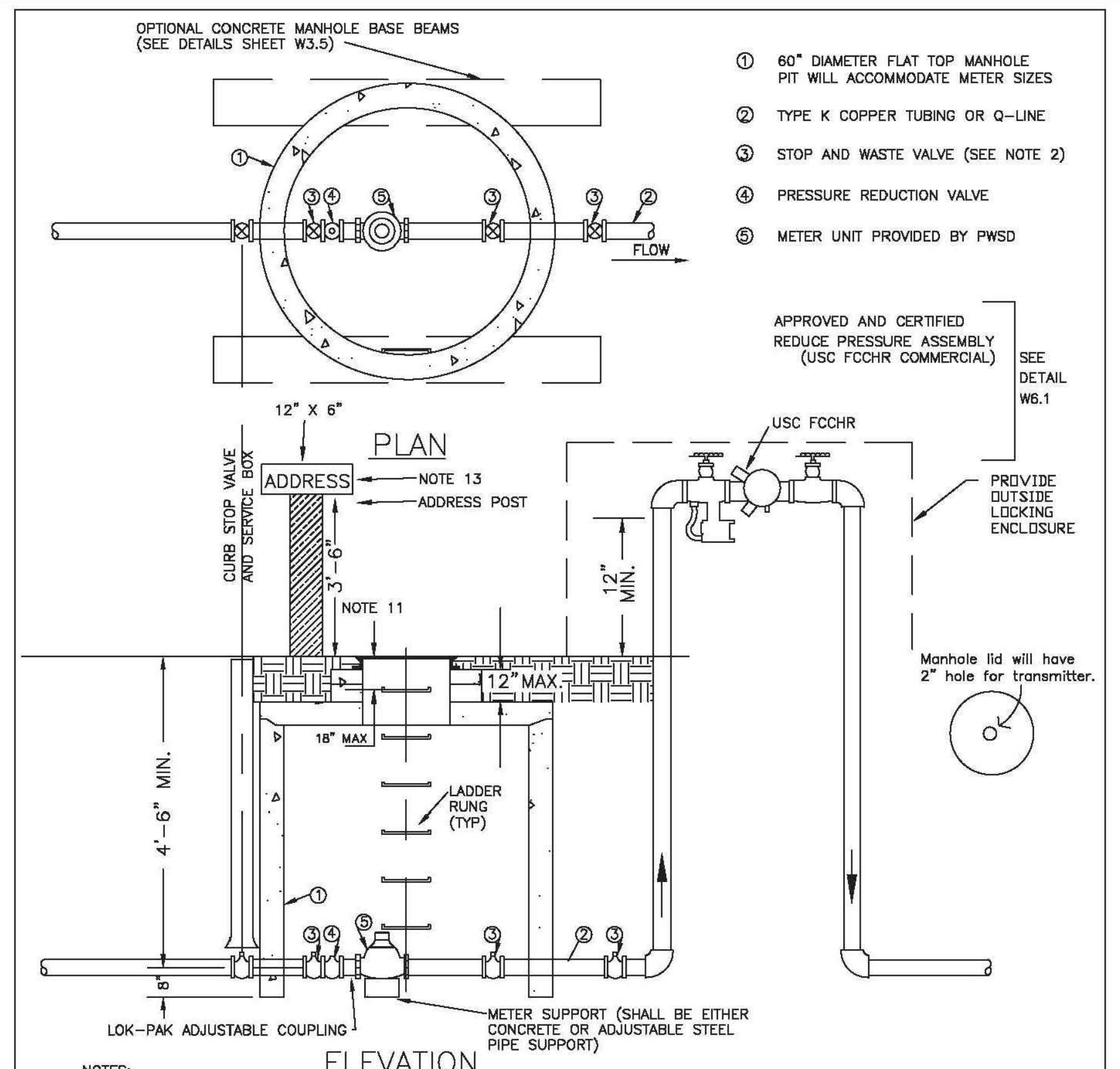
a Westwood team
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel:720.482.952
www.cvlinc.net
westwoodps.com

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
WATER DETAILS

SHEET NUMBER
16

DRAWN BY: JF
CHECKED BY: JJJ
DATE: SEPTEMBER 2017
SCALE: AS SHOWN
FILE NO: 8130283701


OPTIONAL CONCRETE MANHOLE BASE BEAMS (SEE DETAILS SHEET W3.5)
FLOW
PLAN
12" X 6"
ADDRESS
NOTE 13
ADDRESS POST
CURB STOP VALVE AND SERVICE BOX
3'-6"
NOTE 11
12" MAX.
18" MAX
LADDER RUNG (TYP)
4'-6" MIN.
8"
12" MIN.
USC FCCHR
PROVIDE OUTSIDE LOCKING ENCLOSURE
Manhole lid will have 2" hole for transmitter.
LOK-PAK ADJUSTABLE COUPLING
METER SUPPORT (SHALL BE EITHER CONCRETE OR ADJUSTABLE STEEL PIPE SUPPORT)
ELEVATION

① 60" DIAMETER FLAT TOP MANHOLE PIT WILL ACCOMMODATE METER SIZES
② TYPE K COPPER TUBING OR Q-LINE
③ STOP AND WASTE VALVE (SEE NOTE 2)
④ PRESSURE REDUCTION VALVE
⑤ METER UNIT PROVIDED BY PWSD

APPROVED AND CERTIFIED REDUCE PRESSURE ASSEMBLY (USC FCCHR COMMERCIAL) SEE DETAIL W6.1

NOTES:

1 – MANHOLE BASE BEAMS SHALL BE REQUIRED FOR INSTALLATIONS IN DRIVEWAYS, OR PARKING AREAS.
2 – STOP AND WASTE VALVE TO BE INSTALLED.
3 – JOINTS INSIDE METER VAULT SHALL BE EITHER THREADED OR SOLDERED.
4 – SEE WATER SYSTEM SPECIFICATIONS FOR GENERAL METER NOTES.
5 – NO CONCRETE TO BE LAID IN FLOOR OF METER M.H.
6 – METER SHALL BE FLANGED WITH BRASS COMPANION FLANGES.
7 – NO CONNECTIONS OR CHANGES IN PIPE DIAMETER SHALL BE MADE IN THE METER PIT OR IN THE DISTANCE OF FIVE FEET BEYOND THE METER PIT ON THE OUTLET SIDE.
8 – RAIN SENSOR AND ET CONTROLLER MUST BE PRESENT.
9 – VALVE MUST BE CENTERED IN STOP BOX. NO DEBRIS OR STANDING WATER IN STOP BOX.
10 – PLACEMENT OF STOP BOX MUST BE TOUCHING FRONT OF METER PIT.
11 – SEE SHEET W3.19 FOR MANHOLE RING AND COVER DETAIL
12 – BACKFLOW MUST BE INSTALLED PRIOR TO SETTING METER
13 – LETTERS ON POST OR BACKFLOW ENCLOSURE 2" OR GREATER.
14 – RAIN SENSOR AND ET CONTROLLER MUST BE PROVIDED AND INSTALLED PER MANUFACTURER'S REQUIREMENTS.

METER	YOKE DISTANCE
1.5"	13.25" WITH ADJUSTABLE FLANGE FOR GASKET
2"	17.25" WITH ADJUSTABLE FLANGE FOR GASKET

IRRIGATION ONLY

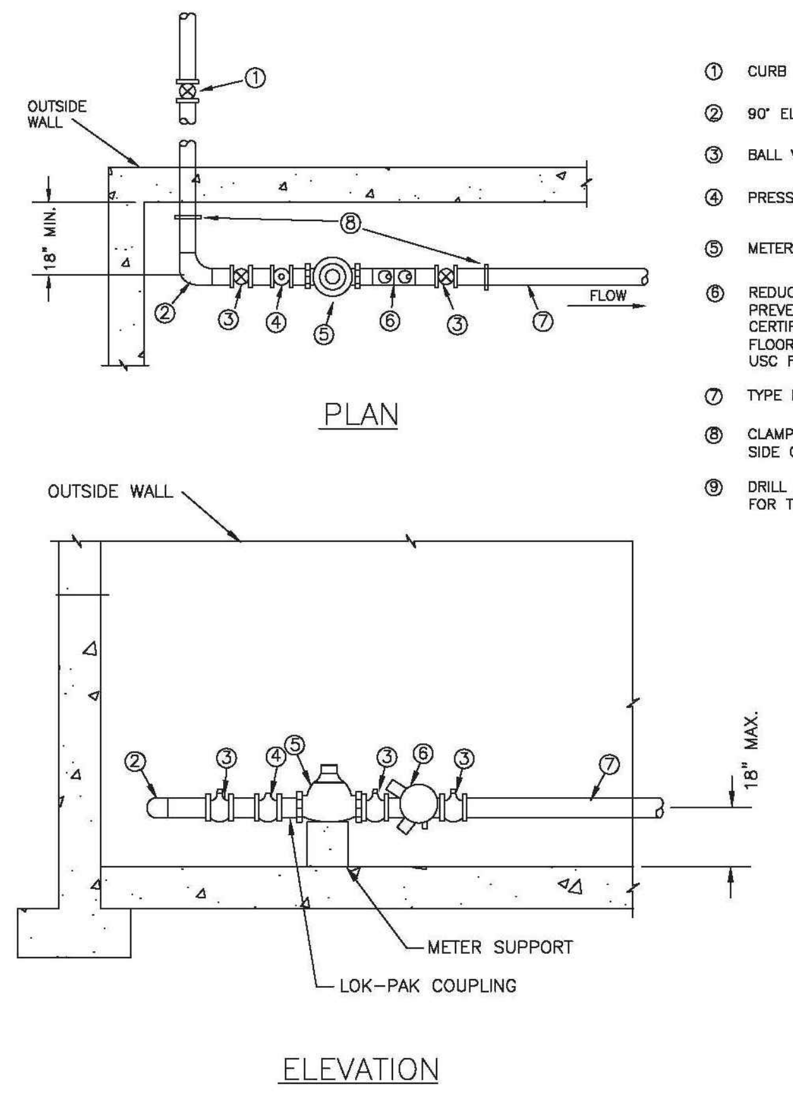
NOT TO BE USED IN COMMERCIAL OR NON-SINGLE FAMILY RESIDENTIAL WITHOUT EXPRESS PERMISSION OF THE PWSD ENGINEER.

PARKER WATER
& SANITATION DISTRICT

OUTSIDE SETTING FOR 1 1/2" & 2"
METER FOR IRRIGATION

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
1/04
06/05
1/16
10/16

2016 REVISION
SHEET W5.12


OUTSIDE WALL
18" MIN.
FLOW
PLAN
OUTSIDE WALL
18" MAX.
METER SUPPORT
LOK-PAK COUPLING
ELEVATION

① CURB STOP
② 90° ELBOW
③ BALL VALVE
④ PRESSURE REDUCING VALVE
⑤ METER UNIT
⑥ REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY (TO HAVE CERTIFICATION) WITH DRAIN CUP TO FLOOR DRAIN. DAYLIGHT PER USC FCCHR.
⑦ TYPE K COPPER TUBING
⑧ CLAMP GROUND WIRE TO EACH SIDE OF METER UNIT
⑨ DRILL A HOLE IN THE WALL FOR TRANSMITTER

NOTES

1 – PIPE JOINT SHALL BE THREADED OR SOLDERED WITH SILVER SOLDER.
2 – INSTALLATION MUST ALLOW ACCESS FOR MAINTENANCE AND BE PROTECTED FROM FREEZING.
3 – SEE WATER SYSTEM SPECIFICATIONS FOR GENERAL METER NOTES.
4 – COMPANION FLANGES SHALL BE BRASS.
5 – METER SUPPORT SHALL BE EITHER CONCRETE OR ADJ. STEEL PIPE (SEE SHEET W3.10)
6 – 1.0' MINIMUM CLEARANCE AROUND BACKFLOW DEVICE
7 – FLOOR DRAIN TO BE 2X PIPE SIZE
8 – FOR IRRIGATION USES, ADD RAIN SENSOR AND SMART E.T. CONTROLLER

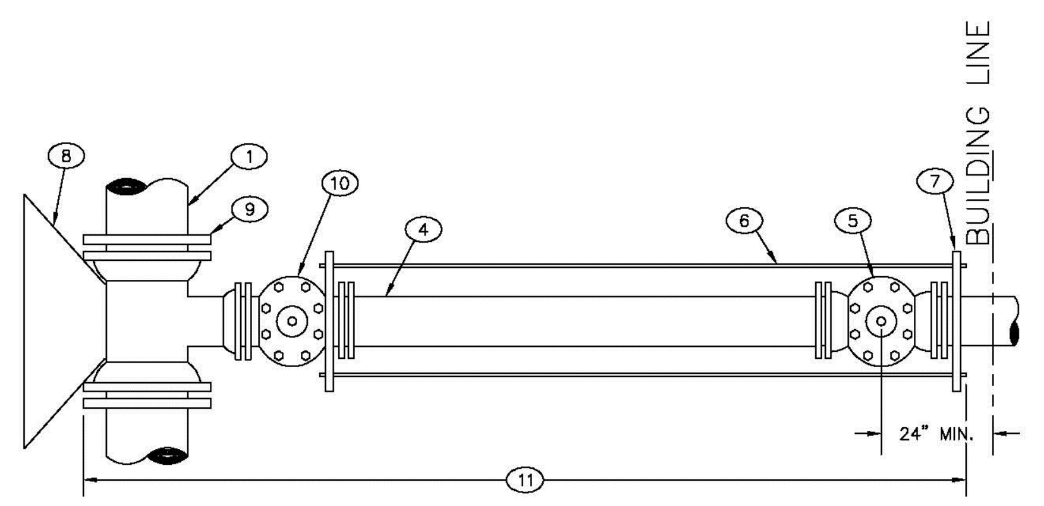
METER	YOKE DISTANCE
1.5"	13.25" WITH ADJUSTABLE FLANGE FOR GASKET
2"	17.25" WITH ADJUSTABLE FLANGE FOR GASKET

PARKER WATER
& SANITATION DISTRICT

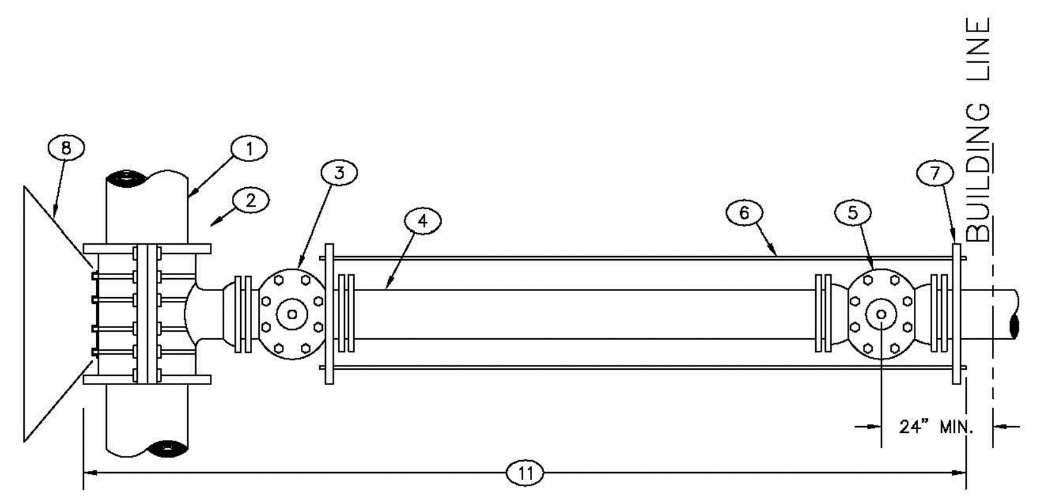
INSIDE SETTING FOR
$1\frac{1}{2}$" & 2" METER

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
8/99 01/02 01/16
2/00 06/05 10/16
4/01 07/06

2016 REVISION
SHEET W5.14


BUILDING LINE
24" MIN.

FIRE SPRINKLER OR DOMESTIC CONNECTION WITH MAIN EXTENSION


BUILDING LINE
24" MIN.

FIRE SPRINKLER OR DOMESTIC CONNECTION

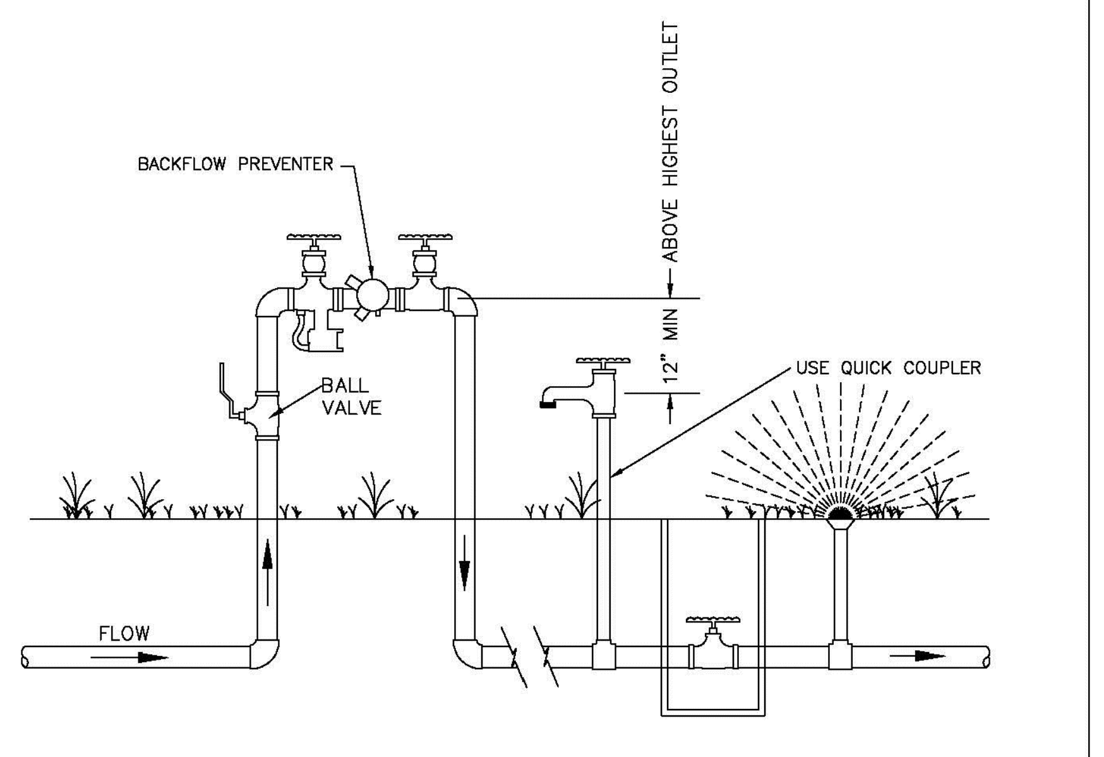
(1) EXISTING MAIN
(2) TAPPING SLEEVE
(3) TAPPING VALVE
(4) DOUBLE SPIGOT PIPE
(5) PROPERTY LINE VALVE
(6) TIE RODS
(7) PIPE CLAMP
(8) CONCRETE KICKBLOCK
(9) M.J. ANCHORING TEE (SWIVEL TEE)
(10) M.J. VALVE
(11) POLYETHYLENE WRAPPED

PARKER WATER
& SANITATION DISTRICT

3" AND LARGER DOMESTIC AND
FIRE SPRINKLER CONNECTIONS

SCALE: NONE
DATE: 2/96
APPROVED:
PVR
DIRECTOR OF ENGINEERING
1/16
10/16

2016 REVISION
SHEET W5.18


BACKFLOW PREVENTER
BALL VALVE
ABOVE HIGHEST OUTLET
12" MIN
USE QUICK COUPLER
FLOW

REDUCED PRESSURE BACKFLOW ON IRRIGATION SYSTEM

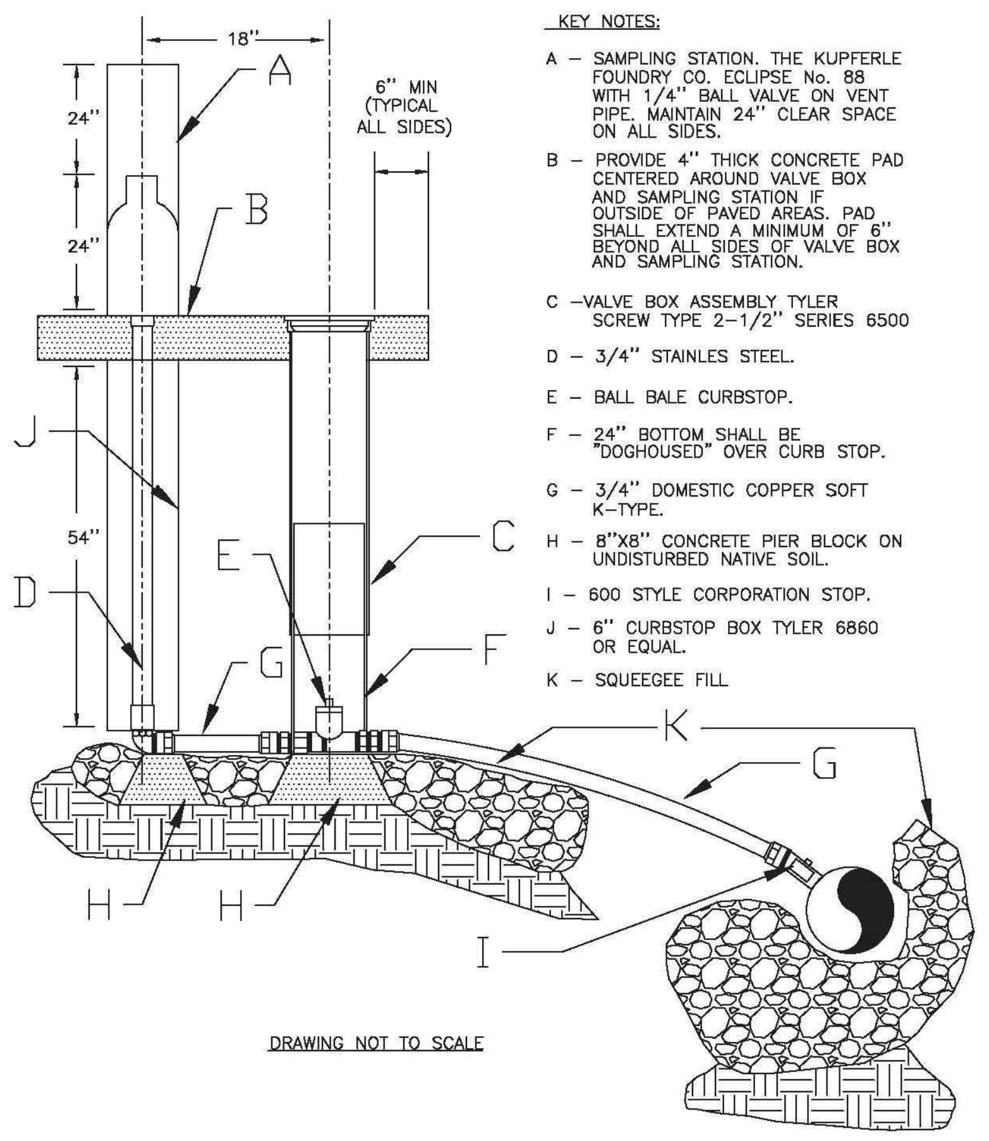
NOTE:
1. ALL IRRIGATION SYSTEMS MUST BE CONNECTED DOWN STREAM OF METER.
2. PROVIDE ENCLOSURE.

PARKER WATER
& SANITATION DISTRICT

REDUCED PRESSURE BACKFLOW

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
2004
06/05
1/16
10/16

2016 REVISION
SHEET W6.1


18"
24"
24"
54"
6" MIN (TYPICAL ALL SIDES)
A
B
C
D
E
F
G
H
I
J
K

KEY NOTES:

A – SAMPLING STATION. THE KUPFERLE FOUNDRY CO. ECLIPSE No. 88 WITH 1/4" BALL VALVE ON VENT PIPE. MAINTAIN 24" CLEAR SPACE ON ALL SIDES.
B – PROVIDE 4" THICK CONCRETE PAD CENTERED AROUND VALVE BOX AND SAMPLING STATION IF OUTSIDE OF PAVED AREAS. PAD SHALL EXTEND A MINIMUM OF 6" BEYOND ALL SIDES OF VALVE BOX AND SAMPLING STATION.
C –VALVE BOX ASSEMBLY TYLER SCREW TYPE 2-1/2" SERIES 6500
D – 3/4" STAINLES STEEL.
E – BALL BALE CURBSTOP.
F – 24" BOTTOM SHALL BE "DOGHOUSED" OVER CURB STOP.
G – 3/4" DOMESTIC COPPER SOFT K-TYPE.
H – 8"X8" CONCRETE PIER BLOCK ON UNDISTURBED NATIVE SOIL.
I – 600 STYLE CORPORATION STOP.
J – 6" CURBSTOP BOX TYLER 6860 OR EQUAL.
K – SQUEEGEE FILL

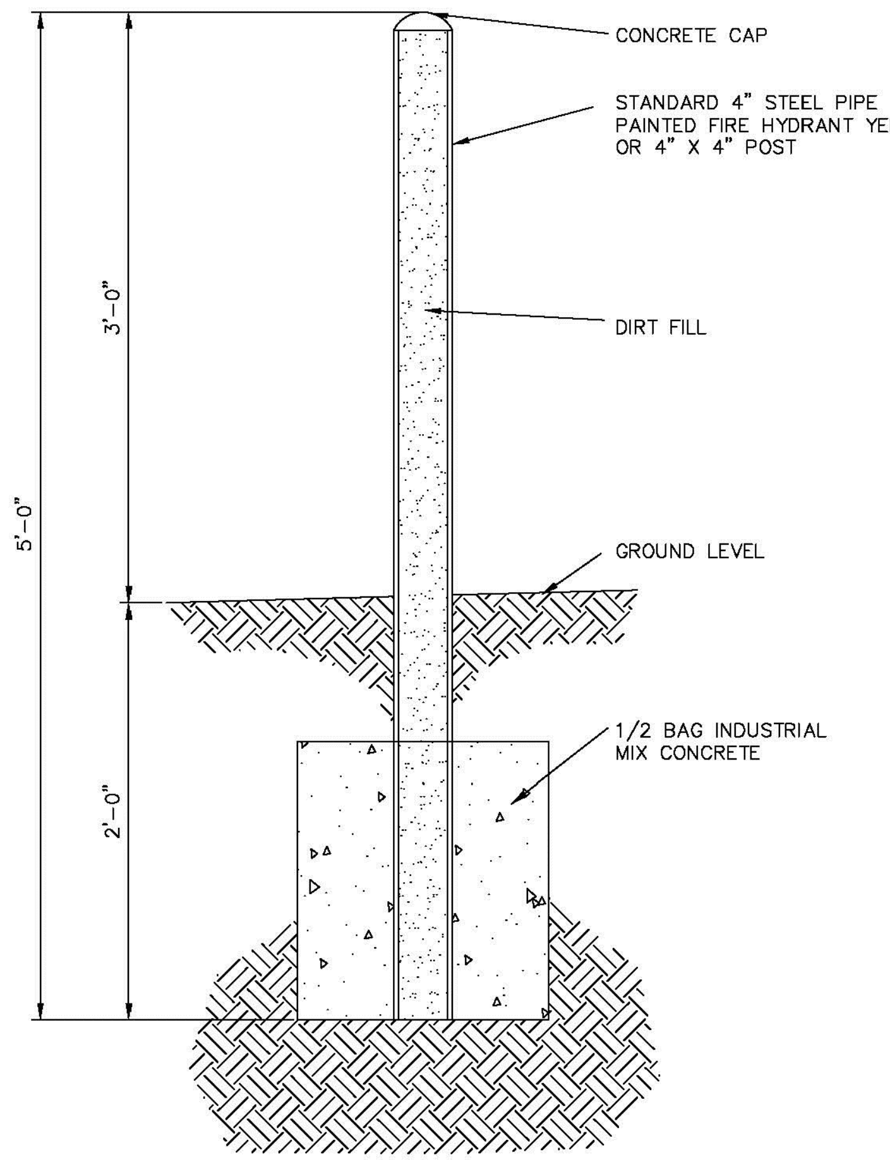
DRAWING NOT TO SCALE

PARKER WATER
& SANITATION DISTRICT

WATER QUALITY SAMPLING
STATION

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
2004
06/05
1/16
10/16

2016 REVISION
SHEET W6.2


CONCRETE CAP
STANDARD 4" STEEL PIPE PAINTED FIRE HYDRANT YELLOW OR 4" X 4" POST
DIRT FILL
GROUND LEVEL
1/2 BAG INDUSTRIAL MIX CONCRETE
5'-0"
3'-0"
2'-0"

MARKER POST DETAIL

STEEL PIPE
STENCILED IDENTIFICATION MARKS WITH BLACK PAINT 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. OR CUT NUMBERS INTO THE WOOD.

PARKER WATER
& SANITATION DISTRICT

MARKER POST

SCALE: NONE
DATE: 2/96
APPROVED: PVR
DIRECTOR OF ENGINEERING
2/00 10/16
4/01
12/07
1/16

2016 REVISION
SHEET W6.3

N:\PROJECTS\HESS RANCH\CAD\ENGINEERING\SHEET SETS\CD'S\F12\PARKER WATER AND SANITATION\F12 WATER DETAILS.DWG, CODYA, 6/17/2021 9:50 AM

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

No.	Revisions	Date	Init.	Appr.	Date

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Englewood, CO 80112
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westwoodps.com

CVL
a Westwood team

HR 935 LLC
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FILING 12 CONSTRUCTION DRAWINGS
WATER DETAILS

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: JF
CHECKED BY: JJJ
DATE: SEPTEMBER 2017
SHEET NUMBER
17