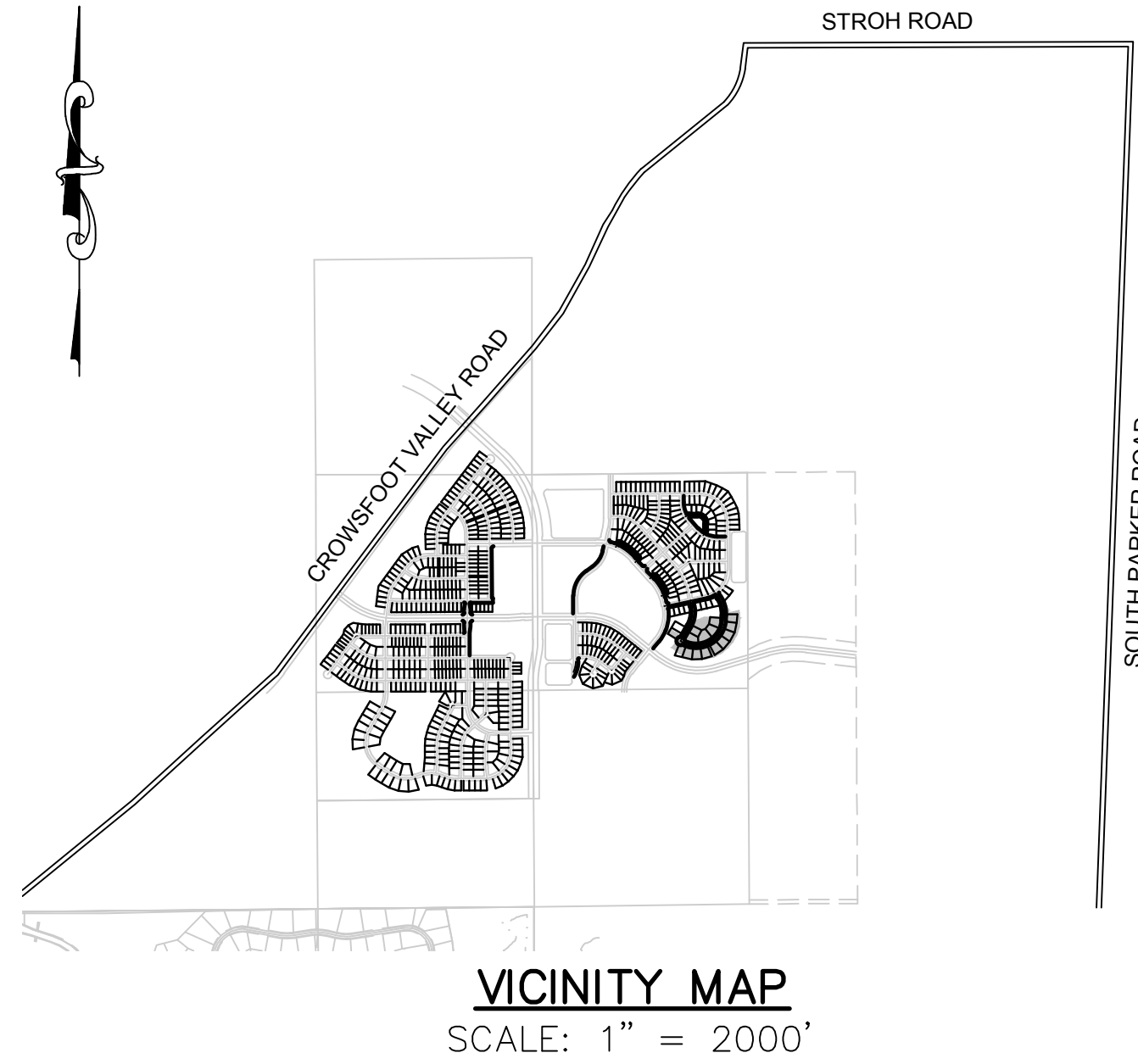


# TRAILS AT CROWFOOT

## FILING 12 UTILITY CONSTRUCTION PLANS

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

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	PARKER WATER AND SANITATION NOTES
3	AREA UTILITY PLAN
4	SANITARY P&P ALPINE PHLOX LANE
5	SANITARY P&P FIELD MINT LANE
6	WATER P&P ALPINE PHLOX LANE
7	WATER P&P FIELD MINT LANE
8	SANITARY SEWER DETAIL
9	SANITARY SEWER DETAIL
10	SANITARY SEWER DETAIL
11	WATER DETAILS
12	WATER DETAILS
13	WATER DETAILS
14	WATER DETAILS
15	WATER DETAILS
16	WATER DETAILS



MATERIALS LIST		
DESCRIPTION	QUANTITY	UNIT
8" WATERPIPE (C900)	1,494	L.F.
6" WATERPIPE (DIP-FIRE HYDRANT LINE)	40	L.F.
8" GATE VALVE W/ BOX	1	EA.
6" GATE VALVE W/ BOX	2	EA.
FIRE HYDRANT ASSEMBLY	2	EA.
8" BEND	12	EA.
8" TEE	2	EA.
WATER SERVICE LATERAL W/ WATER METER AND PIT	19	EA.
8" SEWER (SDR-35 PVC)	1,266	L.F.
4' DIA. MANHOLE	9	EA.
SEWER SERVICE LATERAL W/ WYE TAP	19	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.

(FIRE CODE OFFICIAL OR DESIGNATED REPRESENTATIVE) \_\_\_\_\_ DATE \_\_\_\_\_  
(NOTE- UNDERGROUND FIRE LINE (UFL) SUBMITTAL DOCUMENTS MUST MEET THE REQUIREMENTS OF NFPA24 WHEN SUBMITTING FOR REVIEW.)

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

REVIEWED FOR CONFORMANCE TO PARKER WATER AND SANITATION DISTRICT STANDARDS.

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

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

APPROVED FOR CONSTRUCTION:  
PARKER WATER AND SANITATION DISTRICT

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

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

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

### DEVELOPER

**E5X MANAGEMENT**  
7353 SOUTH ALTON WAY  
CENTENNIAL, CO 80112  
TEL: (303) 770-9111  
CONTACT: MATT JANKE

### PLANNER/ LANDSCAPE DESIGNER:

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

### SURVEYOR/ ENGINEER:

**CVL CONSULTANTS  
OF COLORADO, INC.**  
10333 E. DRY CREEK RD. STE 240  
ENGLEWOOD, CO 80112  
TEL: (720) 482-9526  
CONTACT: JIM JANNICKE

### UTILITY DISTRICT

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

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

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

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

DATE	REVISIONS	NO.	DATE	INIT.	APPR.	DATE

10333 E. Dry Creek Rd.  
Suite 240  
Englewood, Colorado 80112  
Tel: (720) 482-9526  
Fax: (720) 482-9546

**CVL CONSULTANTS**

**ESX MANAGEMENT**  
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: JJ  
DATE: SEPTEMBER 2017

SHEET NUMBER **1**

N:\PROJECTS\BENCHMARCH\ENGINEERING\DRAWINGS\SET\DCSD\SP\2017\2017-PARKER WATER AND SANITATION\FILING 12 COVER.DWG, CDDVA, 9/12/2017 1:15 PM



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**CALL 811**  
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UTILITY NOTIFICATION CENTER OF COLORADO

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(FIRE CODE OFFICIAL OR DESIGNATED REPRESENTATIVE) \_\_\_\_\_ DATE \_\_\_\_\_  
(NOTE: UNDERGROUND FIRE LINE (UFL) SUBMITTAL DOCUMENTS MUST MEET THE REQUIREMENTS OF NFPA24 WHEN SUBMITTING FOR REVIEW.)

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PREPARED UNDER THE SUPERVISION OF

BRIAN P. WILSON  
 COLORADO P.E. 0050067

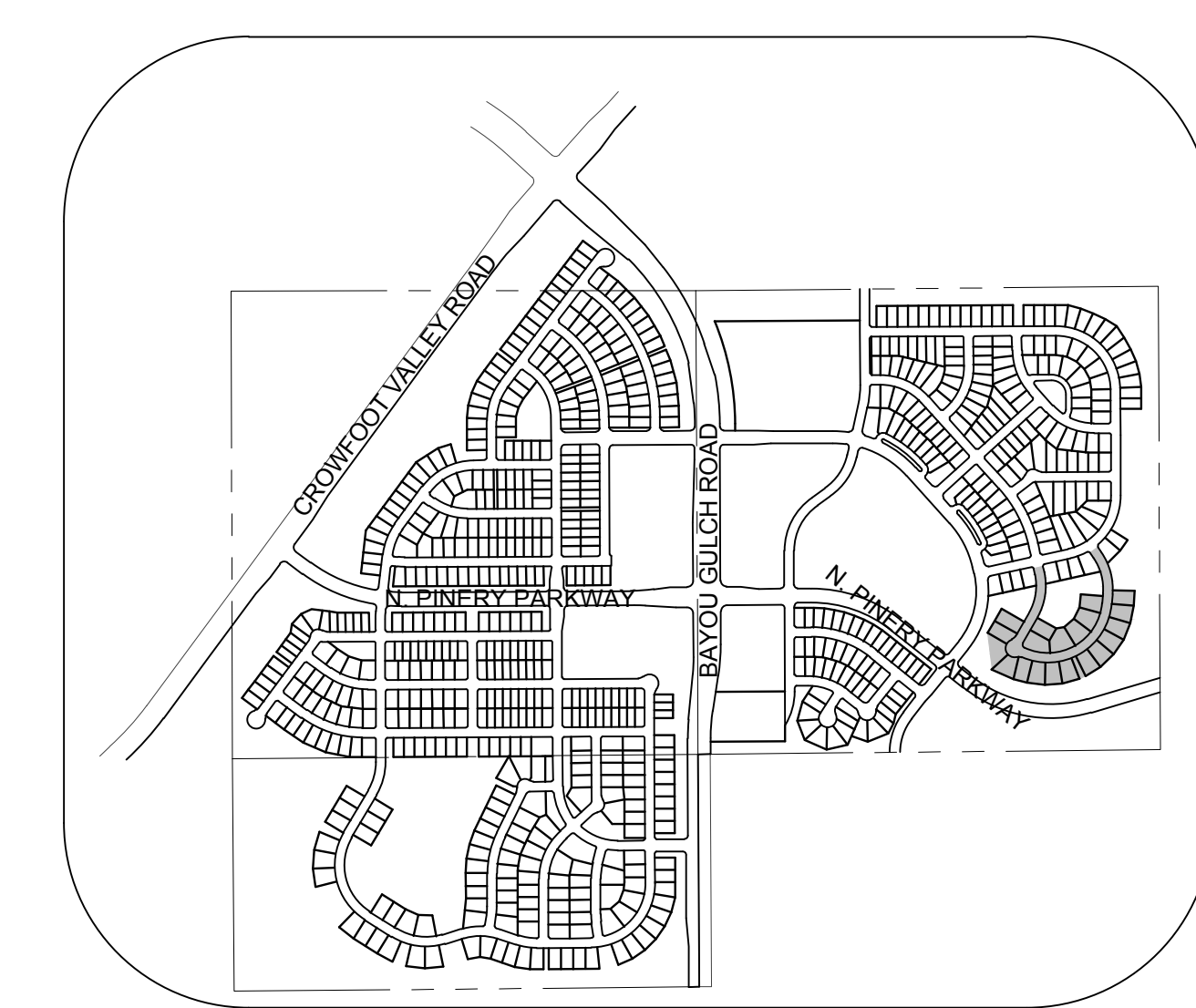
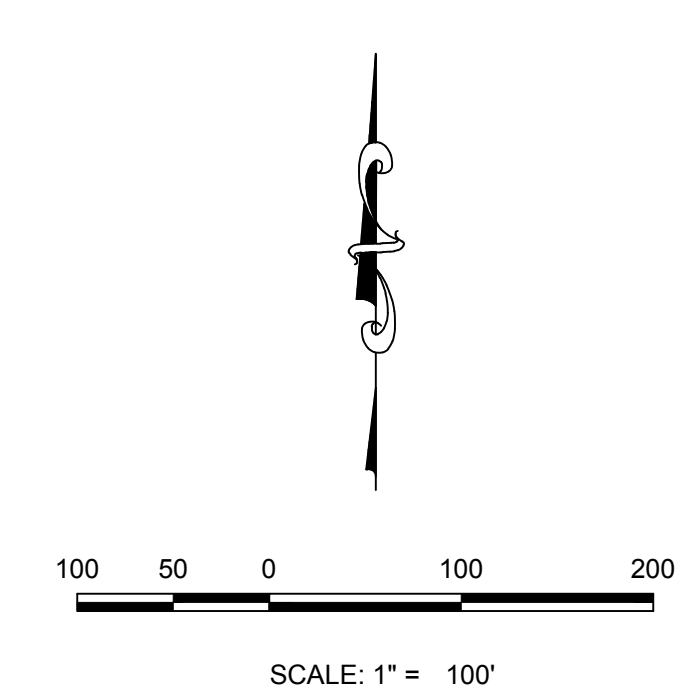
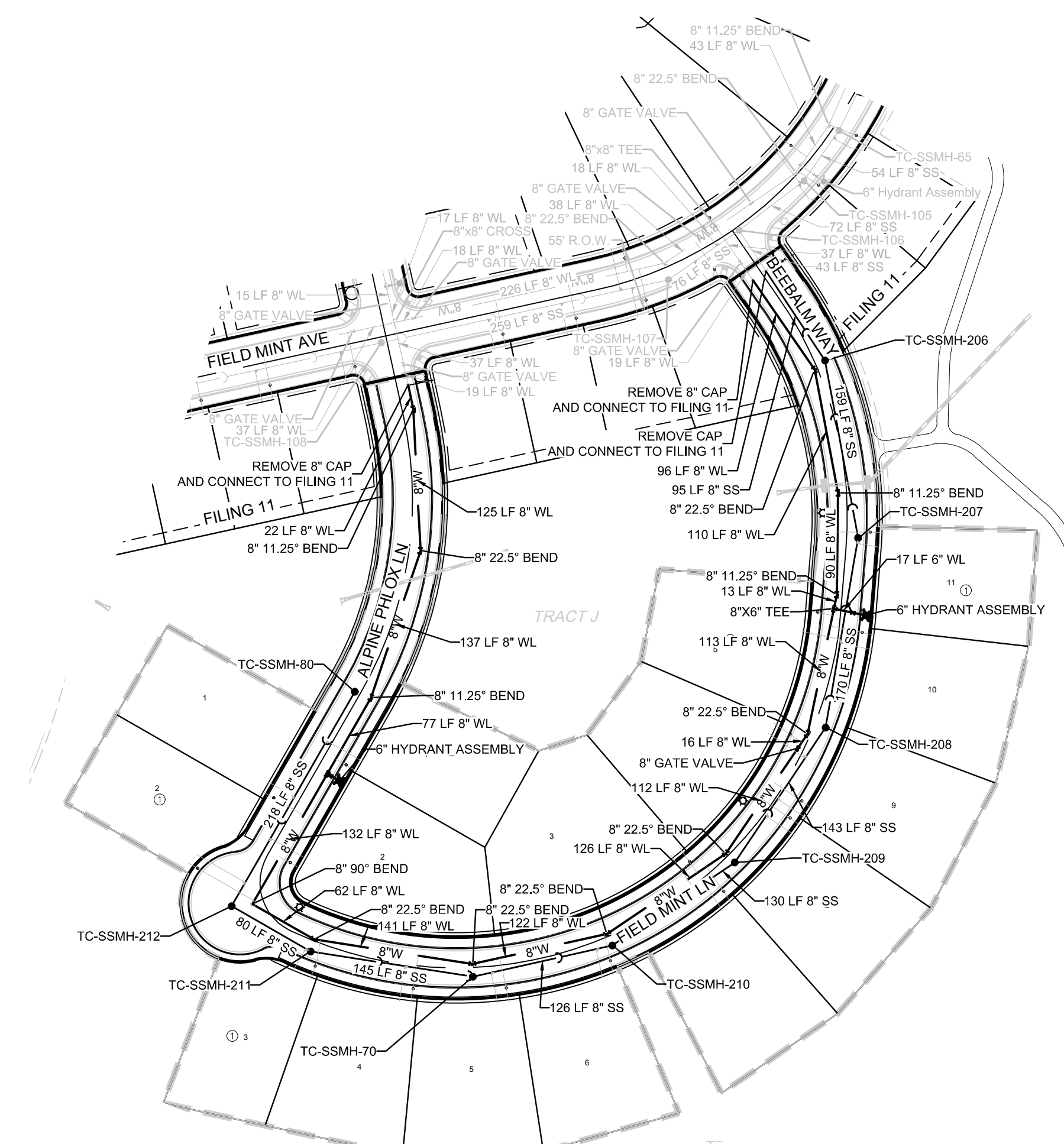
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REVIEWED FOR CONFORMANCE TO PARKER WATER AND SANITATION DISTRICT STANDARDS.

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

APPROVED FOR CONSTRUCTION:  
 PARKER WATER AND SANITATION DISTRICT

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



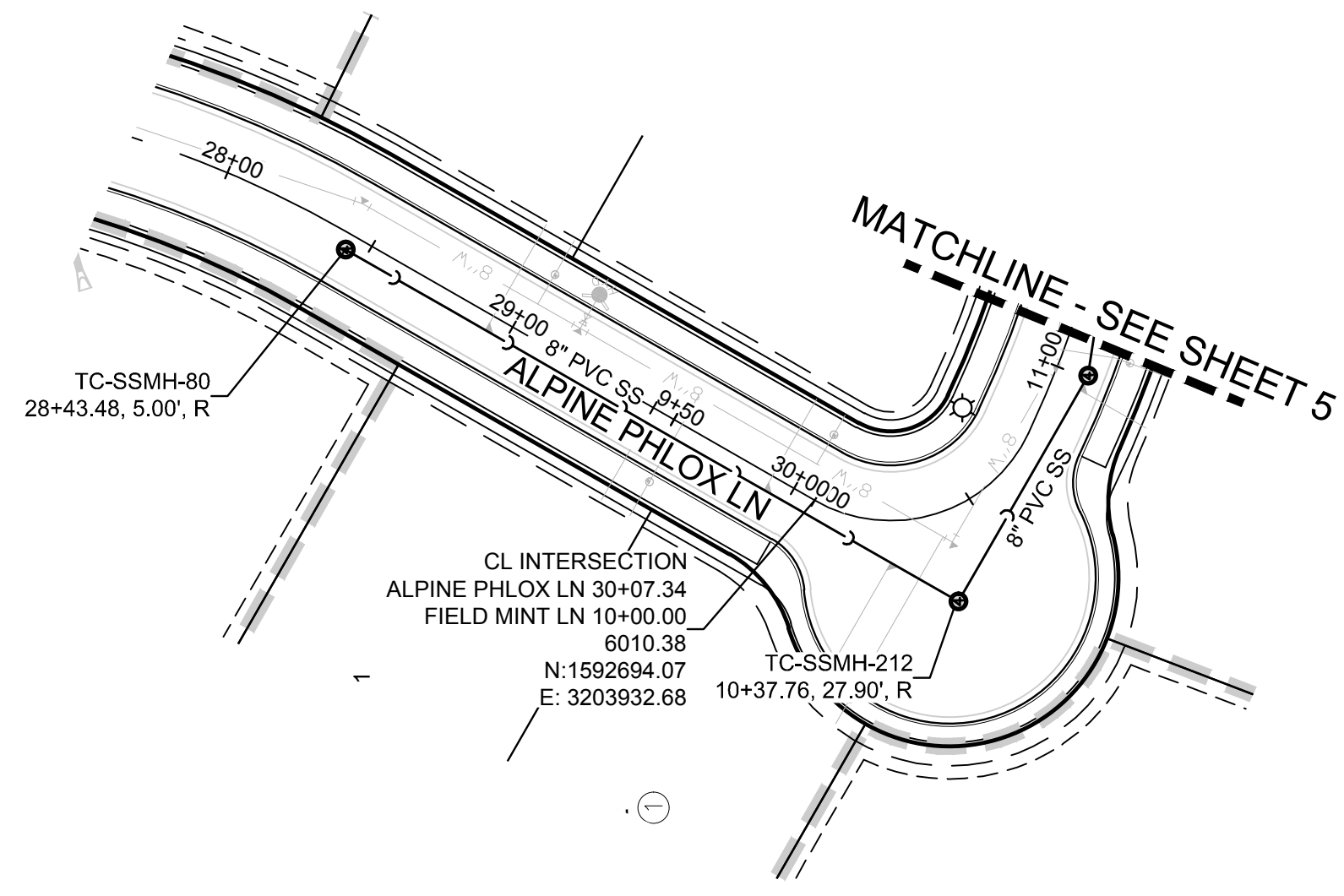
**KEYMAP**  
 N.T.S.  
**LEGEND**

②	BLOCK NUMBER	△	PROPOSED RANGE POINT
Ⓐ	LOT TYPE	---	CENTERLINE
6	LOT NUMBER	---	RIGHT-OF-WAY
ⓧ	PROPOSED BUTTERFLY VALVE	---	PROPERTY LINE
Ⓜ	PROPOSED CAP WITH END OF LINE BLOWOFF	---	EDGE OF PAVEMENT
Ⓜ	PROPOSED REDUCER	→	PROPOSED DIRECTION OF FLOW
Ⓜ	PROPOSED VALVE	1.0%	PROPOSED SLOPE & DIRECTION
Ⓜ	PROPOSED FIRE HYDRANT	5615	EXISTING 5' CONTOUR
Ⓜ	PROPOSED WL FITTING WITH THRUST BLOCK	5616	EXISTING 1' CONTOUR
Ⓜ	PROPOSED FLARED END SECTION	5620	PROPOSED 5' CONTOUR
Ⓜ	PROPOSED LOW POINT BLOW-OFF	5607	PROPOSED 1' CONTOUR
Ⓜ	PROPOSED AIR VALVE	---	PROPOSED STORM DRAIN
Ⓜ	EXISTING BLOW OFF VALVE	---	PROPOSED SEWER LINE WITH MANHOLE
Ⓜ	EXISTING VALVE	---	PROPOSED SEWER LATERAL WITH METER
Ⓜ	EXISTING FIRE HYDRANT	---	PROPOSED WATER LATERAL W/ METER
Ⓜ	PROPOSED LIGHT POLE	---	EXISTING 60" RAW WATER LINE
Ⓜ	PROPOSED SIDEWALK RAMP	---	SECTION LINE
10.00	EXISTING ELEVATION	---	FILING BOUNDARY
10.00	PROPOSED DESIGN ELEVATION	---	EXISTING FIBER OPTIC LINE
Ⓜ	PROPOSED STORM DRAIN INLET	---	EXISTING OVERHEAD HIGH VOLTAGE LINE
Ⓜ	PROPOSED STORM DRAIN MANHOLE	---	EXISTING TELEPHONE LINE

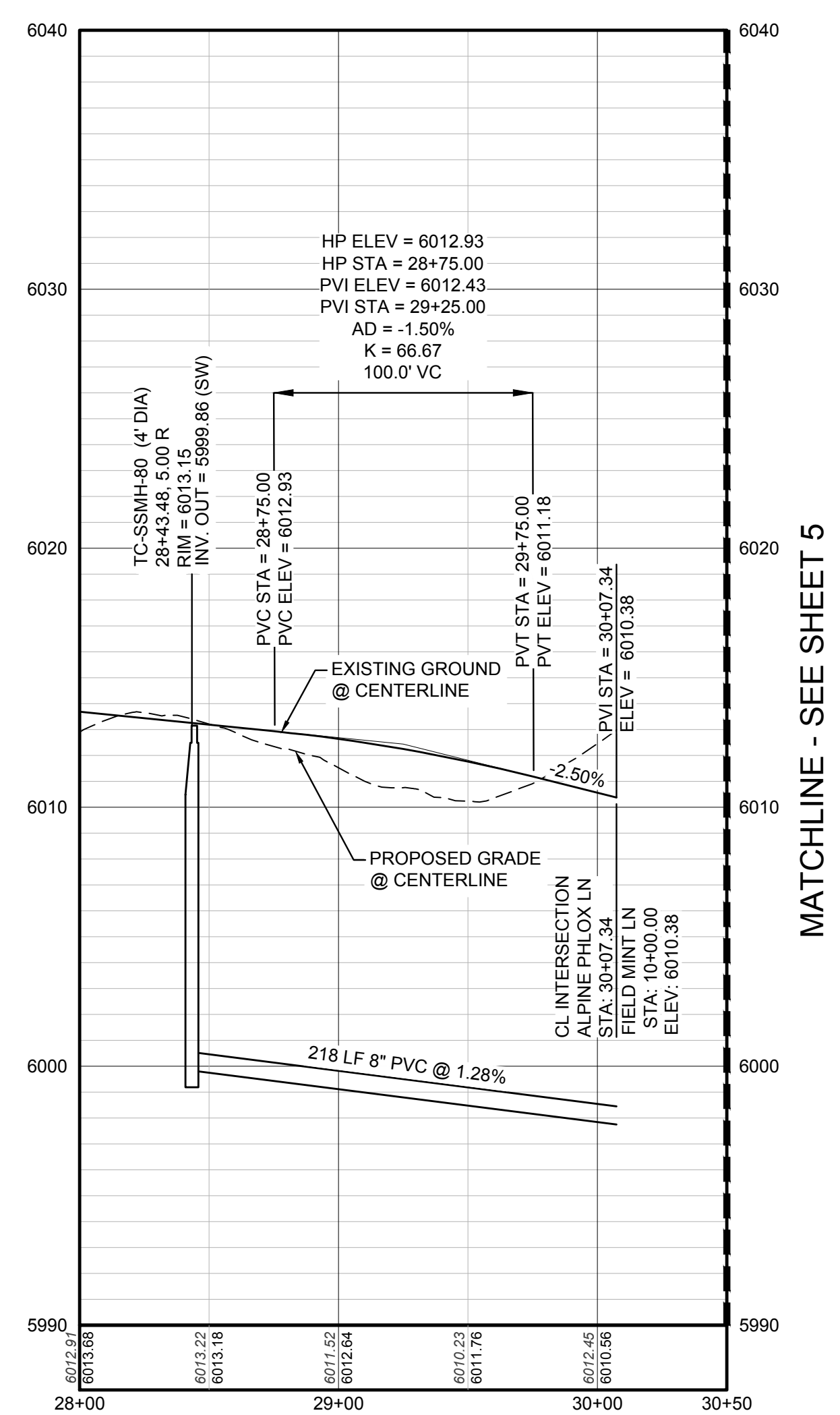
**ABBREVIATIONS**

AD	ANGLE DIFFERENCE	N.T.S.	NOT TO SCALE
BVC	BEGIN VERTICAL CURVE	PL	PROPERTY LINE
BVP	BEGIN VERTICAL PROFILE	PVC	POLYVINYL CHLORIDE
CRR	CURB RETURN RADIUS	PVI	PT. OF VERTICAL INTERSECTION
EL	ELEVATION	PVT	POINT OF VERTICAL TANGENT
EP	EDGE OF PAVEMENT	RCBC	REINFORCED CONCRETE BOX CULVERT
EVC	END VERTICAL CURVE	RCP	REINFORCED CONCRETE PIPE
EVP	END VERTICAL PROFILE	ROW	RIGHT OF WAY
FG	FINISHED GROUND	SD	STORM DRAIN
FL	FLOW LINE	SL	SECTION LINE
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HA	HYDRANT ASSEMBLY	STA	STATION
HCR	HANDICAP CURB RAMP	T.O.P.	TOP OF PIPE
HP	HIGH POINT	UE	UTILITY EASEMENT
INV	INVERT	VC	VERTICAL CURVE
K	CURVATURE COEFFICIENT	WL	WATER LINE
LF	LINEAR FEET	WSE	WATER SURFACE ELEVATION
MH	MANHOLE		

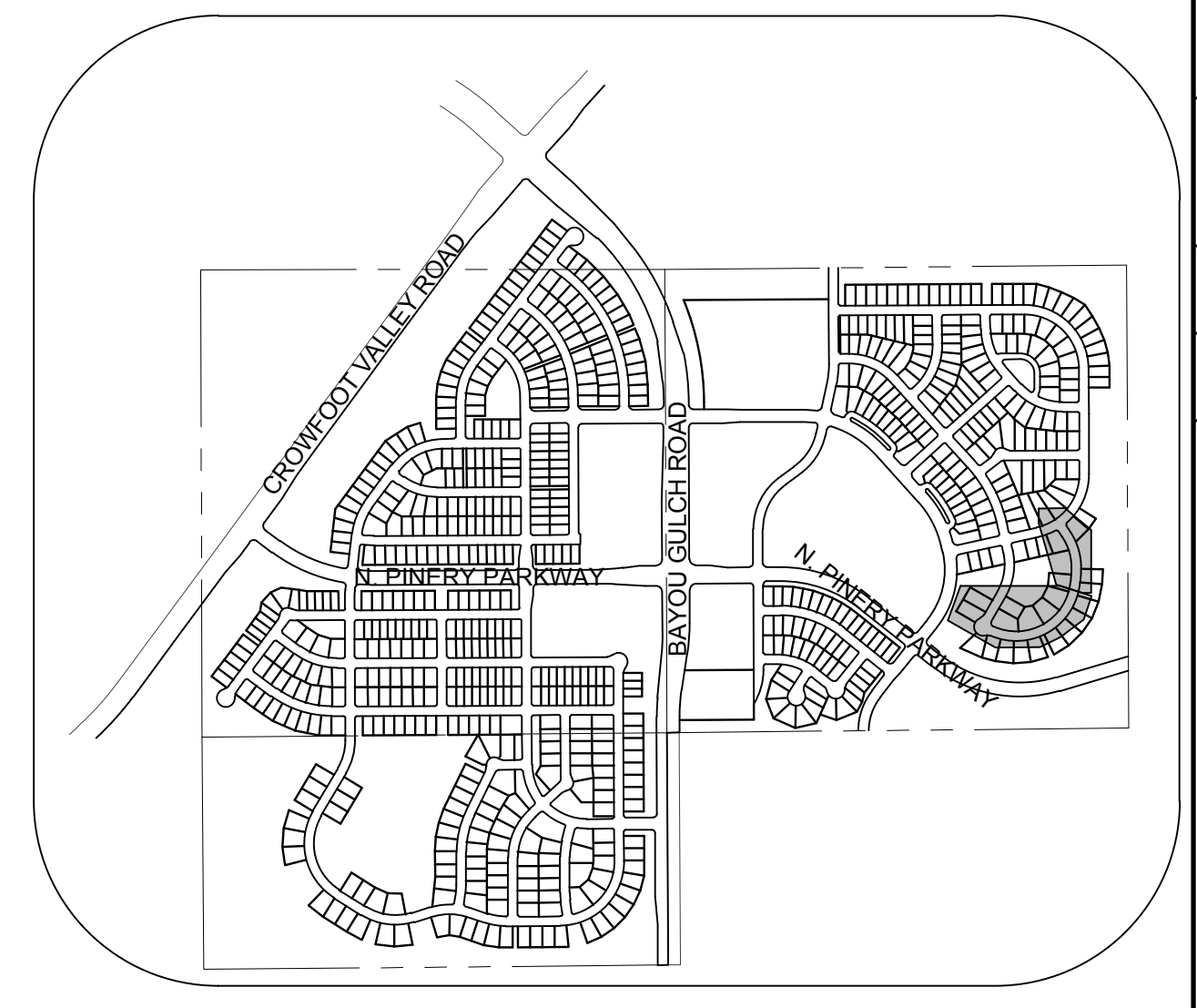
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		CHECKED BY: <b>JLJ</b>	DATE: <b>SEPTEMBER 2017</b>	
3	DATE: <b>SEPTEMBER 2017</b>	TRAILS AT CROWFOOT FILING 12 CONSTRUCTION DRAWINGS AREA UTILITY PLAN		
		ESX MANAGEMENT 7353 South Alton Way CENTENNIAL, CO 80112		
Revisions	No.	Date	Appr.	Date



PLAN: ALPINE PHLOX LANE STA: 28+00.00 TO 30+50.00  
HORIZONTAL SCALE: 1" = 50'



PROFILE: ALPINE PHLOX LN STA: 28+00.00 TO 30+50.00  
HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'



KEYMAP  
N.T.S.

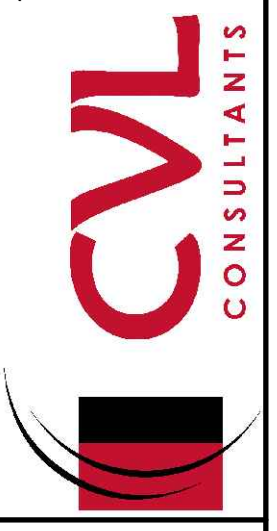
**LEGEND**

②	BLOCK NUMBER	△	PROPOSED RANGE POINT
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⊞	PROPOSED LIGHT POLE	---	PROPOSED WATER LATERAL W/ METER
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10.00	EXISTING ELEVATION	---	FILING BOUNDARY
10.00	PROPOSED DESIGN ELEVATION	---	EXISTING FIBER OPTIC LINE
⊞	PROPOSED STORM DRAIN INLET	---	EXISTING OVERHEAD HIGH VOLTAGE LINE
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**ABBREVIATIONS**

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MH	MANHOLE		

10333 E. Dry Creek Rd.  
Suite 110  
Englewood, CO 80110  
Tel: (720) 482-9526  
Fax: (720) 482-9546



**ESX MANAGEMENT**  
7353 South Alton Way  
CENTENNIAL, CO 80112

**TRAILS AT CROWFOOT**  
FILING 12 CONSTRUCTION DRAWINGS  
SANITARY SEWER PLAN AND PROFILE  
ALPINE PHLOX LANE

SCALE: AS SHOWN  
DRAWN BY: JLR  
CHECKED BY: JJ  
DATE: SEPTEMBER 2017  
FILE NO: 8130283701

SHEET NUMBER **4**

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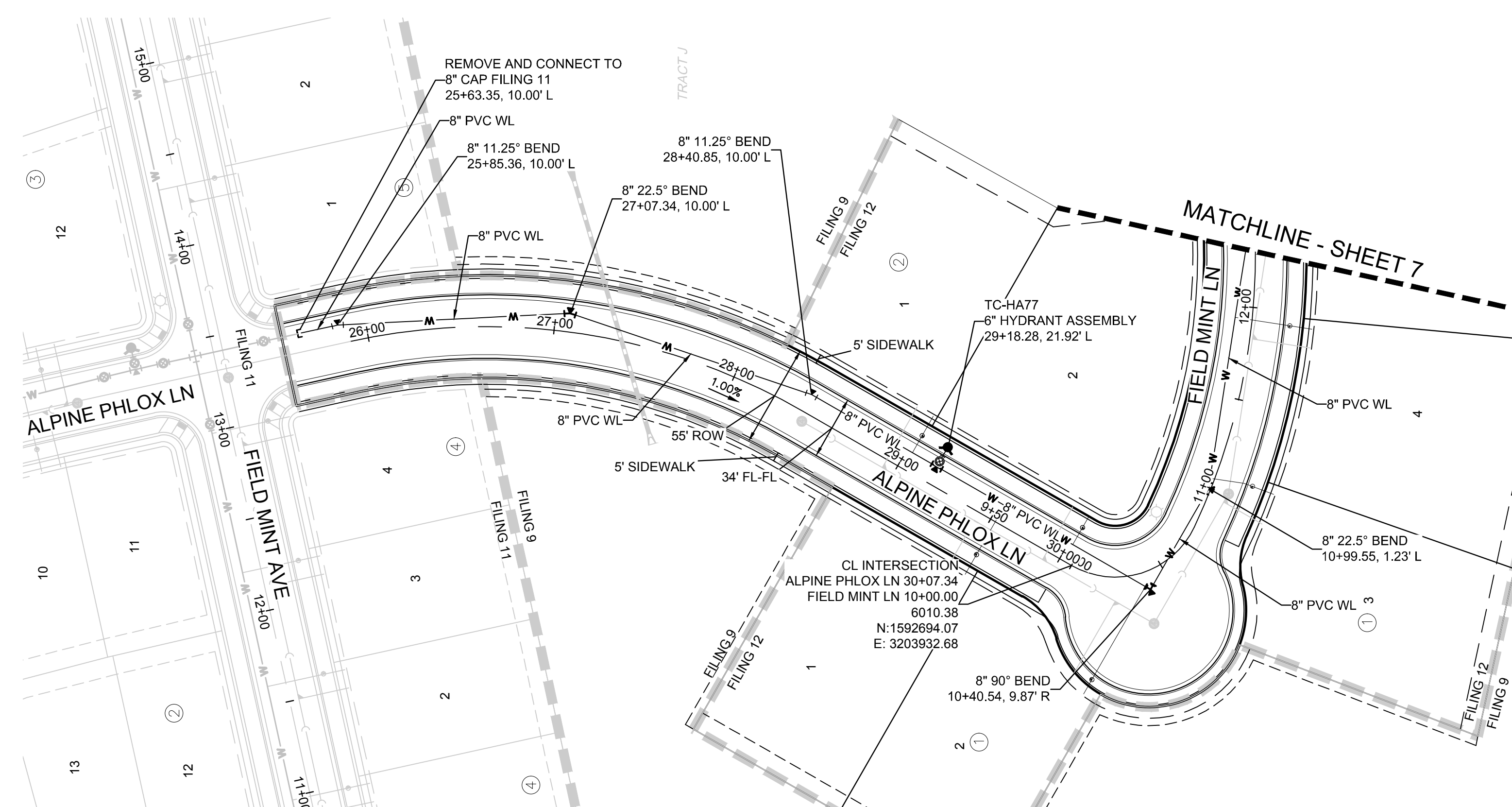
CALL 811  
TWO WORKING DAYS  
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UNCC 1-800-922-1987  
UTILITY NOTIFICATION CENTER OF COLORADO

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

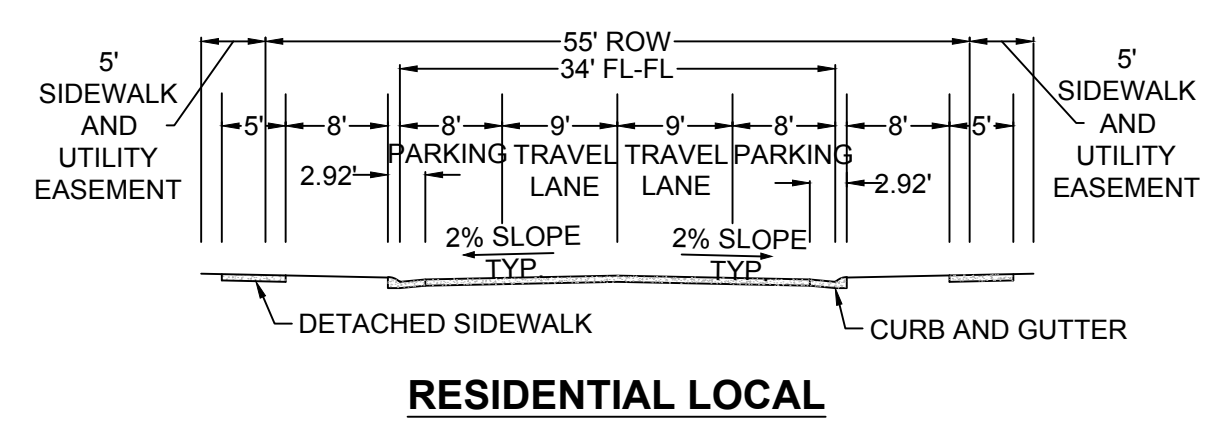
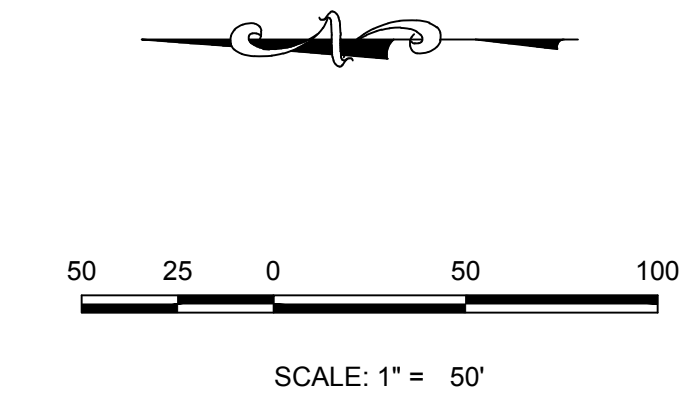
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PREPARED UNDER THE SUPERVISION OF  
  
BRIAN P. WILSON  
COLORADO P.E. 0050067

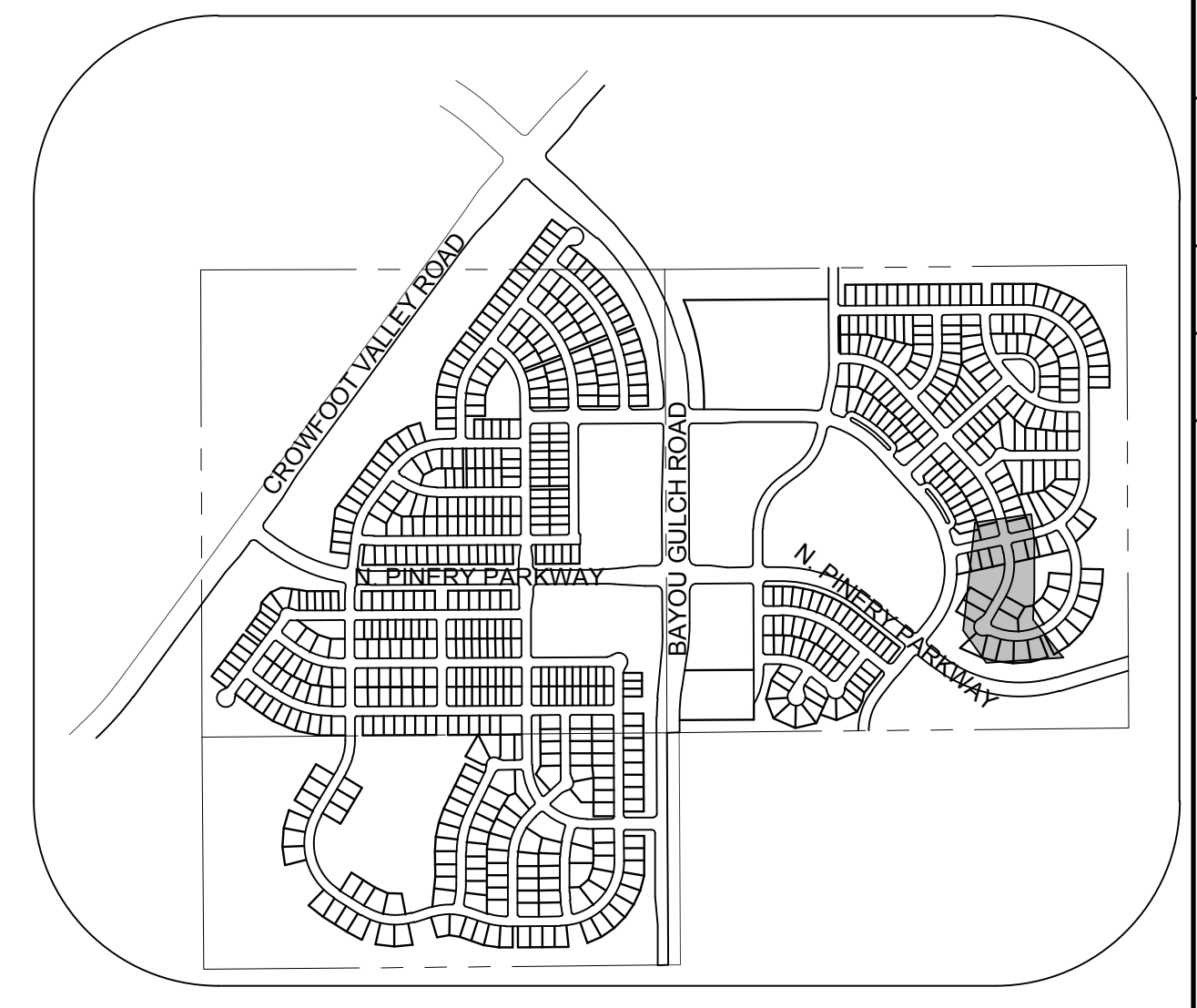




PLAN: FIELD MINT LN STA: 25+00.00 TO 30+50.00  
HORIZONTAL SCALE: 1" = 50'



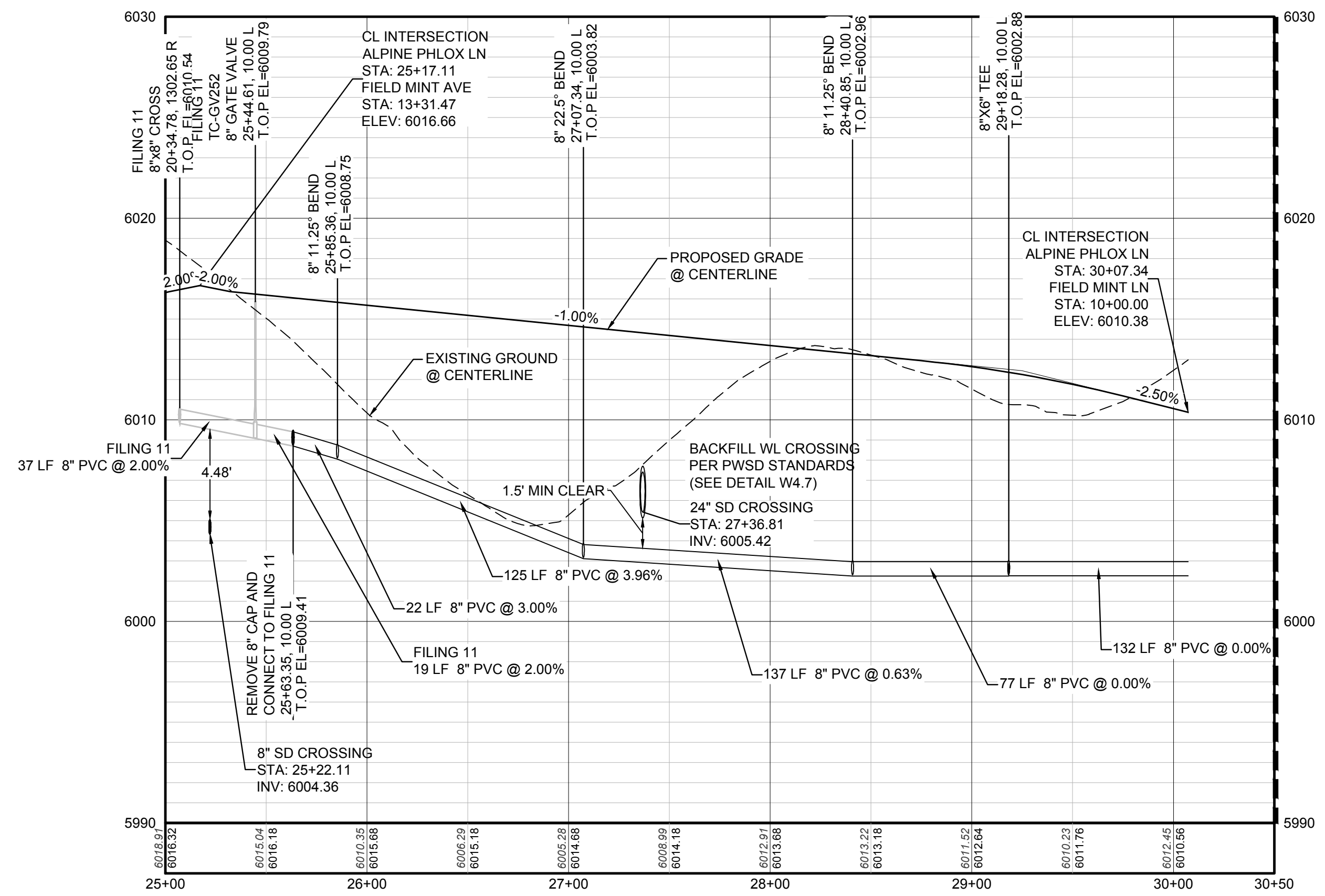
RESIDENTIAL LOCAL



KEYMAP  
N.T.S.

LEGEND			
②	BLOCK NUMBER	△	PROPOSED RANGE POINT
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⊗	PROPOSED REDUCER	→	PROPOSED DIRECTION OF FLOW
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10.00	PROPOSED DESIGN ELEVATION	---	FO
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		---	EXISTING TELEPHONE LINE

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PROFILE: ALPINE PHLOX LN STA: 25+00.00 TO 30+50.00  
HORIZONTAL: 1" = 50'  
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**BENCHMARK**  
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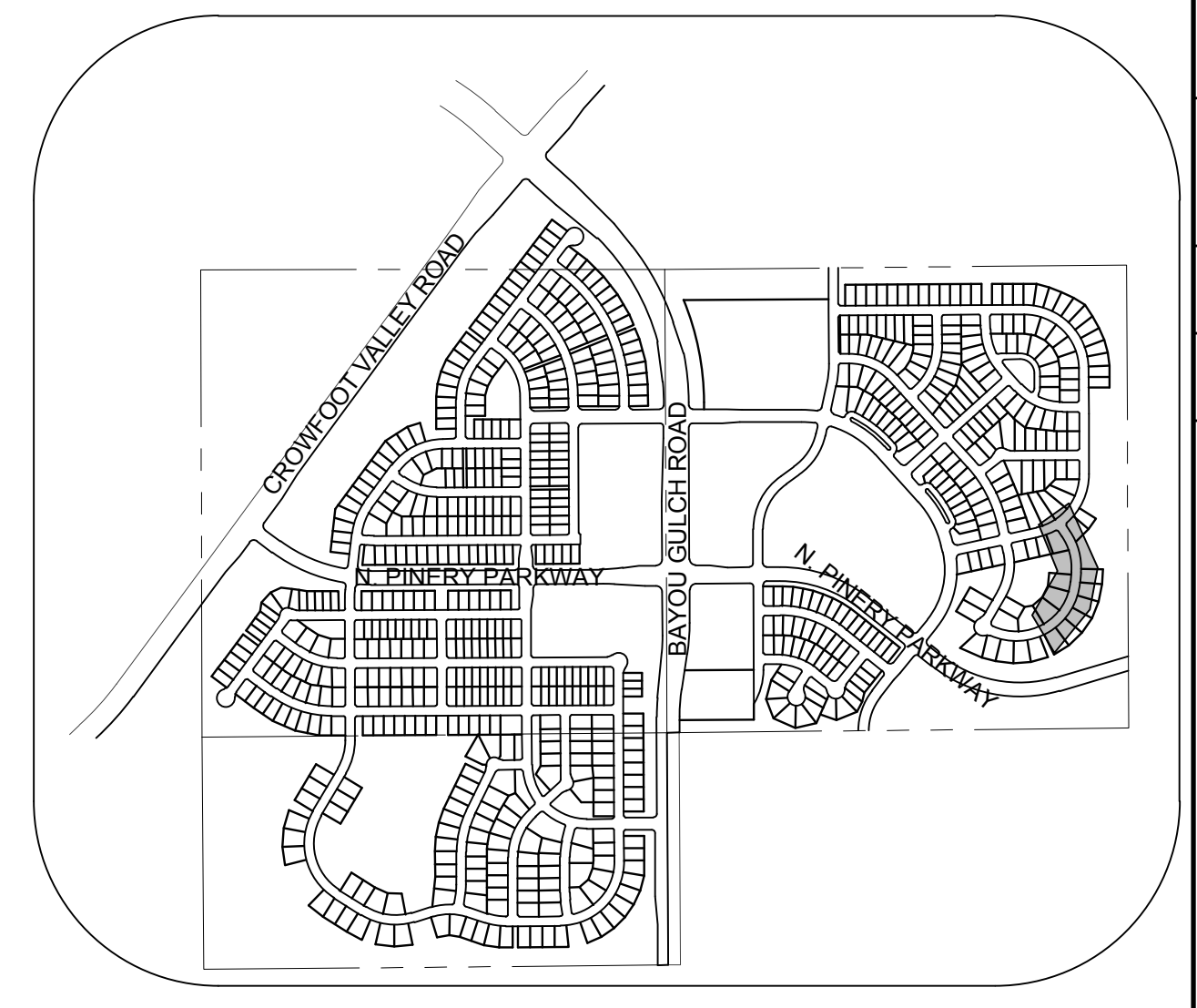
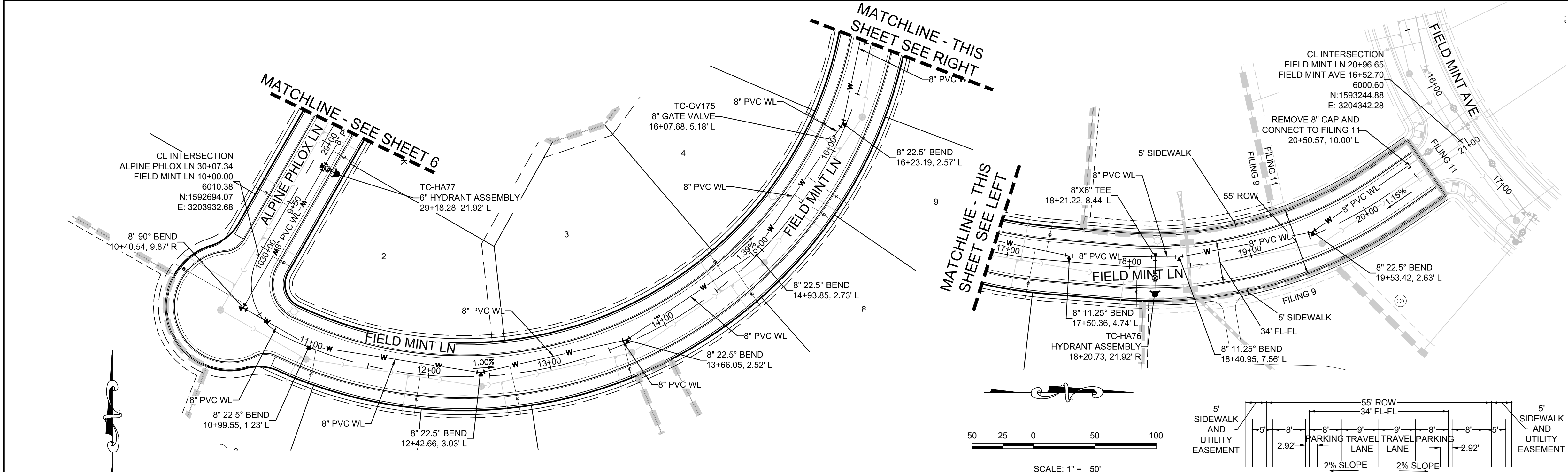
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PREPARED UNDER THE SUPERVISION OF  
  
BRIAN P. WILSON  
COLORADO P.E. 0050067

N:\PROJECTS\SSR\BENCHM\ENGINEERING\SSR\BENCHM\WATER AND SANITATION\WATER PLAN AND PROFILE\BENCHM\WATER.DWG, CDDVA, 01/12/2017, 1:18 PM

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UTILITY NOTIFICATION CENTER OF COLORADO

SHEET NUMBER	DRAWN BY: RHR	SCALE: AS SHOWN	DATE: SEPTEMBER 2017	Revisions	Date	Appr.	Date
				No.			
6	CHECKED BY: JU	FILE NO: 8130283701		EXS MANAGEMENT 7353 South Alton Way CENTENNIAL, CO 80112			
				CVL CONSULTANTS 10333 E. Dry Creek Rd. Suite 6410 Englewood, CO 80110 Tel: (720) 482-9526 Fax: (720) 482-9546			

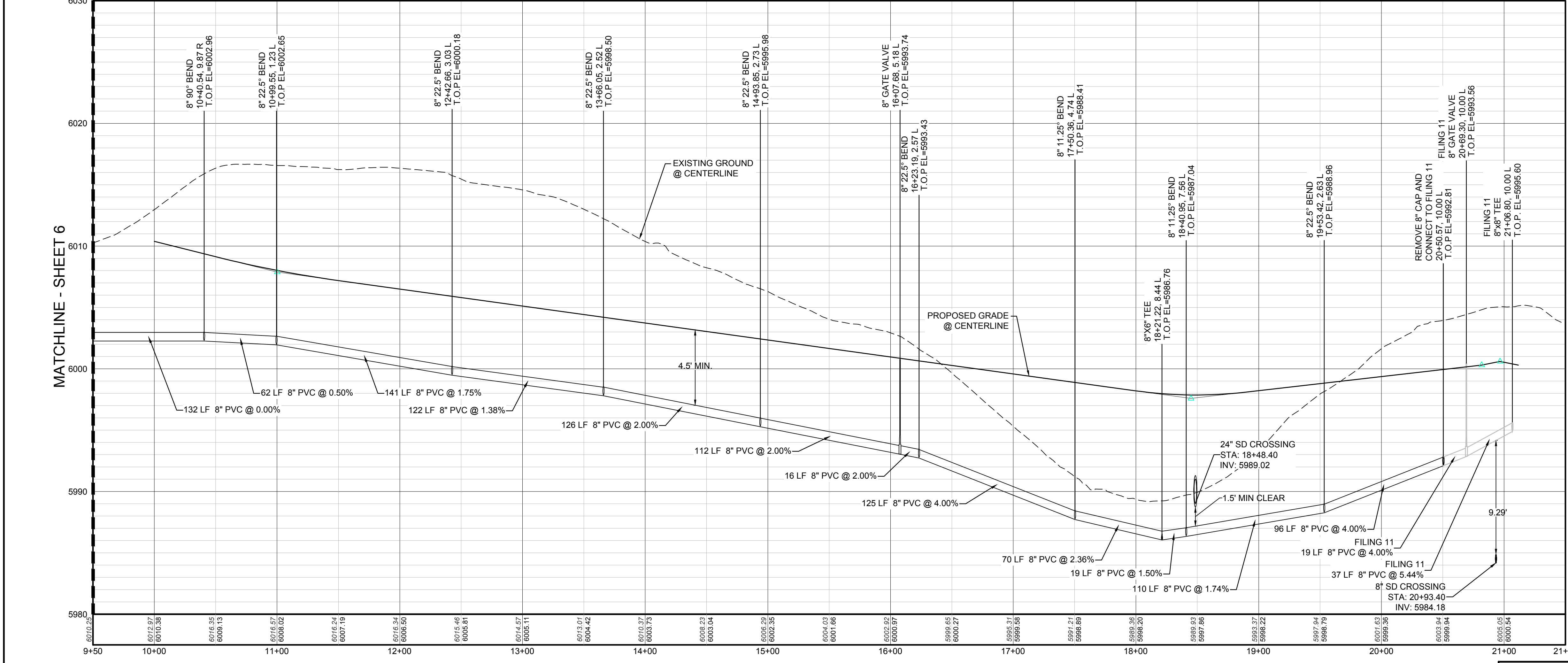


KEYMAP  
N.T.S.

PLAN: FIELD MINT LN STA: 9+50.00 TO 21+50.00  
HORIZONTAL SCALE: 1" = 50'



RESIDENTIAL LOCAL



PROFILE: FIELD MINT LN STA: 9+50.00 TO 21+50.00  
HORIZONTAL: 1" = 50'  
VERTICAL: 1" = 5'

**LEGEND**

②	BLOCK NUMBER	△	PROPOSED RANGE POINT
Ⓐ	LOT TYPE	---	CENTERLINE
6	LOT NUMBER	---	RIGHT-OF-WAY
⊠	PROPOSED BUTTERFLY VALVE	---	PROPERTY LINE
⊞	PROPOSED CAP WITH END OF LINE BLOWOFF	---	EDGE OF PAVEMENT
⊞	PROPOSED REDUCER	→	PROPOSED DIRECTION OF FLOW
⊞	PROPOSED VALVE	1.0%	PROPOSED SLOPE & DIRECTION
⊞	PROPOSED FIRE HYDRANT	5615	EXISTING 5' CONTOUR
⊞	PROPOSED WL FITTING WITH THRUST BLOCK	5616	EXISTING 1' CONTOUR
⊞	PROPOSED FLARED END SECTION	5620	PROPOSED 5' CONTOUR
⊞	PROPOSED LOW POINT BLOW-OFF	5607	PROPOSED 1' CONTOUR
⊞	PROPOSED AIR VALVE	---	PROPOSED STORM DRAIN
⊞	EXISTING BLOW OFF VALVE	---	PROPOSED SEWER LINE WITH MANHOLE
⊞	EXISTING VALVE	---	PROPOSED SEWER LATERAL
⊞	EXISTING FIRE HYDRANT	---	PROPOSED WATER LINE
⊞	PROPOSED LIGHT POLE	---	PROPOSED WATER LATERAL W/ METER
⊞	PROPOSED SIDEWALK	---	EXISTING 60" RAW WATER LINE
⊞	PROPOSED SIDEWALK RAMP	---	SECTION LINE
10.00	EXISTING ELEVATION	---	FILING BOUNDARY
10.00	PROPOSED DESIGN ELEVATION	---	EXISTING FIBER OPTIC LINE
⊞	PROPOSED STORM DRAIN INLET	---	EXISTING OVERHEAD HIGH VOLTAGE LINE
⊞	PROPOSED STORM DRAIN MANHOLE	---	EXISTING TELEPHONE LINE

**ABBREVIATIONS**

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

10333 E. Dry Creek Rd.  
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**ESX MANAGEMENT**  
7353 South Alton Way  
CENTENNIAL, CO 80112

**TRAILS AT CROWFOOT**  
FILING 12 CONSTRUCTION DRAWINGS  
WATER PLAN & PROFILE  
FIELD MINT LANE

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

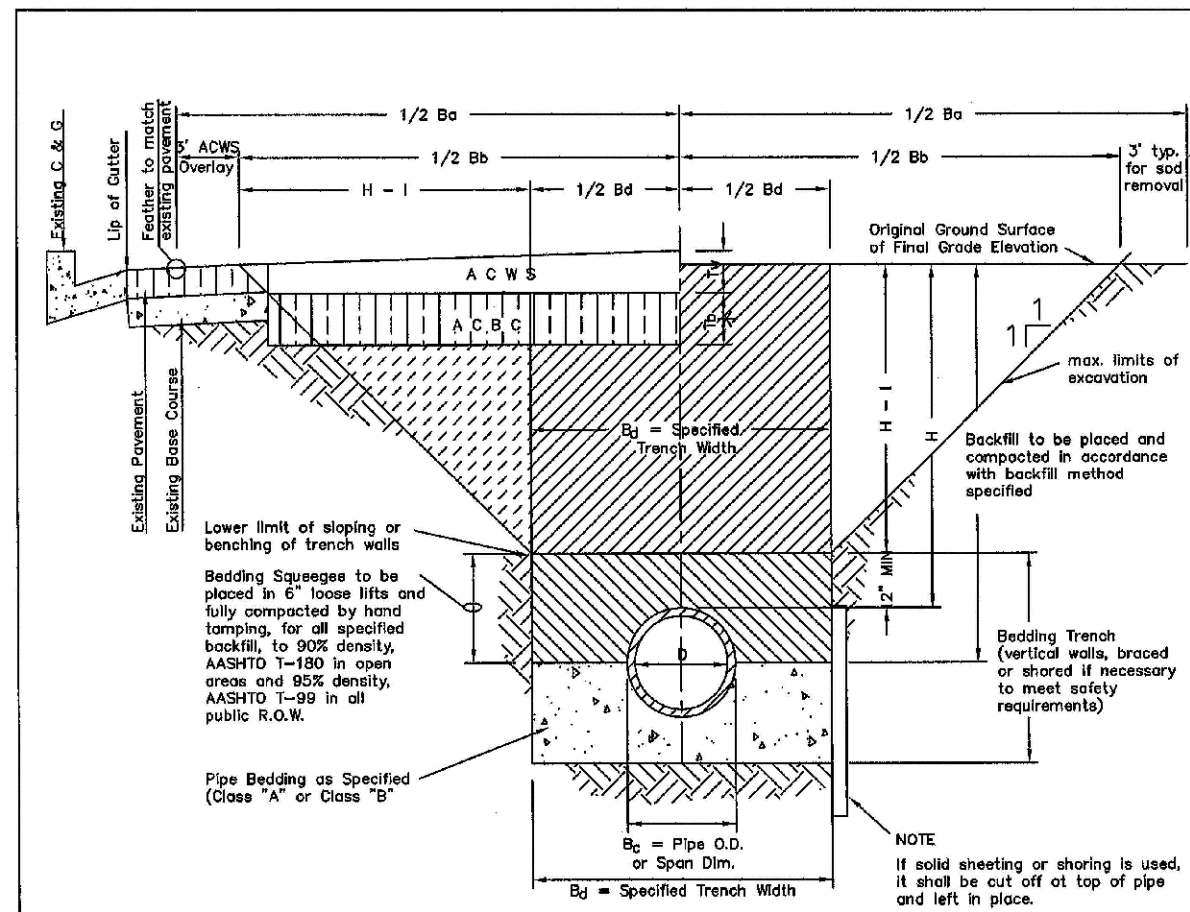
SHEET NUMBER: 7  
FILE NO: 8130283701

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

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

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



TYPICAL TRENCH DETAIL

**NOTES**

- Shoring or bracing of trench walls shall be provided in accordance with applicable Federal, State and Local safety regulations.
- Trench shall be braced and shored on both sides to prevent adjacent utilities, structures, etc. from shifting or settling. Unless otherwise specified on the plans, no pavement will be made for removal, replacement or relocation of curb and gutter, utilities, adjacent structures, etc. outside the maximum limits of excavation as shown and the contractor shall be responsible for protection of same.
- If dimension  $T_{20}$  is  $\leq 2'$ , then existing curbside pavement shall be removed and replaced up to the gutter. Maximum asphalt for  $T_{20}$  is 4" and shall then be based upon this actual width.

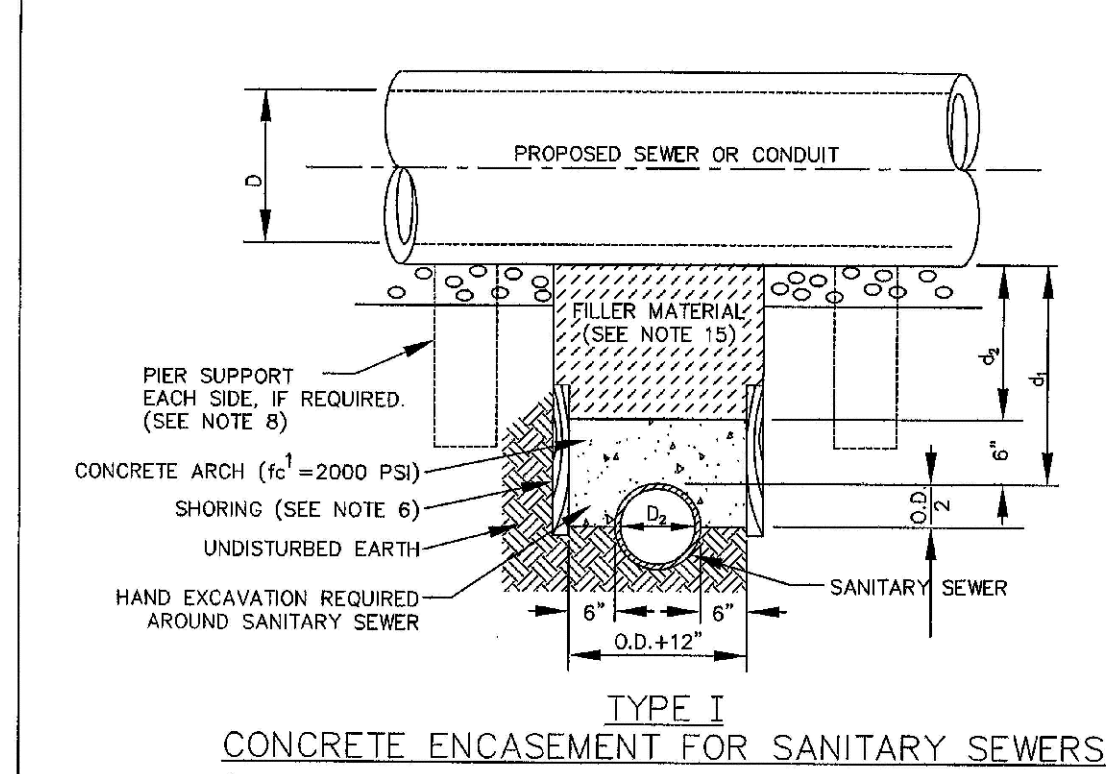
**TABLE I**  
ASPHALT AND BASE COURSE REPLACEMENT SCHEDULE

STREET WIDTH	ASPHALTIC BASE COURSE (A)	ASPHALTIC WEARING SURFACE (B)	TOTAL THICKNESS (A+B)
UP TO 30'	4"	2"	6"
36" TO 44"	4"	3"	7"
44" TO 48"	5"	3"	8"
WIDER THAN 48"	6"	3"	9"

**PARKER WATER & SANITATION DISTRICT  
SEWER TRENCHING AND BEDDING DETAIL**

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

2008 REVISION



TYPE I CONCRETE ENCASEMENT FOR SANITARY SEWERS (CONCRETE ARCH)

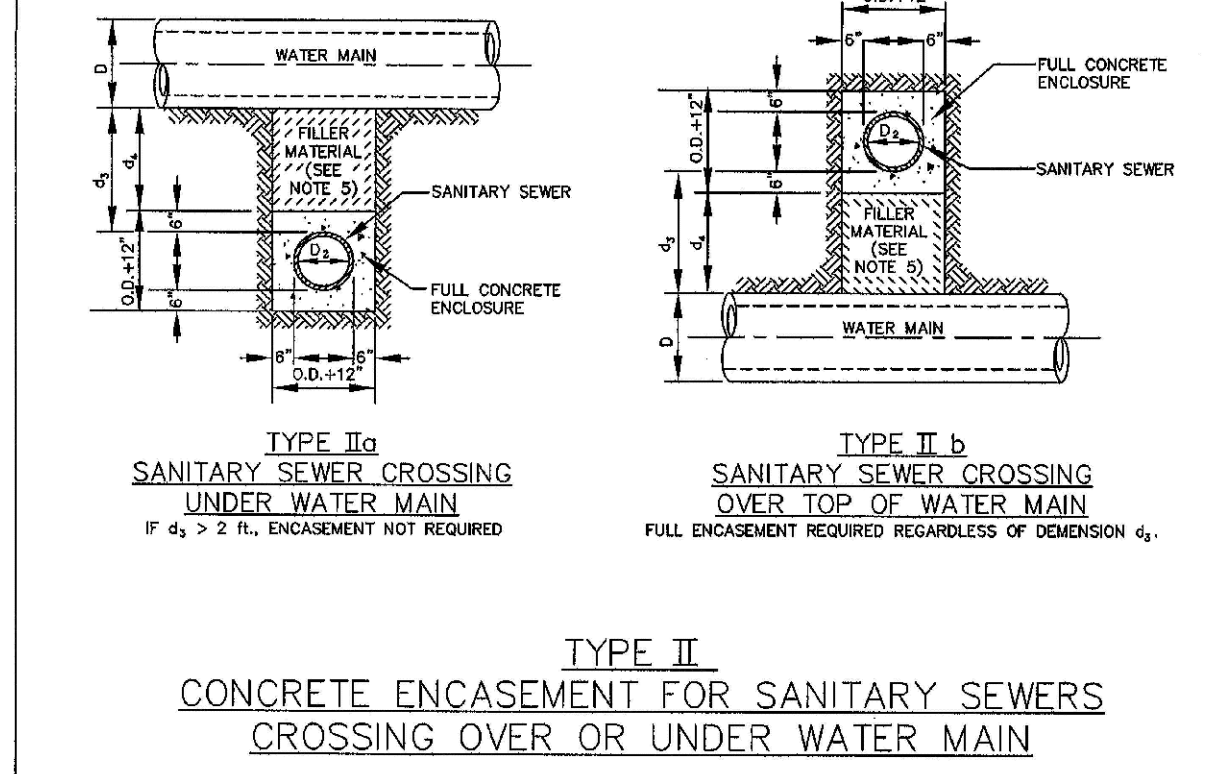
**GENERAL NOTES FOR TYPE I, II & III ENCASEMENT**

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

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

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

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

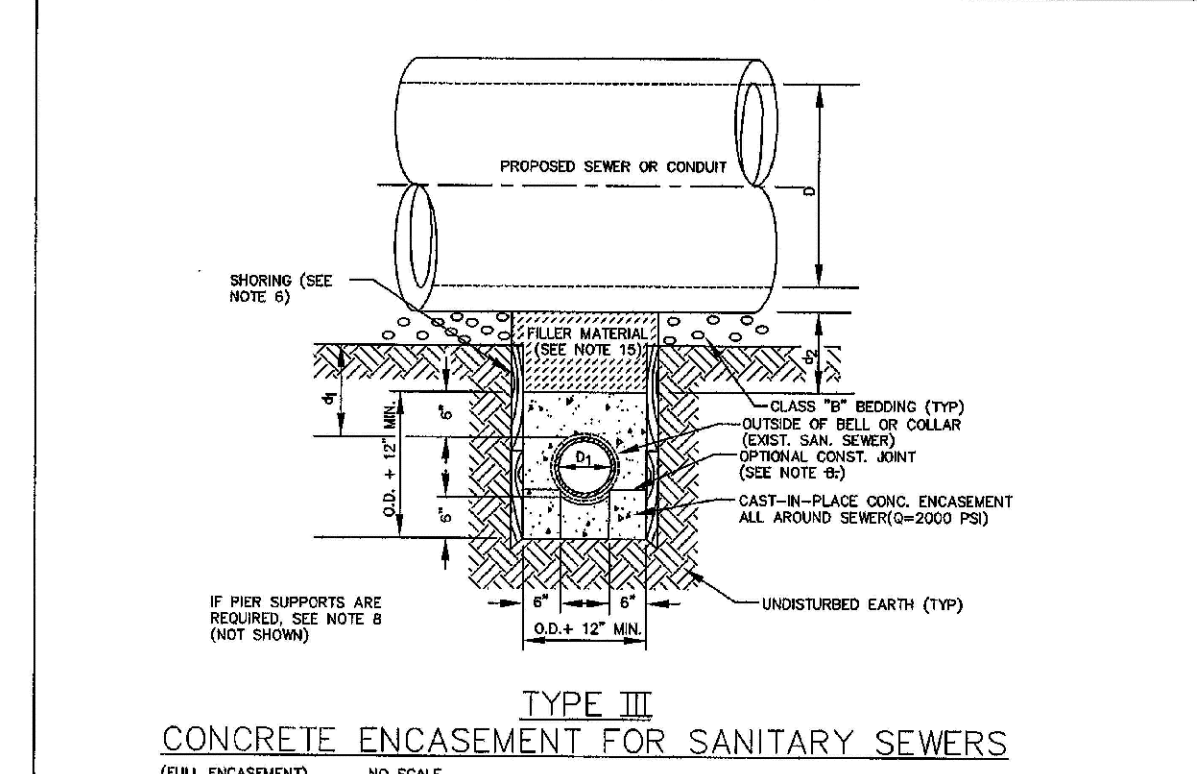
**GENERAL NOTES FOR TYPE I, II & III ENCASEMENT**

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

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

SCALE: NONE DATE: 2/98  
APPROVED: JFN 5/98 4/01 1/08  
DISTRICT ENGINEER

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

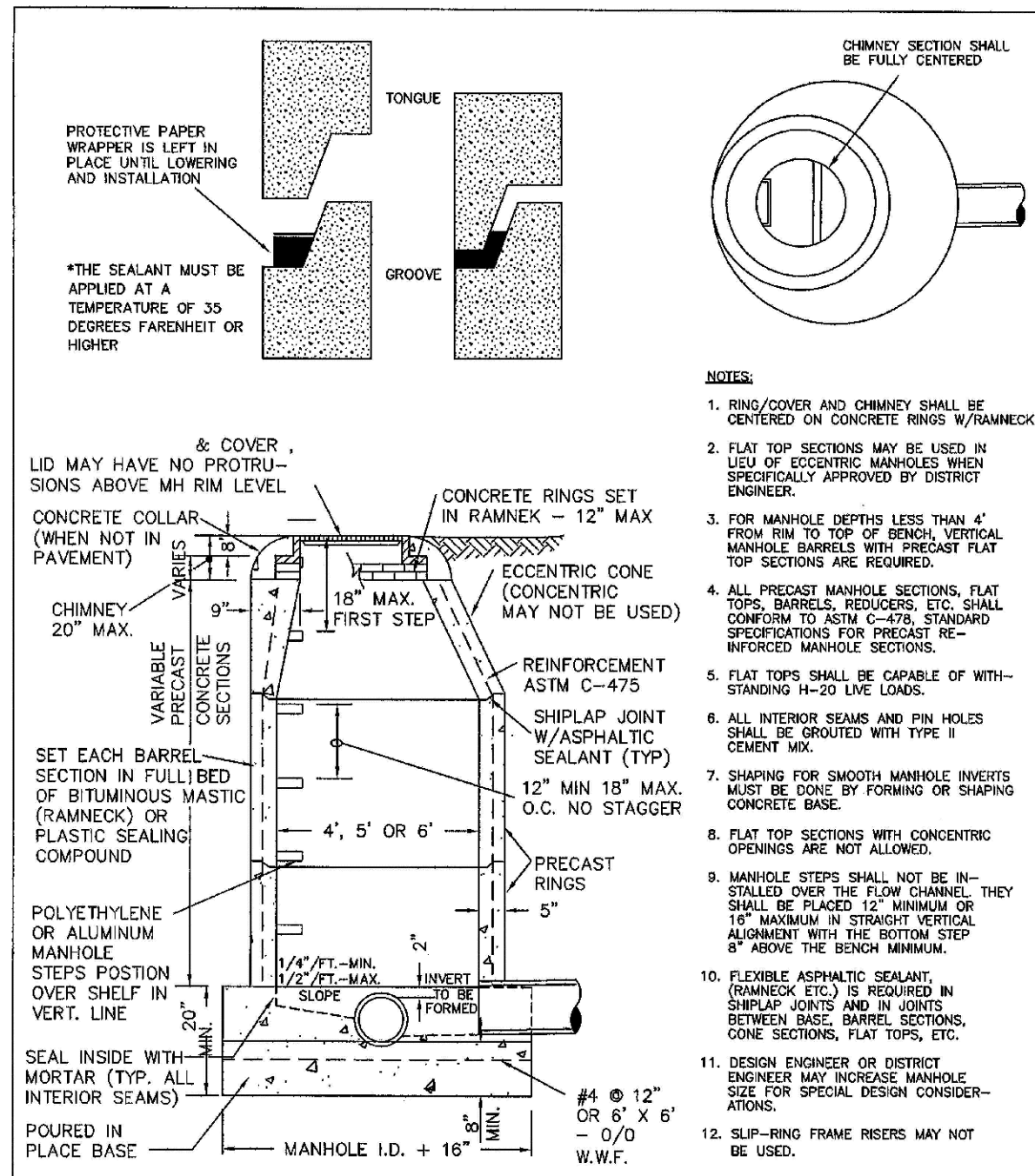
**GENERAL NOTES FOR TYPE I, II & III ENCASEMENT**

- CONCRETE TO BE CAST AGAINST UNDISTURBED SOIL OR SHORING. IF OPTIONAL CONSTRUCTION JOINT IS USED, A ONE INCH LAYER OF SAND OR MORTAR SHALL BE PLACED BETWEEN BOTTOM OF SANITARY SEWER AND TOP OF CONCRETE.
- LENGTH OF ENCASEMENT FOR: (a) TYPE I & II ENCASEMENT SHALL EXTEND FULL TRENCH WIDTH EXCAVATED FOR PROPOSED SEWER OR CONDUIT. (b) TYPE III ENCASEMENT SHALL EXTEND AT LEAST TO FEET EACH SIDE OF WATER MAIN.
- UNLESS OTHERWISE NOTED ON PLAN/PROFILE DRAWINGS, TYPE I, II & III ENCASEMENTS NEED NOT BE REINFORCED. REINFORCEMENT, IF REQUIRED, TO BE SPECIFIED AND DETAIL SEPARATELY ON PLAN & PROFILE DRAWINGS.
- TYPE I, II OR III ENCASEMENTS ARE REQUIRED UNDER FOLLOWING CONDITIONS: (a) TYPE I OR TYPE II IF  $d \leq 18"$  ( $d \leq 12"$ ) EXCEPT FOR SANITARY SEWERS CROSSING OVER OR UNDER WATER MAINS. (b) TYPE III IS REQUIRED FOR SANITARY SEWERS CROSSING OVER WATER MAINS AND  $d \leq 24"$  ( $d \leq 18"$ ). (c) TYPE III IS REQUIRED FOR SANITARY SEWERS CROSSING OVER TOP OF WATER MAINS, REGARDLESS OF DIMENSION  $d$ . (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. (f) COMPACTED CLASS "B" BEDDING IF  $d \leq 4' \times 4'$  OR  $d > 4' \times 4'$ . (g) TYPE III ENCASEMENT FOUR CONCRETE ON UNDISTURBED SOIL.
- SHORING OR SHEETING, IF USED, TO BE CUT OFF AT TOP OF ENCASEMENT.
- THESE ENCASEMENT DETAILS MAY ALSO BE APPLICABLE FOR CONDUITS OTHER THAN STORM OR SANITARY SEWER INSTALLATIONS. IN CERTAIN SITUATIONS WHERE CONDUIT DIAMETER "D" IS EXTREMELY LARGE, PIER SUPPORTS ON EACH SIDE OF SANITARY SEWER MAY ALSO BE REQUIRED. IF REQUIRED, SUPPORTS SHALL BE SPECIFIED AND DETAIL SEPARATELY ON PLAN AND PROFILE DRAWINGS.

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

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

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PARKER WATER & SANITATION DISTRICT PARKER MANHOLE ECCENTRIC CONE

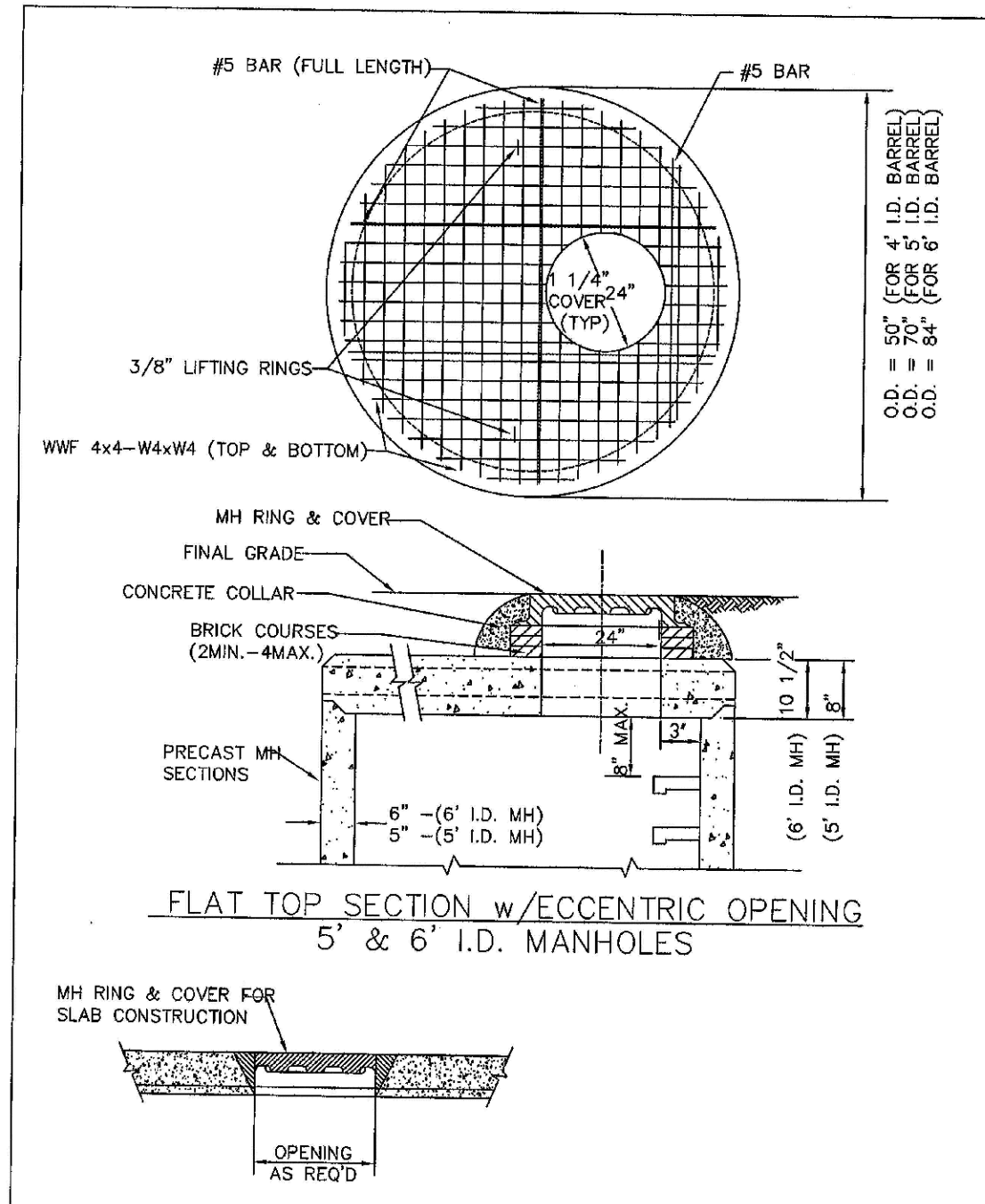
**NOTES**

- RING/COVER AND CHIMNEY SHALL BE CENTERED ON CONCRETE RINGS W/RAMNECK.
- FLAT TOP SECTIONS MAY BE USED IN LIEU OF ECCENTRIC MANHOLE RINGS SPECIFICALLY APPROVED BY DISTRICT ENGINEER.
- FOR MANHOLE DEPTHS LESS THAN 4' FROM RIM TO TOP OF FINAL VERTICAL MANHOLE BARRELS WITH PRECAST FLAT TOP SECTIONS ARE REQUIRED.
- ALL PRECAST MANHOLE SECTIONS, FLAT TOP, BARRELS, REDUCERS, ETC. SHALL CONFORM TO ASTM C-475. STANDARD SPECIFICATIONS FOR PRECAST REINFORCED MANHOLE SECTIONS.
- FLAT TOPS SHALL BE CAPABLE OF WITHSTANDING H=20 LIVE LOADS.
- ALL INTERIOR SEAMS AND Joints SHALL BE GROUTED WITH TYPE II CEMENT MIX.
- SHAPING FOR SMOOTH MANHOLE INTERIORS MUST BE DONE BY FORMING OR SHAPING CONCRETE BASE.
- FLAT TOP SECTIONS WITH CONCENTRIC OPENINGS ARE NOT ALLOWED.
- MANHOLE TOPS SHALL NOT BE INSTALLED OVER THE FLOW CHANNEL. THEY SHALL BE PLACED 12" MINIMUM OR 18" MAXIMUM IN STRAIGHT VERTICAL ALIGNMENT WITH THE BOTTOM STEP 8" ABOVE THE BENCH MANHOLE.
- FLEXIBLE ASPHALTIC SEALANT (RAMNECK, ETC.) IS REQUIRED IN SHIMLAP JOINTS AND IN JOINTS BETWEEN BASE, BARREL SECTIONS, CONE SECTIONS, FLAT TOPS, ETC.
- DESIGN ENGINEER OR DISTRICT ENGINEER MAY INCREASE MANHOLE SIZE FOR SPECIAL DESIGN CONSIDERATIONS.
- SLIP-RING FRAME REINERS MAY NOT BE USED.

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

SCALE: NONE DATE: 2/98  
APPROVED: JFN 4/01 01/02 1/08  
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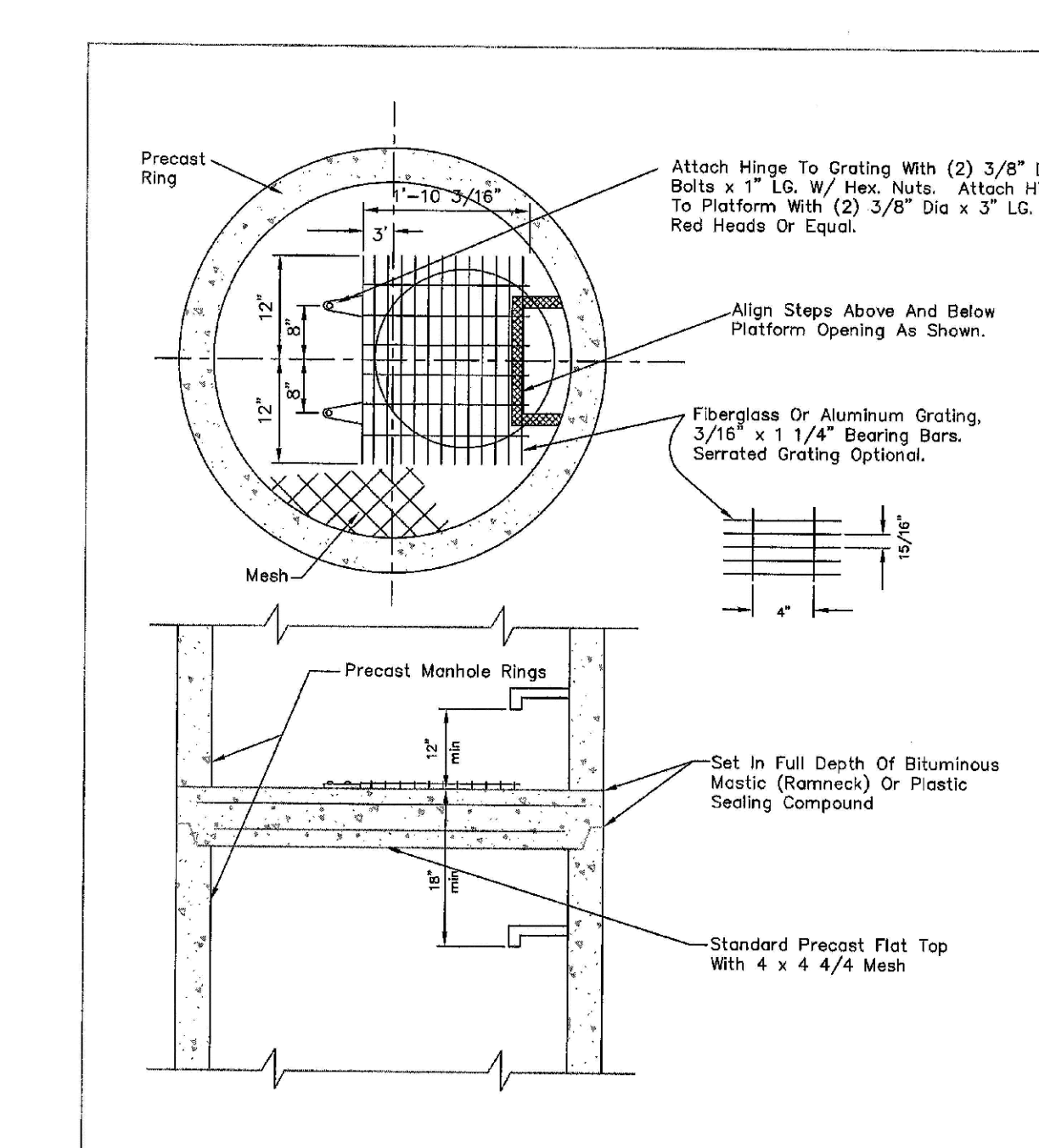
PARKER WATER & SANITATION DISTRICT PRECAST MANHOLE - 5' & 6' I.D. WITH ECCENTRIC CONE

**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: 2/98  
APPROVED: JFN 01/02  
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PARKER WATER & SANITATION DISTRICT INTERMEDIATE PLATFORM FOR MANHOLES OVER 20' DEPTH

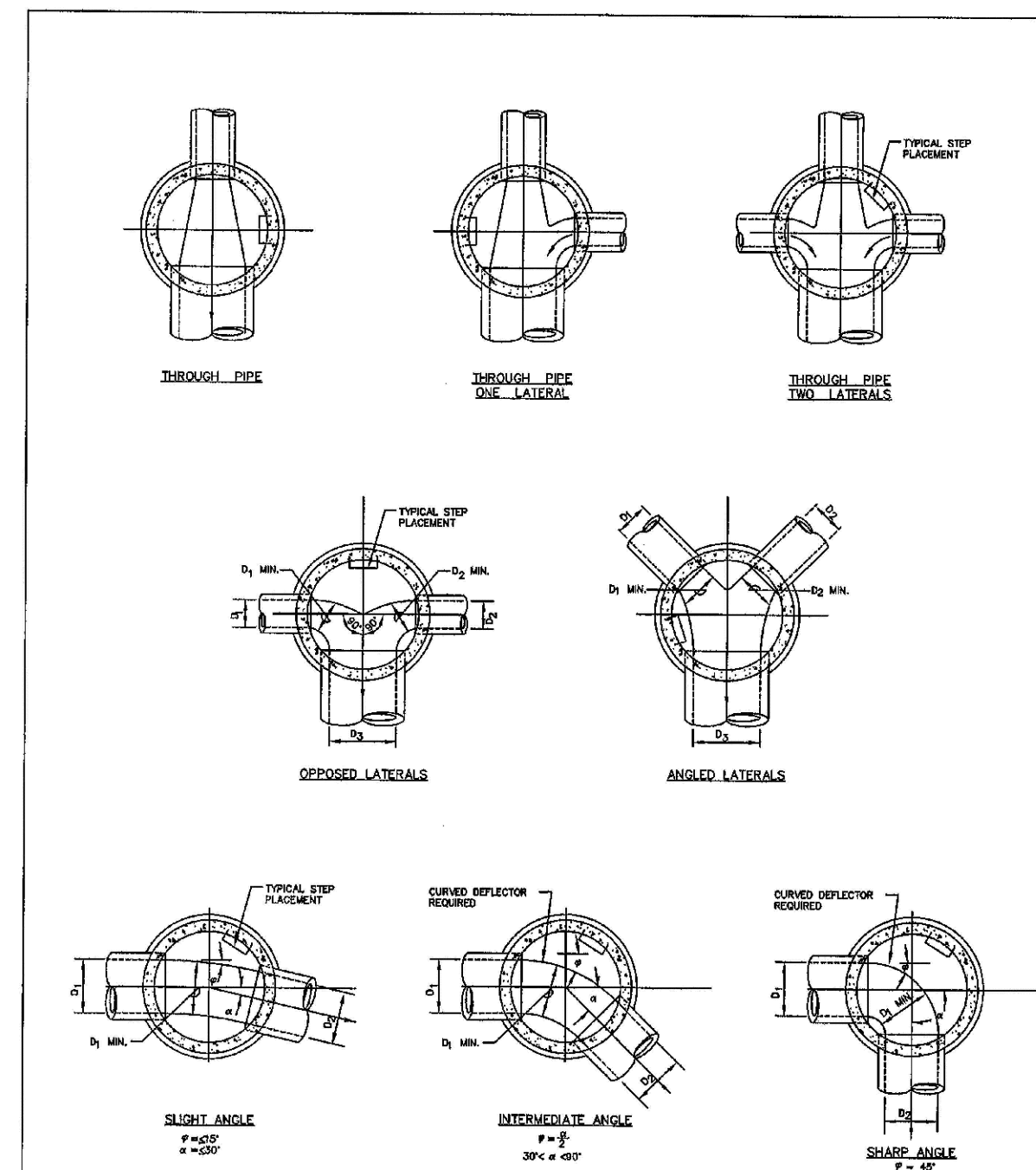
**NOTES:**

- Maximum distance between platforms shall be 15' vertically.
- Minimum distance between platforms shall be 10' vertically.

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

SCALE: NONE DATE: 2/98  
APPROVED: RJJ 2/02  
DISTRICT ENGINEER

2008 REVISION



PARKER WATER & SANITATION DISTRICT TYPICAL BASE CHANNELIZATION DETAILS

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

SCALE: NONE DATE: 2/98  
APPROVED: JFN  
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**CVL CONSULTANTS**

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TRAITS AT CROWFOOT  
FILING 12 CONSTRUCTION DRAWINGS  
SANITARY SEWER DETAIL

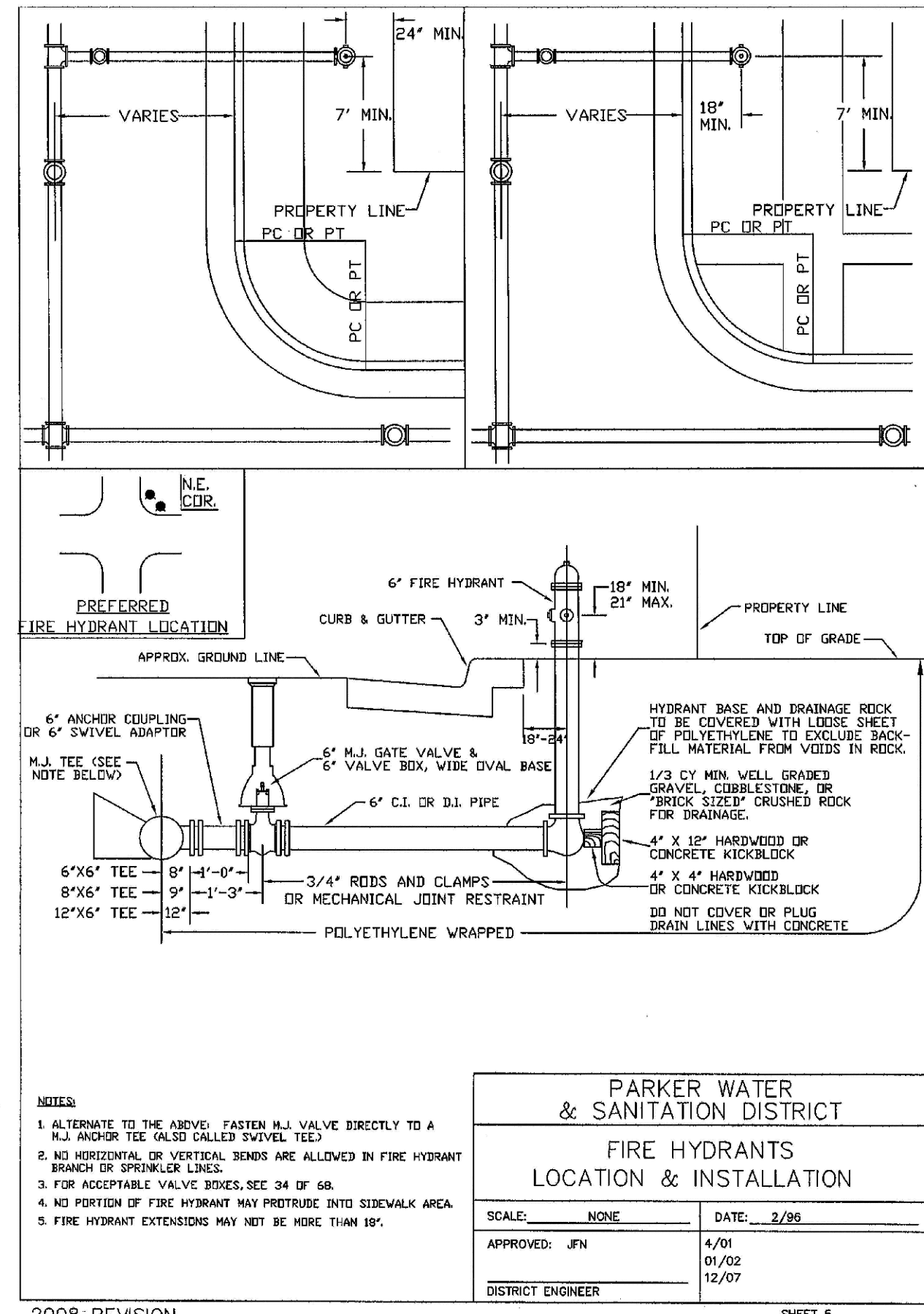
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SHEET NUMBER 8

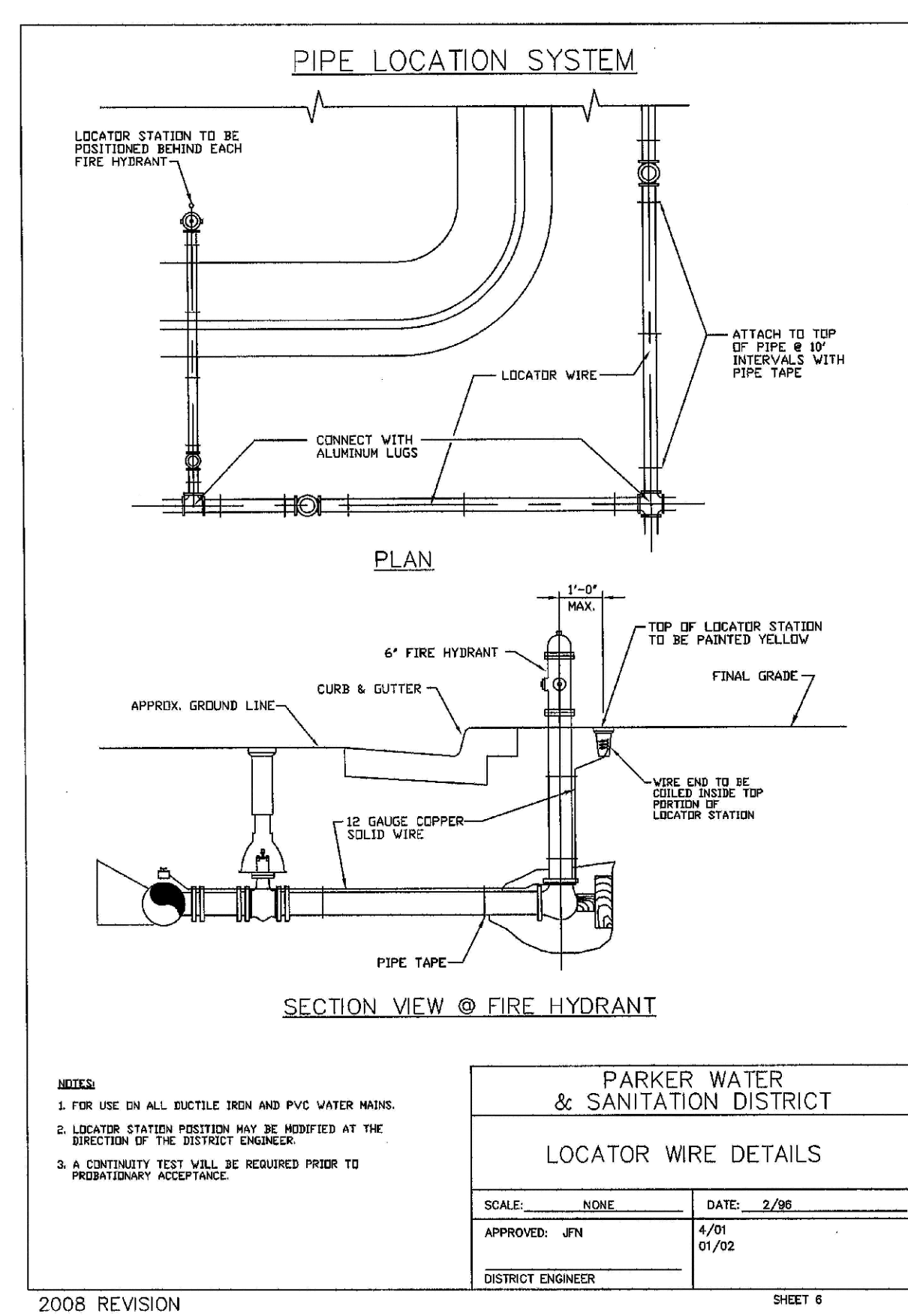
Revisions	No.	Date	Appr.	Date



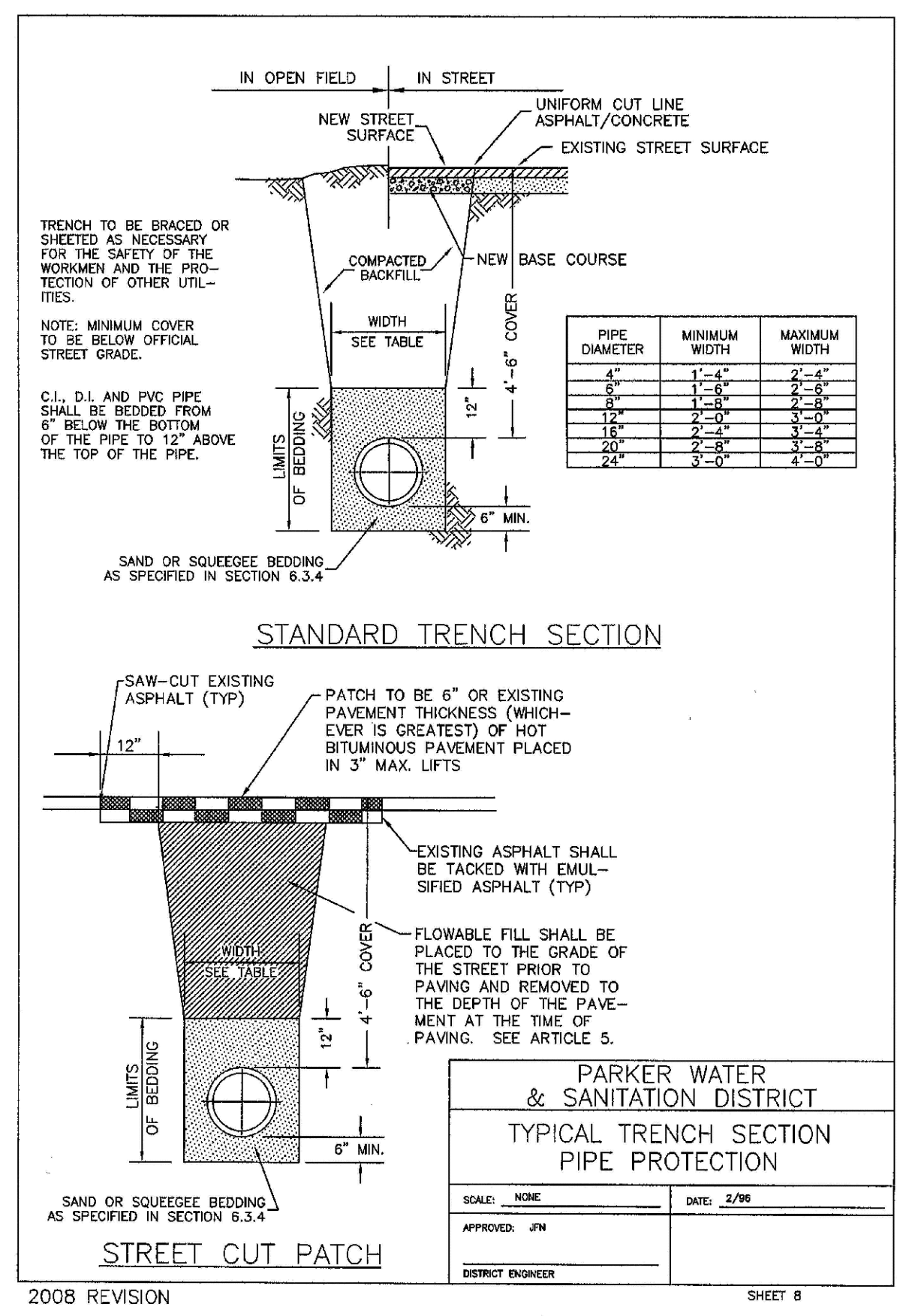




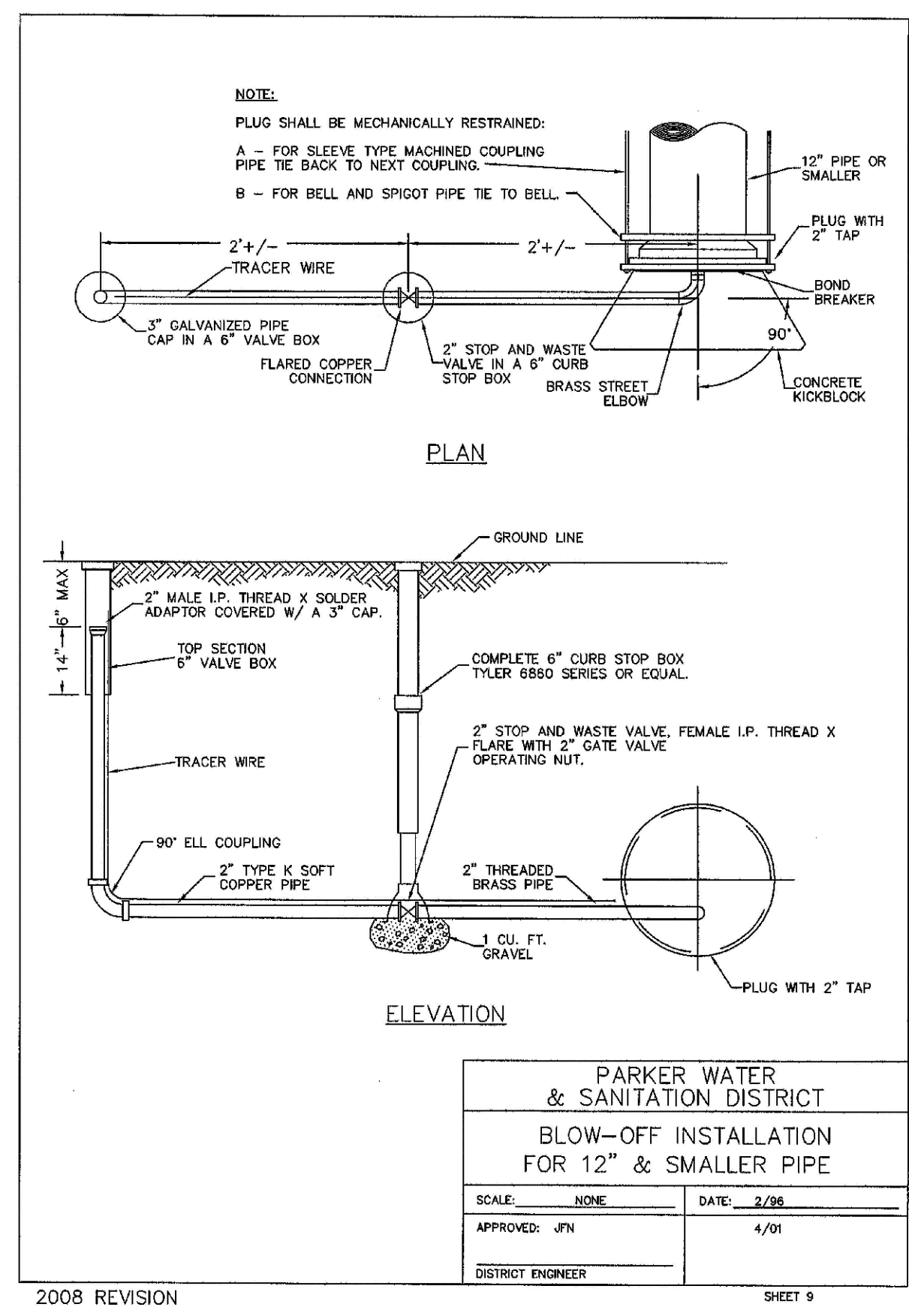
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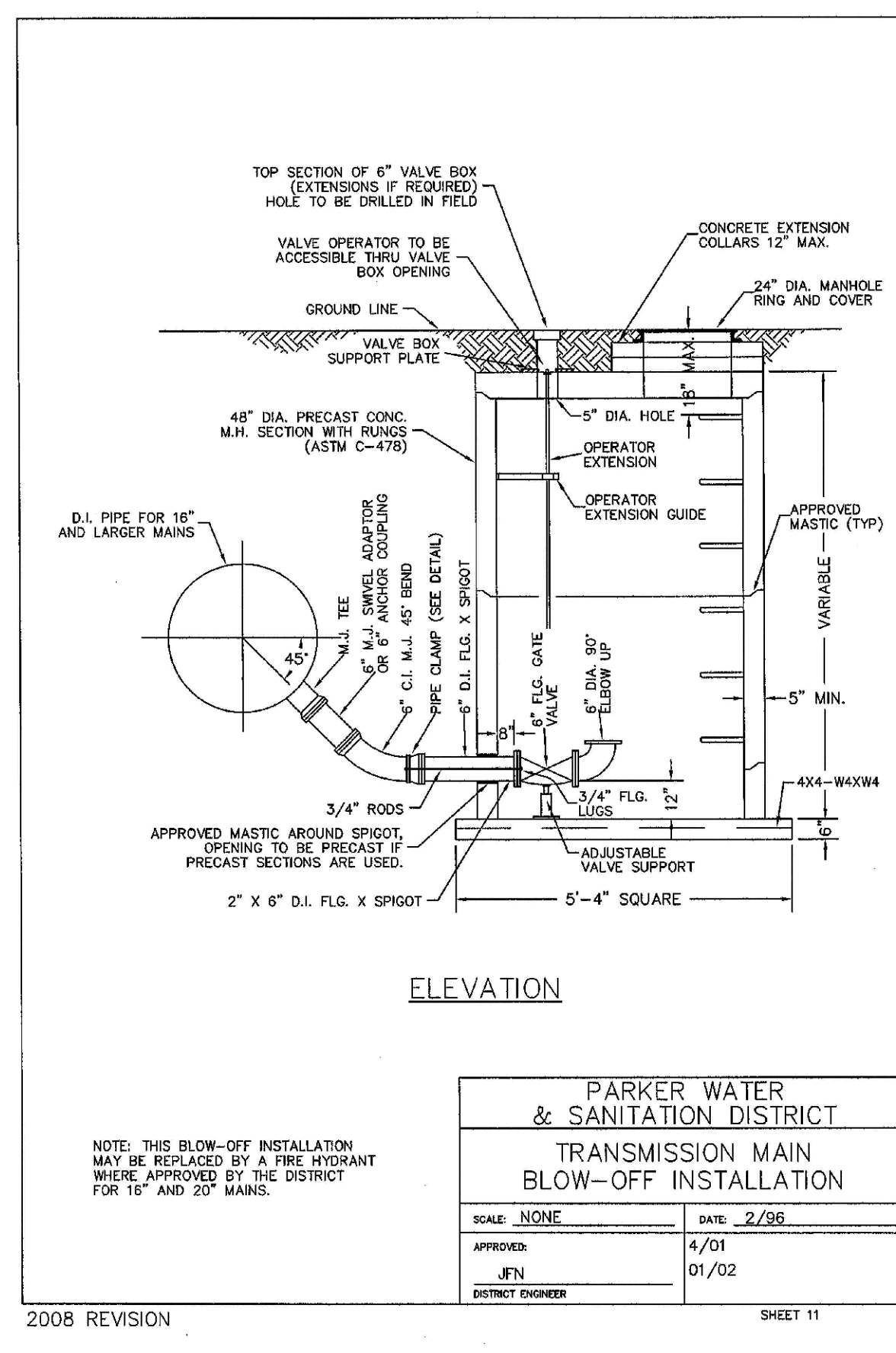
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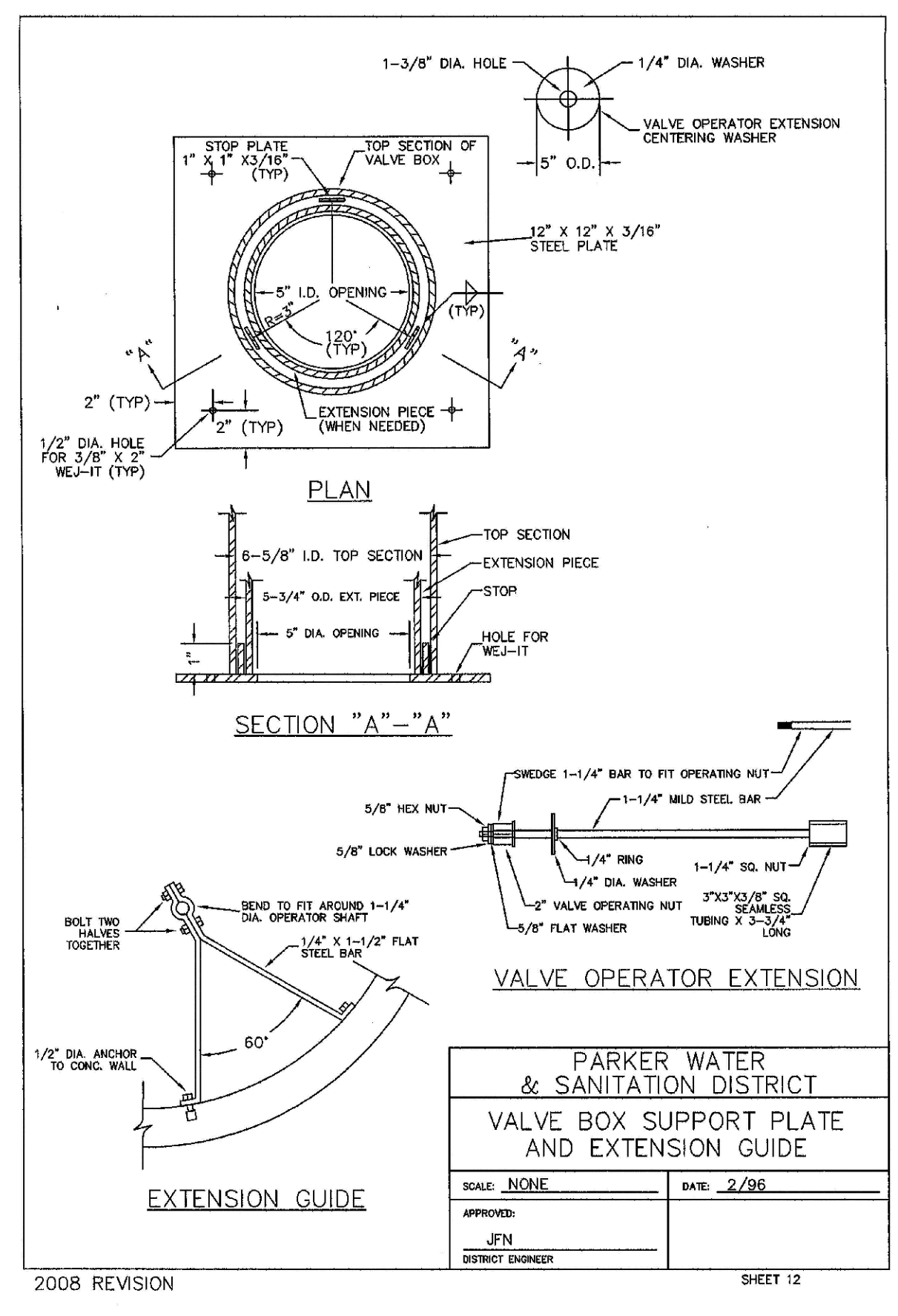
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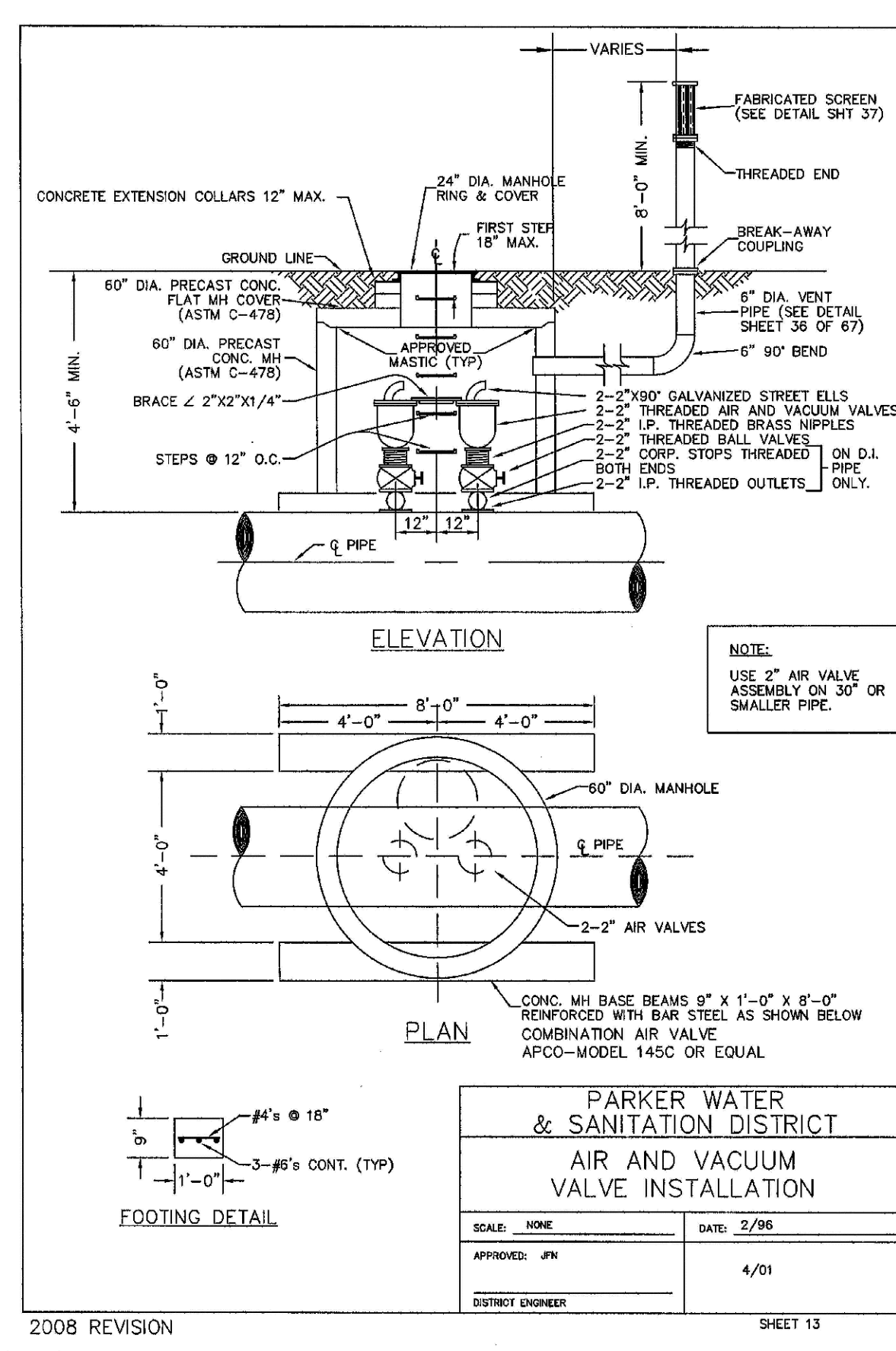
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2008 REVISION SHEET 11



2008 REVISION SHEET 12

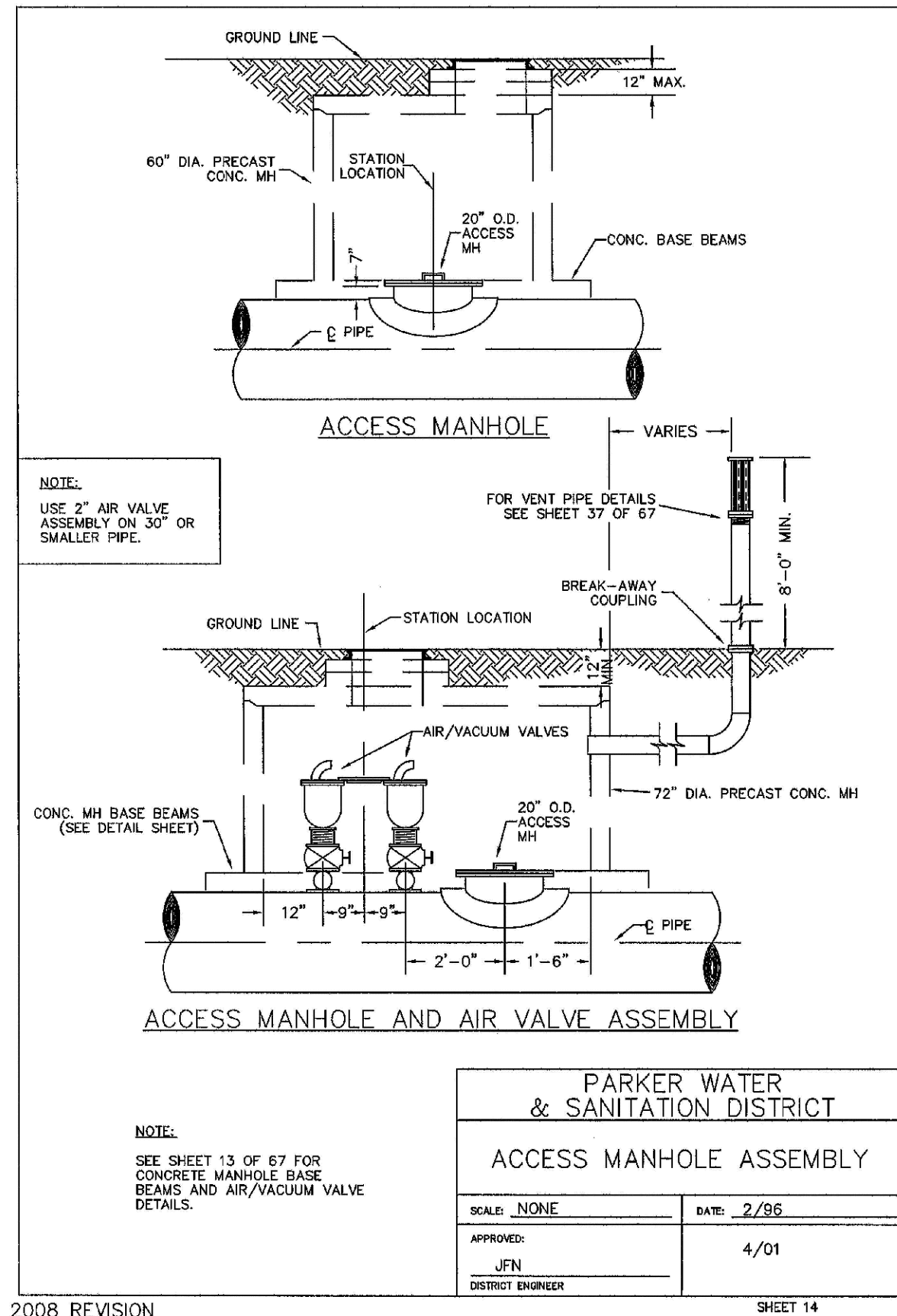


2008 REVISION SHEET 13

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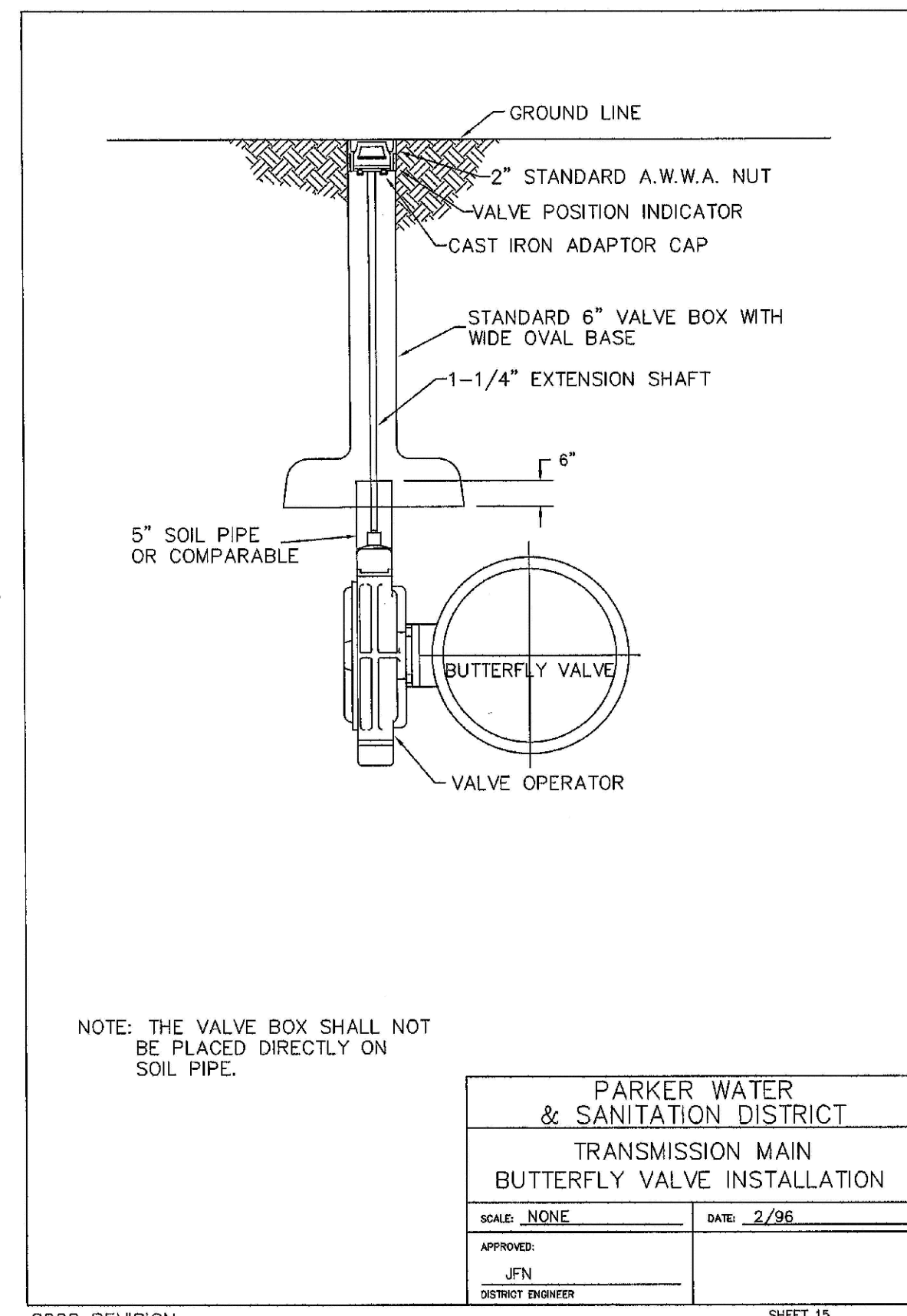
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SHEET NUMBER	DRAWN BY: JF	SCALE: AS SHOWN	CHECKED BY: JJ	DATE: SEPTEMBER 2017	FILE NO: 8130283701	EXX MANAGEMENT 7353 South Alton Way CENTENNIAL, CO 80112	TRAILS AT CROWFOOT FILING 12 CONSTRUCTION DRAWINGS WATER DETAILS	CVL CONSULTANTS	Revisions	Date	Appr.	Date
									No.			



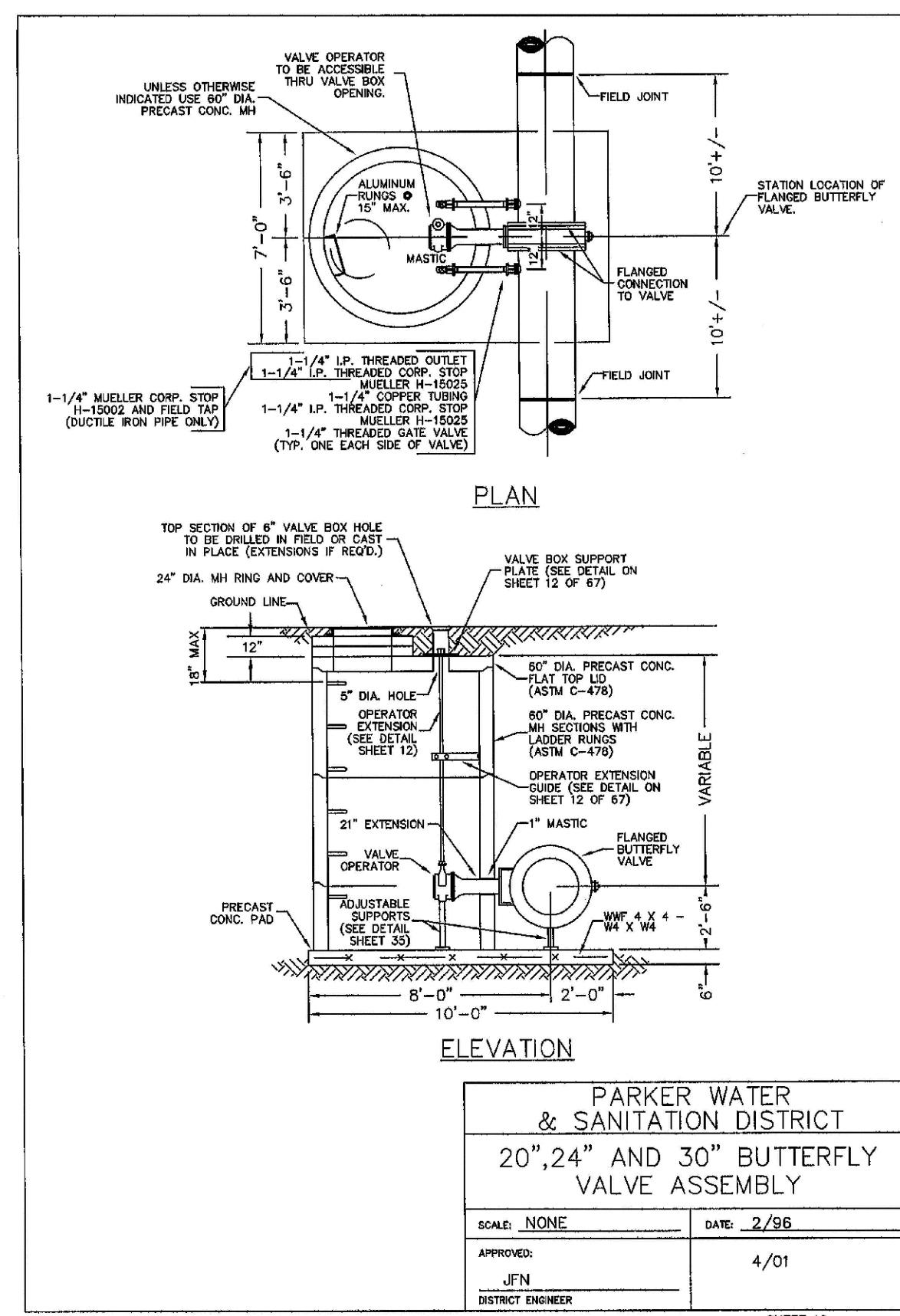
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SHEET 14



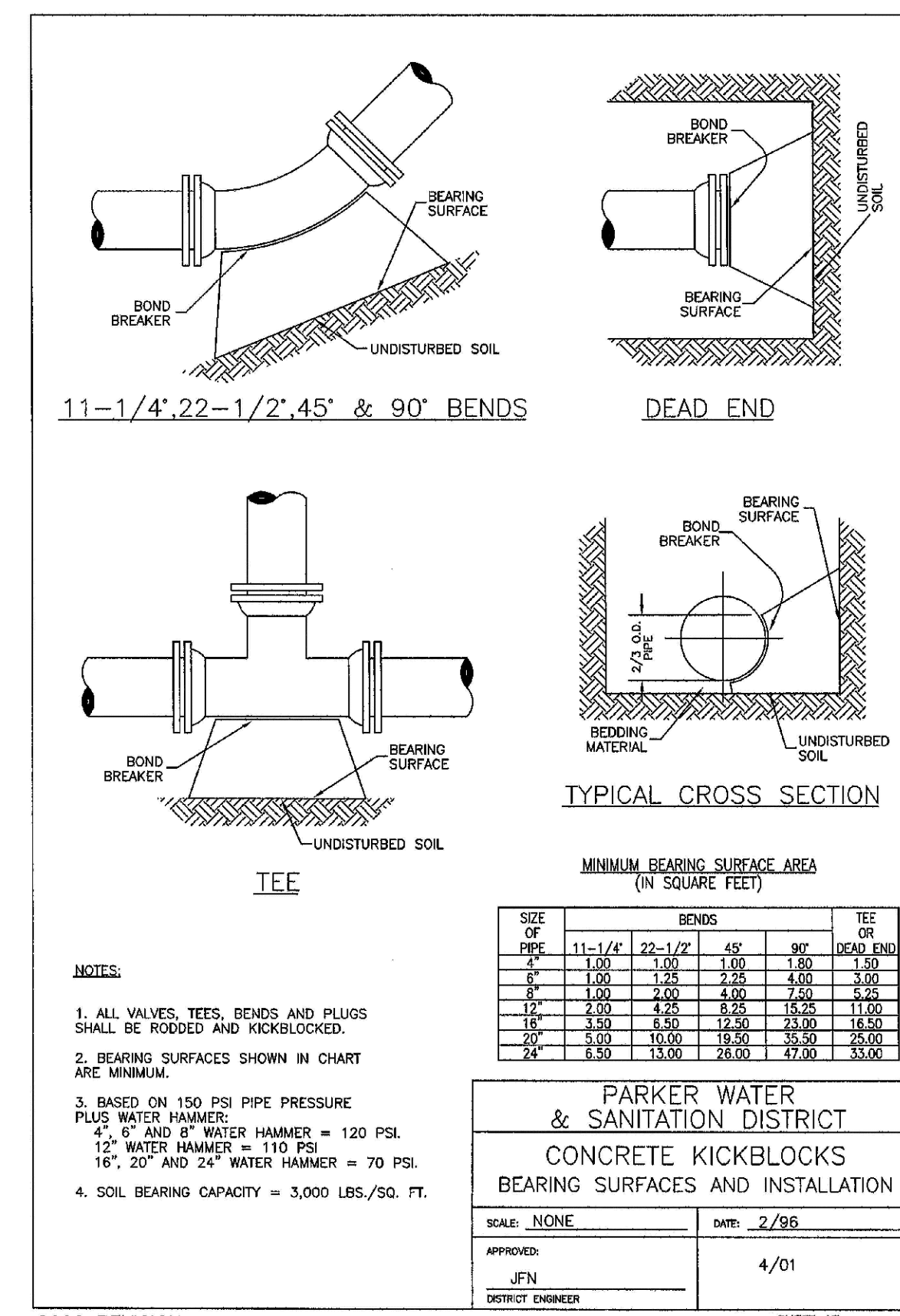
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SHEET 15



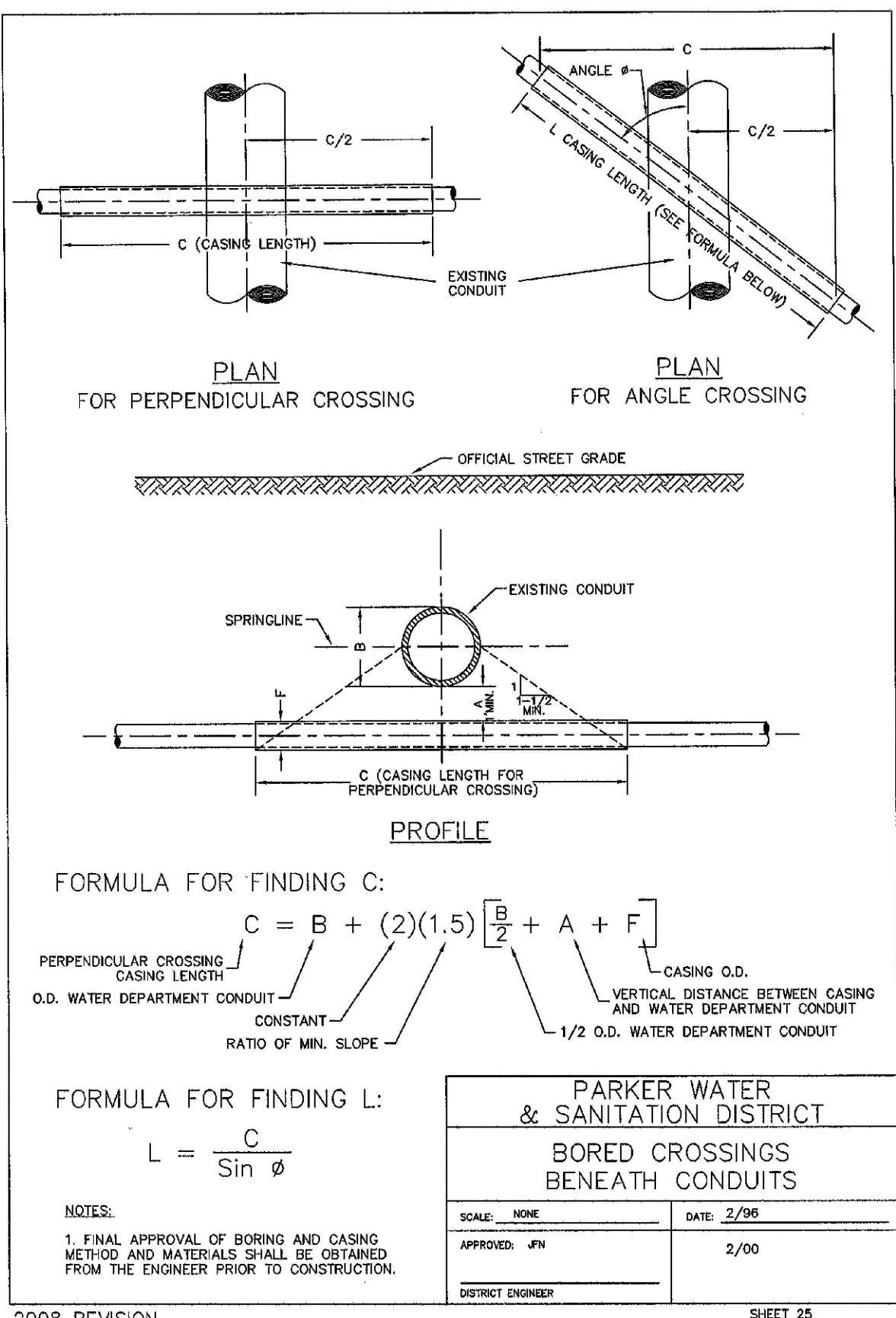
2008 REVISION

SHEET 16



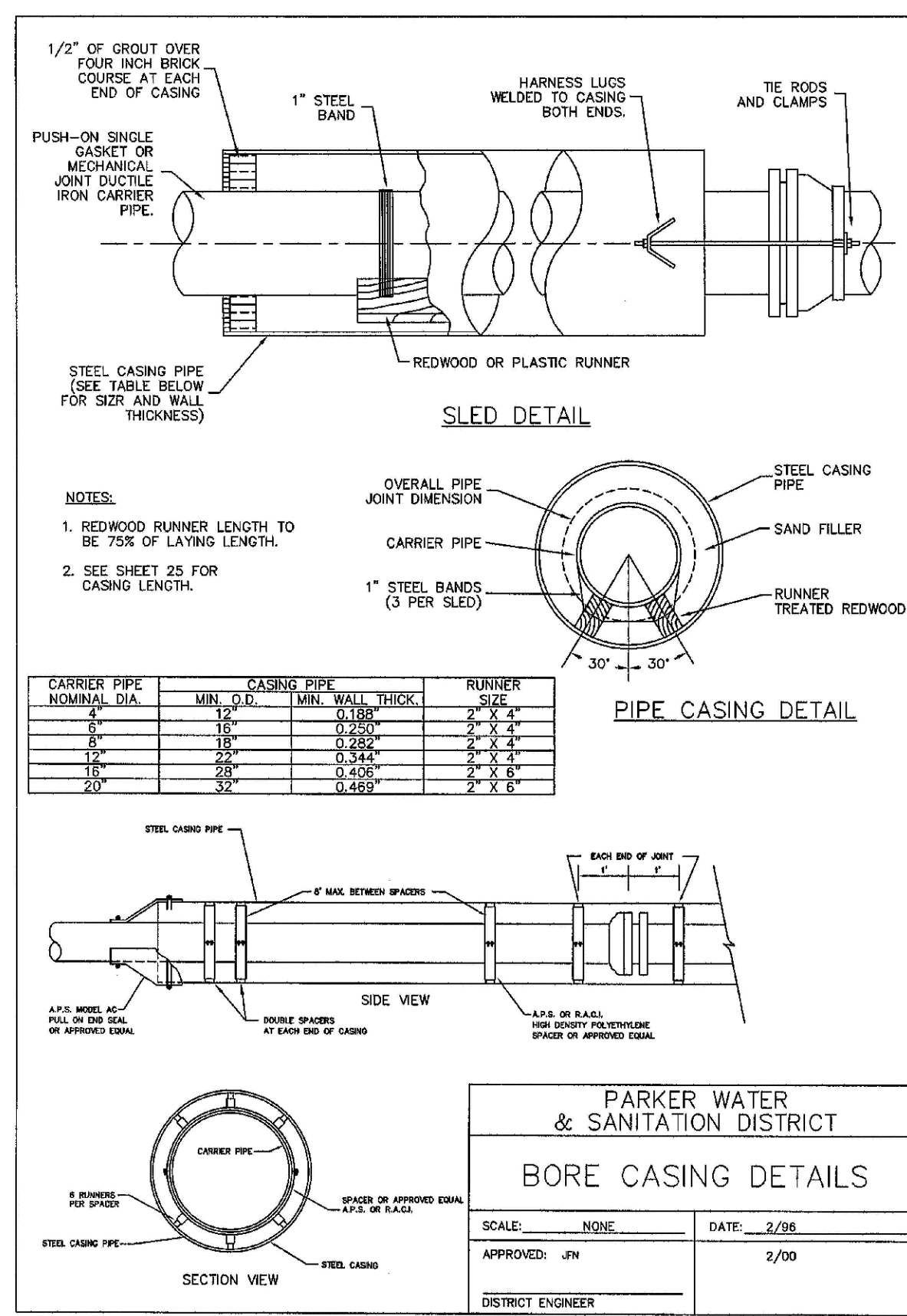
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SHEET 17



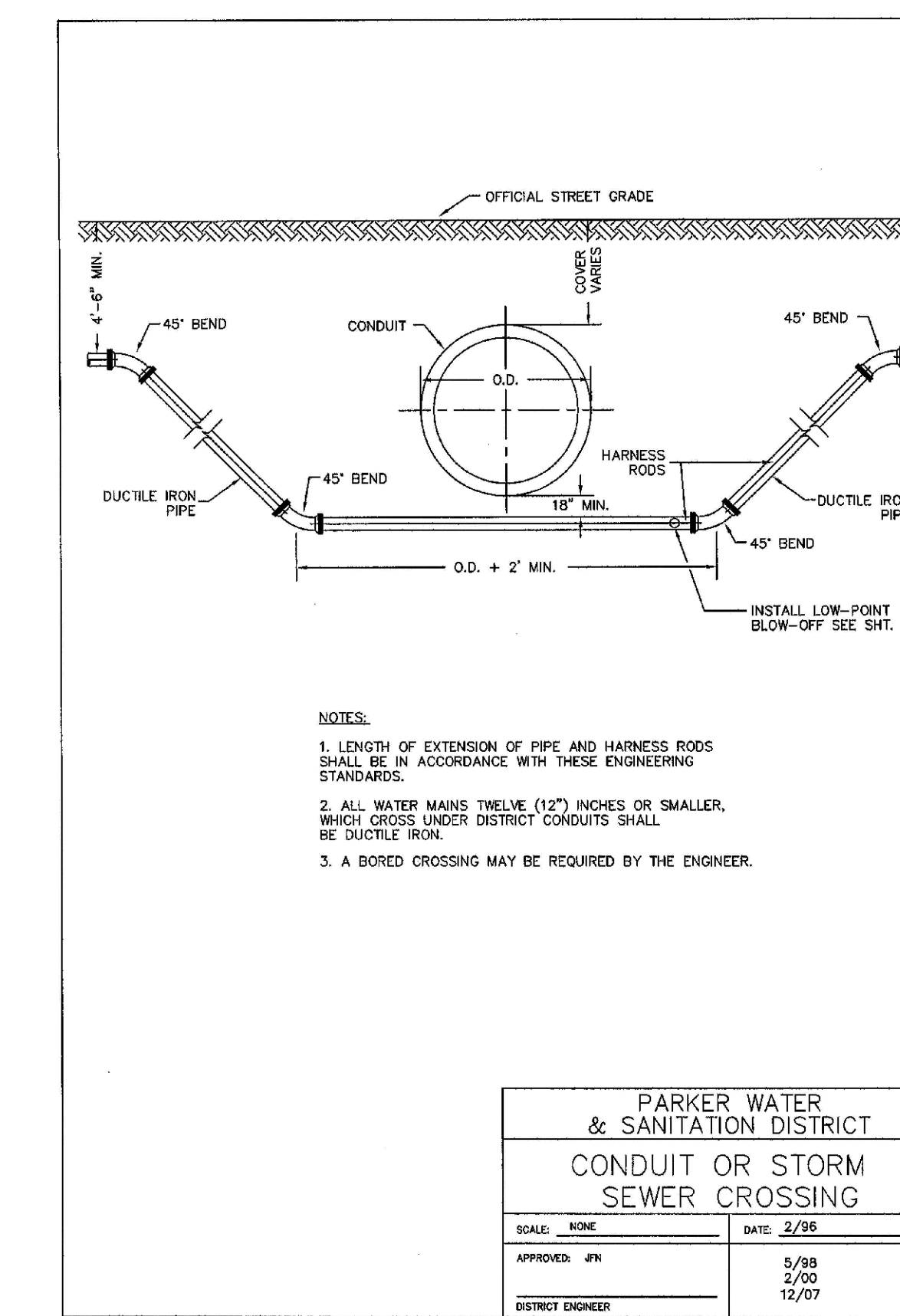
2008 REVISION

SHEET 25



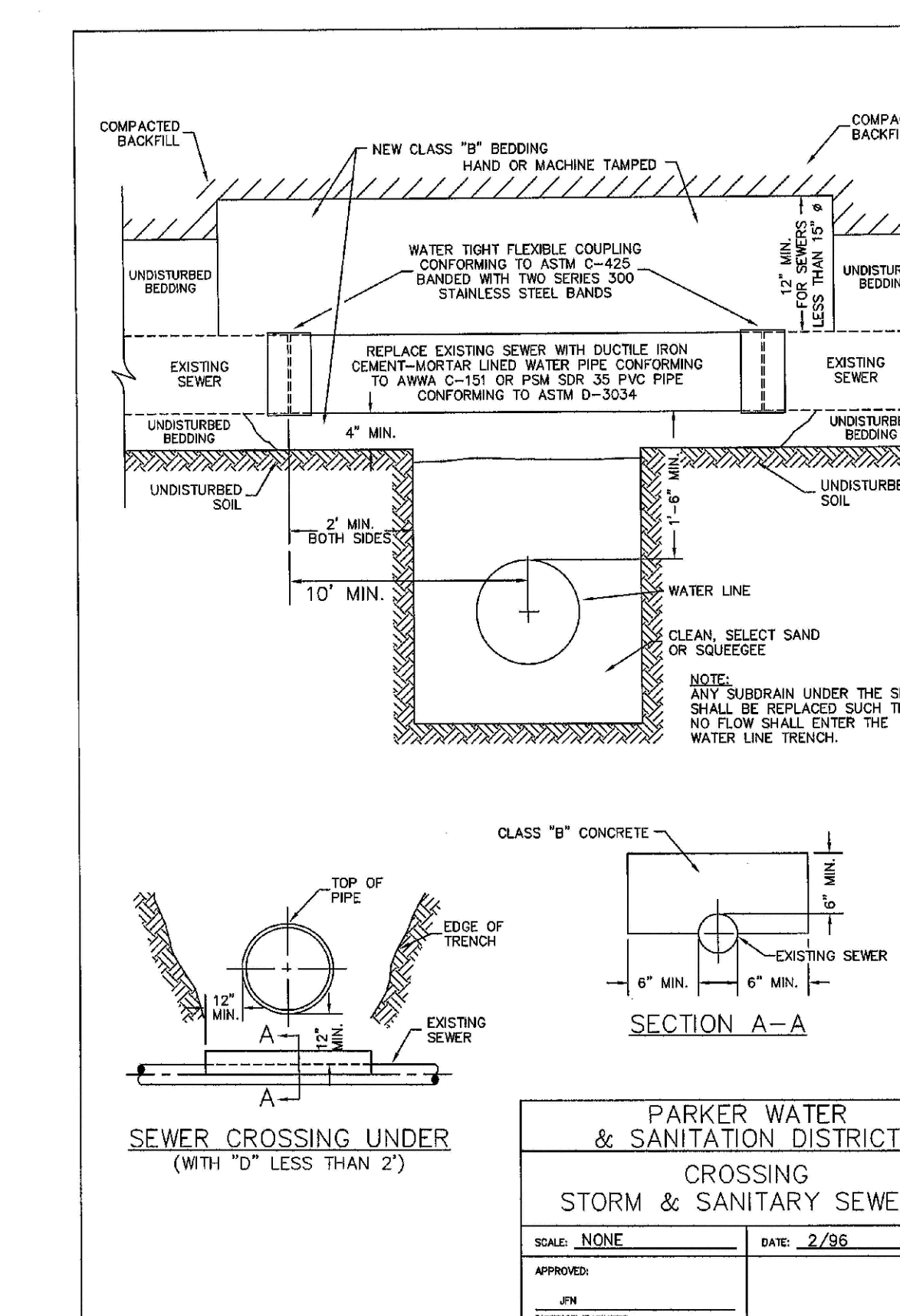
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SHEET 26



2008 REVISION

SHEET 27



2008 REVISION

SHEET 28

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Tel: (720) 482-9526  
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7353 South Alton Way  
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT  
FILING 12 CONSTRUCTION DRAWINGS  
WATER DETAILS

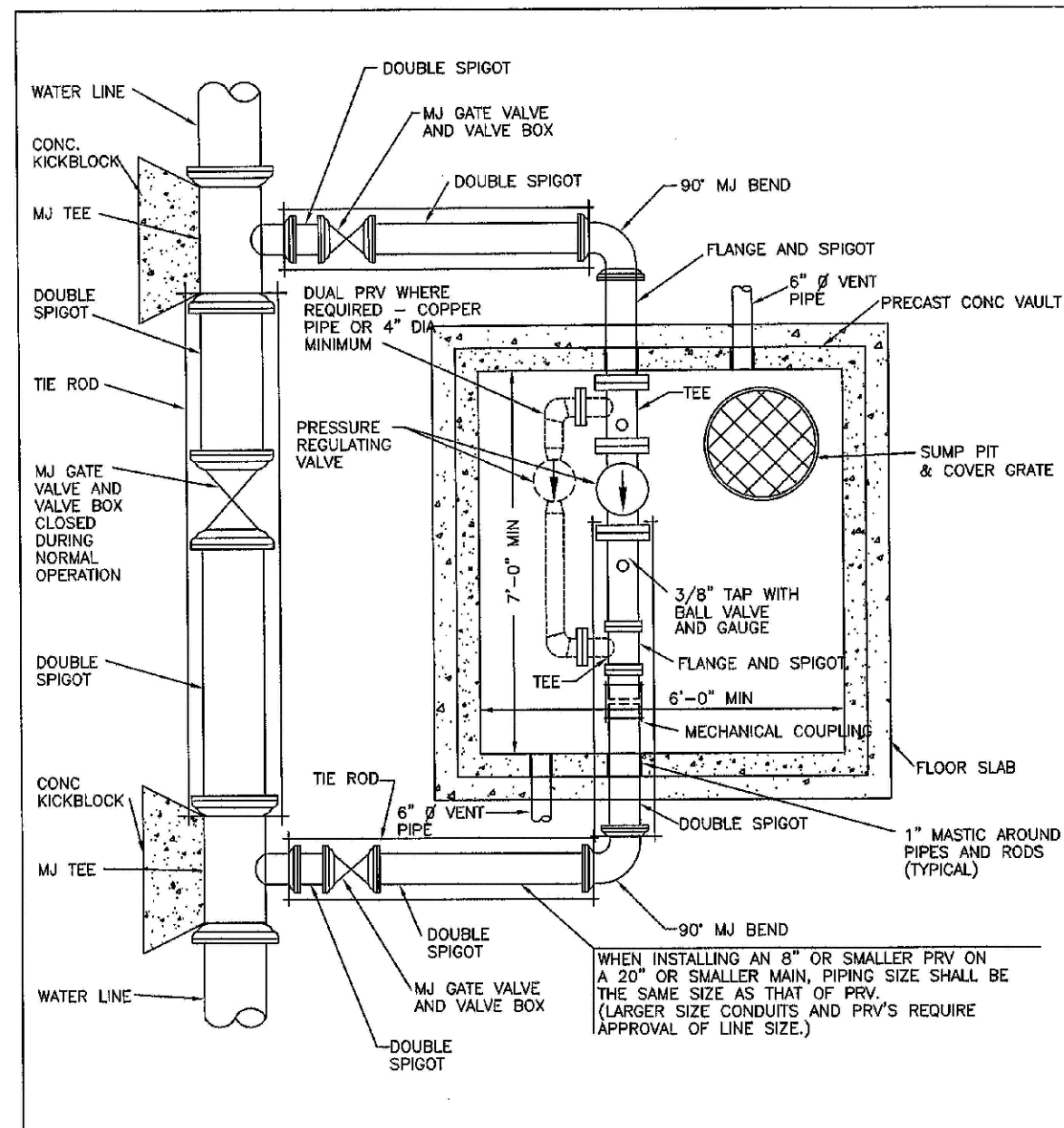
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FILE NO: 8130283701

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

SHEET NUMBER: 12

Revisions: No. Date Init. Appr. Date

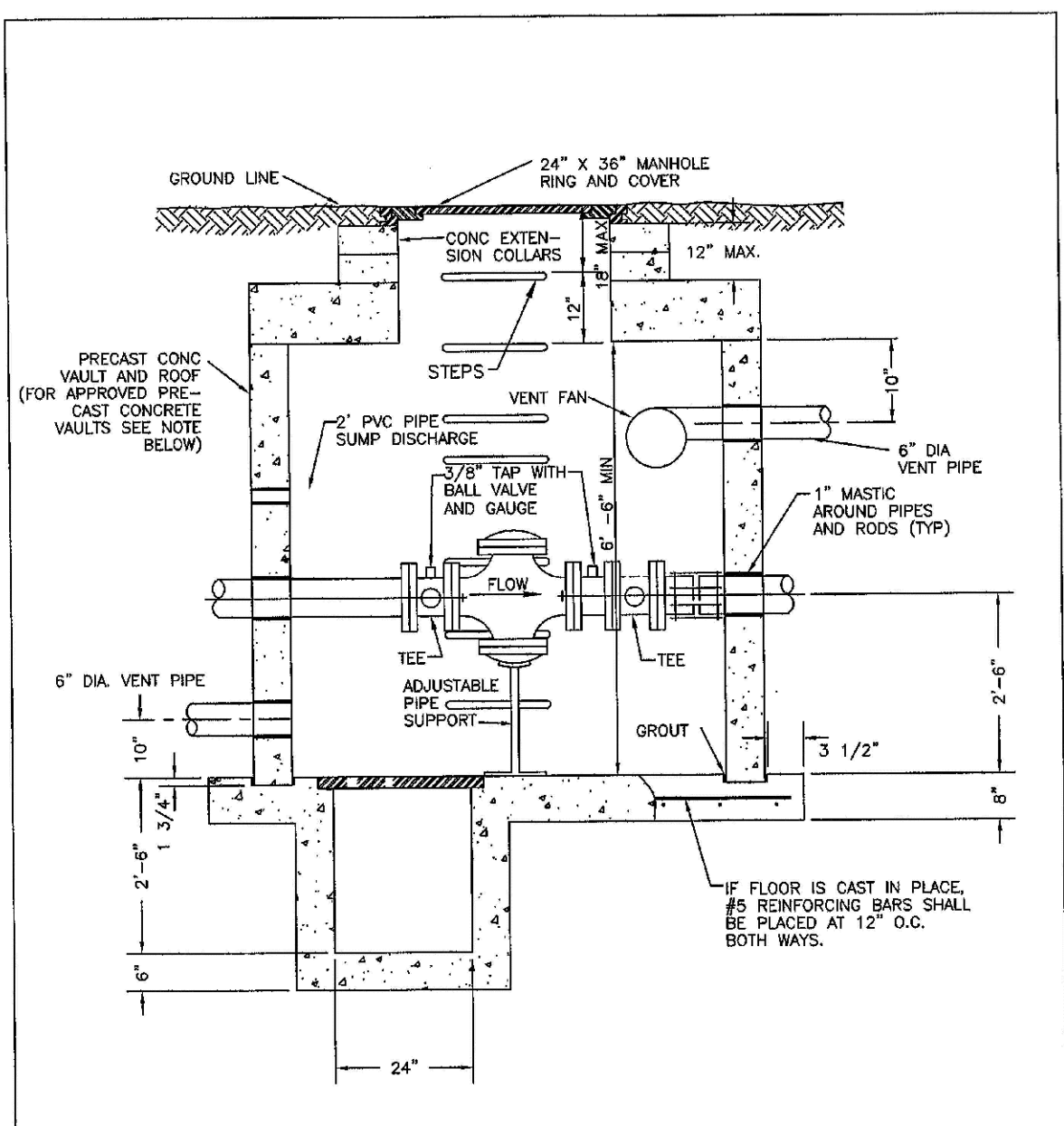




**PARKER WATER & SANITATION DISTRICT**  
**PRESSURE REGULATING VALVE**  
**RECTANGULAR VAULT**  
**TYPICAL PLAN**

SCALE: NONE DATE: 2/98  
 APPROVED: JFN 2/00  
 DISTRICT ENGINEER 3/03

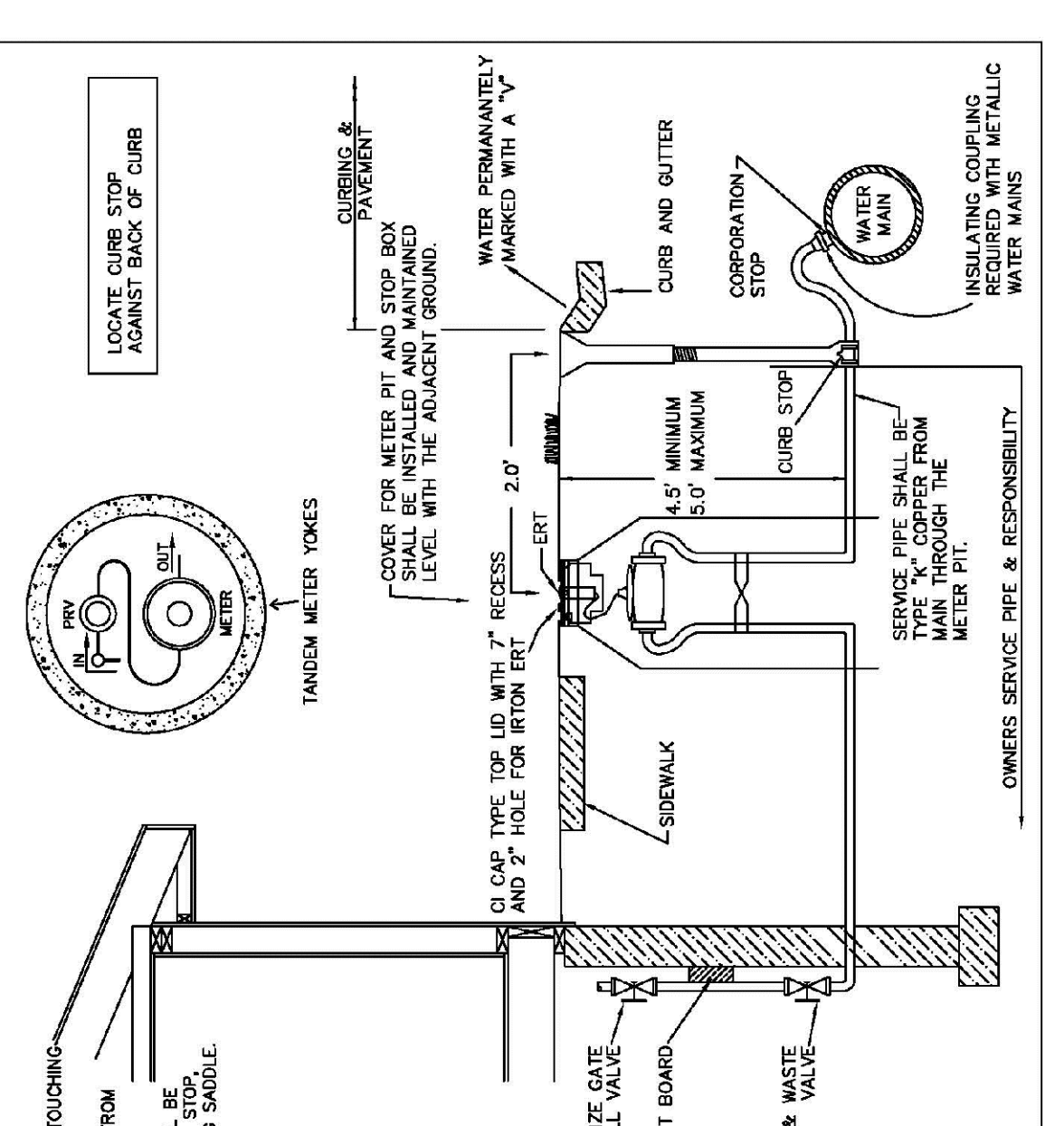
2008 REVISION



**PARKER WATER & SANITATION DISTRICT**  
**PRESSURE REGULATING VALVE**  
**RECTANGULAR VAULT**  
**CROSS SECTION**

SCALE: NONE DATE: 2/98  
 APPROVED: JFN 4/01  
 DISTRICT ENGINEER 3/03

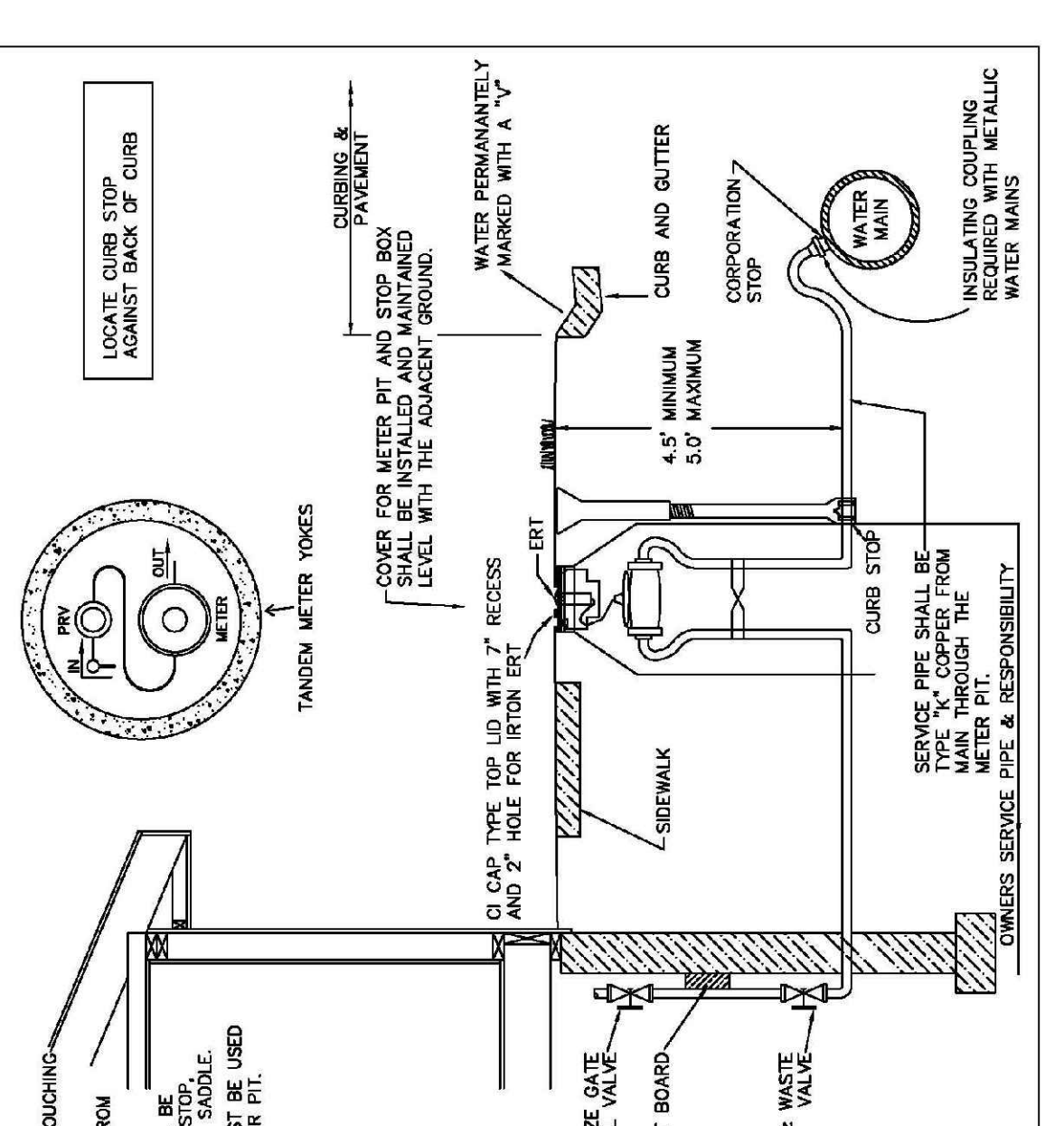
2008 REVISION



**PARKER WATER & SANITATION DISTRICT**  
**SERVICE LINE, STOP BOX AND**  
**OUTSIDE METER INSTALLATION**

SCALE: NONE DATE: 2/98  
 APPROVED: JFN 2/00 5/00  
 DISTRICT ENGINEER 4/01 1/12 12/03

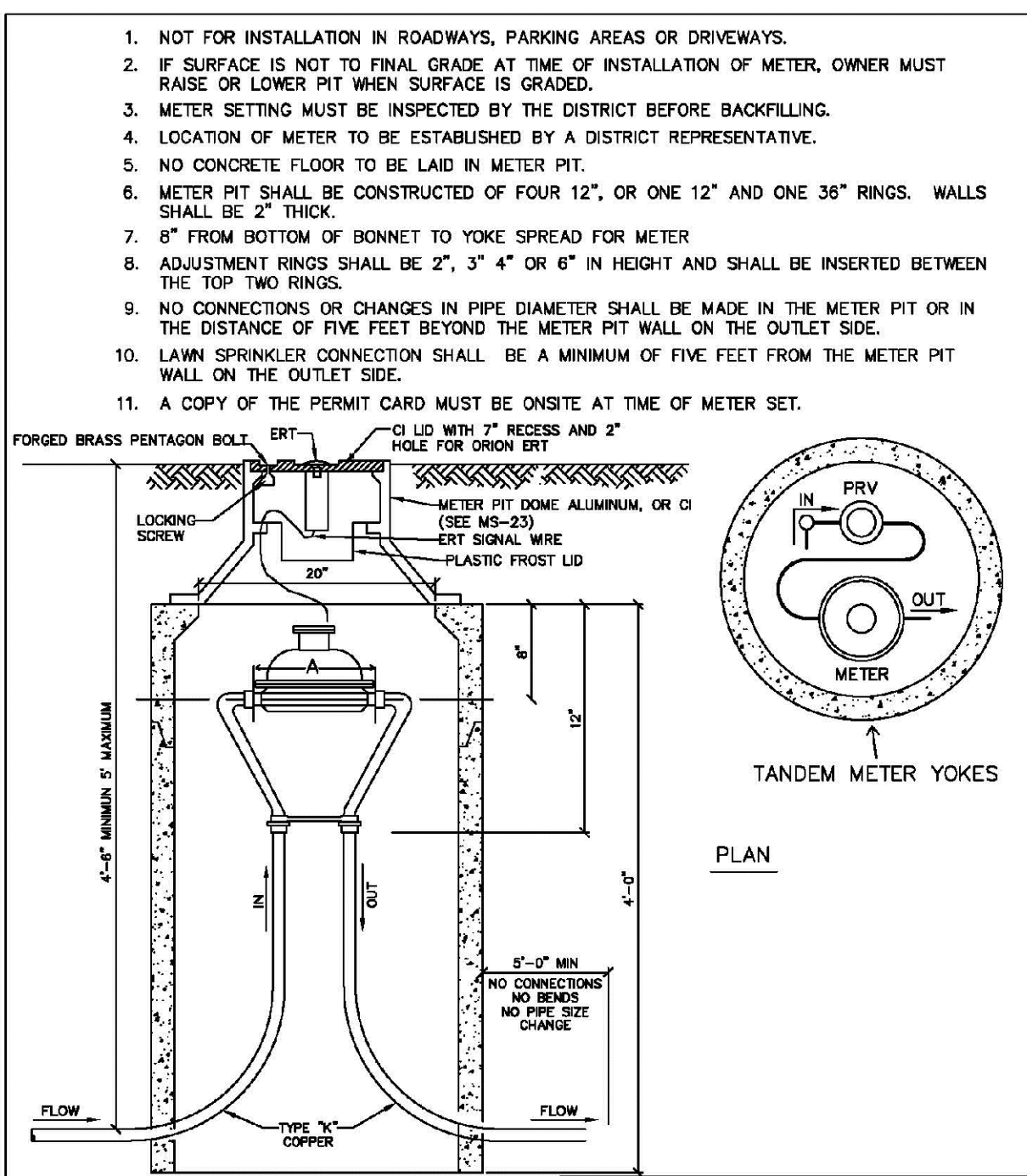
2008 REVISION



**PARKER WATER & SANITATION DISTRICT**  
**SERVICE LINE, STOP BOX AND**  
**OUTSIDE METER INSTALLATION**

SCALE: NONE DATE: 2/98  
 APPROVED: JFN 2/00 5/00  
 DISTRICT ENGINEER 4/01 1/12 12/03

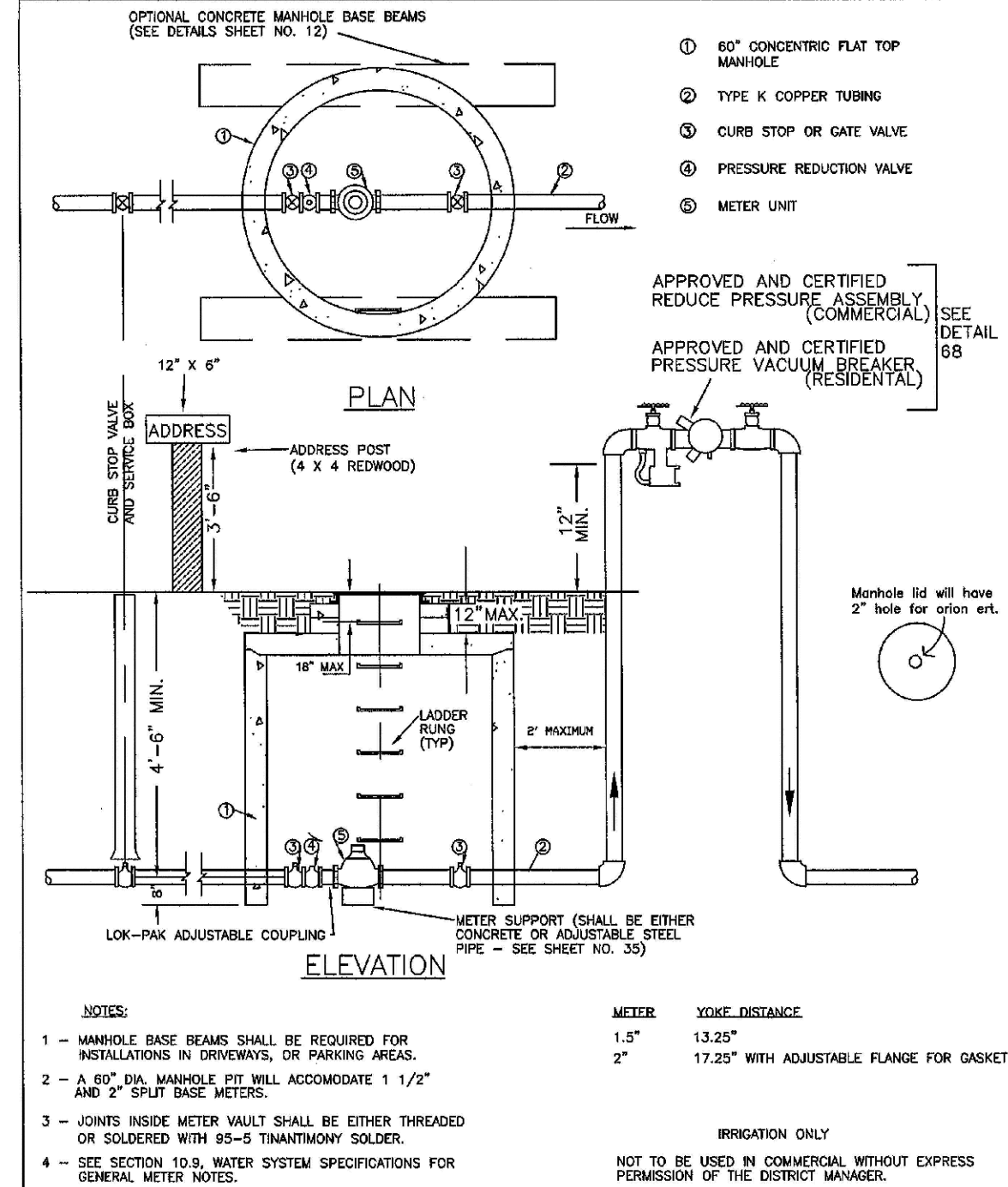
2008 REVISION



**PARKER WATER & SANITATION DISTRICT**  
**ALL OUTSIDE SETTINGS FOR**  
**5/8\"/>**

SCALE: NONE DATE: 2/98  
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 DISTRICT ENGINEER 01/28 01/28

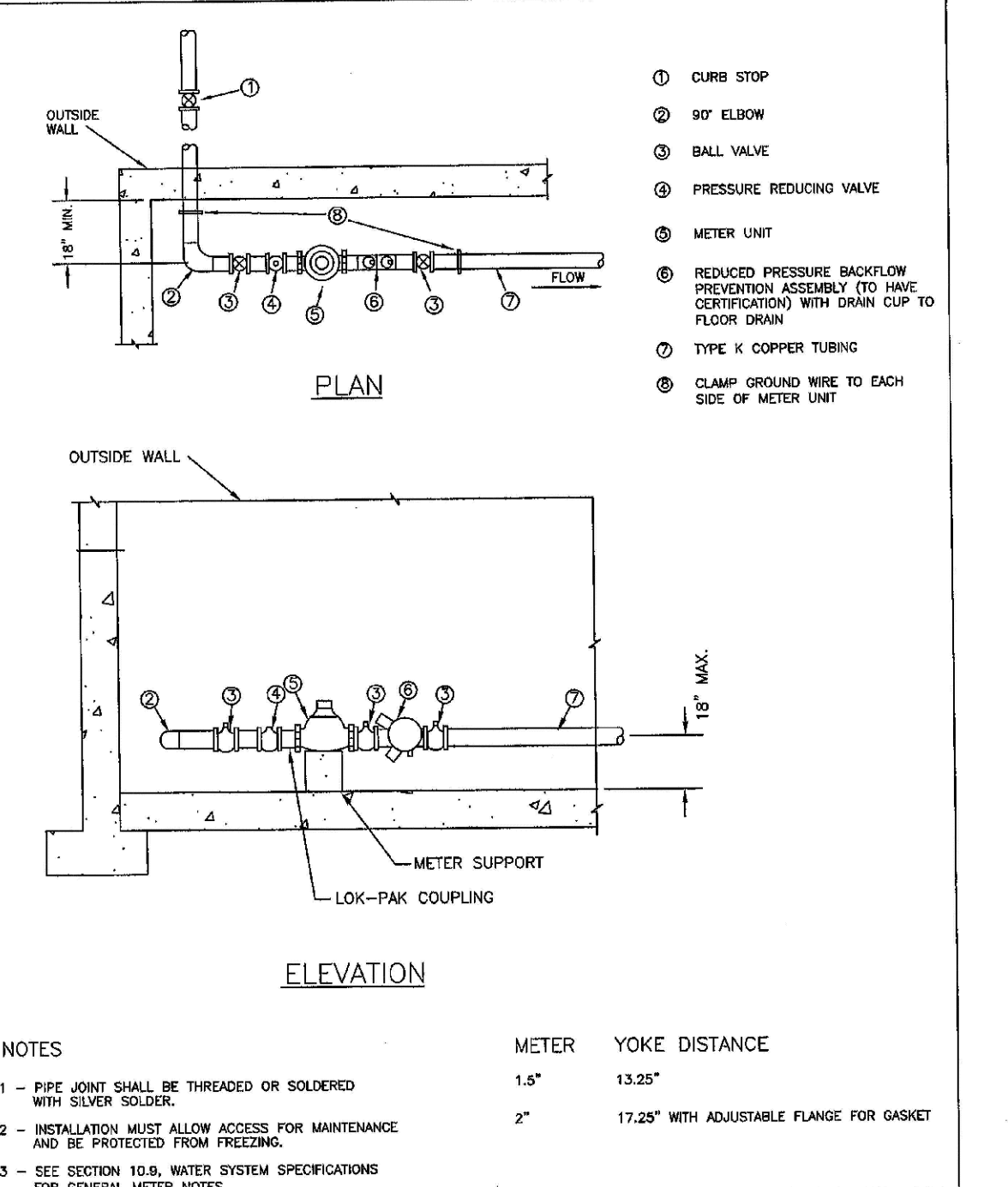
2008 REVISION



**PARKER WATER & SANITATION DISTRICT**  
**OUTSIDE SETTING FOR 1 1/2\"/>**

SCALE: NONE DATE: 2/98  
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 DISTRICT ENGINEER

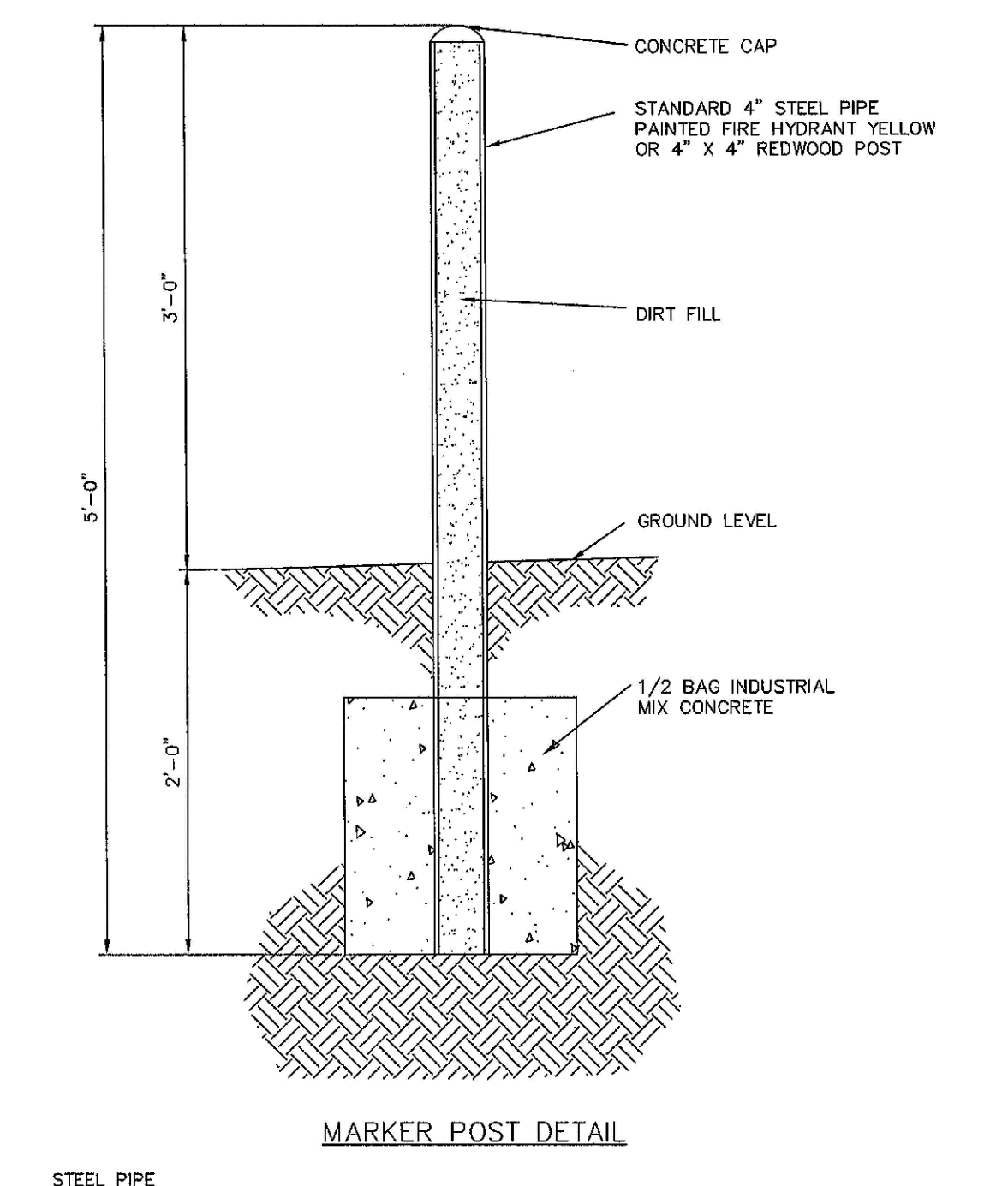
2008 REVISION



**PARKER WATER & SANITATION DISTRICT**  
**INSIDE SETTING FOR**  
**1 1/2\"/>**

SCALE: NONE DATE: 2/98  
 APPROVED: JFN 8/99 01/02 2/00 06/05  
 DISTRICT ENGINEER 4/01 07/06

2008 REVISION



**PARKER WATER AND SANITATION DISTRICT**  
**MARKER POST**

SCALE: NONE DATE: 2/98  
 APPROVED: JFN 2/00  
 DISTRICT ENGINEER 4/01 12/07

2008 REVISION

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 Englewood, CO 80150  
 Tel: (720) 482-9526  
 Fax: (720) 482-9548

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**ESX MANAGEMENT**  
 7353 South Alton Way  
 CENTENNIAL, CO 80112

**TRAILS AT CROWFOOT**  
**FILING 12 CONSTRUCTION DRAWINGS**  
**WATER DETAILS**

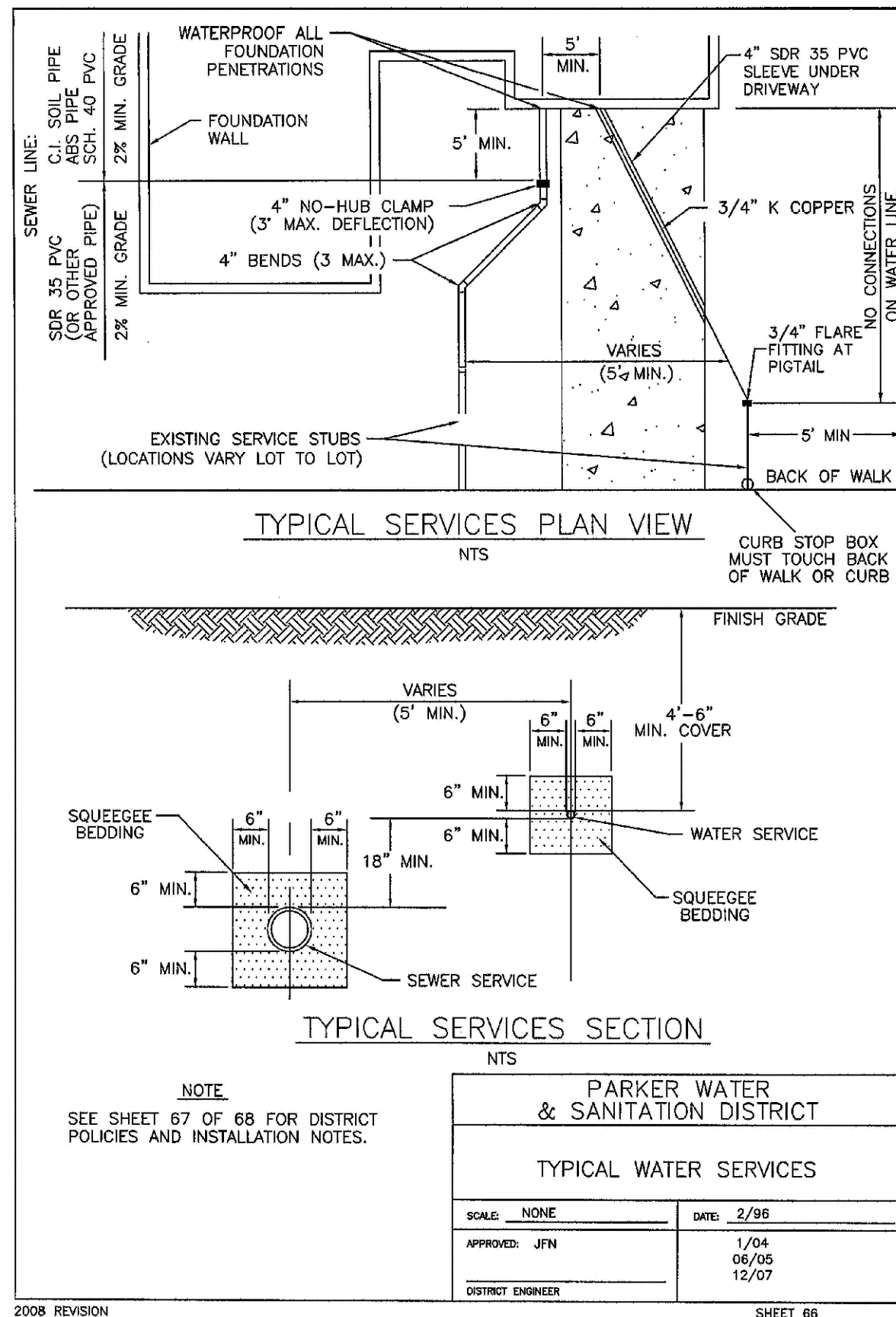
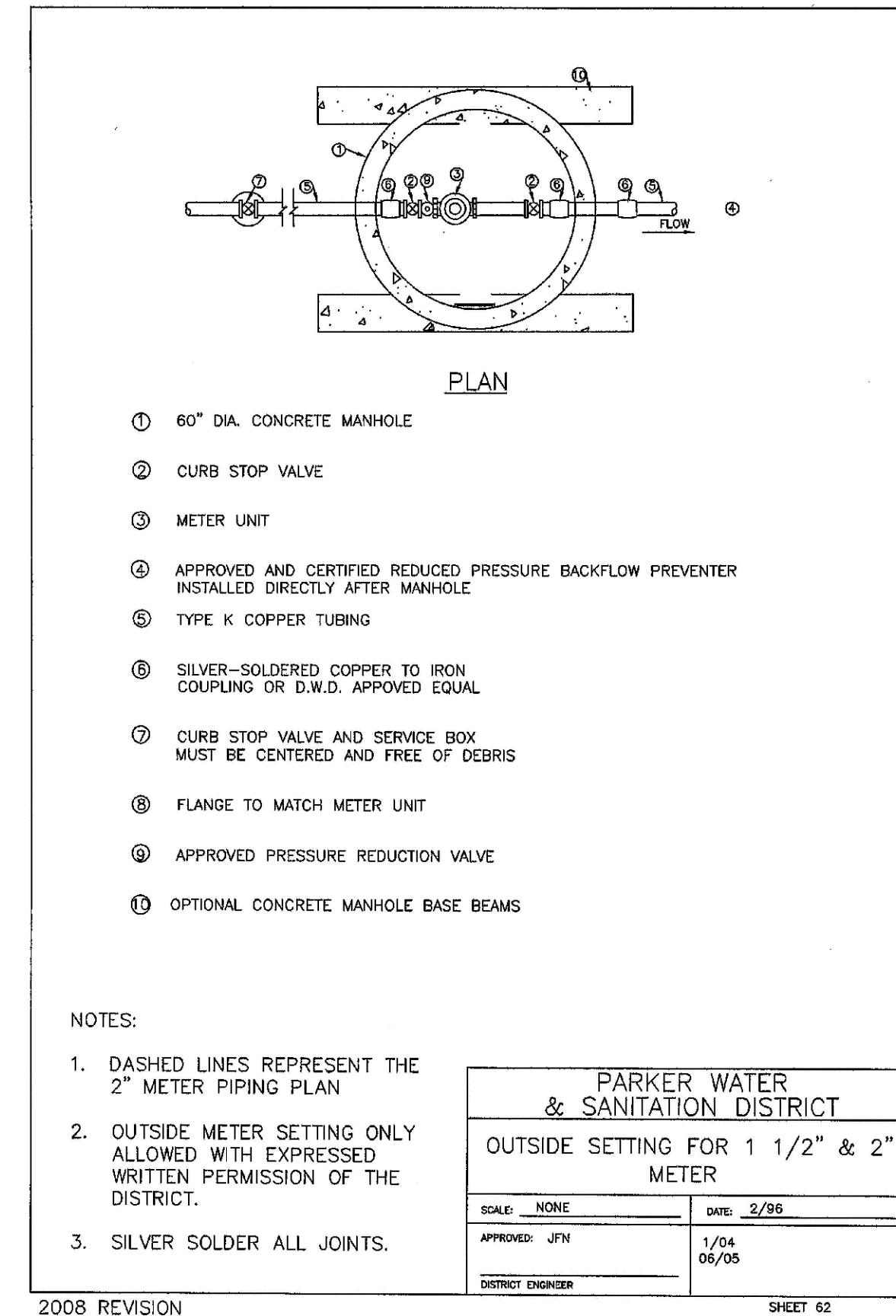
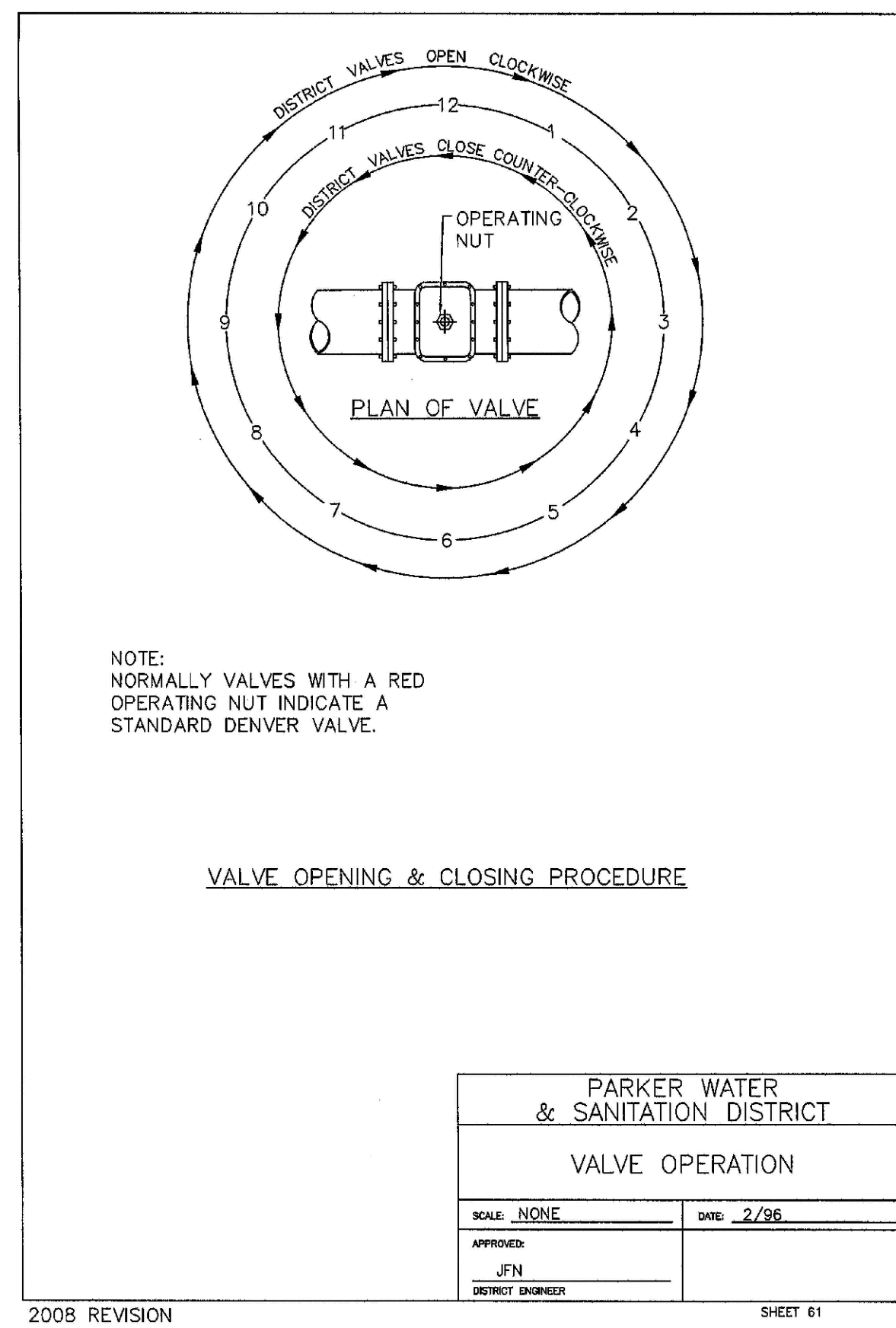
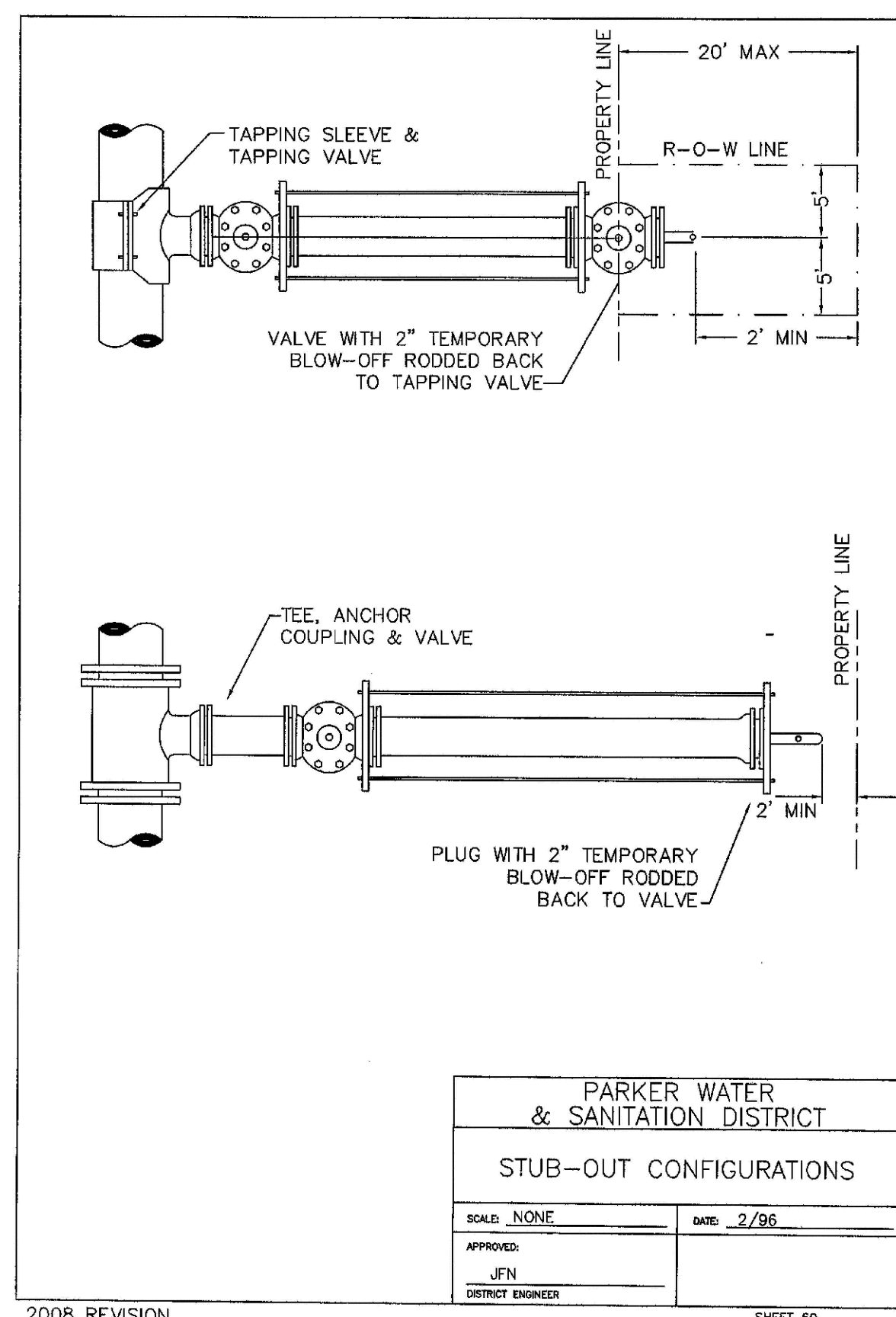
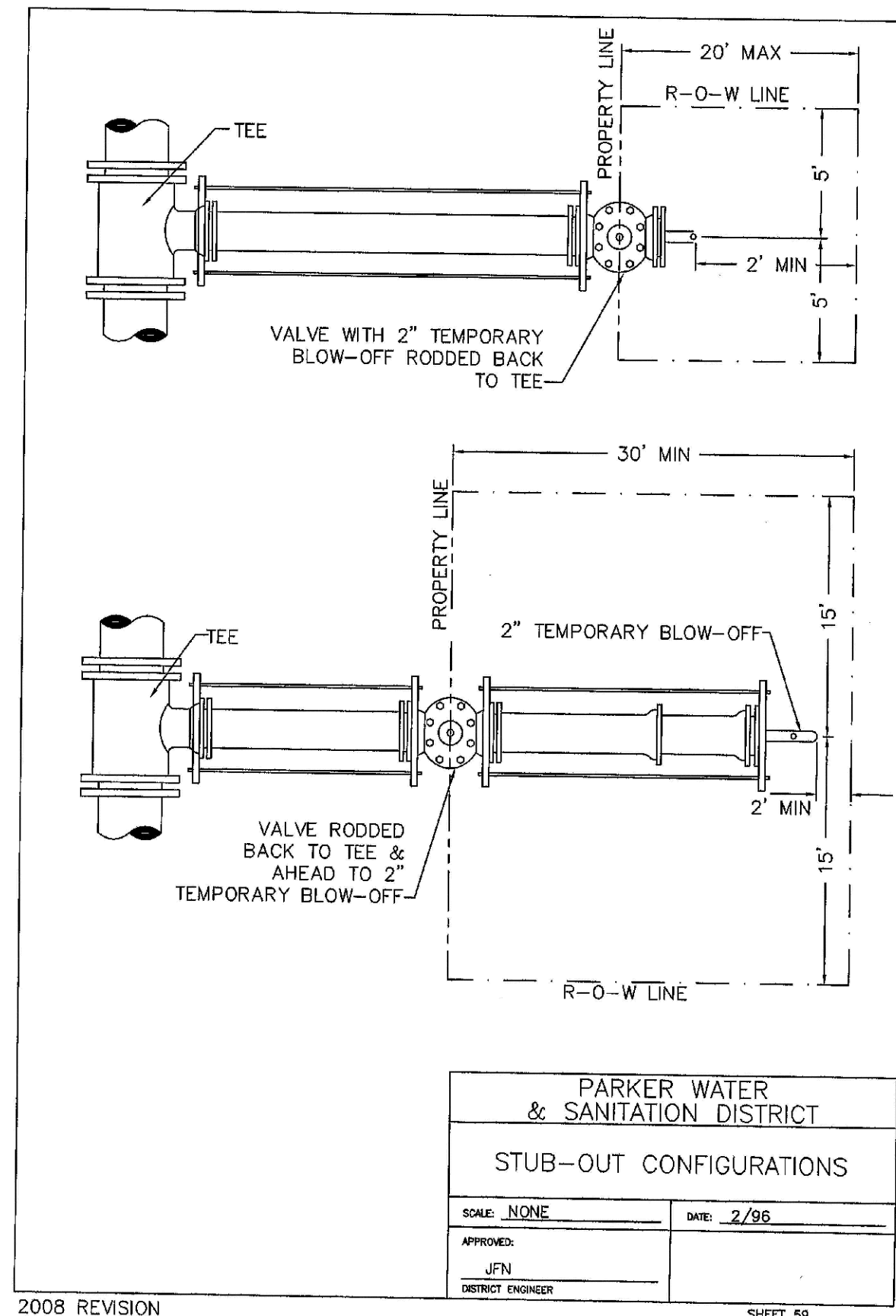
SCALE: AS SHOWN  
 DRAWN BY: JF  
 CHECKED BY: JJ  
 DATE: SEPTEMBER 2017

FILE NO: 8130283701

SHEET NUMBER: 14

NO. Revisions

Date Init. Appr. Date



**INSPECTION POLICY:**

- ALL SERVICE INSPECTIONS MUST BE SCHEDULED WITH THE DISTRICT OFFICE (303)841-2088 AT LEAST 24 HOURS IN ADVANCE OF THE REQUESTED INSPECTION.
- SERVICE INSPECTIONS WILL OCCUR BETWEEN 1:00 P.M. AND 3:00 P.M. SPECIFIC INSPECTION TIMES ARE NOT AVAILABLE.
- 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 \$80 RE-INSPECTION FEE CHARGED.
- SHOULD THE SERVICE LINES BE DAMAGED BY LATER CONSTRUCTION, AN INSPECTION OF THE REPAIR WILL BE REQUIRED IN ACCORDANCE WITH NOTES 1 AND 2 ABOVE.
- THE CONTRACTOR SHALL LEAVE ALL PIPE AND FITTINGS EXPOSED FOR THE INSPECTOR TO OBSERVE. INSPECTORS WILL NOT ENTER ANY EXCAVATIONS TO CHECK MATERIALS. THE TOP LAYER OF BEDDING CAN BE ADDED AFTER THE INSPECTION HAS BEEN COMPLETED.
- ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH OSHA STANDARDS.
- LOTS WITHOUT BUILDING ADDRESSES OR LOT AND BLOCK NUMBERS BEFORE DISTRICT INSPECTION OR METER SET WILL FAIL AUTOMATICALLY.
- CONTRACTOR MUST BE PRESENT AT TIME OF INSPECTION.

**INSTALLATION NOTES:**

**WATER**

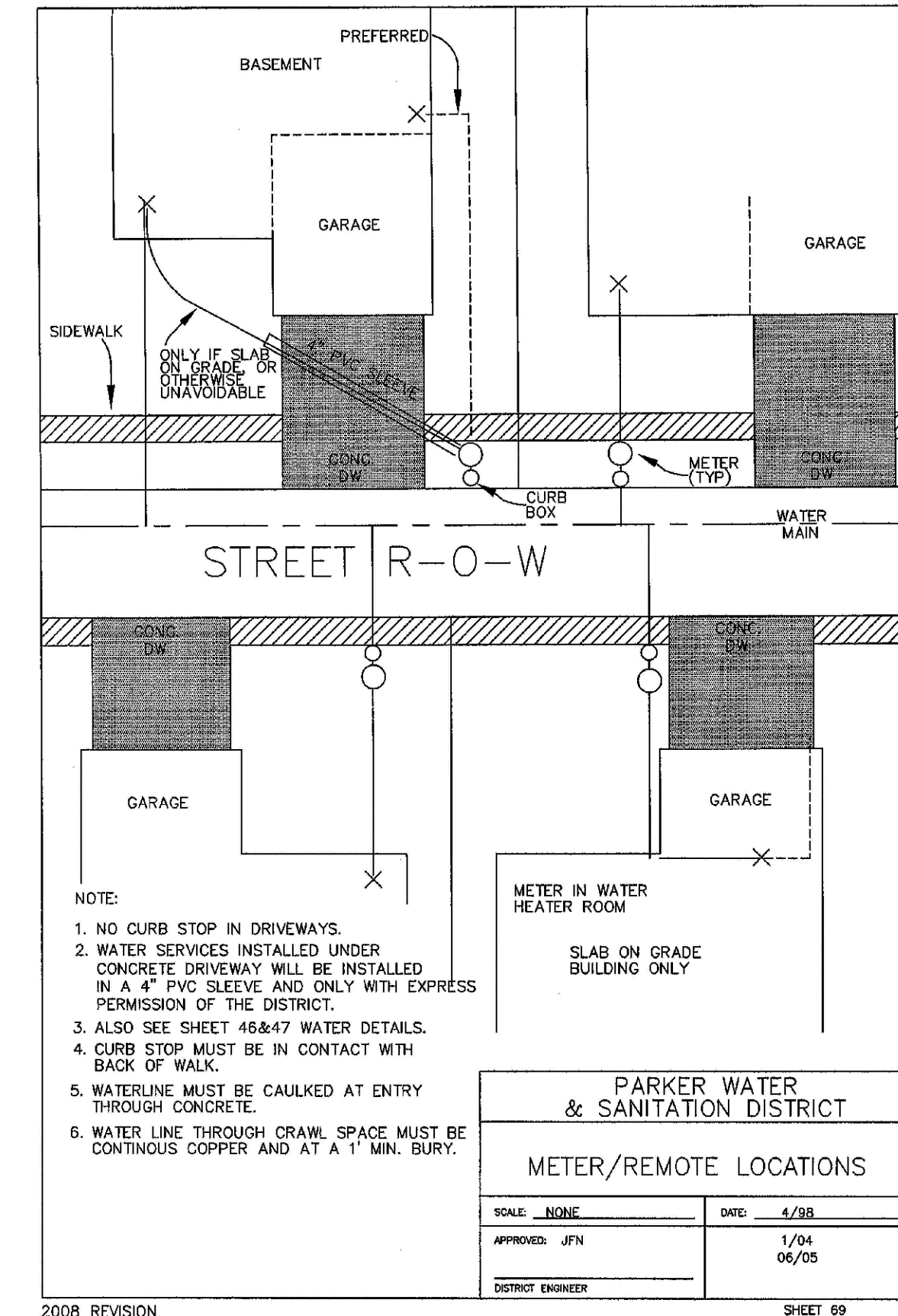
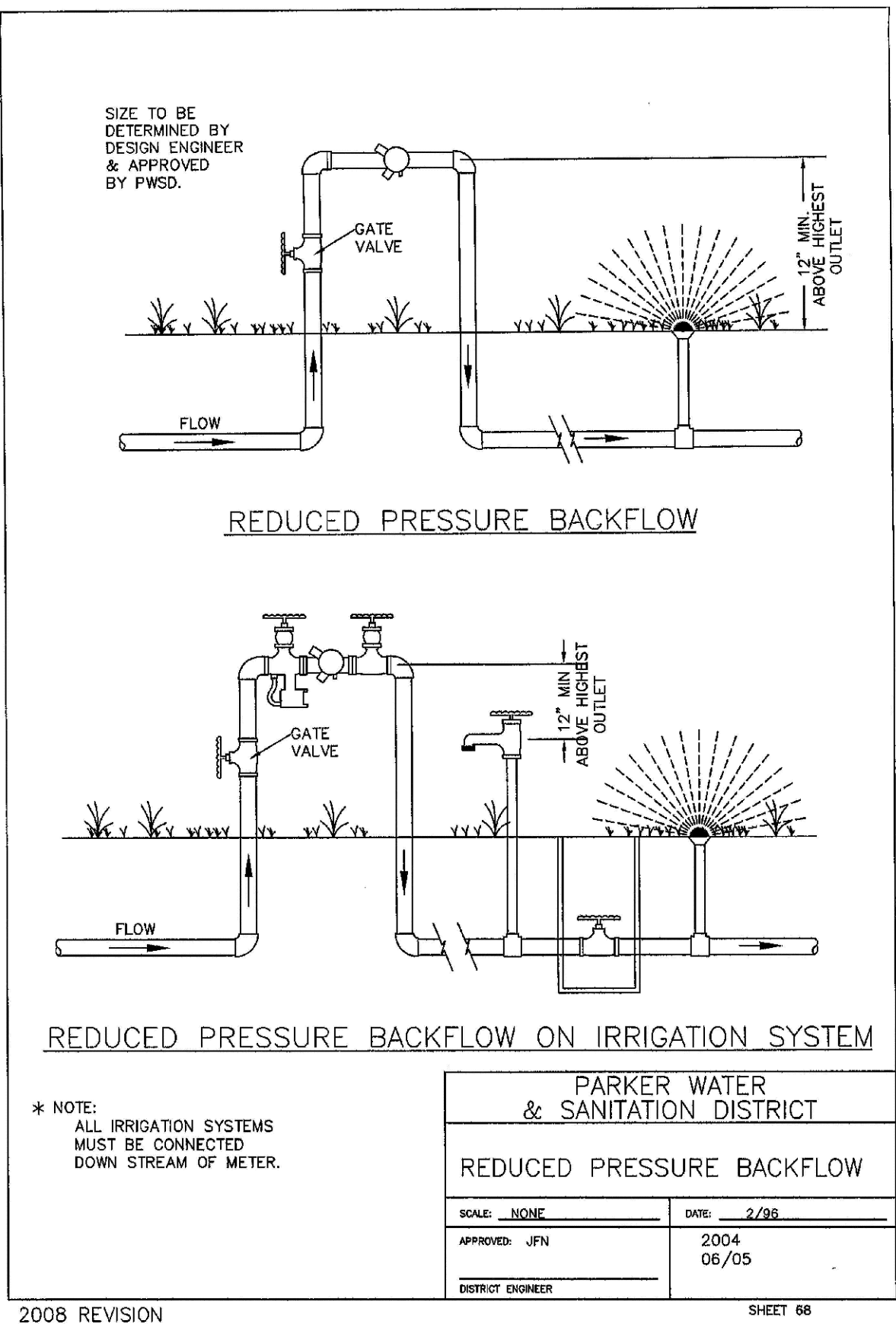
- ACCEPTABLE PIPE MATERIALS SHALL BE K-COPPER TUBING, (3/4" MIN.)
- APPROVED BEDDING TO BE SQUEEGEE.
- ONLY ONE COUPLING WILL BE ALLOWED BETWEEN THE STUB-IN AND BUILDING. A COUPLING MAY BE EITHER FLARED OR SILVER-SOLDERED. COMPRESSION COUPLINGS WILL NOT BE ALLOWED. MOVED CURB BOXES MUST BE INSPECTED BY PWSO PRIOR TO BURIAL.
- A WATER SERVICE WHICH CROSSES A SEWER SERVICE CAN DO SO ONLY AT A 90°± ANGLE. MAXIMUM: 45° ANGLE. MINIMUM: WATER SERVICES SHALL BE LOCATED A MINIMUM OF 18" ABOVE SEWER SERVICE.
- WATER SERVICE FOUNDATION PENETRATIONS SHALL BE WATERPROOFED USING MASTIC OR OTHER APPROVED METHOD. CRAW SPACE: REQUIRES CONTINUOUS COPPER WITH A 1" BURY.
- STOPBOX MUST BE PLUMB AND CENTERED OVER NUT AT THE BACK OF CURB, AND MUST BE SET AT OR SLIGHTLY ABOVE FINISHED GRADE.
- STOPBOXES MUST BE SET AT BACK OF SIDEWALK OR CURB (MUST BE TOUCHING).
- NO CRAWSPACE MOUNTED METERS ALLOWED.
- WATERLINE MUST BE ATTACHED TO A SUPPORT BOARD THAT IS MOUNTED TO THE WALL.
- NO VOIDS ALLOWED UNDER WATERLINES FROM STOP BOX TO FOUNDATION.
- CURBSTOP BOXES CANNOT BE IN DRIVEWAYS.
- WATERLINES PASSING UNDER DRIVEWAYS NEED TO BE SLEEVED IN 4" P.V.C. AND HAVE EXPRESS PERMISSION OF THE DISTRICT.
- YOKES SHOULD BE MOUNTED NO GREATER THAN 6 INCHES ABOVE BOTTOM SHUTOFF. EACH SERVICE MUST INCLUDE A STOP AND WASTE VALVE AND A PRESSURE REDUCING VALVE LOCATED WITHIN THE ABOVE REFERENCED 6 INCH SPACE.
- NO SPIRDS OR FLARED COUPLINGS ALLOWED ON SERVICES LARGER THAN 3/4". SILVER SOLDERED JOINTS MUST BE INSPECTED BY PWSO PRIOR TO BURIAL. FLARED COUPLINGS WILL BE ALLOWED ON ALL SERVICES 3/4" AND SMALLER.
- ONLY 3/4" (JUMPER OR CHEATER) PIPES (RESIDENCES) ARE ALLOWED. (JUMPER OR CHEATER) PIPES WILL BE REMOVED PRIOR TO METER SET DATE.
- ALL SERVICES WILL BE PERMANENTLY MARKED ON CURB FACE AS FOLLOWS:  
"W" FOR SANITARY SEWER SERVICE  
"V" FOR WATER SERVICES
- CONTRACTOR MUST BE PRESENT AT TIME OF THE INSPECTION

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

SCALE: NONE DATE: 2/96

APPROVED: JFN 1/04 DISTRICT ENGINEER

2008 REVISION SHEET 67



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SCALE:	AS SHOWN
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APPR.	
DATE	

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Englewood, CO 80150  
Tel: (720) 482-9526  
Fax: (720) 482-9546

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WATER DETAILS

