

WATER SYSTEM - STANDARD DETAILS		
Sheet #	Rev #	Rev #
(2016R)	(2016R)	(2016R)
W4.11		33
Service Lines and Appurtenances		
Vent Pipe - Installation and Details	WS.1	36
Six Inch (6") Diameter Vent Pipe/Screen	WS.2	37
Residential Vent Assembly	WS.3	38
Pressure Regulating Valve - Manhole Installation Typical Plan	WS.4	39
Pressure Regulating Valve - Manhole Installation Cross-Section	WS.5	40
Pressure Regulating Valve - Rectangular Vault Typical Plan	WS.6	41
Pressure Regulating Valve - Rectangular Vault Cross-Section	WS.7	42
Inside Commercial Meter Installation for Six Inch (6") & Smaller Pipe	WS.8	43
Service Line, Stop Box, and Inside Meter Setting (Commercial only)	WS.9	47
Service Line, Stop Box and Outside Meter Installation	WS.10	44
Outside Setting for 3/4", 1", 1 1/4" and 1 1/2" Meters with PRV	WS.11	45
Outside Setting for 1 1/2" and 2" Meter for Irrigation	WS.12	49
Remote Reading 3/4" and 1" Meter - Typical Inside Setting Commercial	WS.13	46
Inside Setting for 1 1/2" and 2" Meter with Check Valve	WS.14	51
Road Curb Stop and Concrete Collar	WS.15	50
Adjustable Steel Pipe Valve Support	WS.16	35
Residential Fire Line	WS.17	73
Three-Inch (3") and Larger Domestic and Fire Sprinkler Connections	WS.18	34
Large Flow Meter in Vault	WS.19	74
Wall and Body Clamps for 3" Meters	WS.20	52
Wall Clamps for 4", 6", 8" and 10" Meters	WS.21	53
Miscellaneous		
Reduced Pressure Backflow (Irrigation System)	WS.1	68
Water Quality Sampling Station	WS.2	80
Manhole Post Detail	WS.3	58
General Requirements		
District Policies and Installation Notes for Water Services	W1.1	67
Typical Water Services	W1.2	66
Water Distribution System Details		
Water Distribution System Typical Plan	W2.1	1
Typical Street Cross Section and Street Centerline Profile	W2.2	2
Water Distribution System Typical Plan for Curved Streets	W2.3	3
Water Distribution System Typical Plan for Cal-de-Sac	W2.4	4
Fire Hydrants, Location & Installation	W2.5	5
Locator Wire Details	W2.6	6
Piping at Street Intersection - Future Connections	W2.7	7
Water Main Equipment		
Transmission Main Butterfly Valve Installation	W3.1	15
20", 24" and 30" Butterfly Valve Assembly	W3.2	16
Valve Operator Extension	W3.3	71
Valve Operation	W3.4	61
Sub-Outlet Configurations	W3.5	59
Air and Vacuum Valve Installation	W3.6	13
Blow-Off Installation for Twelve Inch (12") and Smaller Pipes	W3.7	9
Low Point Blow-Off with Sand Trap	W3.8	10
Transmission Main Blow-Off Installation	W3.9	11
Valve Box Detail	W3.10	54
Length of Tied Pipe	W3.11	18
Tie Rod and Washer Details	W3.12	19
Tie Rod Coupling	W3.13	20
Flange Log Detail	W3.14	21
Clamp Details and Dimensions	W3.15	23
Honey Log Details	W3.16	24
Mechanical Joint Restraint	W3.17	65
Concrete Kickblocks - Bearing Surface and Installation	W3.18	17
24" Diameter Ring and Cover	W3.19	75
Access Manhole Assembly	W3.20	14
Encasement and Casing Installation		
Typical Trench Section - Pipe Protection	W4.1	8
Pipe Bedding	W4.2	22
Waterline Encasement	W4.3	70
Bored Casings Beneath Conduits	W4.4	25
Bore Casing Detail	W4.5	26
Conduit or Storm Sewer Crossing	W4.6	27
Crossing Storm and Sanitary Sewers	W4.7	28
Bedding Details	W4.8	29
Typical Cutoff Wall	W4.9	30
Insulated Joints, Rods and Mechanical Couplings	W4.10	32

ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO DISTRICT STANDARDS. THE NUMBER AND LOCATIONS OF THE FIRE HYDRANTS AS SHOWN ON THE OVERALL UTILITY PLAN ARE CORRECT AS SPECIFIED BY THE SOUTH METRO FIRE PROTECTION DISTRICT

(SIGNATURE OF FIRE CHIEF OR DESIGNATED REPRESENTATIVE)

DATE SIGNED _____

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 24 HOUR NOTICE TO THE INSPECTOR IS REQUIRED FOR SCHEDULING 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: _____

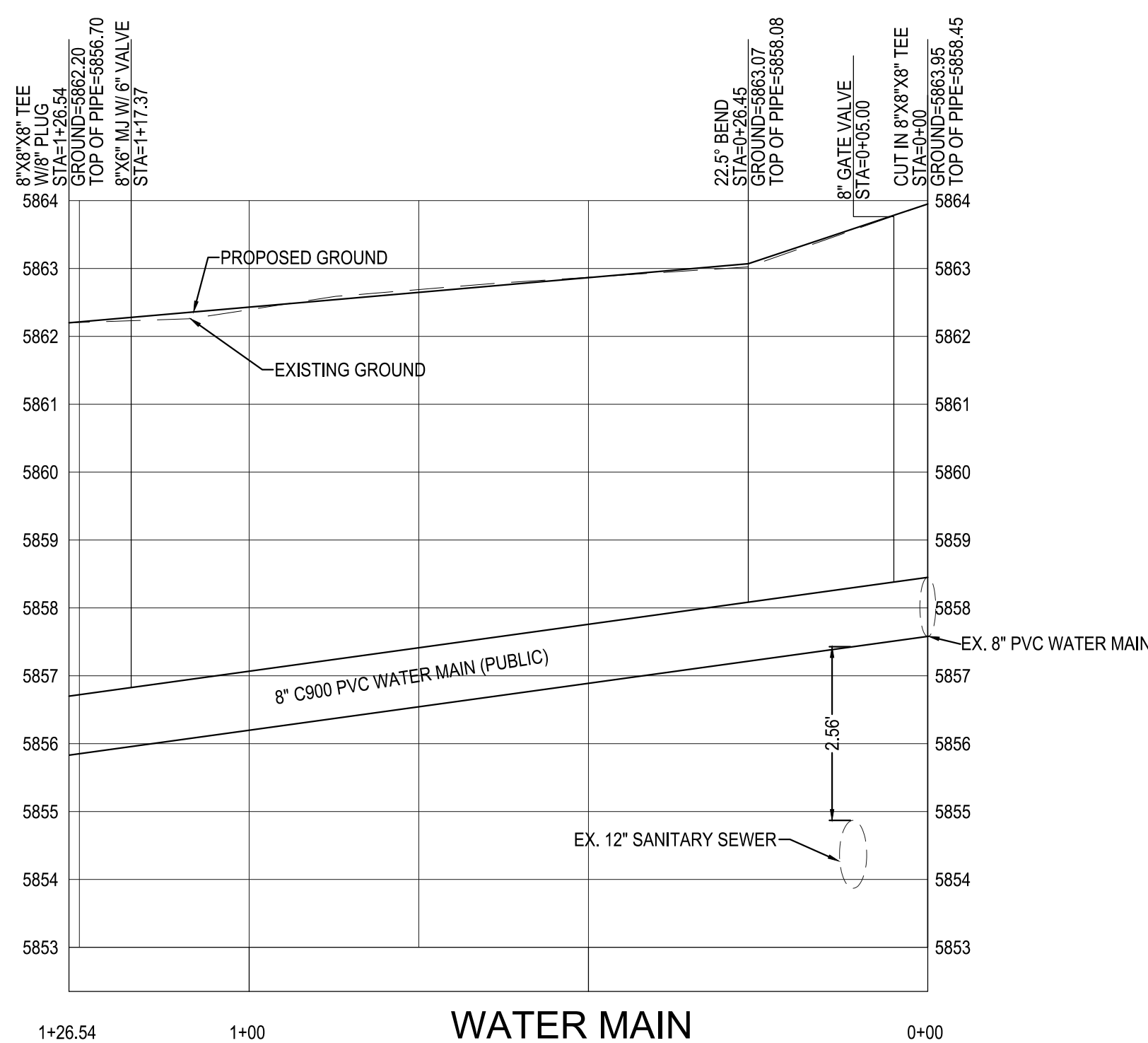
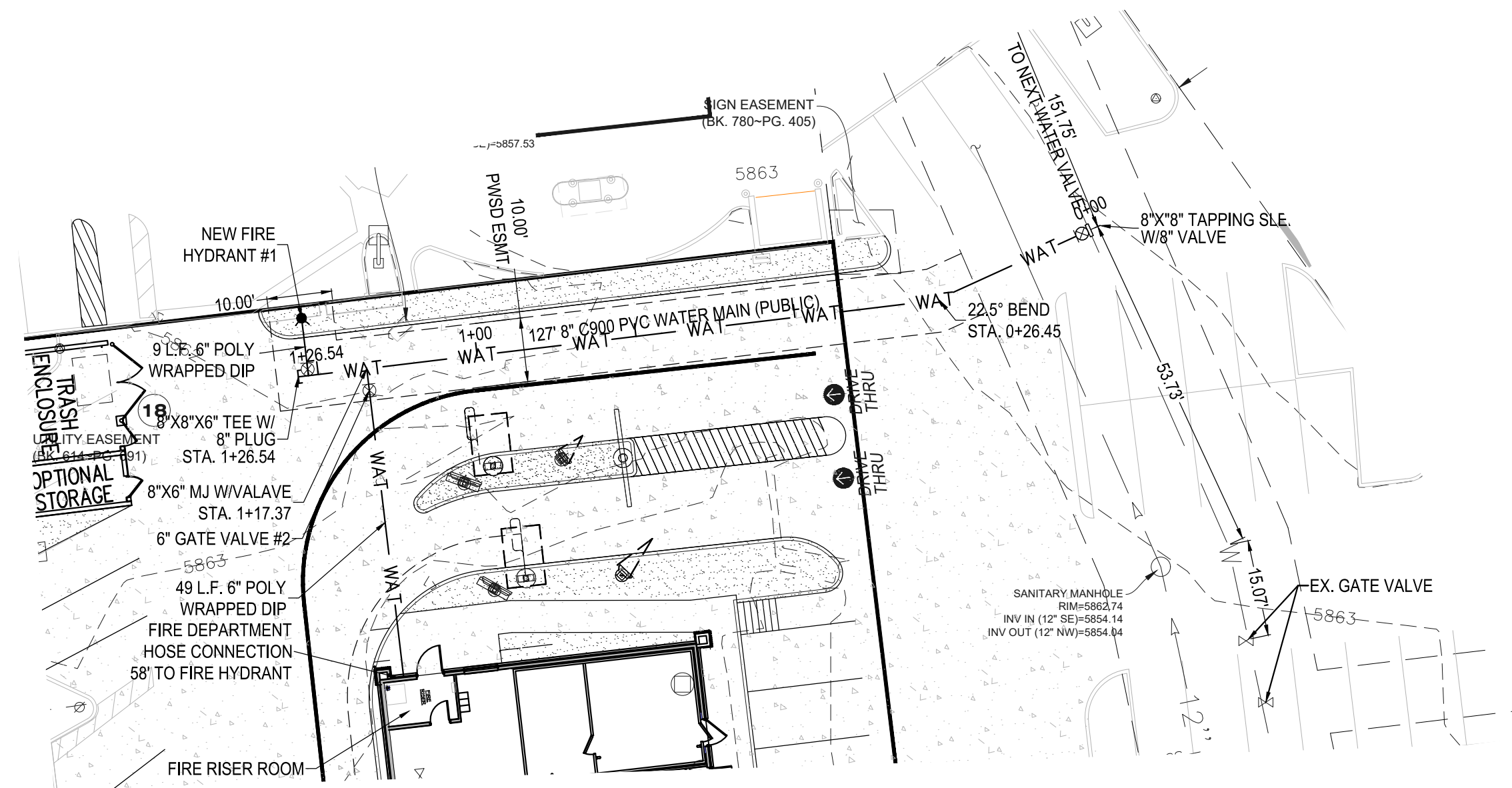
NO.		DATE	REVISION DESCRIPTION
CIVIL ENGINEERING CONSULTANT			
2595 PONDEROSA ROAD FRANKTOWN, CO 80116 720.384.7661 Phone rpalm@strategicsl.com Robert J. Palmer, PE President			
PREPARED UNDER THE DIRECT SUPERVISION OF:			
BY Robert J. Palmer, PE Licensed Professional Engineer (CO PE #36320), AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.			
		OFFICE: ROCKY MOUNTAIN REGION ADDRESS: 4643 S. ULLSTER STREET, SUITE 1300, DENVER, COLORADO 80237	
STREET ADDRESS	CITY	STATE	COUNTY
10950 S. PARKER ROAD	PARKER	COLORADO	DOUGLAS
SCALE:	AS NOTED	MED. RES.:	BOWAN
DATE:	10/12/2023	MED. P/CM:	PEDIGO
DESIGNED BY:	RJP	FILE NAME:	CURRENT.DWG
DRAWN BY:	RJP	SLS. NO.:	14-001-47
CHECKED BY:	RJP	DRAWING TITLE	
OVERALL UTILITY PLAN			
SHEET NO.			
UT2.0			

MCDONALDS REMODEL AT PARKER CENTRAL AREA

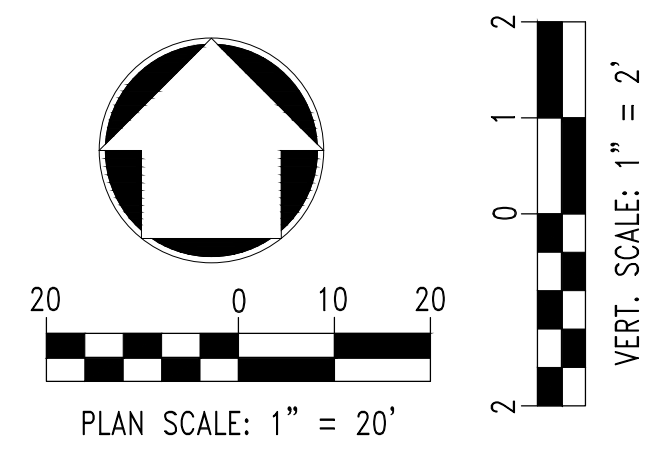
FILING NO. 5, BLOCK 1, LOT 2

WATER & SANITARY SEWER PLANS

PARKER CENTRAL AREA FILING NO. 5, BLOCK 1, LOT 2, TOWN OF PARKER,
COUNTY OF DOUGLAS, STATE OF COLORADO.



WATER SYSTEM - STANDARD DETAILS		
Sheet #	Doc #	
W4.11	2008B	33
Service Lines and Appurtenances		
Polyethylene Wrap		
Vent Pipe - Installation and Details	WS.1	36
Six Inch (6") Diameter Vent Pipe Screen	WS.2	37
Residential Vent Assembly	WS.3	38
Pressure Regulating Valve - Manhole Installation Typical Plan	WS.4	39
Pressure Regulating Valve - Manhole Installation Cross Section	WS.5	40
Pressure Regulating Valve - Rectangular Vault Typical Plan	WS.6	41
Pressure Regulating Valve - Rectangular Vault Cross Section	WS.7	42
Inside Commercial Meter Installation for Six Inch (6") & Smaller Pipe	WS.8	43
Service Line, Stop Box, and Inside Meter Setting (Commercial only)	WS.9	47
Service Line, Stop Box and Outside Meter Installation	WS.10	44
Outside Setting for 5/8", 3/4", 1", 1 1/4" and 1 Meter with PRV	WS.11	45
Outside Setting for 1 1/2" and 2" Meter for Irrigation	WS.12	49
Remote Reading 3/4" and 1" Meter - Typical Inside-Setting Commercial	WS.13	46
Inside Setting for 1 1/2" and 2" Meter with Check Valve	WS.14	51
Round Curb Stop and Concrete Collar	WS.15	50
Adjustable Steel Pipe Valve Support	WS.16	35
Residential Fire Line	WS.17	73
Three-Inch (3") and Larger Domestic and Fire Sprinkler Connections	WS.18	31
Large Flow Meter in Vault	WS.19	74
Wall and Body Clamps for 2" Meters	WS.20	52
Wall Clamps for 4", 6", 8" and 10" Meters	WS.21	53
Miscellaneous		
Reduced Pressure Backflow (Irrigation System)	W6.1	68
Water Quality Sampling Station	W6.2	new
Manhole Test Detail	W6.3	58
General Requirements		
District Policies and Installation Notes for Water Services	W1.1	67
Typical Water Services	W1.2	66
Water Distribution System Details		
Water Distribution System Typical Plan	W2.1	1
Typical Street Cross Section and Street Centerline Profile	W2.2	2
Water Distribution System Typical Plan for Curved Streets	W2.3	3
Water Distribution System Typical Plan for Cal-de-Sacs	W2.4	4
Fire Hydrant, Location & Installation	W2.5	5
Locator Wire Details	W2.6	6
Piping at Street Intersection - Future Connections	W2.7	7
Water Main Equipment		
Transmission Main Butterfly Valve Installation	W3.1	15
20", 24" and 30" Butterfly Valve Assembly	W3.2	16
Valve Operator Extension	W3.3	71
Valve Operation	W3.4	61
Subs-Out Configurations	W3.5	59
Air and Vacuum Valve Installation	W3.6	13
Blow-Off Installation for Twelve-Inch (12") and Smaller Pipes	W3.7	9
Low Point Blow-Off with Sand Trap	W3.8	10
Transmission Main Blow-Off Installation	W3.9	11
Valve Box Detail	W3.10	34
Length of Tied Pipe	W3.11	18
Tie Rod and Washer Details	W3.12	19
Tie Rod Coupling	W3.13	20
Flange Lug Detail	W3.14	21
Clamp Details and Dimensions	W3.15	23
Harness Lug Details	W3.16	24
Mechanical Joint Restraint	W3.17	65
Concrete Kickbacks - Bearing Surface and Installation	W3.18	17
24" Diameter Ring and Cover	W3.19	75
Access Manhole Assembly	W3.20	14
Encasement and Casting Installation		
Typical Trench Section - Pipe Protection	W4.1	8
Pipe Bedding	W4.2	22
Waterline Encasement	W4.3	70
Bored Crossings Beneath Conduits	W4.4	25
Bore Casing Detail	W4.5	26
Conduit or Storm Sewer Crossing	W4.6	27
Crossing Storm and Sanitary Sewers	W4.7	28
Bedding Details	W4.8	29
Typical Cutoff Wall	W4.9	30
Insulated Joints, Rods and Mechanical Couplings	W4.10	32



ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO DISTRICT STANDARDS. THE NUMBER AND LOCATIONS OF THE FIRE HYDRANTS AS SHOWN ON THE OVERALL UTILITY PLAN ARE CORRECT AS SPECIFIED BY THE SOUTH METRO FIRE PROTECTION DISTRICT

(SIGNATURE OF FIRE CHIEF OR DESIGNATED REPRESENTATIVE)

DATE SIGNED _____

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 24 HOUR NOTICE TO THE INSPECTOR IS REQUIRED FOR SCHEDULING 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: _____

NO. DATE REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT:

Strategic Land Solutions, Inc.
Civil Engineering & Land Planning Solutions
2595 PONDEROSA ROAD
FRANKTOWN, CO 80116
720.384.7661 Phone
rpalmer@strategics.net
Robert J. Palmer, PE
President

PREPARED UNDER THE DIRECT SUPERVISION OF:

SEAL: PROFESSIONAL ENGINEER

BY Robert J. Palmer, PE
Licensed Professional Engineer (CO PE #36320),
AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

McDonald's
THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF MCDONALD'S CORPORATION AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.

OFFICE ADDRESS: ROCKY MOUNTAIN REGION
4643 S. ULLSTER STREET, SUITE 1300, DENVER, COLORADO 80237

STREET ADDRESS: 10950 S. PARKER ROAD
CITY: PARKER
STATE: COLORADO
COUNTY: DOUGLAS
CITY: PARKER
STATE: COLORADO
REGIONAL DWG. NO.: 500162
DRAWING D/W: tbd

SCALE: AS NOTED
DATE: 10/12/2023
DESIGNED BY: RJP
DRAWN BY: RJP
CHECKED BY: RJP

MOD. BY: BOWAN
MOD. P/C/M: PEDIGO
FILE NAME: CURRENT.DWG
S.L.S. NO. 14-001-47

DRAWING TITLE: **WATERLINE PROFILE**

SHEET NO.: **UT3.0**

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.

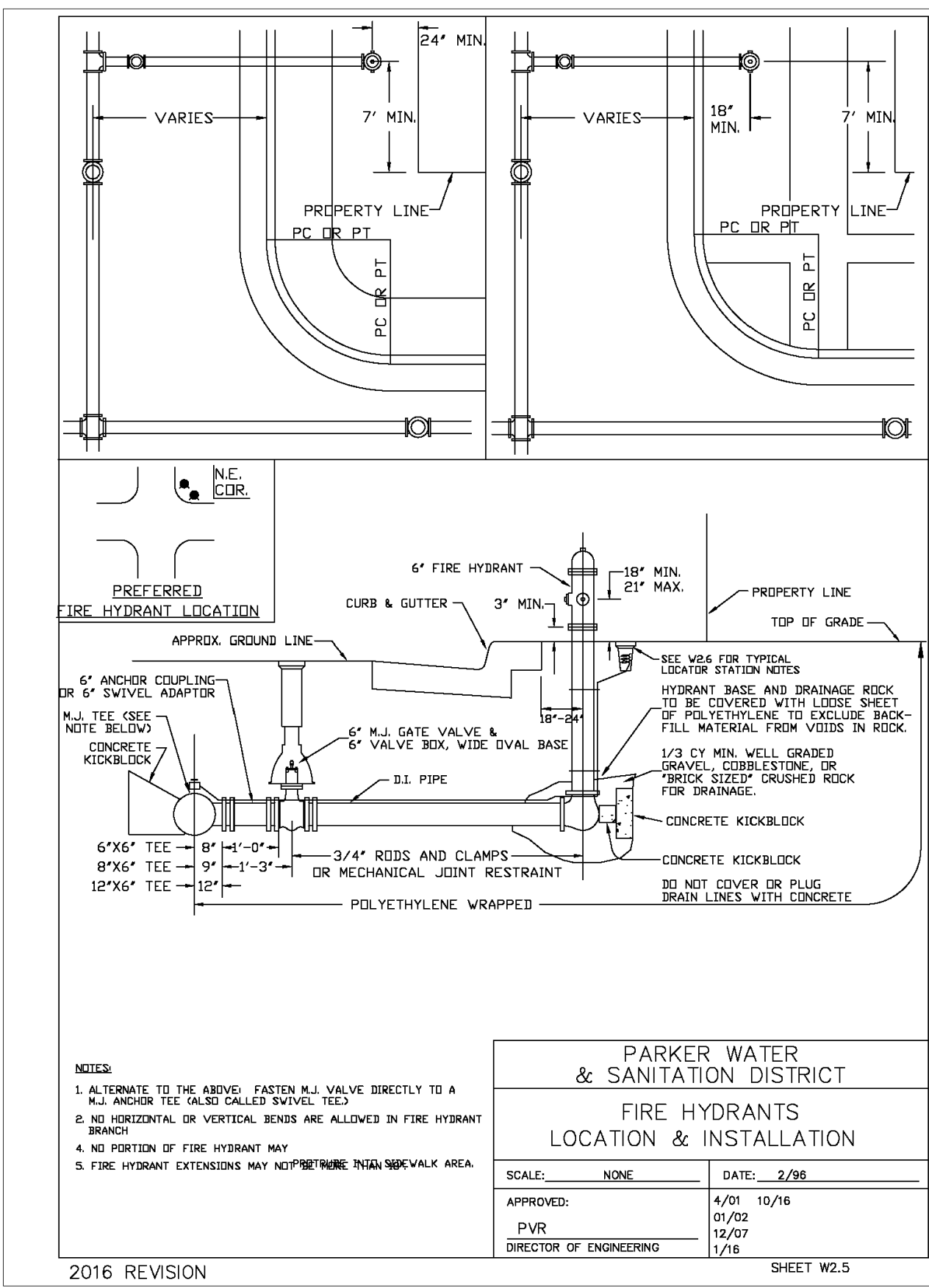
INSTALLATION NOTES:

- WATER**
1. ACCEPTABLE PIPE MATERIALS SHALL BE K-COPPER TUBING. (3/4" MIN.)
 2. APPROVED BEDDING TO BE SQUEEGE.
 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 PWSO 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 CONTINUOUS COPPER WITH A 1" BURY.
 6. CURB STOP MUST BE PLUMB AND CENTERED OVER THE NUT. IT SHOULD BE STRAPPED TO THE METER PIT (RESIDENTIAL INSTALLATIONS) OR CENTERED OVER THE EASEMENT LINE (COMMERCIAL INSTALLATIONS). THE ASSEMBLY MUST BE AT OR SLIGHTLY ABOVE FINISHED GRADE.
 7. MOVED CURB BOXES MUST BE INSPECTED BY PWSO 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:
"W" FOR SANITARY SEWER SERVICE
"V" FOR WATER SERVICES
 13. NO SPLICES OR FLARED COUPLINGS ALLOWED ON SERVICES LARGER THAN 3/4". SILVER SOLDERED JOINTS MUST BE USED IN MOVING STOPBOXES 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.

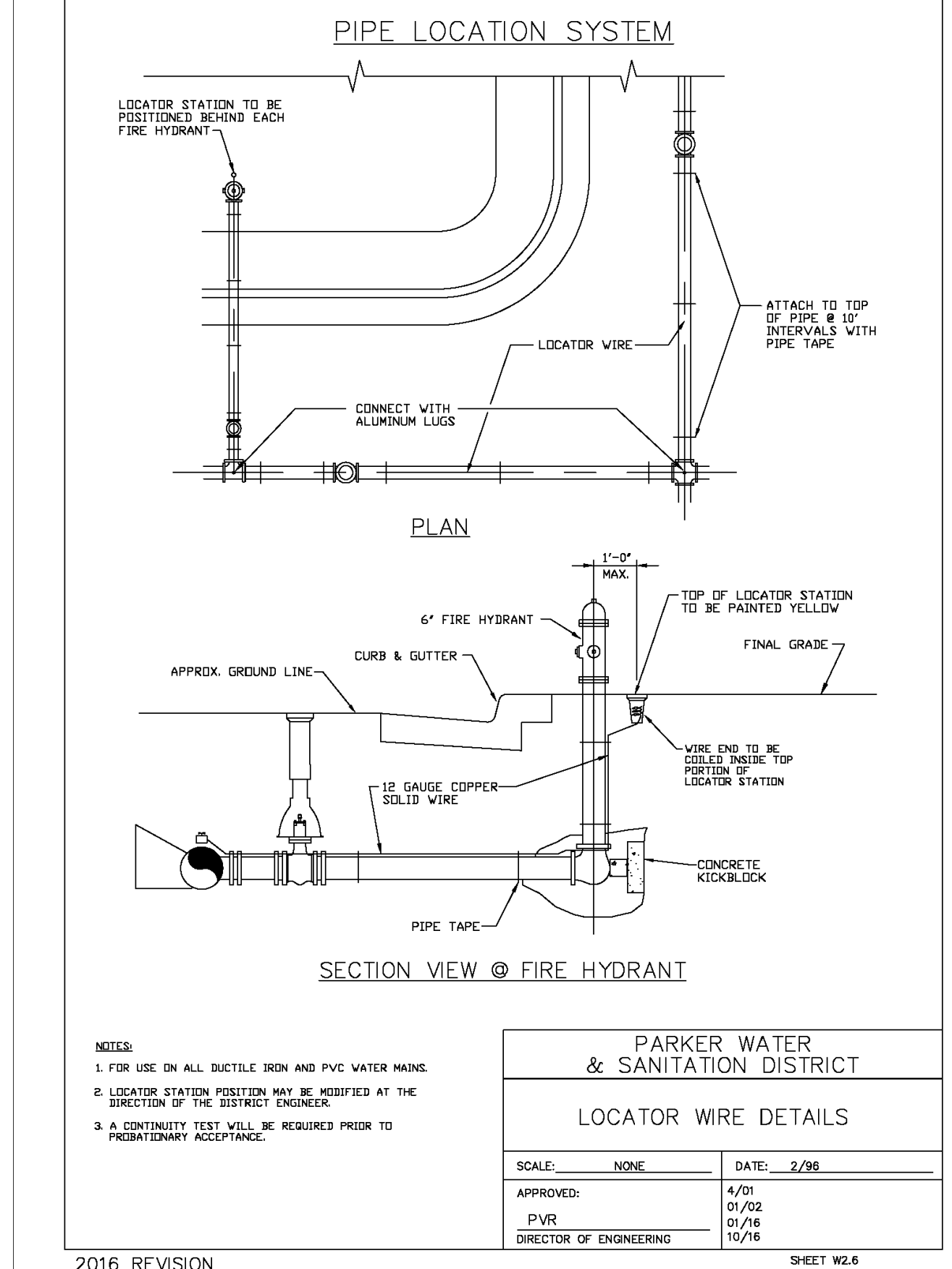
PARKER WATER & SANITATION DISTRICT
DISTRICT POLICIES & INSTALLATION NOTES FOR WATER SERVICES

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

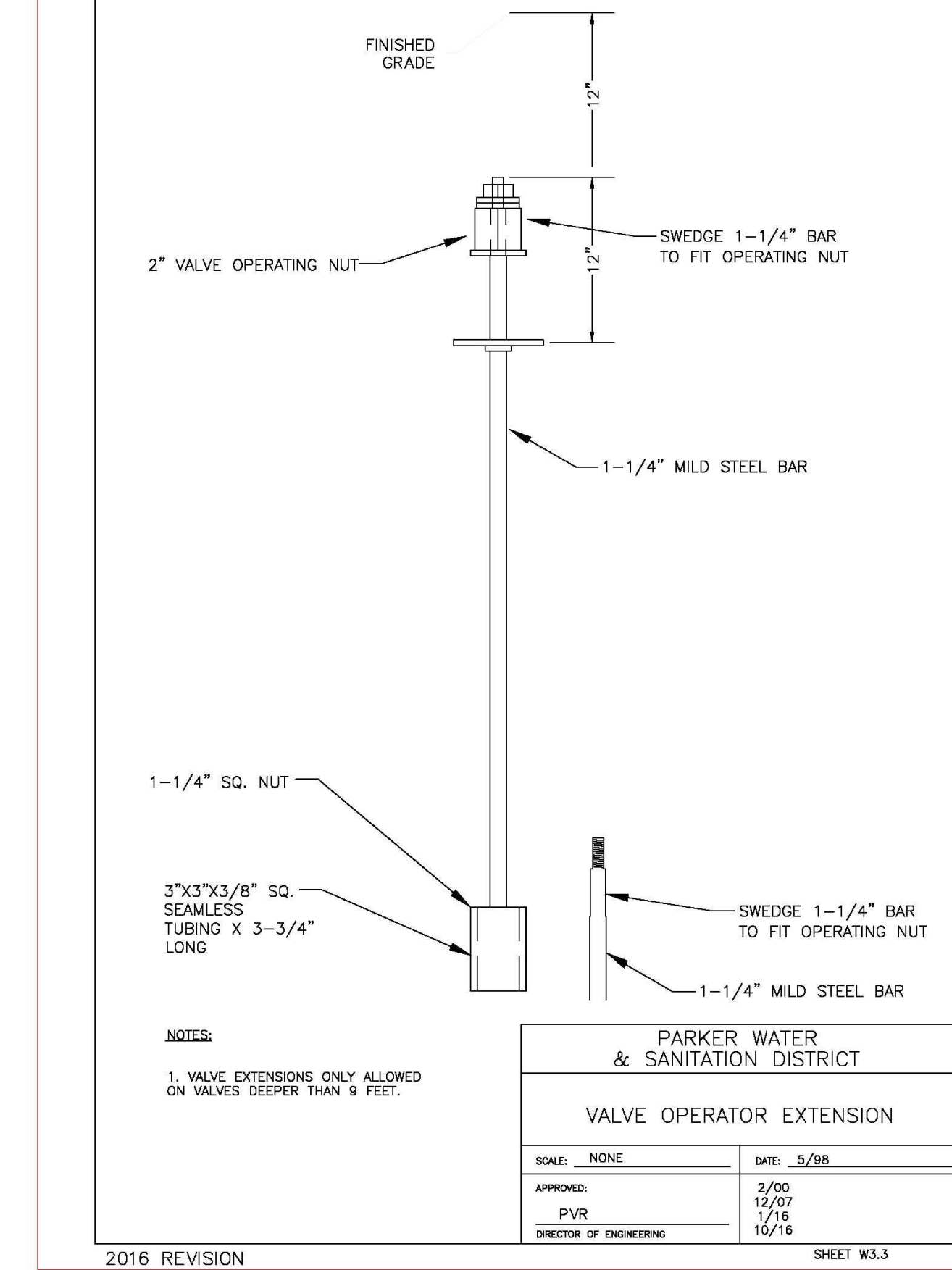
2016 REVISION



2016 REVISION



2016 REVISION



2016 REVISION

WATER NOTES

W1

FIRE HYDRANT

W2

TRACER WIRE

W3

VALVE EXTENSION

W4

Strategic Land Solutions, Inc.
Civil Engineering Consultant

2595 PONDEROSA ROAD
FRANKTOWN, CO 80116
720.384.7661 Phone
rpalmer@strategicls.net
Robert J. Palmer, PE
President

PREPARED UNDER THE DIRECT SUPERVISION OF

ROBERT J. PALMER
PROFESSIONAL ENGINEER
36320

BY Robert J. Palmer, PE
Licensed Professional Engineer (CO PE #36320),
AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

McDonald's
THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF MCDONALD'S CORPORATION AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.

ROCKY MOUNTAIN REGION
OFFICE ADDRESS: 4643 S. ULLSTER STREET, SUITE 1300, DENVER, COLORADO 80237

10950 S. PARKER ROAD
CITY: PARKER, STATE: COLORADO, COUNTY: DOUGLAS

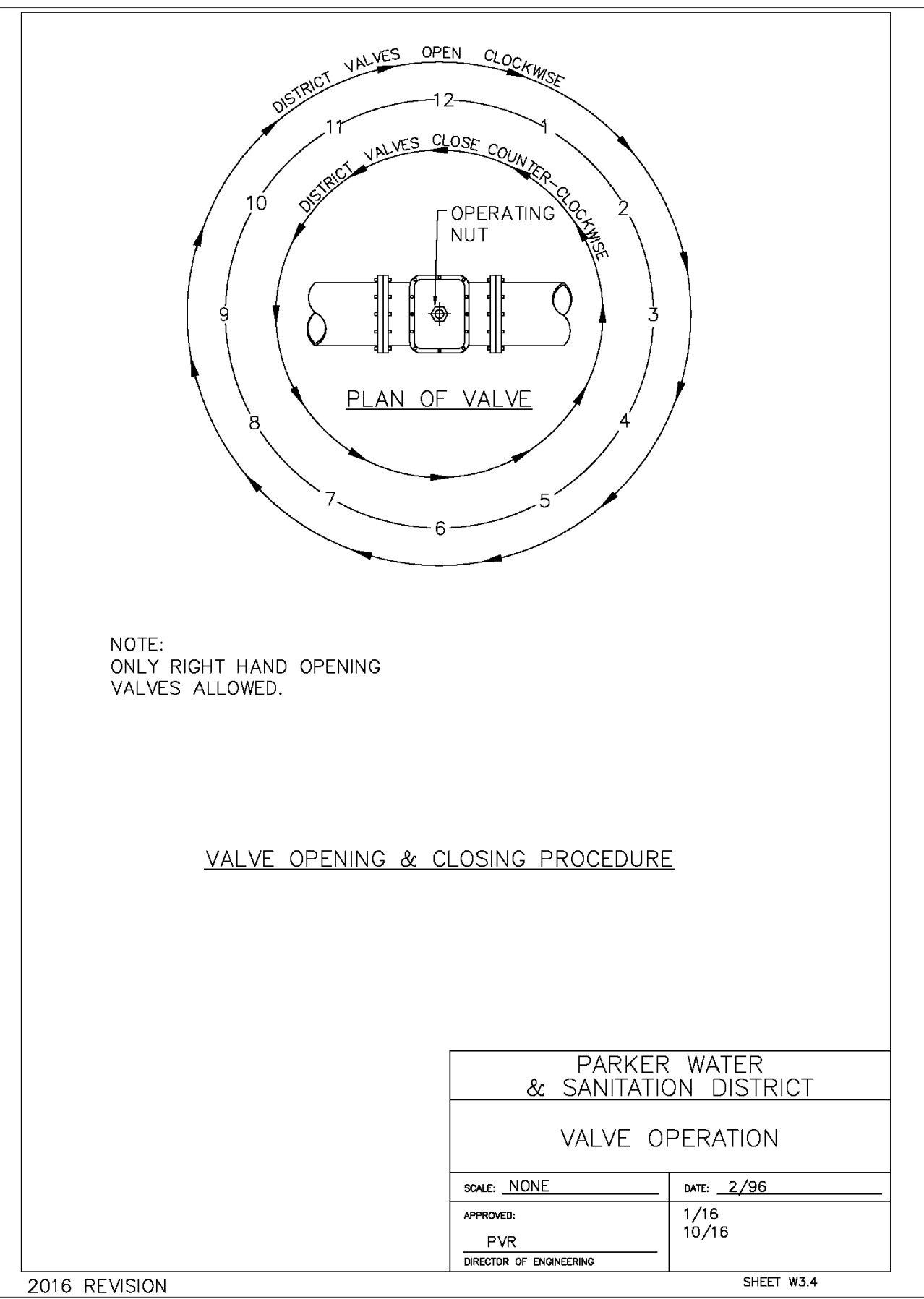
500162
tbd

SCALE: AS NOTED
DATE: 10/12/2023
DESIGNED BY: RJP
DRAWN BY: RJP
CHECKED BY: RJP

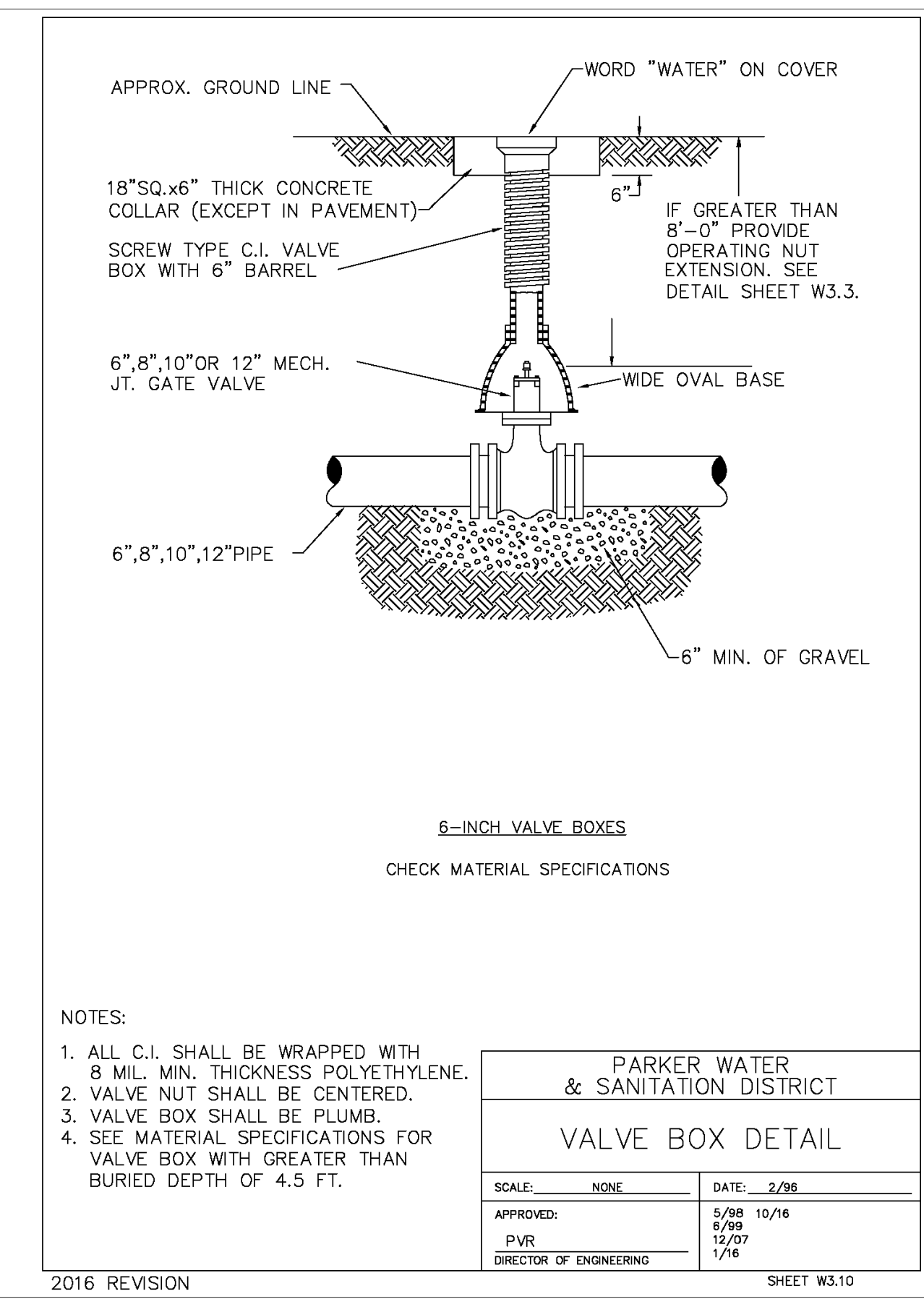
MOD REV: BOWAN
MOD P/CM: PEDIGO
FILE NAME: CURRENT.DWG
SLS JOB: 14-001-47

UTILITY DETAILS

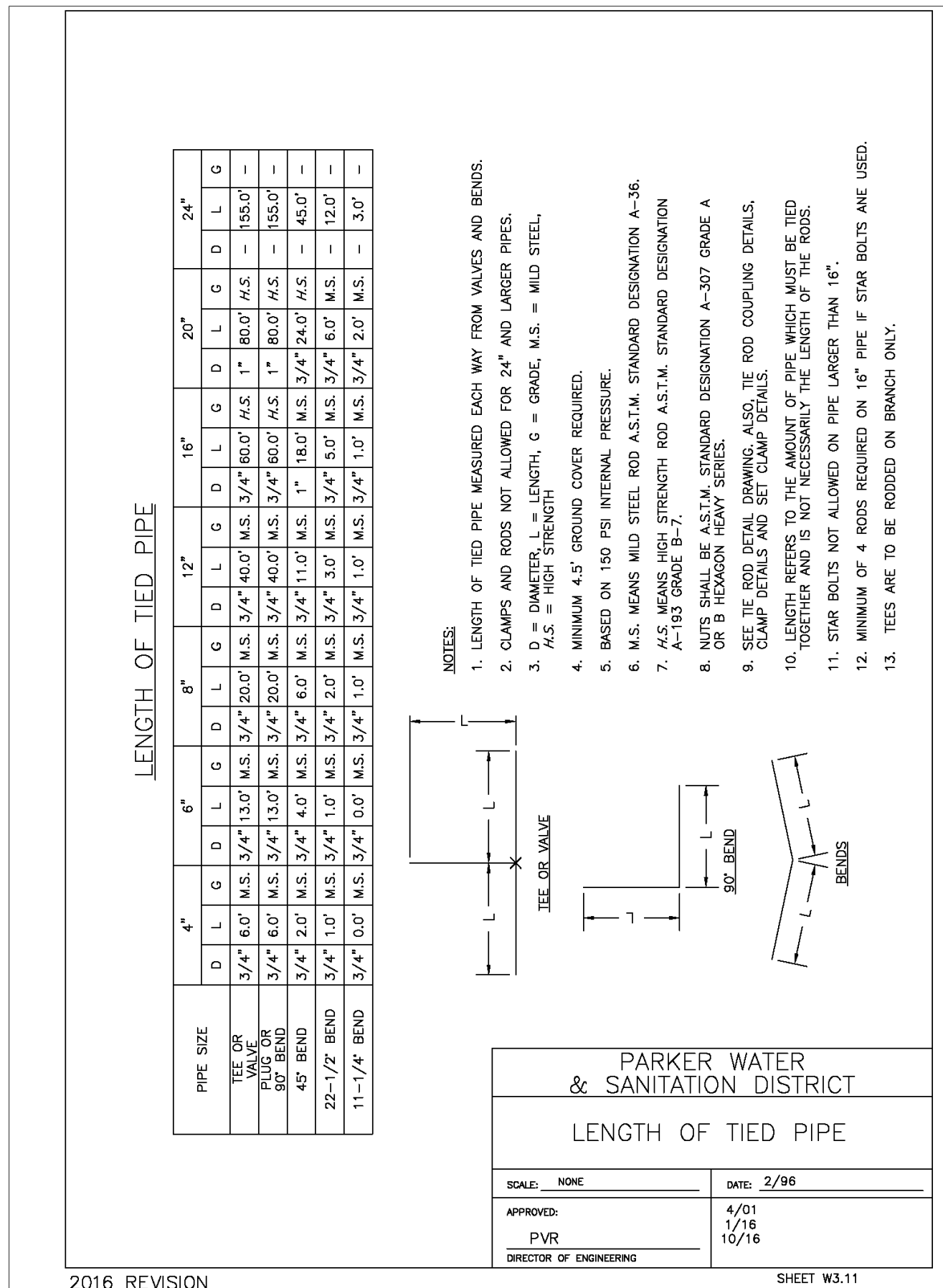
UT4.0



2016 REVISION



2016 REVISION



2016 REVISION

VALVE OPERATION

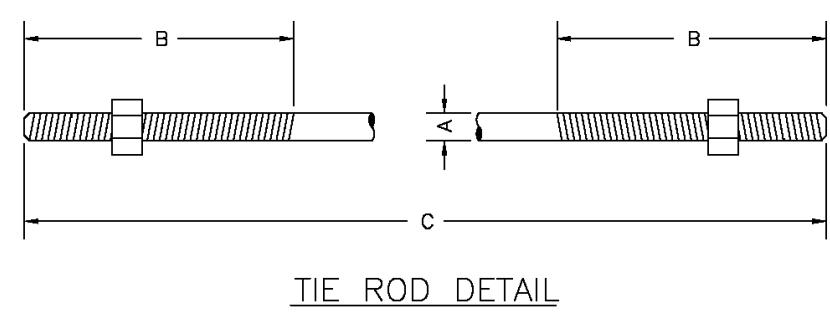
W5

VALVE BOX

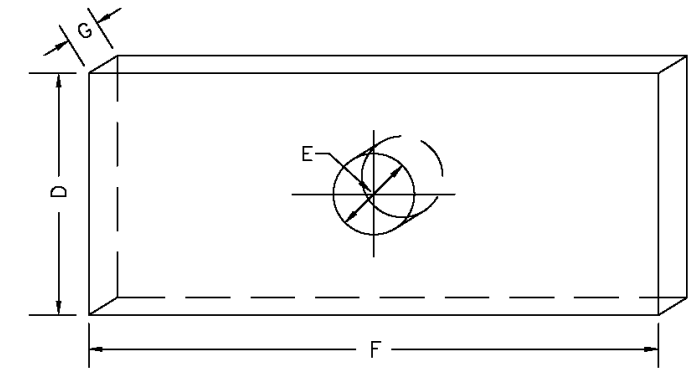
W6

NOT USED

W7



TIE ROD DETAIL



WASHER DETAIL

TIE RODS		
ROD DIAMETER	THREAD	ROD LENGTH
3/4"	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"	2-7/8"	6"	3/8"
4"	1-1/8"	7"	1/2"
5"	1-3/8"	7"	5/8"

- NOTES:
- SEE TIED JOINTS ROD DIMENSIONS SHEET.
 - SEE CLAMP DETAILS AND DIMENSIONS (SHEET W3.15) FOR PROPER PLACEMENT OF WASHERS.

PARKER WATER & SANITATION DISTRICT
TIE ROD AND WASHER DETAILS

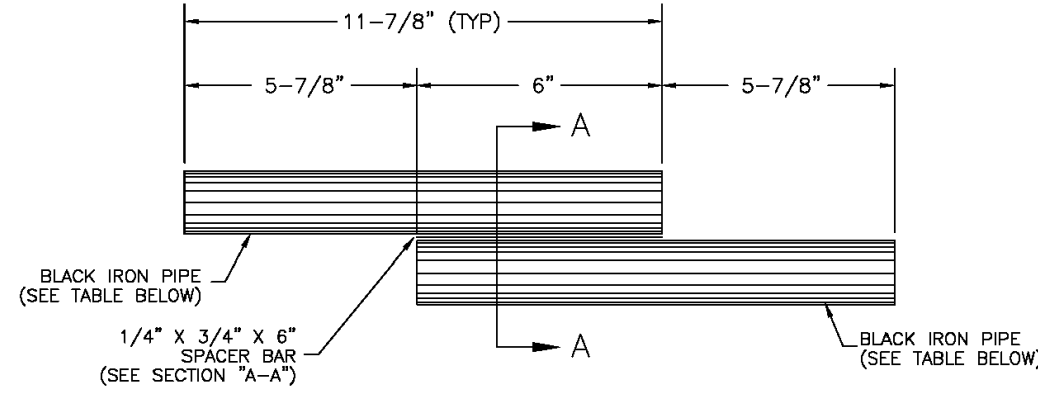
SCALE: NONE DATE: 2/96

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

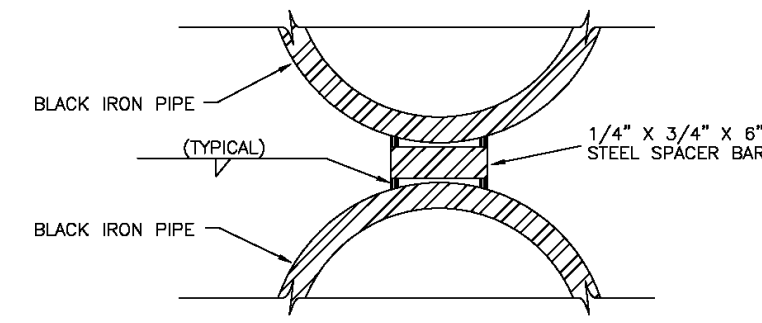
2016 REVISION SHEET W3.12

TIE ROD

W8



TIE ROD COUPLING DETAIL



SECTION "A-A"

NOTE: BLACK IRON PIPE = SCHEDULE 40.

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

PARKER WATER & SANITATION DISTRICT
TIE ROD COUPLING

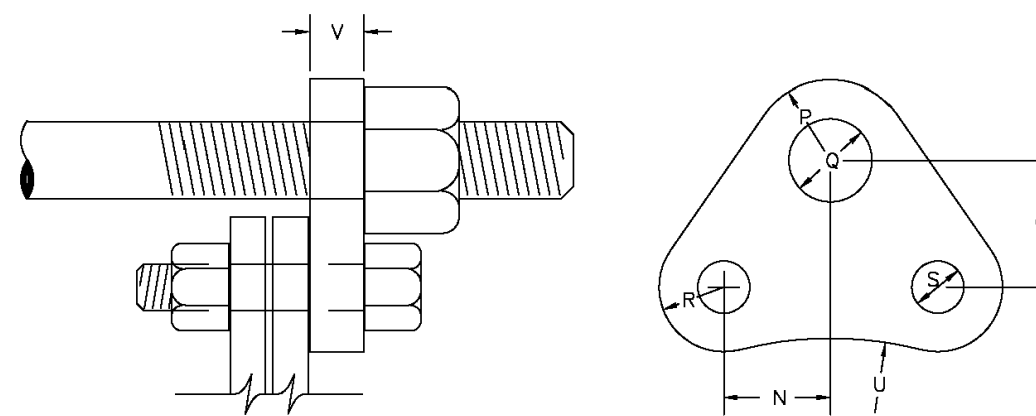
SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W3.13

TIE ROD

W9



FLANGE LUG DETAIL

DIMENSIONS (IN INCHES)

PIPE DIA.	N	O	P	U.S. ROD DIA.	P	O	U.S. ROD DIA.	R	S	U	V	PIPE DIA.	
4	1-7/8	2-1/2	1	7/8	3/4	1	7/8	3/4	7/8	3/4	2-1/2	3/4	4
6	1-15/16	2-1/2	1	7/8	3/4	1	7/8	3/4	7/8	3/4	2-1/2	3/4	6
8	1-7/8	2-3/4	1-1/8	7/8	3/4	1	7/8	3/4	7/8	3/4	2-1/2	3/4	8
10	2-3/16	2-3/4	1-1/8	7/8	3/4	1-1/4	1-1/8	3/4	1-1/8	1-1/4	2-1/2	7/8	10
12	1-7/8	2-3/4	1-1/8	7/8	3/4	1-1/4	1-1/8	3/4	1-1/8	1-1/4	2-1/2	7/8	12
16	1-7/8	2-3/4	1-1/8	7/8	3/4	1-1/4	1-1/8	3/4	1-1/8	1-1/4	2-1/2	7/8	16
20	1-3/4	2-3/4	1-1/8	1-1/8	1-1/8	1-1/4	1-1/8	3/4	1-1/8	1-1/4	2-1/2	7/8	20

RODS AND CLAMPS NOT ALLOWED

- NOTES:
- 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).
 - 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).
 - FLANGE LUGS SHALL NOT BE USED ON VALVES.

PARKER WATER & SANITATION DISTRICT
FLANGE LUG DETAIL

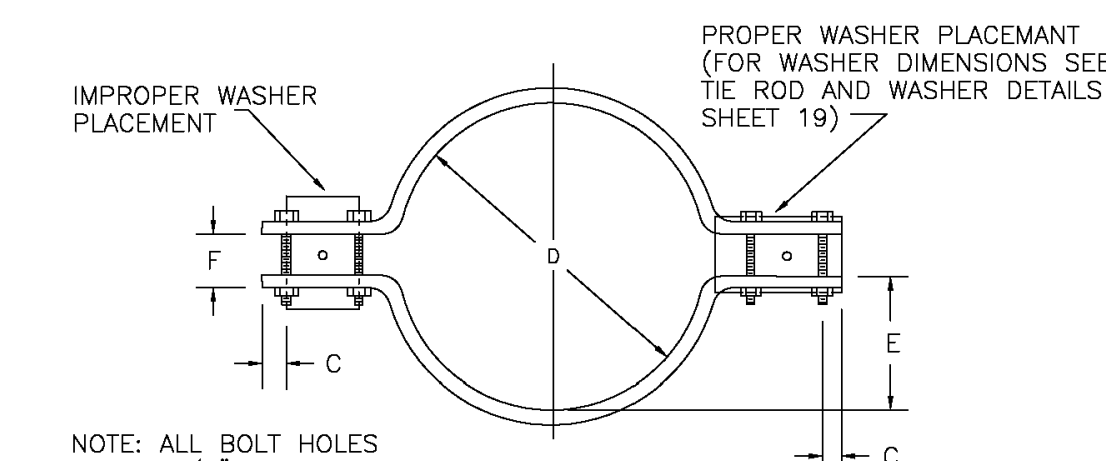
SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W3.14

FLANGE LUG

W10



CLAMP DETAILS

DIMENSIONS

TABLE OF DIMENSIONS FOR CLAMPS

PIPE DIA.	BAR SIZE	A	B	C	D	E	F	BOLT SIZES	PIPE DIA.		
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 2-19/16 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 8-1/4 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 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	18-3/4 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	28-5/8	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											24

RODS AND CLAMPS NOT ALLOWED

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

PARKER WATER & SANITATION DISTRICT
CLAMP DETAILS AND DIMENSIONS

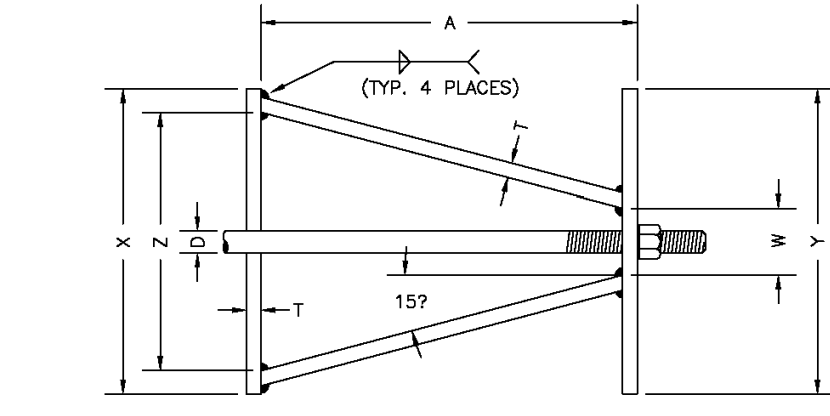
SCALE: NONE DATE: 2/96

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

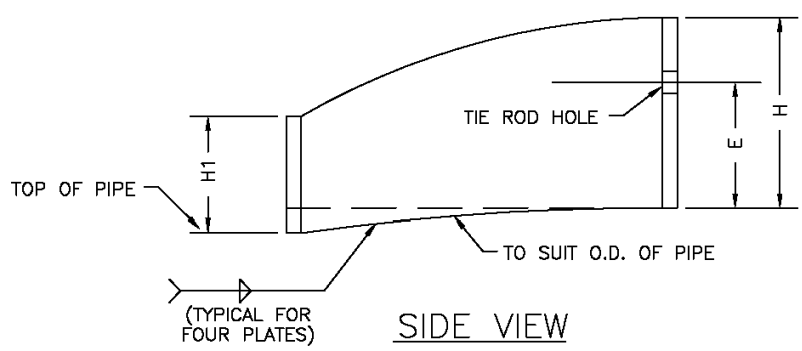
2016 REVISION SHEET W3.15

CLAMP DETAIL

W11



TOP VIEW



SIDE VIEW

HARNES LUG DIMENSIONS

CARRIER PIPE NOMINAL DIA.	STUD DIA.	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:
- USE TWO HIGH STRENGTH STEEL TIE RODS AT END OF CASING.
 - TIE ROD HOLE DIAMETER 1/8" LARGER THAN STUD DIAMETER.
 - BOTTOM EDGE OF ALL PLATES SHAPED TO FIT O.D. OF PIPE.

PARKER WATER & SANITATION DISTRICT
HARNES LUG DETAILS

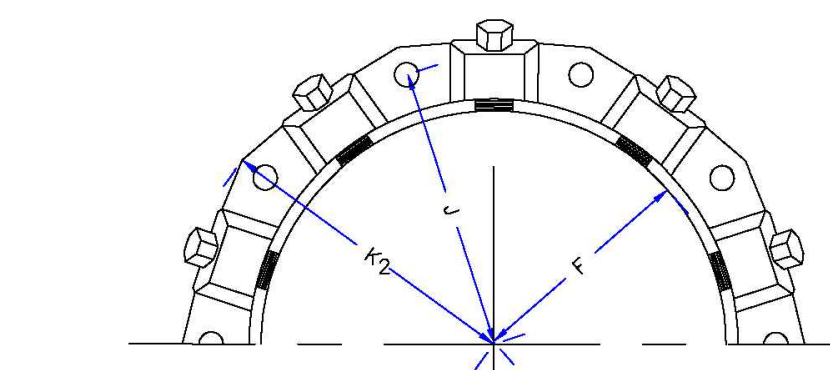
SCALE: NONE DATE: 2/96

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

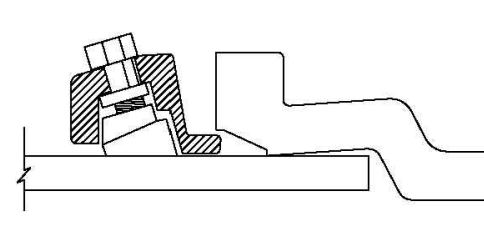
2016 REVISION SHEET W3.16

HARNES LUG

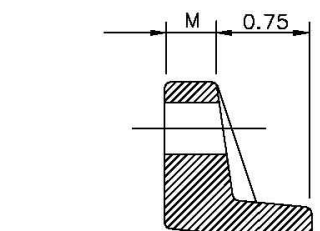
W12



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
4"	2	2	11.12	9.5	7.00	0.88
6"	6	3	13.37	11.75	8.15	1.00
8"	6	4	15.62	14.00	11.30	1.00
10"	8	6	17.88	16.25	13.30	1.25
12"	8	8	17.88	16.25	13.30	1.25

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

PARKER WATER & SANITATION DISTRICT
MECHANICAL JOINT RESTRAINT DETAILS

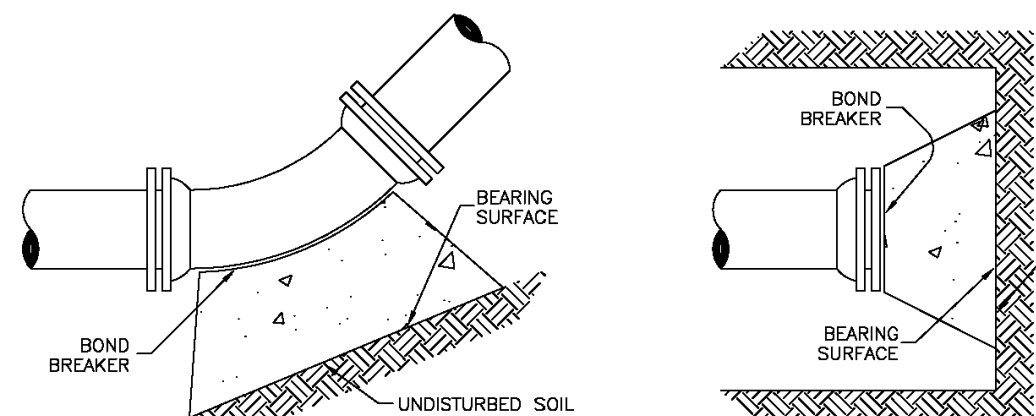
SCALE: NONE DATE: 2/96

APPROVED: 2/00 12/07 1/16 10/16
PVR DIRECTOR OF ENGINEERING

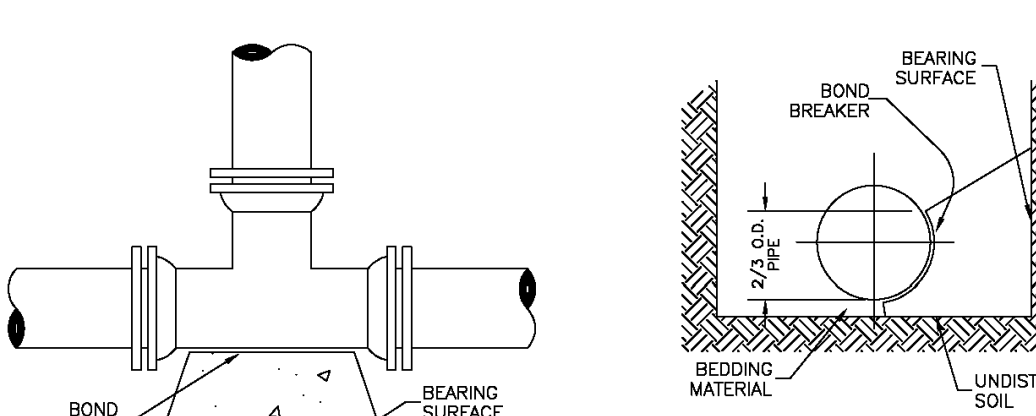
2016 REVISION SHEET W3.17

MECHANICAL JOINT

W13



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



TEE

- NOTES:
- ALL VALVES, TEES, BENDS AND PLUGS SHALL BE RESTRAINED AND KICKBLOCKED.
 - BEARING SURFACES SHOWN IN CHART ARE MINIMUM.
 - 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.
 - SOIL BEARING CAPACITY = 3,000 LBS./SQ. FT.

PARKER WATER & SANITATION DISTRICT
CONCRETE KICKBLOCKS BEARING SURFACES AND INSTALLATION

SCALE: NONE DATE: 2/96

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

2016 REVISION SHEET W3.18

KICKBLOCKS

W14

ALL FIRE HYDRANTS SHALL BE INSTALLED ACCORDING TO DISTRICT STANDARDS. THE NUMBER AND LOCATIONS OF THE FIRE HYDRANTS AS SHOWN ON THE OVERALL UTILITY PLAN ARE CORRECT AS SPECIFIED BY THE SOUTH METRO FIRE PROTECTION DISTRICT

(SIGNATURE OF FIRE CHIEF OR DESIGNATED REPRESENTATIVE)

DATE SIGNED: _____

THE DISTRICT INSPECTOR MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. CALL PARKER WATER AND SANITATION DISTRICT AT 303-841-4827. THE DISTRICT WILL REQUIRE PERIODIC INSPECTIONS OF THE 24 HOUR NOTICE TO THE INSPECTOR IS REQUIRED FOR SCHEDULING 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: _____

NO. DATE REVISION DESCRIPTION

DIV. ENGINEERING CONSULTANT

Strategic Land Solutions, Inc.
2595 PONDEROSA ROAD
FRANKTOWN, CO 80116
720.384.7661 Phone
rpalmer@strategicls.net
Robert J. Palmer, PE
President

PREPARED UNDER THE DIRECT SUPERVISION OF

SEAL: COLORADO REGISTERED PROFESSIONAL ENGINEER
ROBERT J. PALMER
36320

BY Robert J. Palmer, PE
Licensed Professional Engineer (CO PE #36320),
AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

McDonald's
THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF McDONALD'S CORPORATION AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.

ROCKY MOUNTAIN REGION
ADDRESS: 4643 S. UJSTER STREET, SUITE 1300, DENVER, COLORADO 80237

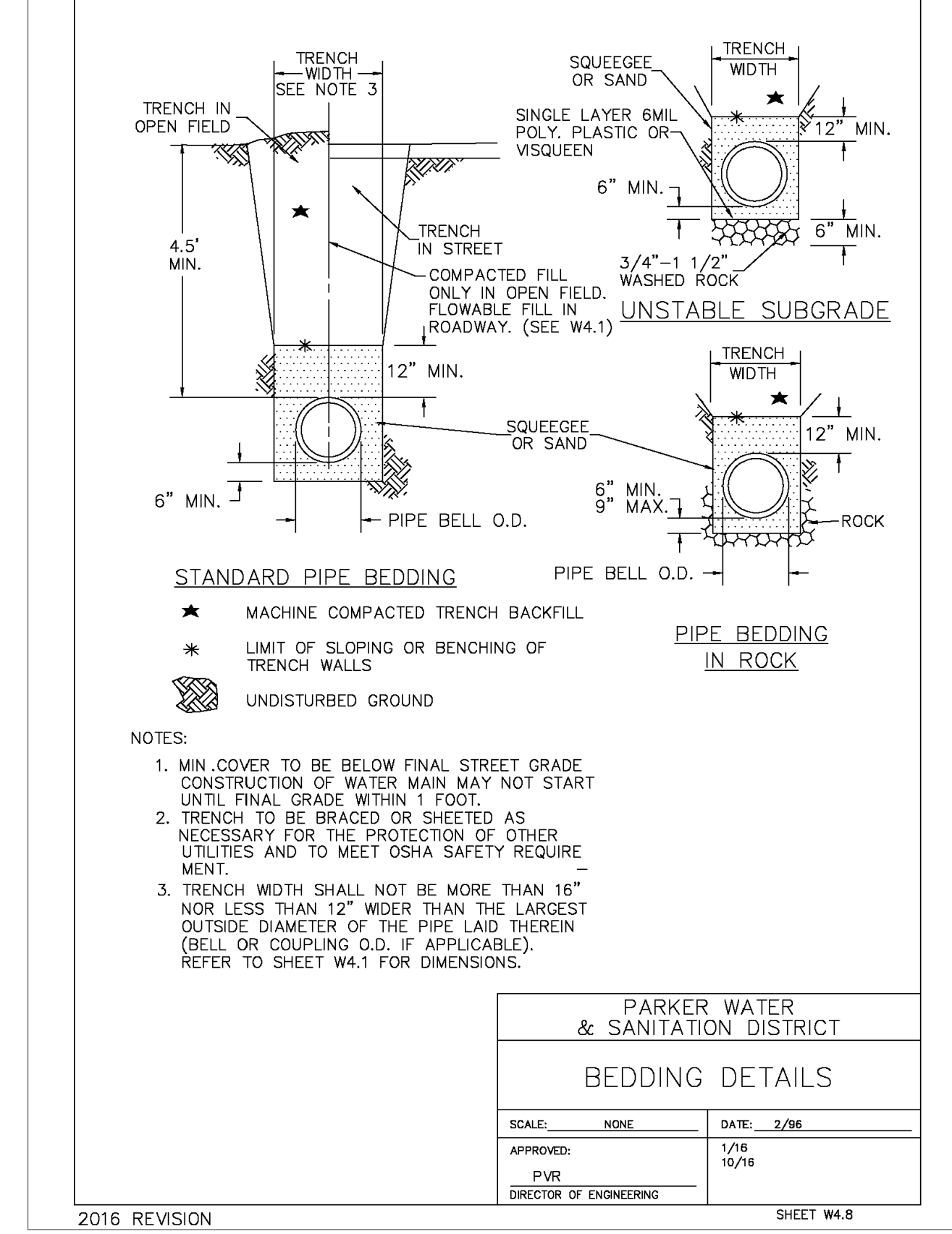
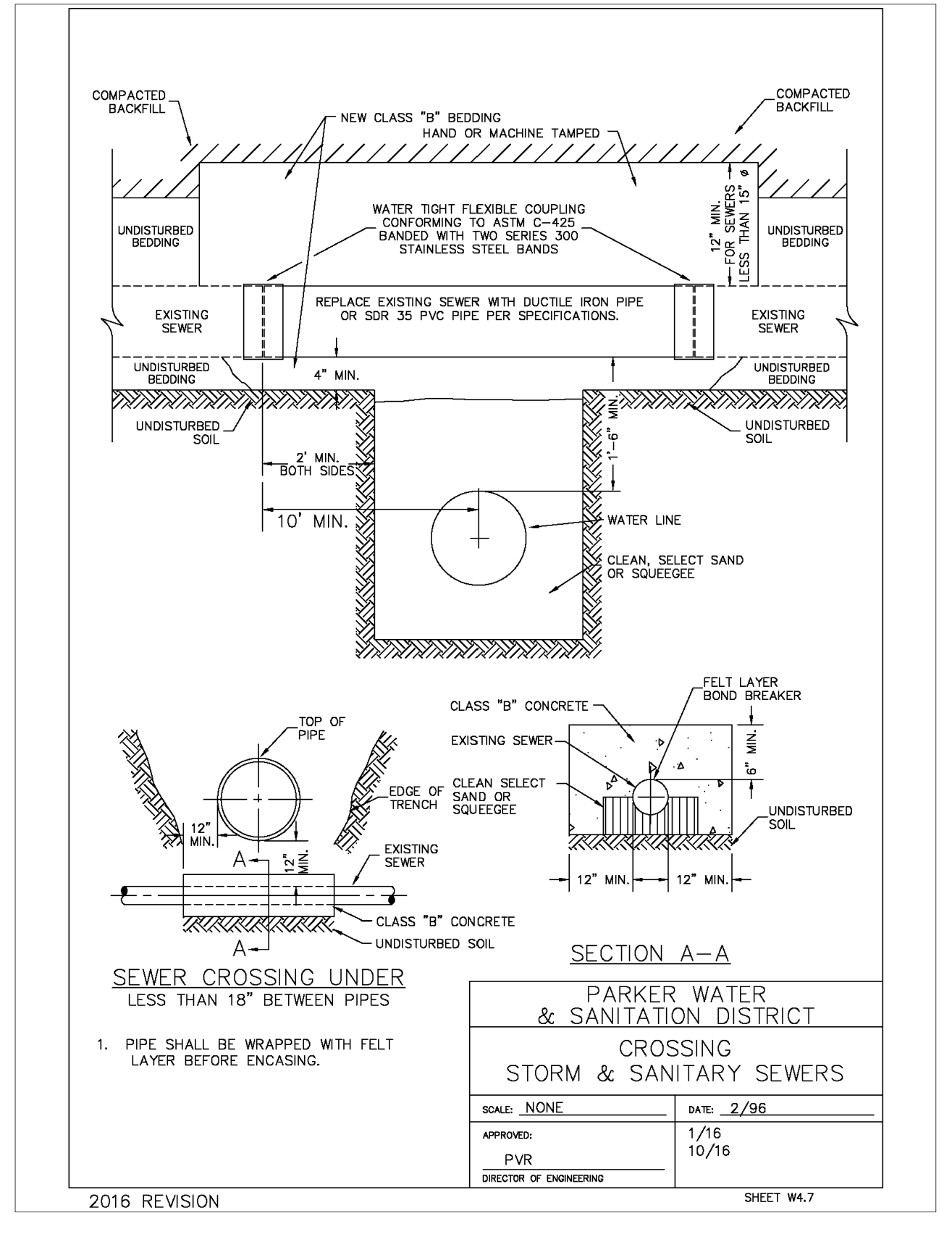
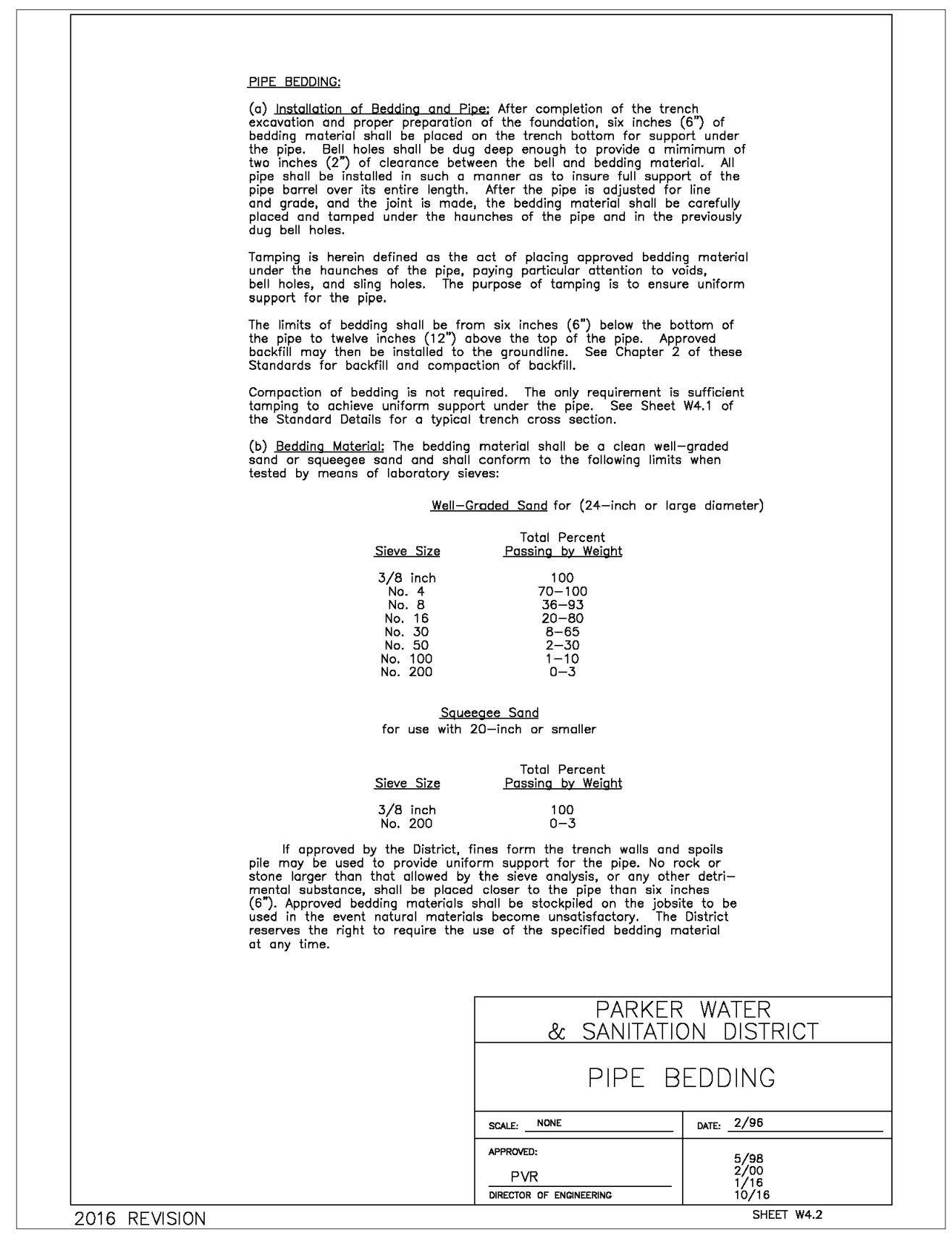
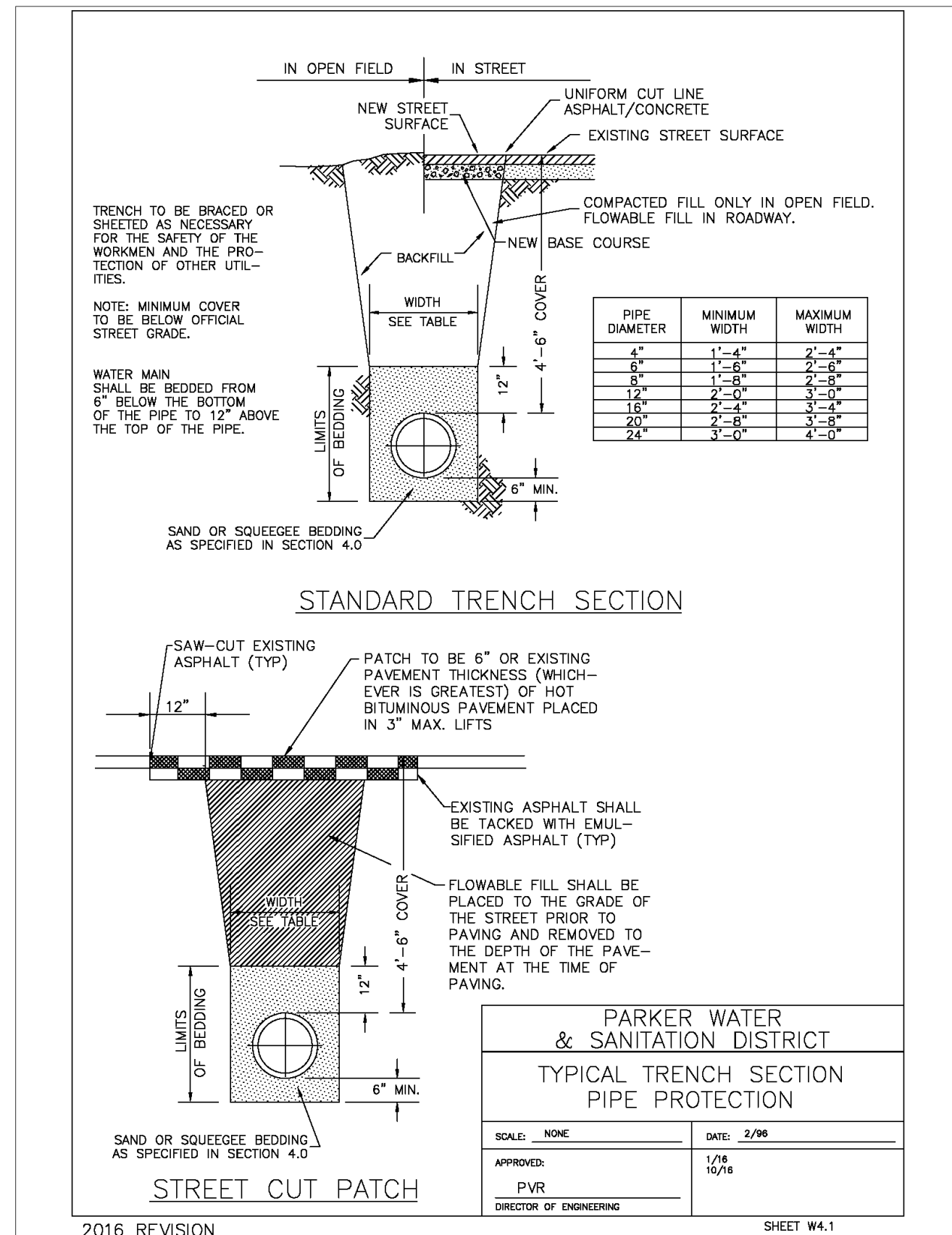
10950 S. PARKER ROAD
CITY: PARKER
STATE: COLORADO
COUNTY: DOUGLAS
500162
tbd

SCALE: AS NOTED
DATE: 10/12/2023
DESIGNED BY: RJP
DRAWN BY: RJP
CHECKED BY: RJP

MED RES: BOWAN
MED P/CM: PEDIGO
FILE NAME: CURRENT.DWG
SLS INC. 14-001-17

UTILITY DETAILS

SHEET NO. UT4.1



NO. DATE REVISION DESCRIPTION

CIVIL ENGINEERING CONSULTANT

Strategic Land Solutions, Inc.
Civil Engineering & Land Planning Solutions
2595 PONDEROSA ROAD
FRANKTOWN, CO 80116
720.384.7661 Phone
rpalmer@strategicls.net
Robert J. Palmer, PE
President

PREPARED UNDER THE DIRECT SUPERVISION OF

ROBERT J. PALMER
36320
PROFESSIONAL ENGINEER

BY Robert J. Palmer, PE
Licensed Professional Engineer (CO PE #36320),
AS PRESIDENT FOR STRATEGIC LAND SOLUTIONS, INC.

McDonald's
THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF MCDONALD'S CORPORATION AND SHALL NOT BE REPRODUCED WITHOUT THEIR WRITTEN PERMISSION.

OFFICE: ROCKY MOUNTAIN REGION
ADDRESS: 4643 S. UJSTER STREET, SUITE 1300, DENVER, COLORADO 80237

10950 S. PARKER ROAD
CITY: PARKER
STATE: COLORADO
COUNTY: DOUGLAS
500162
tbd

SCALE: AS NOTED
DATE: 10/12/2023
DESIGNED BY: RJP
DRAWN BY: RJP
CHECKED BY: RJP

MED RE: BOWAN
MED P/CM: PEDIGO
FILE NAME: CURRENT.DWG
SLS PROJ. 14-001-47

UTILITY DETAILS

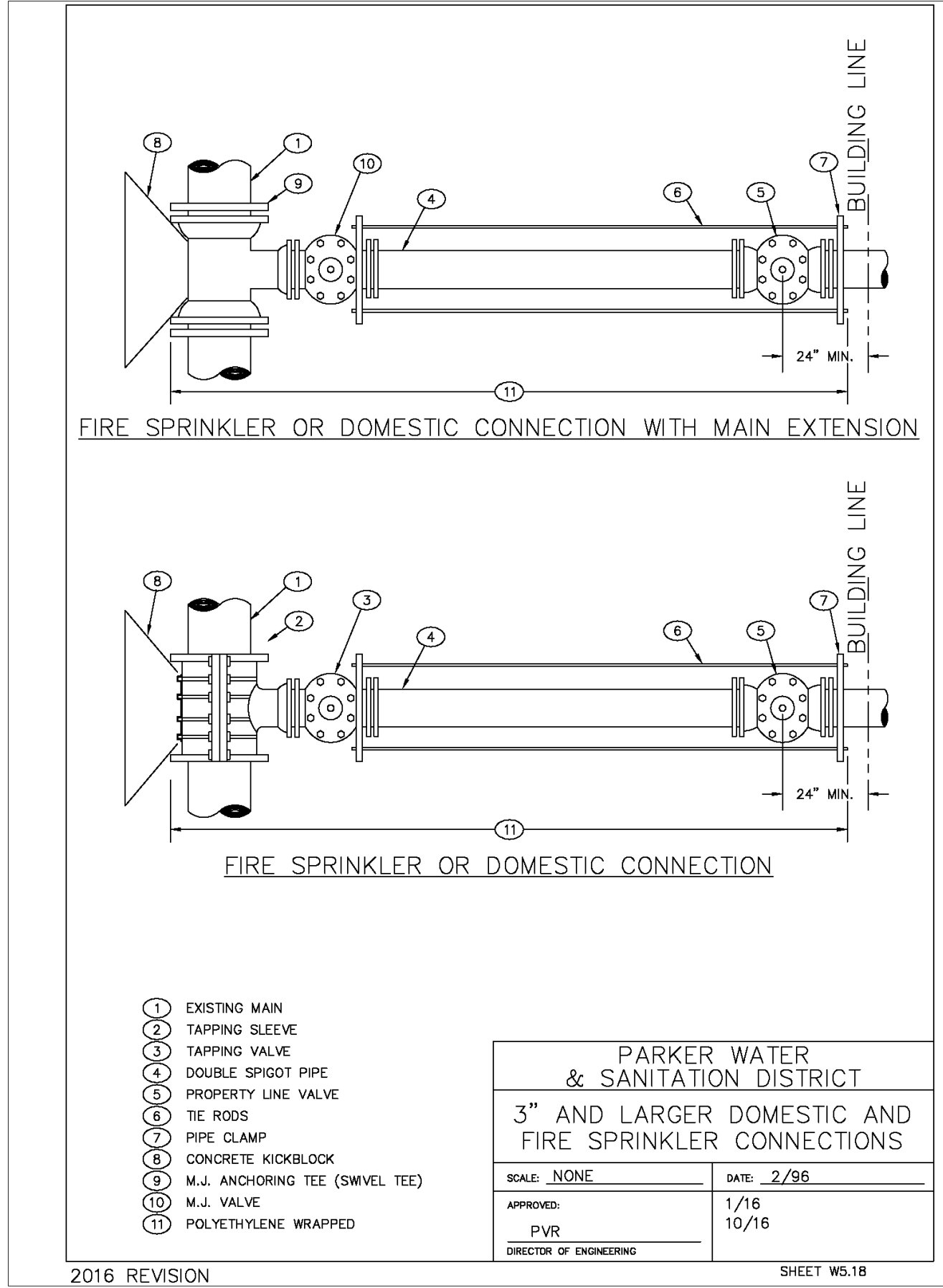
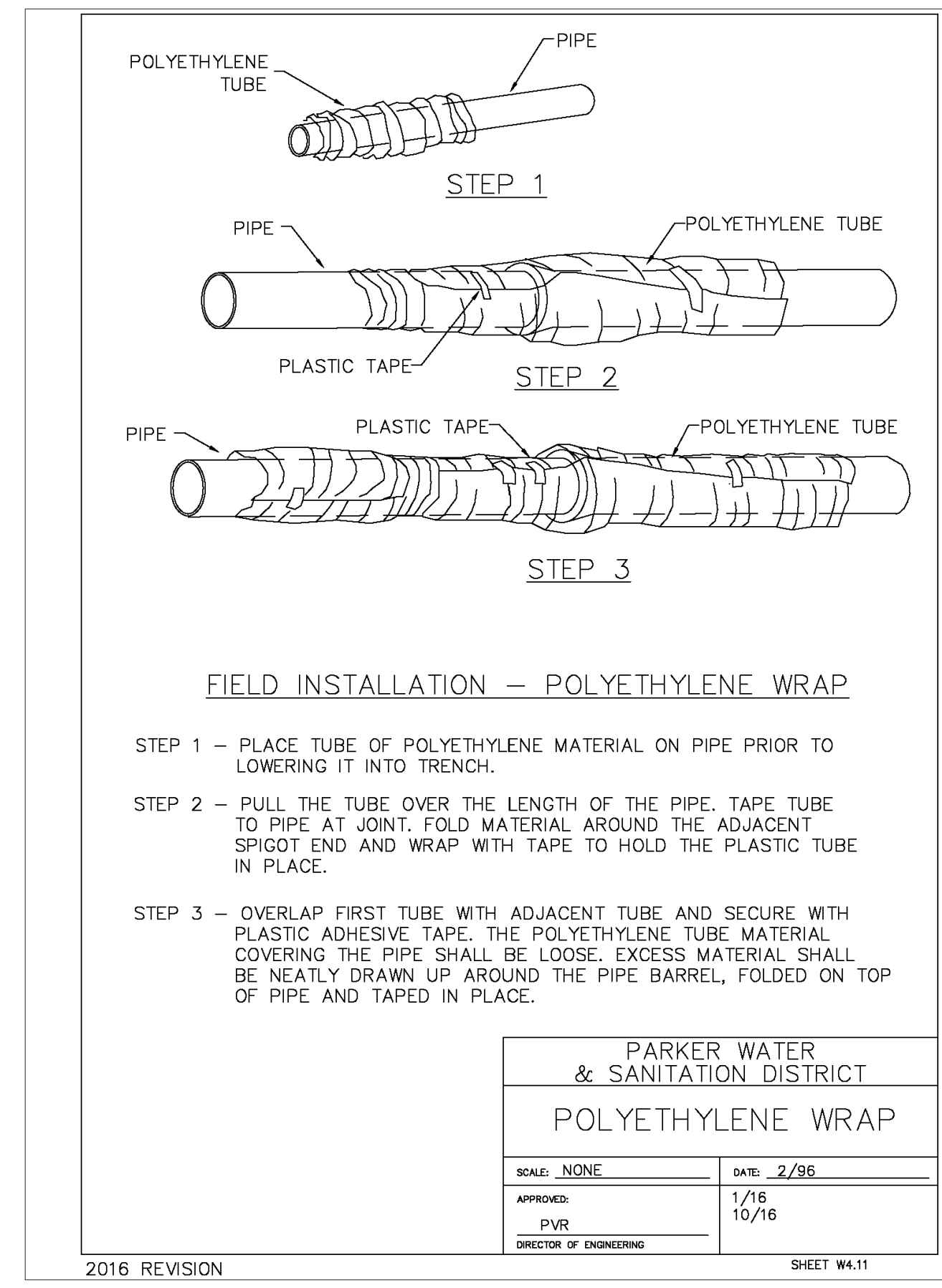
SHEET NO.

TYPICAL TRENCH W15

PIPE BEDDING W16

SANITARY CROSSING W17

BEDDING DETAILS W17



POLY WRAP W19

FIRE LINE CONNECTION W20

NOT USED W21

UT4.2