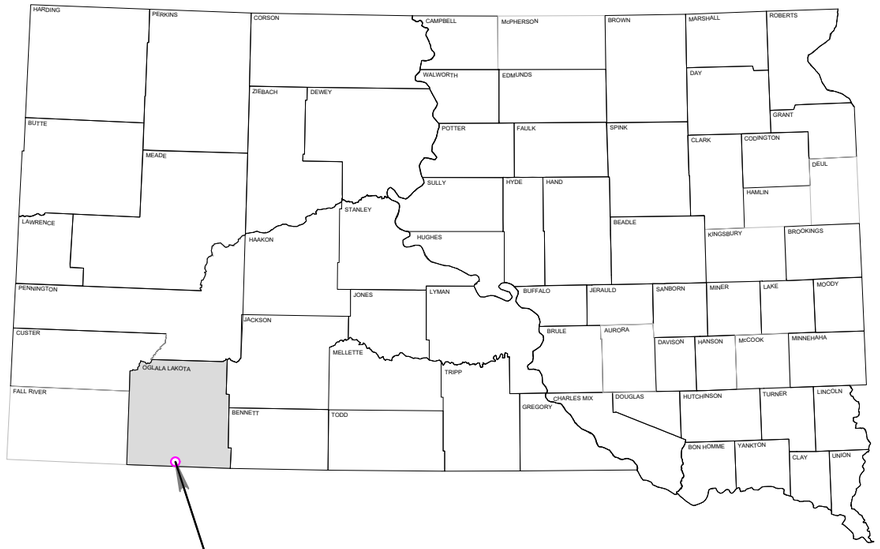


PROJECT

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

FOR BIDDING PURPOSES ONLY

PLANS FOR PROPOSED

PROJECT 2211 01441( )
US HIGHWAY 18
SD HIGHWAY 407
OGLALA LAKOTA COUNTY

WATER MAIN IMPROVEMENTS
PCN X06L

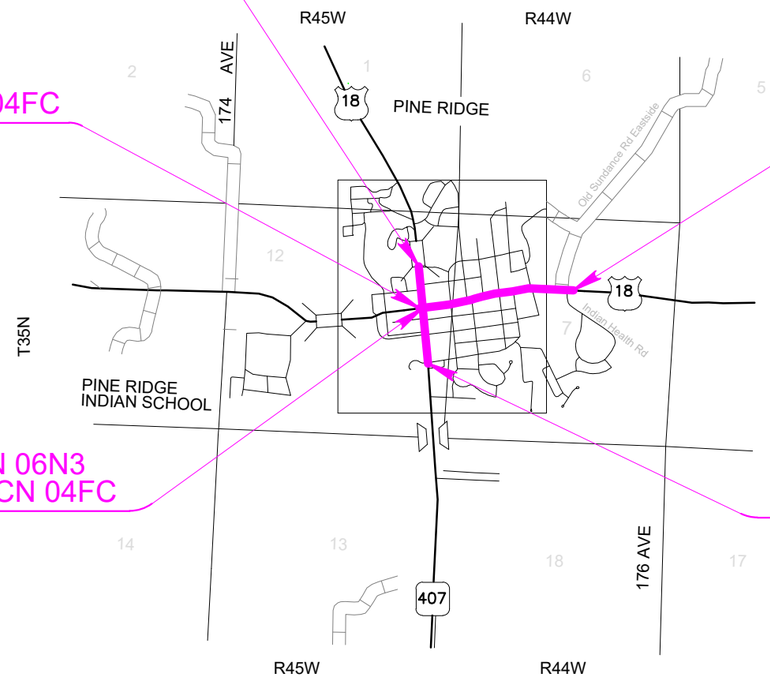
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	2211 01441( )	1	34

Plotting Date: 6/25/2024
Revised: 10/18/2024 JRW

INDEX OF SHEETS

END NH-CR-EM 0018(195)103 - PCN 04FC
Station 228+00.00 = Station 15+57.80
on BRF-NH 0018(71)103 Approximately
915.43 Feet South and 837.94 Feet West
of the Northwest corner of Section 7 -
Township 35 North - Range 44 West
MRM 103.34

BEGIN NH-CR-EM 0018(195)103 - PCN 04FC
Station 99+00 US 18
Approximately 2201.00 Feet South
and 822.08 Feet West of the Northwest
corner of Section 7 - Township 35
North - Range 44 West



END NH-CR-EM 0018(195)103 - PCN 04FC
Station 136+50.00 = Station 36+13.00 on
NH-PH 0018(177)104 Approximately
1528.91 Feet South and 2290.88 Feet
West of the Northeast corner of Section 7 -
Township 35 North - Range 44 West
MRM = 104.00+0.289

END NH-CR-EM 0018(195)103 - PCN 06N3
BEGIN NH-CR-EM 0018(195)103 - PCN 04FC
Station 100+00 US 18 =
Station 215+19.40 SD 407
= Station 30+40.00 on BRF-NH 0018(71)103
Approximately 2192.43 Feet South
and 722.47 Feet West of the Northwest
corner of Section 7 - Township 35
North - Range 44 West
MRM 103.53+0.030 US 18
MRM 1.79 SD 407

BEGIN NH-CR-EM 0018(195)103 - PCN 06N3
Station 200+00 = Station 81+08.14
on HES0407(02)0 Approximately
1581.84 Feet North and 409.82 Feet
West of the Southeast corner of Section 12 -
Township 35 North - Range 45 West
MRM = 1.53

	US 18		SD 407	
GROSS LENGTH	5132.20 FEET	0.972 MILES	1317.80 FEET	0.250 MILES
LENGTH OF EXCEPTIONS	0.00 FEET	0.000 MILES	0.00 FEET	0.000 MILES
NET LENGTH	5132.20 FEET	0.972 MILES	1317.80 FEET	0.250 MILES

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13620
JESSICA R. WAGNER
SOUTH DAKOTA
December 4, 2024
10/18/2024

2

LEGEND

EXISTING	ITEM	PROPOSED
	FIRE HYDRANT	
	GATE VALVE	
	CURB STOP	
	YARD HYDRANT	
	BEND	
	TEE	
	CROSS	
	REDUCER	
	COUPLER	
	VERTICAL BEND	
W	WATER MANHOLE	W
	SPRINKLER HEAD	
W	WATER METER	
	CATHODIC TEST STATION	TS
	TRACER WIRE ACCESS BOX	TW
S	SANITARY MANHOLE	S
FM	SANITARY FORCEMAIN MANHOLE	FM
	SANITARY MANHOLE W. VALVE	
CL	CLEANOUT	CL
ST	STORM SEWER MANHOLE	ST
	CURB INLET	
	CATCH BASIN	
	POWER POLE	
	GUY WIRE	
	LIGHT POLE	
	ELECTRICAL PEDESTAL	
E	ELECTRICAL METER	
J	ELECTRICAL JUNCTION (PULL BOX)	
	ELECTRICAL BOX	
	ELECTRICAL OUTLET/PLUG-IN	
E	ELECTRICAL MANHOLE	E
T	TELEPHONE MANHOLE	T
	TELEPHONE PEDESTAL	
	CABLE TV PEDESTAL	
	FIBER OPTIC PEDESTAL	
G	GAS METER	
G	GAS MANHOLE	G
	FUEL DISPENSER	
	UTILITY MARKER	
	GAS VENT PIPE	
	TREES CONIFEROUS/ DECIDUOUS	
	BUSH/SHRUB	
	SIGN	
	CONTROL POINT	
	BENCHMARK	
	PIPE CAP	
M	MAIL BOX	
	PROPERTY PIN	

LEGEND

EXISTING	ITEM	PROPOSED
	ASPHALT EDGE	
	BUILDING CANOPY	
TV	CABLE TV - UNDERGROUND	TV
	CENTERLINE	
	CONSTRUCTION LIMITS	
E(O)	ELECTRICAL - OVERHEAD	E(O)
E	ELECTRICAL - UNDERGROUND	E
X X	FENCE - BARBED WIRE	X X
	FENCE - CHAINLINK	
	FENCE - PLASTIC, VINYL	
	FENCE - WOOD	
	FENCE - WOVEN WIRE	
FO	FIBER - UNDERGROUND	FO
G G	GAS - UNDERGROUND	G
	GRAVEL EDGE	
FM	SANITARY SEWER FORCE MAIN	FM
S	SANITARY SEWER SERVICE LINE	
S	SANITARY SEWER (LESS THAN 24")	
S	SANITARY SEWER (24" OR MORE)	
	STORM SEWER EDGEDRAIN	
ST	STORM SEWER (LESS THAN 24")	
ST	STORM SEWER (24" OR MORE)	
T(O)	TELEPHONE - OVERHEAD	T(O)
T	TELEPHONE - UNDERGROUND	T
W	WATER SERVICE LINE	
W	WATER MAIN	W

AC	ASPHALT CEMENT
AGGR	AGGREGATE
AHD	AHEAD
APPROX	APPROXIMATE OR APPROXIMATELY
ARV	AIR RELEASE VALVE
ASPH	ASPHALT
BIT	BITUMINOUS
BK	BACK
BM	BENCH MARK
BLDG	BUILDING
C&G	CURB & GUTTER
CI	CAST IRON
CL	CENTERLINE
CMES	CORRUGATED METAL END SECTION
CMP	CORRUGATED METAL PIPE
CP	CONTROL POINT
CPP	CORRUGATED PLASTIC PIPE
CONST	CONSTRUCTION
CONC	CONCRETE
CPLG	COUPLING
CS	CURB STOP
CY	CUBIC YARD
D	DEGREE OF CURVATURE
DB	DITCH BLOCK
DEFL	DEFLECTION
DG	DITCH GRADE
EA	EACH
EL	ELEVATION
ELEC	ELECTRIC
EMB	EMBANKMENT
EQ	EQUATION
ES	END SECTION
ESMT	EASEMENT
EX	EXISTING
EXC	EXCAVATION
FES	FLARED END SECTION
FF	FINISHED FLOOR
FG	FINISHED GRADE
GR	GRAVEL
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HORZ	HORIZONTAL
HP	HIGH POINT
HYD	HYDRANT
INST	INSTALL
INV	INVERT
JB	JUNCTION BOX
L	LENGTH
LF	LINEAR OR LINEAL FEET
LONG	LONGITUDINAL
LP	LOW POINT OR LIGHT POLE
LS	LUMP SUM
LT	LEFT
MAX	MAXIMUM
ME	MATCH EXISTING
MH	MANHOLE
MIN	MINIMUM
PVC	POLYVINYL CHLORIDE PIPE
P & P	PLAN & PROFILE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVE
PI	POINT OF INTERSECTION
PIV	POST INDICATOR VALVE
POC	POINT ON CURVE
POT	POINT ON TANGENT
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PRV	PRESSURE REDUCING VALVE
PT	POINT OF TANGENCY
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
RCES	REINFORCED CONCRETE END SECTION
RCP	REINFORCED CONCRETE PIPE
RDWY	ROADWAY
RR	RAILROAD
RT	RIGHT
R/W ROW	RIGHT-OF-WAY
SALV	SALVAGE
SAN	SANITARY
SE	SUPERELEVATION
SEC	SECTION
SF	SQUARE FEET
SHLDR	SHOULDER
SSD	STOPPING SIGHT DISTANCE
SEC LINE	SECTION LINE
SPEC	SPECIFICATION
STA	STATION
STD	STANDARD
STRUCT	STRUCTURE
SURV	SURVEY
SW	SIDEWALK
SY	SQUARE YARD
T	TANGENT
TA	TOP OF ASPHALT
TBC	TOP BACK OF CURB
TC	TOP OF CONCRETE
TEL	TELEPHONE
TEMP	TEMPORARY
THEOR	THEORETICAL
TP	TOP OF PAVEMENT
TR	TRAFFIC
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
WM	WATER MAIN
WV	WATER VALVE
XSEC	CROSS SECTION

PRIVATE UTILITY PROFILE VIEW LEGEND

Ⓣ T,T/F, TFO, UNDERGROUND FIBER OPTIC LINE

Ⓟ UNDERGROUND POWER

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13620
JESSICA WAGNER
SOUTH DAKOTA
06/26/2024

KLJ

NO.	DATE	REVISION

DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

LEGEND & ABBREVIATIONS

SHEET 1.02

FOR BIDDING PURPOSES ONLY

REVISED: 11/06/2024 JRW

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 009E0010	Mobilization	LUMP SUM	LS
* 100E0010	Clear and Grub Stump	3	Each
* 100E0020	Clear and Grub Tree	6	Each
* 110E0300	Remove Concrete Curb and/or Gutter	201	Ft
* 110E0460	Remove Manhole	1	Each
* 110E0600	Remove Fence	36	Each
* 110E1010	Remove Asphalt Concrete Pavement	345.4	SqYd
* 110E1100	Remove Concrete Pavement	474.5	SqYd
* 110E1140	Remove Concrete Sidewalk	29.6	SqYd
* 120E6200	Water for Granular Material	2.6	MGal
* 120E6300	Water for Vegetation	22.6	MGal
* 230E0010	Placing Topsoil	124	CuYd
* 260E1030	Base Course, Salvaged	89	Ton
* 260E2010	Gravel Cushion, Salvaged	120.0	Ton
* 320E1200	Asphalt Concrete Composite	34	Ton
* 380E0050	8" Nonreinforced PCC Pavement	456.4	SqYd
* 380E6000	Dowel Bar	246	Each
* 380E6110	Insert Steel Bar in PCC Pavement	221	Each
* 451E0401	1" High Density Polyethylene Pipe	445	Ft
* 451E0604	4" PVC Water Main	50	Ft
* 451E0606	6" PVC Water Main	416	Ft
* 451E0608	8" PVC Water Main	3,800	Ft
* 451E1006	6" PVC Sewer Pipe	277	Ft
* 451E1283	4" Water Service	1	Each
* 451E2212	8"x4" Pipe Tee	1	Each
* 451E2213	8"x6" Pipe Tee	13	Each
* 451E2214	8"x8" Pipe Tee	8	Each
* 451E2412	8"x4" Pipe Reducer	1	Each
* 451E2413	8"x6" Pipe Reducer	8	Each
* 451E2802	1" Corporation Stop with Tapping Saddle	16	Each
* 451E2902	1" Curb Stop with Box	16	Each
* 451E3004	4" Pipe Bend	2	Each
* 451E3006	6" Pipe Bend	14	Each
* 451E3008	8" Pipe Bend	24	Each
* 451E3208	8" Pipe Coupling	5	Each
* 451E4208	8" Gate Valve with Box	25	Each
* 451E4380	Tracer Wire Access Box, Type 1	23	Each
* 451E4585	Fire Hydrant with Auxiliary Valve & Box	11	Each
* 451E4750	Meter Pit	1	Each

Non-Section Method

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
* 451E6050	Temporary Water Service	16	Each
* 451E6100	Reconnect Water Service	16	Each
* 451E6103	Abandon Water Main	3,455	Ft
* 451E6105	Connect To Existing Water Main	14	Each
* 621E0050	5' Chain Link Fence with Top Rail	21	Ft
* 650E0080	Type B68 Concrete Curb and Gutter	148	Ft
* 650E4680	Type P8 Concrete Gutter	23	Ft
* 651E0040	4" Concrete Sidewalk	248	SqFt
* 730E0251	Special Permanent Seed Mixture 1	65	Lb
* 730E1200	Hydroseeding	1,116	SqYd
* 731E0200	Fertilizing	0.20	Ton
* 732E0250	Fiber Mulching	692	Lb
* 734E5005	Dewatering	LUMP SUM	LS
* 900E5149	Landscaping Rock	16.0	CuYd
* 910E1086	Locate Underground Utility	50.0	Hour

*** - Denotes Non-Participating**

Abandon Water Main Summary Table		
Item Description	**Quantity**	**Unit**
451E6103 - Abandon Water Main		
Abandonment of Existing Water Main - 4 inch	1,420	FT
Abandonment of Existing Water Main - 6 inch	1,800	FT
Abandonment of Existing Water Main - 8 inch	235	FT

Pipe Bend Summary Table		
Item Description	**Quantity**	**Unit**
451E3004 - 4" Pipe Bend		
4" 45 Degree Bend	2	EA
451E3006 - 6" Pipe Bend		
6" 45 Degree Bend	14	EA
451E3008 - 8" Pipe Bend		
8" High Deflection Coupling	5	EA
8" 22.5 degree bend	1	EA
8" 11.25 degree bend	5	EA
8" 45 degree bend	17	EA
8" 90 degree bend	1	EA

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND BRIDES, 2015 EDITION AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL FOR PROJECT NH-CR-EM 0018(195)103 US HIGHWAY 18 AND PROJECT P 0407(05)01 SD HIGHWAY 407 OGLALA COUNTY PCN 04FC AND PCN 06N3 SHALL APPLY TO NON-PARTICIPATING ITEMS 009E3230 THROUGH 380E6110 AND 621E0050 THROUGH 900E5149 IN PROJECT 2211 01441 ( ) BID SCHEDULE. THESE NON-PARTICIPATING ITEM ARE DETAILED IN THE PLANS FOR PCN 04FC AND PCN 06N3 (LET IN CONJUNCTION WITH PCN X06L). THE DETAILS, PLAN NOTES, TABLES OF QUANTITIES AND STANDARD PLATES INCLUDED IN THE PCN 04FC AND PCN 06N3 PLANS SHALL APPLY TO PCN X06L.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13620
JESSICA WAGNER
SOUTH DAKOTA
11/06/2024

KLJ

REVISION | DATE | NO.

DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA
SUMMARY OF QUANTITIES

SHEET 1.03

GENERAL NOTES:

ALL WORK REQUIREMENTS SHOWN ON THESE DRAWINGS AND NOT OTHERWISE DETAILED MUST BE ACCOMPLISHED AS SPECIFIED IN THE LATEST SPECIFICATIONS FROM THE STATE OF SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDDOT).

CONTRACTOR WILL CONDUCT HIS WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, DEPT OF LABOR.

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL UTILITIES AND PROTECT THEM FROM DAMAGE. THE LOCATION OF ALL AERIAL AND UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND SOME ITEMS MAY NOT BE INDICATED IN THE PLANS. UNDERGROUND UTILITIES, WHETHER INDICATED OR NOT, WILL BE LOCATED AND FLAGGED BY THE UTILITIES AT THE REQUEST OF THE CONTRACTOR. THE CONTRACTOR MUST NOT BEGIN EXCAVATION IN THE AREA OF UNDERGROUND UTILITIES UNTIL ALL SUCH UTILITIES HAVE BEEN LOCATED AND IDENTIFIED AND THEN ONLY WITH EXTREME CARE TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY. THE CONTRACTOR MUST BEAR THE TOTAL EXPENSE OF REPAIR OR REPLACEMENT OF SAID UTILITIES DAMAGED BY OPERATION IN CONNECTION WITH EXECUTION OF THE WORK. THE CONTRACTOR MUST COORDINATE CONSTRUCTION EFFORTS WITH ALL LOCAL UTILITY COMPANIES PERTINENT TO THE WORK.
2. THE INFORMATION ON THESE DRAWINGS CONCERNING THE TYPE, SIZE AND LOCATION OF UTILITIES HAS BEEN BASED UPON THE INFORMATION AVAILABLE DURING TOPOGRAPHIC SURVEYS. SIZE AND TYPE OF UTILITIES WAS PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR MUST BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES IN PLACE UNLESS THEY ARE SCHEDULED FOR RELOCATION. THE CONTRACTOR MUST COORDINATE ALL WORK WITH THE UTILITY COMPANIES. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.
3. THE CONTRACTOR MUST UTILIZE THE SOUTH DAKOTA ONE CALL NOTIFICATION PROCESS TO PROVIDE ADVANCE NOTICE OF AT LEAST 48 HOURS, EXCLUDING WEEKENDS AND HOLIDAYS, TO INFORM ALL SOUTH DAKOTA UNDERGROUND FACILITY OPERATORS OF INTENDED EXCAVATION. THE CONTRACTOR MUST CONTACT ALL UTILITY COMPANIES BEFORE WORK IS COMMENCED.
4. ALL WATER IMPROVEMENT PROJECT MATERIAL TO BE REMOVED FOR DISPOSAL MUST BECOME THE PROPERTY OF THE CONTRACTOR, UNLESS NOTED OTHERWISE, AND MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL & STATE REGULATIONS.
9. ALL BARRICADES, WARNING SIGNS, LIGHTS, DEVICES, ETC. FOR THE GUIDANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS MUST CONFORM TO THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SHOP DRAWINGS

THE CONTRACTOR MUST SUBMIT ELECTRONIC PDF COPIES OF ALL WATER IMPROVEMENT PROJECT SUBMITTALS FOR REVIEW TO:

james.ainslie@ihs.gov

AFTER REVIEW, COPIES WILL BE RETURNED TO THE CONTRACTOR WITH ANY REVISIONS NOTED.

CONTRACTOR FURNISHED PROGRESS SCHEDULES

AT LEAST TWO WEEKS PRIOR TO THE START OF THE WATER IMPROVEMENT WORK, THE CONTRACTOR MUST FURNISH TWO COPIES OF A BAR CHART METHOD PROGRESS SCHEDULE. THE SCHEDULE MUST CONSIST OF A CONSTRUCTION SCHEDULE AND A BRIEF WRITTEN NARRATIVE. THE SCHEDULE MUST CONTAIN THE FOLLOWING INFORMATION:

1. USE A TIME SCALE TO GRAPHICALLY SHOW PERCENTAGE OF WORK SCHEDULED FOR COMPLETION WITHIN THE CONTRACT COMPLETION REQUIREMENTS.
2. DEFINE AND RELATE WORK ACTIVITIES TO CONTRACT PAY ITEMS.
3. SHOW WORK ACTIVITIES (PRIME CONTRACTOR AND ALL SUBCONTRACTOR ACTIVITIES) IN THE ORDER THE WORK WILL BE PERFORMED INCLUDING SUBMITTALS, APPROVALS, DELIVERIES, TEMPORARY TRAFFIC CONTROL, AND PERMANENT SIGNING/STRIPING.
4. SHOW ALL MAJOR WORK ACTIVITIES THAT ARE CONTROLLING FACTORS IN THE COMPLETION OF THE WORK.
5. SHOW THE TIME REQUIRED FOR EACH ACTIVITY AND ITS RELATIONSHIP IN TIME TO OTHER ACTIVITIES.
6. SHOW THE TOTAL EXPECTED TIME TO COMPLETE ALL WORK.
7. SHOW THE EXPECTED WORK SHIFTS IN DAYS PER WEEK AND HOURS PER DAY AND THE DAYS WHEN WORK IS NOT EXPECTED TO BE PERFORMED. THE SCHEDULE MUST BE UPDATED, REVISED AND RESUBMITTED ON A MONTHLY INTERVAL UNTIL THE PROJECT IS SUBSTANTIALLY COMPLETE. THERE WILL BE NO DIRECT PAYMENT FOR THE CONTRACTOR-FURNISHED SCHEDULE. ALL COSTS ASSOCIATED WITH THE SCHEDULE MUST BE INCLUDED IN RELATED ITEMS. FAILURE TO PROPERLY SUBMIT THE REQUIRED CONSTRUCTION SCHEDULES WILL RESULT IN HOLDING OF PROGRESS PAYMENTS UNTIL AN APPROVED SCHEDULE IS RECEIVED.

EXPLORATORY EXCAVATION

PLANS REFLECT BEST AVAILABLE DATA AND ANY EXPLORATORY EXCAVATION TO IDENTIFY EXISTING SERVICE LINES, MAINS, PRIVATE UTILITIES, ETC. MUST BE CONSIDERED INCIDENTAL TO THE PROJECT.PLANS NOTE EXISTING SERVICES THAT WILL REQUIRE VERIFICATION OF LOCATION AND SIZE.

CERTIFICATION AND TESTING

SUBMITTALS AND CERTIFICATION DOCUMENTS RELATED TO THE WATER IMPROVEMENT PROJECT MUST BE PROVIDED TO THE ENGINEER FOR ALL MATERIALS DELIVERED TO THE SITE.

TRENCH EXCAVATION AND BACKFILL

THE CONTRACTOR MUST BE RESPONSIBLE FOR MAINTAINING A SAFE EXCAVATION COMPLYING WITH APPLICABLE STATE AND FEDERAL REGULATIONS. IT IS POSSIBLE THAT IN SOME AREAS SPECIAL FOUNDATIONS MAY BE REQUIRED TO PROVIDE ADEQUATE SUPPORT FOR THE PIPE. SUCH FOUNDATIONS WILL CONSIST OF SUB-EXCAVATION TO A DEPTH AS REQUIRED BY THE ENGINEER AND PLACEMENT OF FOUNDATION MATERIAL.

OPEN TRENCHES WILL NOT BE PERMITTED OVERNIGHT. DROP OFF AND SLOPE RESTRICTIONS LISTED IN THE SDDOT PLANS WILL APPLY TO ALL WATER AND SANITARY SEWER WORK AREAS. IF EXTRAORDINARY CIRCUMSTANCES REQUIRE OPEN TRENCHES OVER NIGHT, THE CONTRACTOR WILL FURNISH AND INSTALL CONCRETE BARRIERS AS APPROVED BY THE ENGINEER. THE COST FOR FURNISHING AND INSTALLING AND ANY INCIDENTALS TO THIS WORK WILL BE INCIDENTAL TO THE VARIOUS BID ITEMS. NO EXTRA PAYMENT WILL BE MADE.

TRENCH CHECK DAM

CONTRACTOR MUST PLACE WITHIN THE TRENCH A COMPACTED COHESIVE CLAY CHECK DAM. DURING CONSTRUCTION, CHECK DAM LOCATIONS MAY BE MOVED DUE TO FIELD CONDITIONS. THE CHECK DAM MUST EXTEND FROM THE BOTTOM OF THE EXCAVATION THROUGH THE BEDDING MATERIAL TO THE BACKFILL AND MUST EXTEND COMPLETELY TO EACH TRENCH SIDEWALL. THE CHECK DAM IS USED AS A MEANS TO PREVENT THE CONVEYANCE OF WATER THROUGH THE TRENCH BEDDING. COMPACTED COHESIVE CLAY MUST CONSIST OF MATERIAL THAT CONTAINS A MINIMUM OF 25% MINUS NO. 200 SIEVE MATERIAL WITH 70% PASSING A ¾" SIEVE AND A PI OF 10%. THE MATERIAL MUST CONSIST OF CLAY, SILTY SAND OR SILTY CLAY. IF THE NORMAL EXCAVATED MATTER IS NOT SUITABLE FOR CONSTRUCTION OF THE CHECK DAM, THEN THE CONTRACTOR MUST OBTAIN MATERIAL FROM OUTSIDE SOURCES. CHECK DAM INSTALLATION AND MATERIAL MUST BE CONSIDERED AS INCIDENTAL TO THE PIPE INSTALLATION.

PVC WATER MAIN PIPE

PIPE FOR WATER MAINS MUST BE PVC PRESSURE PIPE AND MUST CONFORM TO AWWA SPECIFICATIONS C-900, DR18. THE PIPE MUST MEET ALL OTHER REQUIREMENTS SPECIFIED IN THE STANDARD SPECIFICATIONS.

BOLTS FOR FITTING AND JOINT RESTRAINING DEVICES

BOLTS AND NUTS FOR WATER MAIN FITTING AND JOINT RESTRAINING DEVICES MUST BE SERIES 300 STAINLESS STEEL.

TEMPORARY WATER SERVICE

CONTRACTOR MUST PROVIDE TEMPORARY WATER SERVICE TO ALL HOMES ALONG PROJECT DURING PROJECT DURATION. ALL PIPING, FITTINGS, MAINTENANCE AND HOOKUPS MUST BE INCLUDED.

WATER SHUTOFF

MAXIMUM WATER SHUTOFF MUST BE 4 HOURS.

CONNECT TO EXISTING WATER MAIN

PAYMENT INCLUDED CONNECTING NEW WATER MAIN TO EXISTING WATER MAIN PER EACH, COMPLETE AND MUST CONSIDERED FULL COMPENSATION FOR ALL LABOR, TOOLS, EQUIPMENT, MATERIALS, FITTINGS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

WARRANTY PERIOD

THE WARRANTY PERIOD FOR THIS PROJECT MUST START WHEN THE PROJECT IS COMPLETE. WARRANTY PERIOD 1 YEAR.

AS-BUILT PLANS

THE CONTRACTOR MUST MEASURE AND RECORD ANY HORIZONTAL OR VERTICAL DEVIATIONS FROM THE WATER IMPROVEMENT CONTRACT DRAWINGS. THE CHANGES MUST BE RECORDED IN AN ACCURATE, NEAT FASHION ON THE DRAWINGS AND FURNISHED TO THE ENGINEER UPON COMPLETION OF THE PROJECT. SPECIFICALLY, ALL CONNECTIONS, ANODES AND BURIED FITTINGS MUST BE RECORDED FOR THE WORK. THE AS-BUILT DRAWINGS MUST BE ON-SITE AND AVAILABLE FOR REVIEW BY THE ENGINEER UPON REQUEST.

EXISTING UTILITY CROSSINGS

REFER TO PLANS AND SPECIFICATIONS FOR CROSSINGS OF EXISTING STORM SEWERS, SANITARY SEWERS, WATER MAINS AND LOWERINGS. AT ALL LOCATIONS WHERE THE PROPOSED UTILITY IMPROVEMENT CROSSES OR IS ADJACENT TO EXISTING STORM SEWERS, SANITARY SEWERS, OR WATER MAINS, THE CONTRACTOR MUST BE RESPONSIBLE FOR SAFEGUARDING THE EXISTING UTILITIES TO ENSURE THAT THEY ARE NOT DISTURBED DURING THE WORK. TEMPORARY STRUCTURAL SUPPORT FOR THE UTILITIES MAY BE REQUIRED. NO SEPARATE PAYMENT MUST BE MADE FOR CROSSED UTILITY PROTECTION. ANY REPAIR WORK NECESSARY TO A CROSSED UTILITY RESULTING FROM THE CONTRACTOR'S ACTIVITY MUST BE AT THE CONTRACTOR'S EXPENSE.

REMOVALS AND SURFACE RESTORATION

REFER TO THE DOT CONSTRUCTION DOCUMENTS FOR REMOVALS AND SURFACE RESTORATION PER PROJECT EM-NH-CR 0018(195)103 US HIGHWAY 18 & P 0407(00)01 SD HIGHWAY 407.

DEWATERING

DEWATERING IS CONSIDERED INCIDENTAL.

CONSTRUCTION LIMITS

CONTRACTOR MUST CONFINE CONSTRUCTION WORK WITHIN THE CONSTRUCTION LIMITS DEFINED AS SHOWN. THE CONTRACTOR MUST NOT OPERATE OR PLACE EQUIPMENT, MATERIALS OR STOCKPILES ON PRIVATE PROPERTY WITHOUT THE PROPERTY OWNER'S WRITTEN CONSENT. THE CONTRACTOR MUST FURNISH A COPY OF OWNER'S WRITTEN CONSENT TO THE ENGINEER AND THE OWNER.

WASTE DISPOSAL

WASTE DISPOSAL SITE CONSTRUCTION AND/OR DEMOLITION DEBRIS MAY NOT BE DISPOSED OF WITHIN THE ROW. THE WASTE DISPOSAL SITE(S) MUST NOT BE LOCATED IN A WETLAND, WITHIN 200 FEET OF SURFACE WATER OR IN AN AREA THAT ADVERSELY AFFECTS WILDLIFE, RECREATION, THE AESTHETIC VALUE OF AN AREA, OR ANY THREATENED OR ENDANGERED SPECIES, AS APPROVED BY THE PROJECT ENGINEER. ALL COSTA ASSOCIATED WITH DISPOSING OF WASTE, MAINTAINING CONTROL OF ACCESS (FENCE, GATES AND SIGNS), AND RECLAMATION OF THE WASTE DISPOSAL SITES(S) MUST BE INCIDENTAL TO THE VARIOUS CONTRACT

RESIDENTS NOTIFICATION

CONTRACTOR MUST COORDINATE WITH IHS AND OST. WATER AND SEWER FOR RESIDENTIAL NOTIFICATIONS. OST SEWER AND WATER WILL PREPARE FLIERS AND RADIO ANNOUNCEMENTS TO BE RELEASED 2 WEEKS PRIOR TO ANY PLANNED WATER SERVICE OUTAGES.

COORDINATION

CONTRACTOR SHALL COORDINATE ALL WORK ON THE WATER MAIN PROJECT (PCN #XO6L) WITH THE DOT ROAD PROJECT (PCN 04FC AND PCN 06N3).

BUILD AMERICA, BUY AMERICA PREFERENCE

THE BUILD AMERICA, BUY AMERICA REQUIREMENTS WILL APPLY TO THIS UTILITY PROJECT.

METER

FOR THE 1-INCH SERVICE LINES THE METER MUST BE A MUELLER 240 BRONZE OR APPROVED EQUAL. FOR THE 4-INCH SERVICE LINE THE METER MUST BE A ZENNER CAST IRON TURBINE WATER METER OR APPROVED EQUAL.

TRACER WIRE

THE TRACER WIRE WILL BE #12 AWG COPPER CLAD STEEL, WITH A MINIMUM 450-LB BREAK LOAD. THE TRACER WIRE WILL HAVE 30-MIL THICK BLUE HDPE INSULATION INTENDED FOR DIRECT BURIAL USE AT 30 VOLTS.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13620
JESSICA WAGNER
SOUTH DAKOTA
10/21/2024

KLJ

NO.	DATE	REVISION

DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

GENERAL NOTES

SHEET 1.04

FOR BIDDING PURPOSES ONLY

REVISED: 9/12/2024 JRW

ESTIMATE OF QUANTITIES – PCN X06L

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
120E6200	Water for Granular Material	2.6	MGal
260E1030	Base Course, Salvaged	89.1	Ton
260E2030	Gravel Cushion, Salvaged	120.0	Ton
320E1200	Asphalt Concrete Composite	34.0	Ton
380E0050	8" Nonreinforced PCC Pavement	456.4	SqYd
380E6000	Dowel Bar	246	Each
380E6110	Insert Steel Bar in PCC Pavement	221	Each

SURFACING THICKNESS DIMENSIONS

Plans tonnage will be applied even though the thickness may vary from that shown on the plans.

At those locations where material must be placed to achieve a required elevation, plans tonnage may be varied to achieve the required elevation.

EXISTING PCC PAVEMENT

The existing concrete is Plain Jointed PCC Pavement. The existing transverse joints are perpendicular and are spaced at 20 feet. The aggregate in the existing Plain Jointed PCC Pavement is limestone.

GRAVEL CUSHION, SALVAGED

Gravel Cushion, Salvaged will be obtained from the stockpile site(s) provided by the Contractor and may be used without further gradation testing.

The Contractor will ensure the Gravel Cushion, Salvaged material contains no more than 40% salvaged asphalt mix material and at least 60% granular material (salvaged or virgin). Blended material will be to the satisfaction of the Engineer.

All other requirements for Gravel Cushion, Salvaged will apply.

ASPHALT CONCRETE COMPOSITE

Asphalt Concrete Composite will include MC-70 Asphalt for Prime placed at the rate of 0.30 gallons per square yard. The Asphalt for Prime will be applied to the Base Course, Salvaged for the full width of the bottom layer of Asphalt Concrete Composite plus one foot additional on the outside shoulder for a rural section or to match the width of the gutter.

Asphalt for tack SS-1h or CSS-1h will be applied prior to each lift of Asphalt Concrete Composite. Asphalt for tack will be applied at a rate of 0.09 gallons per square yard on existing pavement or milled asphalt concrete surfaces and at a rate of 0.06 gallons per square yard on primed base course or new asphalt concrete pavement. The Asphalt for tack will be applied for the full width of the bottom layer of Asphalt Concrete Composite plus one-half foot additional on the outside shoulder.

8" NONREINFORCED PCC PAVEMENT

The aggregate may require screening as determined by the Engineer.

The concrete mix will conform to the special provision for Contractor Furnished Mix Design for PCC Pavement.

A construction joint will be sawed whenever new concrete pavement is placed adjacent to existing concrete pavement.

In lieu of an automatic subgrader operating from a preset line, a motor grader or other suitable equipment may be used to trim the gravel cushion to final grade prior to placement of concrete. There will be no direct payment for trimming of the gravel cushion for PCC pavement. The trimming will be considered incidental to the related items required for PCC Pavement.

The surface of the mainline paving will be a heavy carpet drag. All other areas will be textured as directed by the Engineer. The surface of the mainline paving will receive a heavy carpet drag to within 2 or 3 feet of the face of the curb.

Unless specified otherwise in the PCC Pavement Joint Layout Sheets or elsewhere in the plans, the typical joint spacing for 8" Nonreinforced PCC Pavement will be 15'.

The transverse construction joints will be handled in accordance with the Special Details for PCC Pavement Transverse Construction Joints.

The transverse contraction joints will be perpendicular to the centerline. In multilane areas the transverse contraction joints will be perpendicular to the centerline and be in a straight line across the entire width of the pavement. In special situations the Engineer may pre-approve transverse contraction joints that do not meet these requirements. All nonconforming transverse contraction joints will be removed at the Contractor's expense. Any method of placement that cannot produce these requirements will not be allowed.

The location of joints, as shown and designated on the PCC Pavement Joint Layout(s) are only approximate locations to be used as a guide and to afford bidders a basis for estimating the construction cost of the joints. The final locations of the joints are to be designated by the Engineer during construction.

There will be no direct payment for trimming of the gravel cushion for PCC pavement. The trimming will be considered incidental to the related items required for PCC Pavement. Trimming will be performed as required by Section 380.3 C of the Specifications.

Revised: 11Sep24, RML

CURING OF CONCRETE

Portland Cement Concrete Pavement, Concrete Curb & Gutter, Concrete Gutter, and Concrete Fillet will be cured with Linseed Oil Base Emulsion Compound. All costa for Curing of Concrete will be incidental to the contract unit price per various Portland Cement Concrete bid items.

TABLE OF 8" NONREINFORCED PCC PAVEMENT – PCN X06L

Location			8" NONREINFORCED PCC PAVEMENT
Sta	to	Sta.	(SqYd)
Mainline US Hwy 18 - South-North			
220+16.57	to	220+36.58	88.9
224+16.68	to	224+36.68	88.9
SD Hwy 407 - South-North			
212+97.20	to	214+50.11	278.6
		Total:	456.4

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PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

GENERAL NOTES

SHEET 1.04A

ALKALI SILICA REACTIVITY

Fine aggregate will conform to Section 800.2 D Alkali Silica Reactivity (ASR) Requirements.

Below is a list of known fine aggregate sources and the average corresponding 14-day expansion values (as of 8-30-2023):

Source	Location	Expansion Value
Bachman	Winner, SD	0.335*
Bitterman	Delmont, SD	0.316*
Concrete Materials	Corson, SD	0.146
Concrete Materials - Vellek Pit	Yankton, SD	0.411**
Croell	Hot Springs, SD	0.089
Croell	Wasta, SD	0.212
Emme Sand & Gravel	Oneil, NE	0.217
Fisher S&G – Blair Pit	W of Vale, SD	0.171
Fisher S&G - Mickelson Pit	E of Nisland, SD	0.129
Fisher S&G - Vallery Pit	Nisland, SD	0.110
Fisher S&G	Rapid City, SD	0.092
Fisher S&G	Spearfish, SD	0.053
Fisher S&G	Wasta, SD	0.159
Fuchs	Pickstown, SD	0.275*
Henning – Tilstra Pit	Ash Creek, MN	0.199
Higman	Hudson, SD	0.187
Jensen	Herried, SD	0.276*
L.G. Everist	Akron, IA	0.257*
L.G. Everist	Brookings, SD	0.297*
L.G. Everist – Ode Pit	E Sioux Falls, SD	0.215
L.G. Everist – Nelson Pit	NE Sioux Falls, SD	0.156
L.G. Everist	Hawarden, IA	0.176
L.G. Everist	Summit, SD	0.184
Mark's S&G – Moerke Pit	Underwood, MN	0.165
Morris – Birdsall	Blunt, SD	0.229
Morris - Leesman	Blunt, SD	0.231
Morris - Richards Pit	Onida, SD	0.188
Morris - Shawn's Pit	E of Sturgis, SD	0.186
Northern Concrete Agg.	Rauville, SD	0.113
Northern Concrete Agg.	Luverne, MN	0.133
Opperman - Gunvordahl Pit	Burke, SD	0.363*
Opperman - Cahoy Pit	Herrick, SD	0.307*
Opperman - Jones Pit	Burke, SD	0.321*
Opperman - Randall Pit	Pickstown, SD	0.230
Pete Lien & Sons	Creston, SD	0.158
Pete Lien & Sons	Oral, SD	0.157
Pete Lien & Sons	Wasta, SD	0.226
Simon Materials - Beltline Pit	Scottsbluff, NE	0.277*
Thorpe Pit	Britton, SD	0.098
Wagner Building Supplies	Pickstown (Wagner), SD	0.251*
Winter Brothers- Whitehead Pit	Brookings, SD	0.197

* These sources will require Type II cement with a fly ash content of 25% in the concrete mix.

** These sources will not be used.

The Department will use the running average of the last three or fewer known expansion test results for determining acceptability of the source. These expansion results are reported in the preceding table. Additional testing, when requested by the Contractor, will be performed by the Department at the Contractor's expense.

The values listed in the table are intended for use in bidding. If a previously tested pit by SDDOT with a test value less than 0.250 is discovered after letting to be 0.250 or greater, then the Department will accept financial responsibility if higher costs are incurred due to higher percent of fly ash requirement.

STEEL BAR INSERTION

The Contractor will insert the Steel Bars (11/4 inch x 18 inch epoxy coated plain round dowel bars) into drilled holes in the existing concrete pavement. An epoxy resin adhesive must be used to anchor the steel bar in the drilled hole.

The steel bars will be cut to the specified length by sawing or shearing and will be free from burring or other deformations.

Epoxy coated plain round steel bars will be inserted on 12 inch centers in the joint. The first steel bar will be placed a minimum of 3 inches and a maximum of 6 inches from the outside edge of the slab.

TABLE OF STEEL BAR INSERTION – PCN X06L

LOCATION	1-1/4" x 18" Plain Round Dowel Bars
US Hwy 18 North - South	
Sta. 220+16.58	40
Sta. 220+36.58	40
Sta. 224+16.68	40
Sta. 224+36.68	40
SD Hwy 407 North - South	
Sta. 212+97.20 to 214+50.11	61
Total:	**221**

TABLE OF DOWEL BARS – PCN X06L

Location	1 1/4" Bars
US Hwy 18	
Bars in Mainline - 12 bar	82
SD Hwy 407	
Bars in Mainline - 12 bar	164
Total Dowel Bars:	246

MANHOLE BOX-OUT DETAILS

The Contractor will construct box-outs for all manholes in the 8" Concrete Pavement according to the Box-Out Detail. Locations of Proposed Manholes and water valve boxes are shown on the Pavement Joint Layout Sheets.

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13620
JESSICA WAGNER
SOUTH DAKOTA
09/13/2024

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PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA
GENERAL NOTES

SHEET 1.04B

FOR BIDDING PURPOSES ONLY

REVISED: 9/12/2024 JRW

TABLE OF MATERIALS – PCN X06L

LOCATION Station to Station	WATER FOR GRANULAR MATERIAL (MGal)	GRAVEL CUSHION, SALVAGED (Ton)	BASE COURSE, SALVAGED (Ton)	ASPHALT CONCRETE COMPOSITE	
				1st Lift (Ton)	Top Lift (Ton)
Mainline US Hwy 18					
Sta. 220+16.58 to Sta. 220+36.57	0.3	23.4			
Sta. 224+16.68 to Sta. 224+36.68	0.3	23.4			
Mainline SD 407					
Sta. 212+03.39 to Sta. 212+97.2	1.1		89.1		
Sta. 212+97.20 to Sta. 214+50.11	0.9	73.2		17.0	17.0
Totals	2.6	120.0	89.1	34.0	

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OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

GENERAL NOTES

SHEET 1.04C

FOR BIDDING PURPOSES ONLY

11
3287.92
CP CP11 5/8" REBAR W/KLJ AC

10
3310.92
CP CP10 5/8 REBAR W/KLJ AC

20
3264.26
CP CP20 5/8" REBAR W/KLJ AC

19
3247.06
CP CP19 5/8" REBAR W/KLJ AC

12
3298.87
CP CP12 5/8" REBAR W/KLJ AC

21
3235.13
CP CP21 5/8" REBAR W/KLJ AC

22
3219.15
CP CP22 5/8" REBAR W/KLJ AC

24
3238.01
CP CP24 5/8" REBAR W/KLJ AC

23
3249.60
CP CP23 5/8" REBAR W/KLJ AC

US HIGHWAY 18
SITTING BULL ROAD NE
BUFFALO BERRY ST NE
EAGLE FEATHER ST
EAGLE ROAD
W MAIN ST
E MAIN ST
SD 407
WHITETAIL DEER ROAD
PRAIRIE VIEW AVE
IRVING ROAD
EAST RIDGE ROAD
MAPLE ST
SIOUX NATION AVE SE
CHEYENNE AVE SE
CHEROKEE AVE SE
DAKOTA AVE
MOCCASIN FACTORY ROAD

CONTROL DATA FOR PINE RIDGE WATER SYSTEM IMPROVEMENTS

COORDINATE SYSTEM: US STATE PLANE 1983 (US SURVEY FEET)

ZONE: SOUTH DAKOTA SOUTH 4002

DATUM: NAD 1983/2011 (epoch 2010.00)

GEOID MODEL: GEOID18

VERTICAL DATUM: NAVD 1988

CSF (GRID TO GROUND): 1.0001969

POINT	NORTHING USFT	EASTING USFT	ELEVATION USFT	MARKER
CP 10	263413.25	1373813.19	3310.92	5/8" REBAR W/KLJ AC
CP 11	263583.76	1373507.82	3287.92	5/8" REBAR W/KLJ AC
CP 12	263093.91	1373866.54	3298.87	5/8" REBAR W/KLJ AC
CP 19	263223.69	1374818.60	3247.06	5/8" REBAR W/KLJ AC
CP 20	263461.64	1374445.28	3264.26	5/8" REBAR W/KLJ AC
CP 21	262320.89	1374029.22	3235.13	5/8" REBAR W/KLJ AC
CP 22	261940.67	1374960.86	3219.15	5/8" REBAR W/KLJ AC
CP 23	260418.09	1375246.98	3249.60	5/8" REBAR W/KLJ AC
CP 24	260388.45	1374191.41	3238.01	5/8" REBAR W/KLJ AC

250 0 250 500
SCALE FEET

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13620
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06/26/2024

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PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

HORIZONTAL ALIGNMENT & SURVEY CONTROL

SHEET 2.01

FOR BIDDING PURPOSES ONLY

EAST MAIN STREET 1

NAME	STATION	DISTANCE	RADIUS	DIRECTION	BEGIN	END
L1	1+00.00	56.62'		N85° 02' 26.87"E	N: 260,237.85 E: 1,373,972.92	N: 260,242.75 E: 1,374,029.32
L2	1+56.62	31.64'		N39° 29' 08.46"E	N: 260,242.75 E: 1,374,029.32	N: 260,267.17 E: 1,374,049.45
L3	1+88.26	24.08'		N84° 22' 35.62"E	N: 260,267.17 E: 1,374,049.45	N: 260,269.53 E: 1,374,073.41
L4	2+12.34	41.29'		N84° 22' 34.94"E	N: 260,269.53 E: 1,374,073.41	N: 260,273.58 E: 1,374,114.50
L5	2+53.63	87.43'		N83° 57' 47.97"E	N: 260,273.58 E: 1,374,114.50	N: 260,282.77 E: 1,374,201.45
L6	3+41.07	4.98'		N83° 39' 29.90"E	N: 260,282.77 E: 1,374,201.45	N: 260,283.32 E: 1,374,206.41
L7	3+46.05	350.46'		N83° 06' 57.89"E	N: 260,283.32 E: 1,374,206.41	N: 260,325.33 E: 1,374,554.34
L8	6+96.51	192.11'		N83° 01' 57.83"E	N: 260,325.33 E: 1,374,554.34	N: 260,348.63 E: 1,374,745.03
L9	8+88.62	30.25'		N83° 01' 57.83"E	N: 260,348.63 E: 1,374,745.03	N: 260,352.30 E: 1,374,775.06
L10	9+18.88	13.13'		N82° 50' 12.96"E	N: 260,352.30 E: 1,374,775.06	N: 260,353.94 E: 1,374,788.09

EAST MAIN STREET 2

NAME	STATION	DISTANCE	RADIUS	DIRECTION	BEGIN	END
C1	PC: 10+00.00 PI: 11+43.34 PT: 12+86.13	286.13'	1,898.86'	Δ= 8° 38' 00.92"	N: 260,375.80 E: 1,374,785.58	N: 260,433.69 E: 1,375,065.52
L11	12+86.13	204.02'		N73° 59' 52.97"E	N: 260,433.69 E: 1,375,065.52	N: 260,489.93 E: 1,375,261.63
L12	14+90.15	215.19'		N73° 59' 52.97"E	N: 260,489.93 E: 1,375,261.63	N: 260,549.25 E: 1,375,468.48
L13	17+05.33	33.34'		N73° 59' 52.97"E	N: 260,549.25 E: 1,375,468.48	N: 260,558.44 E: 1,375,500.52
L14	17+38.67	7.02'		N16° 00' 07.03"W	N: 260,558.44 E: 1,375,500.52	N: 260,565.19 E: 1,375,498.59
L15	17+45.69	79.31'		N7° 55' 23.85"W	N: 260,565.19 E: 1,375,498.59	N: 260,643.74 E: 1,375,487.66

EAST RIDGE ROAD

NAME	STATION	DISTANCE	RADIUS	DIRECTION	BEGIN	END
L16	20+00.00	25.02'		N6° 41' 23.81"W	N: 260,522.71 E: 1,375,871.99	N: 260,547.56 E: 1,375,869.07
L17	20+25.02	35.57'		N37° 30' 07.37"E	N: 260,547.56 E: 1,375,869.07	N: 260,575.78 E: 1,375,890.73
L18	20+60.59	198.02'		N7° 48' 24.50"W	N: 260,575.78 E: 1,375,890.73	N: 260,771.96 E: 1,375,863.83
L19	22+58.61	34.90'		N52° 29' 52.63"W	N: 260,771.96 E: 1,375,863.83	N: 260,793.21 E: 1,375,836.14
L20	22+93.52	31.48'		N7° 55' 23.85"W	N: 260,793.21 E: 1,375,836.14	N: 260,824.40 E: 1,375,831.80

HIGHWAY 18 CROSSING

NAME	STATION	DISTANCE	RADIUS	DIRECTION	BEGIN	END
L21	30+00.00	25.67'		N2° 07' 57.75"E	N: 260,725.25 E: 1,377,087.81	N: 260,750.90 E: 1,377,088.76
L22	30+25.67	14.14'		N42° 52' 02.25"W	N: 260,750.90 E: 1,377,088.76	N: 260,761.27 E: 1,377,079.14
L23	30+39.81	152.14'		N2° 07' 57.75"E	N: 260,761.27 E: 1,377,079.14	N: 260,913.30 E: 1,377,084.80
L24	31+91.94	14.14'		N47° 07' 57.75"E	N: 260,913.30 E: 1,377,084.80	N: 260,922.92 E: 1,377,095.17
L25	32+06.09	18.91'		N2° 07' 57.75"E	N: 260,922.92 E: 1,377,095.17	N: 260,941.81 E: 1,377,095.87

CHEYENNE AVE SE

NAME	STATION	DISTANCE	RADIUS	DIRECTION	BEGIN	END
L26	40+00.00	21.42'		N6° 37' 31.38"W	N: 260,399.20 E: 1,375,269.16	N: 260,420.48 E: 1,375,266.69
L27	40+21.42	15.05'		N38° 22' 28.62"E	N: 260,420.48 E: 1,375,266.69	N: 260,432.28 E: 1,375,276.03
L28	40+36.48	12.58'		N6° 37' 31.38"W	N: 260,432.28 E: 1,375,276.03	N: 260,444.77 E: 1,375,274.58
L29	40+49.05	50.95'		N16° 00' 07.03"W	N: 260,444.77 E: 1,375,274.58	N: 260,493.74 E: 1,375,260.53

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PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

HORIZONTAL ALIGNMENT & SURVEY CONTROL

SHEET 2.02

SD 407						
NAME	STATION	DISTANCE	RADIUS	DIRECTION	BEGIN	END
L30	50+00.00	29.91'		N5° 35' 19.40"W	N: 259,939.27 E: 1,374,131.89	N: 259,969.04 E: 1,374,128.98
L31	50+29.91	18.42'		N39° 49' 49.76"E	N: 259,969.04 E: 1,374,128.98	N: 259,983.18 E: 1,374,140.78
L32	50+48.33	301.67'		N5° 10' 10.24"W	N: 259,983.18 E: 1,374,140.78	N: 260,283.63 E: 1,374,113.59

HIGHWAY 18						
NAME	STATION	DISTANCE	RADIUS	DIRECTION	BEGIN	END
L33	60+00.00	68.46'		N5° 25' 10.45"W	N: 260,266.93 E: 1,374,072.08	N: 260,335.09 E: 1,374,065.62
L34	60+68.46	22.02'		N39° 34' 49.55"E	N: 260,335.09 E: 1,374,065.62	N: 260,352.06 E: 1,374,079.65
L35	60+90.48	599.55'		N5° 25' 10.45"W	N: 260,352.06 E: 1,374,079.65	N: 260,948.93 E: 1,374,023.02
L36	66+90.04	16.97'		N50° 25' 10.45"W	N: 260,948.93 E: 1,374,023.02	N: 260,959.74 E: 1,374,009.94
L37	67+07.01	354.71'		N5° 25' 10.45"W	N: 260,959.74 E: 1,374,009.94	N: 261,312.87 E: 1,373,976.44
L38	70+61.72	10.09'		N39° 02' 58.73"E	N: 261,312.87 E: 1,373,976.44	N: 261,320.70 E: 1,373,982.80
L39	70+71.81	8.84'		N5° 20' 22.42"W	N: 261,320.70 E: 1,373,982.80	N: 261,329.51 E: 1,373,981.97

WHITETAIL DEER RD 1						
NAME	STATION	DISTANCE	RADIUS	DIRECTION	BEGIN	END
L40	80+00.00	54.32'		N7° 26' 08.47"W	N: 260,246.38 E: 1,374,779.56	N: 260,300.24 E: 1,374,772.53
L41	80+54.32	30.35'		N53° 44' 26.64"W	N: 260,300.24 E: 1,374,772.53	N: 260,318.19 E: 1,374,748.05
L42	80+84.67	96.82'		N5° 47' 13.81"W	N: 260,318.19 E: 1,374,748.05	N: 260,414.51 E: 1,374,738.29
L43	81+81.49	29.81'		N39° 31' 48.21"E	N: 260,414.51 E: 1,374,738.29	N: 260,437.51 E: 1,374,757.26
L44	82+11.30	13.70'		N6° 00' 55.11"W	N: 260,437.51 E: 1,374,757.26	N: 260,451.13 E: 1,374,755.83

PRAIRIE VIEW AVE 1						
NAME	STATION	DISTANCE	RADIUS	DIRECTION	BEGIN	END
L46	100+00.00	39.38'		N16° 00' 07.03"W	N: 260,464.49 E: 1,375,165.39	N: 260,502.34 E: 1,375,154.54
L47	100+39.38	11.20'		N7° 43' 58.39"W	N: 260,502.34 E: 1,375,154.54	N: 260,513.45 E: 1,375,153.03
L48	100+50.59	28.88'		N53° 50' 25.41"W	N: 260,513.45 E: 1,375,153.03	N: 260,530.49 E: 1,375,129.71
L49	100+79.46	20.54'		N7° 45' 11.40"W	N: 260,530.49 E: 1,375,129.71	N: 260,550.83 E: 1,375,126.94

BUFFALO BERRY ST NE 1						
NAME	STATION	DISTANCE	RADIUS	DIRECTION	BEGIN	END
L50	150+00.00	125.00'		N83° 08' 57.75"E	N: 260,781.49 E: 1,374,038.91	N: 260,796.40 E: 1,374,163.01

CROSSING S OF WHITETAIL DEER RD						
NAME	STATION	DISTANCE	RADIUS	DIRECTION	BEGIN	END
L51	170+00.00	237.30'		N83° 53' 20.19"E	N: 261,188.36 E: 1,373,988.25	N: 261,213.62 E: 1,374,224.20

KLJ

REVISION

NO. DATE

DRAFTED
MJK
REVIEWED
JRW
PROJECT NUMBER
2211-01441
ISSUE DATE
6/25/2024

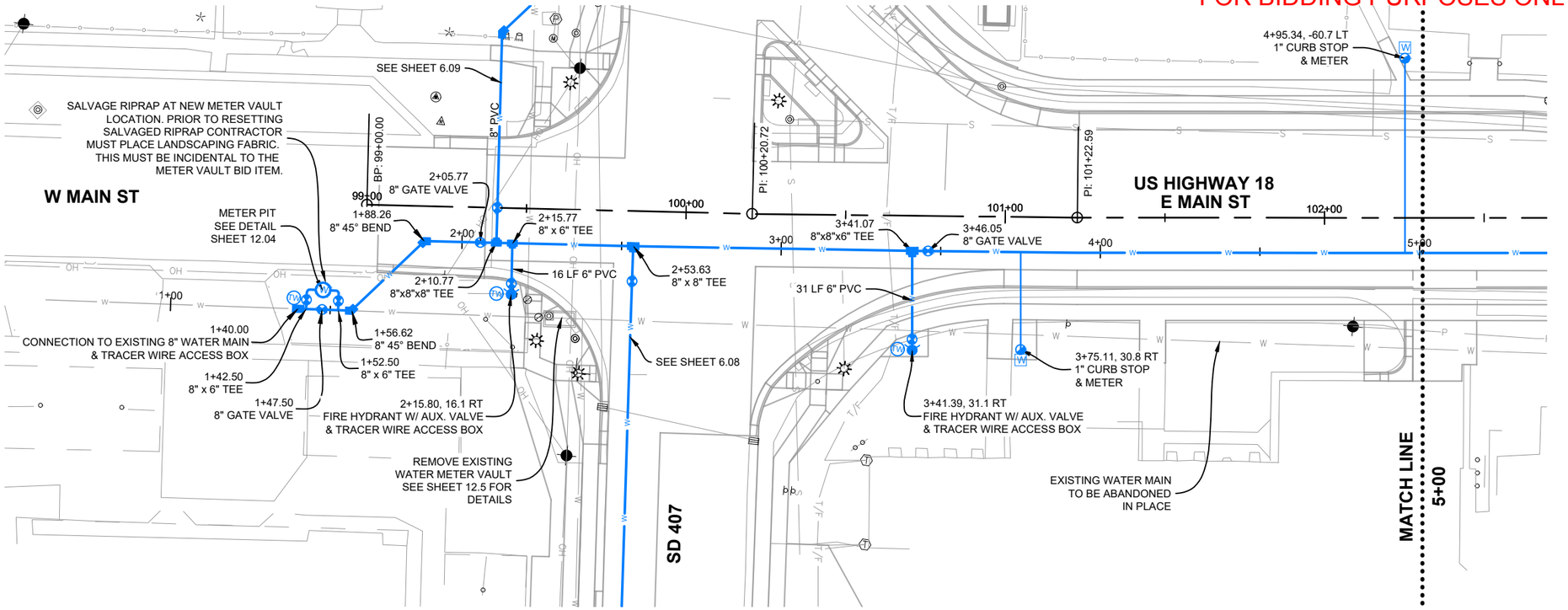
PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

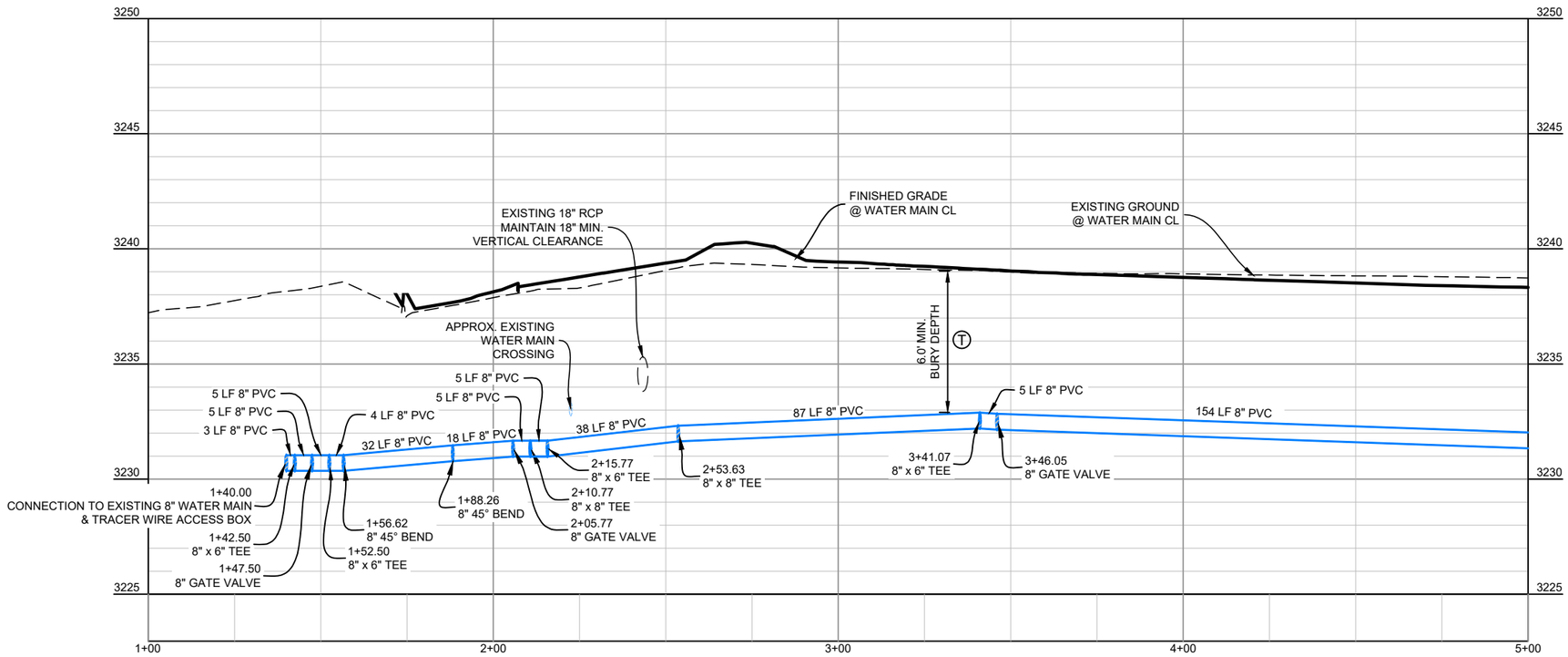
HORIZONTAL ALIGNMENT & SURVEY CONTROL

SHEET
2.03

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW





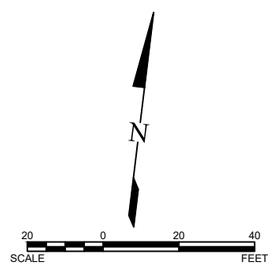
MAP KEY
1"=2000'

QUANTITIES THIS SHEET

1" PE WATER SERVICE LINE	91 LF
6" PVC WATER MAIN	47 LF
8" PVC WATER MAIN	360 LF
8" 45 DEGREE BEND	2 EA
8"x8"x6" TEE	4 EA
8"x8"x8" TEE	2 EA
FIRE HYDRANT W/AUX. VALVE	2 EA
1" CURB STOP, BOX AND METER	2 EA
8" GATE VALVE	3 EA
TRACER WIRE ACCESS BOX - 2 WIRE	3 EA
RECONNECT WATER SERVICE	2 EA
CONNECT TO EXISTING WATER MAIN	1 EA
WATER METER VAULT	1 EA
REMOVAL OF METER VAULT	1 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.



REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13620
JESSICA WAGNER
SOUTH DAKOTA
08/06/2024

KLJ

NO.	DATE	REVISION

DRAFTED: MJK
REVIEWED: JRW
PROJECT NUMBER: 2211-01441
ISSUE DATE: 6/25/2024

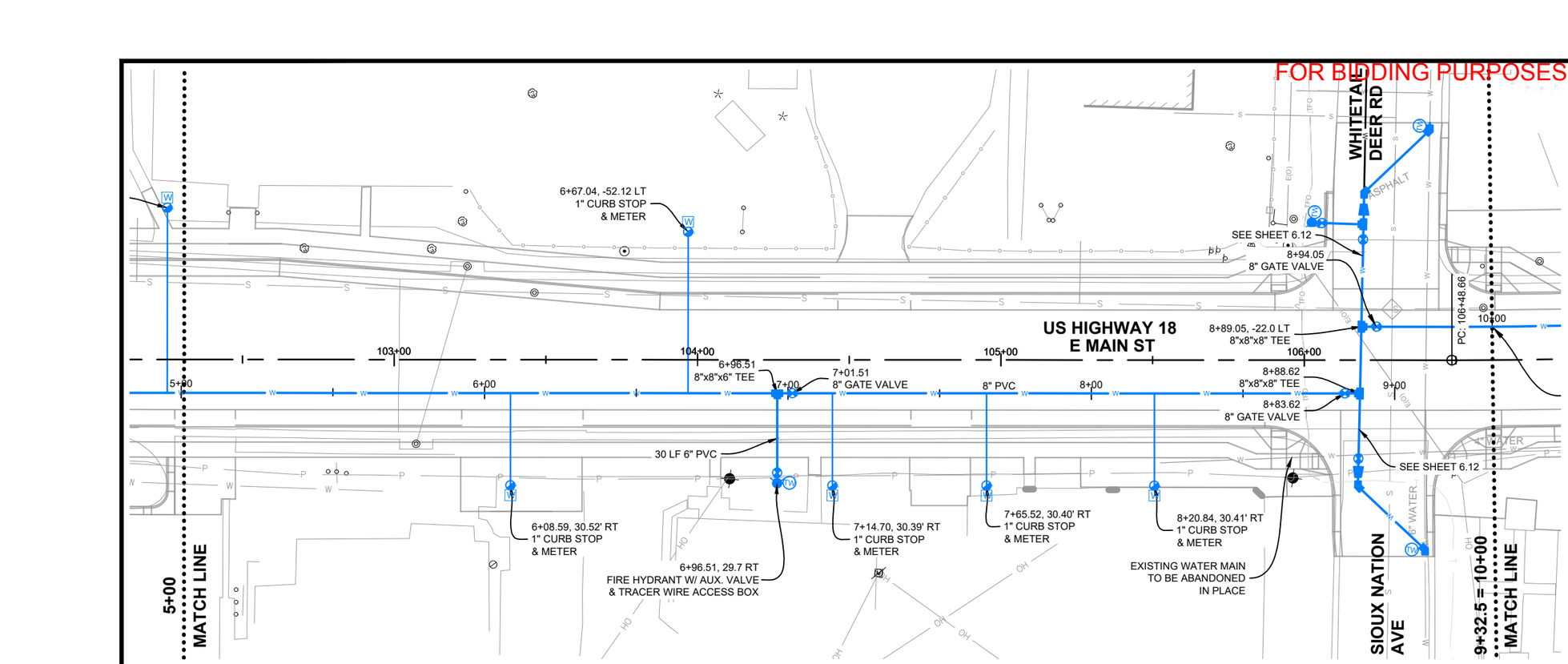
PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

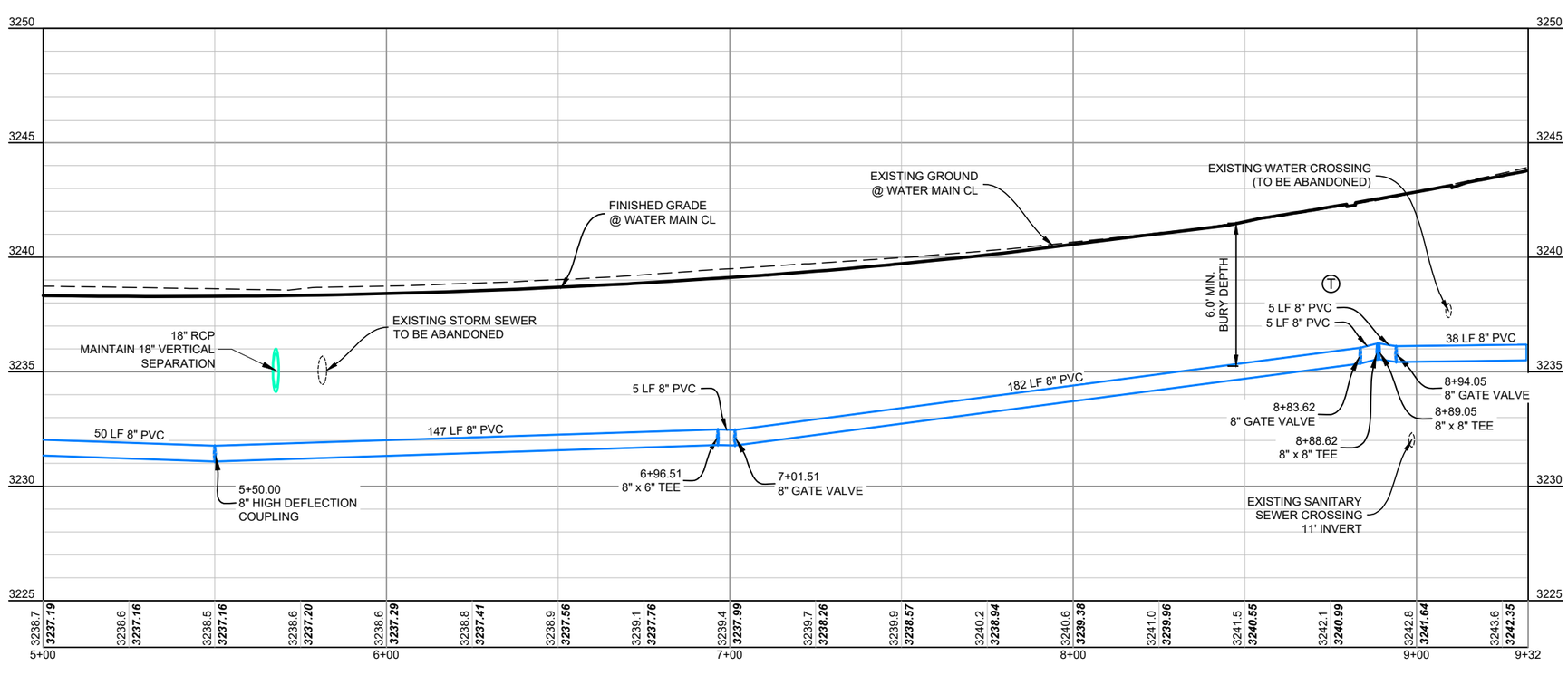
WATER PLAN & PROFILE - E MAIN ST

SHEET 6.01

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW





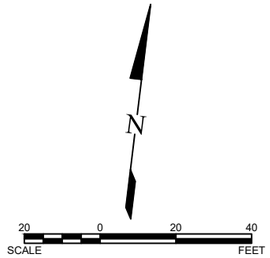
MAP KEY
1"=2000'

QUANTITIES THIS SHEET

1" PE WATER SERVICE LINE	173 LF
8" PVC WATER MAIN	432 LF
6" PVC WATER MAIN	30 LF
8"x8"x6" TEE	1 EA
8"x8"x8" TEE	2 EA
FIRE HYDRANT W/AUX. VALVE	1 EA
1" CURB STOP, BOX AND METER	5 EA
8" HIGH DEFLECTION COUPLING	1 EA
8" GATE VALVE	3 EA
TRACER WIRE ACCESS BOX - 2 WIRE	1 EA
RECONNECT WATER SERVICE	5 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.



KLJ

NO.	DATE	REVISION

DRAFTED
MJK
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JRW
PROJECT NUMBER
2211-01441
ISSUE DATE
6/25/2024

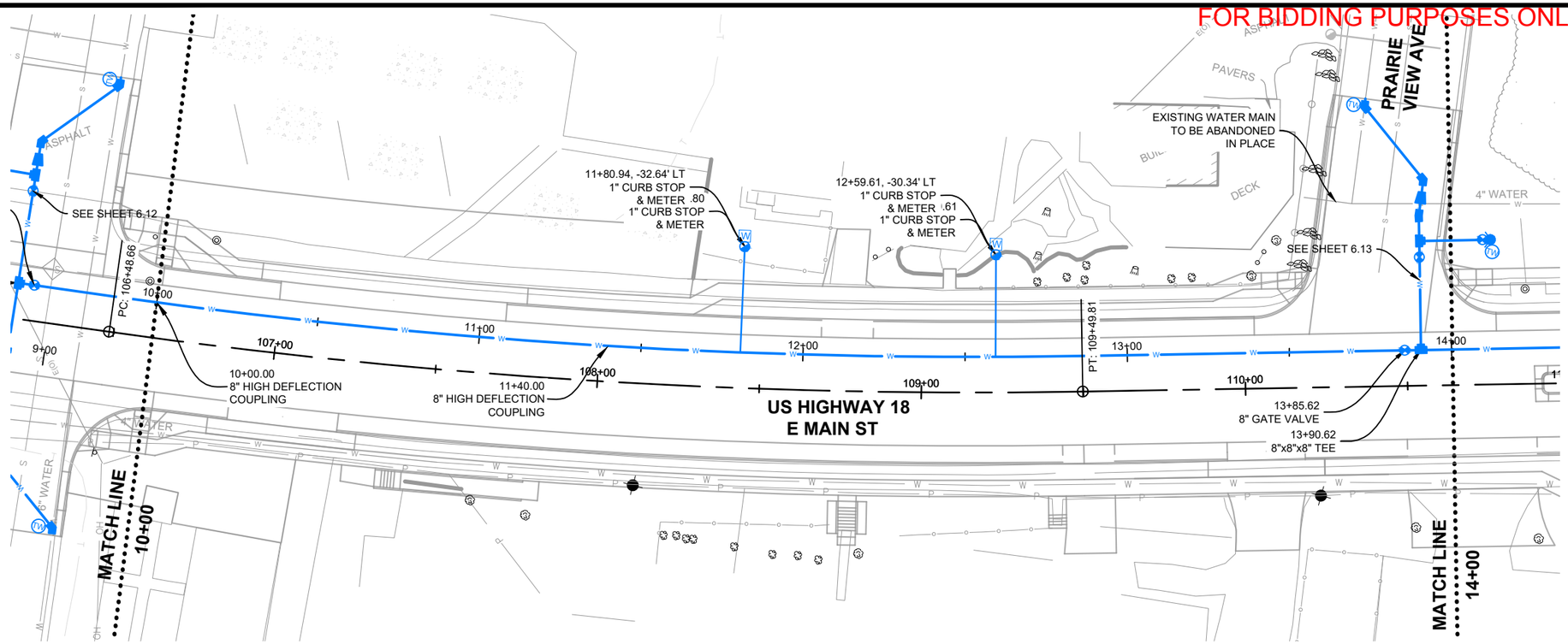
PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

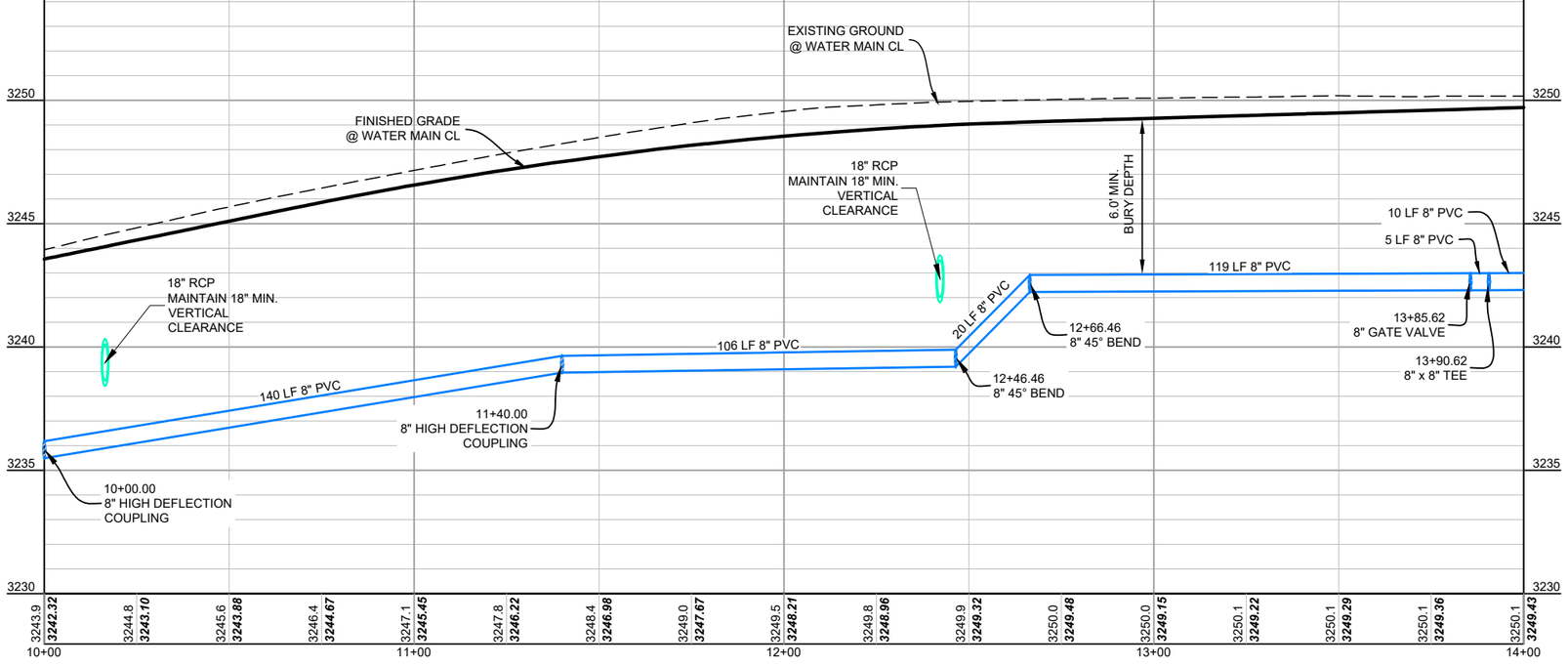
WATER PLAN & PROFILE - E MAIN ST

SHEET
6.02

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW





MAP KEY
1"=2000'

QUANTITIES THIS SHEET

1" PE WATER SERVICE LINE	63 LF
8" PVC WATER MAIN	400 LF
8" 45° BEND	2 EA
8"x8"x8" TEE	1 EA
8" HIGH DEFLECTION COUPLING	2 EA
1" CURB STOP, BOX AND METER	2 EA
8" GATE VALVE	1 EA
RECONNECT WATER SERVICE	2 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
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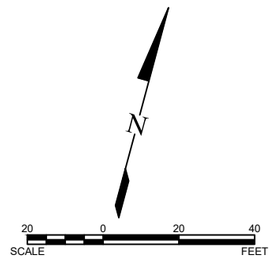
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.



KLJ

NO.	DATE	REVISION

DRAFTED: MJK
REVIEWED: JRW
PROJECT NUMBER: 2211-01441
ISSUE DATE: 6/25/2024

PINE RIDGE WATER IMPROVEMENTS

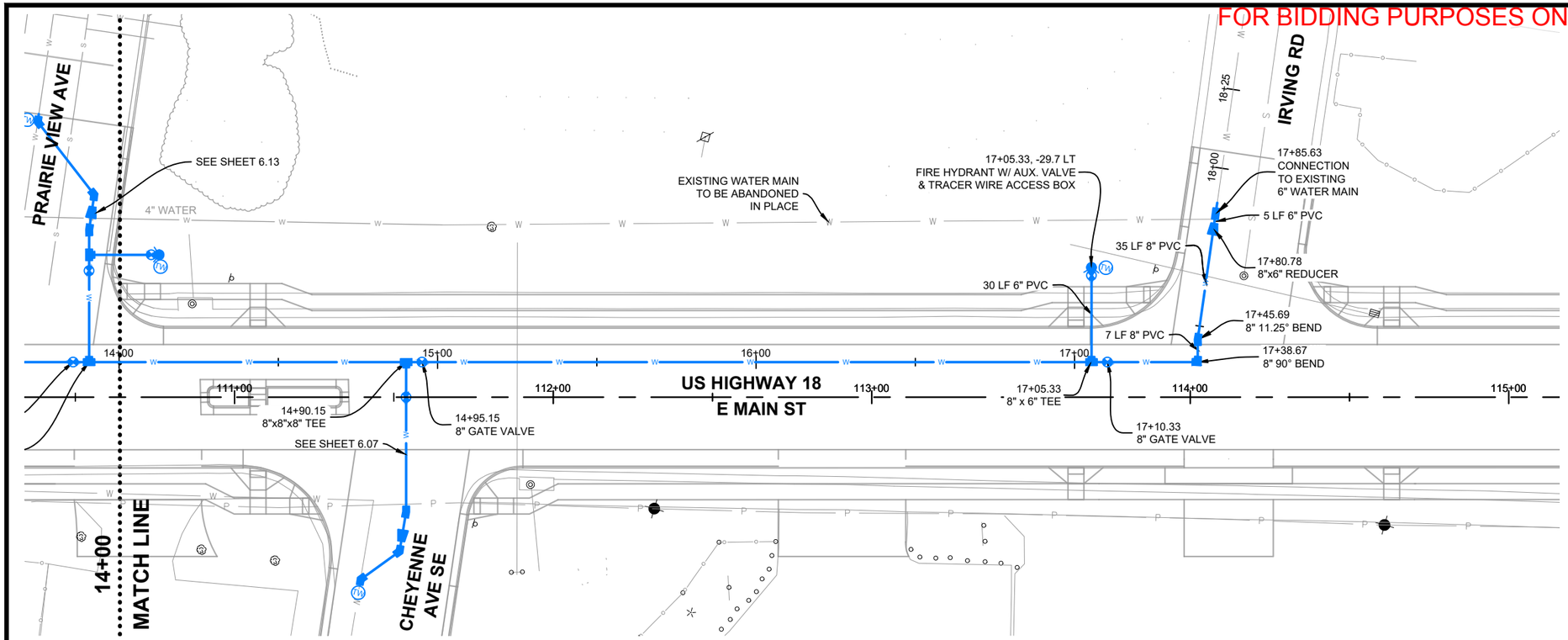
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

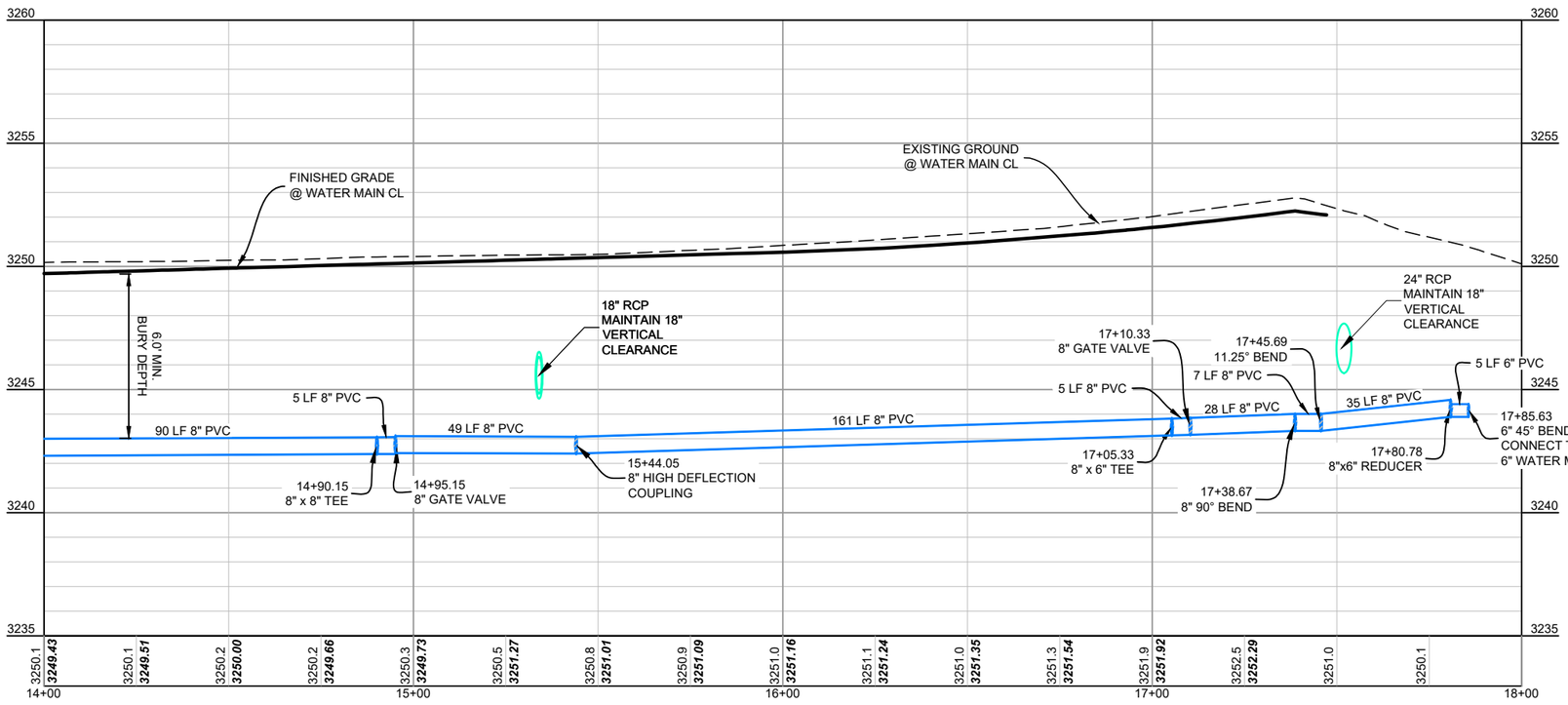
WATER PLAN & PROFILE - E MAIN ST

SHEET 6.03

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW





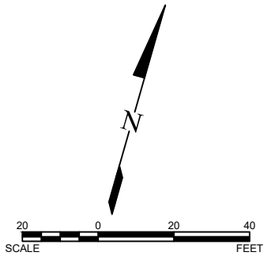
MAP KEY
1"=2000'

QUANTITIES THIS SHEET

8" PVC WATER MAIN	380 LF
6" PVC WATER MAIN	35 LF
8" 11.25 DEGREE BEND	1 EA
8" HIGH DEFLECTION COUPLING	1 EA
8" 90 DEGREE BEND	1 EA
8"x6" REDUCER	1 EA
8"x8"x8" TEE	1 EA
8"x8"x6" TEE	1 EA
FIRE HYDRANT W/AUX. VALVE	1 EA
8" GATE VALVE	2 EA
TRACER WIRE ACCESS BOX - 2 WIRE	1 EA
CONNECT TO EXISTING WATER MAIN	1 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.



KLJ

NO.	DATE	REVISION

DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

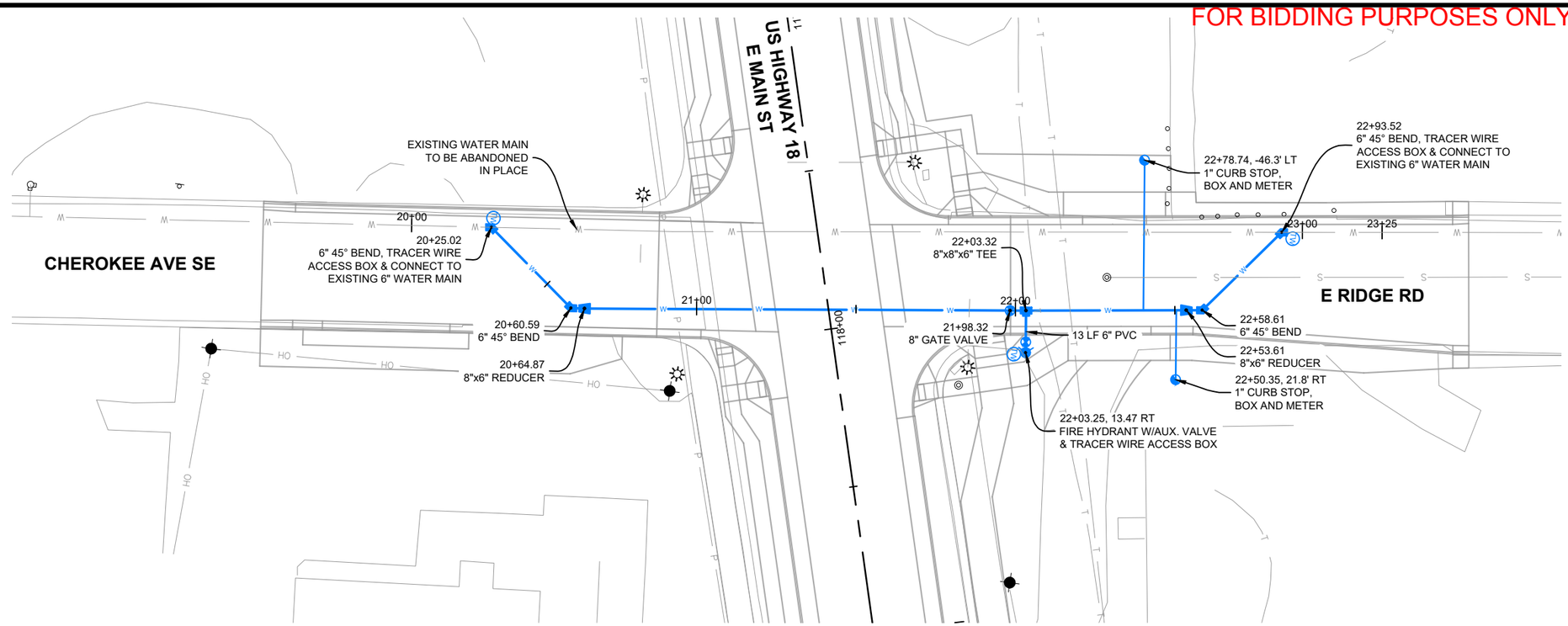
PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

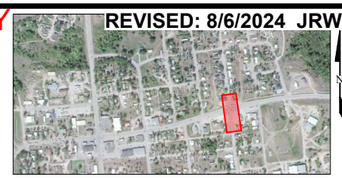
WATER PLAN & PROFILE - E MAIN ST

SHEET 6.04

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW





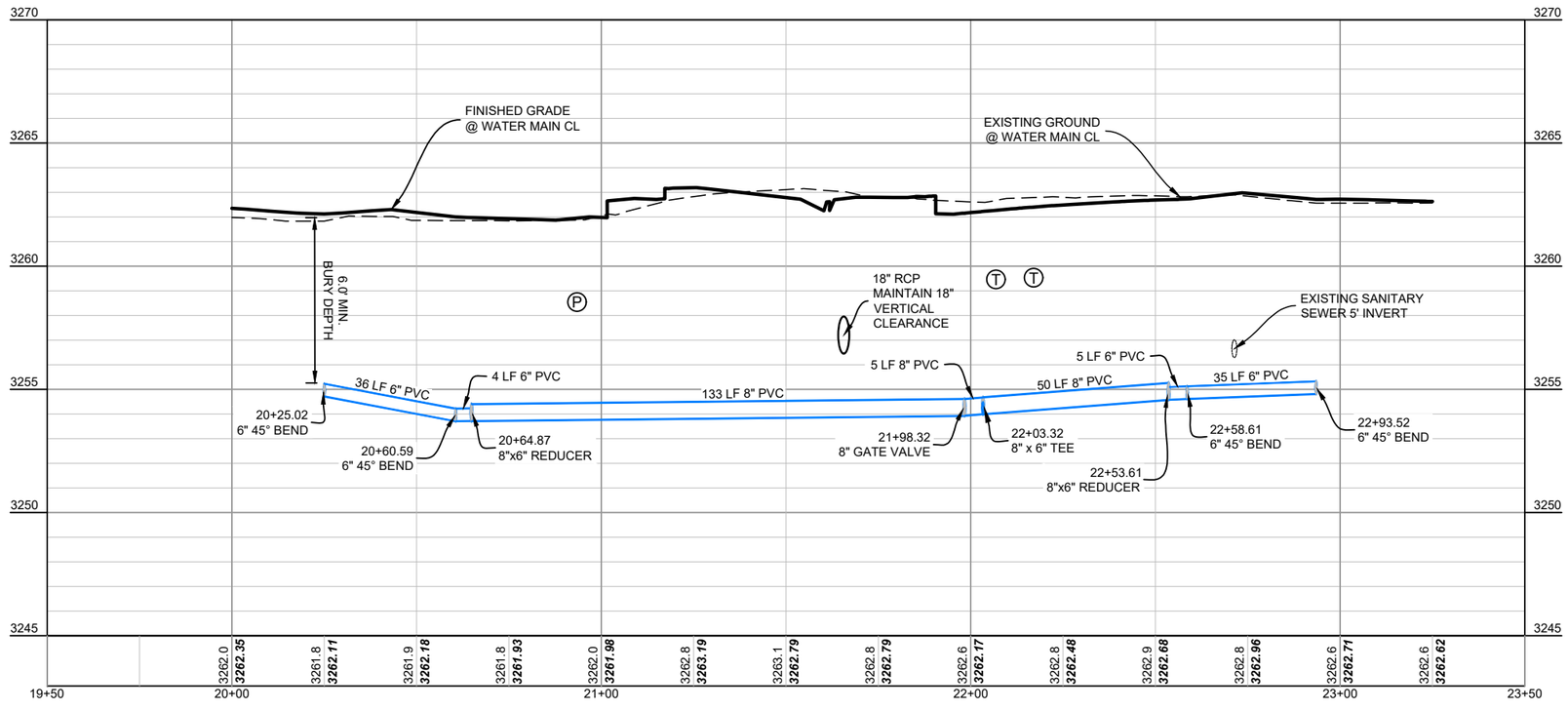
MAP KEY
1"=2000'

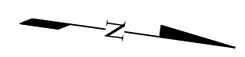
QUANTITIES THIS SHEET

1" PE WATER SERVICE LINE	68 LF
8" PVC WATER MAIN	188 LF
6" PVC WATER MAIN	93 LF
6" 45 DEGREE BEND	4 EA
8"x6" REDUCER	2 EA
8"x8"x6" TEE	1 EA
FIRE HYDRANT W/AUX. VALVE	1 EA
1" CURB STOP, BOX AND METER	2 EA
8" GATE VALVE	1 EA
TRACER WIRE ACCESS BOX - 2 WIRE	3 EA
RECONNECT WATER SERVICE	2 EA
CONNECT TO EXISTING WATER MAIN	2 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.





KLJ

NO.	DATE	REVISION

DRAFTED: MJK
REVIEWED: JRW
PROJECT NUMBER: 2211-01441
ISSUE DATE: 6/25/2024

PINE RIDGE WATER IMPROVEMENTS

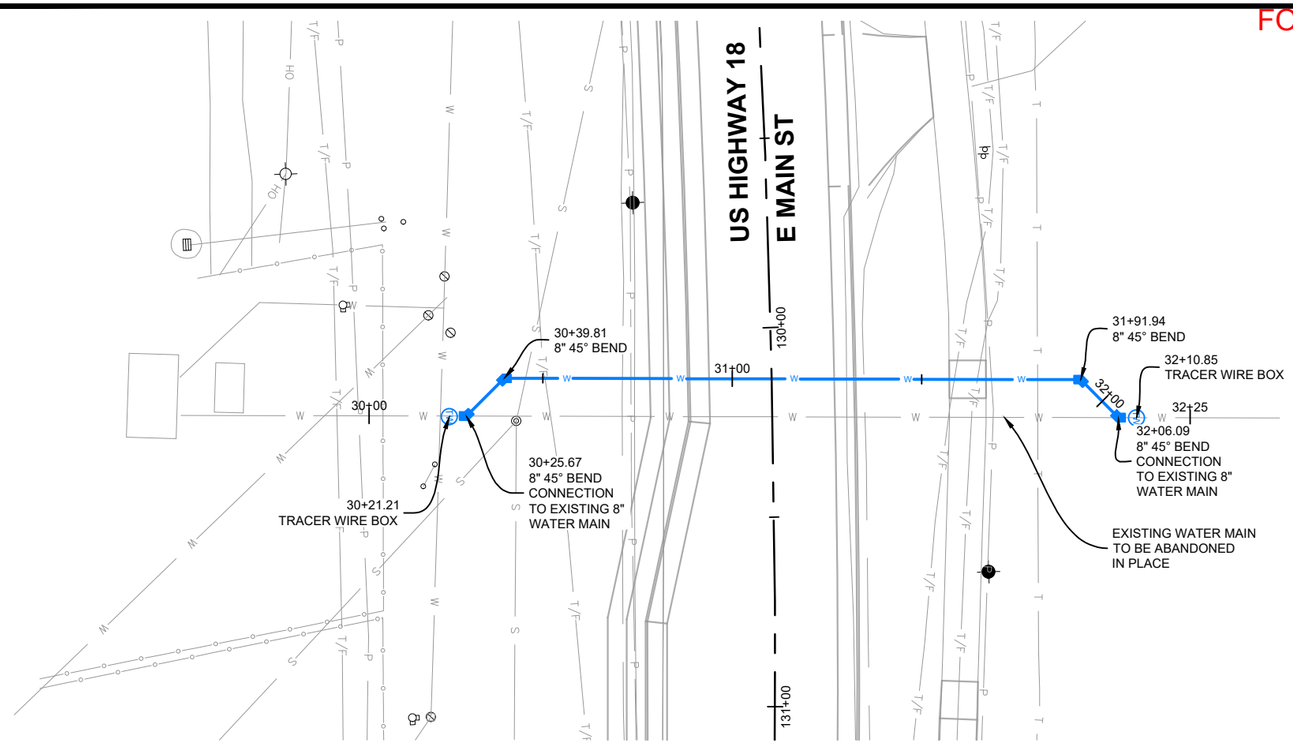
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

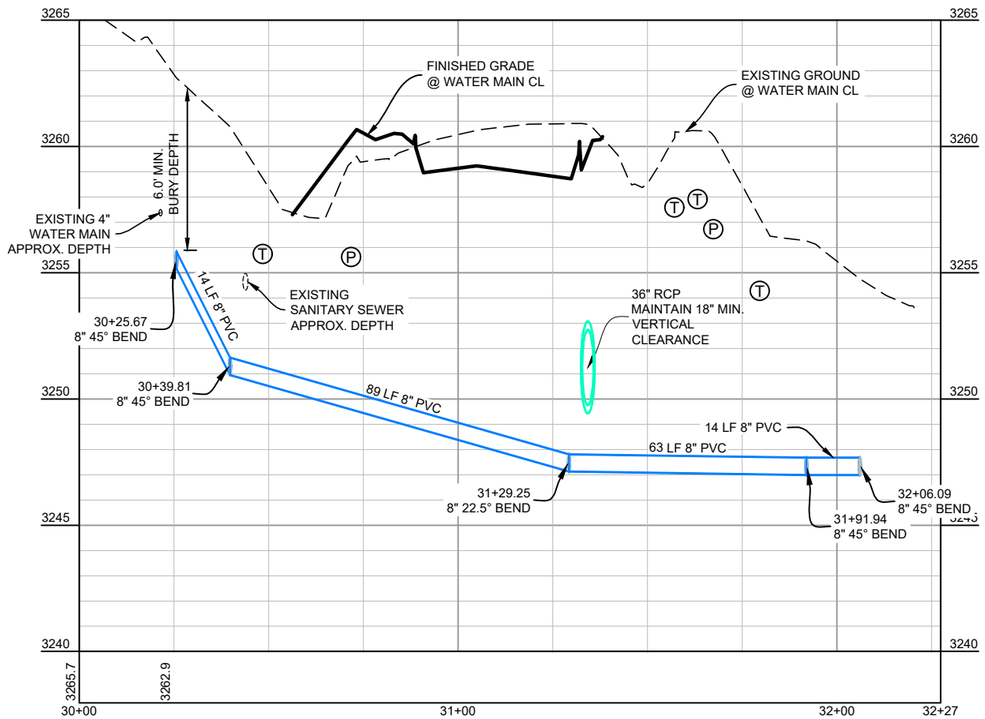
WATER PLAN & PROFILE - E RIDGE RD

SHEET 6.05

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW





MAP KEY
1"=2000'

QUANTITIES THIS SHEET

8" PVC WATER MAIN	180 LF
8" 45 DEGREE BEND	4 EA
8" 22.5 DEGREE BEND	1 EA
TRACER WIRE ACCESS BOX - 2 WIRE	2 EA
CONNECT TO EXISTING WATER MAIN	2 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.

N

SCALE 20 0 20 40 FEET

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
13620
JESSICA
WAGNER
SOUTH DAKOTA
08/06/2024

KLJ

REVISION | DATE | NO.

DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

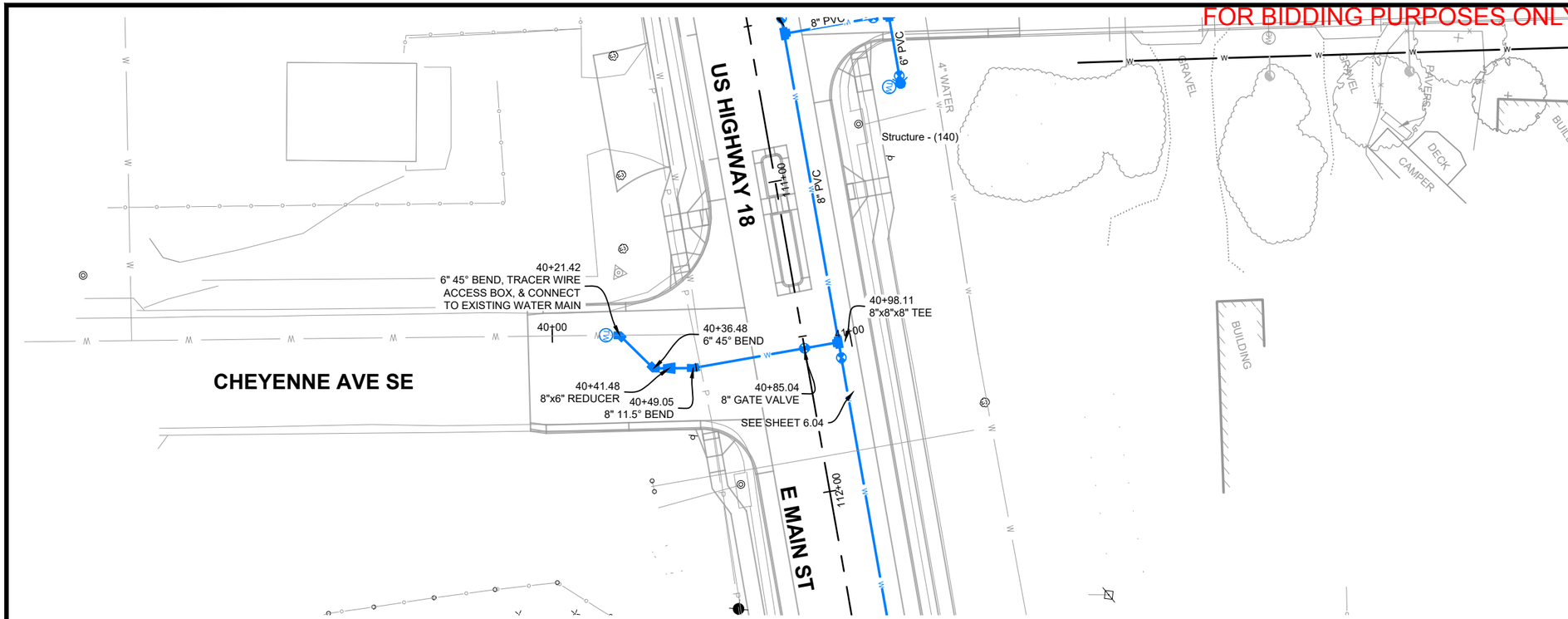
WATER PLAN & PROFILE - HIGHWAY 18 CROSSING

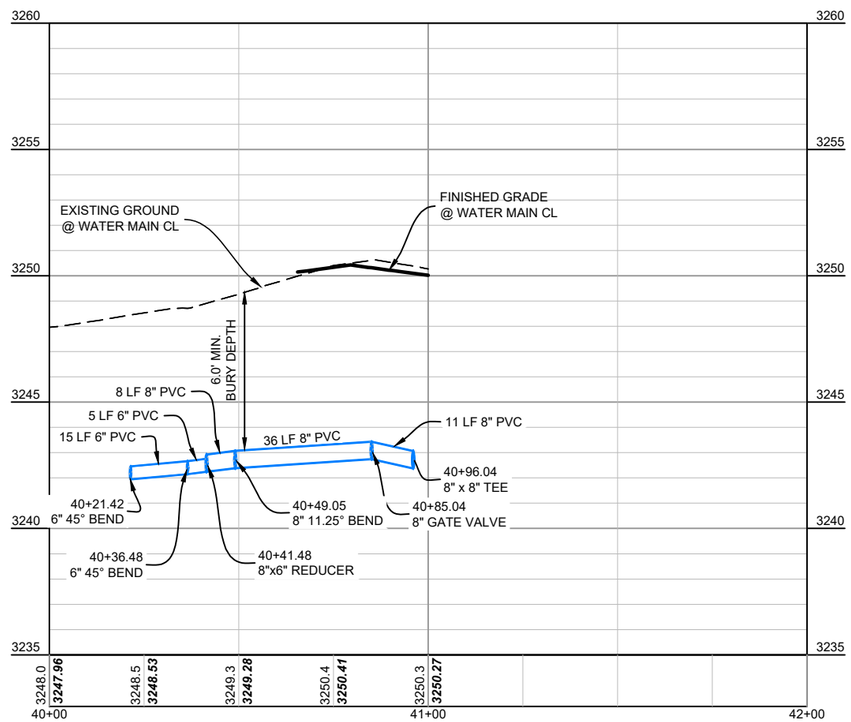
SHEET 6.06

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW

MAP KEY
1"=2000'





QUANTITIES THIS SHEET

8" PVC WATER MAIN	55 LF
6 PVC WATER MAIN	20 LF
8" 11.25 DEGREE BEND	1 EA
6" 45 DEGREEE BEND	2 EA
8"x6" REDUCER	1 EA
8"x8"x8" TEE	1 EA
8" GATE VALVE	1 EA
TRACER WIRE ACCESS BOX - 2 WIRE	1 EA
CONNECT TO EXISTING WATER MAIN	1 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
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6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.

N

20 0 20 40
SCALE FEET

REGISTERED PROFESSIONAL ENGINEER
REG. NO
13620
JESSICA
WAGNER
SOUTH DAKOTA
08/06/2024

KLJ

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PROJECT NUMBER 2211-01441
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PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

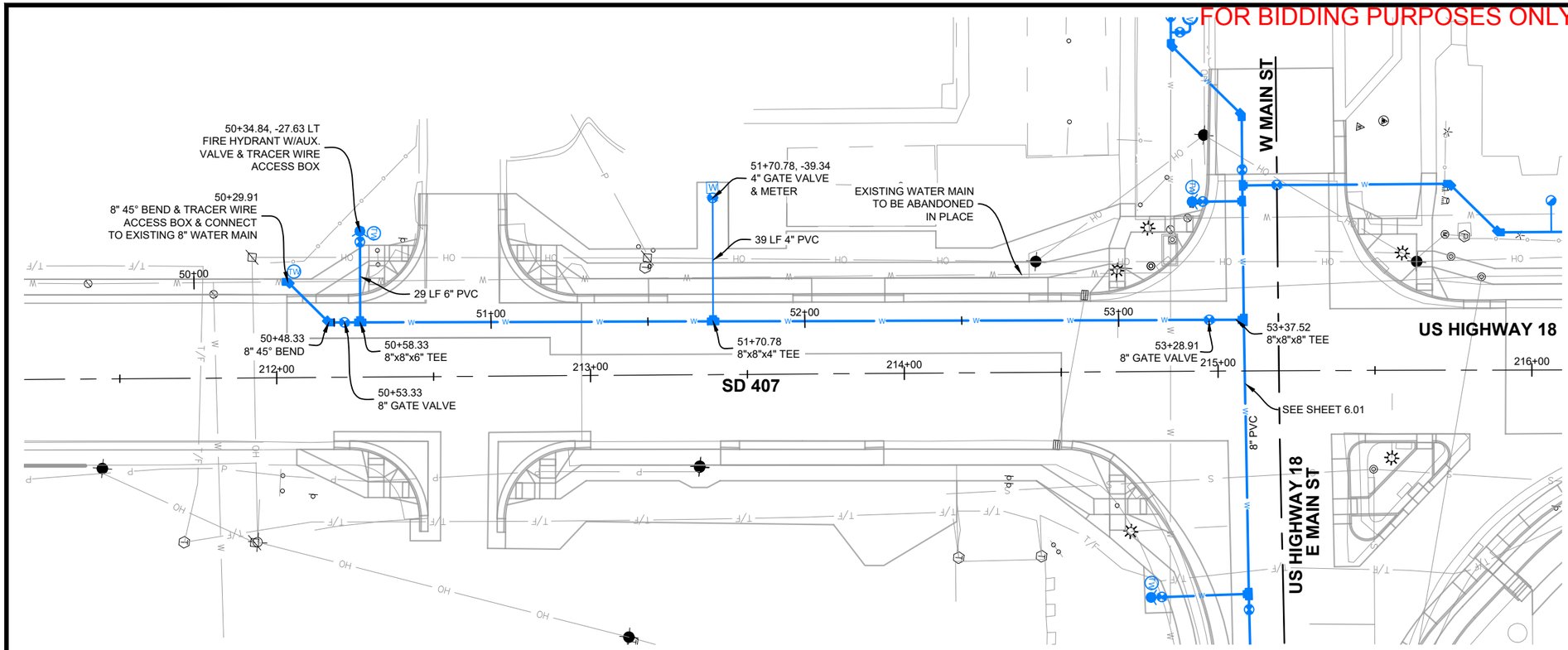
WATER PLAN & PROFILE - CHEYENNE AVE SE

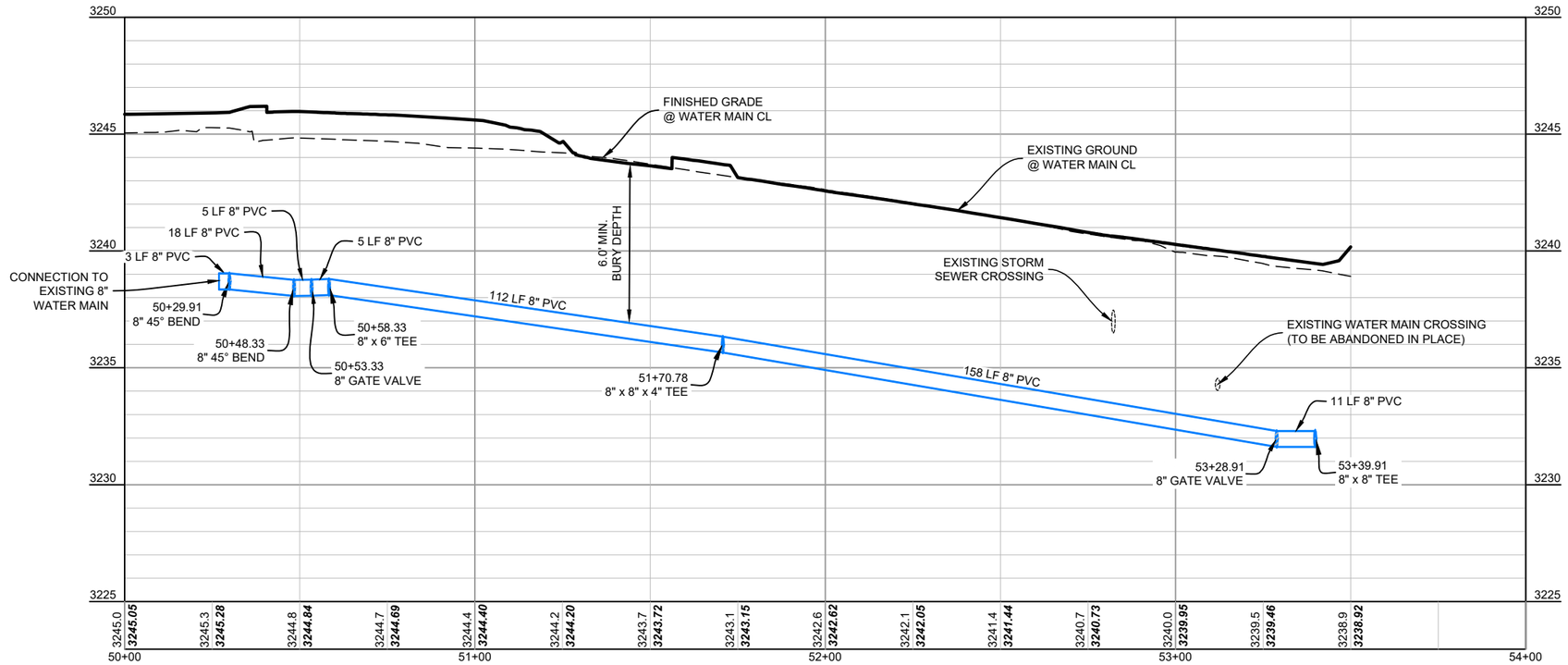
SHEET 6.07

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW

MAP KEY
1"=2000'





QUANTITIES THIS SHEET

4" PVC WATER MAIN	39 LF
8" PVC WATER MAIN	312 LF
8" 45 DEGEREE BEND	2 EA
8"x8"x4" TEE	1 EA
8"x8"x6" TEE	1 EA
8"x8"x8" TEE	1 EA
FIRE HYDRANT W/AUX. VALVE	1 EA
8" GATE VALVE	2 EA
TRACER WIRE ACCESS BOX - 2 WIRE	2 EA
CONNECT TO EXISTING WATER MAIN	1 EA
4" GATE VALVE & METER	1 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
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N

SCALE 20 0 20 40 FEET

KLJ

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PROJECT NUMBER 2211-01441
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PINE RIDGE WATER IMPROVEMENTS

OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

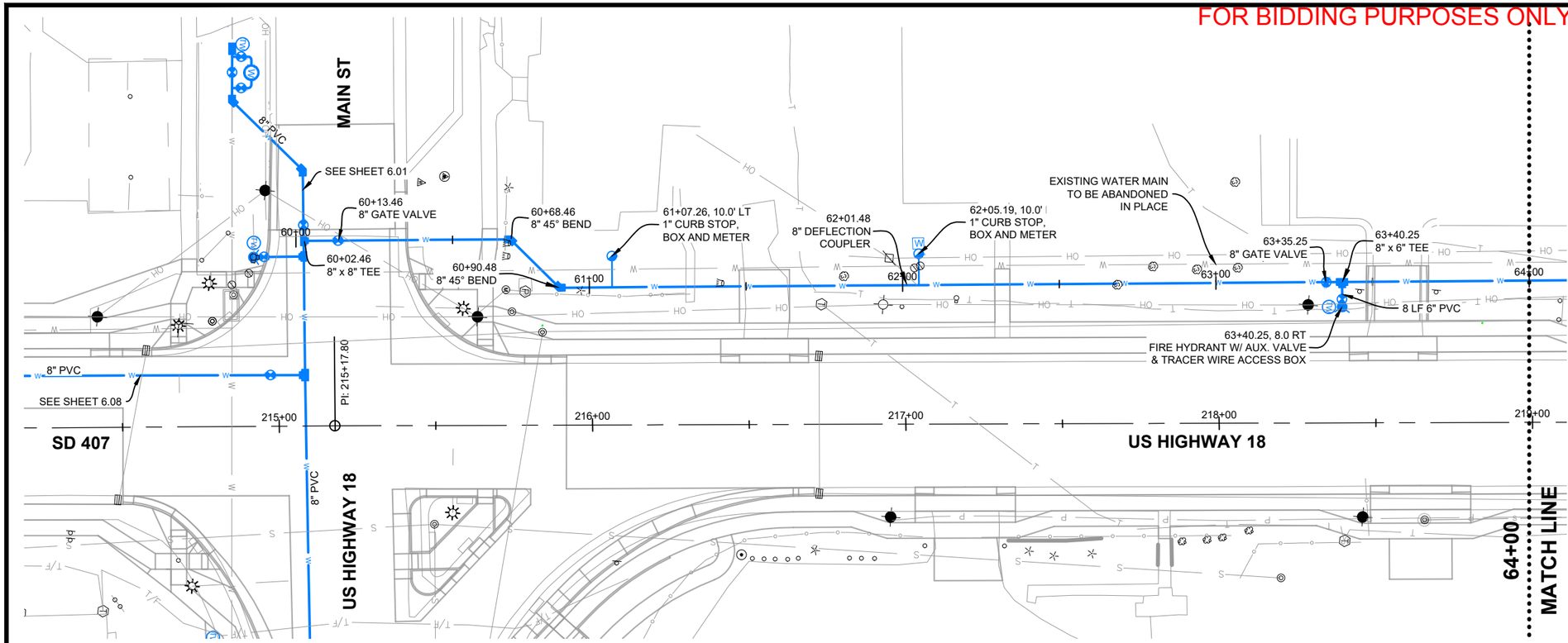
WATER PLAN & PROFILE - SD 407

SHEET 6.08

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW

MAP KEY
1"=2000'

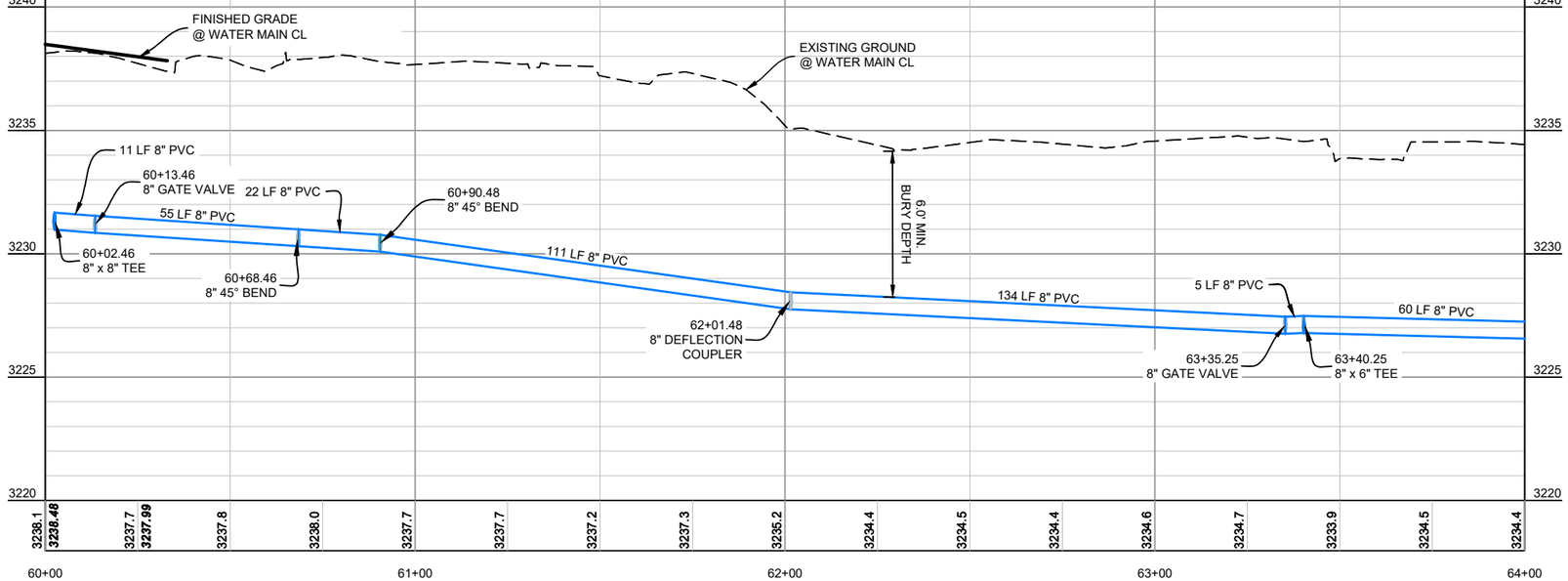


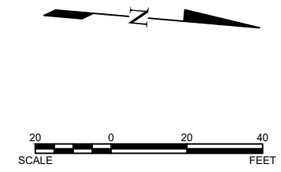
QUANTITIES THIS SHEET

1" PE WATER SERVICE LINE	20 LF
8" PVC WATER MAIN	398 LF
6" PVC WATER MAIN	8 LF
8"x8"x6" TEE	1 EA
8"x8"x8" TEE	1 EA
8" HIGH DEFLECTION COUPLING	1 EA
FIRE HYDRANT W/AUX. VALVE	1 EA
1" CURB STOP, BOX AND METER	2 EA
8" GATE VALVE	2 EA
8" 45 DEGREE BENDS	2 EA
TRACER WIRE ACCESS BOX - 2 WIRE	1EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.





KLJ

NO.	DATE	REVISION

DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

PINE RIDGE WATER IMPROVEMENTS

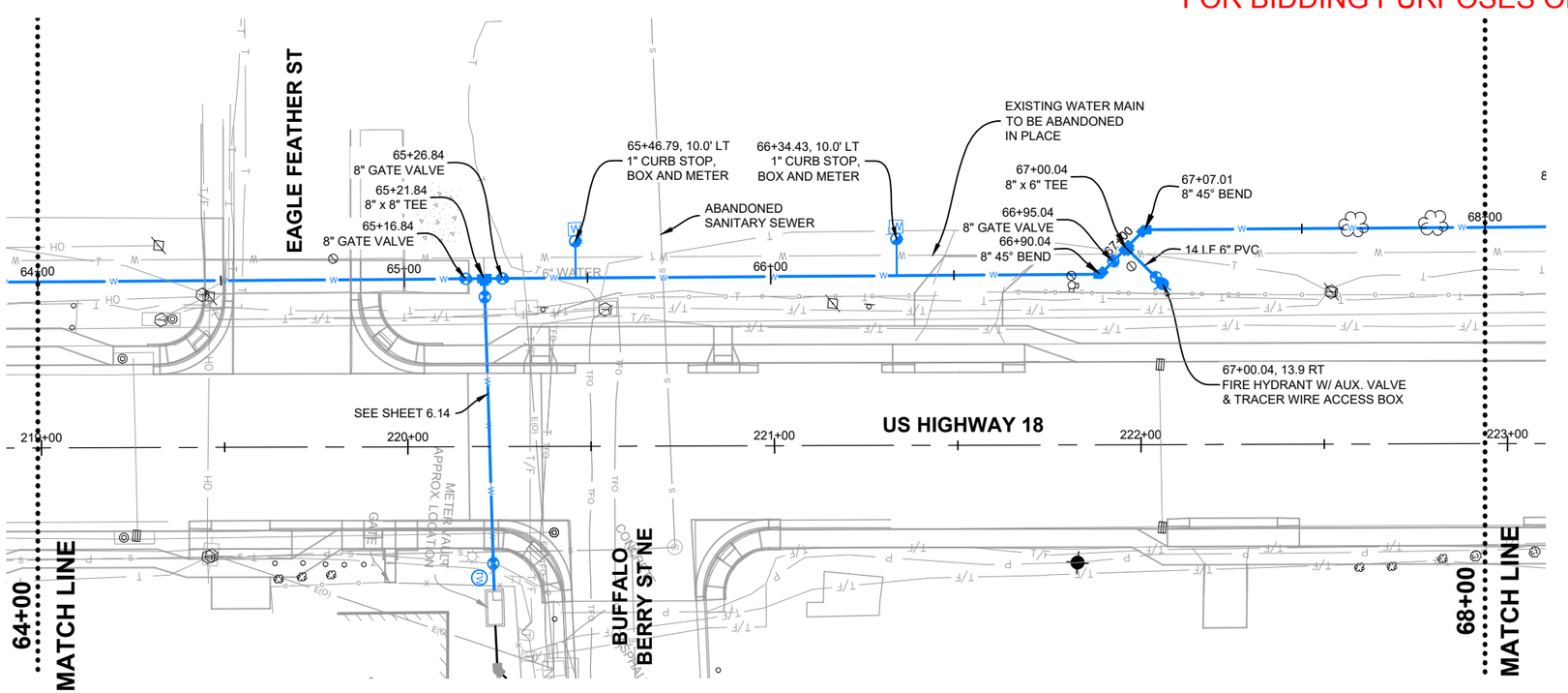
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

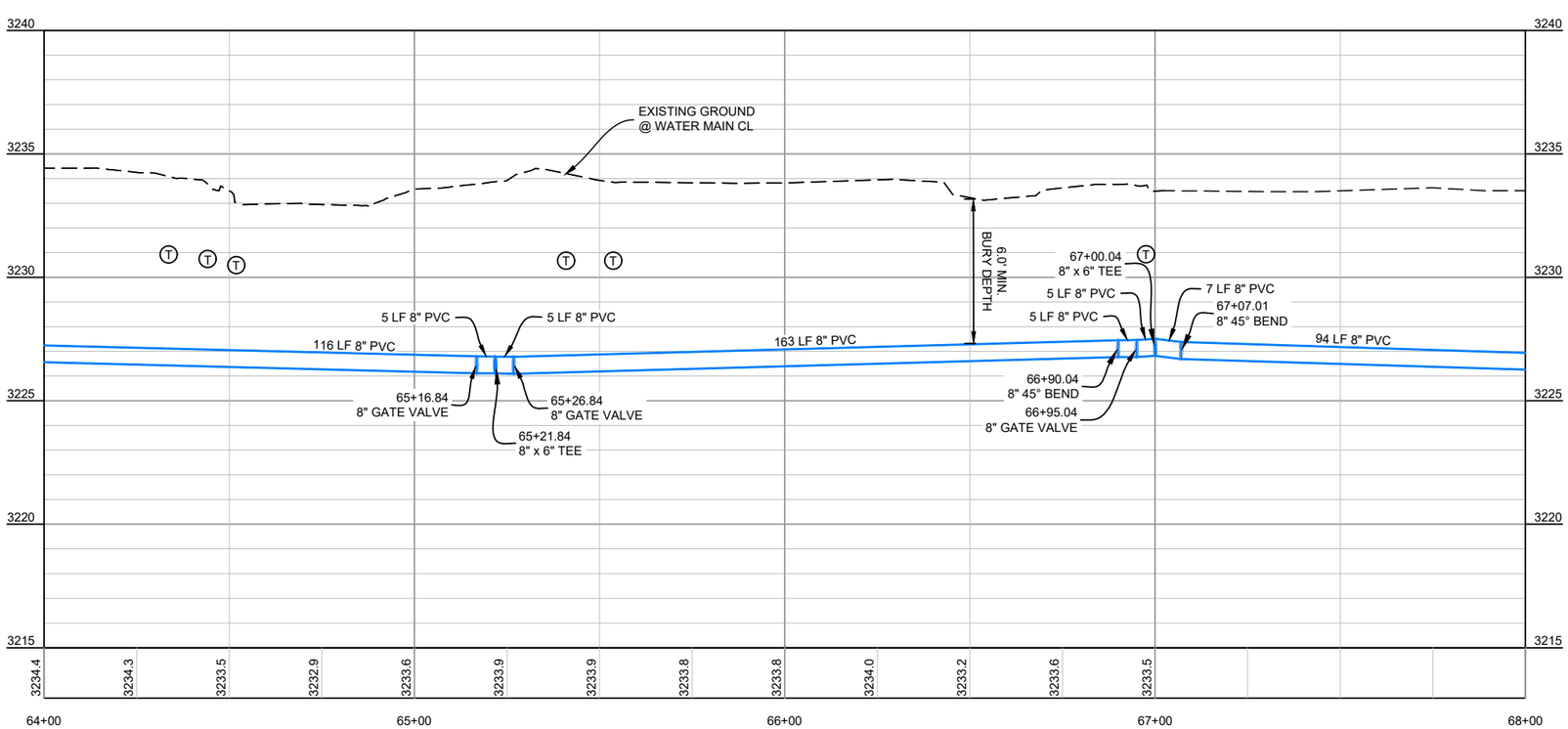
WATER PLAN & PROFILE - HIGHWAY 18

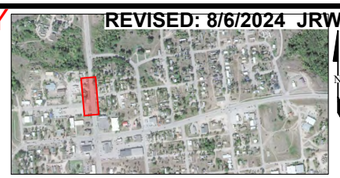
SHEET 6.09

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW







MAP KEY
1"=2000'

QUANTITIES THIS SHEET

1" PE WATER SERVICE LINE	20 LF
8" PVC WATER MAIN	400 LF
6" PVC WATER MAIN	14 LF
8" 45 DEGREE BEND	2 EA
8"X8"x8" TEE	1 EA
8"x8"x6" TEE	1 EA
8" GATE VALVE	3 EA
FIRE HYDRANT W/AUX. VALVE	1 EA
1" CURB STOP, BOX AND METER	2 EA
RECONNECT WATER SERVICE	2 EA
TRACER WIRE ACCESS BOX - 2 WIRE	1 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.

N

SCALE 20 0 20 40 FEET

KLJ

REVISION | DATE | NO.

DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

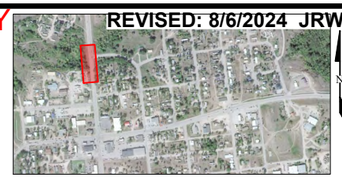
PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

WATER PLAN & PROFILE - HIGHWAY 18

SHEET 6.10

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW



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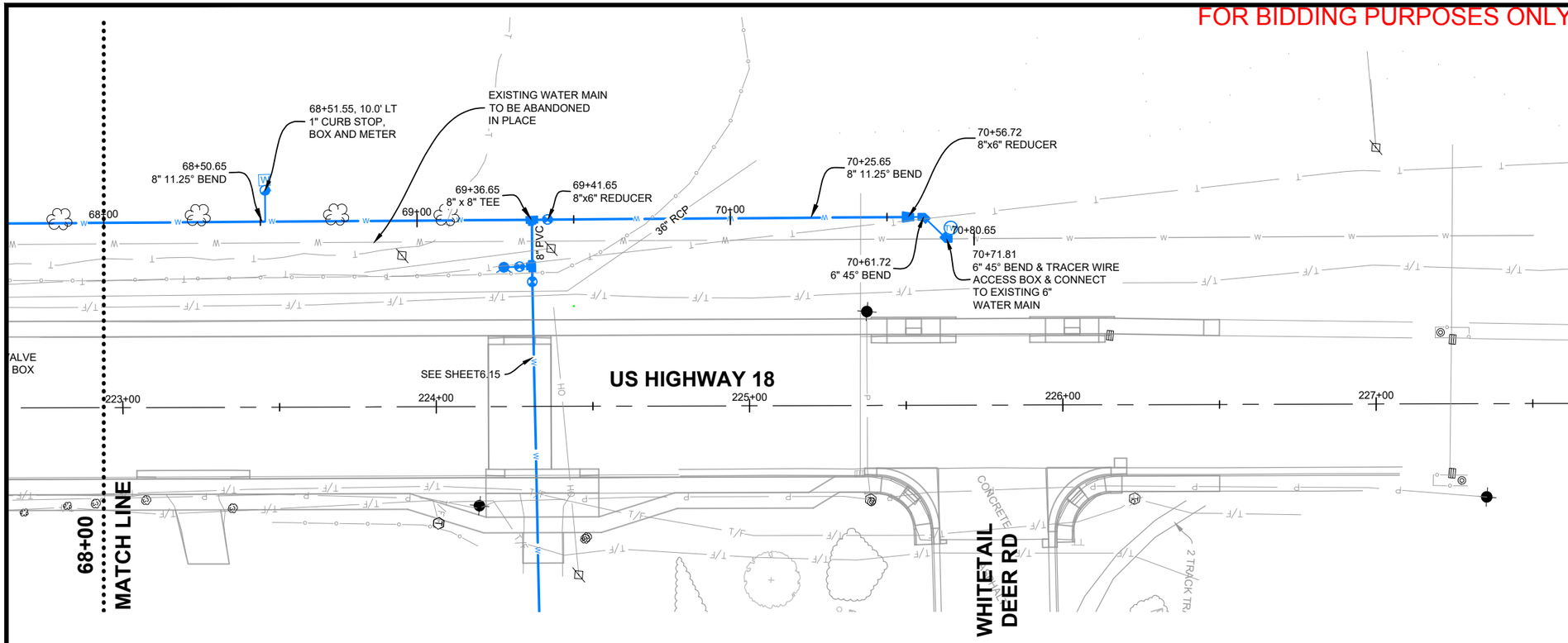
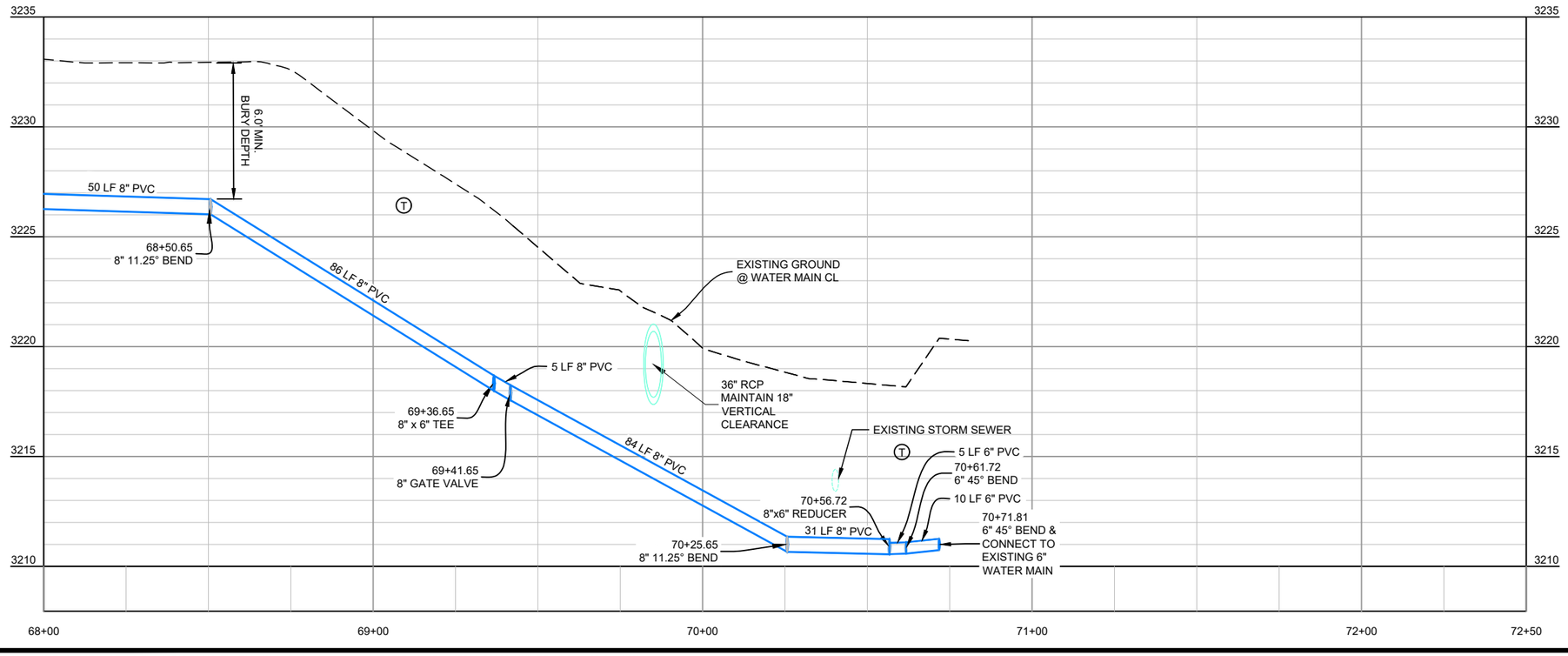




QUANTITIES THIS SHEET

1" PE WATER SERVICE LINE	10 LF
8" PVC WATER MAIN	256 LF
6" PVC WATER MAIN	15 LF
6" 45 DEGREE BEND	2 EA
8" 11.25 DEGREE BEND	2 EA
8"x6" REDUCER	1 EA
8"x8"x8" TEE	1 EA
1" CURB STOP, BOX METER	1 EA
8" GATE VALVE	1 EA
CONNECT TO EXISTING WATER MAIN	1 EA
RECONNECT WATER SERVICE	1 EA
TRACER WIRE ACCESS BOX - 2 WIRE	1 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.

N

SCALE 20 0 20 40 FEET

KLJ

REVISION | DATE | NO.

DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

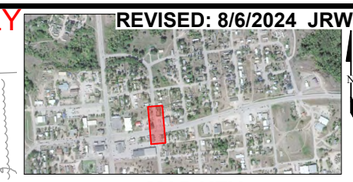
PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

WATER PLAN & PROFILE - HIGHWAY 18

SHEET 6.11

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW



MAP KEY
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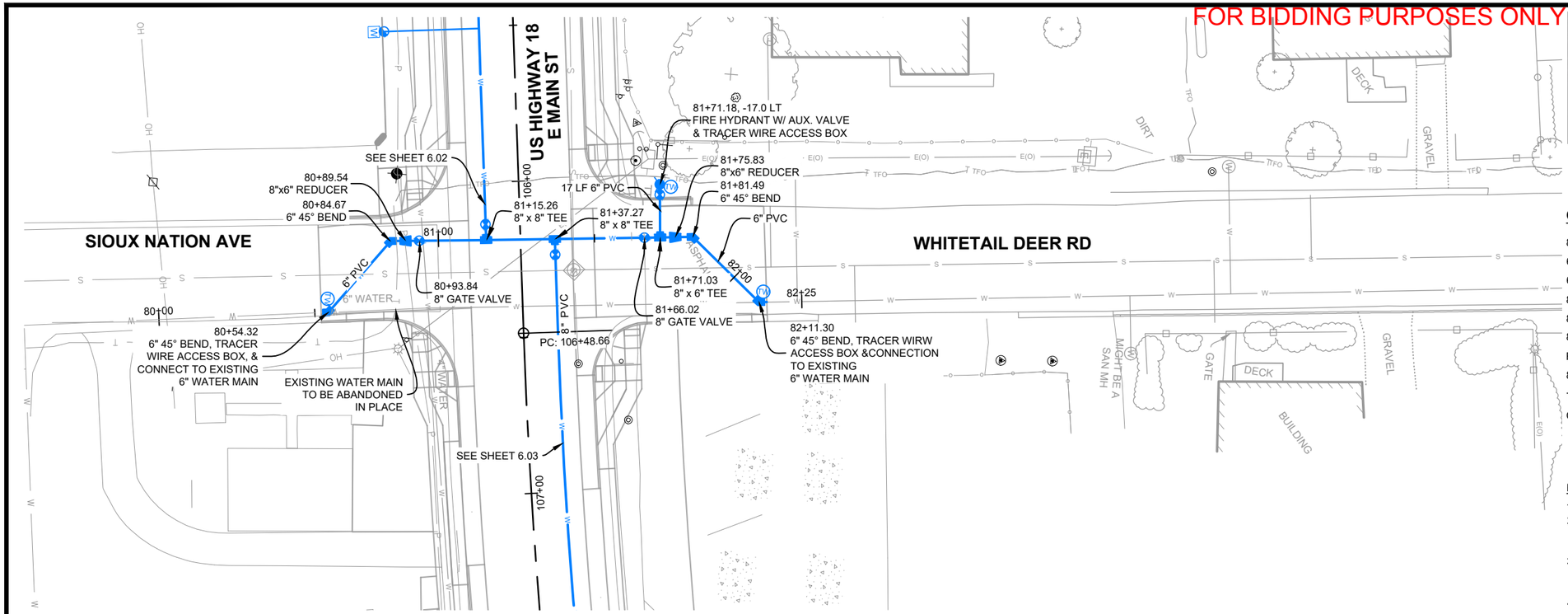
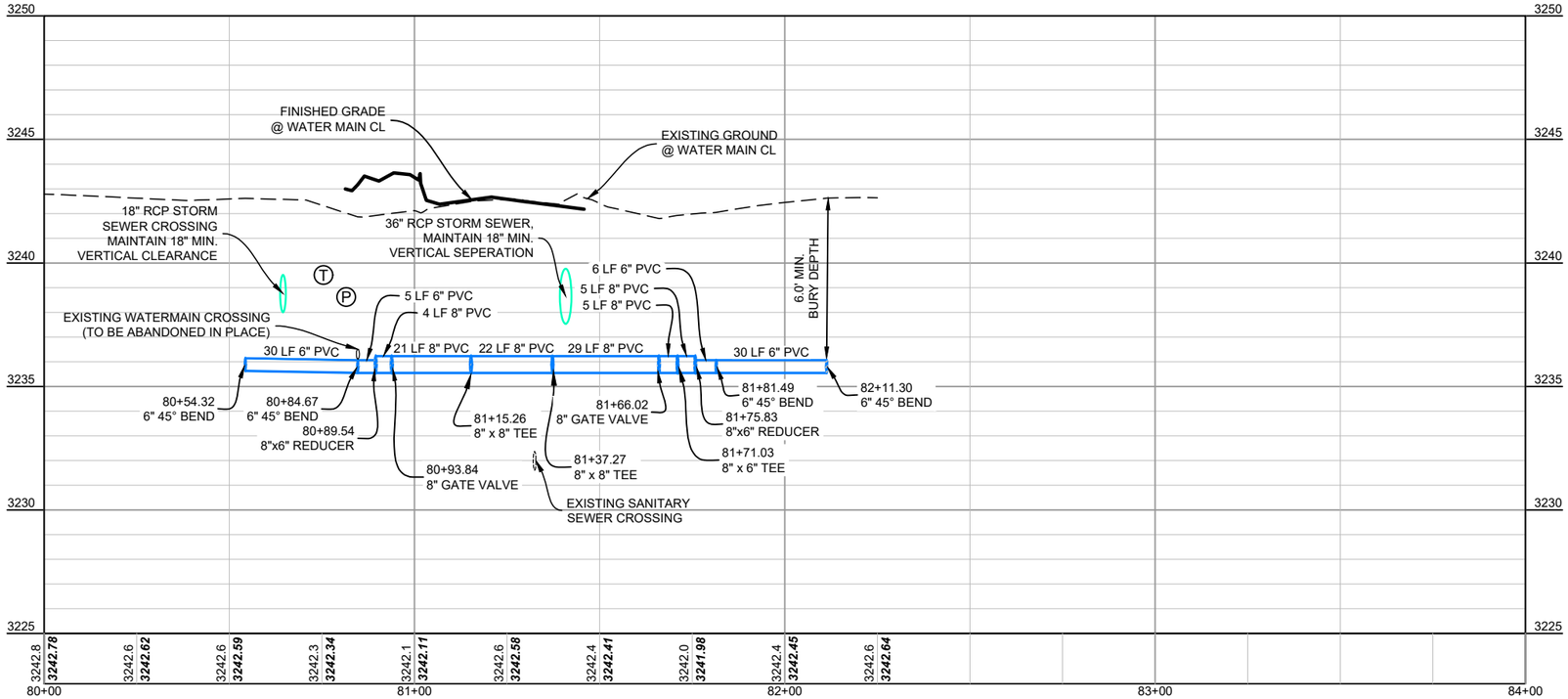




QUANTITIES THIS SHEET

8" PVC WATER MAIIN	86 LF
6" PVC WATER MAIN	88 LF
6" 45 DEGREE BEND	4 EA
8"x6" REDUCER	2 EA
8"x8"x6" TEE	1 EA
8"x8"x8" TEE	2 EA
FIRE HYDRANT W/AUX. VALVE	1 EA
8" GATE VALVE	2 EA
TRACER WIRE ACCESS BOX - 2 WIRE	3 EA
CONNECT TO EXISTING WATER MAIN	2 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.

N

20 0 20 40
SCALE FEET

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
13620
JESSICA
WAGNER
SOUTH DAKOTA
08/06/2024

KLJ

NO.	DATE	REVISION

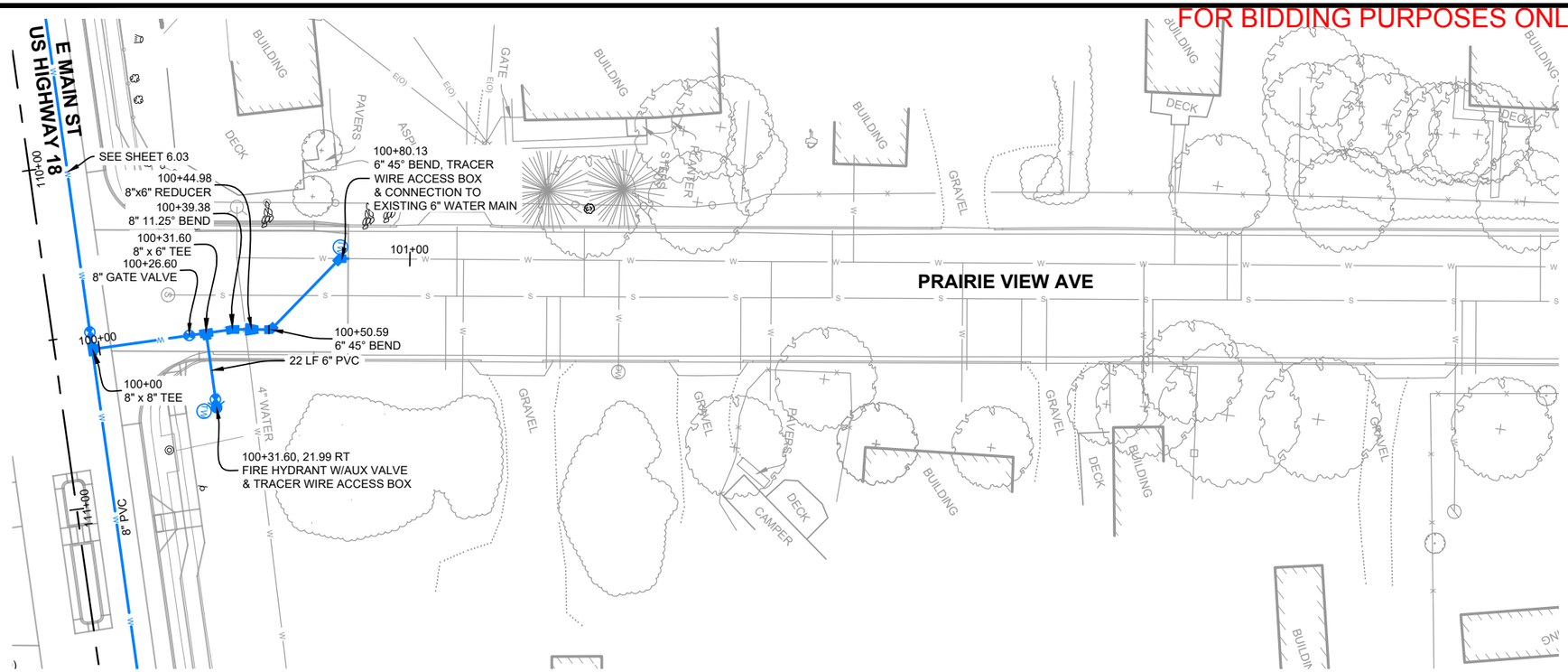
DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

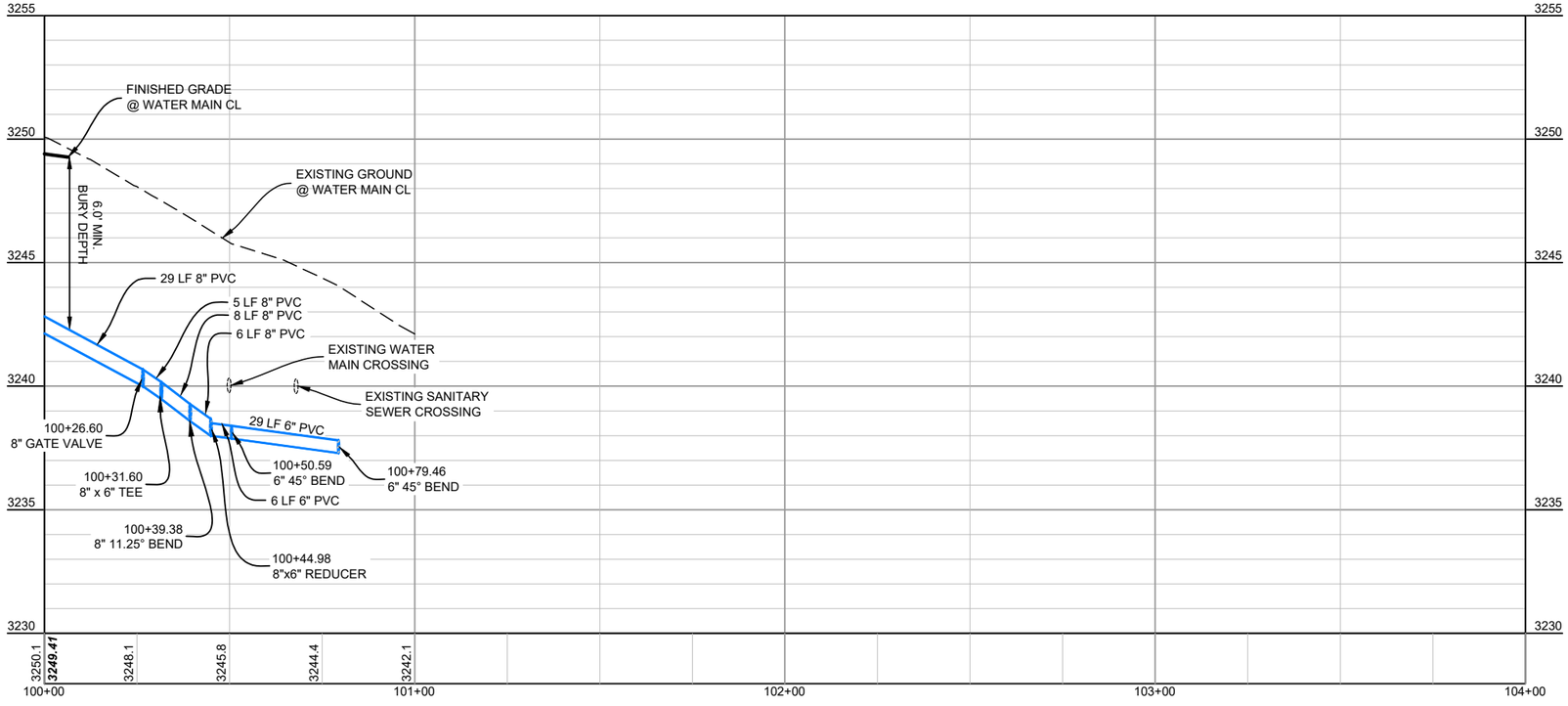
PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

WATER PLAN & PROFILE - WHITETAIL DEER RD

SHEET 6.12

FOR BIDDING PURPOSES ONLY





REVISED: 8/6/2024 JRW

MAP KEY
1"=2000'

QUANTITIES THIS SHEET

8" PVC WATER MAIN	48 LF
6" PVC WATER MAIN	57 LF
8" 11.5 DEGREE BEND	1 EA
6" 45 DEGREE BEND	2 EA
8"x6" REDUCER	1 EA
8"x8"x6" TEE	1 EA
8"x8"x8" TEE	1 EA
FIRE HYDRANT W/AUX. VALVE	1 EA
8" GATE VALVE	1 EA
TRACER WIRE ACCESS BOX - 2 WIRE	2 EA
CONNECT TO EXISTING WATER MAIN	1 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.

N

SCALE 20 0 20 40 FEET

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13620
JESSICA WAGNER
SOUTH DAKOTA
08/06/2024

KLJ

NO.	DATE	REVISION

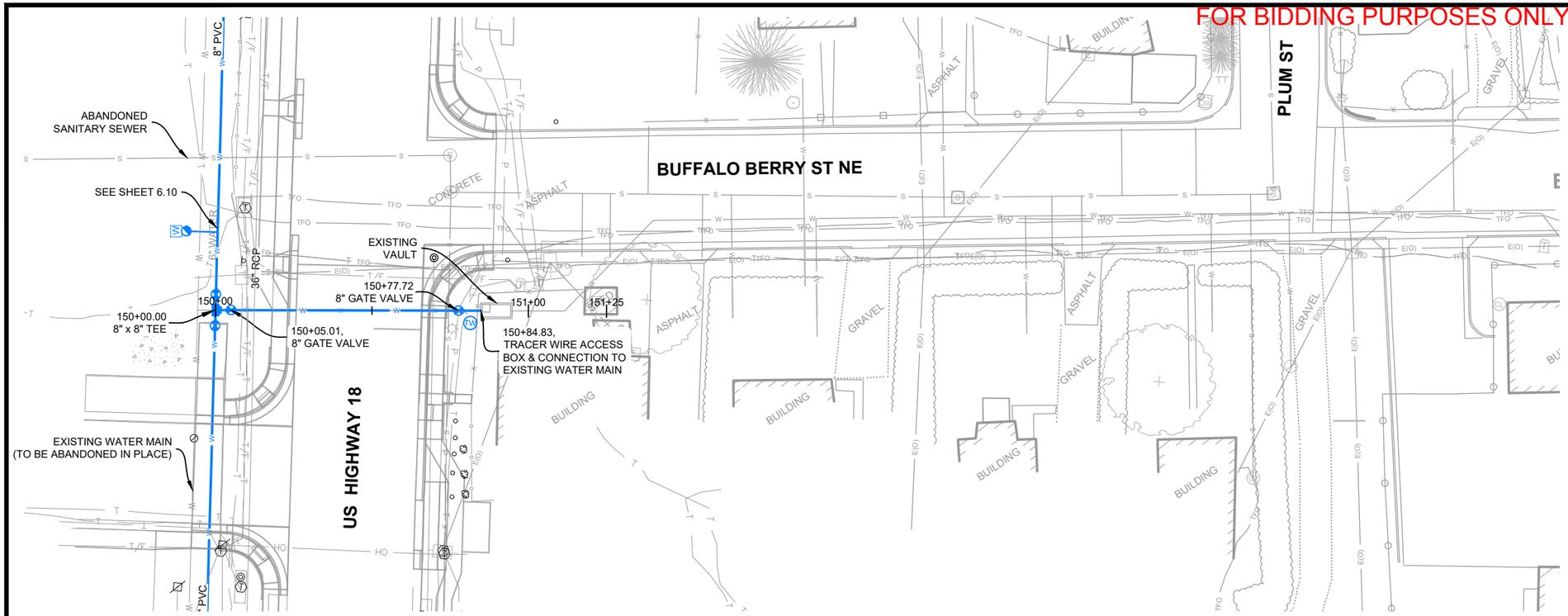
DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

WATER PLAN & PROFILE - PRAIRIE VIEW AVE

SHEET 6.13

FOR BIDDING PURPOSES ONLY

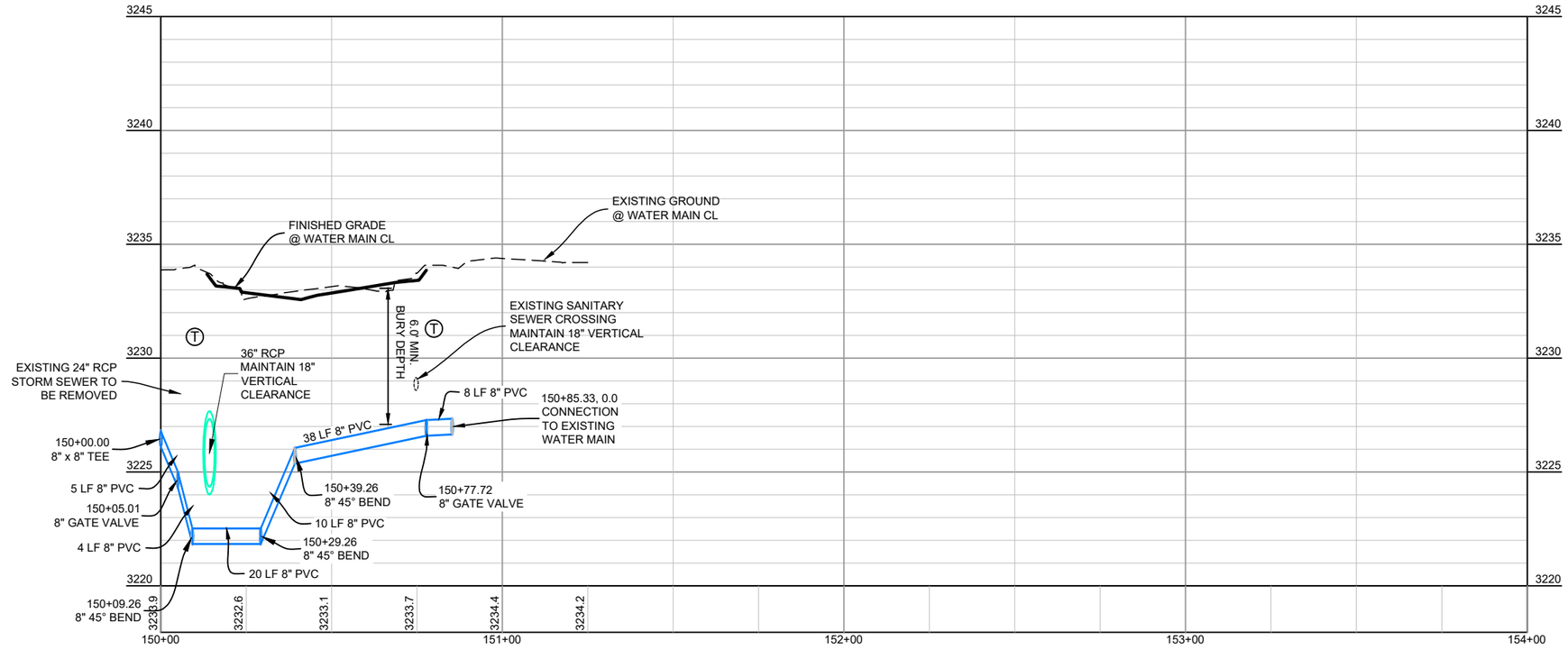


MAP KEY
1"=2000'

REVISED: 8/6/2024 JRW

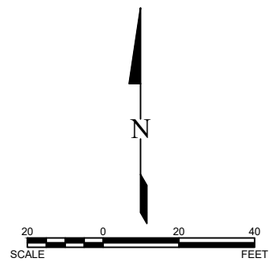
QUANTITIES THIS SHEET

8" PVC WATER MAIN	85 LF
8"x8"x8" TEE	1 EA
8" 45 DEGREE BEND	3 EA
8" GATE VALVE	2 EA
CONNECT TO EXISTING WATER MAIN	1 EA
TRACER WIRE ACCESS BOX - 2 WIRE	1 EA



NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.



KLJ

NO.	DATE	REVISION

DRAFTED
MJK
REVIEWED
JRW
PROJECT NUMBER
2211-01441
ISSUE DATE
6/25/2024

PINE RIDGE WATER IMPROVEMENTS

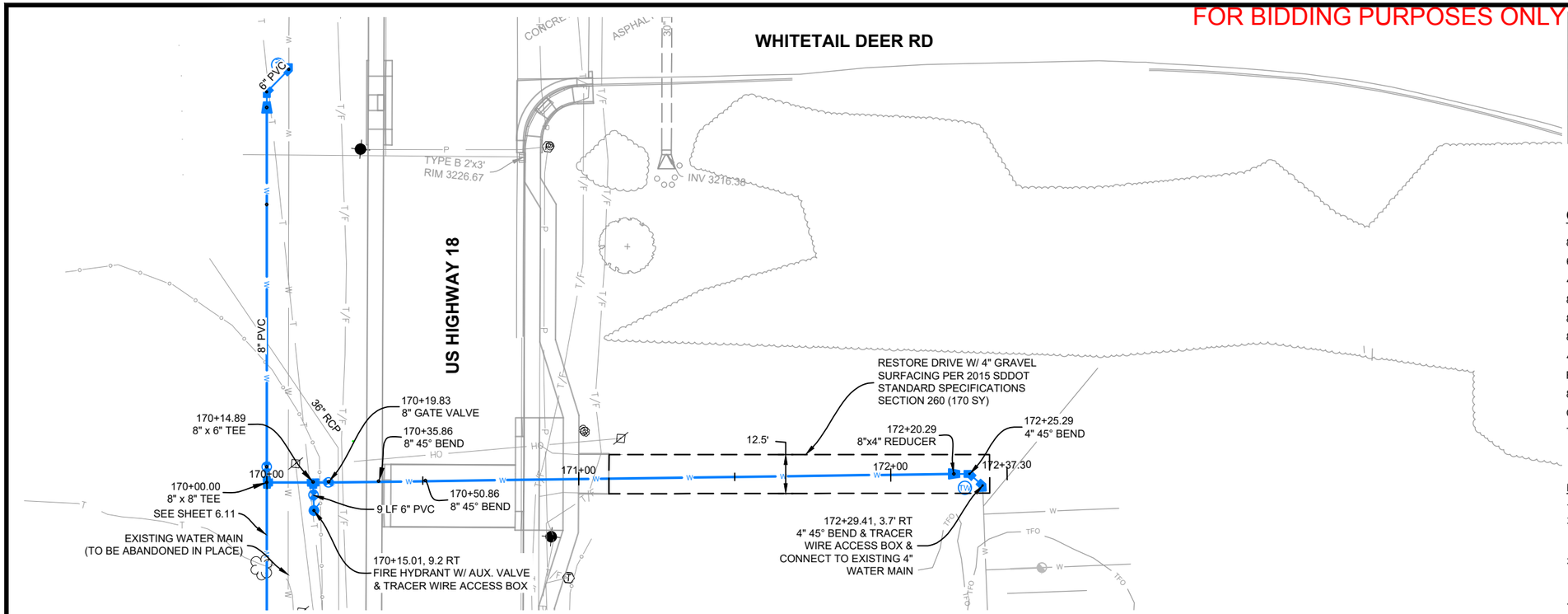
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

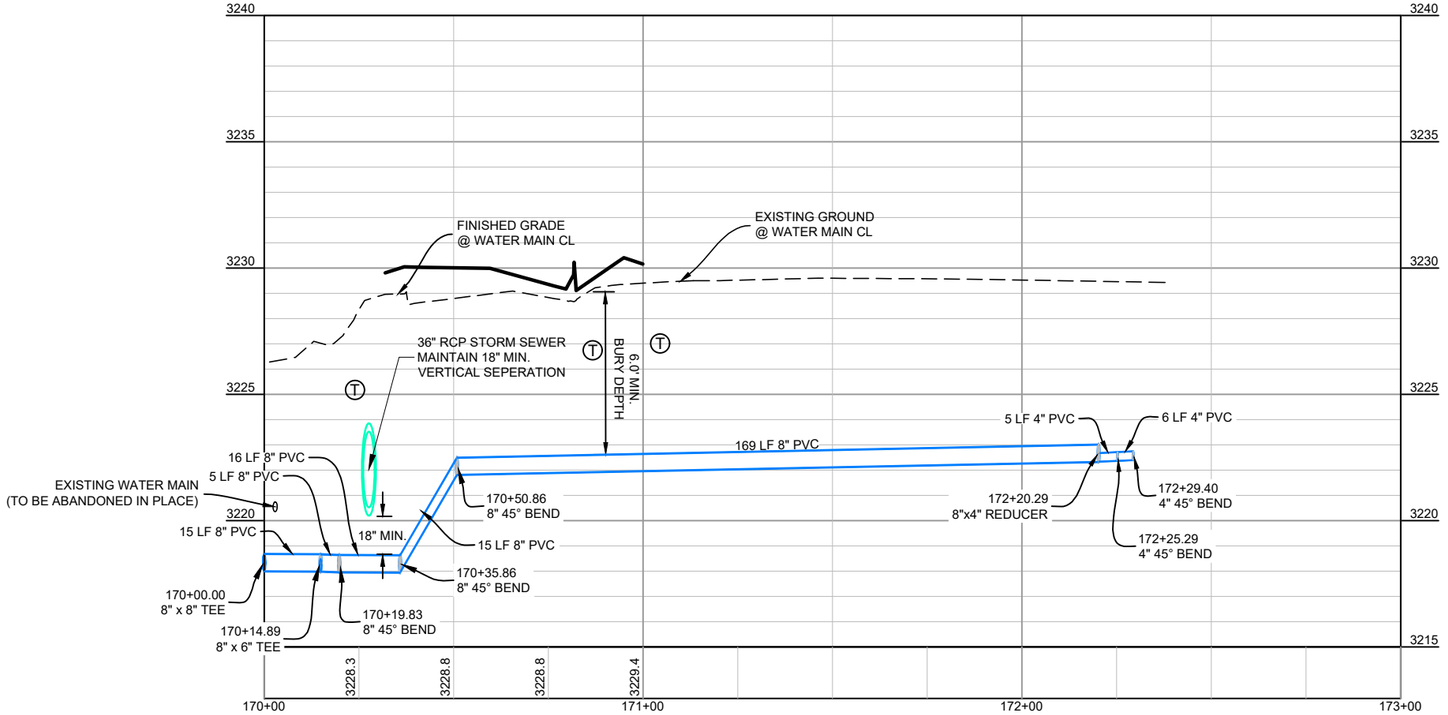
WATER PLAN & PROFILE - BUFFALO BERRY ST NE

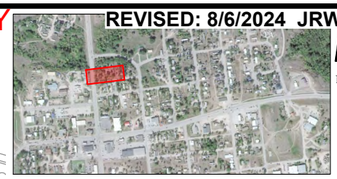
SHEET
6.14

FOR BIDDING PURPOSES ONLY

REVISED: 8/6/2024 JRW







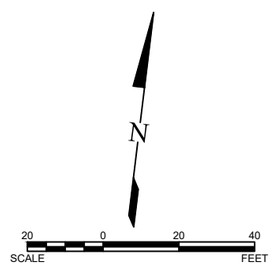
MAP KEY
1"=2000'

QUANTITIES THIS SHEET

8" PVC WATER MAIN	220 LF
6" PVC WATER MAIN	9 LF
4" PVC WATER MAIN	11 LF
8"x4" REDUCER	1 EA
8"x8"x8" TEE	1 EA
8"x8"x6" TEE	1 EA
4" 45 DEGREE BEND	2 EA
FIRE HYDRANT W/AUX. VALVE	1 EA
8" GATE VALVE	1 EA
CONNECT TO EXISTING WATER MAIN	1 EA
TRACER WIRE ACCESS BOX - 2 WIRE	2 EA

NOTES:

1. ALL WATER SERVICE LINES MUST BE 1" PE.
2. MINIMUM BURY DEPTH OF WATER MAIN & SERVICE LINES MUST BE 6' FROM PROPOSED FINISH GRADE.
3. EXISTING WATER MAIN MUST BE ABANDONED IN PLACE. THIS MUST INCLUDE FILLING THE PIPE WITH FLOWABLE FILL AND CAPPING THE ENDS.
4. ONCE ABANDONED, A PORTION OF EXISTING WATER MAIN CAN BE REMOVED AND DISPOSED OF TO ALLOW FOR INSTALLATION OF THE PROPOSED WATER SERVICE LINES.
5. CURB STOP LOCATIONS ARE APPROXIMATE AND NEED TO BE FIELD VERIFIED.
6. LOCATION FOR CONNECTION TO EXISTING WATER MAIN MUST BE CONFIRMED BY CONTRACTOR PRIOR TO ANY WORK ON THE WATER MAIN. ALL NECESSARY PIPING, COUPLINGS AND FITTINGS MUST BE ON-SITE PRIOR TO THE WATER MAIN BEING TURNED OFF.



KLJ

NO.	DATE	REVISION

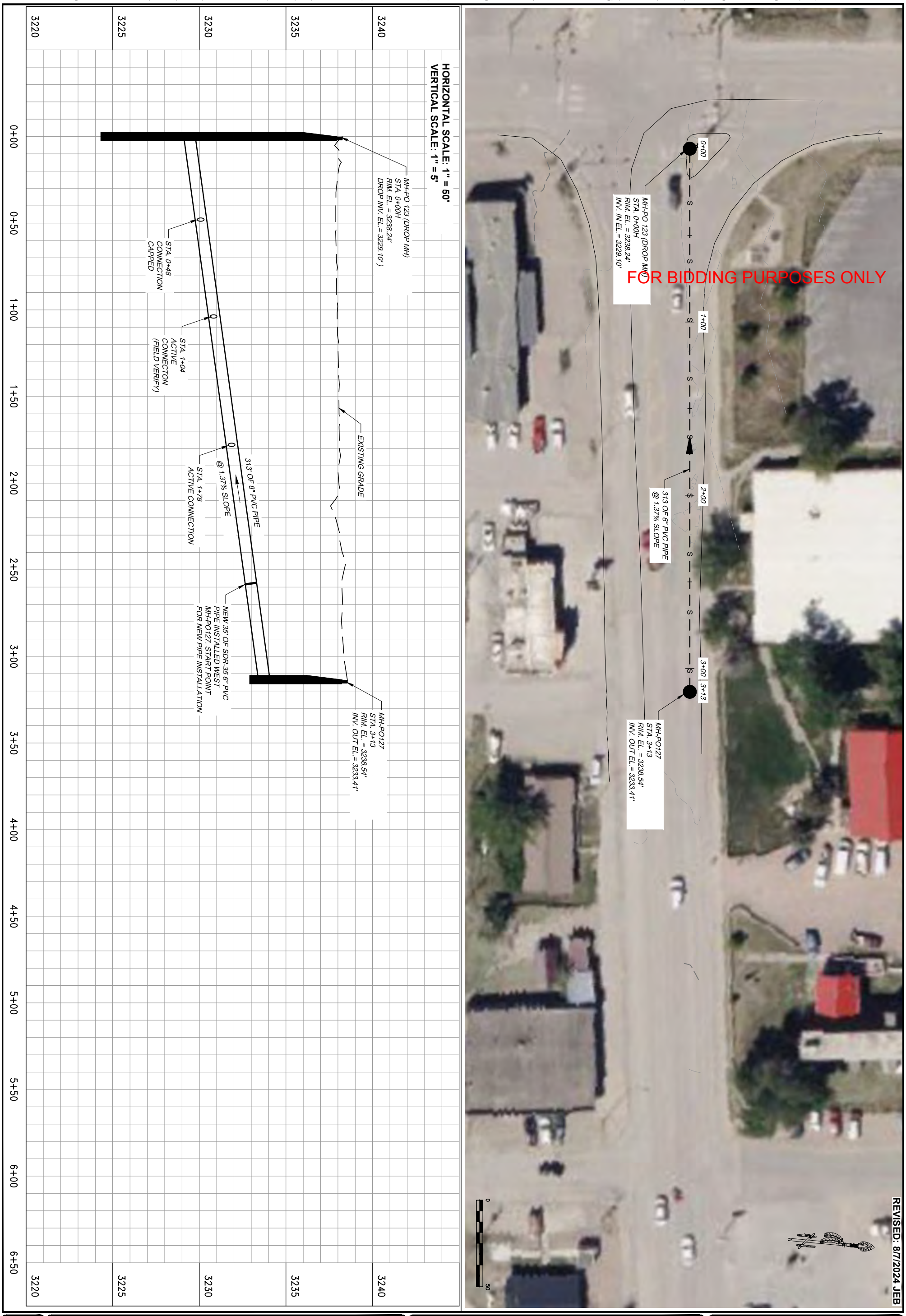
DRAFTED
MJK
REVIEWED
JRW
PROJECT NUMBER
2211-01441
ISSUE DATE
6/25/2024

PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

WATER PLAN & PROFILE - S OF WHITETAIL DEER RD

SHEET
6.15

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



Sanitary Sewer Plan & Profile - E Main Street

PINE RIDGE RESERVATION, SOUTH DAKOTA
SEWER MAIN REPLACEMENT
PUBLIC LAW 86-121
GP-21-J96

SHEET 6.16

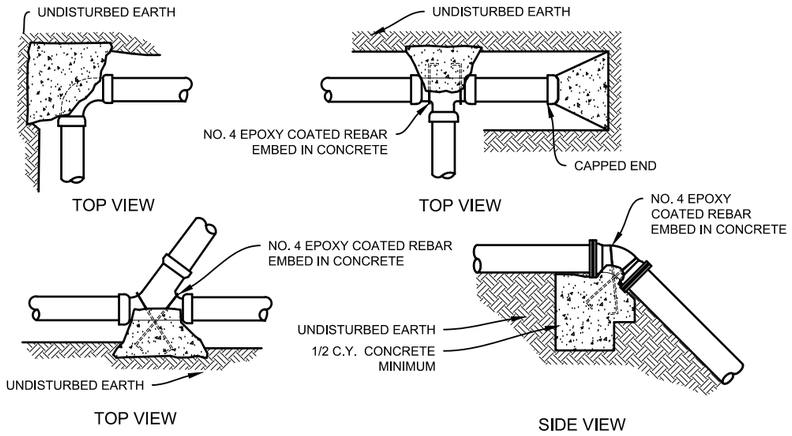
DRAWN BY: S HYDE
CHECKED BY: J AINSLIE
APPROVED BY: J BEGEMAN
FILE NAME: PINE RIDGE SEWER
LAYOUT NAME: SS P&P - E Main Street
PROJ ENG: J AINSLIE
SCALE: 1"=50'

GREAT PLAINS AREA INDIAN HEALTH SERVICE
OFFICE OF ENVIRONMENTAL
HEALTH & ENGINEERING

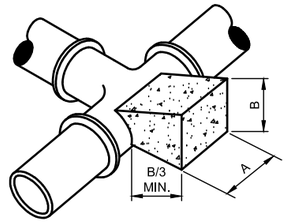
SANITATION FACILITIES CONSTRUCTION
115 4th Ave SE: FEDERAL BUILDING RM. 309
Aberdeen, SD 57401
(605)226-7451

DATE	REVISIONS	INIT.
8/7/24	CHANGE SHEET TITLE AND NO.	JEB

NOTES: POUR ALL THRUST BLOCKS AGAINST UNDISTURBED EARTH
TRANSITION GASKETS WILL NOT BE APPROVED



THRUST BLOCK SETTINGS
NOT TO SCALE

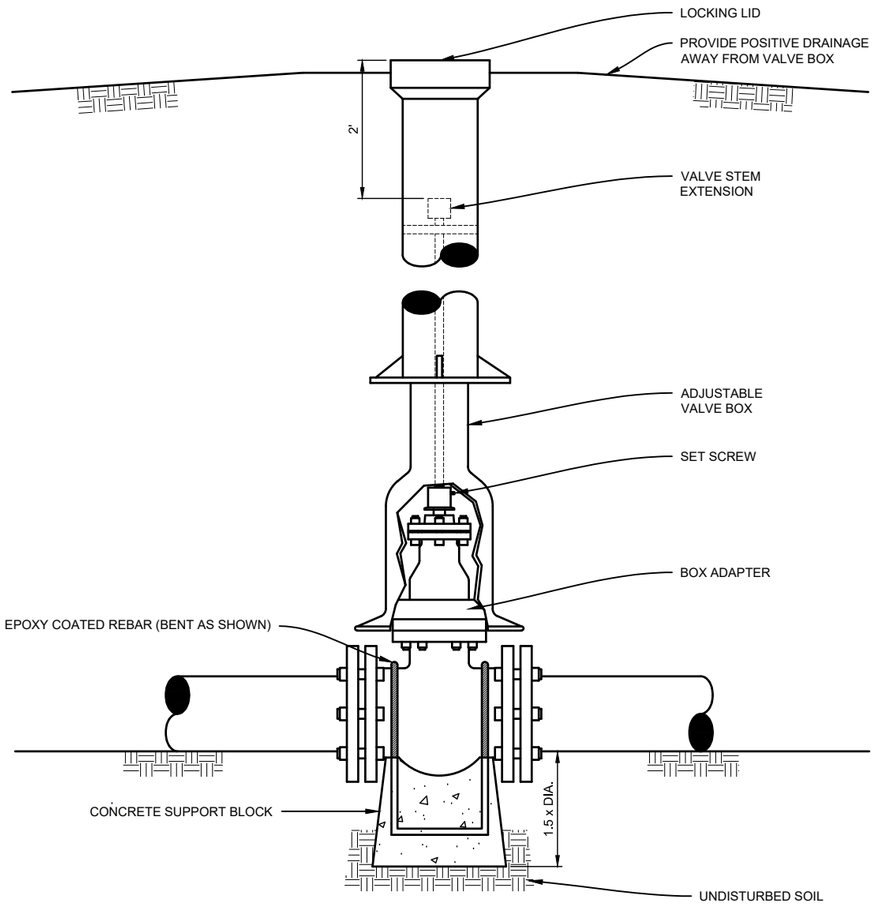


THRUST BLOCK MINIMUM DIMENSIONS

NOTE: THIS TABLE IS BASED ON 150 PSI MAIN PRESSURE AND 2000 PSF SOIL BEARING PRESSURE.
DIMENSIONS FOR THRUST BLOCKING

FITTING SIZES	TEES AND PLUGS		90 DEG. BEND		45 DEG. BEND & WYES		REDUCERS & 22 1/2 DEG. BEND	
	A	B	A	B	A	B	A	B
4"	1'-7"	1'-2"	1'-9"	1'-6"	1'-8"	0'-10"	1'-7"	0'-8"
6"	2'-0"	1'-11"	2'-5"	2'-2"	1'-10"	1'-7"	1'-9"	0'-10"
8"	2'-8"	2'-8"	3'-2"	3'-0"	2'-5"	2'-1"	1'-9"	1'-6"
10"	3'-4"	3'-3"	4'-0"	3'-10"	3'-0"	2'-9"	2'-2"	1'-11"
12"	4'-0"	3'-10"	4'-8"	4'-8"	3'-8"	3'-3"	2'-7"	2'-3"
14"	5'-5"	3'-10"	6'-6"	4'-11"	4'-9"	3'-5"	3'-5"	2'-5"

THRUST BLOCK SETTINGS & MINIMUM DIMENSIONS
NO SCALE



GATE VALVE & BOX
NO SCALE

KLJ

NO.	DATE	REVISION

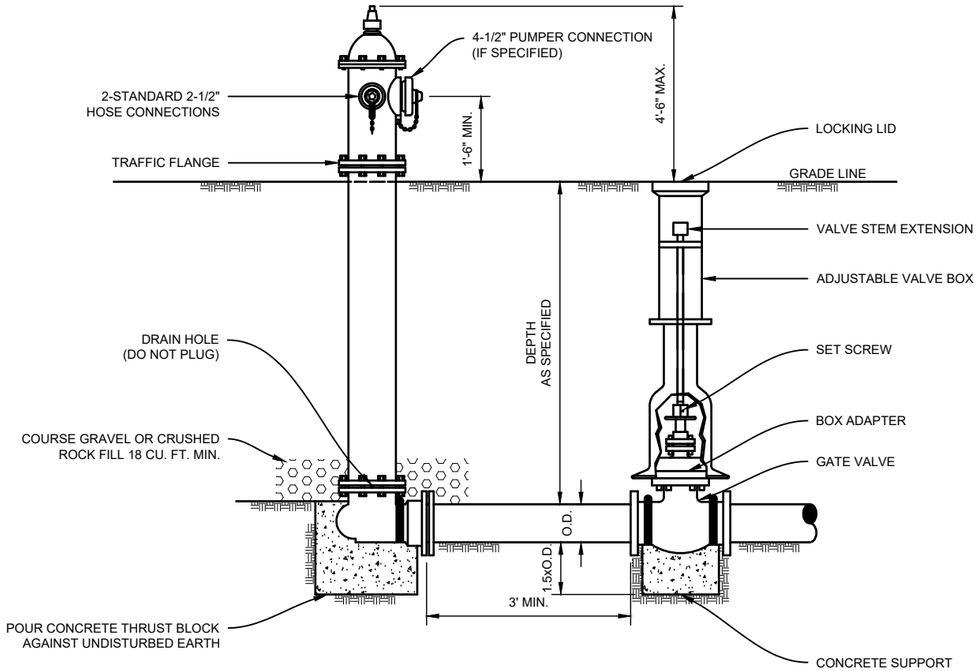
DRAFTED: MJK
REVIEWED: JRW
PROJECT NUMBER: 2211-01441
ISSUE DATE: 6/25/2024

PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

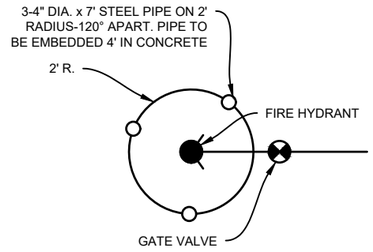
DETAILS

SHEET 12.01

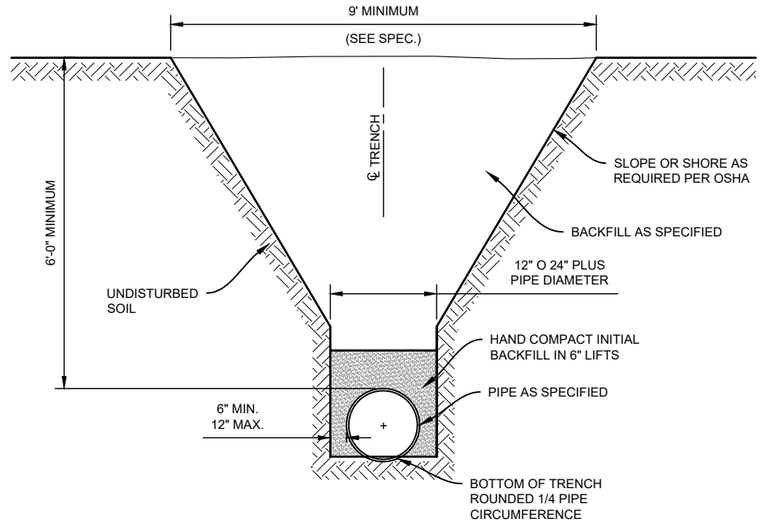
FOR BIDDING PURPOSES ONLY



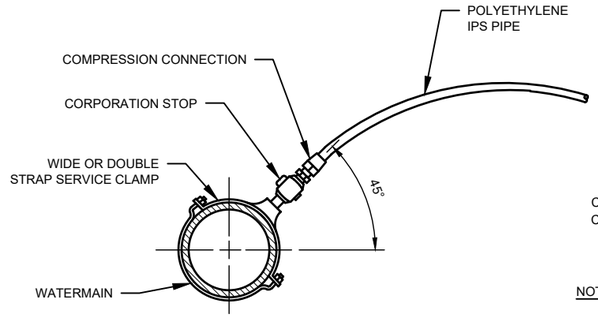
HYDRANT WITH GATE VALVE & BOX
NO SCALE

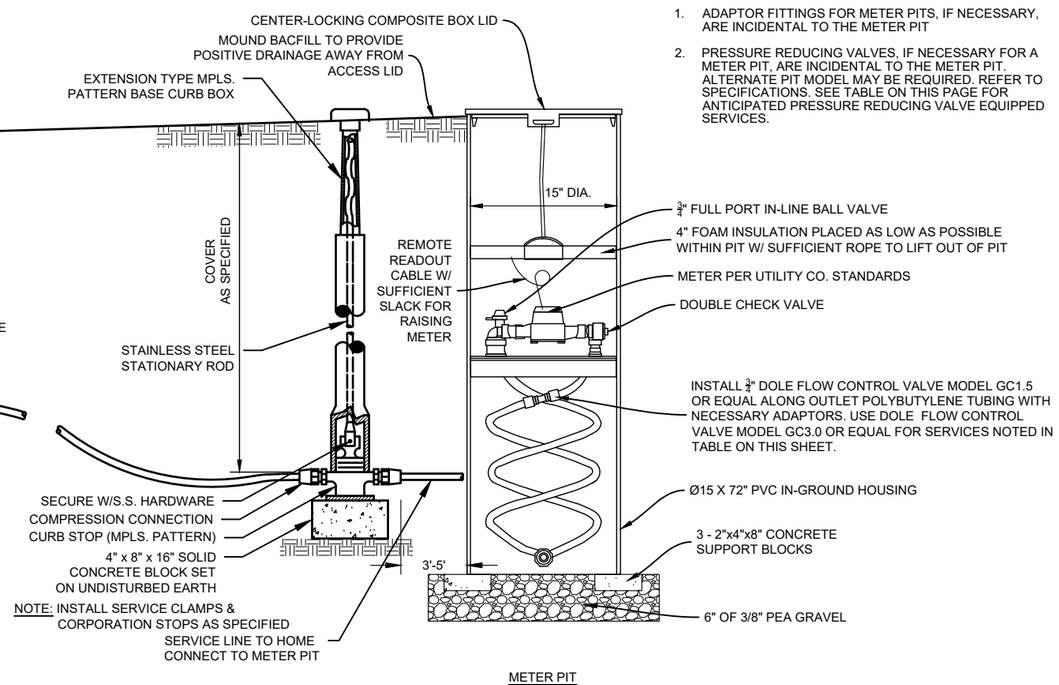


NOTE: IF PVC PIPE IS USED BETWEEN HYDRANT AND GATE VALVE, WALL THICKNESS MUST BE A MINIMUM OF 0.30" FOR CONNECTION BY MECHANICAL JOINT.



TYPICAL TRENCH DETAIL
NO SCALE



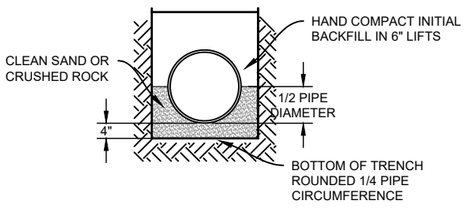


METER PIT

WATER SERVICE CONNECTION
NO SCALE

NOTES

1. ADAPTOR FITTINGS FOR METER PITS, IF NECESSARY, ARE INCIDENTAL TO THE METER PIT
2. PRESSURE REDUCING VALVES, IF NECESSARY FOR A METER PIT, ARE INCIDENTAL TO THE METER PIT. ALTERNATE PIT MODEL MAY BE REQUIRED. REFER TO SPECIFICATIONS. SEE TABLE ON THIS PAGE FOR ANTICIPATED PRESSURE REDUCING VALVE EQUIPPED SERVICES.



IMPORTED BEDDING
NO SCALE

KLJ

NO.	REVISION	DATE

DRAFTED: MJK
REVIEWED: JRW
PROJECT NUMBER: 2211-01441
ISSUE DATE: 6/25/2024

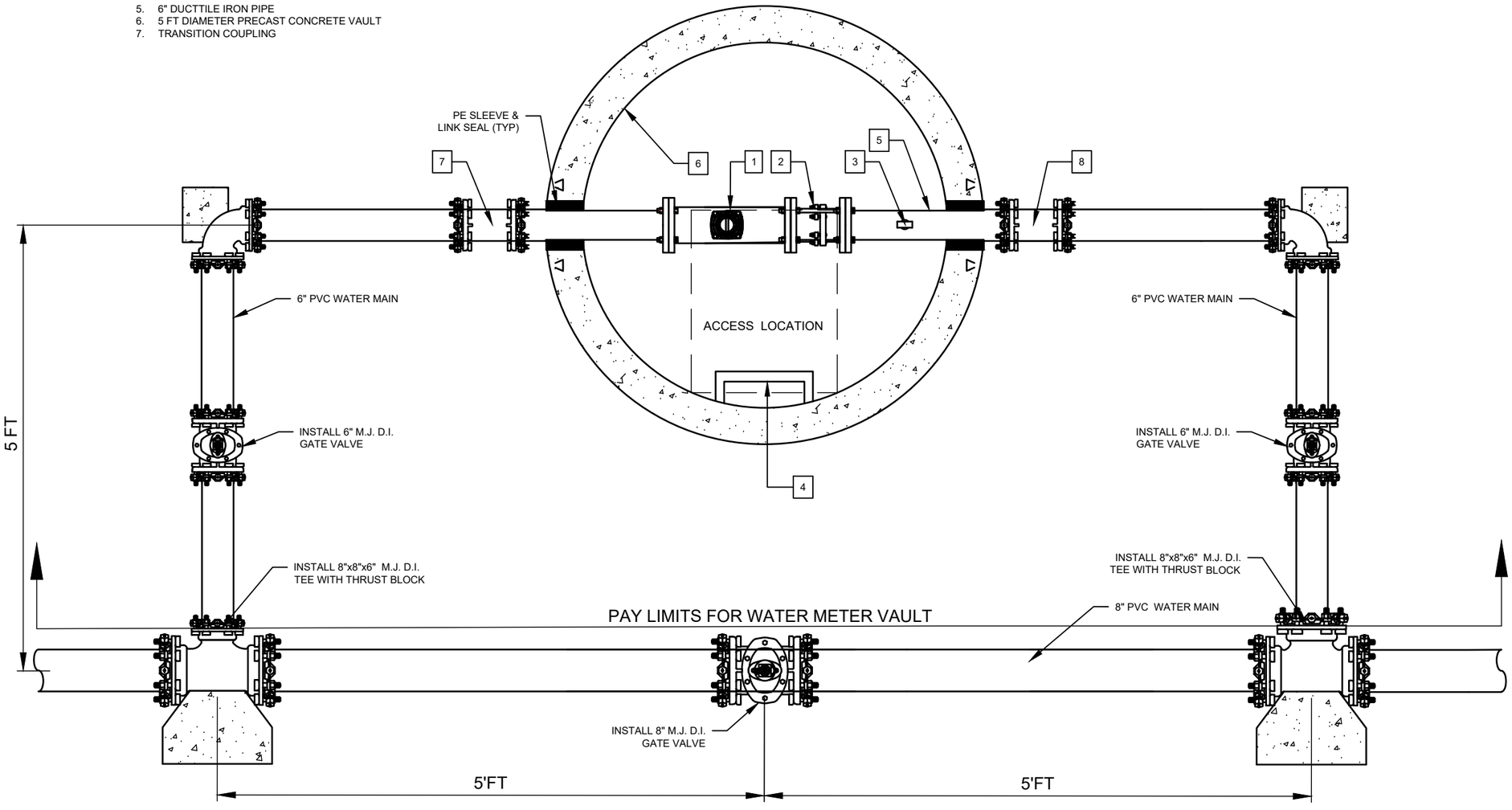
PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA
DETAILS

SHEET
12.02

FOR BIDDING PURPOSES ONLY

KEY NOTES

1. 6" WATER METER
2. 6" FLANGED DISMANTLING JOINT
3. 3-1/2" LIQUID FILLED S.S. PRESSURE GAUGE W/ REDUCER BUSHINGS AS NEEDED
4. MANHOLE STEPS
5. 6" DUCTTILE IRON PIPE
6. 5 FT DIAMETER PRECAST CONCRETE VAULT
7. TRANSITION COUPLING



WATER METER SITE PLAN VIEW
NO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13620
JESSICA WAGNER
SOUTH DAKOTA
06/26/2024

KLJ

REVISION
NO. DATE

DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

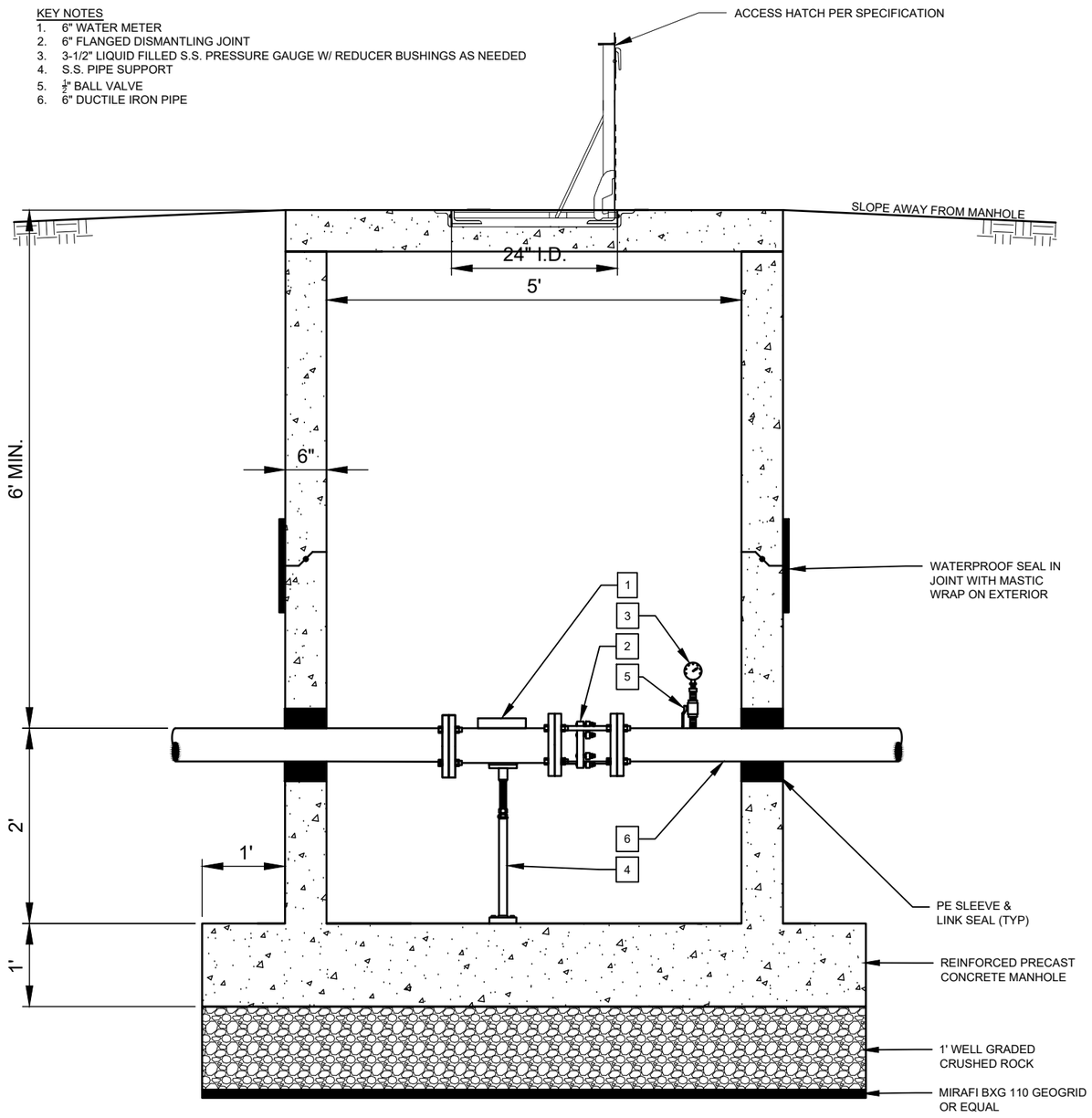
PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA
DETAILS

SHEET 12.03

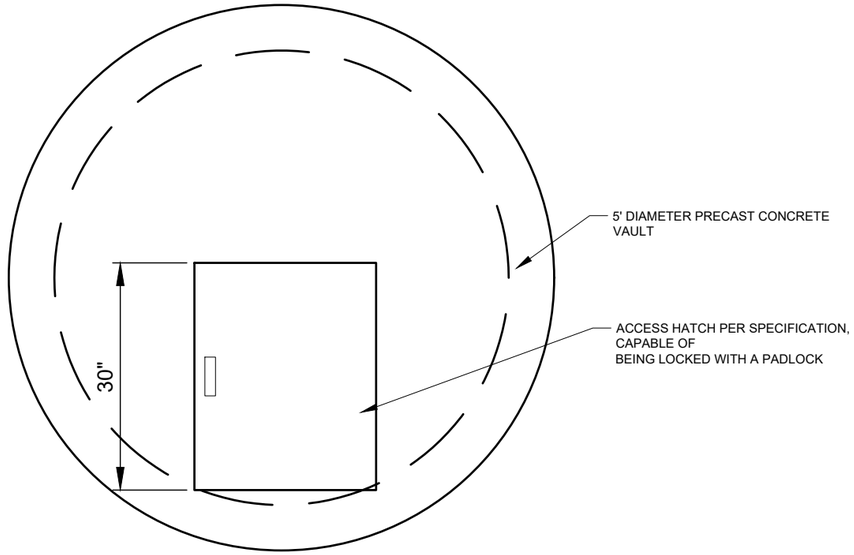
Jun 25, 2024 - 4:44pm - K:\Projects\Tribal\OglalaSioux\2211-01441_PineRidgeWaterSystemImprovements\CAD\Design\Plans\2211_01441_Details.dwg ((3))

FOR BIDDING PURPOSES ONLY

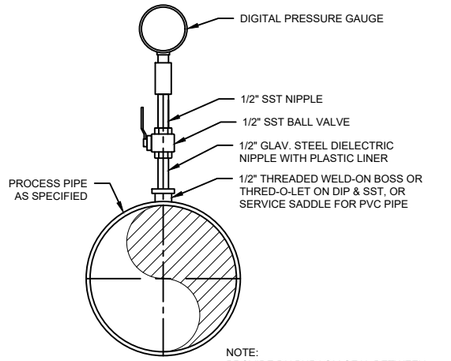
KEY NOTES
1. 6" WATER METER
2. 6" FLANGED DISMANTLING JOINT
3. 3-1/2" LIQUID FILLED S.S. PRESSURE GAUGE W/ REDUCER BUSHINGS AS NEEDED
4. S.S. PIPE SUPPORT
5. ¾" BALL VALVE
6. 6" DUCTILE IRON PIPE



WATER METER VAULT PROFILE VIEW
NO SCALE



WATER METER VAULT PLAN VIEW
NO SCALE



NOTE:
PROVIDE DIAPHRAGM SEAL BETWEEN BALL VALVE AND PRESSURE SNUBBER ON CHEMICAL FEED LINE APPLICATIONS.

PRESSURE GAUGE MOUNTING DETAIL
NO SCALE

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13620
JESSICA WAGNER
SOUTH DAKOTA
06/26/2024

KLJ

REVISION
NO. DATE

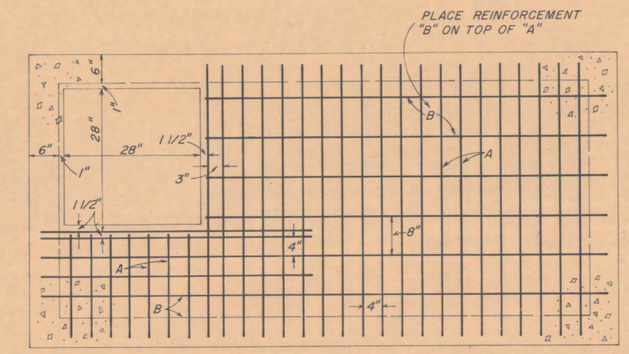
DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

DETAILS

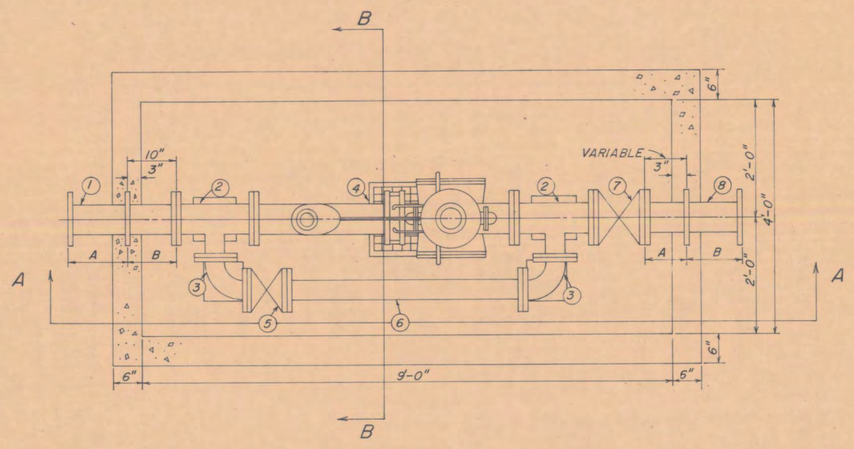
SHEET 12.04

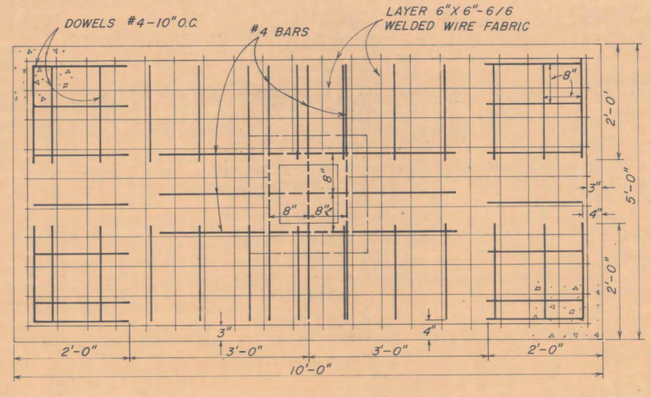
FOR BIDDING PURPOSES ONLY



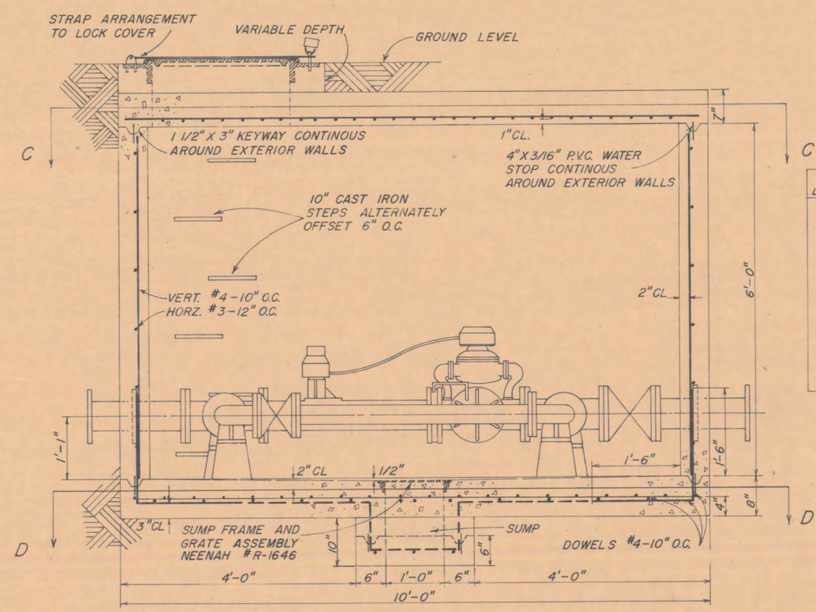
USE #4 BARS IN BOTH DIRECTIONS

SECTION C-C





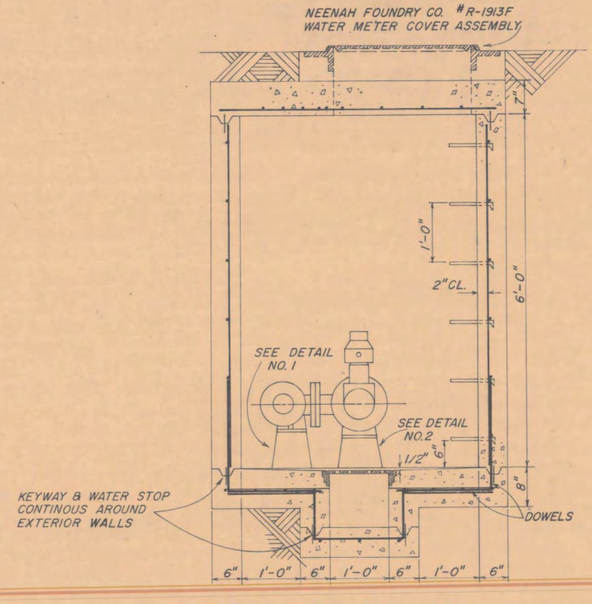
SECTION D-D



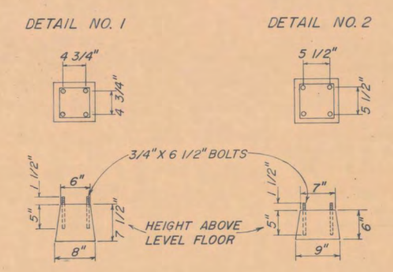
SECTION A-A

SCHEDULE OF PIPING & FITTINGS

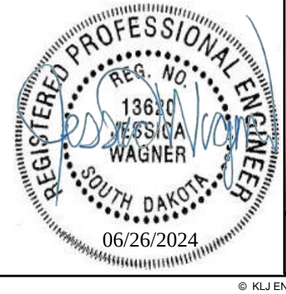
LINE	DESCRIPTION	NO. REQ'D.	SIZE	LENGTH	REMARKS
1	WALL CASTING FL'GE	1	6"	A = 20" B = 10"	
2	BASE TEE FL'GE	2	6"X4"	8" C. to F.	FABRICATED AS SHOWN
3	90° BASE ELBOW FL'GE	2	4"	6 1/2" C. to F.	FABRICATED AS SHOWN
4	WATER METER FL'GE	1	6"	——	SEE SPECIFICATIONS
5	GATE VALVE FL'GE	1	4"	9" F. to F.	
6	PIPE FL'GE	1	4"	——	TO FIT EQUIP-MENT FURNISHED
7	GATE VALVE FL'GE	1	6"	10 1/2" F. to F.	
8	WALL CASTING FL'GE	1	6"	A —— B = 24"	A - TO FIT EQUIP-MENT FURNISHED



SECTION B-B



AS CONSTRUCTED



KLJ

NO.	DATE	REVISION

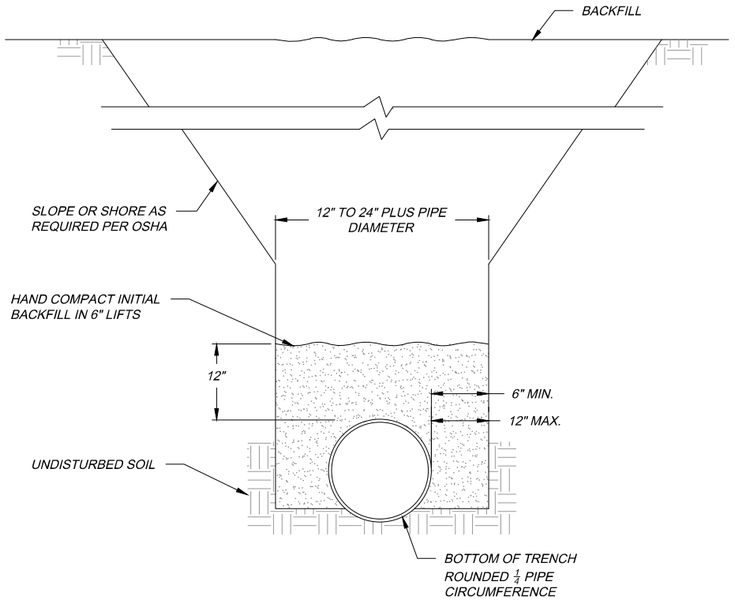
DRAFTED MJK
REVIEWED DRF
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA

DETAILS

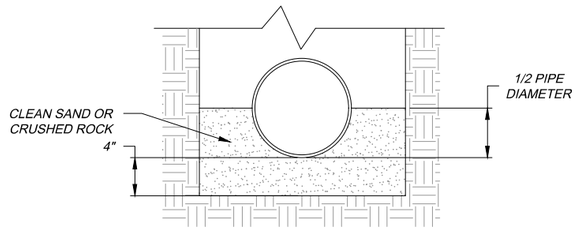
SHEET 12.05

REVISED: 8/7/2024 JEB



TYPICAL TRENCH DETAIL
NOT TO SCALE

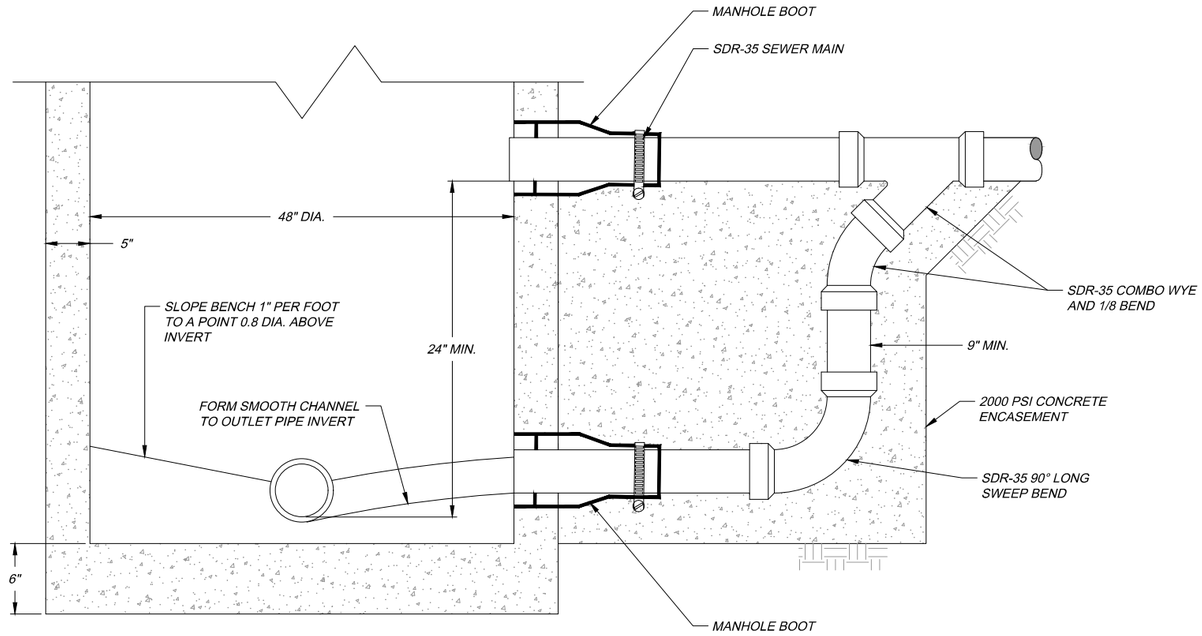
NOTE:
1. EXCAVATION, TRENCHING, AND BACKFILL SPECIFIED IN SECTION 02315.
2. KEEP LOWER 4' OF TRENCH VERTICAL WHEN POSSIBLE. UPPER PART OF TRENCH MAY VARY IN WIDTH TO COMPENSATE FOR UNSTABLE SOIL.
3. USE IMPORTED BEDDING MATERIAL WHEN EXISTING SOIL CAN NOT PROVIDE UNIFORM, STABLE BEARING SUPPORT.
4. USE CLEAN SAND OR CRUSHED ROCK ACCEPTABLE TO ENGINEER.



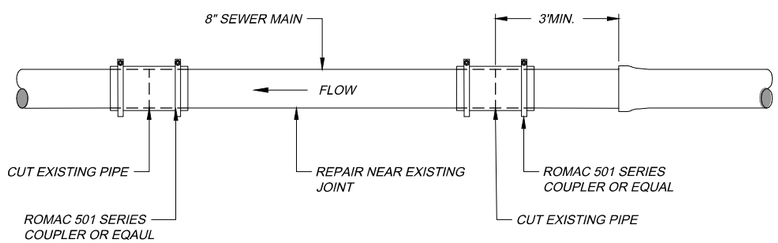
IMPORTED BEDDING
NOT TO SCALE

FOR BIDDING PURSPOSES ONLY

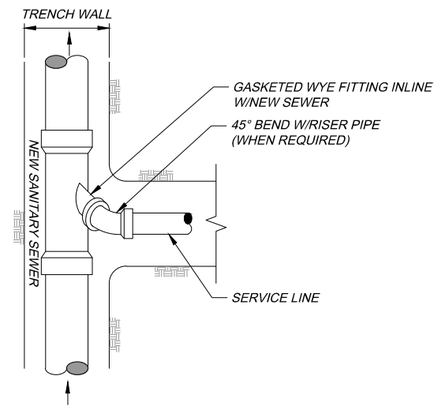
NOTE:
1. MANHOLES SPECIFIED IN SECTION 02532.
2. EXCAVATION, TRENCHING, AND BACKFILL SPECIFIED IN SECTION 02315.
3. CONNECT TO NEW MANHOLES WITH CAST IN BOOTS CONFORMING TO ASTM C923, CONNECT TO EXISTING MANHOLES WITH SANDED MANHOLE ADAPTER.
4. FORM SMOOTH CHANNEL IN EXISTING MANHOLES.



OUTSIDE DROP MANHOLE
NOT TO SCALE



PROPOSED REPAIR NEAR EXISTING JOINT
NOT TO SCALE



SEWER SERVICE CONNECTION - PLAN VIEW
NOT TO SCALE

REVISIONS			INIT.
DATE	CHANGE	SHEET NUMBER	JEB
8/7/24			

GREAT PLAINS AREA INDIAN HEALTH SERVICE
OFFICE OF ENVIRONMENTAL HEALTH & ENGINEERING

SANITATION FACILITIES CONSTRUCTION
115 4TH AVE SE; FEDERAL BUILDING RM 309
ABERDEEN, SD 57401
(605) 226-7451

STANDARD DETAILS
Pine Ridge Reservation, South Dakota
Sewer Main Replacement
PUBLIC LAW 86-121
GP-21-J96

DRAWN BY: S. HYDE
CHECKED BY: J. AINSLIE
APPROVED BY: J. BEGEMAN
FILE NAME: PINE RIDGE SEWER
LAYOUT NAME: Standard Details
PROJ ENG: J. AINSLIE
SCALE: NTS

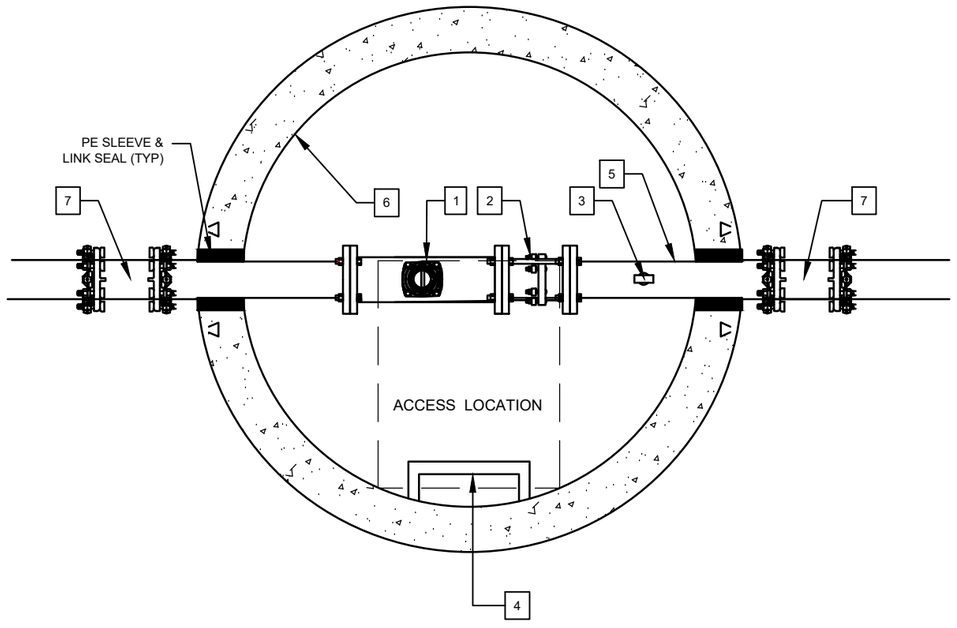
SHEET
12.06

FOR BIDDING PURPOSES ONLY

REVISED: 10/18/2024 JRW

KEY NOTES

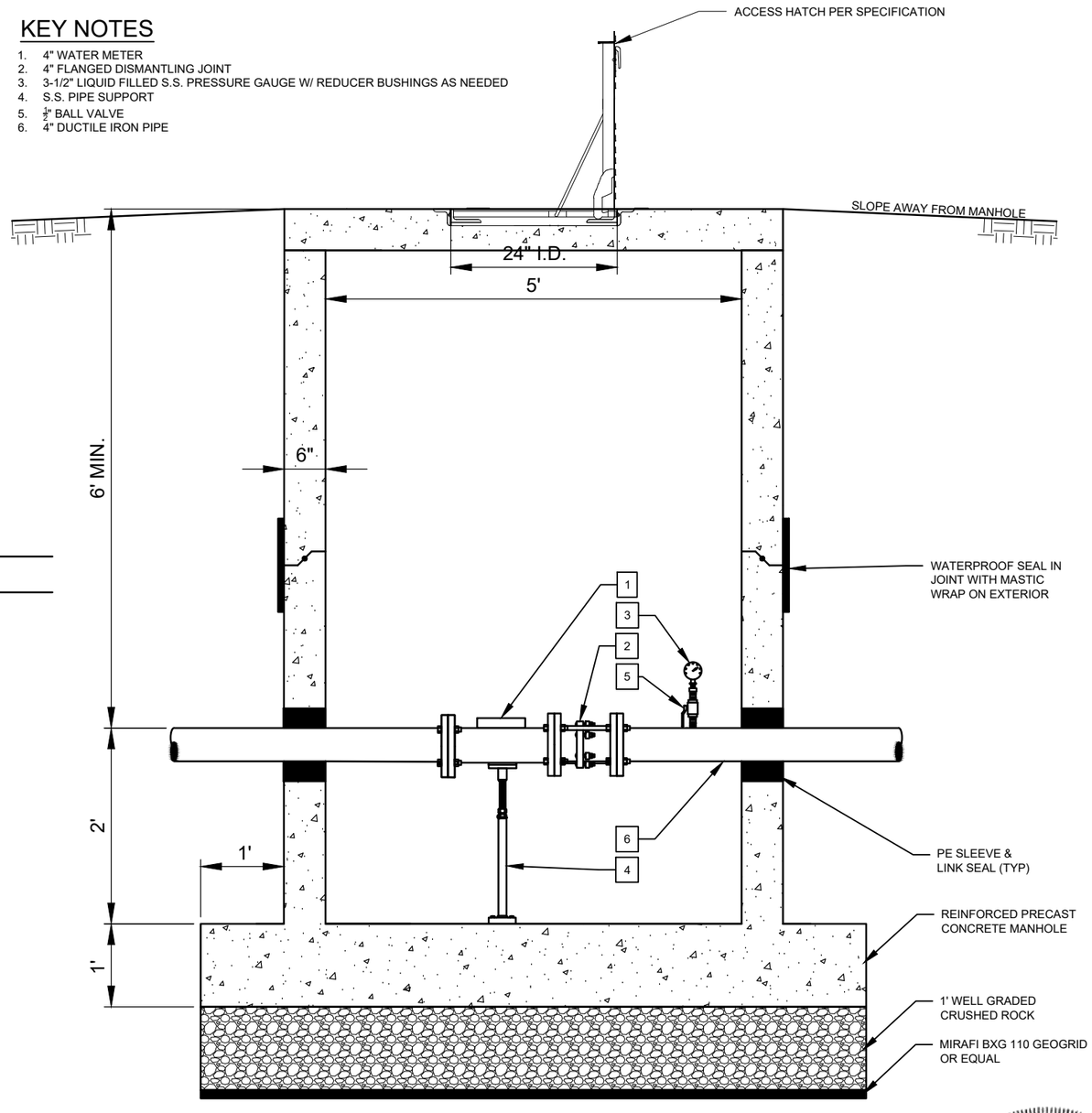
1. 4" WATER METER
2. 4" FLANGED DISMANTLING JOINT
3. 3-1/2" LIQUID FILLED S.S. PRESSURE GAUGE W/ REDUCER BUSHINGS AS NEEDED
4. MANHOLE STEPS
5. 4" DUCTTILE IRON PIPE
6. 5 FT DIAMETER PRECAST CONCRETE VAULT
7. TRANSITION COUPLING



4" WATER METER SITE PLAN VIEW
NO SCALE

KEY NOTES

1. 4" WATER METER
2. 4" FLANGED DISMANTLING JOINT
3. 3-1/2" LIQUID FILLED S.S. PRESSURE GAUGE W/ REDUCER BUSHINGS AS NEEDED
4. S.S. PIPE SUPPORT
5. ½" BALL VALVE
6. 4" DUCTILE IRON PIPE



WATER METER VAULT PROFILE VIEW
NO SCALE

KLJ

REVISION NO. DATE

DRAFTED MJK
REVIEWED JRW
PROJECT NUMBER 2211-01441
ISSUE DATE 6/25/2024

PINE RIDGE WATER IMPROVEMENTS
OGLALA SIOUX TRIBE
PINE RIDGE, SOUTH DAKOTA
DETAILS

SHEET 12.07