

SMITH LAKE WATER SYSTEM IMPROVEMENTS

SMITH LAKE CHAPTER

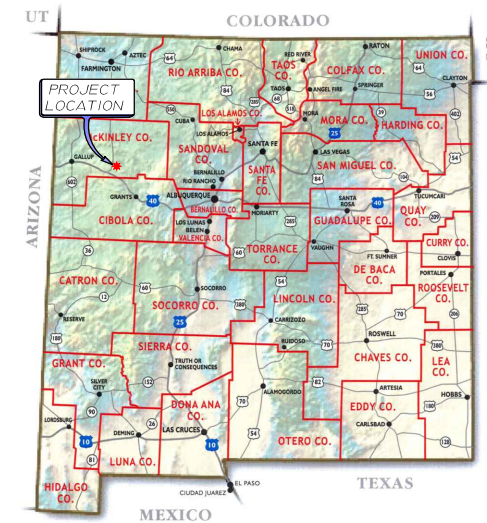
WELL SITE #1 TREATMENT BUILDING



March 2021

PROJECT DESCRIPTION

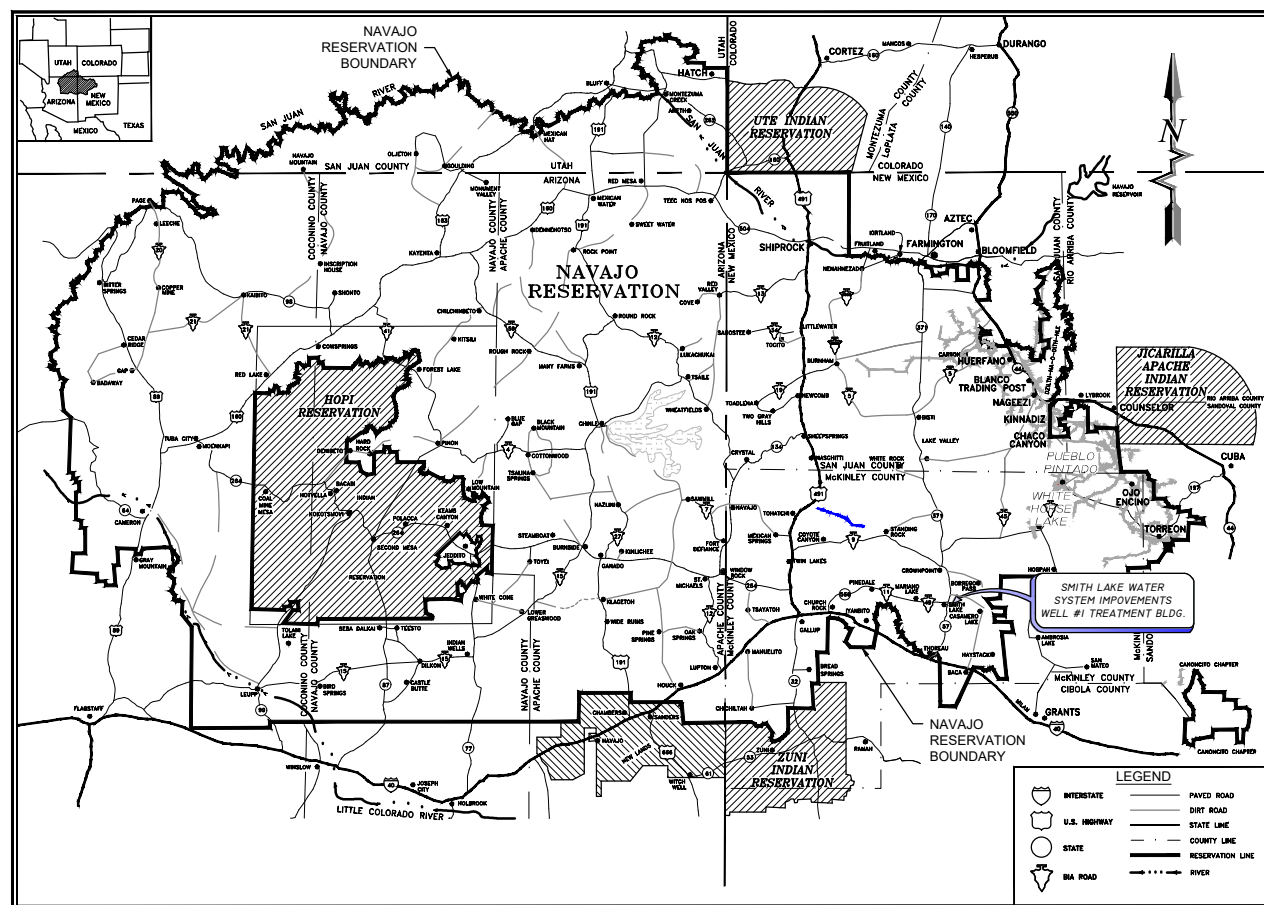
THE PROJECT CONSISTS OF CONSTRUCTION OF 810 FEET OF 4" PVC WATERLINE AND A WATER TREATMENT BUILDING.



PROJECT VICINITY MAP

3/12/21
30% DRAFT

NOTE: ALL NOTES IN RED ARE DESIGN NOTES ONLY AND WILL NOT BE INCLUDED IN THE FINAL PLAN SET. THESE ARE TO ASSIST IN INTERNAL DESIGN AND REVIEW ONLY.



NAVAJO RESERVATION
PROJECT SITE MAP

DRAWING INDEX

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Client: The Navajo Nation
Location: Smith Lake, NM

COVER SHEET & DRAWING INDEX
SMITH LAKE CHAPTER
WATER SYSTEM IMPROVEMENTS PROJECT
MCKINLEY COUNTY, NEW MEXICO
SECTION 8, T. 15 N., R. 12 W.

30% REVIEW
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3/2021

Designed RMB	Drawn MvH/AaV	Checked JMG
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Project No: 6922268

Sheet: G-1

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GENERAL NOTES

- THE ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND IS NOT LIABLE FOR PROBLEMS THAT MAY ARISE FROM CONTRACTOR'S FAILURE TO FOLLOW THESE DRAWINGS, SPECIFICATIONS, AND THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS ARISING FROM FAILURE TO OBTAIN AND/OR FOLLOW THE ENGINEER'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES, OR CONFLICTS.
- IF THERE IS A CONFLICT BETWEEN THE PLANS, SPECIFICATIONS AND/OR MANUFACTURER'S RECOMMENDATIONS FOR ANY DEVICE, PART, OR MATERIAL USED IN THE PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER, IN WRITING, FOR CLARIFICATION AT LEAST TWO WEEKS PRIOR TO CONSTRUCTION OF SAID DEVICE, PART, OR MATERIAL.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE HIMSELF WITH THE LOCATION OF ALL UTILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION. THE GENERAL LOCATION OF KNOWN EXISTING UTILITIES HAS BEEN SHOWN ON THE CONSTRUCTION DRAWINGS TO INDICATE THAT CAUTION MUST BE EXERCISED WHEN WORKING IN THESE AREAS. IN MANY CASES THE EXACT LOCATION OF THE FACILITIES IS NOT KNOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL OVERHEAD AND UNDERGROUND UTILITIES WITHIN THE VICINITY OF THE NEW CONSTRUCTION. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR, WORKING WITH THE RESPECTIVE UTILITY COMPANIES, SHALL ACCURATELY LOCATE AND MARK ALL BURIED FACILITIES, INCLUDING SERVICE LINES. ALL EQUIPMENT LABOR, ETC. NECESSARY TO PROPERLY LOCATE THE EXISTING UTILITIES SHALL BE FURNISHED BY THE CONTRACTOR, THE COST OF WHICH SHALL BE INCIDENTAL TO THE WORK.
- CONTRACTOR SHALL REPAIR ANY EXISTING STRUCTURE OR UTILITY PIPELINE DAMAGED DURING THE EXECUTION OF THE PROJECT, AT NO ADDITIONAL COSTS TO THE OWNER.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTING THE PROJECT ACCORDING TO CURRENT NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (NMSSPWC) AWWA SPECS AND NAVAJO NATION / NTUA STANDARDS, INCLUDING WHERE PARTICULAR WORK ITEMS ARE NOT SPECIFIED HEREIN.
- CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS AS SET FORTH IN THE TECHNICAL SPECIFICATIONS AND CONTRACT DOCUMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE ENGINEER REGARDING ANY QUESTION ARISING FROM ANY ASPECT OF THIS PROJECT NOT SPECIFICALLY COVERED IN THE PLANS AND TECHNICAL SPECIFICATIONS, OR ANY CHANGES OR CORRECTIONS TO THE PLANS AND SPECS.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY, WHICH SHALL REMAIN WHOLLY THE RESPONSIBILITY OF THE CONTRACTOR. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL (OSHA), STATE, TRIBAL AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING SAFETY AND HEALTH. ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE CARRIED OUT IN ACCORDANCE WITH OSHA 29 CFR 1926, SUBPART P - EXCAVATIONS.
- CONTRACTOR SHALL PROVIDE INGRESS AND EGRESS TO ANY LOCAL BUSINESSES AND RESIDENTS AS REQUIRED FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL ADVISE OF AND SCHEDULE ACCESS CLOSURES AT LEAST 24 HOURS IN ADVANCE WITH PROPERTY OWNERS AND THE ENGINEER.
- THE CONTRACTOR SHALL CONFINE HIS OPERATIONS TO THE CONSTRUCTION LIMITS OF THE PROJECT AND SHALL IN NO WAY ENCR OACH ONTO ADJACENT PROPERTIES UNLESS LEGAL EASEMENTS ARE PROVIDED OR SECURED BY THE CONTRACTOR. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES TO PUBLIC OR PRIVATE PROPERTY, INCLUDING UTILITIES.
- THE DRAWINGS CONTAIN SPECIFIC EROSION CONTROL FEATURES DESIGNED BY THE ENGINEER TO PROTECT PROJECT FACILITIES FROM EROSION. THESE FEATURES ARE NOT DESIGNED TO PREVENT POLLUTION OF WATERWAYS DUE TO SEDIMENT. THE CONTRACTOR IS WHOLLY RESPONSIBLE TO PROVIDE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND IMPLEMENT THE BEST MANAGEMENT PRACTICES (BMPs) REQUIRED THEREIN, IN ADDITION TO THE FEATURES SHOWN ON THE DRAWINGS. ALL BID ITEMS REFERRING TO SPECIFIC EROSION CONTROL FEATURES, SUCH AS RIPRAP OR ROCK DAMS, ARE APPLICABLE ONLY TO FEATURES DESIGNED BY THE ENGINEER. A SEPARATE BID ITEM(S) IS PROVIDED FOR PREPARATION AND IMPLEMENTATION OF THE CONTRACTOR'S SWPPP.
- ALL RIPRAP, ROCK CHECK DAMS AND OTHER EROSION CONTROL FEATURES SHOWN ON THE DRAWINGS ARE APPROXIMATE WITH REGARD TO QUANTITY, LOCATION, DIMENSIONS, SPACING, AND ORIENTATION. EXACT PLACEMENT WILL BE DETERMINED IN FIELD BY ENGINEER AFTER FINAL GRADING IS COMPLETE.
- ALL AREAS DISTURBED BY THE CONSTRUCTION ACTIVITIES OF THIS PROJECT SHALL BE RESTORED AND RE-GRADED IN A MANNER ACCEPTABLE TO THE OWNER, ENGINEER, AND LAND OWNER. ALL DISTURBED AREAS SHALL BE RE-SEEDED PER THE CONTRACT DOCUMENTS.
- FUSIBLE PVC PIPE SHALL BE USED IN LIEU OF ALL RESTRAINED JOINTS AND SHALL BE USED ON BOTH SIDES OF ALL ISOLATION VALVES, CASINGS, TEES, AND BENDS. REFER TO SPECIFICATIONS AND DETAIL, SHEET DT-3. IN ADDITION, THE PLAN AND PROFILE SHEETS INDICATE SPECIFIC ADDITIONAL LOCATIONS WHERE FUSIBLE PVC PIPE MUST BE USED IN LIEU OF BELL-AND-SPIGOT PIPE. IN THE ABSENCE OF ANY REQUIREMENT TO USE FUSIBLE PVC PIPE, CONTRACTOR HAS THE OPTION TO USE EITHER FUSIBLE OR BELL-AND-SPIGOT PIPE. IN THESE DRAWINGS, THE TERMS "BELL-AND-SPIGOT PIPE" AND "JOINTED PIPE" ARE USED SYNONYMOUSLY.
- THE PLAN AND PROFILE SHEETS SHOW HORIZONTAL ANGLES WITH DI ELL(S) OR FUSIBLE PVC SWEEP(S) CALLED OUT. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE SPECIFIED FITTINGS AT EACH LOCATION. IN ADDITION TO THE SPECIFIED FITTINGS(S), USE JOINT DEFLECTION TO ACHIEVE THE SPECIFIED HORIZONTAL ANGLE. IF A LOCATION IS SHOWN WITHOUT SPECIFYING A FITTING, USE JOINT DEFLECTION TO ACHIEVE THE HORIZONTAL ANGLE.
- ALL PRESSURE RATINGS GIVEN HEREIN FOR PIPES, VALVES, FITTINGS AND OTHER COMPONENTS REFER TO COLD WATER WORKING PRESSURE RATING, UNLESS OTHERWISE NOTED.
- VERTICAL CLEARANCES AT WATERLINE CROSSINGS ON PLAN AND PROFILE SHEETS CALLED OUT AS "MIN CLR" REFER TO MINIMUM CLEARANCE FROM BOTTOM OF EXISTING WATERLINE TO TOP OF PROPOSED WATERLINE. VERTICAL CLEARANCES FOR CASINGS CALLED OUT AS "MIN CLR TO CASING" REFER TO MINIMUM CLEARANCE FROM BOTTOM OF EXISTING PIPELINE OR FINISHED GRADE TO TOP OF PROPOSED CASING. VERTICAL CLEARANCES AT WASH CROSSINGS CALLED OUT AS "MIN TO CL" REFER TO MINIMUM PIPE DEPTH, MEASURED FROM BOTTOM OF WASH TO VERTICAL CENTERLINE OF PROPOSED WATERLINE.

- REFER TO PROFESSIONAL REGISTRANTS IDENTIFIED ON INDIVIDUAL PLAN SHEETS AS THE RESPONSIBLE PARTY FOR THOSE DISCIPLINES. THE SEAL AND SIGNATURE OF THE PROFESSIONAL REGISTRANT IDENTIFIED ON THIS COVER SHEET DOES NOT INDICATE RESPONSIBLE CHARGE FOR ALL SHEETS CONTAINED WITHIN THIS PACKAGE OR ANY PLAN SHEETS NOT SIGNED AND SEALED.
- ALL SCALES ARE BASED ON 11" x 17" SHEET SIZE.

CONTACT INFORMATION:

NAVAJO NATION WATER MANAGEMENT BRANCH (OWNER):
 JASON JOHN (928) 729-4004

SOUDER, MILLER & ASSOCIATES (ENGINEER):
 TORY TADANO, P.E (OFFICE) (505) 299-0942

NAVAJO TRIBAL UTILITY AUTHORITY (NTUA):
 (928) 729-5721

ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	LF	LINEAR FEET
A.C.	ASPHALTIC CONCRETE	LT	LEFT
ACI	AMERICAN CONCRETE INSTITUTE	LONG	LONGITUDE
AC	ACRE	LVC	LENGTH VERTICAL CURVE
AC-FT.	ACRE FEET	MANUF	MANUFACTURER
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	MAX.	MAXIMUM
ALIGN.	ALIGNMENT	MIL	ONE THOUSANDTHS OF AN INCH
ALUM	ALUMINUM	MIN.	MINIMUM
AMSL	ABOVE MEAN SEA LEVEL	M.J.	MECHANICAL JOINT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MNPT	MALE NATIONAL PIPE THREAD
APPROX.	APPROXIMATE	M.S.L.	MEAN SEA LEVEL
ARV	AIR RELEASE VALVE	N	NORTH
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	N	NORTHING
AWG	AMERICAN WIRE GAUGE	N.C.	NATIONAL ELECTRICAL CODE
AWWA	AMERICAN WATER WORKS ASSOCIATION	NEC	NORMALLY CLOSED
B.F.V.	BUTTERFLY VALVE	NG	NATURAL GAS
BIA	BUREAU OF INDIAN AFFAIRS	NGWSP	NAVAJO GALLUP WATER SUPPLY PROJECT
BLDG	BUILDING	NM	NEW MEXICO
BLM	BUREAU OF LAND MANAGEMENT	NMDOT	NEW MEXICO DEPARTMENT OF TRANSPORTATION
BV	BALL VALVE	NMED	NEW MEXICO ENVIRONMENT DEPARTMENT
BVCE	BEGIN VERTICAL CURVE ELEVATION	NN	NAVAJO NATION
BVCS	BEGIN VERTICAL CURVE STATION	NO.	NUMBER
CL	CENTERLINE	N.O.	NORMALLY OPEN
CFS	CUBIC FEET PER SECOND	NPT	NATIONAL PIPE THREAD
CI	CAST IRON	NTS	NOT TO SCALE
CLR.	CLEARANCE	OAE	OR APPROVED EQUAL
CMP	CORRUGATED METAL PIPE	O.C.	ON CENTER
COMM.	COMMUNICATION	O.C.E.W.	ON CENTER EACH WAY
CONC.	CONCRETE	O.D.	OUTER DIAMETER
CONST.	CONSTRUCTION	OHE	OVERHEAD ELECTRICAL
CONT.	CONTINUOUS	PE	PLAIN END
COR.	CORNER	P.G.P.	PER GRADING PLAN
COUP.	COUPLING	PI	POINT OF INFLECTION
CP	CONTROL POINT	PROP	PROPOSED
CTR	CENTER	PRV	PRESSURE REDUCING VALVE
CY	CUBIC YARD	PSF	POUNDS PER SQUARE FOOT
DI	DUCTILE IRON	PSI	POUNDS PER SQUARE INCH
DIA	DIAMETER	PVC	POLY VINYL CHLORIDE
DIMS	DIMENSIONS	PVI	POINT VERTICAL INFLECTION
DR	DIMENSION RATIO	PVT	PRIVATE
DW	DRIVEWAY	Q	FLOW
E	EAST	QTY.	QUANTITY
E	EASTING	R	RADIUS
EA.	EACH	R-	RANGE
ED.	EDITION	REF	REFERENCE
EG	EXISTING GRADE	RO	ROUGH OPENING
ELEC.	ELECTRICAL	ROW	RIGHT OF WAY
EL., ELEV.	ELEVATION	RT	RIGHT
EOP	EDGE OF PAVEMENT	S	SOUTH
EQ.	EQUAL	SCH	SCHEDULE
ESMT.	EASEMENT	SCO	SANDOVAL COUNTY
EVCE	END VERTICAL CURVE ELEVATION	SDR	STANDARD DIMENSION RATIO
EVCS	END VERTICAL CURVE STATION	SEC.	SECTION
EX, EXIST.	EXISTING	SF	SAFETY FACTOR
FBE	FUSION BONDED EPOXY	SHT	SHEET
FF	FINISHED FLOOR	SPECS.	SPECIFICATIONS
FFE	FINISHED FLOOR ELEVATION	SS	STAINLESS STEEL
FG	FINISHED GRADE	STA	STATION
FIG.	FIGURE	STD.	STANDARD
FL	FLANGE	SW	SIDEWALK
FND.	FOUND	T	TOWNSHIP
FNPT	FEMALE NATIONAL PIPE THREAD	TBD	TO BE DETERMINED
FRP	FIBER REINFORCED PLASTIC	TBR	TO BE REMOVED
FT.	FEET	TCE	TEMPORARY CONSTRUCTION EASEMENT
FV	FLUSH VALVE	TDH	TOTAL DYNAMIC HEAD
GA.	GAUGE	TELE.	TELEPHONE
GALV.	GALVANIZED	TEMP.	TEMPORARY
GI	GALVANIZED IRON	THK	THICK
GPM	GALLONS PER MINUTE	TNT	NAVAJO TRIBAL TRUST
GV	GATE VALVE	T.O.	TOP OF
HDD	HORIZONTAL DIRECTIONAL DRILLING	TOE	TOE OF SLOPE
HDPE	HIGH DENSITY POLYETHYLENE	TP	TOP OF PIPE
HORIZ.	HORIZONTAL	TRANS	TRANSFORMER
HP	HORSE POWER	TW	TOP OF WALL
HT	HEIGHT	TYP	TYPICAL
HWY	HIGHWAY	UGE	UNDERGROUND ELECTRIC
I.A.	INDIAN ALLOTMENT	USGS	UNITED STATES GEOLOGICAL SURVEY
I.D.	INNER DIAMETER	V	VOLUME
I.E.	INCH	VB	VACUUM BREAKER
IN	INVERT	VERT.	VERTICAL
INV	INVERT	VLV	VALVE
IPS	IRON PIPE SIZE	VR	VACUUM RELIEF
KSI	KILO POUNDS PER SQUARE INCH	W	WATER
LAT	LATITUDE	W	WEST
L, LEN	LENGTH	WI	WITH
		WL	WATERLINE
		WP	WORKING PRESSURE
		WT	WALL THICKNESS
		WV	WATER VALVE

LEGEND

	EXISTING ISOLATION VALVE
	WATER VAULT
	WATER METER
	HYDRANT
	POWER POLE
	GUY ANCHOR
	ELECTRICAL J-BOX
	TELEPHONE PEDESTAL
	STORM DRAIN INLET / OUTLET
	BUILDING
	CATTLE GUARD
	ROAD SIGN
	EXISTING DRAINAGE WASH
	GUARD RAIL
	PAVED ROAD EDGE
	DIRT ROAD EDGE
	ROAD CENTER
	CONTOUR MAJOR
	CONTOUR MINOR
	SECTION CORNER
	CULTURALLY SENSITIVE AREA DO NOT ENCR OACH
	Navajo Tribal Trust CURRENT LAND STATUS (OWNER)
	SECTION LINE
	TOWNSHIP / RANGE LINE
	FENCE
	OVERHEAD POWER LINE
	UNDERGROUND POWER LINE
	OVERHEAD TELEPHONE LINE
	UNDERGROUND TELEPHONE LINE
	WATER LINE
	GAS LINE

LEGEND PROPOSED

	WATER LINE		CONTOUR MAJOR
	POWER LINE		CONTOUR MINOR
	FENCE		40' WATERLINE EASEMENT
	PIPE CASING		TEMPORARY CONSTRUCTION EASEMENT
	GATE VALVE		ACCESS DRIVE / ROAD
	BUTTERFLY VALVE		RIP RAP OR CABLE CRETE
	VACUUM BREAKER		GRAVEL OVER BASE COURSE
	AIR RELEASE VALVE COMBO		SWALE
	FLUSH VALVE		DIRECTION OF FLOW
	POWER POLE		MATCH LINE
	GUY ANCHOR		
	DOUBLE SWING GATE		

Revision	Date	Description

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 Location: Smith Lake, NM

GENERAL NOTES & LEGEND
SMITH LAKE CHAPTER
WATER SYSTEM IMPROVEMENTS PROJECT
 MCKINLEY COUNTY, NEW MEXICO
 SECTION 8, T. 15 N., R. 12 W.

30% REVIEW DRAFT

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Designed RMB	Drawn MvH/Aav	Checked JMG
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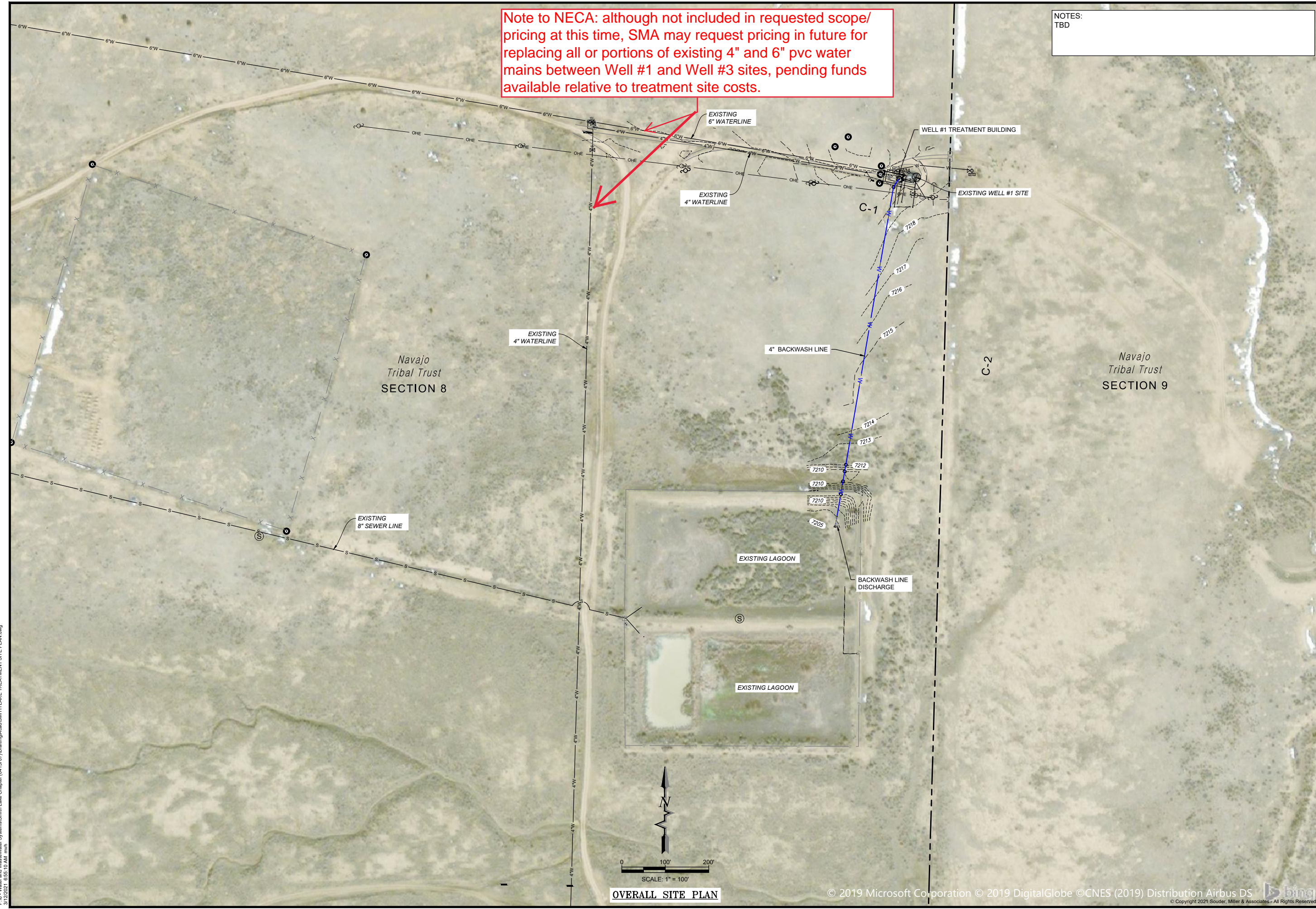
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Note to NECA: although not included in requested scope/pricing at this time, SMA may request pricing in future for replacing all or portions of existing 4" and 6" pvc water mains between Well #1 and Well #3 sites, pending funds available relative to treatment site costs.

NOTES:
TBD



Revision	Date	Description	By

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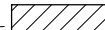
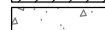
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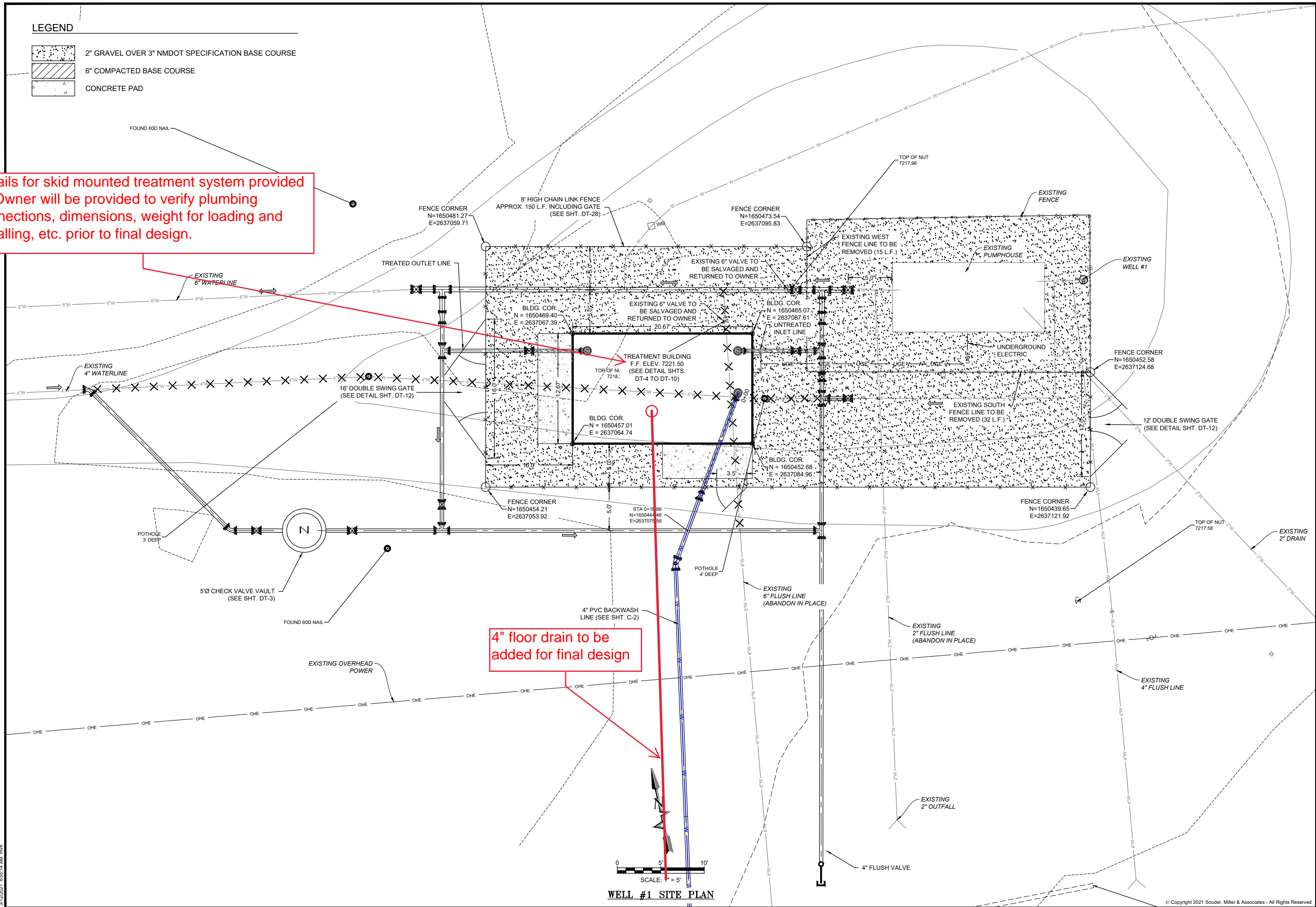
OVERALL SITE PLAN

LEGEND

-  2" GRAVEL OVER 3" NMDOT SPECIFICATION BASE COURSE
-  6" COMPACTED BASE COURSE
-  CONCRETE PAD

Details for skid mounted treatment system provided by Owner will be provided to verify plumbing connections, dimensions, weight for loading and installing, etc. prior to final design.

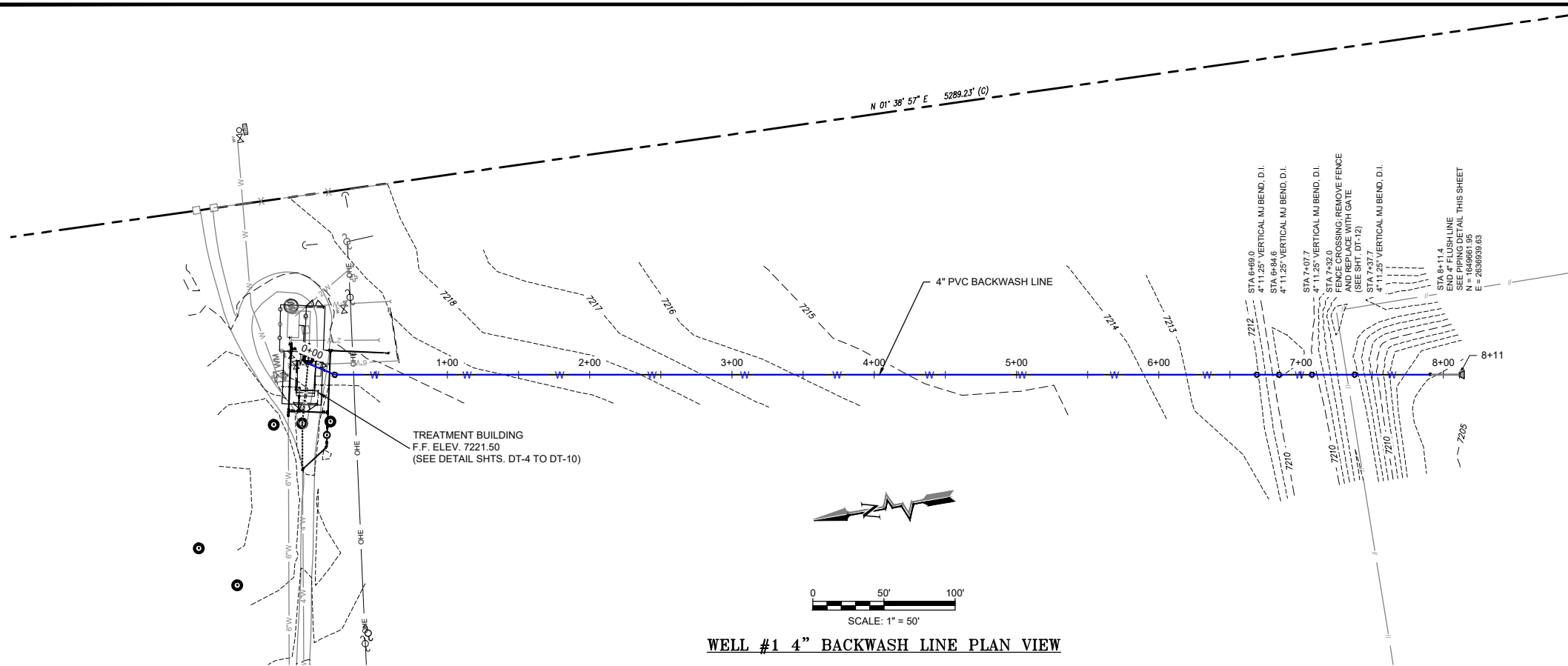
4" floor drain to be added for final design



WELL #1 SITE PLAN

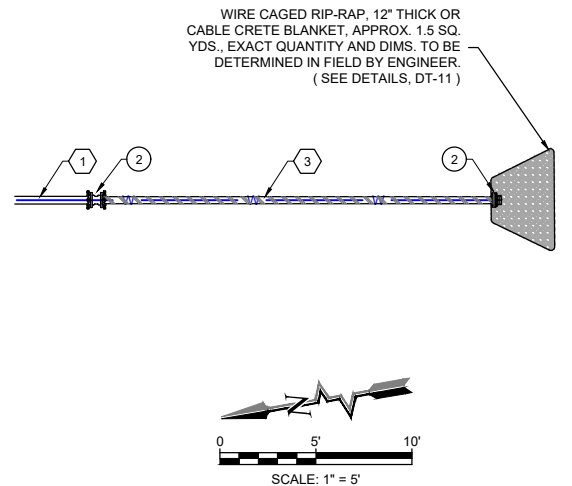
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<p>Client: The Navajo Nation</p> <p>Location: Smith Lake, NM</p>	<p>WELL #1 SITE PLAN SMITH LAKE CHAPTER WATER SYSTEM IMPROVEMENTS PROJECT MCKINLEY COUNTY, NEW MEXICO SECTION 8, T. 15 N., R. 12 W.</p>			
<p>30% REVIEW DRAFT</p> <p>PRELIMINARY NOT FOR CONSTRUCTION 3/2021</p>				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Designed: RMB</td> <td>Drawn: MvH/Aav</td> <td>Checked: JMG</td> </tr> </table> <p>THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS STAMPED, SIGNED AND DATED</p>		Designed: RMB	Drawn: MvH/Aav	Checked: JMG
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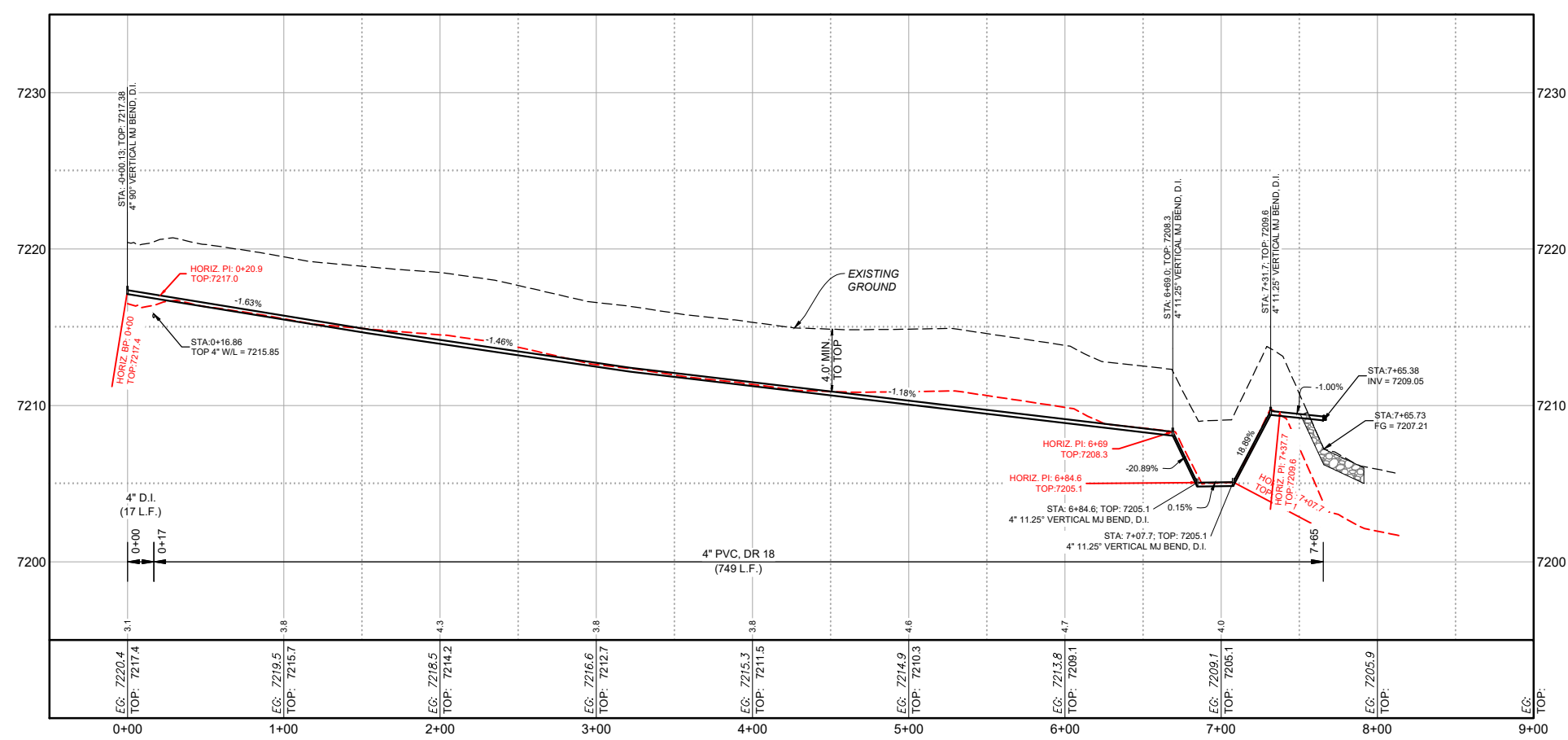


WELL #1 4" BACKWASH LINE PLAN VIEW

KEYED NOTES - WELL #1 4" BACKWASH OUTFALL	
Item No.	Description
1	4" PVC DR18 PIPE
2	4" MJ X MJ SHORT SLEEVE, D.I.
3	4" FL x PE DUCTILE IRON PIPE
4	4" CAST IRON FLAP VALVE (SEE DETAIL DT-19)



WELL #1 4" BACKWASH LINE OUTFALL DETAIL



WELL #1 4" BACKWASH LINE PROFILE VIEW

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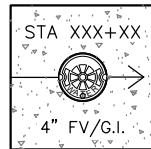
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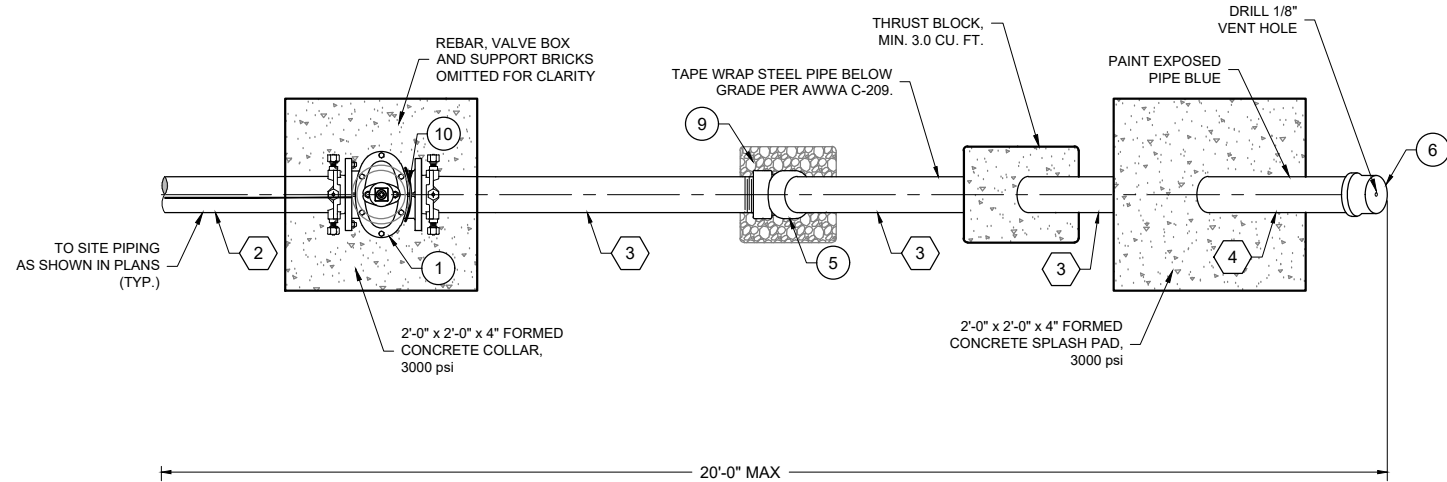
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Project No: 6922268
 Sheet: C-2

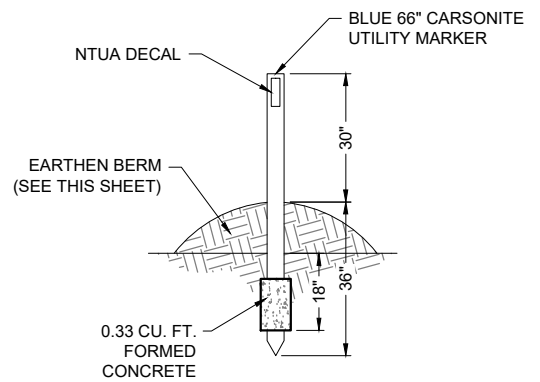
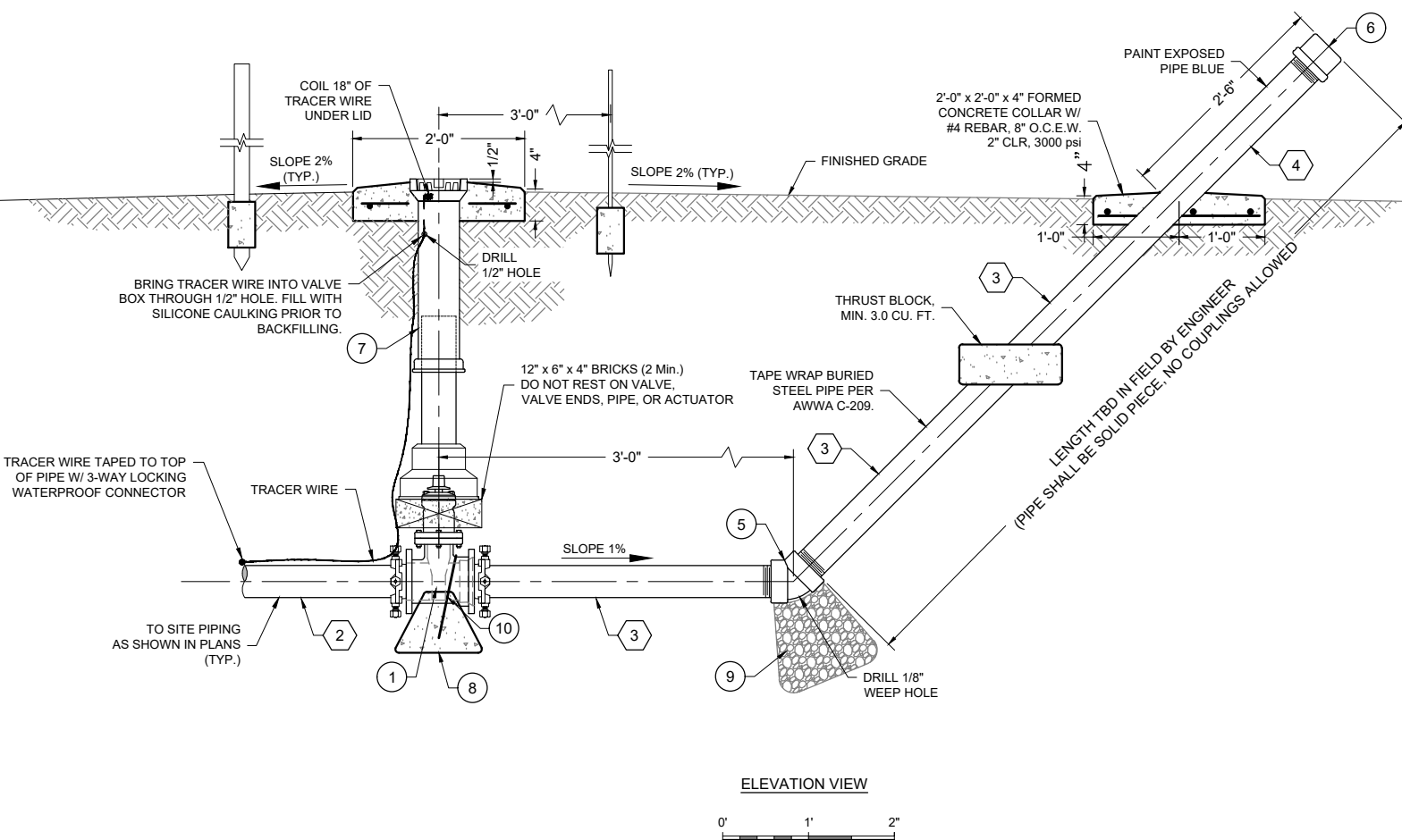
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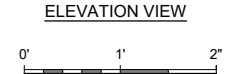


KEYED NOTES - 4" FLUSH VALVE WITH ABOVE GRADE DISCHARGE	
Item No.	DESCRIPTION
1	4" GATE VALVE, FL x MJ, 350 psi (SEE TYPICAL GATE VALVE DETAIL, SHT. DT-6)
2	4" PVC DR18 PIPE
3	4" G.I. PIPE, STANDARD WALL, NPT, TAPE COATED BELOW GRADE
4	4" G.I. PIPE, STANDARD WALL, NPT, PAINTED BLUE ABOVE GRADE
5	4" G.I. 45° ELL, NPT, 300 psi
6	4" G.I. CAP, NPT, 300 psi, W/ 1/8" VENT HOLE
7	VALVE BOX SLIP TYPE WITH LOCKING CAST IRON COVER (SEE TYPICAL GATE VALVE DETAIL, SHT. DT-6)
8	1'-0" x 1'-0" x 1'-0" CONCRETE BLOCK, 3000 psi
9	ROUNDED ROCK (1.5 CU. YD.)
10	#4 REBAR RESTRAINT



INDIVIDUAL MARKER POST
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4" FLUSH VALVE WITH ABOVE GRADE DISCHARGE DETAIL



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Client: The Navajo Nation
Location: Smith Lake, NM

FLUSH VALVE DETAILS
SMITH LAKE CHAPTER
WATER SYSTEM IMPROVEMENTS PROJECT
McKINLEY COUNTY, NEW MEXICO
SECTION 8, T. 15 N., R. 12 W.

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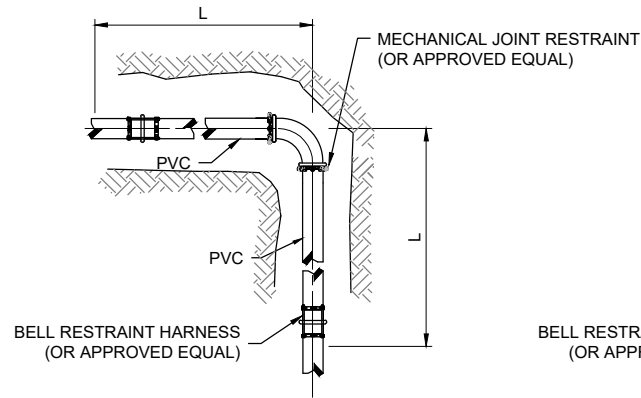
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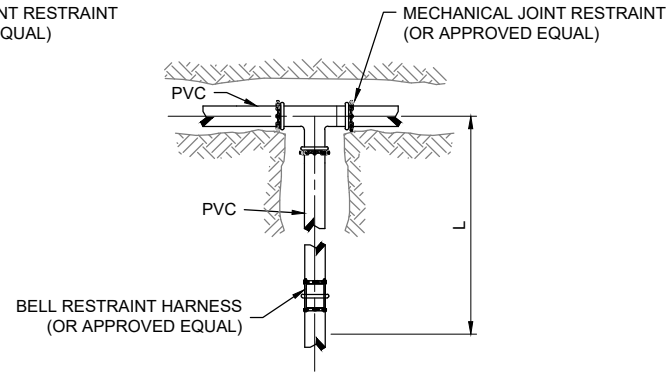
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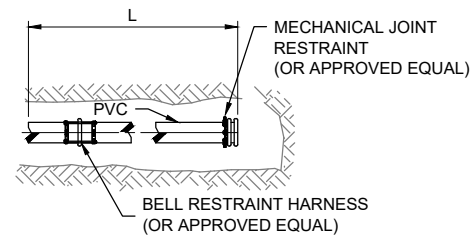
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Vert: N/A
Project No: 6922268
Sheet: **DT-2**



PLAN VIEW
JOINT RESTRAINT FOR MJ ELBOW



PLAN VIEW
JOINT RESTRAINT FOR MJ TEE



PLAN VIEW
JOINT RESTRAINT FOR DEAD END
AND/OR ISOLATION VALVE

Minimum Required Restraint Lengths (L) for Individual Fittings

Fitting	Pipe Size	Pipe DR	Test Pressure (psi)	Design Restraint Length (ft)
Isolation Valve/ Dead End	4	18	235	65
From End of Casing	4	18	235	30
Horizontal Bend or Sweep				
90°	4	18	235	30
45°	4	18	235	20
22.5°	4	18	235	20
11.25°	4	18	235	20
Vertical Bend or Sweep¹				
22.5°, upper bend	4	18	235	20
22.5°, lower bend	4	18	235	20
11.25°, upper bend	4	18	235	20
11.25°, lower bend	4	18	235	20

NOTE:
1. INSTALL PER MANUFACTURER'S SPECIFICATIONS
2. SUBMIT JOINT RESTRAINT TABLE BASED ON MANUFACTURER'S SPECIFICATIONS. (APPROXIMATE LENGTHS PROVIDED BELOW)

WATERLINE JOINT RESTRAINTS AT VERTICAL / HORIZONTAL BENDS AND GATE VALVES

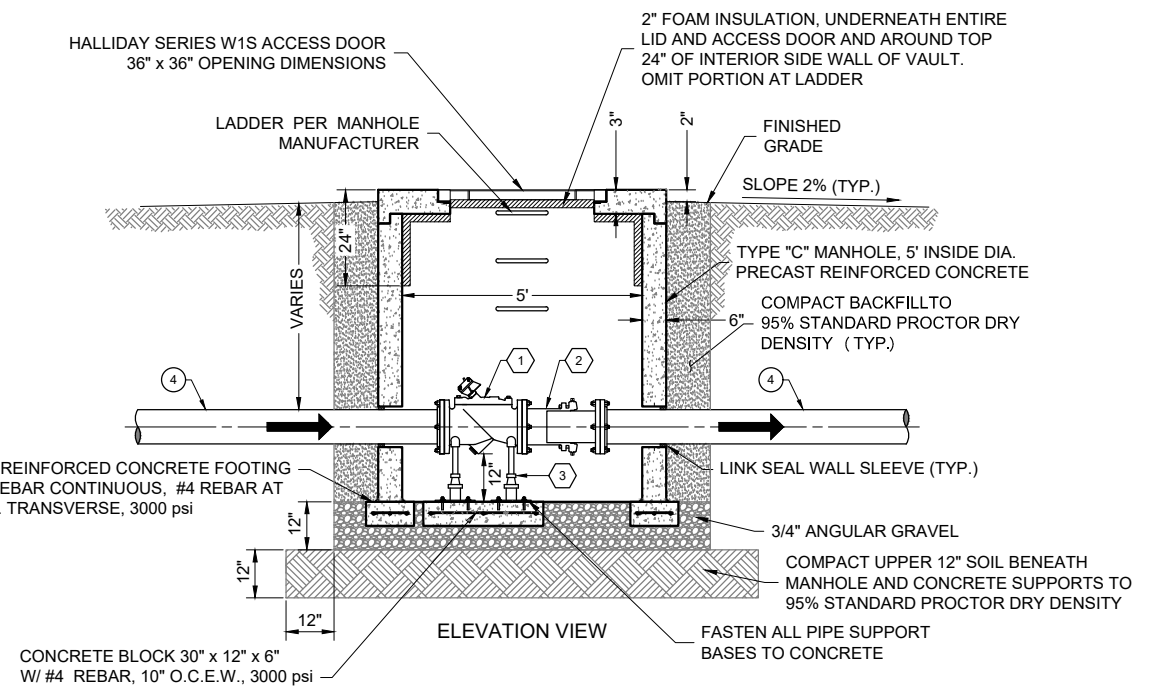
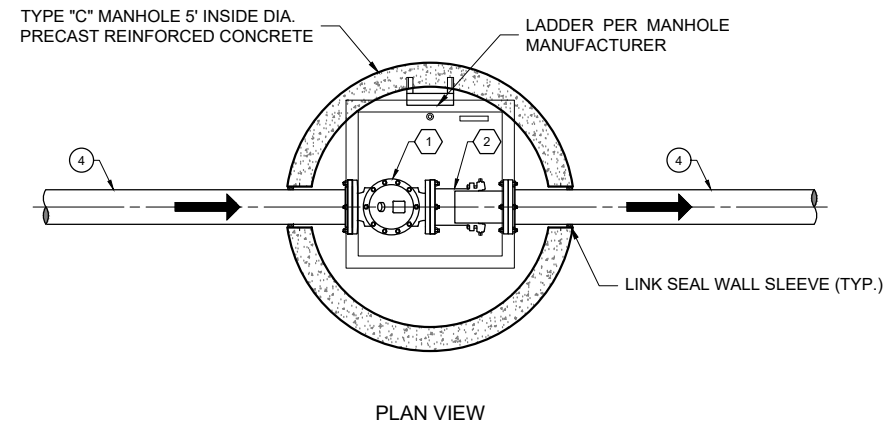
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KEYED NOTES - 4" SWING CHECK VALVE / VAULT

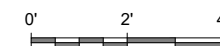
Item No.	Description
1	4" CHECK VALVE, SURGE BUSTER SERIES 7200, 250 psi, OAE
2	4" DISMANTLING JOINT, FBE COATED W/ 304 SS BOLTS, SMITH BLAIR MODEL 973, 150 psi, OAE
3	ADJUSTABLE PIPE SUPPORT SIZE W/ U-SHAPED CRADLE, 3" BASE
4	4" DUCTILE IRON, FL X PE

NOTES:

- ALL MATERIALS SHALL BE RATED TO AT LEAST 150 psi, UNLESS OTHERWISE NOTED.
- ALL METALLIC PIPE, VALVES AND FITTINGS SHALL BE FBE-COATED, INTERIOR AND EXTERIOR. ALL METALLIC PIPE IN CONTACT WITH SOIL SHALL ALSO BE COLD APPLIED TAPE-COATED, PER SPECIFICATIONS.
- FLANGES SHALL BE ANSI CLASS 150 (STEEL) OR ANSI CLASS 125 (IRON).
- ALL STEEL PIPE AND FITTINGS SHALL BE STANDARD WALL.



4" CHECK VALVE IN VAULT DETAIL



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Client: The Navajo Nation
 Location: Smith Lake, NM
RESTRAINTS AND CHECK VALVE DETAILS
 SMITH LAKE CHAPTER
WATER SYSTEM IMPROVEMENTS PROJECT
 MCKINLEY COUNTY, NEW MEXICO
 SECTION 8, T. 15 N., R. 12 W.

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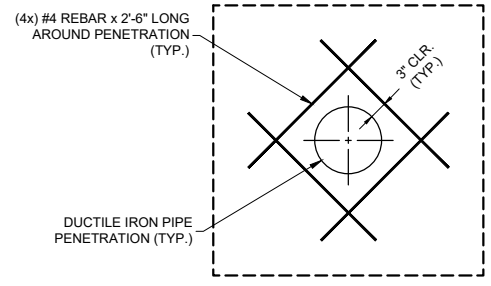
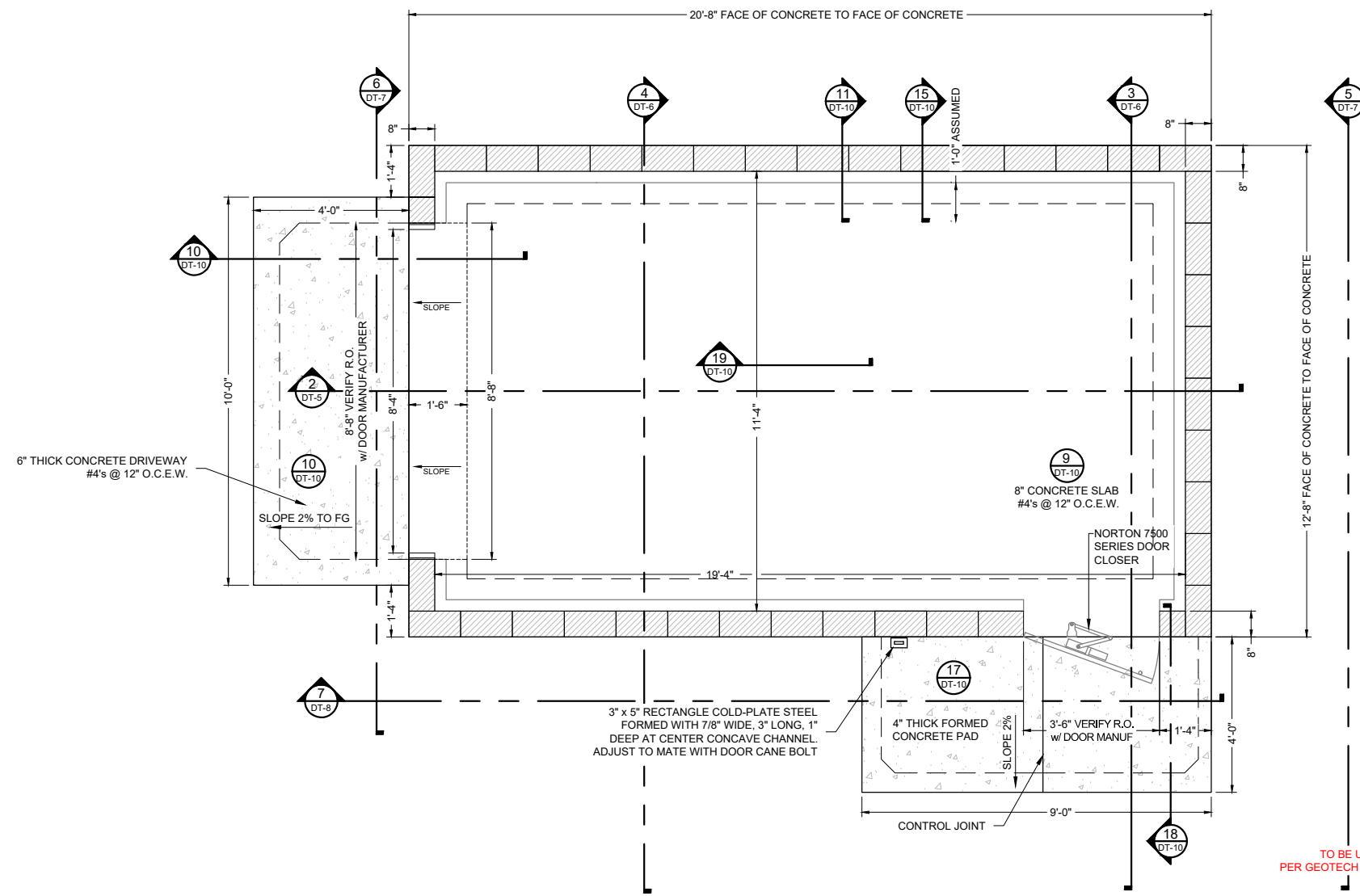
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Project No: 6922268

Sheet: DT-3

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PIPE PENETRATION REBAR FOR THICKENED SLAB DETAIL
NTS

NOTES

- ALL DIMENSIONS RELATED TO TANK SIZES, LEG SPACING, ETC. ARE APPROXIMATE. CONTRACTOR RESPONSIBLE TO VERIFY ACTUAL TANK DIMENSIONS AND ALIGN ACTUAL LOCATION OF TANK LEGS AND ALL PIPING INLETS, OUTLETS AND DRAINS IN THE FIELD PRIOR TO CONSTRUCTION.
- VERIFY DIMENSIONS OF BURIED DUCTILE IRON PIPING AND MJ X MJ ADAPTOR PRIOR TO FINALIZING LOCATIONS OF FLOOR PENETRATIONS.
- CONTROL JOINTS @ 10'-0" O.C. MAXIMUM.
- BUILDING FOUNDATION SHALL BEAR ON A MINIMUM OF 2 FEET OF ENGINEERED FILL. SLABS SHALL BEAR ON A MINIMUM OF 3 FEET OF ENGINEERED FILL. ENGINEERED FILL SHALL EXTEND MINIMUM OF 2 FEET LATERALLY BEYOND FOUNDATION. INCREASE DEPTH OF OVER-EXCAVATION, IF NECESSARY, TO ENSURE ENGINEERED FILL BEARS UNIFORMLY ON CUT; DO NOT ALLOW TRANSITION FROM CUT TO FILL TO PASS UNDERNEATH OR WITHIN 5 HORIZONTAL FEET OF BUILDING OR SLAB.
- REFER TO GEOTECH REPORT BY X8E VINYARD PROJECT #14-1-087 DATED DECEMBER 30, 2014 FOR SUBSURFACE INFORMATION, OVER EXCAVATION REQUIREMENTS, SUBGRADE PREPARATION, AND STRUCTURAL FILL & COMPACTION.
- ALL FLOOR DRAINS MUST HAVE REMOVABLE GRATING.
- VERIFY LOCATION OF DRAINS w/ PIPING.
- ALL FLOOR DRAINS SHALL BE CENTERED UNDER PIPE OUTLETS. FIELD VERIFY LOCATIONS.

TO BE UPDATED PER GEOTECH REPORT

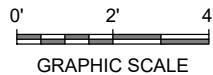
DESIGN LOADS

DESIGN LIVE LOADS ARE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2006 EDITION WITH THE FOLLOWING MINIMUM CRITERIA:
 ROOF SNOW LOAD = 10 PSF
 ROOF DEAD LOAD = 16 PSF
 FLOOR LIVE LOAD = 40 PSF
 WIND
 V-3S.....115 MPH - EXP C
 SEISMIC
 SEISMIC DESIGN CATEGORY.....D
 IMPORTANCE FACTOR.....1
 SPECTRAL RESPONSE COEFFICIENTS
 S-DS.....0.267
 S-D1.....0.128
 SITE CLASS.....D

TO BE UPDATED PER GEOTECH REPORT

FOUNDATION DESIGN TO BE UPDATED PENDING GEOTECH REPORT

1 FOUNDATION PLAN
1/4"=1'-0"



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TREATMENT BUILDING FOUNDATION PLAN
SMITH LAKE CHAPTER
WATER SYSTEM IMPROVEMENTS PROJECT
 MCKINLEY COUNTY, NEW MEXICO
 SECTION 8, T. 15 N., R. 12 W.

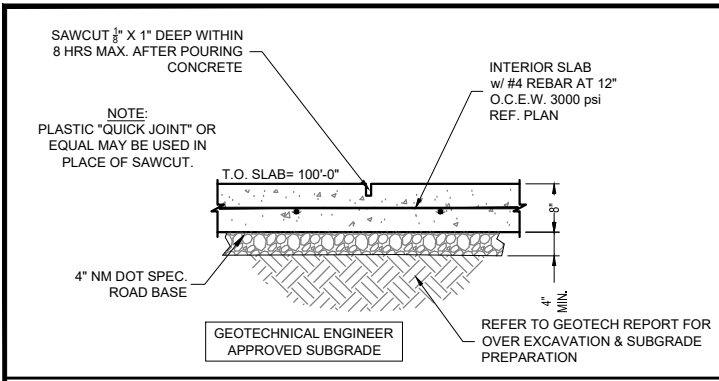
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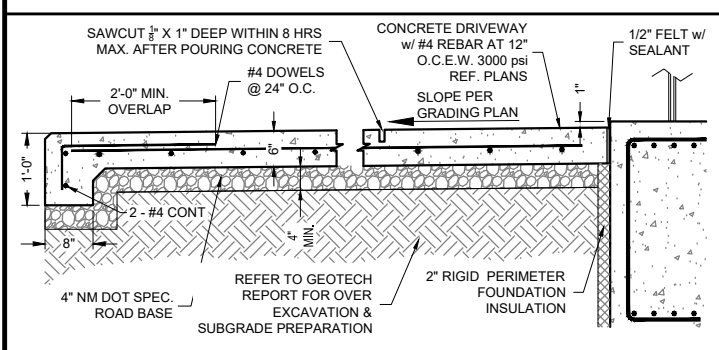
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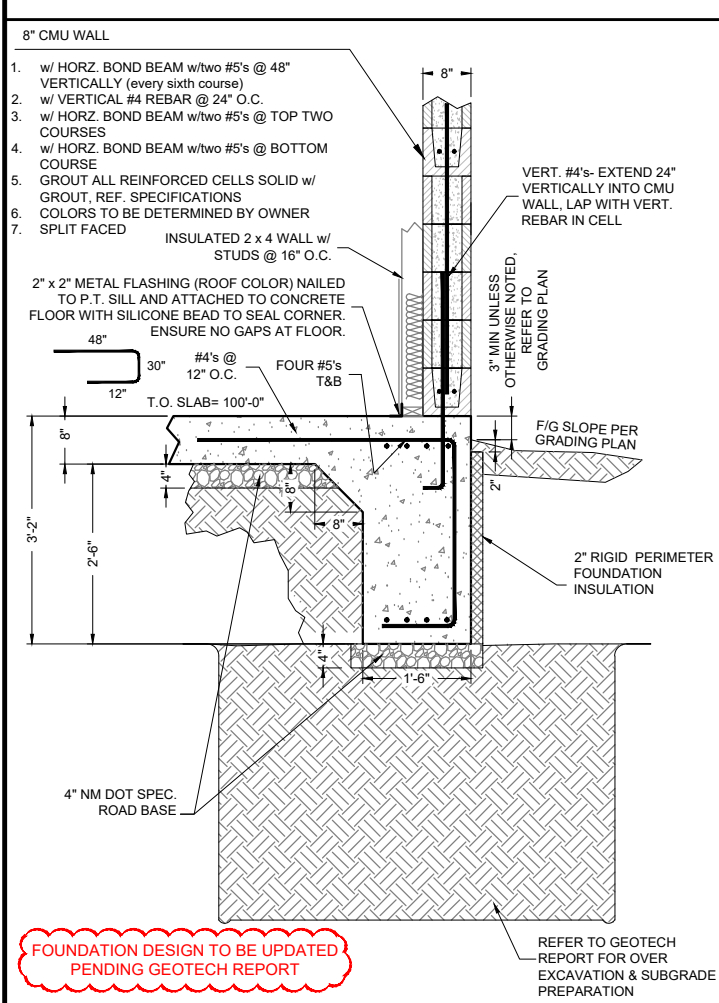
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 Project No: 6922268
 Sheet: DT-4



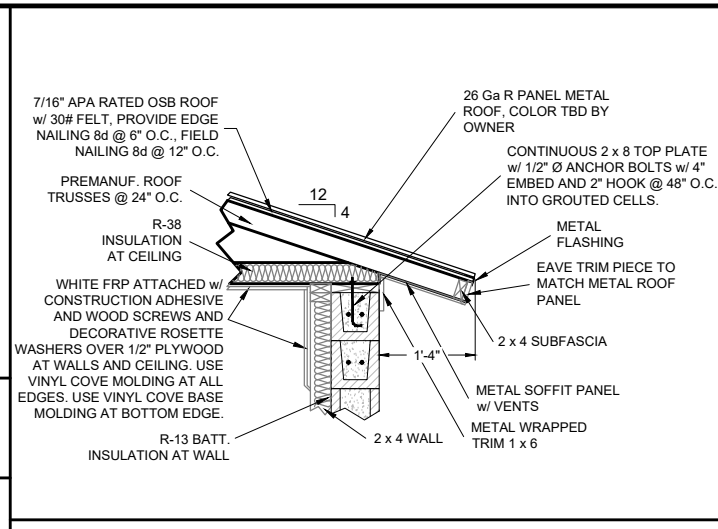
9 8" INTERIOR SLAB SECTION WITH CONTROL JOINT
3/8"=1'-0"



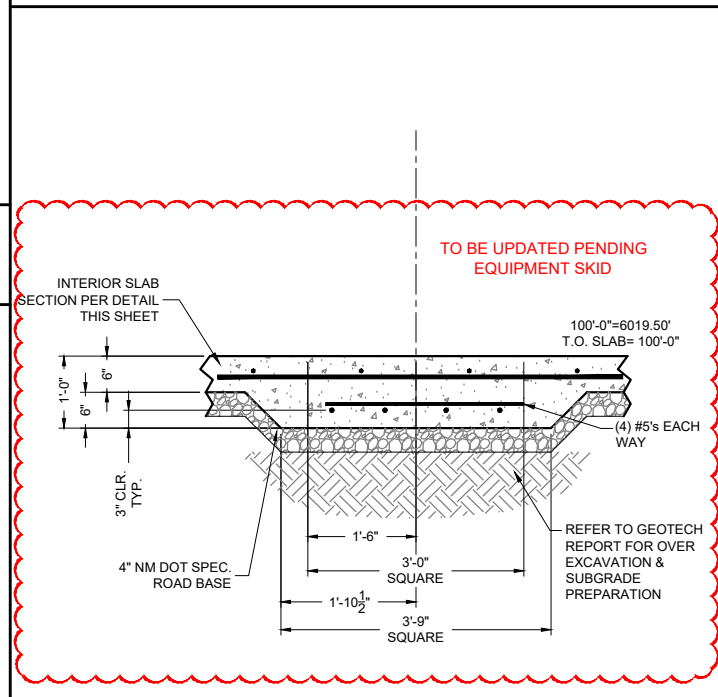
10 6" DRIVEWAY SECTION WITH CONTROL JOINT
3/8"=1'-0"



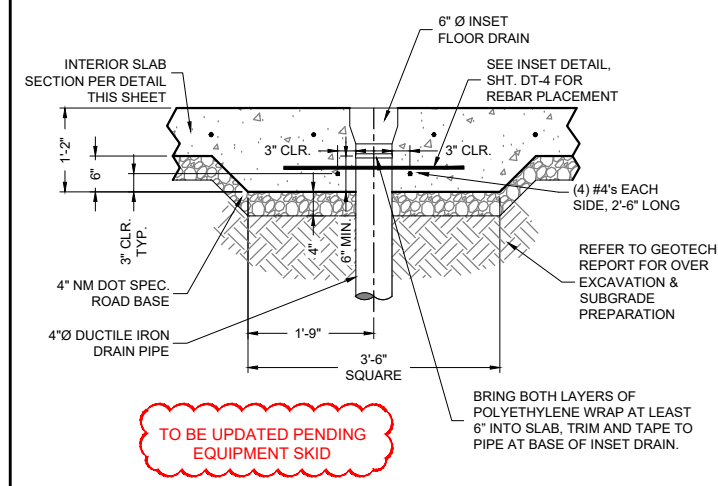
11 FOUNDATION SECTION
3/8"=1'-0"



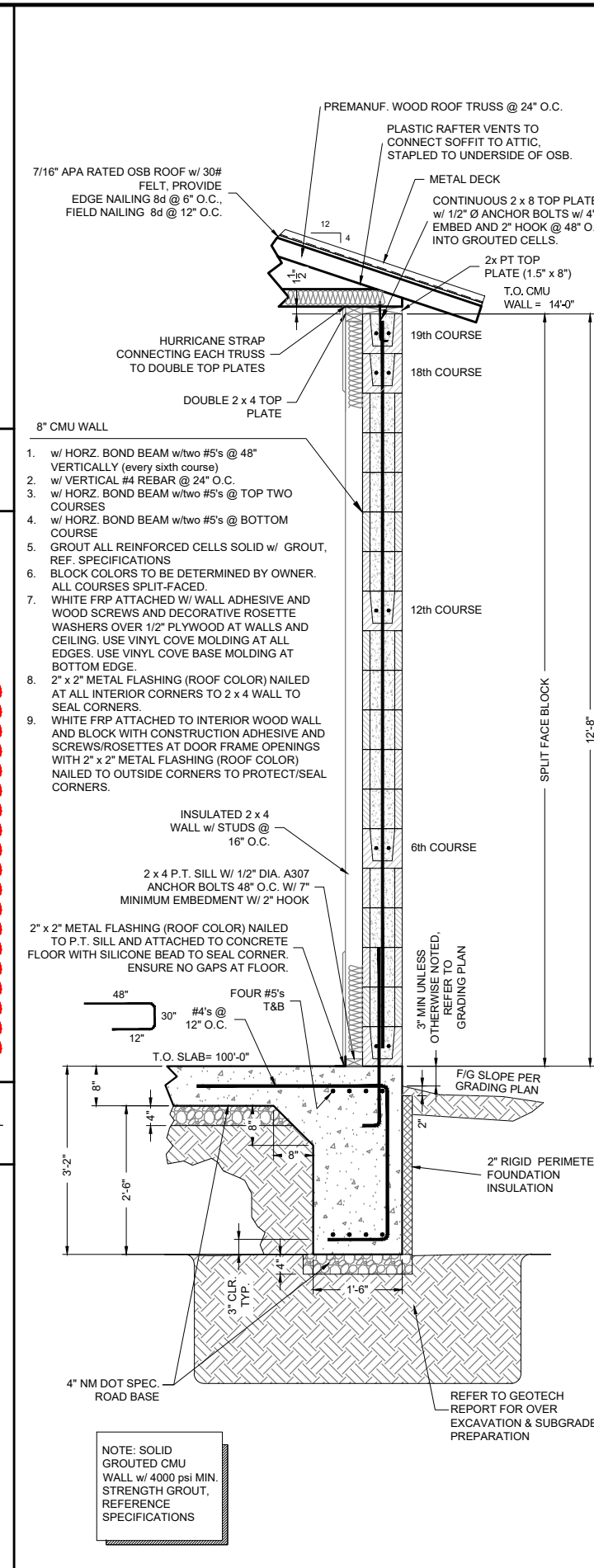
12 FRAMING DETAIL
3/8"=1'-0"



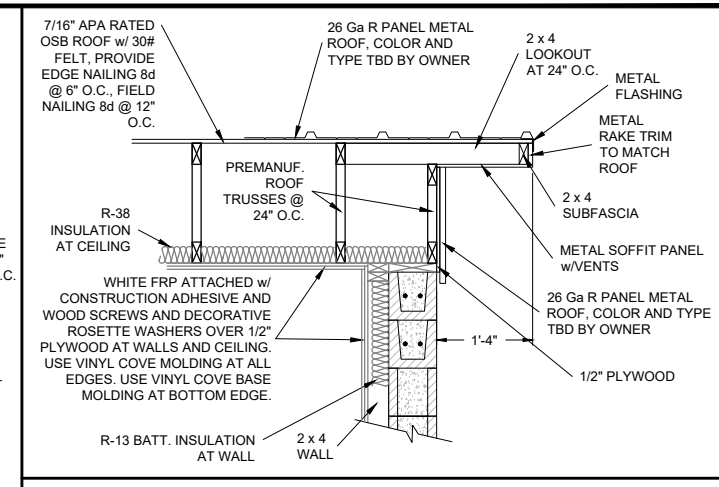
13 TANK PEDESTAL & THICKENED SLAB DETAIL
3/8"=1'-0"



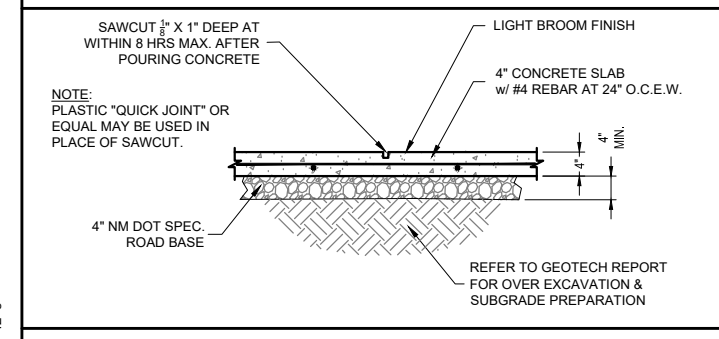
14 DRAIN PIPE PENETRATION AND THICKENED SLAB DETAIL
3/8"=1'-0"



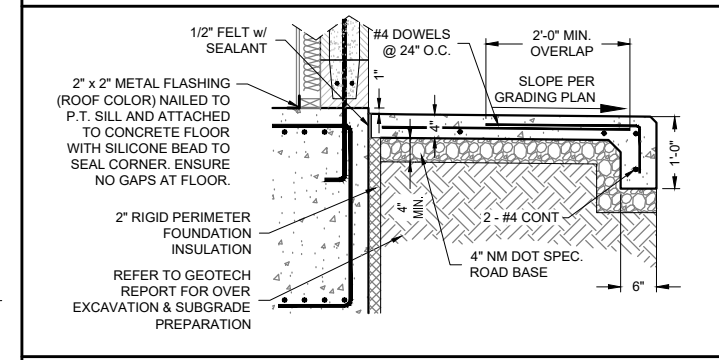
15 WALL SECTION
3/8"=1'-0"



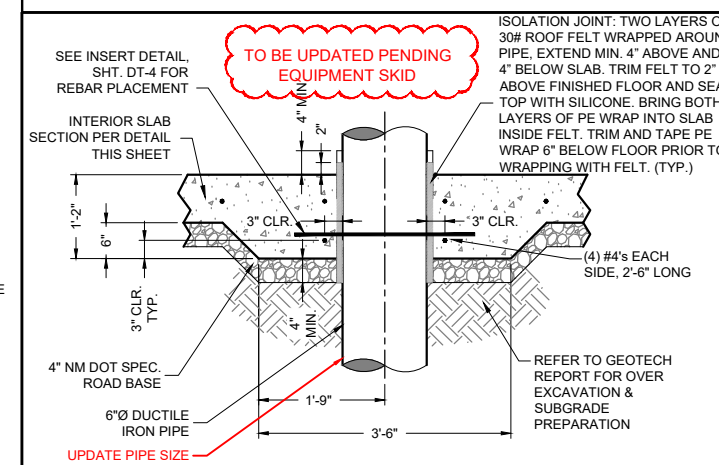
16 FRAMING DETAIL
3/8"=1'-0"



17 PORCH DETAIL
3/8"=1'-0"



18 PORCH SECTION
3/8"=1'-0"



19 PIPE PENETRATION AND THICKENED SLAB DETAIL
3/8"=1'-0"

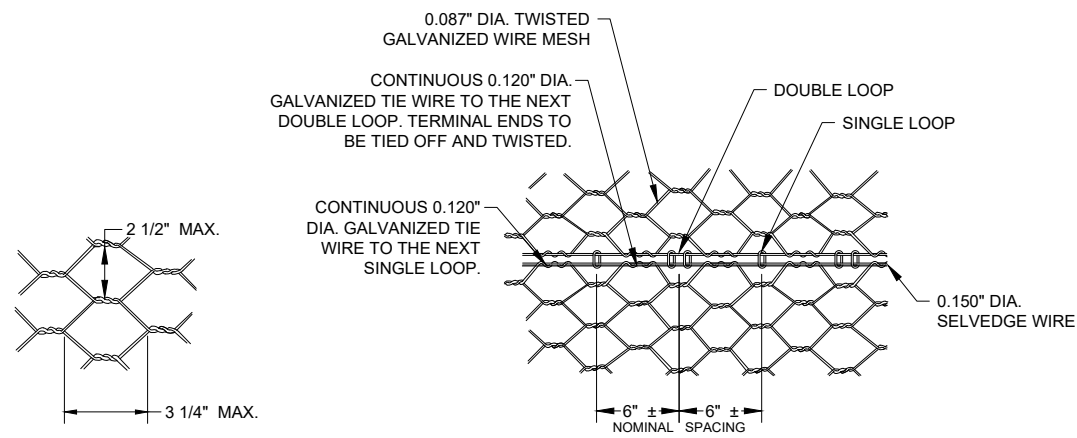
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SMITH LAKE CHAPTER	
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SECTION 8, T. 15 N., R. 12 W.	
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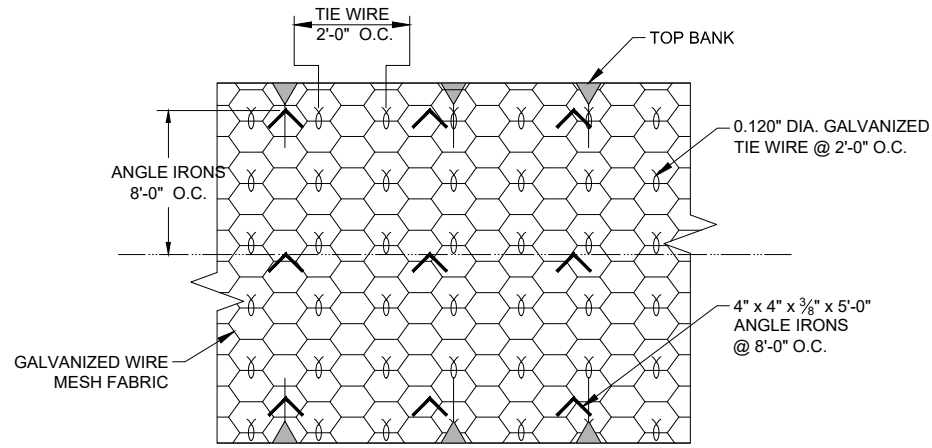
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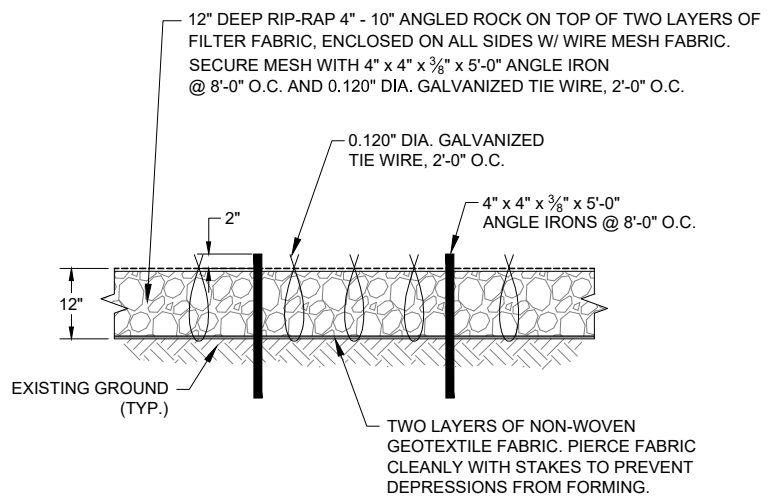


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STANDARD JOINT CONNECTION DETAIL
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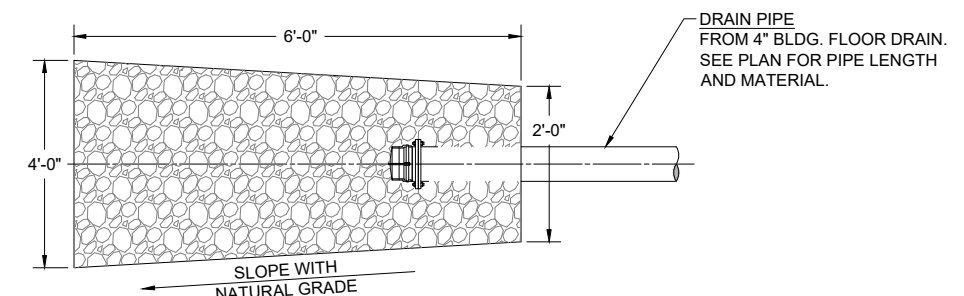


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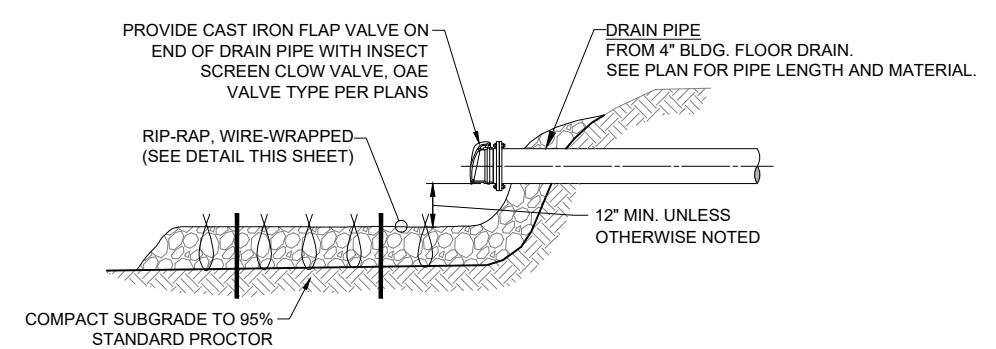


CROSS SECTION

TYPICAL 12\"/>



PLAN VIEW



ELEVATION VIEW

TYPICAL SPLASH PAD DETAIL
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 Location: Smith Lake, NM
EROSION CONTROL DETAILS
SMITH LAKE CHAPTER
WATER SYSTEM IMPROVEMENTS PROJECT
 MCKINLEY COUNTY, NEW MEXICO
 SECTION 8, T. 15 N., R. 12 W.

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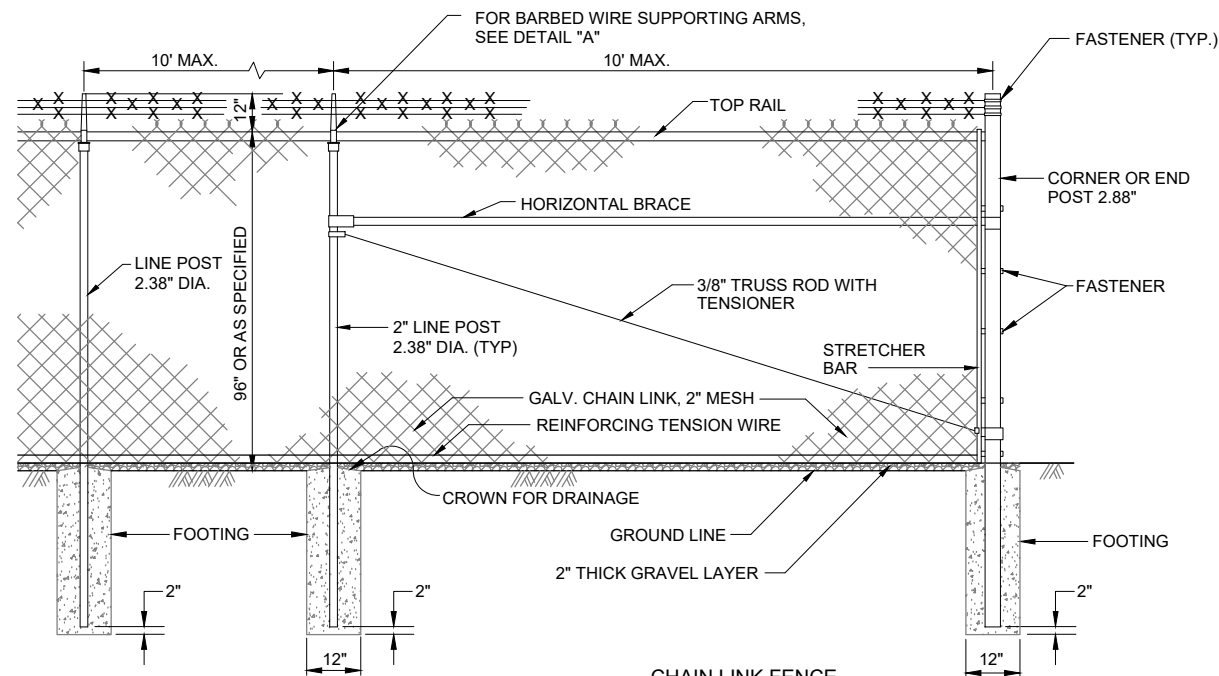
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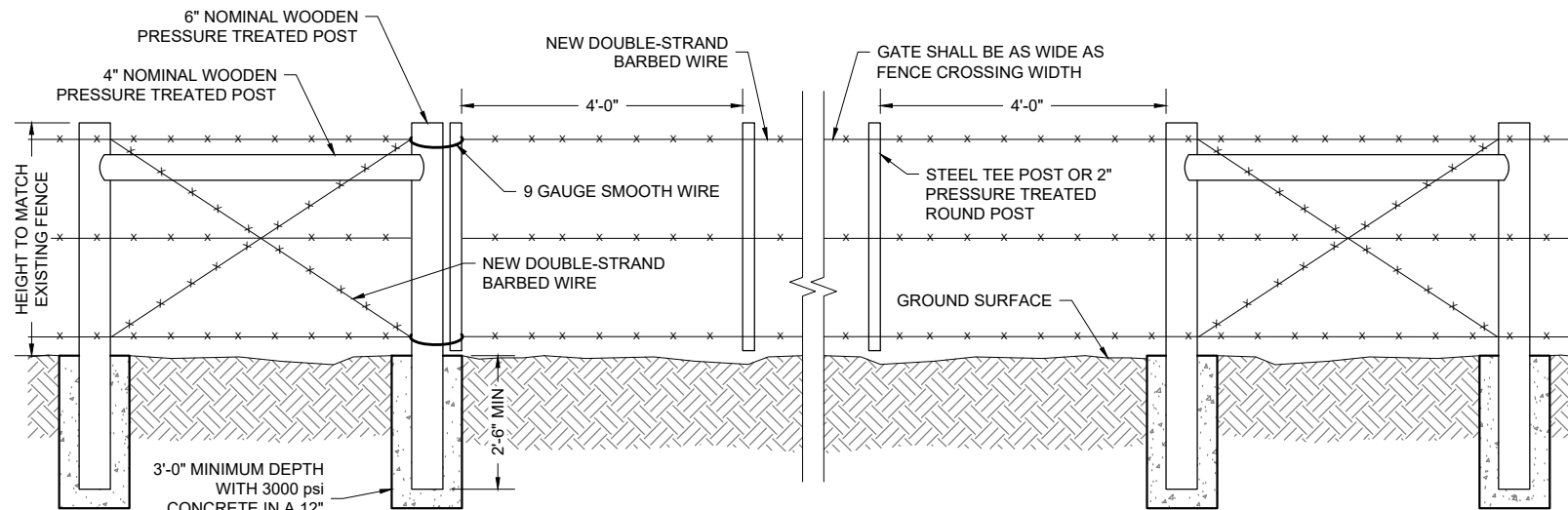
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Project No: 6922268
 Sheet: **DT-11**

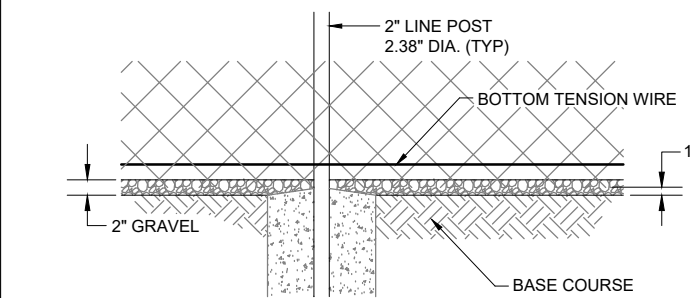


CHAIN LINK FENCE
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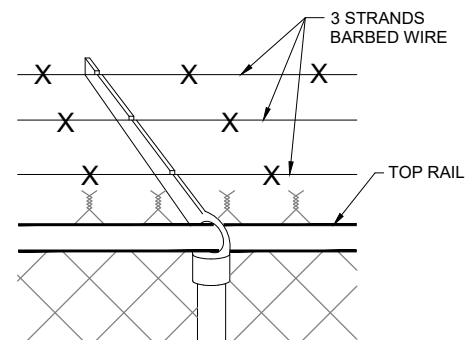
- NOTES:**
1. AT BROW CROSSING, EMBED ON 6" CENTERS, 4-11/2" x 24" GALVANIZED RODS WITH 2" HOOKED END INTO BROW DITCH CONCRETE. EXPOSED END OF ROD SHALL BE WOVEN INTO FENCE FABRIC.
 2. IMBED BOTTOM OF FABRIC MIN. 1" INTO THE 2" THICK GRAVEL LAYER.



"RANCHER STYLE" GATE WITH H-BRACE PULL ASSEMBLY AT FENCE CROSSING
 NOT TO SCALE



BASE COURSE AND GRAVEL DETAIL
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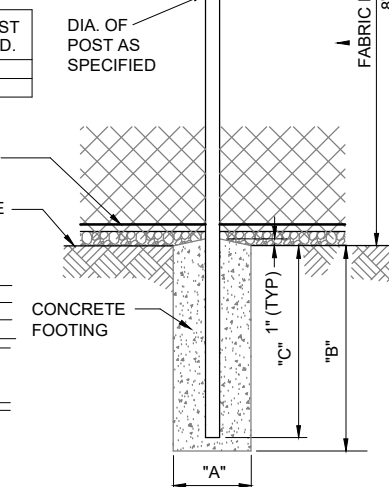
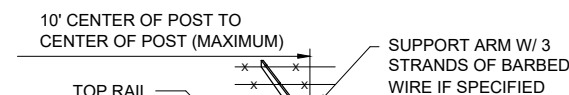
DETAIL "A" SUPPORTING ARM & BARBED WIRE
 NOT TO SCALE

GATE POST

GATE LEAF WIDTH	GATE POST (OD)	FABRIC HEIGHT	"A" DIAM	"B" DEPTH	"C" POST EMBED.
10'	4"	8'	16"	56"	54"

LINE AND TERMINAL POSTS

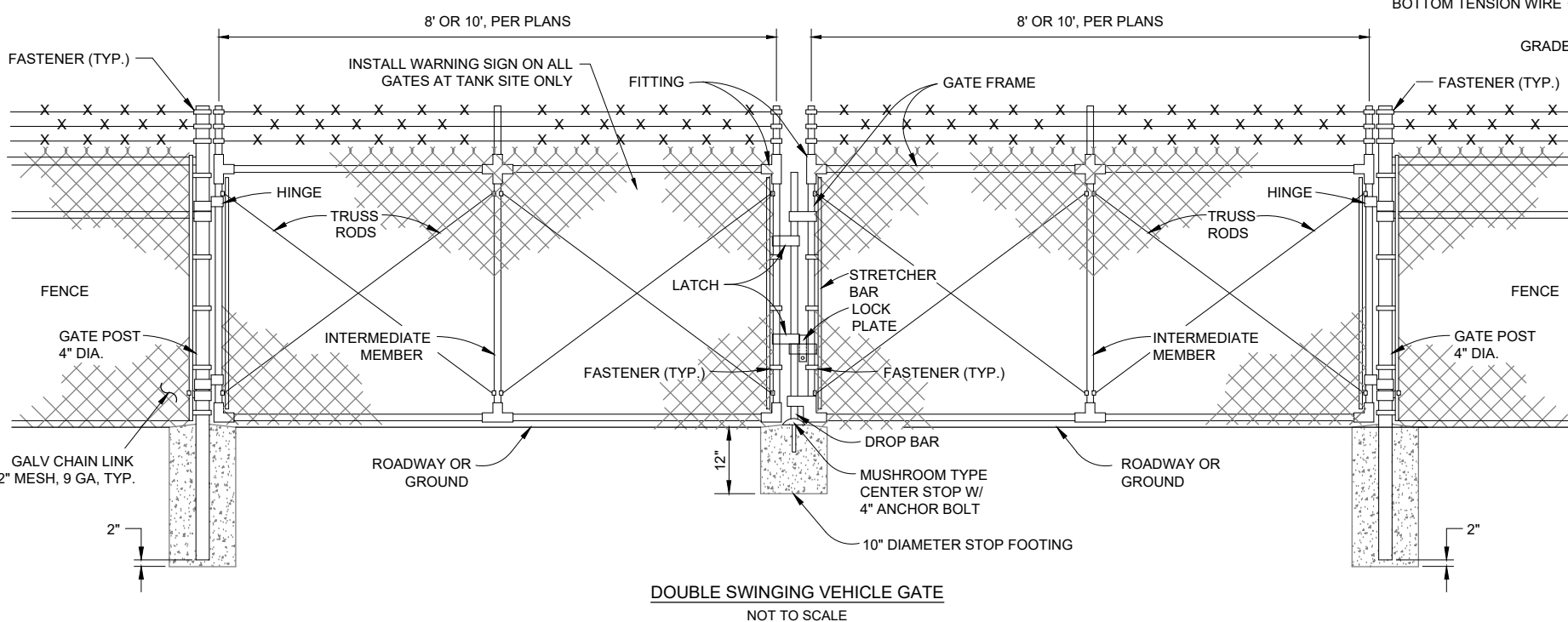
FABRIC HEIGHT	TYPE POST	"A" DIAM	"B" DEPTH	"C" POST EMBED.
8'-0"	LINE	12"	38"	36"
	TERMINAL	12"	38"	36"



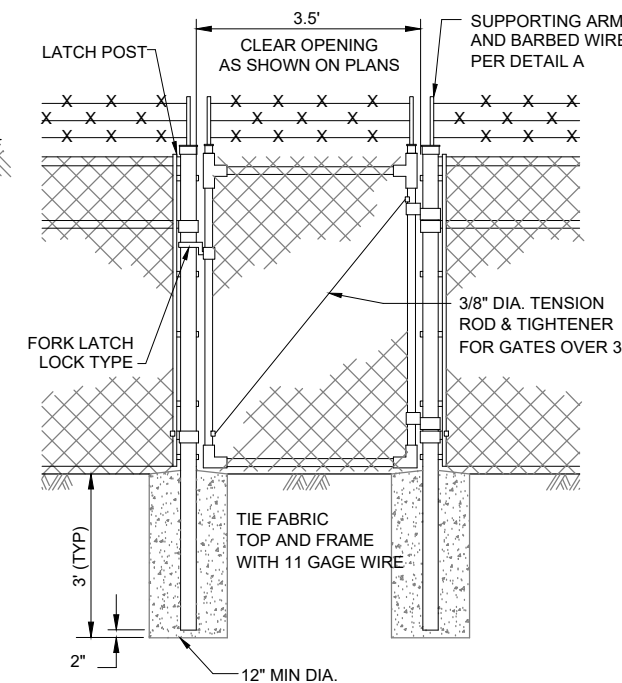
CHAIN LINK FENCE FOUNDATION
 NOT TO SCALE

NOTES:

1. COMMON LOCKS SHALL BE PROVIDED FOR ALL FENCE GATES
2. TERMINAL POSTS INCLUDE END, CORNER, AND PULL POSTS



DOUBLE SWINGING VEHICLE GATE
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PEDESTRIAN GATE
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Revision Date Description

By: CHK

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Client: The Navajo Nation
 Location: Smith Lake, NM

FENCE DETAILS
SMITH LAKE CHAPTER
WATER SYSTEM IMPROVEMENTS PROJECT
 MCKINLEY COUNTY, NEW MEXICO
 SECTION 8, T. 15 N., R. 12 W.

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 Drawn: MvH/AaV
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 Sheet: **DT-12**

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