NAVAJO GALLUP WATER SUPPLY PROJECT

BEACON BISTI N9

REACH 10.1

NGWSP SAN JUAN LATERAL BBN9 TURNOUT TO BBN9 PUMPING PLANT 12

August 2025

PROJECT DESCRIPTION

REACH 10.1 IS COMPRISED OF THE FOLLOWING FEATURES:
REACH 10.1 TIE IN TO SAN JUAN LATERAL REACH 9 TURNOUT FACILITY AND APPURTENANCES;
APPROXIMATELY 56,950 FEET OF 16-INCH PVC DR18 TRANSMISSION PIPELINE AND APPURTENANCES;
TWO (2) 75,000 GALLON REGULATING WATER STORAGE TANKS AND APPURTENANCES;
TRANSMISSION PIPELINE SURGE TANK INCLUDING BUILDING AND APPURTENANCES.

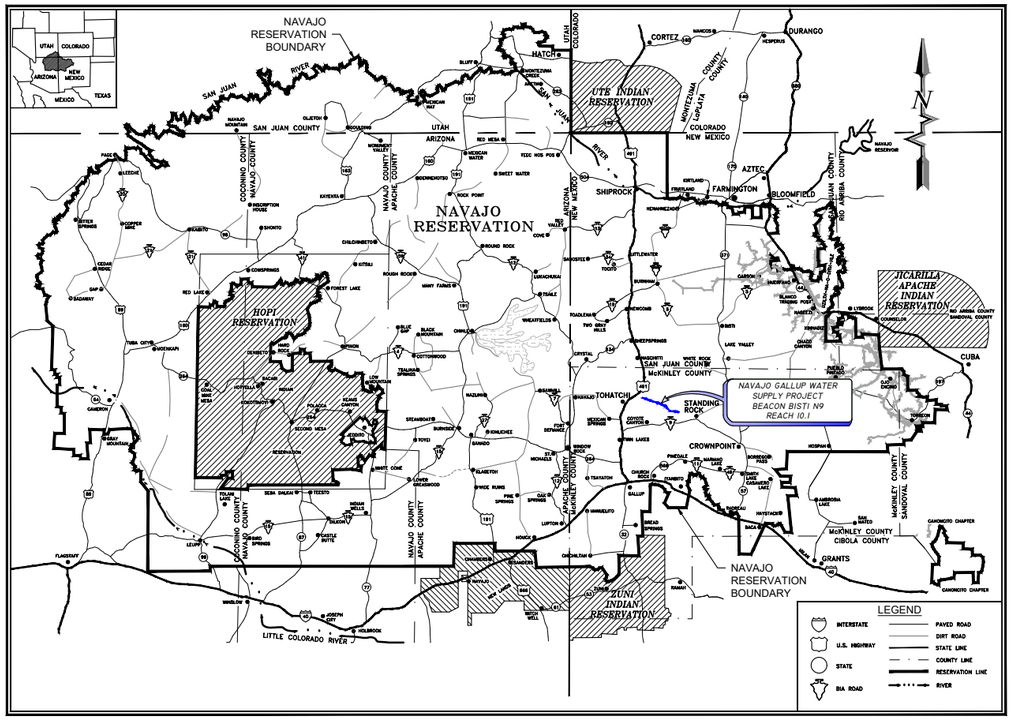
PROJECT SUMMARY:
THE NAVAJO GALLUP WATER SUPPLY PROJECT (NGWSP) WILL PROVIDE TREATED SURFACE WATER FROM THE SAN JUAN RIVER TO NAVAJO CHAPTERS AND THE CITY OF GALLUP IN NEW MEXICO VIA THE SAN JUAN LATERAL (SJL). THE NGWSP BEACON BISTI / N9 (BBN9) LATERAL WILL TIE INTO THE SJL AND SEND WATER EASTWARD TO SUPPLY NAVAJO CHAPTERS ALONG NAVAJO SERVICE ROUTE N9 AND HIGHWAY 371.

NGWSP BBN9 REACH 10.1 IS THE FIRST SEGMENT OF THE MAIN BBN9 LATERAL AND INCLUDES THE BBN9'S CONNECTION TO THE SJL. IT'S COMPRISED OF APPROXIMATELY 10.8 MILES OF 16" PVC WATERLINE, ONE SURGE TANK IN A BUILDING, A CONTROL VALVE VAULT, TWO (2) STORAGE TANKS, AND ASSOCIATED APPURTENANCES. REACH 10.1 BEGINS AT SJL REACH 9 TURNOUT FACILITY AND ENDS AT THE FIRST PUMPING PLANT SITE OF THE BBN9 PROJECT, PUMPING PLANT 12 (PP12).

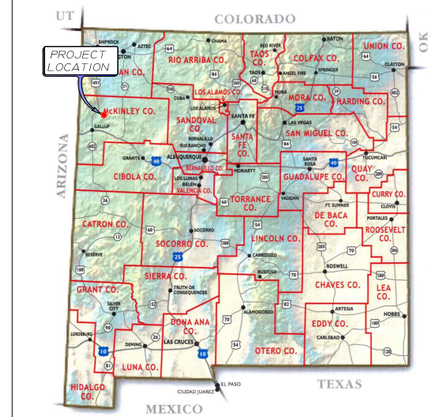
REACH 10.1 WILL BEGIN WITH A CAP 5-FEET INSIDE OF RECLAMATION'S PERMANENT RIGHT OF WAY (ROW) FOR NGWSP REACH 9. THE BUREAU OF RECLAMATION WILL DESIGN AND CONSTRUCT A TURNOUT FACILITY BUILDING AND CONNECT TO THE CAPPED PIPELINE. PUMPING PLANTS 04 (PP04) AND 07 (PP07) ARE PART OF THE SJL, AND THE HYDRAULICS OF THE SJL DIRECTLY IMPACT REACH 10.1. ACTUAL FLOW RATES IN REACH 10.1 COULD EXCEED THE REACH 10.1 DESIGN FLOW RATE OF 1,571 GPM, BUT A FLOW CONTROL VALVE LOCATED IN THE TURNOUT FACILITY BUILDING WILL LIMIT THE FLOW RATE TO 1,571 GPM. THERE WILL BE REDUNDANT FLOW CONTROL FUNCTIONALITY IN THE ALTITUDE VALVE AT THE PP12 SITE.

THE REACH 10.1 SURGE TANK SITE INCLUDES ONE SURGE TANK IN A BUILDING. THE SURGE TANK ASSISTS IN MITIGATING TRANSIENT PRESSURES FROM OPERATION OF THE TRANSMISSION SYSTEM.

THE PP12 SITE WILL BE CONSTRUCTED IN PHASES AND INCLUDES A COMBINATION ALTITUDE AND FLOW CONTROL VALVE IN A VAULT (TO BE CONSTRUCTED AS PART OF REACH 10.1), TWO (2) PP12 REGULATING TANKS (TO BE CONSTRUCTED AS PART OF REACH 10.1), A BOOSTER STATION (TO BE CONSTRUCTED AS PART OF REACH 10.2) AND SURGE TANK BUILDING (TO BE CONSTRUCTED AS PART OF REACH 10.2). WHEN THE WATER SURFACE OF THE PP12 REGULATING TANKS DROP TO 80% CAPACITY, THE COMBINATION ALTITUDE AND FLOW CONTROL VALVE WILL OPEN TO FILL THE TANK AT THE DESIGN FLOWRATE. WHEN THE WATER SURFACE OF THE PP12 REGULATING TANKS REACHES 100% FULL, THE COMBINATION ALTITUDE AND FLOW CONTROL VALVE WILL CLOSE TO KEEP THE TANKS FROM OVERFLOWING. THE TANK LEVELS ARE MONITORED BY A PRESSURE TRANSDUCER.



NAVAJO RESERVATION
PROJECT SITE MAP



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Revision	Date	Description	By	Chkd

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Location: Coyote Canyon, NM

COVER SHEET AND DRAWING INDEX
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

JOHN TADANO JR. NEW MEXICO 21073 LICENSED PROFESSIONAL ENGINEER 12-29-25

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS STAMPED, SIGNED AND DATED

811 Know what's BELOW. CALL before you dig.

Date: September 2025
Scale: Horiz: N/A
Vert: N/A
Project No: 6922268
Sheet: G-1

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P:\6-Beacon Bisti N9 Water Line (6922268)\CAD\Civil\Reach 10.1 Plan Set\Construction Plans\BBN9 Reach 10.1 Cover-Gen Notes.dwg
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GENERAL NOTES

1. 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.

2. 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.

3. 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.

4. CONTRACTOR SHALL REPAIR ANY EXISTING STRUCTURE OR UTILITY PIPELINE DAMAGED DURING THE EXECUTION OF THE PROJECT, AT NO ADDITIONAL COSTS TO THE OWNER.

5. 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.

6. 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.

7. 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.

8. 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.

9. THE CONTRACTOR SHALL CONFINE HIS OPERATIONS TO THE CONSTRUCTION LIMITS OF THE PROJECT AND SHALL IN NO WAY ENCROACH 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.

10. 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.

11. 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.

12. 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.

13. 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.

14. THE PLAN AND PROFILE SHEETS SHOW HORIZONTAL ANGLES WITH DI ELL(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.

15. ALL PRESSURE RATINGS GIVEN HEREIN FOR PIPES, VALVES, FITTINGS AND OTHER COMPONENTS REFER TO COLD WATER WORKING PRESSURE RATING, UNLESS OTHERWISE NOTED.

16. 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.

17. 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.

18. ALL SCALES ARE BASED ON 11" x 17" SHEET SIZE.

CONTACT INFORMATION:

NAVAJO NATION WATER MANAGEMENT BRANCH (OWNER):

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SOUDER, MILLER & ASSOCIATES (ENGINEER):

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(800) 528-5011

UTILITY CONTACT INFORMATION:

HIGH VOLTAGE POWER:

TUCSON ELECTRIC POWER: 520-730-1974

ABBREVIATIONS

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

LEGEND

EXISTING

- WV — ISOLATION VALVE
- W — WATER VAULT
- WM — 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
- 6490 — CONTOUR MAJOR
- 6492 — CONTOUR MINOR
- SECTION CORNER
- CULTURALLY SENSITIVE AREA DO NOT ENCROACH
- Navajo Tribal Trust — CURRENT LAND STATUS (OWNER)
- SECTION LINE
- TOWNSHIP / RANGE LINE
- X — FENCE
- OHE — OVERHEAD POWER LINE
- UGE — UNDERGROUND POWER LINE
- OHT — OVERHEAD TELEPHONE LINE
- UGT — UNDERGROUND TELEPHONE LINE
- W — WATER LINE
- G — GAS LINE

LEGEND

PROPOSED

- W — WATER LINE
- OHE — POWER LINE
- X — FENCE
- PIPE CASING
- GATE VALVE
- BUTTERFLY VALVE
- VACUUM BREAKER / AIR RELEASE VALVE ASSEMBLY
- FLUSH VALVE
- POWER POLE
- GUY ANCHOR
- DOUBLE SWING GATE
- 6965 — CONTOUR MAJOR
- 6964 — CONTOUR MINOR
- 40' WATERLINE EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- ACCESS DRIVE / ROAD
- RIP RAP OR CABLE CRETE
- GRAVEL OVER BASE COURSE
- SWALE
- DIRECTION OF FLOW
- MATCH LINE

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Revision	Date	Description	By	Chkd

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

GENERAL NOTES AND LEGEND
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TORY L. TADANO — NEW MEXICO — 21073 — 12-19-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Date: September 2025
Scale: Horiz: N/A Vert: N/A
Project No: 6922268
Sheet: G-2

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McKINLEY COUNTY

NASCHITTI

MEXICAN SPRINGS

TOHATCHI

STANDING ROCK

BECENTI

COYOTE CANYON

NAHODISHGISH

CROWNPOINT

TWIN LAKES

ROCK SPRINGS

CHURCH ROCK

PINEDALE

MARIANO LAKE

LITTLEWATER

IYANBITO

SMITH LAKE

CASAMERO LAKE

GALLUP

To Naschitti

US 491

491

Route 9

9

264

371

REACH 10.1 TURNOUT

BBN9 REACH 10.1
16" PVC PIPE,
1,571 GPM (3.5 CFS),
10.8 MI. (56,950 FT.)

PUMPING PLANT 12
REGULATING TANKS (2X)
BASE ELEV: 6068.00 FT.
OVERFLOW ELEV: 6099.17 FT.
CAP: 75,000 GAL (2X)

BBN9 REACH 10.2

REACH 10.2.1 TURNOUT

REACH 10.1
SURGE TANK
1,057 GALLONS

EXISTING NTUA STANDING ROCK TANK 1

PUMPING PLANT 13

BBN9 REACH 10.2.1

EXISTING NTUA STANDING ROCK TANKS 2 & 3

BBN9 REACH 10.3

EXISTING NTUA NAHODISHGISH TANK (1X)

BBN9 REACH 10.3.1

EXISTING NTUA CROWNPOINT TANK

PUMPING PLANT 14

SAN JUAN LATERAL REACH 9
42" AND 48" STEEL PIPE

SAN JUAN LATERAL REACH 10
42" STEEL PIPE

PUMPING PLANT 7
ELEV: 6225 FT.

REACH 10.1.1 TURN OUT

BBN9 REACH 10.1.1

REACH 10.1.1
CHLORINATOR

EXISTING NTUA COYOTE CANYON TANKS (2X)

SAN JUAN LATERAL REACH 11
42" STEEL PIPE

SAN JUAN LATERAL REACH 12A
42" STEEL PIPE

SAN JUAN LATERAL REACH 12.1
30" STEEL PIPE

TOHLAKAI PUMPING PLANT
TDH: 306 FT.
FLOW: 36.5 CFS
ELEV: 6540 FT.

SAN JUAN LATERAL REACH 12B
30" STEEL PIPE

GALLUP REGIONAL SYSTEM

LEGEND

- SJL REACH 9
- SJL REACH 10
- BBN9 REACH 10.1
- BBN9 REACH 10.1.1
- BBN9 REACH 10.2
- BBN9 REACH 10.2.1
- BBN9 REACH 10.3
- BBN9 REACH 10.3.1
- SJL REACH 11
- SJL REACH 12A
- SJL REACH 12B
- SJL REACH 12.1
- GALLUP REGIONAL SYSTEM
- NAVAJO CHAPTER BOUNDARY
- STORAGE TANK
- SURGE TANK
- PUMP
- CHLORINATOR

N

0' 8000' 16000'

GRAPHIC SCALE

BEACON BISTI N9 PROJECT OVERVIEW

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Client: The Navajo Nation

Location: Coyote Canyon, NM

BEACON BISTI N9 PROJECT OVERVIEW
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TROY T. ADAMS — NEW MEXICO — 21073 — 12-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Project No:	6922268
Sheet:	G-2

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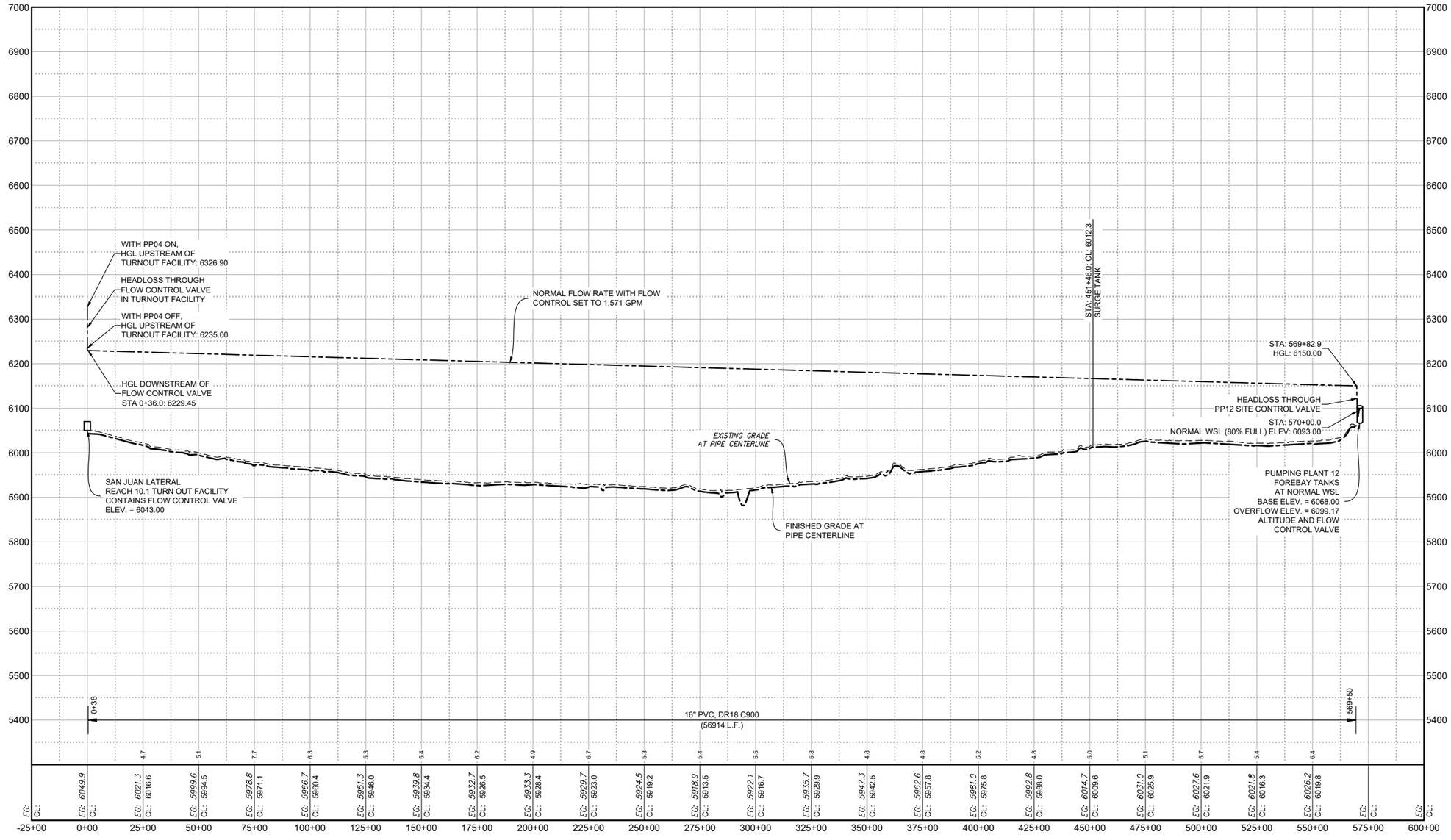

0' 2500' 5000'

GRAPHIC SCALE

BBN9 REACH 10.1 HYDRAULIC PROFILE

16" WATERLINE

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Client: The Navajo Nation

Location: Coyote Canyon, NM

HYDRAULIC PROFILE
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TROY T. ADAMS
NEW MEXICO
21073
9-29-25
LICENSED PROFESSIONAL ENGINEER

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EAP	MvH/AaV	TTT

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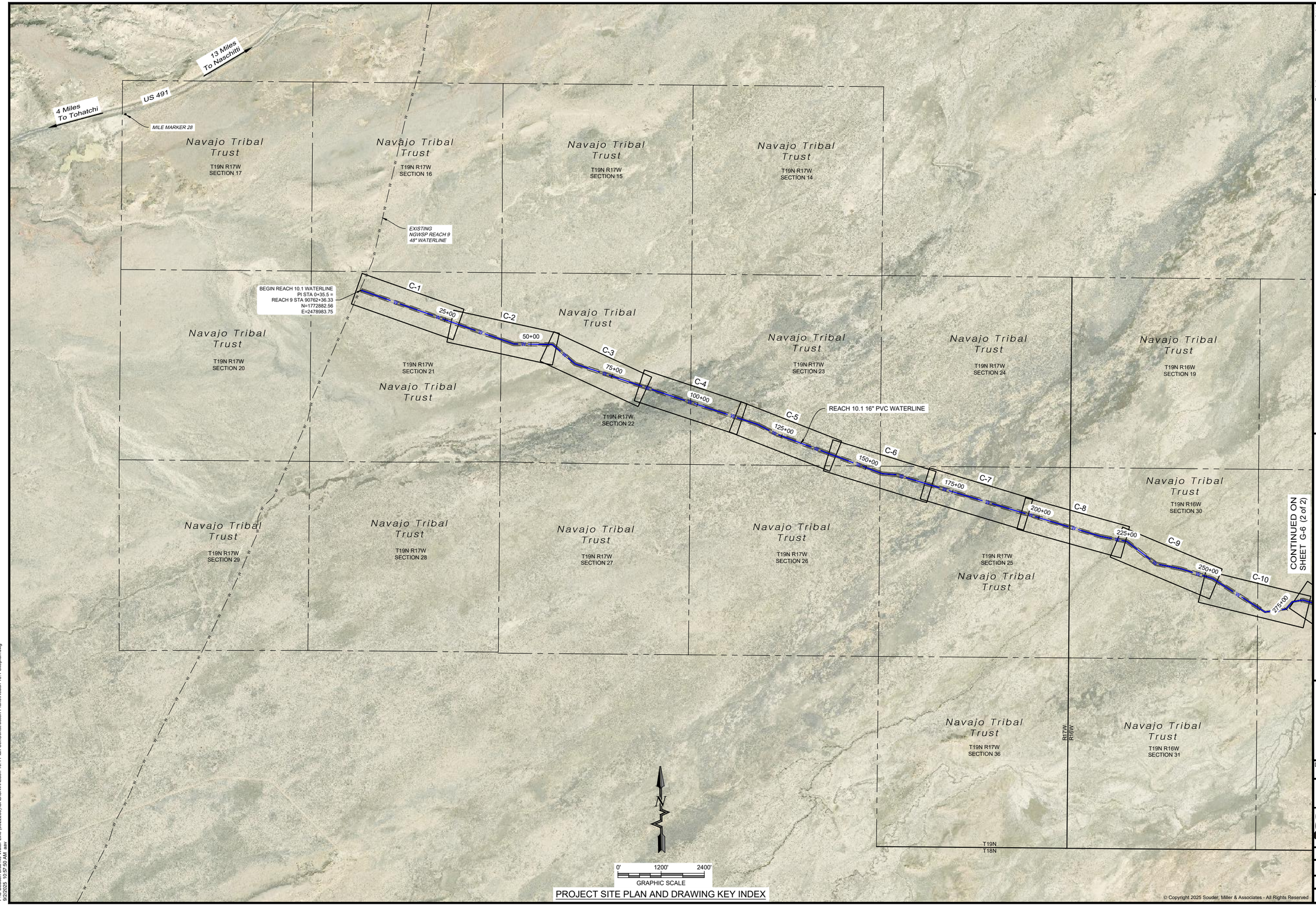
Scale: Horiz: 1" = 5000'
Vert: 1" = 200'

Project No: 6922268

Sheet: G-4



PROJECT SITE PLAN AND DRAWING KEY INDEX

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Location: Coyote Canyon, NM
Client: The Navajo Nation

SITE PLAN AND DRAWING KEY INDEX (1 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TROY T. ADAMS
NEW MEXICO
21073
9-29-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
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Sheet: G-5

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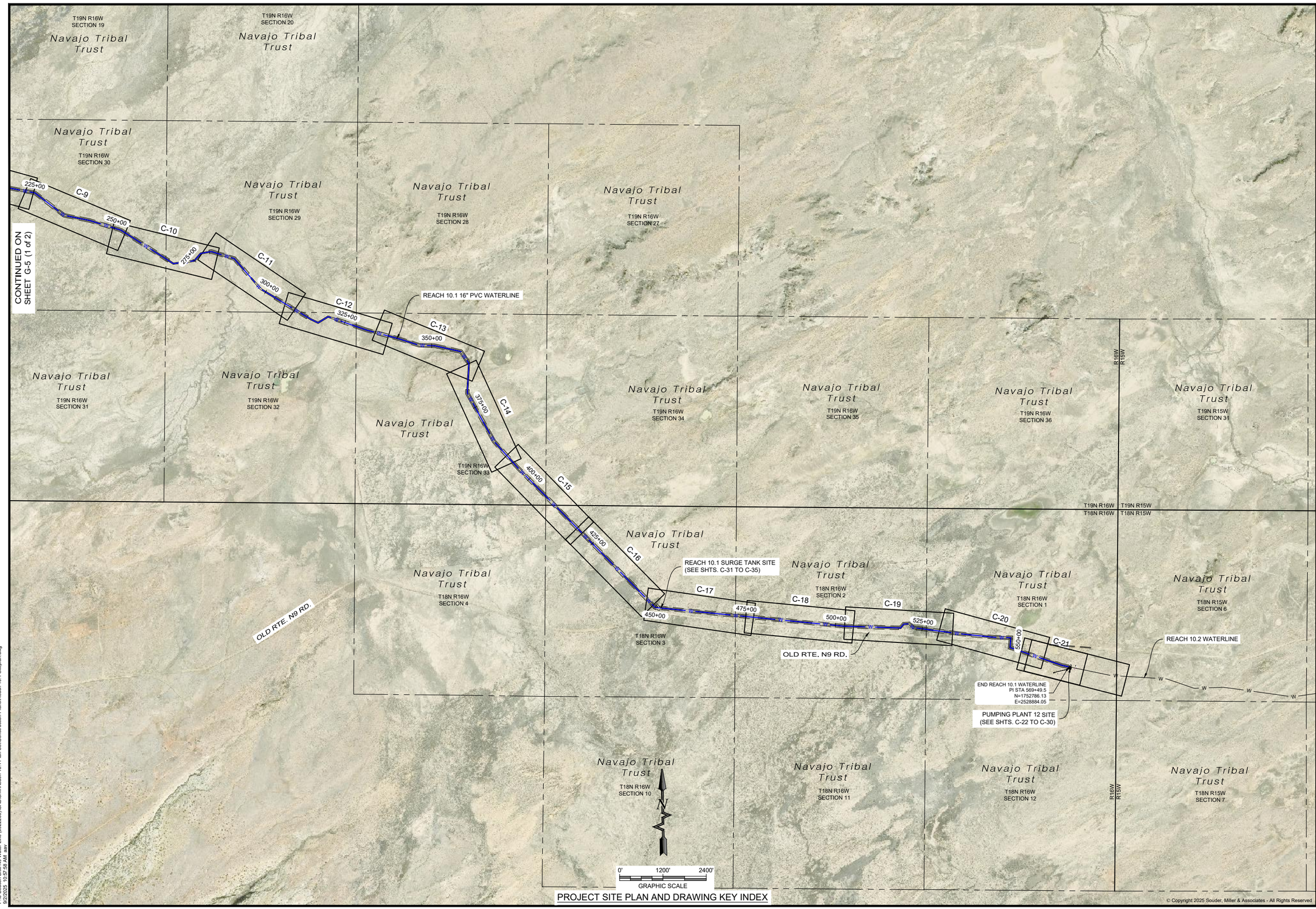

PROJECT SITE PLAN AND DRAWING KEY INDEX

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

SITE PLAN AND DRAWING KEY INDEX (2 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TADAYON NEW MEXICO 21073 LICENSED PROFESSIONAL ENGINEER 12-29-25

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EAP	MvH/AaV	TTT

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Scale: Horiz: 1" = 2400'
Vert: N/A
Project No: 6922268
Sheet: G-6

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Point Table				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
700	1754368.86	2517398.12	6014.14	SET #4 REBAR WITH CAP STAMPED SMA CONTROL
701	1753488.62	2527484.96	6026.19	SET #4 REBAR WITH CAP STAMPED SMA CONTROL
702	1763961.39	2503336.76	5922.80	SET #4 REBAR WITH CAP STAMPED SMA CONTROL
704	1753017.60	2532878.31	6082.72	SET #4 REBAR WITH CAP STAMPED SMA CONTROL
711	1769007.43	2489785.95	5955.15	SET #4 REBAR WITH CAP STAMPED SMA CONTROL
712	1768997.67	2489758.27	5955.94	SET 60 D NAIL
713	1763950.69	2503304.46	5922.89	SET 60 D NAIL
901	1773431.09	2479389.34	6048.17	SET #4 REBAR WITH CAP STAMPED SMA CONTROL

13 Miles To Naschitti

4 Miles To Tohatchi

US 491

T19N R17W SECTION 17

T19N R17W SECTION 16

T19N R17W SECTION 15

T19N R17W SECTION 14

T19N R17W SECTION 20

T19N R17W SECTION 21

T19N R17W SECTION 22

T19N R17W SECTION 23

T19N R17W SECTION 24

T19N R16W SECTION 19

T19N R17W SECTION 29

T19N R17W SECTION 28

T19N R17W SECTION 27

T19N R17W SECTION 26

T19N R17W SECTION 25

T19N R16W SECTION 30

T19N R17W SECTION 36

T19N R16W SECTION 31

T19N T18N

R17W R16W

901
SET #4 REBAR WITH
CAP STAMPED SMA CONTROL
N=1773431.09
E=2479389.34
EL=6048.17

EXISTING REACH 9 WATERLINE

25+00 50+00 75+00 100+00 125+00 150+00 175+00 200+00 225+00 250+00 275+00

712
SET 60 D NAIL
N=1768997.67
E=2489758.27
EL=5955.94

REACH 10.1 WATERLINE

702
SET #4 REBAR WITH
CAP STAMPED SMA CONTROL
N=1763961.39
E=2503336.76
EL=5922.80

711
SET #4 REBAR WITH
CAP STAMPED SMA CONTROL
N=1769007.43
E=2489785.95
EL=5955.15

713
SET 60 D NAIL
N=1763950.69
E=2503304.46
EL=5922.89

CONTINUED ON SHEET G-8 (2 of 2)

PROJECT COORDINATE SYSTEM INFORMATION:

REFERENCE FRAME: NAD1983 (2011) (EPOCH 2010.0000)
U.S. STATE PLANE, NEW MEXICO WEST (3003) ZONE
ALL DISTANCES ARE GRID DISTANCES. UNITS ARE US SURVEY FEET.

VERTICAL DATUM
NAVD 1988
GEOID 12B(CONUS) WAS UTILIZED TO ESTABLISH ORTHO HEIGHTS

METHODS
ALL CONTROL ON THIS PROJECT WAS OBSERVED AND SET ON APRIL 10, 2019. ALL POINTS WERE OBSERVED USING TRIMBLE R8 GPS RECEIVERS UTILIZING RTK GPS METHODS.

I, JAYSON NATERA, NEW MEXICO PROFESSIONAL SURVEYOR NO. 27749, DO HEREBY CERTIFY THAT THIS CONTROL SURVEY REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION BASED ON AN ACTUAL SURVEY ON THE GROUND AS DESCRIBED HEREIN; THAT I AM RESPONSIBLE FOR THIS SURVEY; AND THAT THE SURVEY AND REPORT MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

JAYSON NATERA, N.M.P.S. 27749

JAYSON NATERA NEW MEXICO 27749 PROFESSIONAL SURVEYOR

9/23/2022
DATE

N

0' 1200' 2400'
GRAPHIC SCALE

SURVEY CONTROL PLAN

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Client: The Navajo Nation
Location: Coyote Canyon, NM

SURVEY CONTROL (1 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

Designed | Drawn AD | Checked JN

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Project No: 6922268
Sheet: G-7

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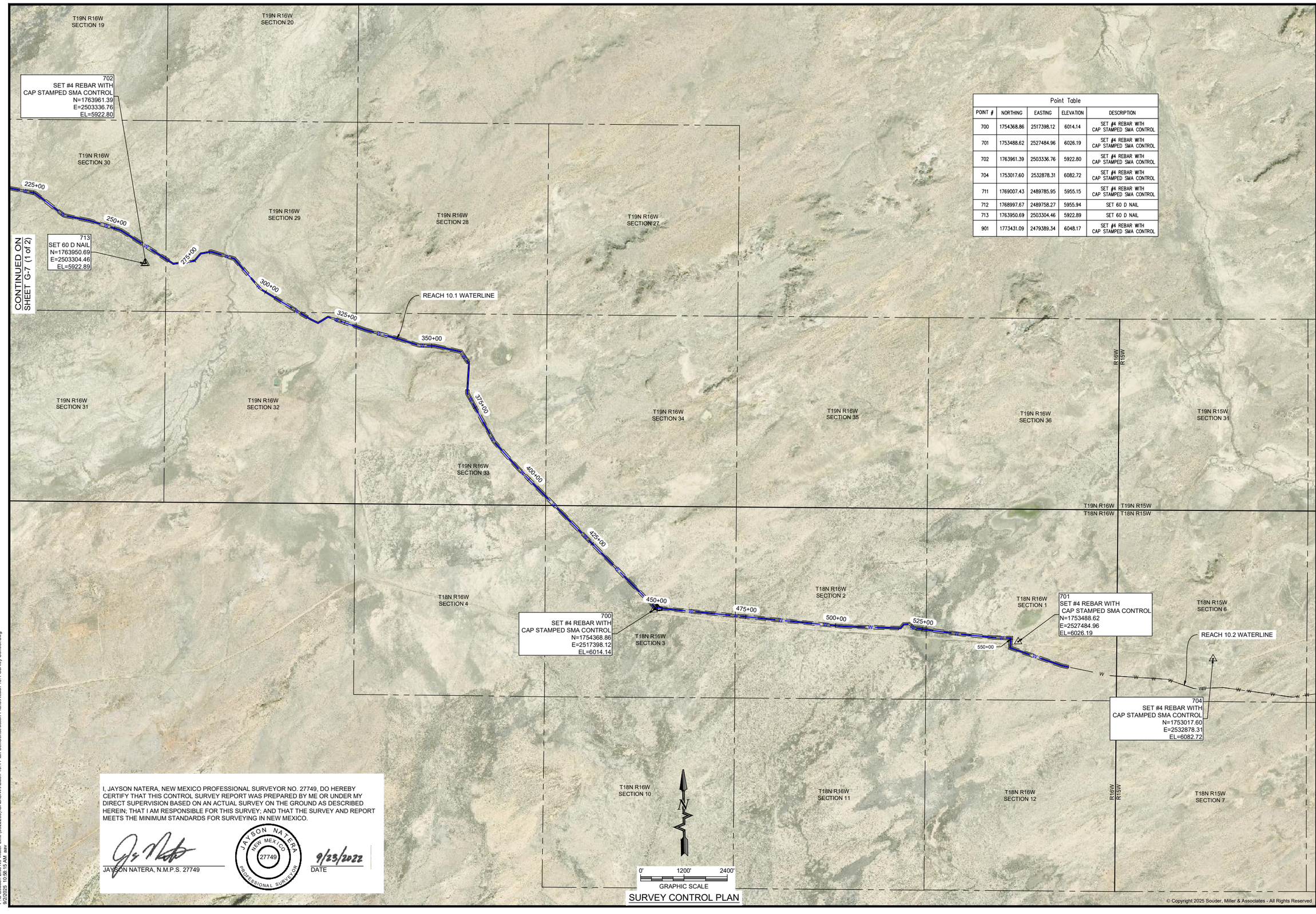

Point Table

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
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JAYSON NATERA, N.M.P.S. 27749

JAYSON NATERA NEW MEXICO 27749 PROFESSIONAL SURVEYOR

9/23/2022
DATE

SURVEY CONTROL PLAN

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Client: The Navajo Nation
Location: Coyote Canyon, NM

SURVEY CONTROL (2 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

Designed	Drawn	Checked
	AD	JN

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Vert: N/A
Project No: 6922268
Sheet: G-8

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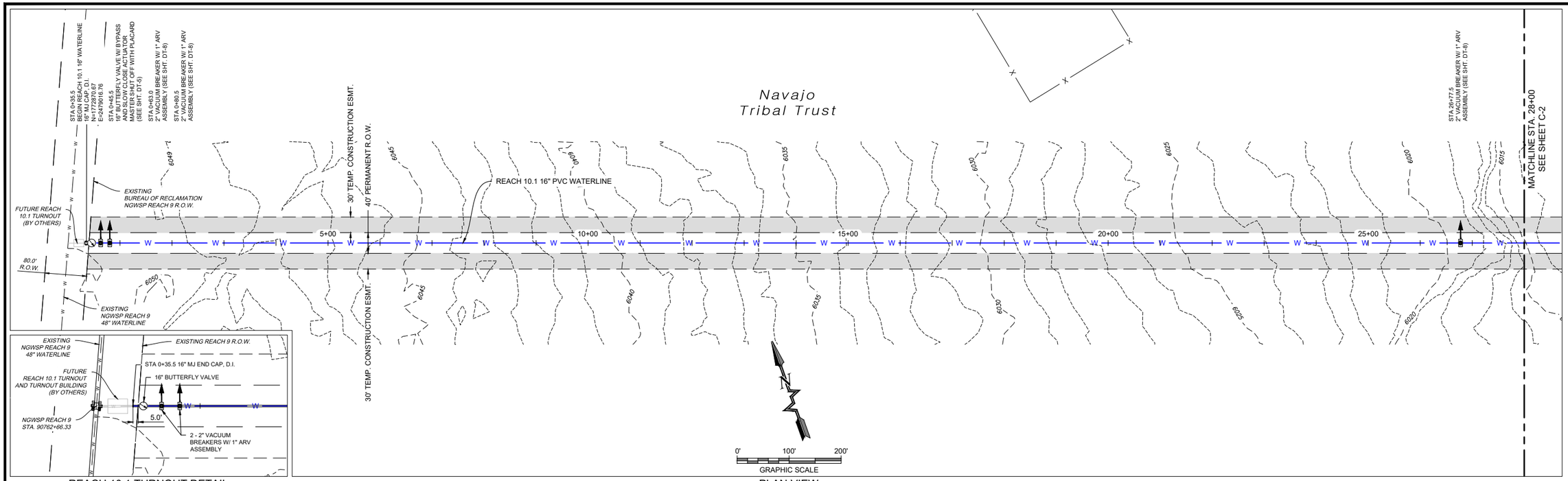
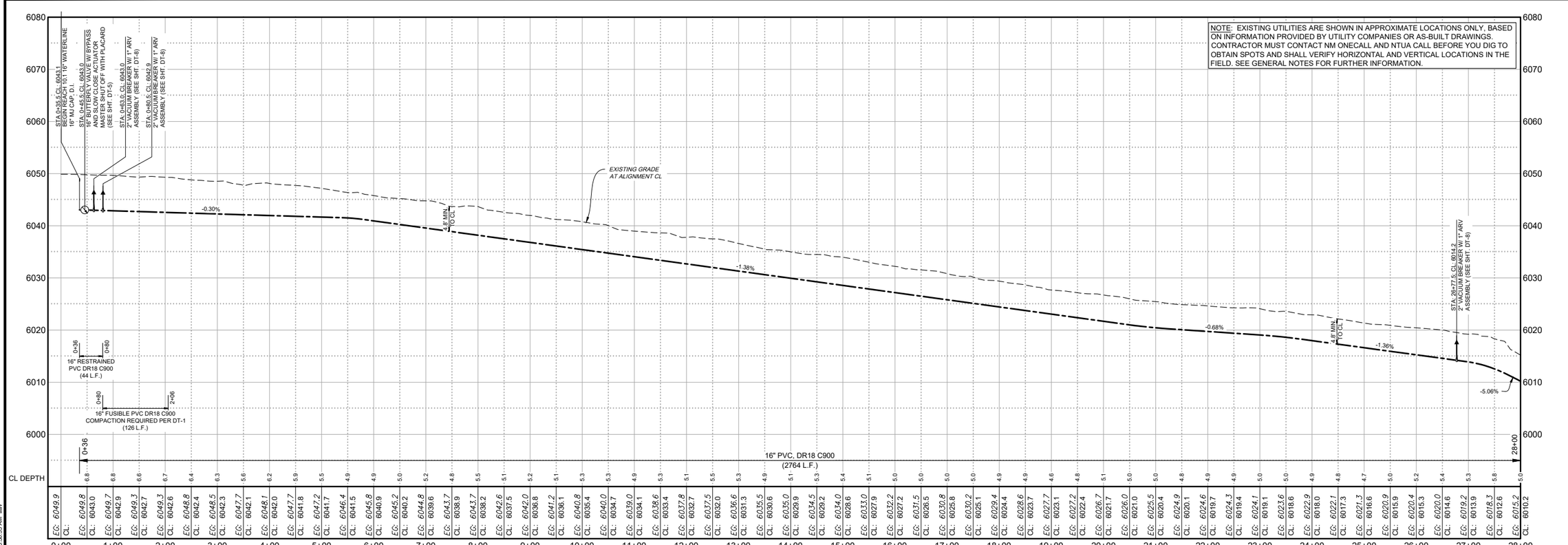


REACH 10.1 TURNOUT DETAIL
SCALE: 1'=50'

PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 0+35.5 To STA 28+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 21, T. 19 N., R. 17 W.

TOBY TADANO — NEW MEXICO — 21073 — 12-9-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Vert: 1" = 20'
Project No: 6922268
Sheet: C-1

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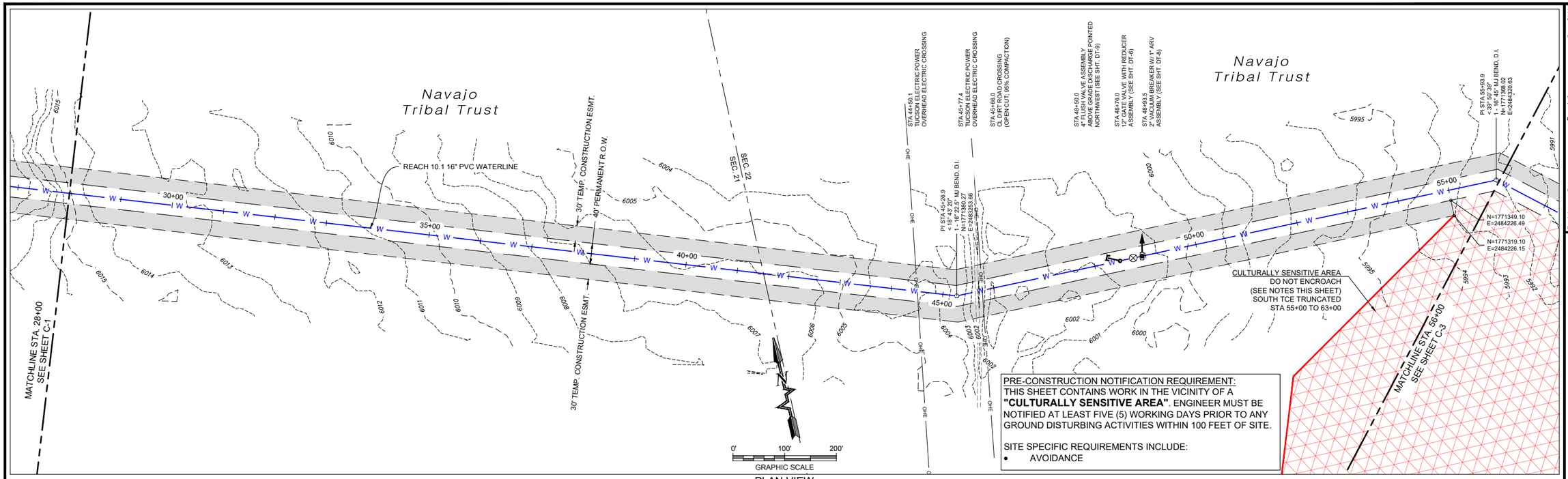


PLAN VIEW
16" WATERLINE

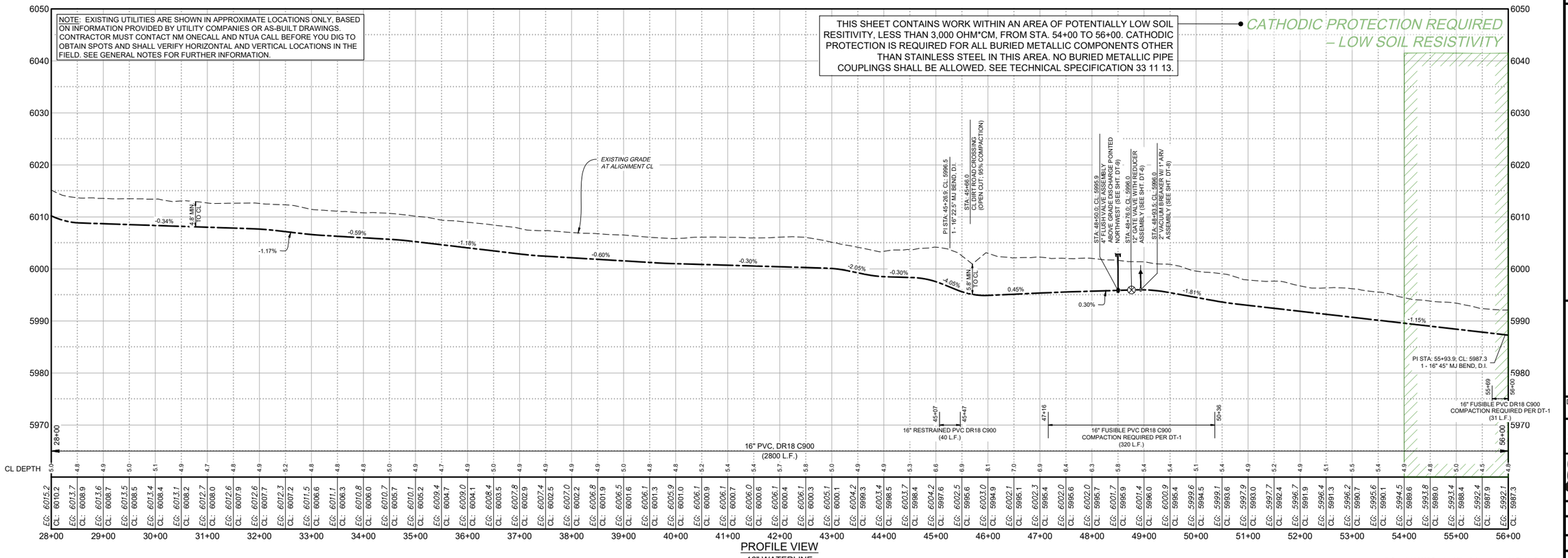
PRE-CONSTRUCTION NOTIFICATION REQUIREMENT:
THIS SHEET CONTAINS WORK IN THE VICINITY OF A **"CULTURALLY SENSITIVE AREA"**. ENGINEER MUST BE NOTIFIED AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY GROUND DISTURBING ACTIVITIES WITHIN 100 FEET OF SITE.

SITE SPECIFIC REQUIREMENTS INCLUDE:
- AVOIDANCE

NOTE: EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY, BASED ON INFORMATION PROVIDED BY UTILITY COMPANIES OR AS-BUILT DRAWINGS. CONTRACTOR MUST CONTACT NM ONECALL AND NTUA CALL BEFORE YOU DIG TO OBTAIN SPOTS AND SHALL VERIFY HORIZONTAL AND VERTICAL LOCATIONS IN THE FIELD. SEE GENERAL NOTES FOR FURTHER INFORMATION.

THIS SHEET CONTAINS WORK WITHIN AN AREA OF POTENTIALLY LOW SOIL RESISTIVITY, LESS THAN 3,000 OHM*CM, FROM STA. 54+00 TO 56+00. CATHODIC PROTECTION IS REQUIRED FOR ALL BURIED METALLIC COMPONENTS OTHER THAN STAINLESS STEEL IN THIS AREA. NO BURIED METALLIC PIPE COUPLINGS SHALL BE ALLOWED. SEE TECHNICAL SPECIFICATION 33 11 13.

CATHODIC PROTECTION REQUIRED – LOW SOIL RESISTIVITY



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 28+00 To STA 56+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 21 AND 22, T. 19 N., R. 17 W.

TROY T. ADAMS
NEW MEXICO
21073
12-9-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Vert: 1" = 20'
Project No: 6922268
Sheet: C-2

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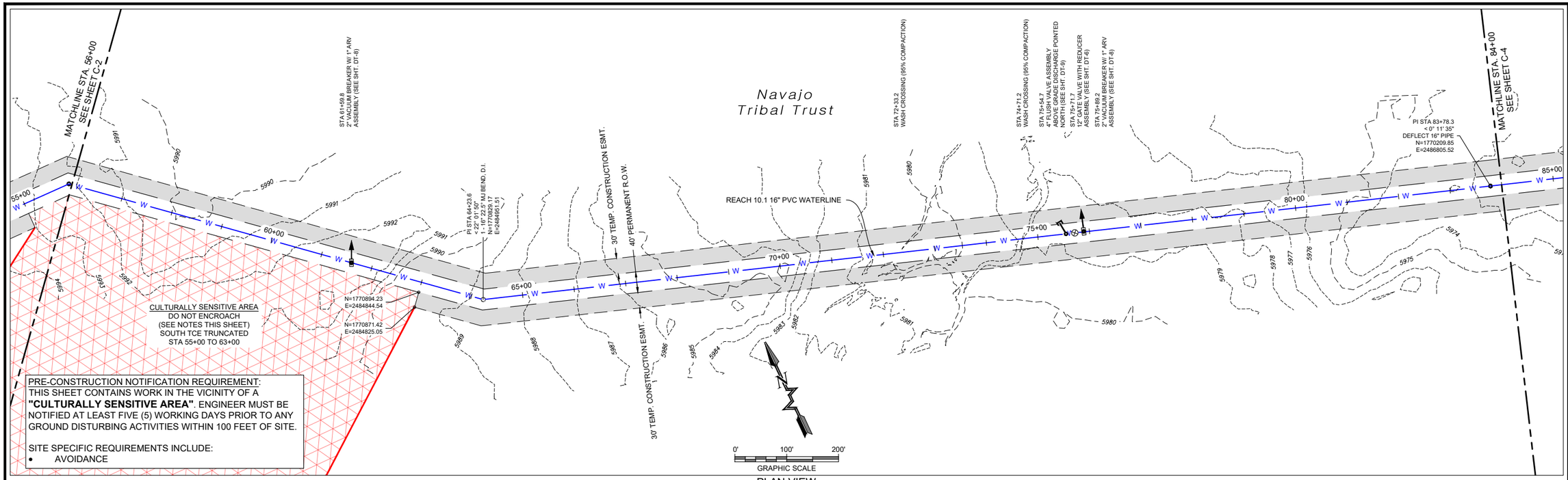
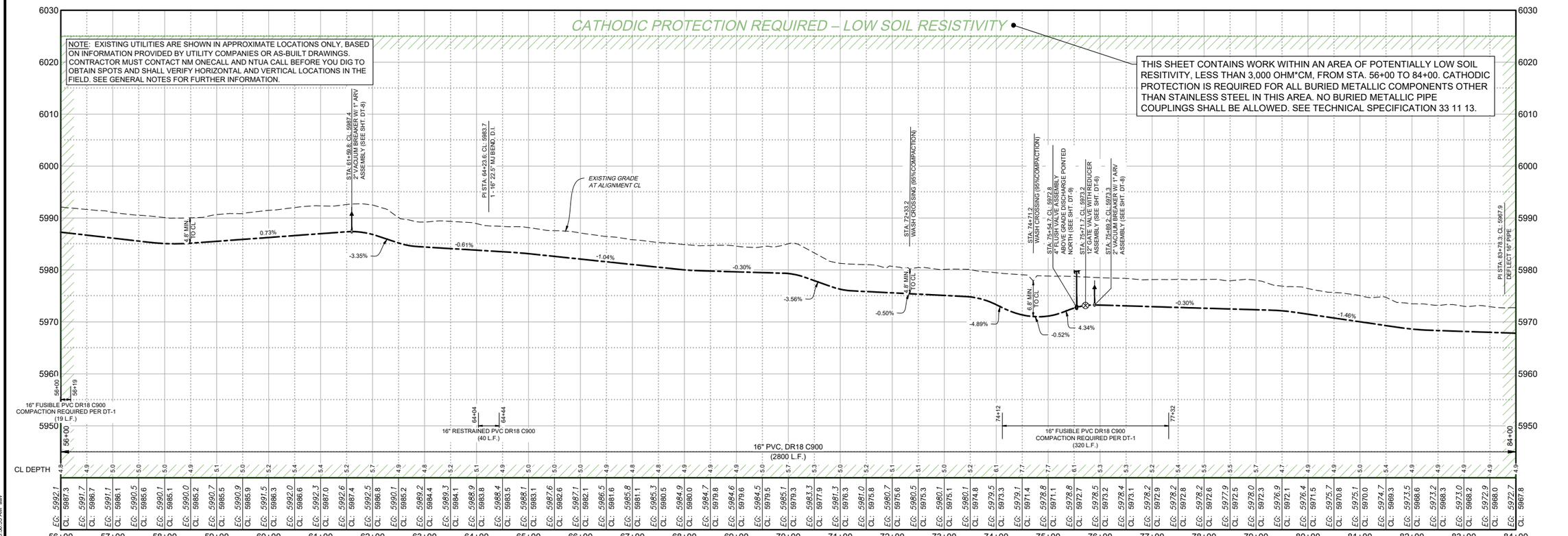


PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 56+00 To STA 84+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1

McKINLEY COUNTY, NEW MEXICO
SECTION 22, T. 19 N., R. 17 W.

TODAY TADAY NEW MEXICO 21073 12-9-25 LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Date: September 2025
Scale: Horiz: 1" = 200'
Vert: 1" = 20'
Project No: 6922268
Sheet: C-3

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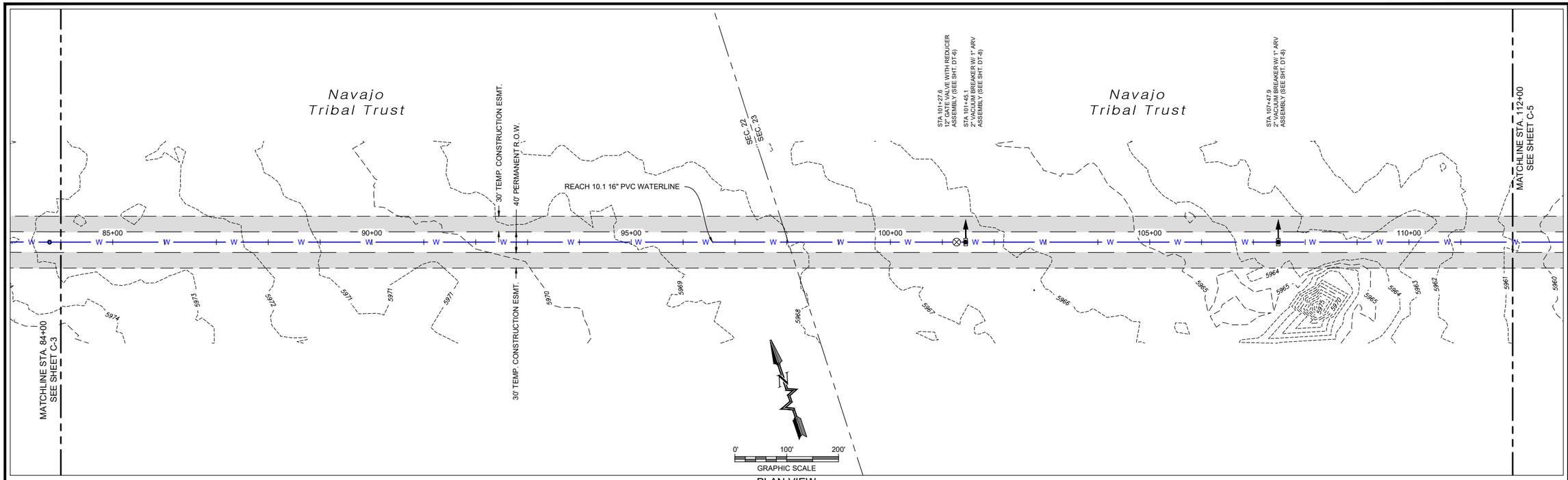
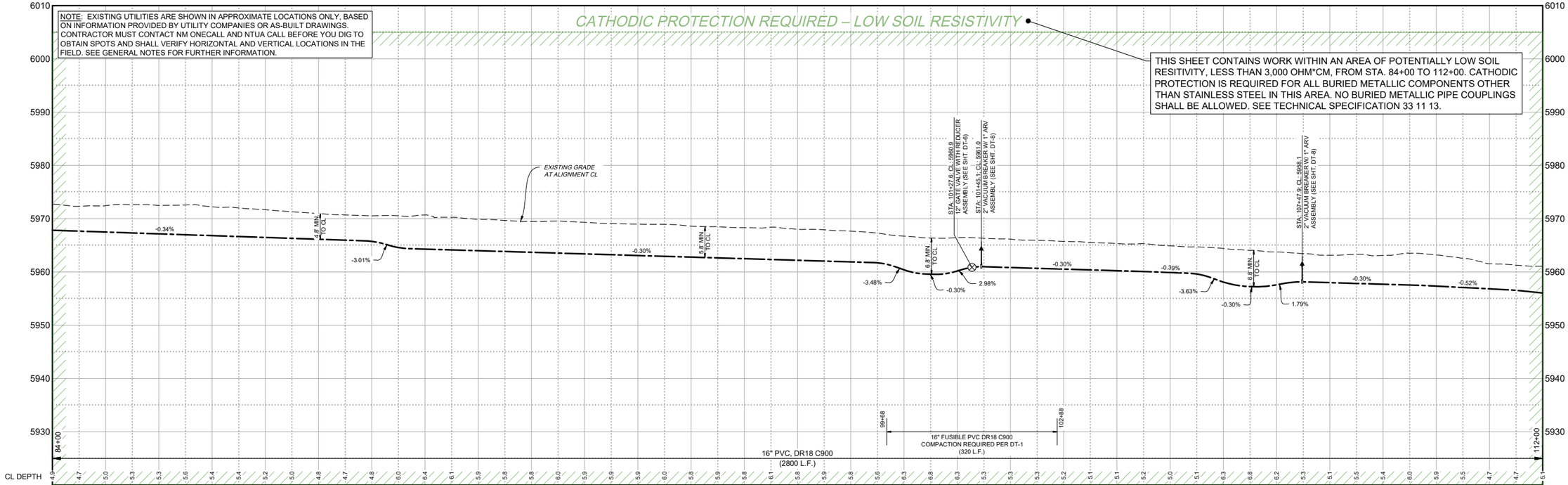


PLAN VIEW
16" WATERLINE

NOTE: EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY, BASED ON INFORMATION PROVIDED BY UTILITY COMPANIES OR AS-BUILT DRAWINGS. CONTRACTOR MUST CONTACT NM ONECALL AND NTUA CALL BEFORE YOU DIG TO OBTAIN SPOTS AND SHALL VERIFY HORIZONTAL AND VERTICAL LOCATIONS IN THE FIELD. SEE GENERAL NOTES FOR FURTHER INFORMATION.

CATHODIC PROTECTION REQUIRED – LOW SOIL RESISTIVITY

THIS SHEET CONTAINS WORK WITHIN AN AREA OF POTENTIALLY LOW SOIL RESITIVITY, LESS THAN 3,000 OHM*CM, FROM STA. 84+00 TO 112+00. CATHODIC PROTECTION IS REQUIRED FOR ALL BURIED METALLIC COMPONENTS OTHER THAN STAINLESS STEEL IN THIS AREA. NO BURIED METALLIC PIPE COUPLINGS SHALL BE ALLOWED. SEE TECHNICAL SPECIFICATION 33 11 13.



PROFILE VIEW
16" WATERLINE

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 84+00 To STA 112+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1

McKINLEY COUNTY, NEW MEXICO
SECTION 22 AND 23, T. 19 N., R. 17 W.

TROY T. ADAMS
NEW MEXICO
21073
12-9-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Date: September 2025
Scale: Horiz: 1" = 200'
Vert: 1" = 20'
Project No: 6922268
Sheet: C-4

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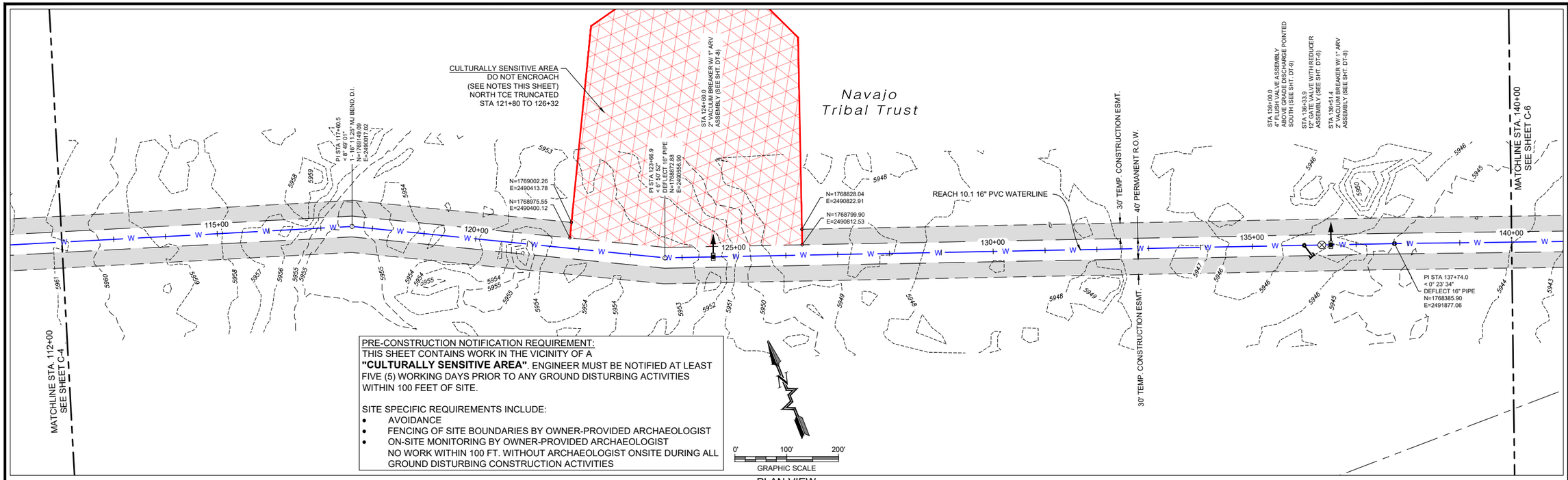
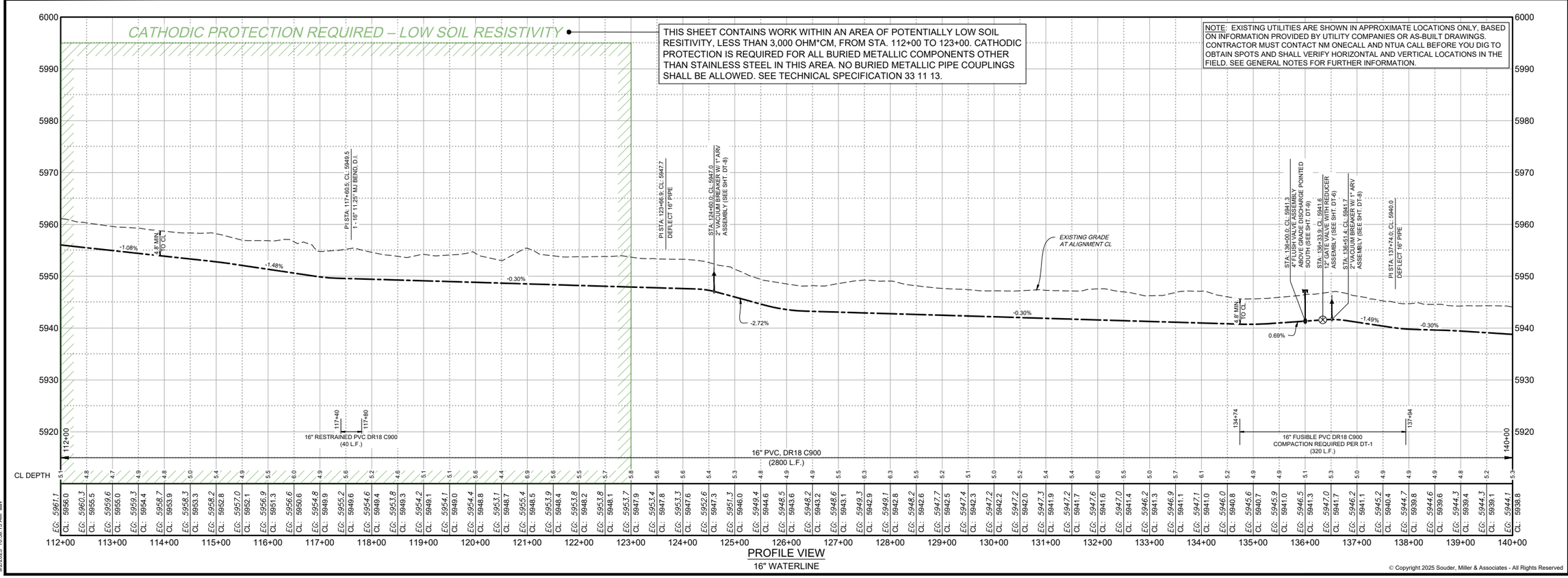


PRE-CONSTRUCTION NOTIFICATION REQUIREMENT:
THIS SHEET CONTAINS WORK IN THE VICINITY OF A **"CULTURALLY SENSITIVE AREA"**. ENGINEER MUST BE NOTIFIED AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY GROUND DISTURBING ACTIVITIES WITHIN 100 FEET OF SITE.

SITE SPECIFIC REQUIREMENTS INCLUDE:
- AVOIDANCE
- FENCING OF SITE BOUNDARIES BY OWNER-PROVIDED ARCHAEOLOGIST
- ON-SITE MONITORING BY OWNER-PROVIDED ARCHAEOLOGIST
  NO WORK WITHIN 100 FT. WITHOUT ARCHAEOLOGIST ONSITE DURING ALL GROUND DISTURBING CONSTRUCTION ACTIVITIES

PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 112+00 To STA 140+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1

McKINLEY COUNTY, NEW MEXICO
SECTION 23, T. 19 N., R. 17 W.

TROY TADANO — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 12-9-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Scale: Horiz: 1" = 200'
Vert: 1" = 20'
Project No: 6922268
Sheet: C-5

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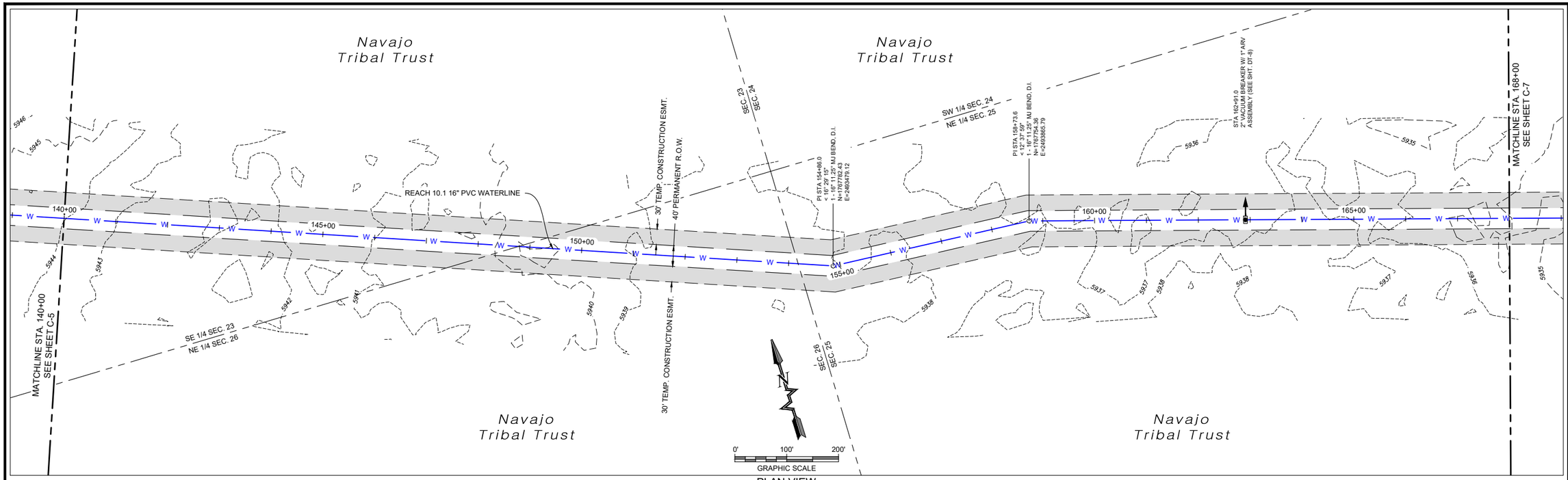

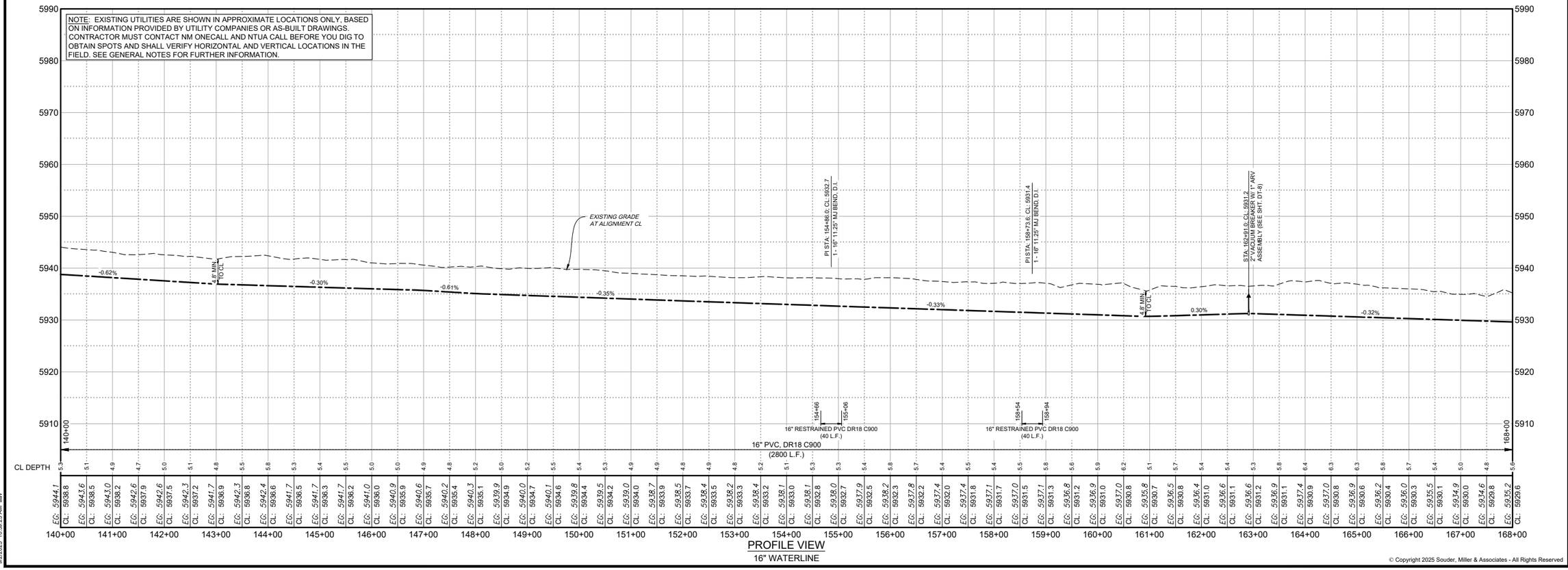

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 140+00 To STA 168+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 23, 25 AND 26 T. 19 N., R. 17 W.

TROY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 12-9-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Vert: 1" = 20'
Project No: 6922268
Sheet: C-6

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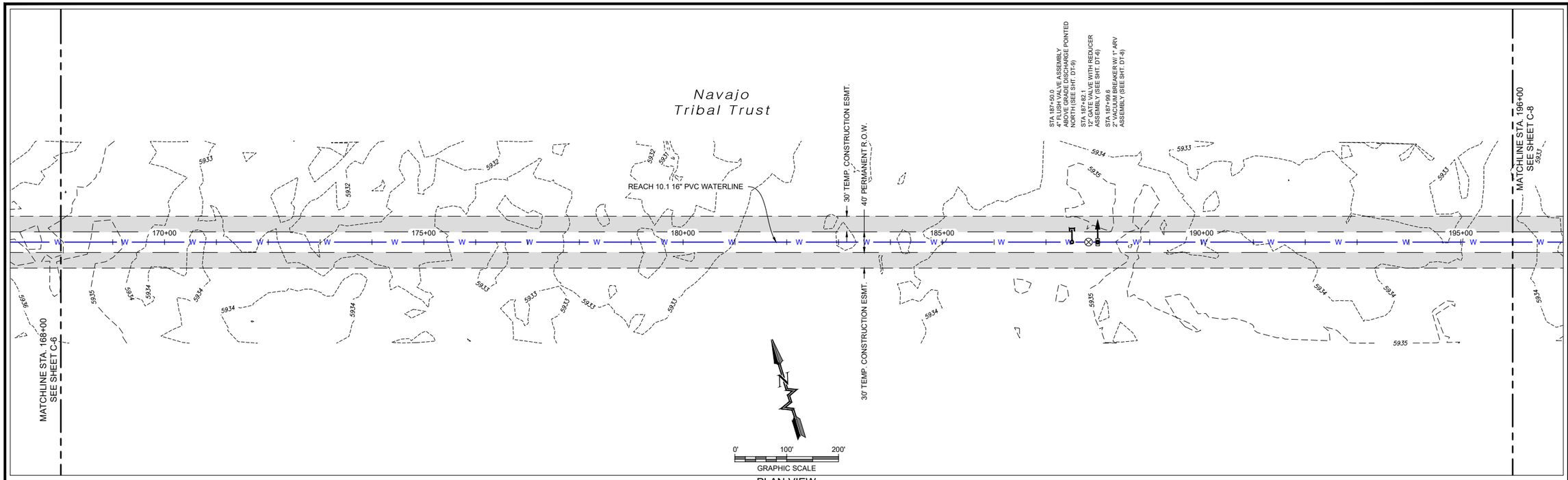

PLAN VIEW
16" WATERLINE

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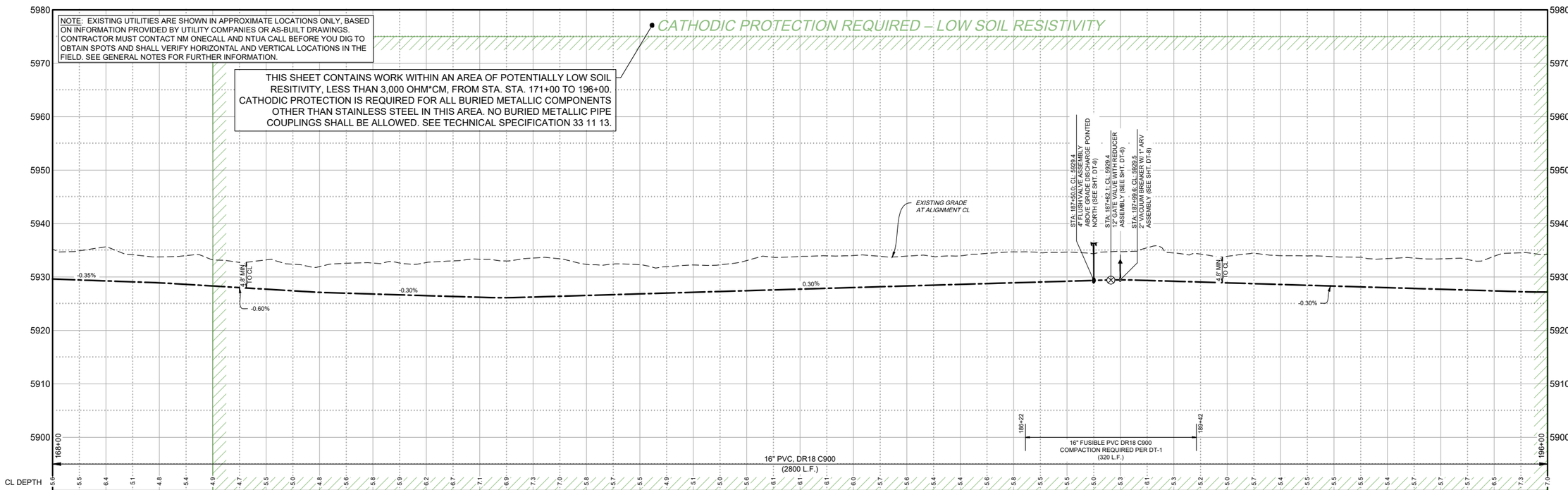
CATHODIC PROTECTION REQUIRED – LOW SOIL RESISTIVITY

THIS SHEET CONTAINS WORK WITHIN AN AREA OF POTENTIALLY LOW SOIL RESITIVITY, LESS THAN 3,000 OHM*CM, FROM STA. STA. 171+00 TO 196+00. CATHODIC PROTECTION IS REQUIRED FOR ALL BURIED METALLIC COMPONENTS OTHER THAN STAINLESS STEEL IN THIS AREA. NO BURIED METALLIC PIPE COUPLINGS SHALL BE ALLOWED. SEE TECHNICAL SPECIFICATION 33 11 13.



PROFILE VIEW
16" WATERLINE

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 168+00 To STA 196+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 25, T. 19 N., R. 17 W.

TROY T. ADAMS
NEW MEXICO
21073
12-9-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Date: September 2025
Scale: Horiz: 1" = 200'
Vert: 1" = 20'
Project No: 6922268
Sheet: C-7

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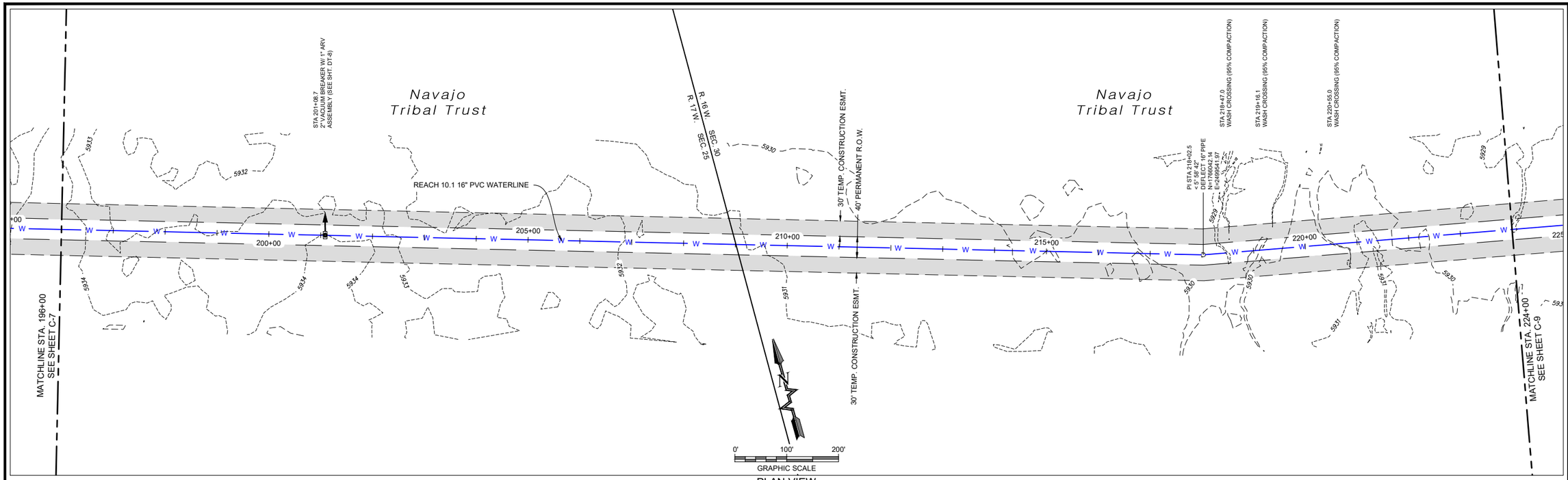

PLAN VIEW
16" WATERLINE

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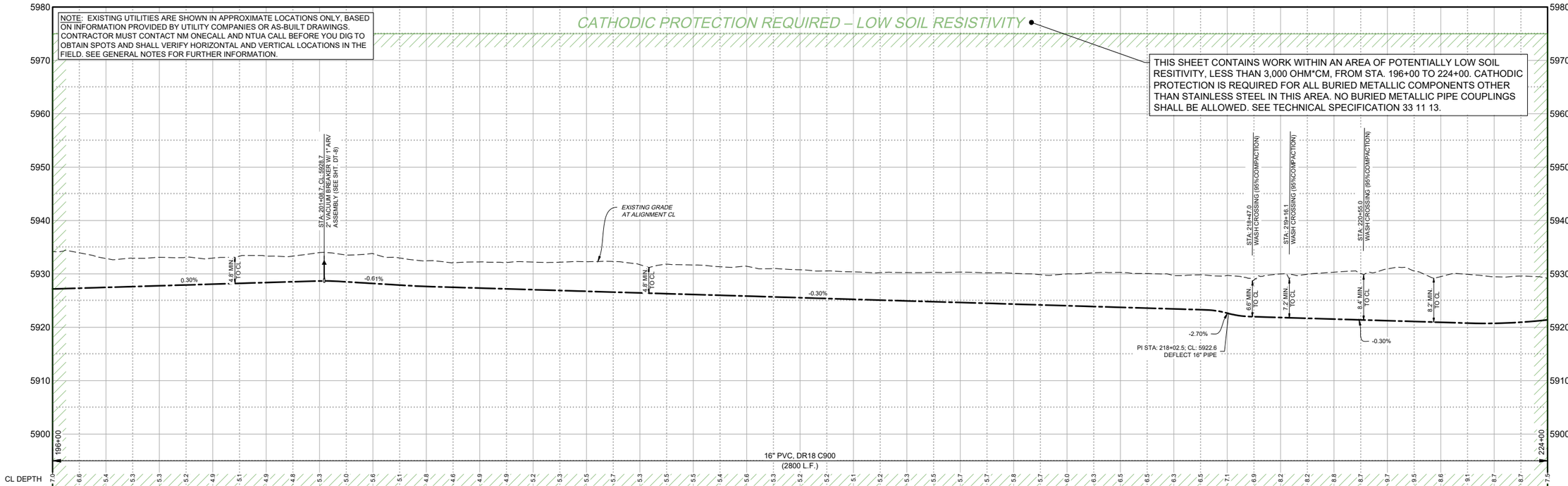

PROFILE VIEW
16" WATERLINE

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Client: The Navajo Nation Location: Coyote Canyon, NM

PLAN AND PROFILE STA 196+00 To STA 224+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1

McKINLEY COUNTY, NEW MEXICO
SEC. 25, T. 19 N., R. 17 W. & SEC. 30, T. 19 N., R. 16 W.

TROY TADANO — NEW MEXICO — 21073 — 12-9-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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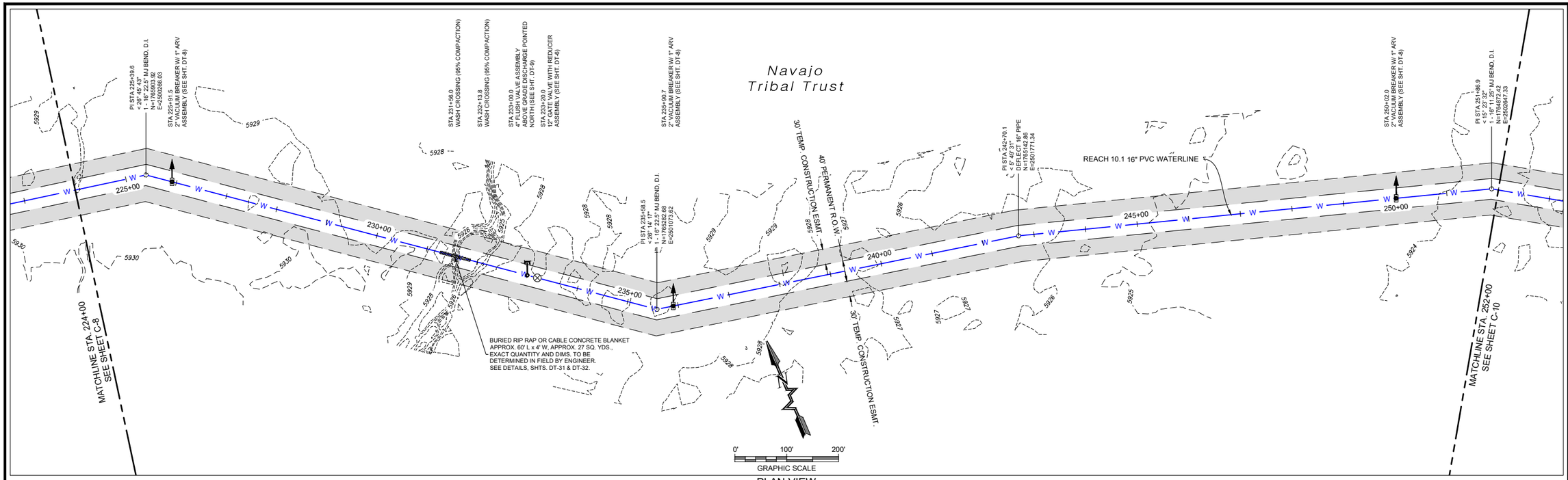
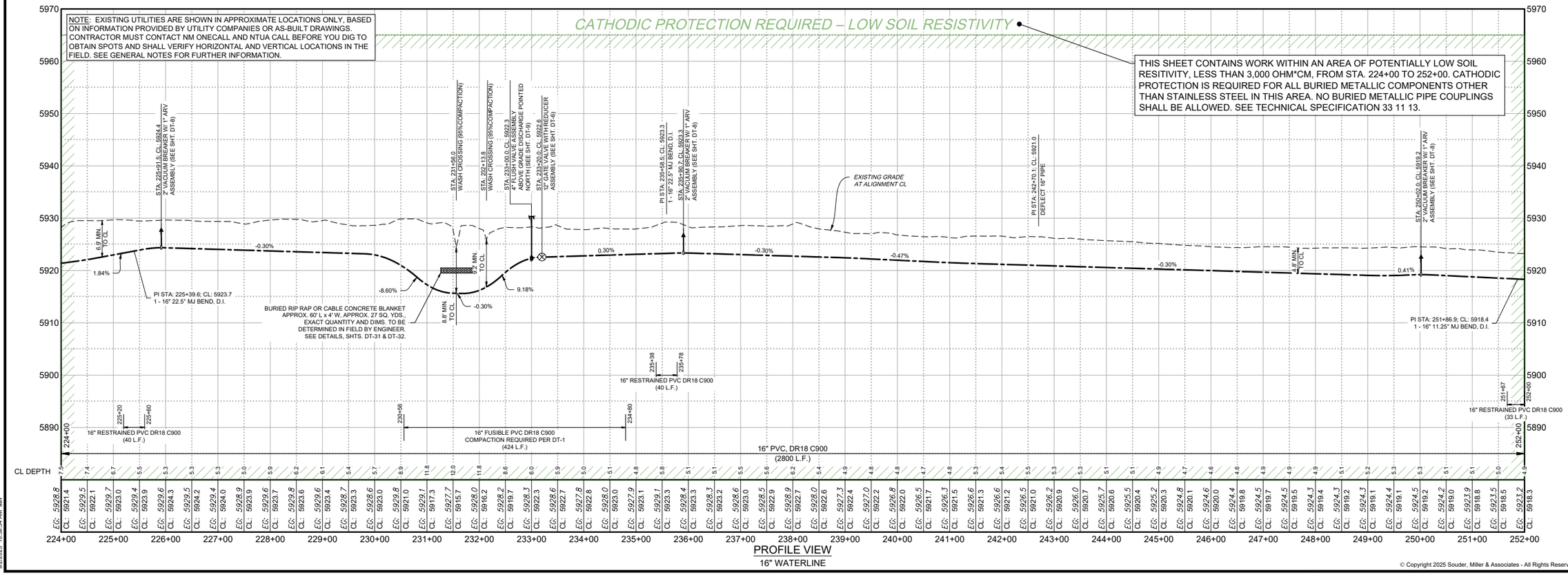
Project No: 6922268
Sheet: C-8



PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 224+00 To STA 252+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 30, T. 19 N., R. 16 W.

TROY T. ADAMS
NEW MEXICO
21073
12-9-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Scale: Horiz: 1" = 200'
Vert: 1" = 20'
Project No: 6922268
Sheet: C-9

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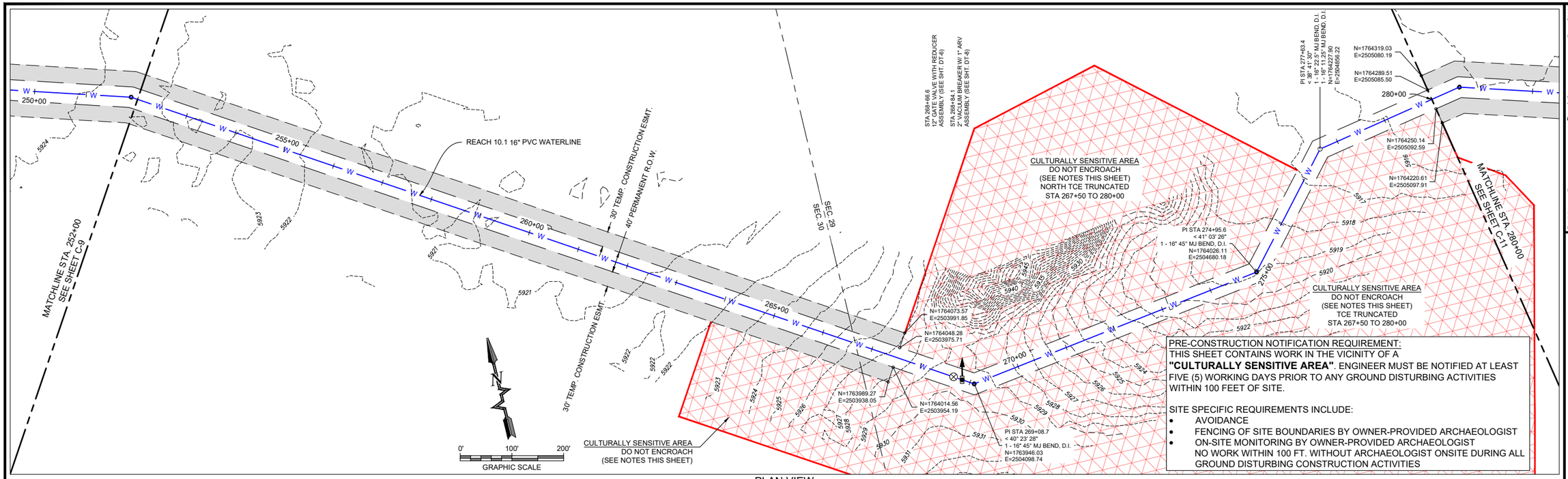
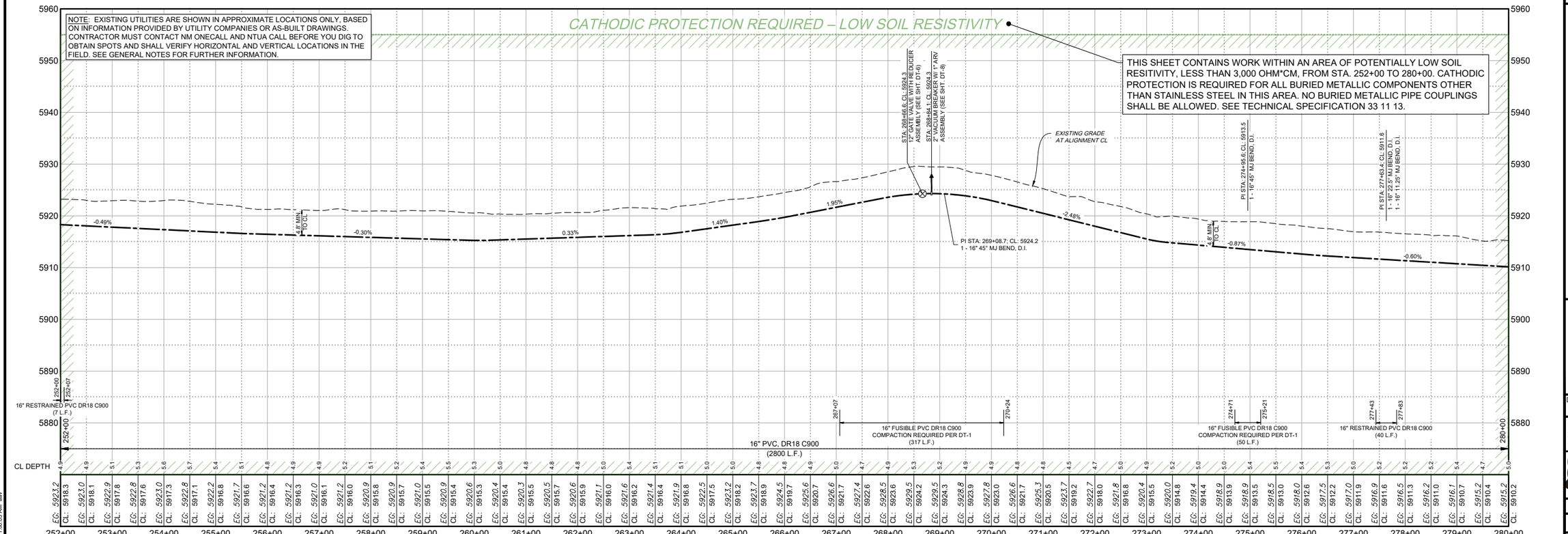


PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chkd

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 252+00 To STA 280+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1

McKINLEY COUNTY, NEW MEXICO
SECTION 29 AND 30, T. 19 N., R. 16 W.

TOBY T. ADAMS
NEW MEXICO
21073
9-29-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Vert: 1" = 20'
Project No: 6922268
Sheet: C-10

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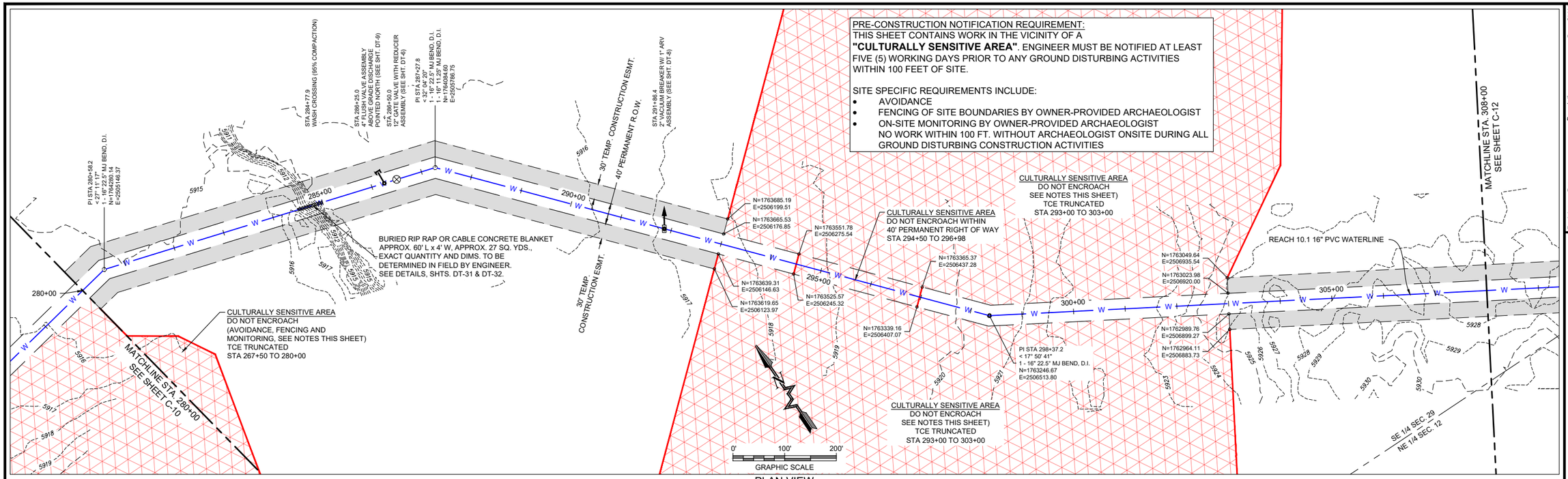
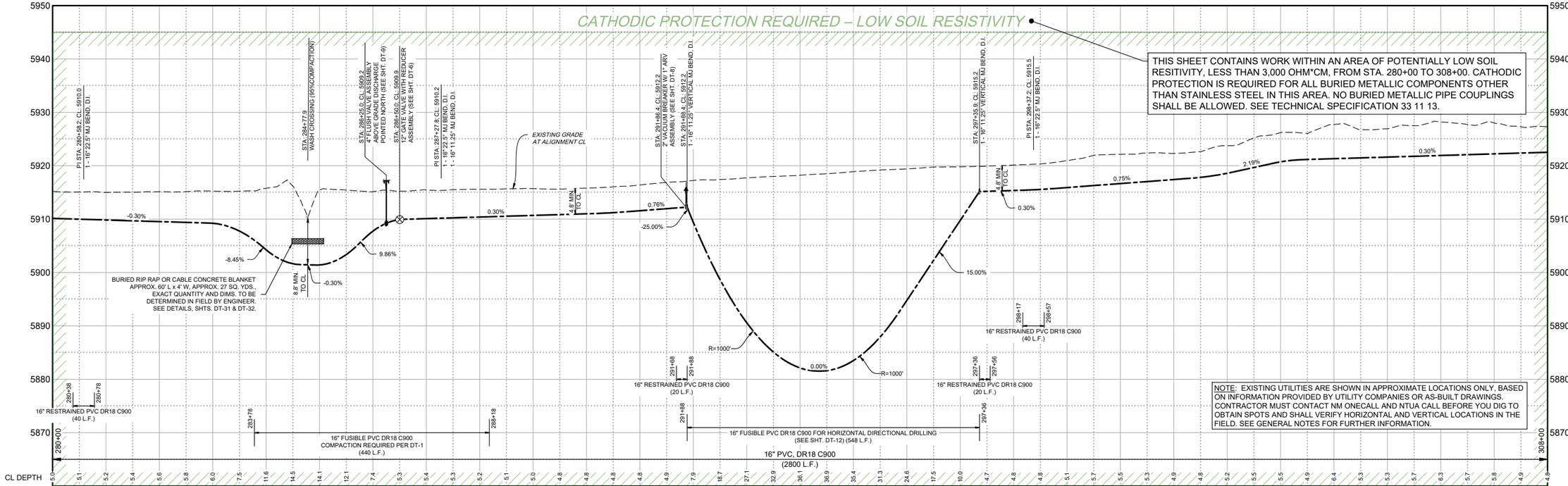
SITE SPECIFIC REQUIREMENTS INCLUDE:
- AVOIDANCE
- FENCING OF SITE BOUNDARIES BY OWNER-PROVIDED ARCHAEOLOGIST
- ON-SITE MONITORING BY OWNER-PROVIDED ARCHAEOLOGIST
  NO WORK WITHIN 100 FT. WITHOUT ARCHAEOLOGIST ONSITE DURING ALL GROUND DISTURBING CONSTRUCTION ACTIVITIES



PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chkd

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 280+00 To STA 308+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 29, T. 19 N., R. 16 W.

TOBY TADANO
NEW MEXICO
21073
12-9-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Sheet: C-11

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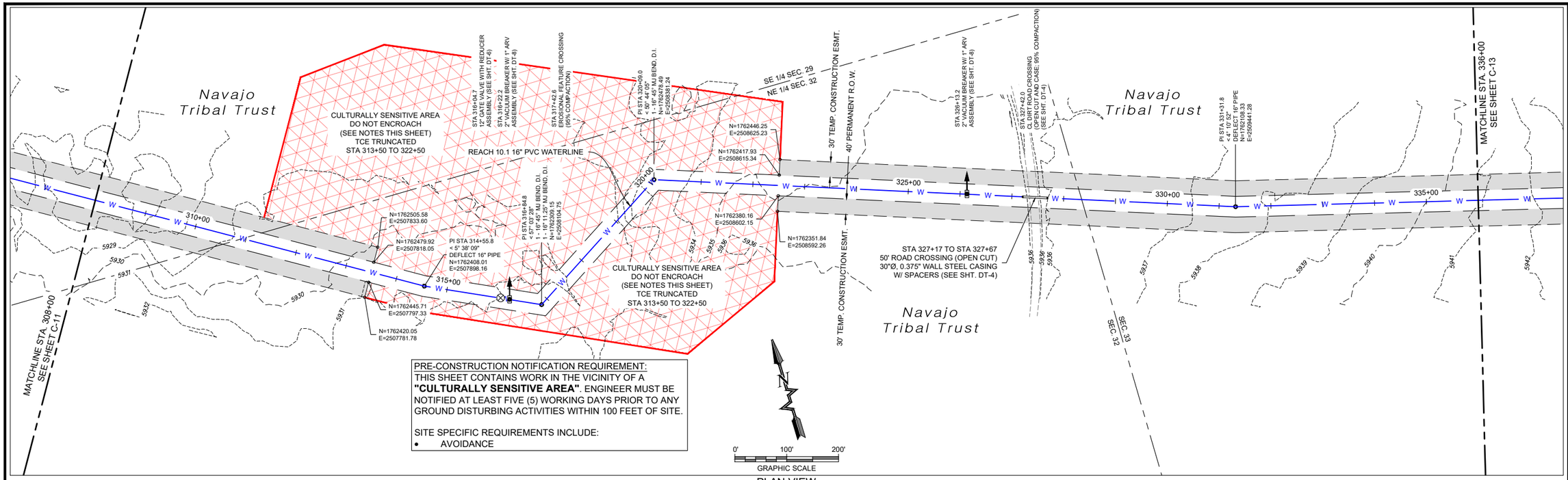
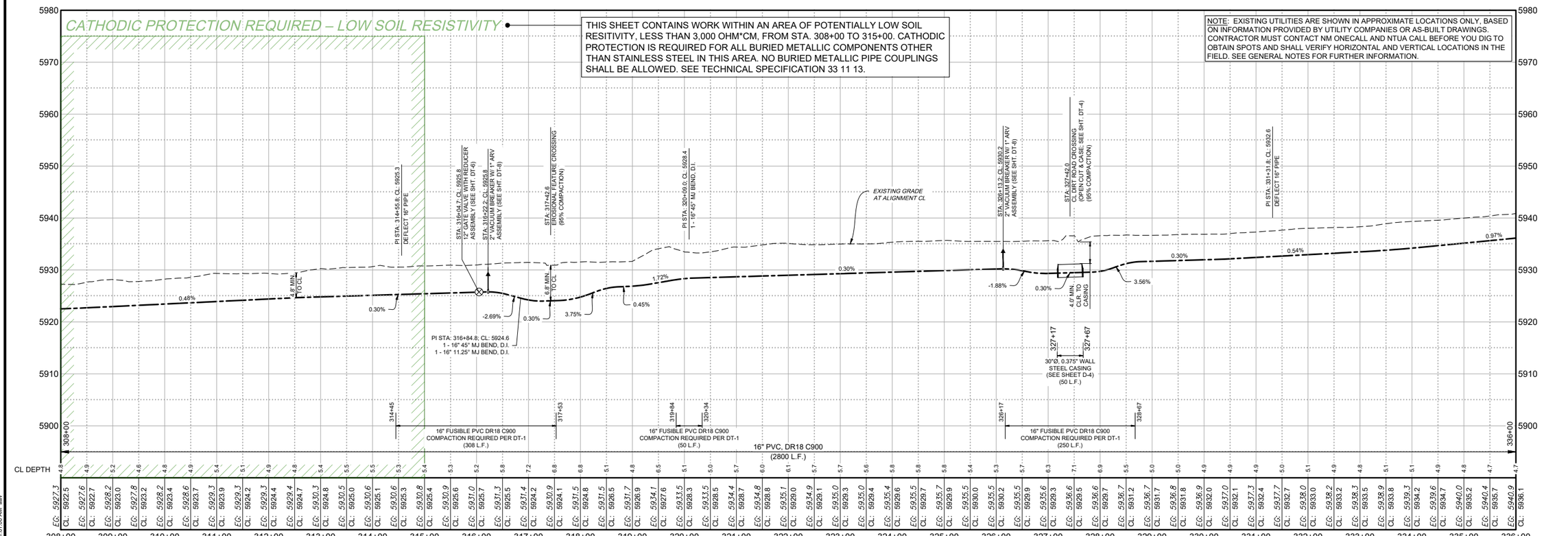


PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 308+00 To STA 336+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 29, 32 AND 33 T. 19 N., R. 16 W.

TROY T. ADAMS — NEW MEXICO — 21073 — 12-9-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Project No: 6922268
Sheet: C-12

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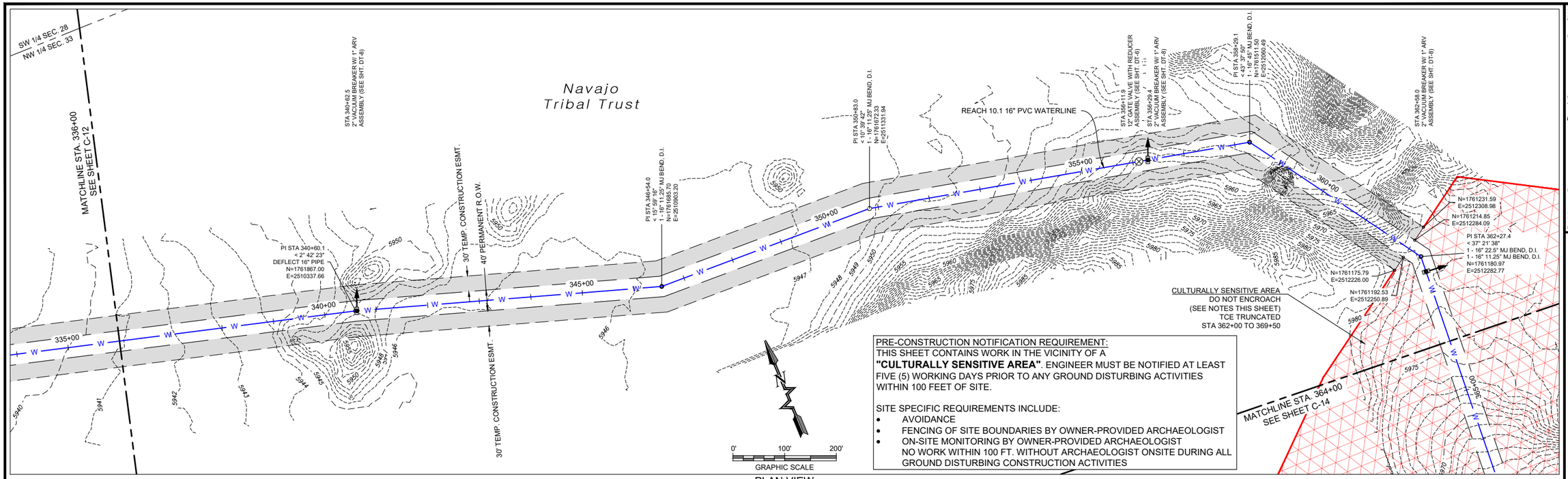


PLAN VIEW
16" WATERLINE

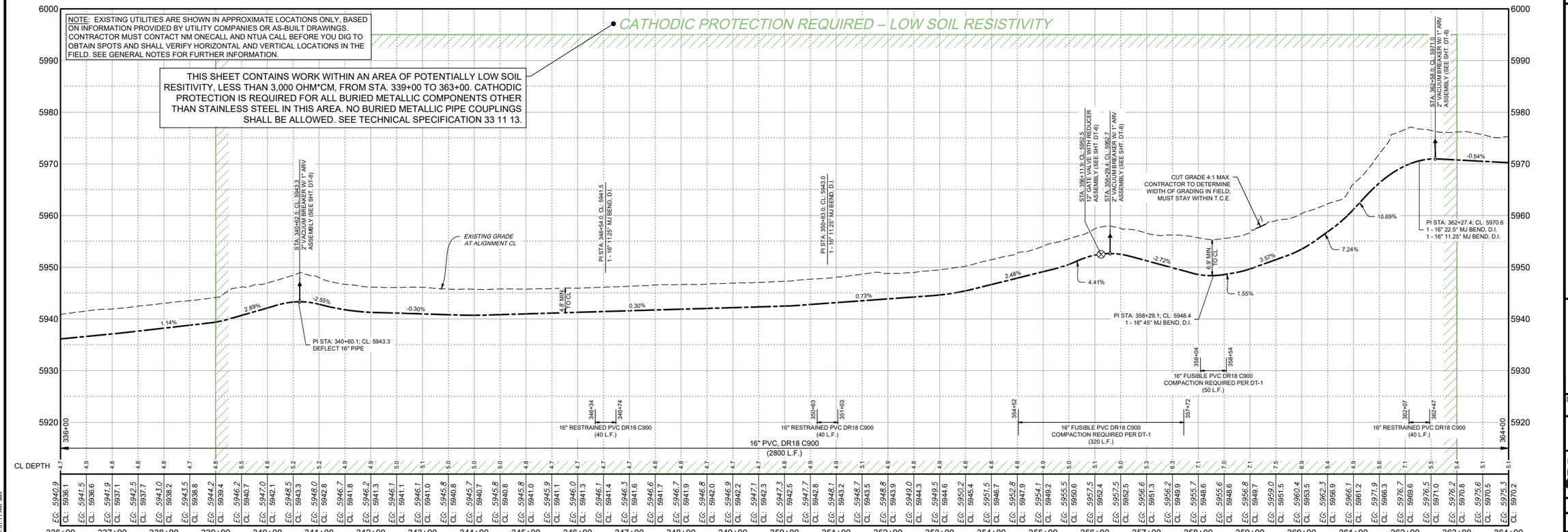
PRE-CONSTRUCTION NOTIFICATION REQUIREMENT:
THIS SHEET CONTAINS WORK IN THE VICINITY OF A **"CULTURALLY SENSITIVE AREA"**. ENGINEER MUST BE NOTIFIED AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY GROUND DISTURBING ACTIVITIES WITHIN 100 FEET OF SITE.

SITE SPECIFIC REQUIREMENTS INCLUDE:
- AVOIDANCE
- FENCING OF SITE BOUNDARIES BY OWNER-PROVIDED ARCHAEOLOGIST
- ON-SITE MONITORING BY OWNER-PROVIDED ARCHAEOLOGIST
  NO WORK WITHIN 100 FT. WITHOUT ARCHAEOLOGIST ONSITE DURING ALL GROUND DISTURBING CONSTRUCTION ACTIVITIES

NOTE: EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY, BASED ON INFORMATION PROVIDED BY UTILITY COMPANIES OR AS-BUILT DRAWINGS. CONTRACTOR MUST CONTACT NM ONECALL AND NTUA CALL BEFORE YOU DIG TO OBTAIN SPOTS AND SHALL VERIFY HORIZONTAL AND VERTICAL LOCATIONS IN THE FIELD. SEE GENERAL NOTES FOR FURTHER INFORMATION.

THIS SHEET CONTAINS WORK WITHIN AN AREA OF POTENTIALLY LOW SOIL RESITIVITY, LESS THAN 3,000 OHM*CM, FROM STA. 339+00 TO 363+00. CATHODIC PROTECTION IS REQUIRED FOR ALL BURIED METALLIC COMPONENTS OTHER THAN STAINLESS STEEL IN THIS AREA. NO BURIED METALLIC PIPE COUPLINGS SHALL BE ALLOWED. SEE TECHNICAL SPECIFICATION 33 11 13.

CATHODIC PROTECTION REQUIRED – LOW SOIL RESISTIVITY



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 336+00 To STA 364+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 33, T. 19 N., R. 16 W.

TROY TADANO — NEW MEXICO — 21073 — 10-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Date: September 2025
Scale: Horiz: 1" = 200'
Vert: 1" = 20'
Project No: 6922268
Sheet: C-13

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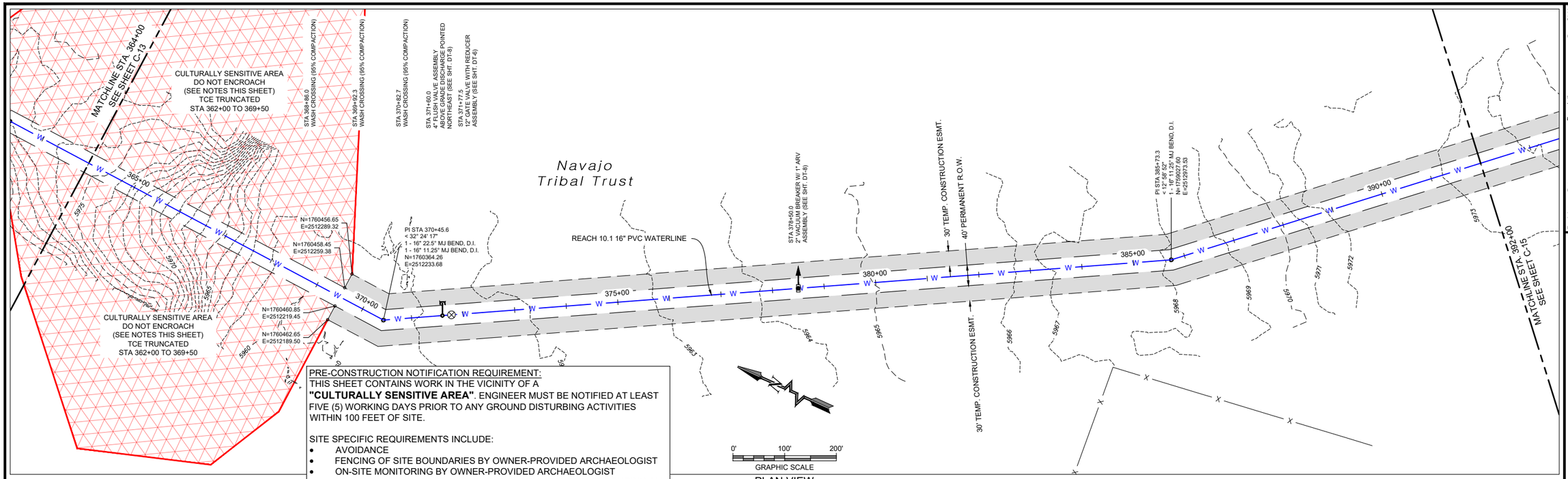
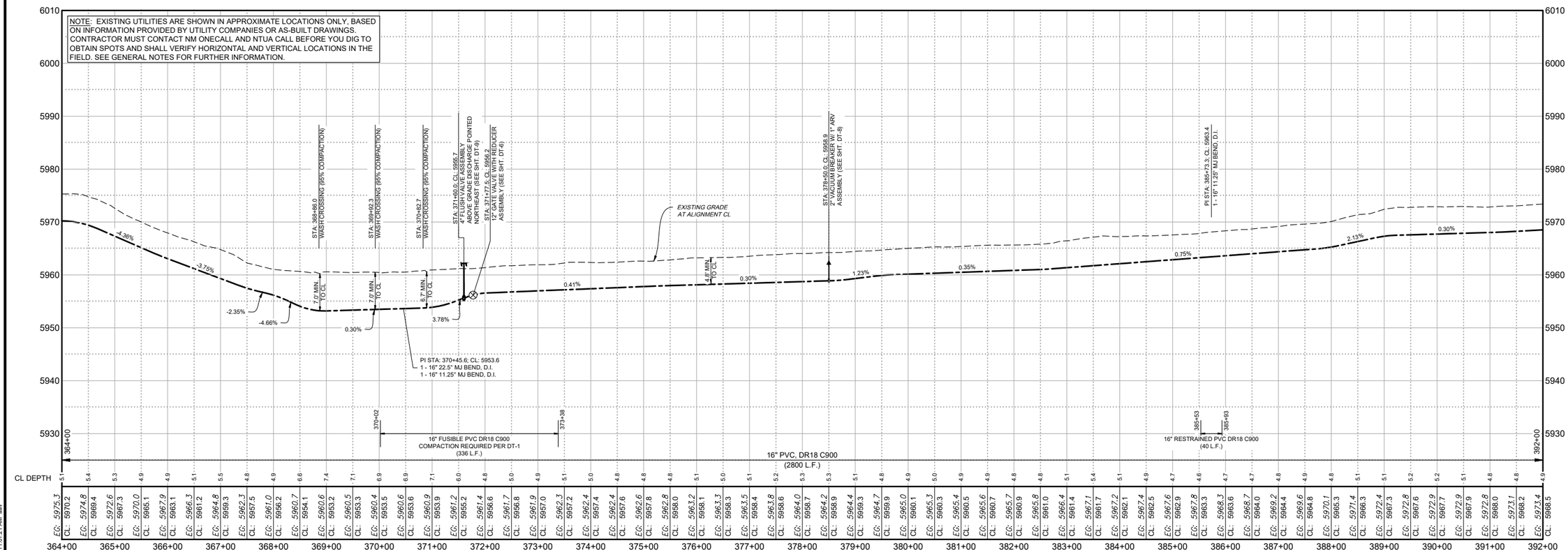


PLAN VIEW
16" WATERLINE

PRE-CONSTRUCTION NOTIFICATION REQUIREMENT:
THIS SHEET CONTAINS WORK IN THE VICINITY OF A **"CULTURALLY SENSITIVE AREA"**. ENGINEER MUST BE NOTIFIED AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY GROUND DISTURBING ACTIVITIES WITHIN 100 FEET OF SITE.

SITE SPECIFIC REQUIREMENTS INCLUDE:
- AVOIDANCE
- FENCING OF SITE BOUNDARIES BY OWNER-PROVIDED ARCHAEOLOGIST
- ON-SITE MONITORING BY OWNER-PROVIDED ARCHAEOLOGIST
  NO WORK WITHIN 100 FT. WITHOUT ARCHAEOLOGIST ONSITE DURING ALL GROUND DISTURBING CONSTRUCTION ACTIVITIES



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 364+00 To STA 392+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 33, T. 19 N., R. 16 W.

TROY T. ADAMS
NEW MEXICO
21073
12-9-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Date: September 2025
Scale: Horiz: 1" = 200'
Vert: 1" = 20'
Project No: 6922268
Sheet: C-14

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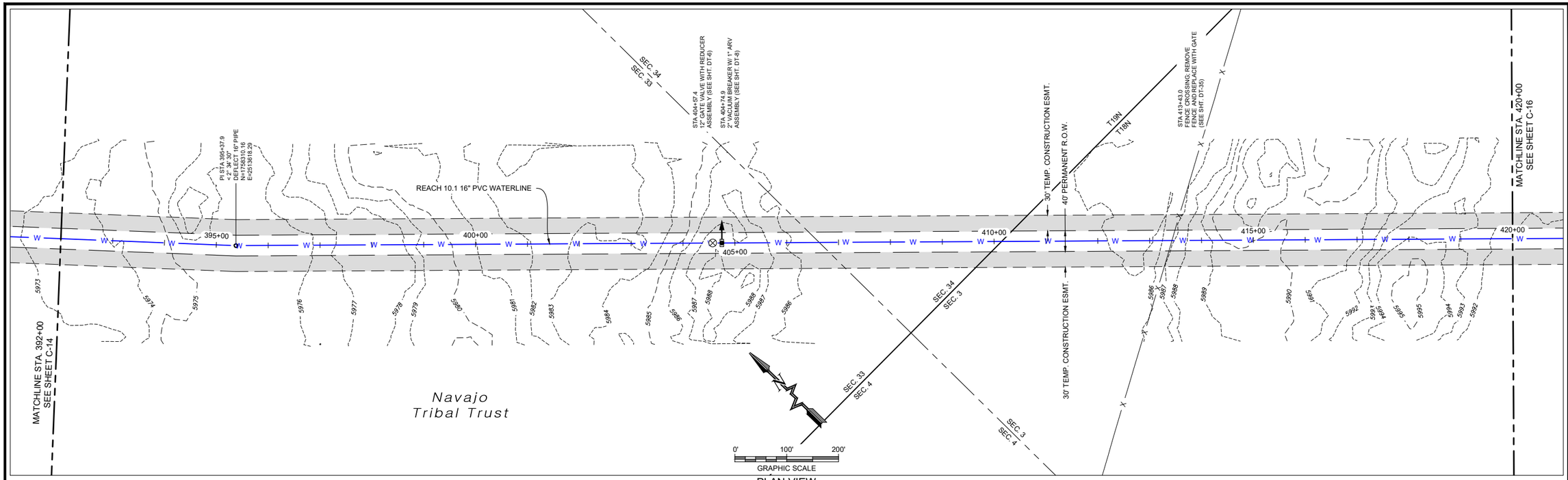
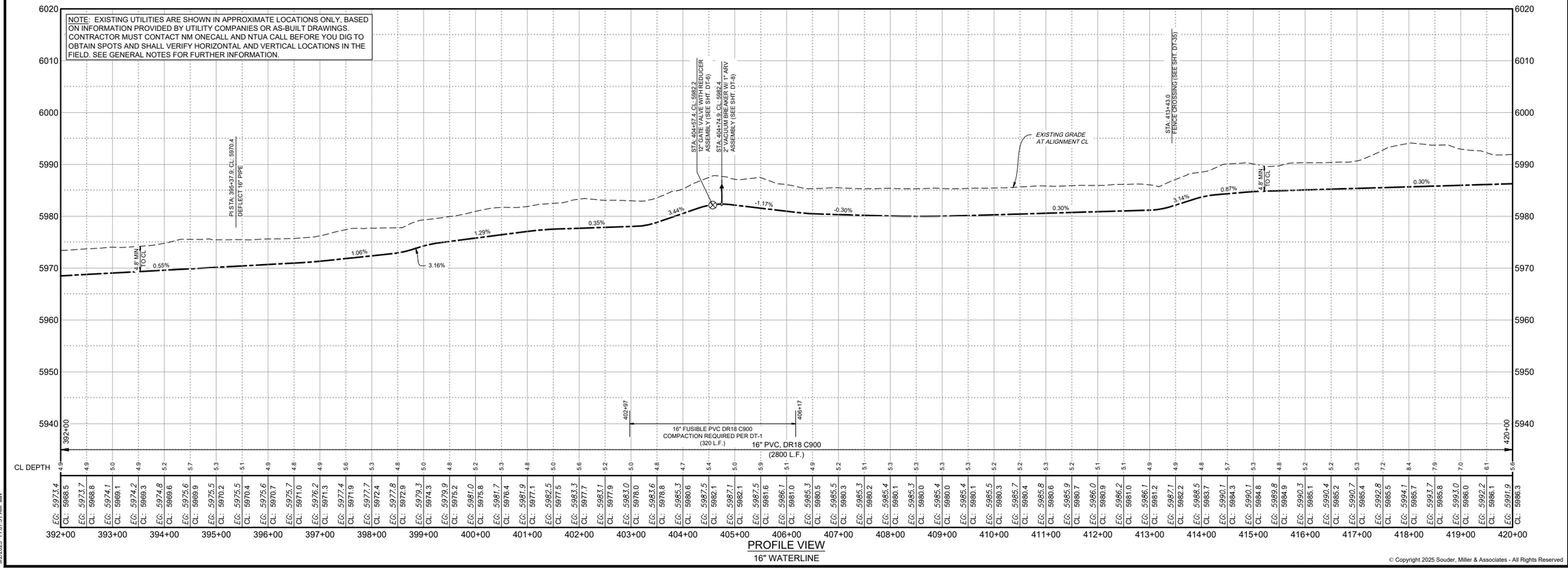


PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 392+00 To STA 420+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SEC 33 AND 34, T. 19 N., R. 16 W. & SEC 3, T. 18 N., R. 16 W.

TROY T. ADAMS — NEW MEXICO — 21073 — 12-9-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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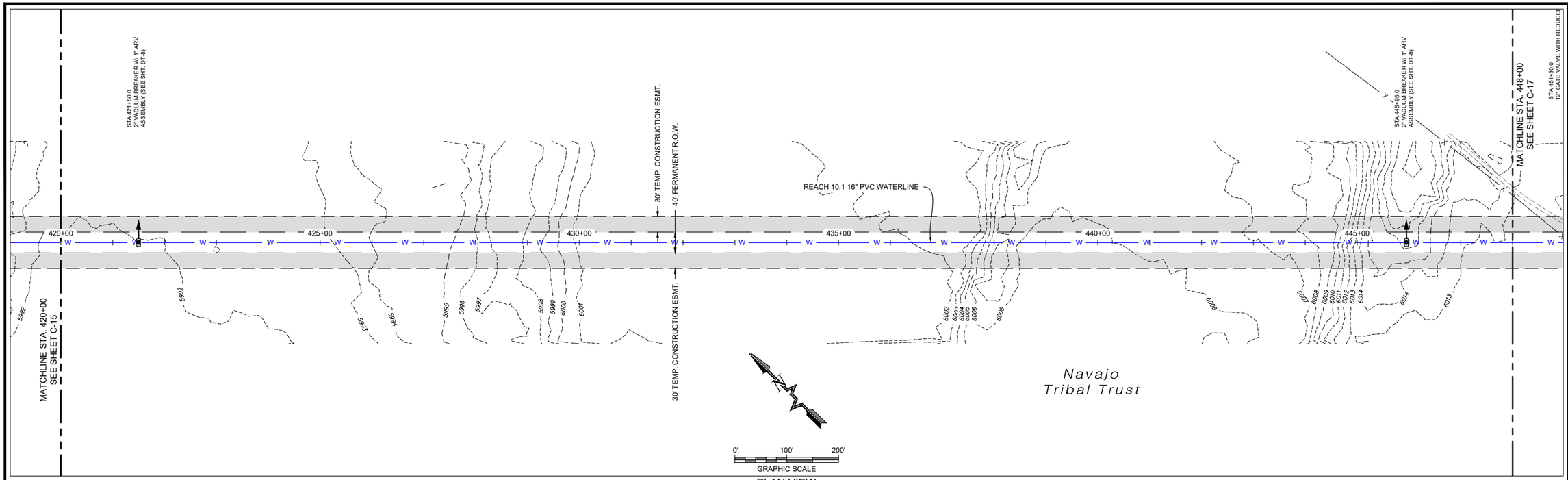
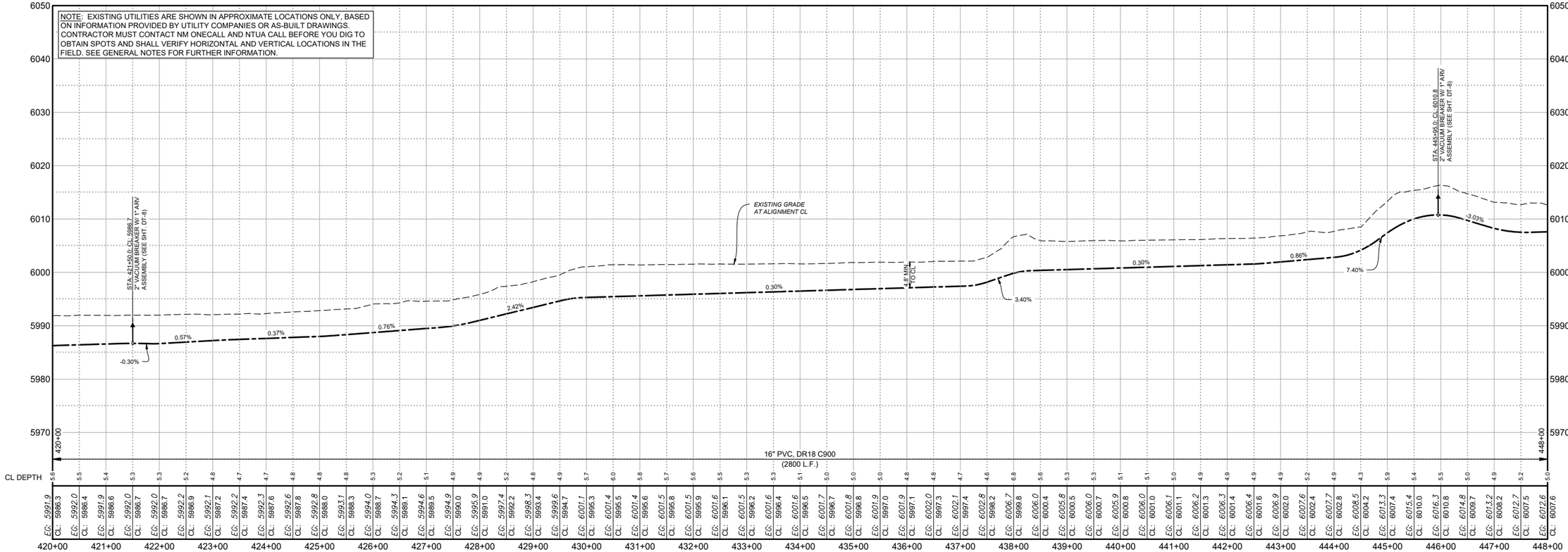
Project No: 6922268
Sheet: C-15



PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 420+00 To STA 448+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1

McKINLEY COUNTY, NEW MEXICO
SECTION 3, T. 18 N., R. 16 W.

TROY T. ADAMS — NEW MEXICO — 21073 — 12-31-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Project No: 6922268
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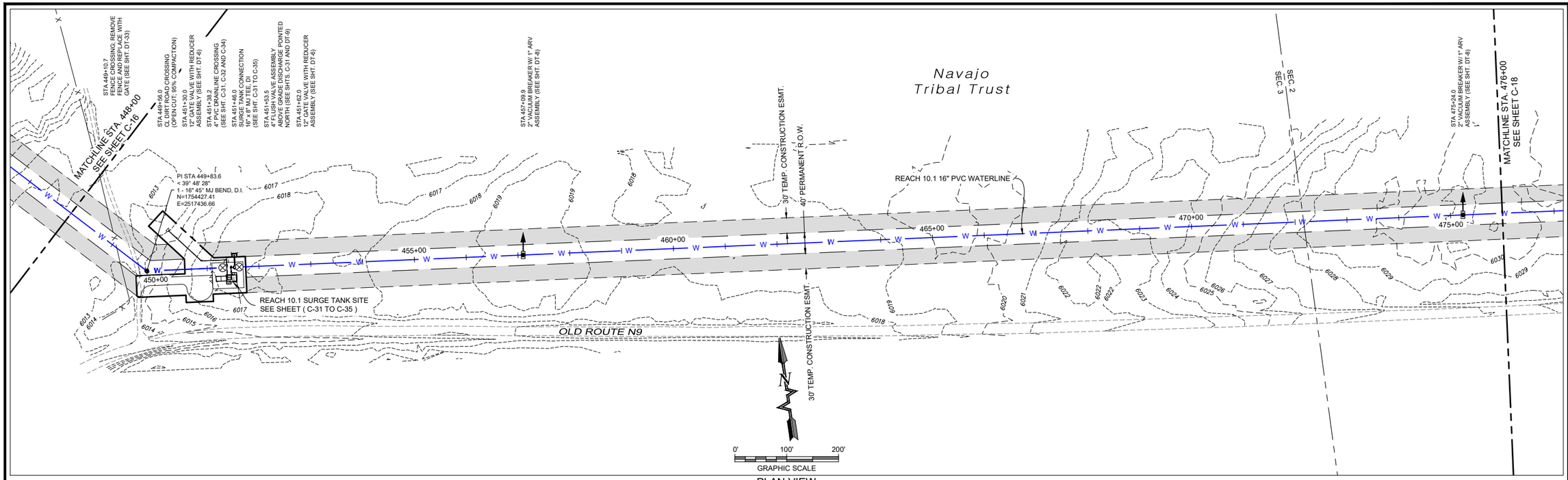
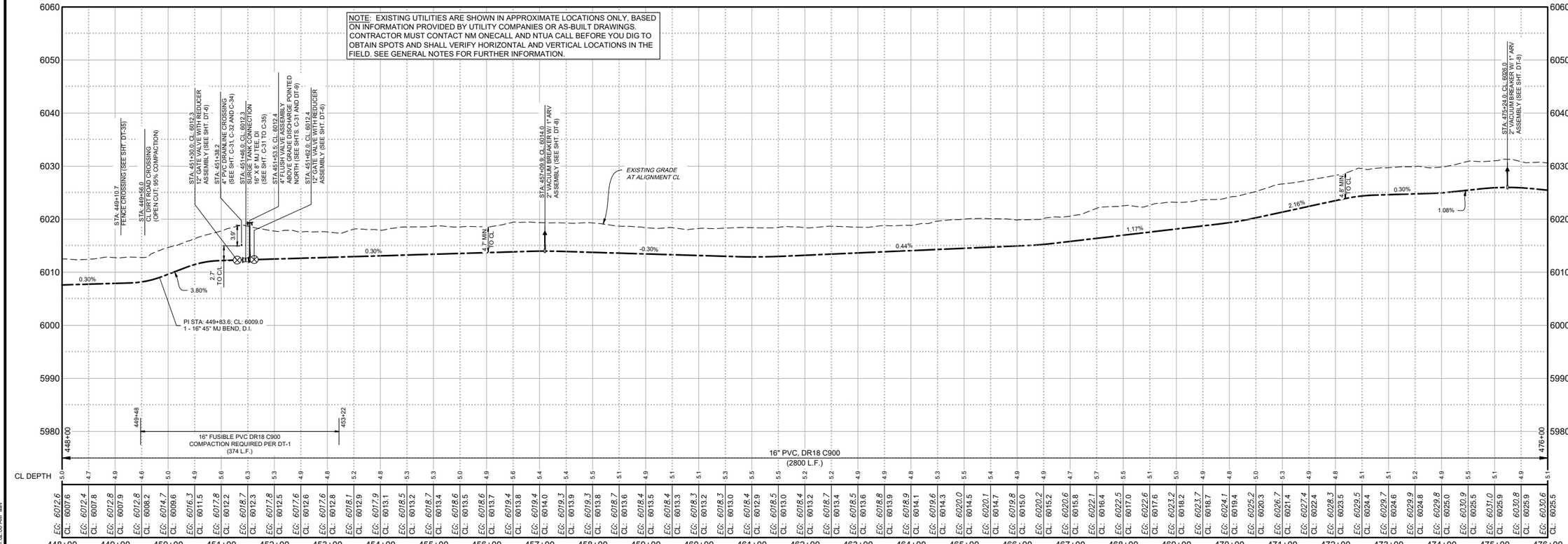


PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 448+00 To STA 476+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 2 AND 3, T. 18 N., R. 16 W.

TROY T. ADAMS
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
12-9-25

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EAP	MvH/AaV	TTT

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Project No: 6922268
Sheet: C-17

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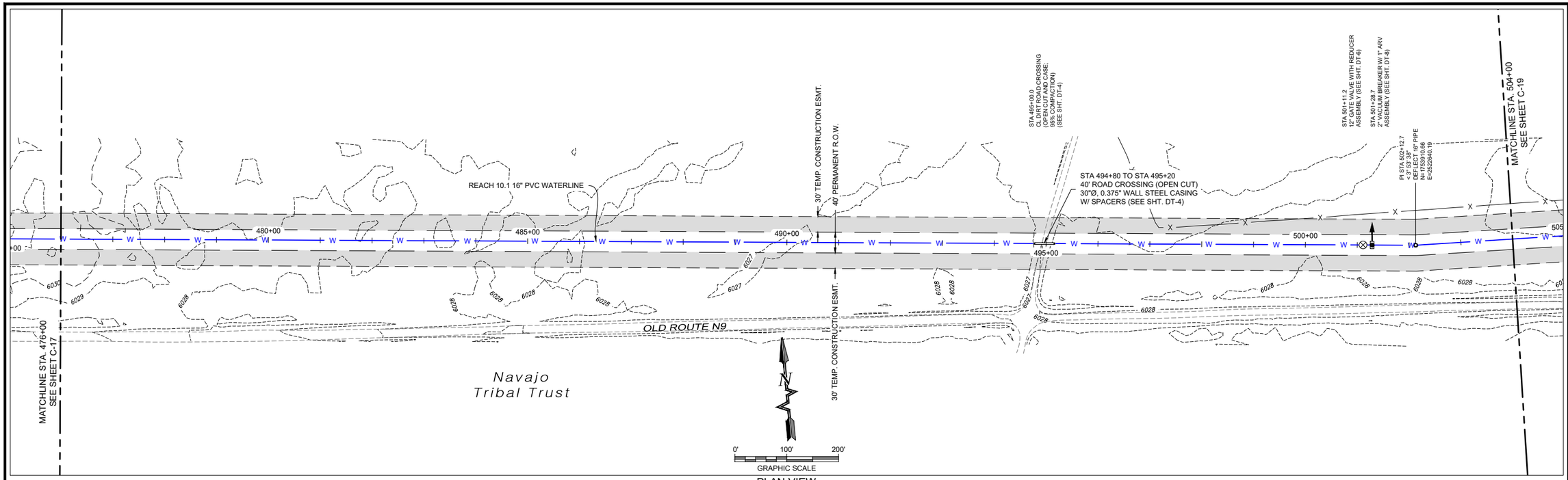
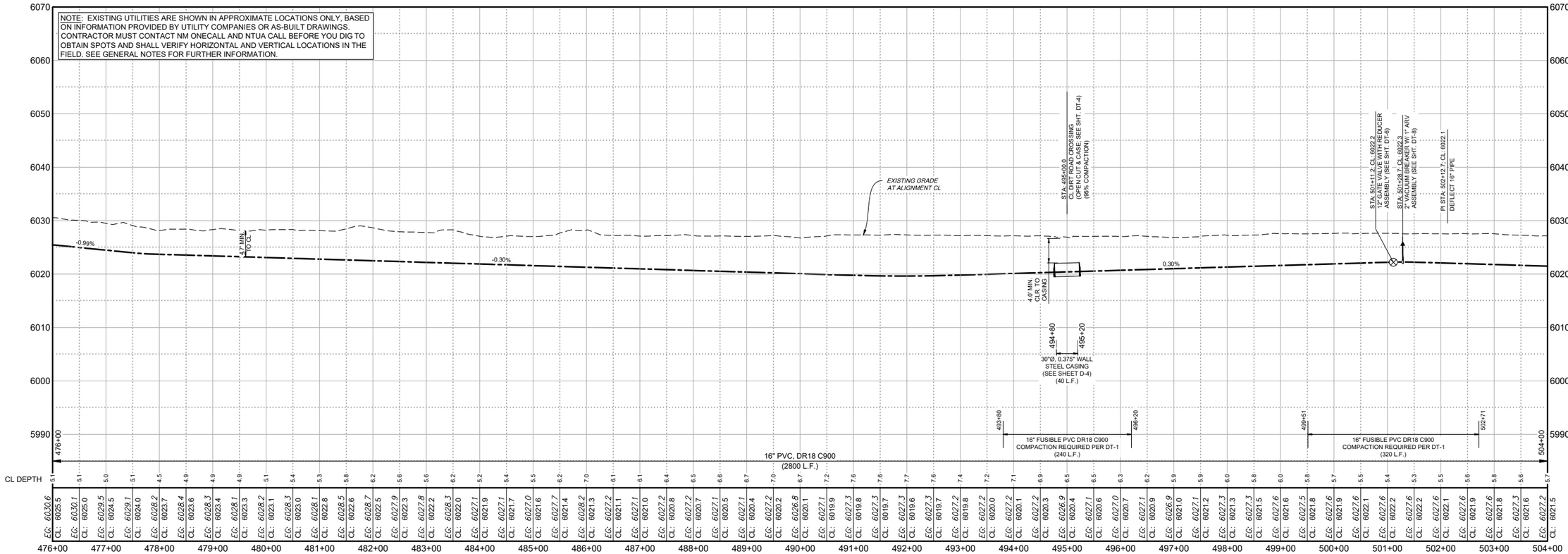


PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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By	Chk'd
Description	
Date	
Revision	

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 476+00 To STA 504+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 2, T. 18 N., R. 16 W.

TROY T. ADAMS — NEW MEXICO — 21073 — 12-9-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Date: September 2025
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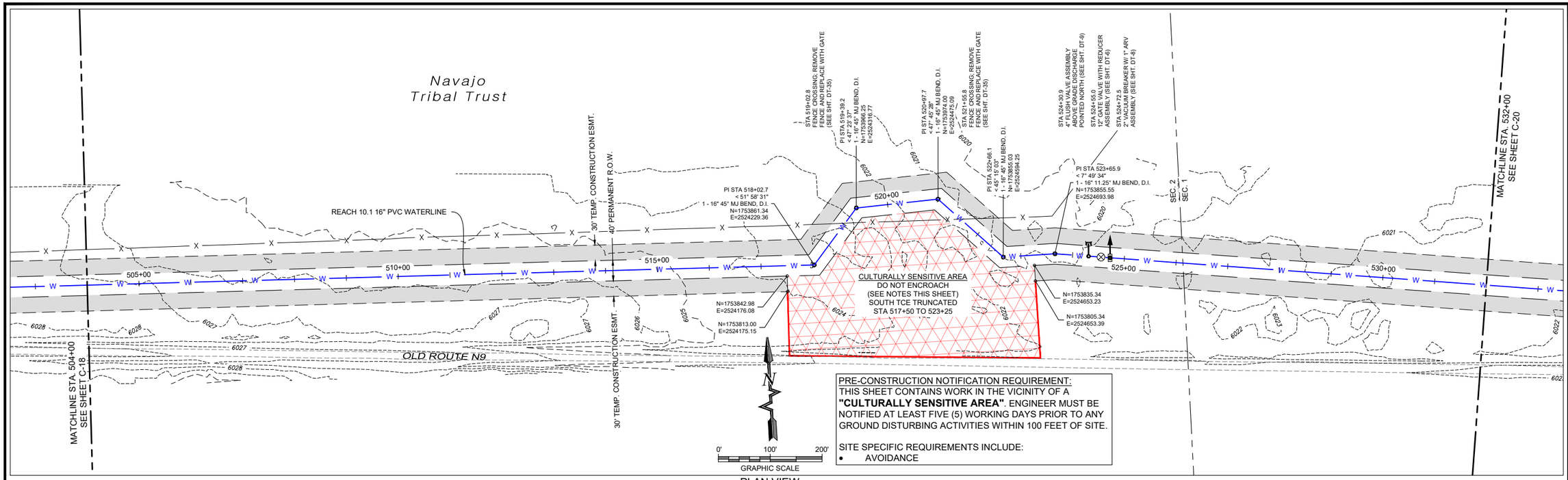
Project No: 6922268
Sheet: C-18



PRE-CONSTRUCTION NOTIFICATION REQUIREMENT:
THIS SHEET CONTAINS WORK IN THE VICINITY OF A **"CULTURALLY SENSITIVE AREA"**. ENGINEER MUST BE NOTIFIED AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY GROUND DISTURBING ACTIVITIES WITHIN 100 FEET OF SITE.

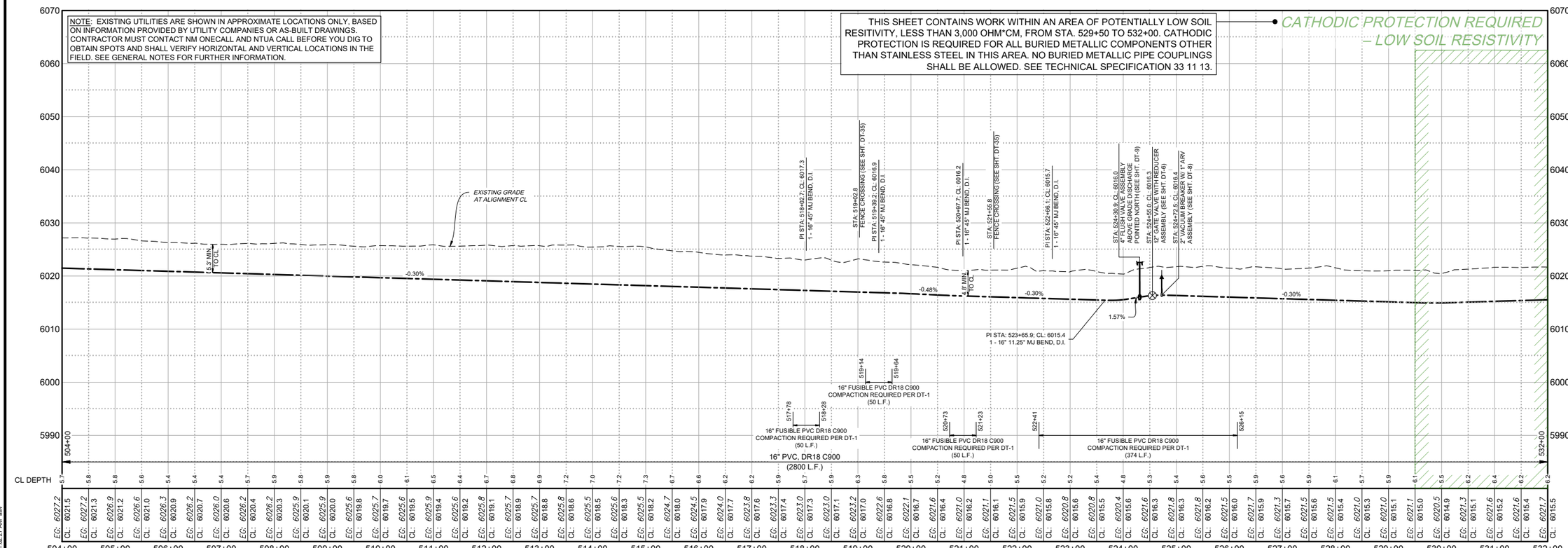
SITE SPECIFIC REQUIREMENTS INCLUDE:
- AVOIDANCE

PLAN VIEW
16" WATERLINE

NOTE: EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY, BASED ON INFORMATION PROVIDED BY UTILITY COMPANIES OR AS-BUILT DRAWINGS. CONTRACTOR MUST CONTACT NM ONECALL AND NTUA CALL BEFORE YOU DIG TO OBTAIN SPOTS AND SHALL VERIFY HORIZONTAL AND VERTICAL LOCATIONS IN THE FIELD. SEE GENERAL NOTES FOR FURTHER INFORMATION.

THIS SHEET CONTAINS WORK WITHIN AN AREA OF POTENTIALLY LOW SOIL RESITIVITY, LESS THAN 3,000 OHM*CM, FROM STA. 529+50 TO 532+00. CATHODIC PROTECTION IS REQUIRED FOR ALL BURIED METALLIC COMPONENTS OTHER THAN STAINLESS STEEL IN THIS AREA. NO BURIED METALLIC PIPE COUPLINGS SHALL BE ALLOWED. SEE TECHNICAL SPECIFICATION 33 11 13.

CATHODIC PROTECTION REQUIRED – LOW SOIL RESISTIVITY



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 504+00 To STA 532+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 1 AND 2, T. 18 N., R. 16 W.

TROY T. ADAMS — NEW MEXICO — 21073 — 12-9-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVt/AaV	TTT

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Project No: 6922268
Sheet: C-19

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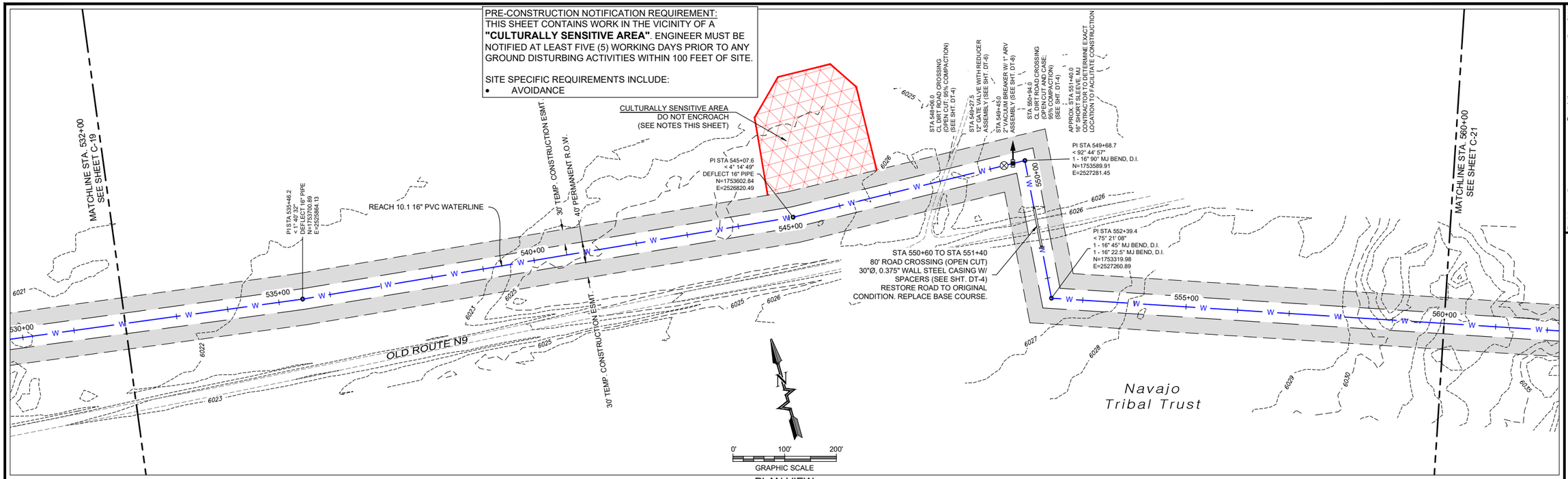
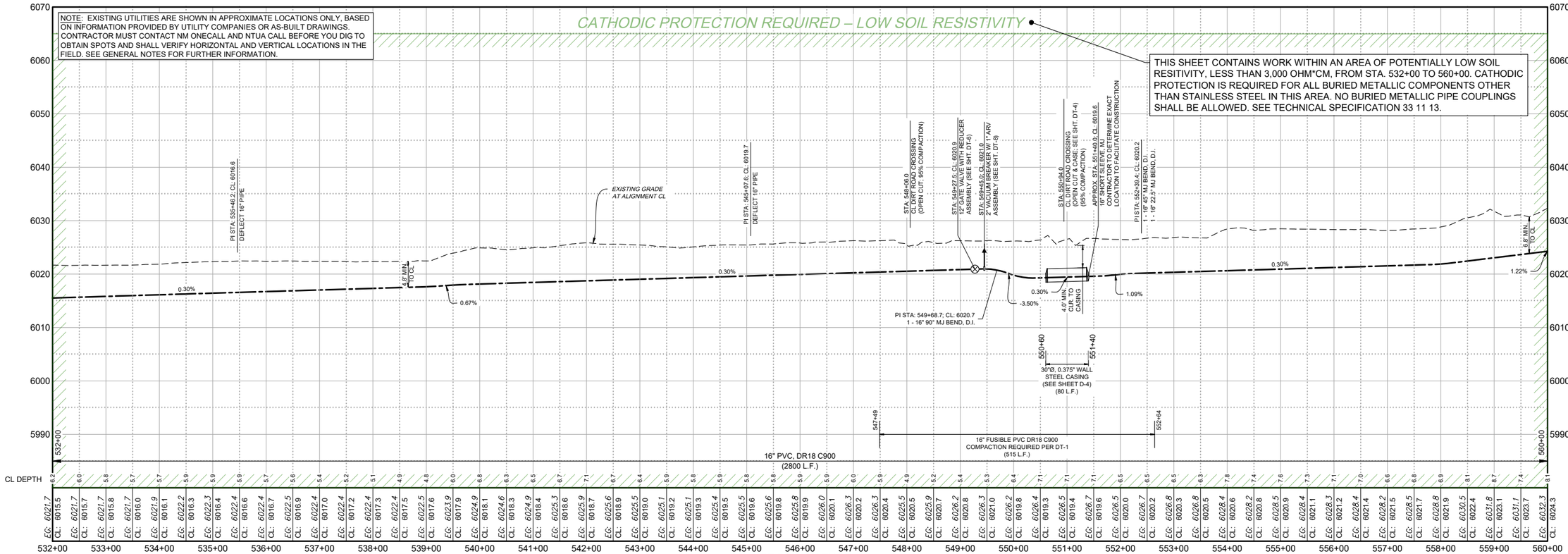
SITE SPECIFIC REQUIREMENTS INCLUDE:
- AVOIDANCE



PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chkd

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 532+00 To STA 560+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 1, T. 18 N., R. 16 W.

TROY T. ADAMS
NEW MEXICO
21073
9-29-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Date: September 2025
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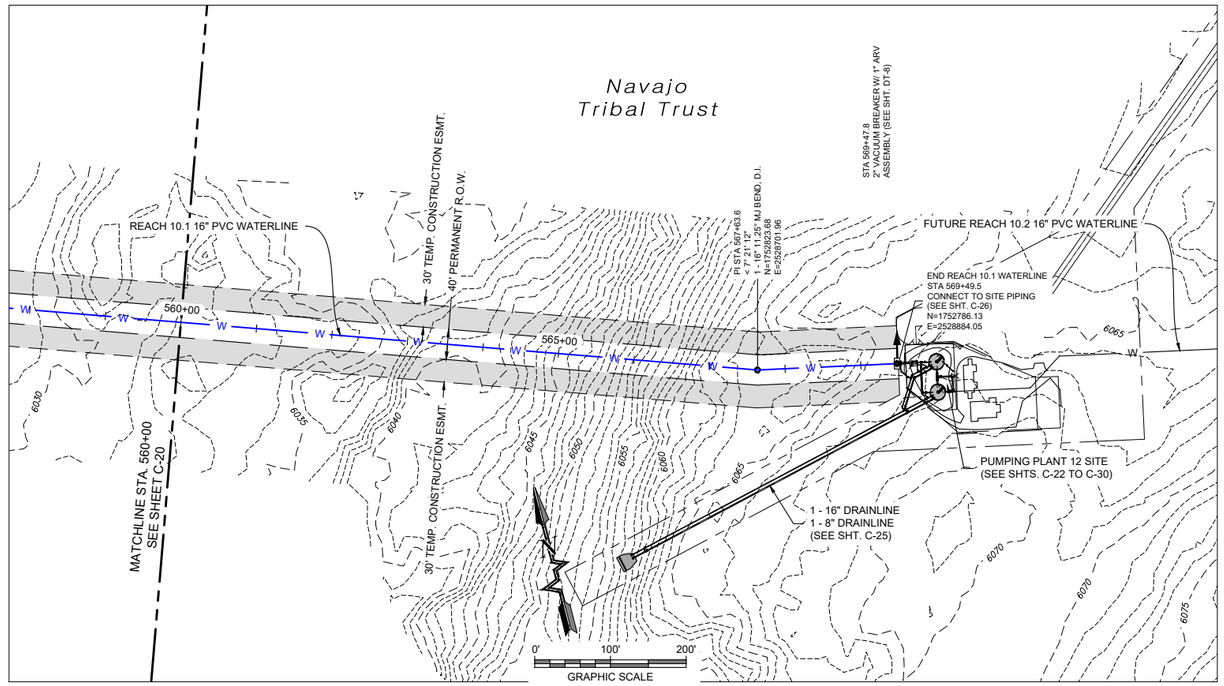
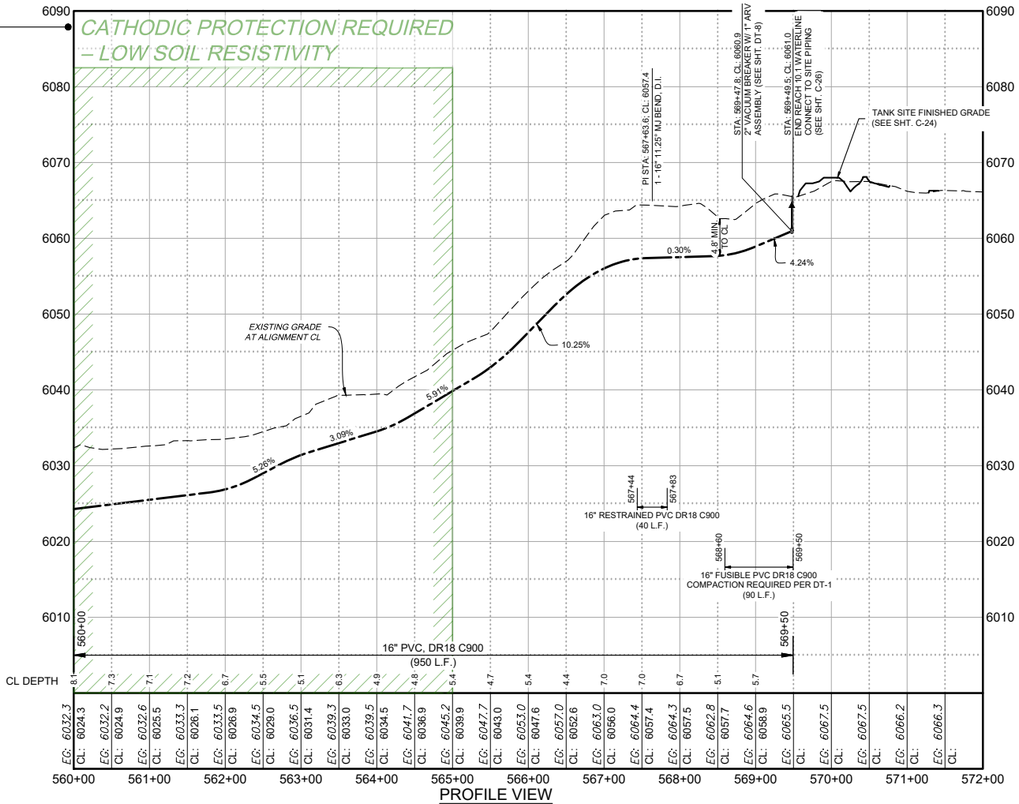
Vert: 1" = 20'
Project No: 6922268
Sheet: C-20



PLAN VIEW
16" WATERLINE

THIS SHEET CONTAINS WORK WITHIN AN AREA OF POTENTIALLY LOW SOIL RESITIVITY, LESS THAN 3,000 OHM*CM, FROM STA. 560+00 TO 565+00. CATHODIC PROTECTION IS REQUIRED FOR ALL BURIED METALLIC COMPONENTS OTHER THAN STAINLESS STEEL IN THIS AREA. NO BURIED METALLIC PIPE COUPLINGS SHALL BE ALLOWED. SEE TECHNICAL SPECIFICATION 33 11 13.



PROFILE VIEW
16" WATERLINE

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PLAN AND PROFILE STA 560+00 To STA 569+49.5
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 1, T. 18 N., R. 16 W.

TADAY LEE TADAY JR. NEW MEXICO 21073 LICENSED PROFESSIONAL ENGINEER 12-29-25

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Project No: 6922268
Sheet: C-21

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LEGEND

TEMPORARY CONSTRUCTION EASEMENT

6" COMPACTED BASE COURSE

NOTES:
1. PUMPING PLANT 12 SITE IS TO BE CONSTRUCTED IN PHASES. THE PP12 REGULATING TANKS ARE TO BE CONSTRUCTED AS PART OF BBN9 REACH 10.1 PROJECT.
2. THE PP12 PUMPING PLANT AND SURGE TANK BUILDING ARE TO BE CONSTRUCTED AS PART OF BBN9 REACH 10.2. SITE SURFACING MATERIAL BASE COURSE AND GRAVEL TO BE INSTALLED AS PART OF THE REACH 10.2 PROJECT.
3. THE ACCESS ROAD TO BE CONSTRUCTED AS PART OF BBN9 REACH 10.1 PROJECT. THE ACCESS DRIVEWAY TO BE CONSTRUCTED AS PART OF BBN9 REACH 10.2 PROJECT.
4. GRAY LINEWORK IS PROPOSED REACH 10.2 LAYOUT.

Navajo Tribal Trust

OLD ROUTE N9

30' TEMP. CONSTRUCTION ESMT.

40' PERMANENT R.O.W.

595+00

REACH 10.1 16" PVC WATERLINE (SEE PLAN AND PROFILE, SHT. C-21)

PI STA 567+63.6
< 7° 21' 12"
N=1752823.68
E=2528701.96

END REACH 10.1 WATERLINE
PI STA 569+49.5
CONNECT TO SITE PIPING
N=1752786.13
E=2528884.05

STA 569+47.8
2" VACUUM BREAKER W/ 1" ARV ASSEMBLY (SEE SHT. DT-7)

SEE DETAIL "A" (SHT. C-26) FOR PIPING AND RIP-RAP DESCRIPTIONS.

PUMPING PLANT 12 SITE (SEE SITE PLAN SHT. C-23)

16" AND 8" DRAIN LINES (SEE PLAN AND PROFILE SHT. C-25)

ESMT. CORNER
N=1752627.74
E=2528389.83

ESMT. CORNER
N=1752579.15
E=2528401.63

ESMT. CORNER
N=1752745.69
E=2528875.71

ESMT. CORNER
N=1752681.56
E=2528823.50

ESMT. CORNER
N=1752846.08
E=2528896.41

ROAD CENTERLINE
N=1752828.11
E=2528918.23

ROAD CENTERLINE
N=1752808.28
E=2529016.16

ROAD CENTERLINE
N=1752830.70
E=2529101.46

ESMT. CORNER
N=1752904.12
E=2529139.06

ESMT. CORNER
N=1752907.90
E=2529235.89

PERMANENT EASEMENT

ESMT. CORNER
N=1753279.86
E=2529527.07

ESMT. CORNER
N=1753231.49
E=2529522.50

ROAD CENTERLINE
N=1753196.82
E=2529528.11

ROAD CENTERLINE
N=1753277.04
E=2529556.94

ESMT. CORNER
N=1753274.23
E=2529586.80

ROAD CENTERLINE
N=1753246.81
E=2529554.08

ESMT. CORNER
N=1753201.64
E=2529579.95

12' WIDE ACCESS ROAD.
1,341 SQ. YDS. 6" THICK COMPACTED BASE COURSE OVER 18" COMPACTED SUBGRADE.
(SEE SHTS. C-29 AND C-30)

FUTURE REACH 10.2 ACCESS DRIVEWAY

FUTURE REACH 10.2 PARKING AND TURN AROUND

REACH 10.2 WATERLINE

ESMT. CORNER
N=1752609.23
E=2529174.31

R100.0'

50.0'

60.0'

0' 50' 100'
GRAPHIC SCALE

PUMPING PLANT 12 OVERALL SITE PLAN

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Revision	Date	Description	By	Chkd

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www.soudermiller.com

Client: The Navajo Nation

Location: Coyote Canyon, NM

PUMPING PLANT 12 OVERALL SITE PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 1, T. 18 N., R. 16 W.

TROY T. ADAMS
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Date: September 2025

Scale: Horiz: 1" = 100'
Vert: N/A

Project No: 6922268

Sheet: C-22

P:\6-Beacon Bisti N9 Water Line (6922268)\CAD\Civil\Reach 10.1 Plan Set\Construction Plans\Reach 10.1 Tank Site Plan.dwg
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NOTES:
1. GRAY LINEWORK IS PROPOSED REACH 10.2 LAYOUT.

Navajo
Tribal Trust

30' TEMPORARY CONSTRUCTION EASEMENT

40' PERMANENT R.O.W.

30' TEMPORARY CONSTRUCTION EASEMENT

PERMANENT EASEMENT

FENCE CORNER
N=1752807.62
E=2528898.69

REACH 10.1 PERMANENT FENCE
8' HIGH CHAIN LINK FENCE
APPROX. 166 L.F. INCLUDING GATES
(SEE SHT. DT-35)

REACH 10.1 16" PVC WATERLINE
(SEE PLAN AND PROFILE, SHT. C-21)

END REACH 10.1 WATERLINE
PI STA 569+49.5
CONNECT TO SITE PIPING
N=1752786.13
E=2528884.05

STA 569+47.8
2" VACUUM BREAKER WITH
1" AIR RELEASE VALVE
(SEE DETAIL DT-8)

4" FLUSH LINE

FENCE CORNER
N=1752752.77
E=2528887.38

REACH 10.1
PERMANENT FENCE

20' DOUBLE
SWING GATE
(SEE SHT. DT-35)

REACH 10.1 PARKING
AND TURN AROUND

R20.0'

48.0'

64.00'

3' PEDESTRIAN GATE
(SEE SHT. DT-35)

REACH 10.1
PERMANENT FENCE

FENCE CORNER
N=1752794.69
E=2528961.37

REACH 10.1 FOREBAY TANK
ACCESS ROAD

R100.00'

CONSTRUCTION
STAGING AREA

FUTURE REACH 10.2
ACCESS DRIVEWAY

PUMPING PLANT 12
FOREBAY TANK 1
NOMINAL CAPACITY: 75,000 GAL
NOMINAL SIZE: 20' DIA. x 32' HT.
BASE ELEV. = 6068.00'
OVERFLOW ELEV. = 6099.00'
(SEE DETAILS, DT-23 & DT-24)

8" ALTITUDE CONTROL
VALVE VAULT
(SEE SHTS. DT-10 AND DT-11)

14.00'

30.53'

56.00'

68.23'

REACH 10.1 TEMPORARY FENCE
APPROX. 119 LINEAR FEET

FUTURE REACH 10.2
SITE FENCING

4" PUMP
RECIRCULATION LINE

FUTURE REACH 10.2
PUMPING PLANT 12

FUTURE REACH 10.2 WATERLINE

46.31'

14.00'

30.74'

8" DRAIN LINE
(SEE PLAN AND PROFILE SHT. C-25)

16" DRAIN LINE

FENCE CORNER
N=1752714.49
E=2528913.45

REACH 10.1
TEMPORARY FENCE

FUTURE REACH 10.2
BUILDING FLOOR DRAINS

FENCE CORNER
N=1752708.28
E=2528943.56

PUMPING PLANT 12
FOREBAY TANK 2
NOMINAL CAPACITY: 75,000 GAL
NOMINAL SIZE: 20' DIA. x 32' HT.
BASE ELEV. = 6068.00'
OVERFLOW ELEV. = 6099.00'
(SEE DETAILS, DT-25 & DT-26)

FUTURE REACH 10.2
SURGE TANK BUILDING

FUTURE REACH 10.2
PARKING AND TURN
AROUND

FUTURE 20' DOUBLE
SWING GATE

FUTURE REACH 10.2
FLUSH DRAIN LINE

FUTURE REACH 10.2
SITE FENCING

PERMANENT EASEMENT

N

0' 10' 20'
GRAPHIC SCALE

PUMPING PLANT 12 SITE PLAN

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

PUMPING PLANT 12 SITE PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 1, T. 18 N., R. 16 W.

TERRY T. ADAMS
NEW MEXICO
21073
12-29-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Project No: 6922268
Sheet: C-23

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LEGEND

— — — PUMPING PLANT 12 SITE PAD EXTENTS

NOTES:
1. GREY LINEWORK IS PROPOSED REACH 10.2 LAYOUT.
2. THE PP12 AND SURGE TANK BUILDING LOCATION SHALL BE CLEARED AND GRADED PER THE PROVIDED PLANS. BUILDING EXCAVATION AND FOUNDATION WORK WILL BE COMPLETED AS PART OF THE REACH 10.2 PROJECT
1. CONTOURS SHOWN WITHIN FENCED AREA AND ACCESS DRIVE REFER TO FINISHED GRADE TOP OF SURFACING MATERIAL.
3. FINISHED GRADE WITHIN FENCED AREA SHALL BE 2" DEEP GRAVEL OVER 4" DEEP BASECOURSE. FINISHED GRADE FOR ACCESS DRIVE SHALL BE 6" DEEP BASE COURSE. (TO BE INSTALLED PER REACH 10.2).
4. FG = TOP OF SURFACING MATERIAL OR NATIVE SOIL.

Navajo Tribal Trust

PERMANENT EASEMENT

PUMPING PLANT 12
FOREBAY TANK 1
NOMINAL CAPACITY: 75,000 GAL
NOMINAL SIZE: 20' DIA. x 32' HT.
BASE ELEV. = 6068.00'
FOUNDATION TOP ELEV. = 6068.00'

N=1752808.80
E=2528897.91
FG=6065.75

N=1752795.63
E=2528961.80
FG=6065.75

SWALE CL
N=1752788.68
E=2528970.96
FG=6065.94

CENTER OF VAULT
N=1752780.87
E=2528904.62

CENTER OF TANK
N=1752775.93
E=2528933.54
FG=6068.00

8" ALTITUDE CONTROL VALVE VAULT
TOP OF VAULT EL 6067.50'
(SEE SHTS. DT-10 AND DT-11)

N=1752783.39
E=2528909.73
FG=6067.25

SWALE CL
N=1752778.12
E=2528962.95
FG=6066.08

FUTURE SITE FENCE
(REACH 10.2)

PUMPING PLANT 12 SITE PAD
BOUNDARY

REACH 10.1 16" PVC WATERLINE

N=1752778.35
E=2528899.50
FG=6067.25

SWALE CL
N=1752769.32
E=2528887.06
FG=6066.00

N=1752756.23
E=2528929.48
FG=6067.51

SWALE CL
N=1752753.97
E=2528951.99
FG=6066.34

CENTER OF TANK
N=1752736.53
E=2528925.42
FG=6068.00

FUTURE PP12 PUMP STATION
FINISHED FLOOR EL 6068.25'
(REACH 10.2)

N=1752752.56
E=2528886.32
FG=6067.00

SWALE CL
N=1752745.63
E=2528896.66
FG=6066.26

CLEAR AND LEVEL FUTURE PUMP
STATION AND SURGE TANK BUILDING
AREA FLAT AT FINISHED GRADE 6068.00'
DETAILED GRADING PER REACH 10.2

SWALE CL
N=1752721.27
E=2528945.24
FG=6066.68

SWALE CL
N=1752720.59
E=2528913.71
FG=6066.56

SWALE CL
N=1752708.85
E=2528942.68
FG=6066.81

PUMPING PLANT 12
FOREBAY TANK 2
NOMINAL CAPACITY: 75,000 GAL
NOMINAL SIZE: 20' DIA. x 32' HT.
BASE ELEV. = 6068.00'
FOUNDATION TOP ELEV. = 6068.00'

SWALE CL
N=1752689.93
E=2528944.41
FG=6067.00

SWALE CL
N=1752675.73
E=2528978.35
FG=6067.37

N=1752677.46
E=2528937.47
FG=6068.75

FUTURE SURGE TANK BUILDING
FINISHED FLOOR 6068.25'
(REACH 10.2)

SWALE CL
N=1752669.20
E=2529010.03
FG=6067.69

N=1752736.91
E=2529039.18
FG=6067.45

N=1752730.90
E=2529068.34
FG=6067.80

FUTURE REACH 10.2 WATERLINE

N=1752699.85
E=2529081.52
FG=6068.29

N=1752662.64
E=2529073.59
FG=6068.72

N=1752653.76
E=2529052.44
FG=6069.00

1.0%

N
0' 10' 20'
GRAPHIC SCALE

PUMPING PLANT 12 SITE GRADING PLAN

PUMPING PLANT 12 SITE CUT/FILL DATA

MATERIAL TYPE	CUT	FILL	EXPORT/IMPORT
*NATIVE SOILS	220 CU. YDS.	159 CU.YDS	61 CU. YDS. EXPORT
SURFACING MATERIAL (ACCESS ROAD 6" BASE COURSE)	---	224 CU.YDS	224 CU. YDS. EXPORT
RIP RAP (CAGED)	---	21 CU. YDS	21 CU. YDS. IMPORT

NOTES:
1. THESE EARTHWORK QUANTITIES ARE ESTIMATES, PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. BIDDER IS NOT ENTITLED TO BASE THEIR BID ON THESE QUANTITIES, NOR TO SUBMIT ANY CLAIM IN THE EVENT THAT ACTUAL EARTHWORK QUANTITIES DIFFER FROM THESE ESTIMATES.
2. ALL GRADING WORKS SHALL BE COMPACTED TO 95% STANDARD PROCTOR.

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

PUMPING PLANT 12 SITE GRADING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 1, T. 18 N., R. 16 W.

TROY TADANO — NEW MEXICO — 21073 — 12-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Date: September 2025
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Project No: 6922268
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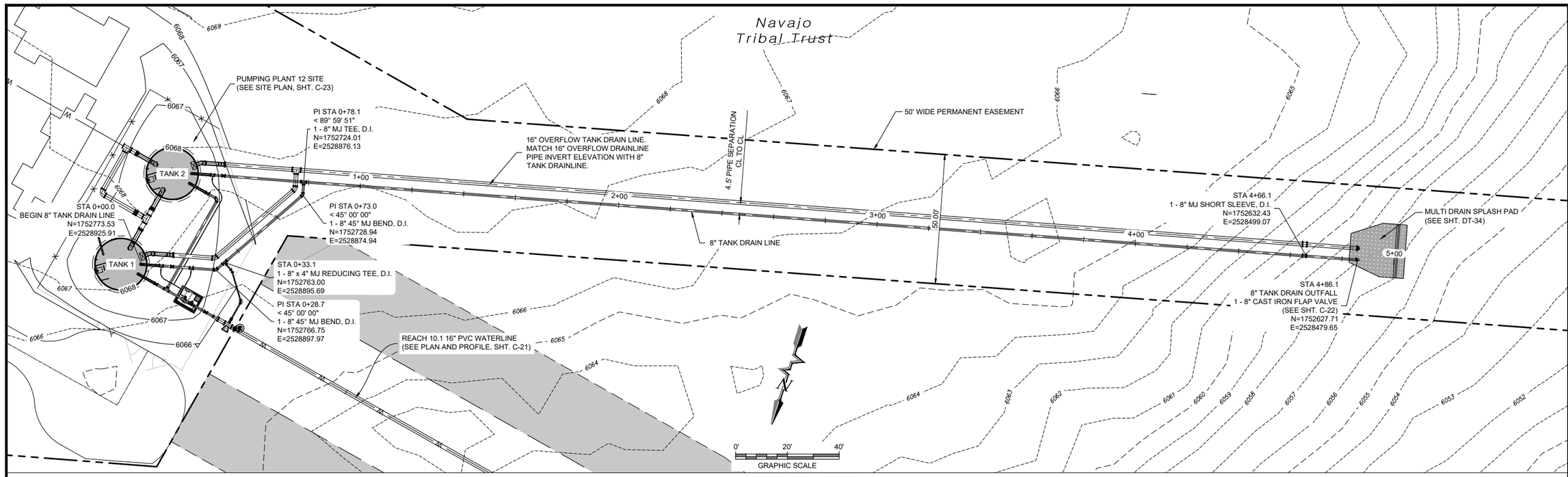
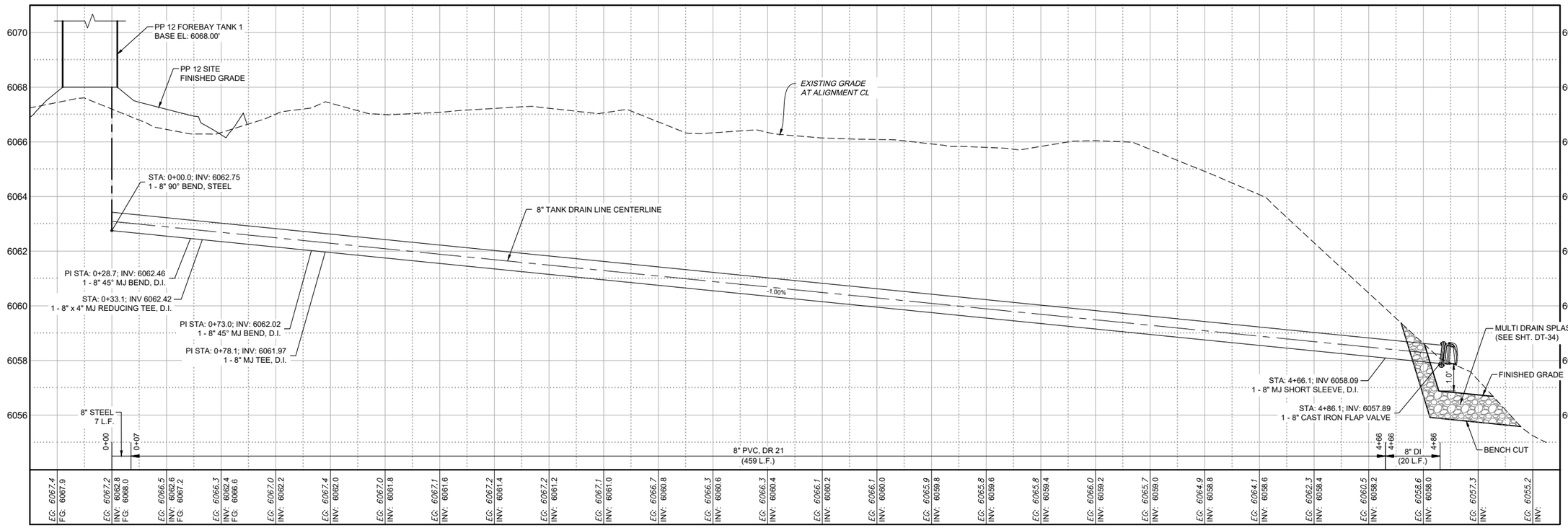


PUMPING PLANT 12 SITE
8" TANK 1 DRAINLINE PLAN



PUMPING PLANT 12 SITE
8" TANK 1 DRAINLINE PROFILE

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PUMPING PLANT 12 DRAIN PLAN AND PROFILE
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1

McKINLEY COUNTY, NEW MEXICO
SECTION 1, T. 18 N., R. 16 W.

TERRY T. ADAMS
NEW MEXICO
21073
12-9-25
LICENSED PROFESSIONAL ENGINEER

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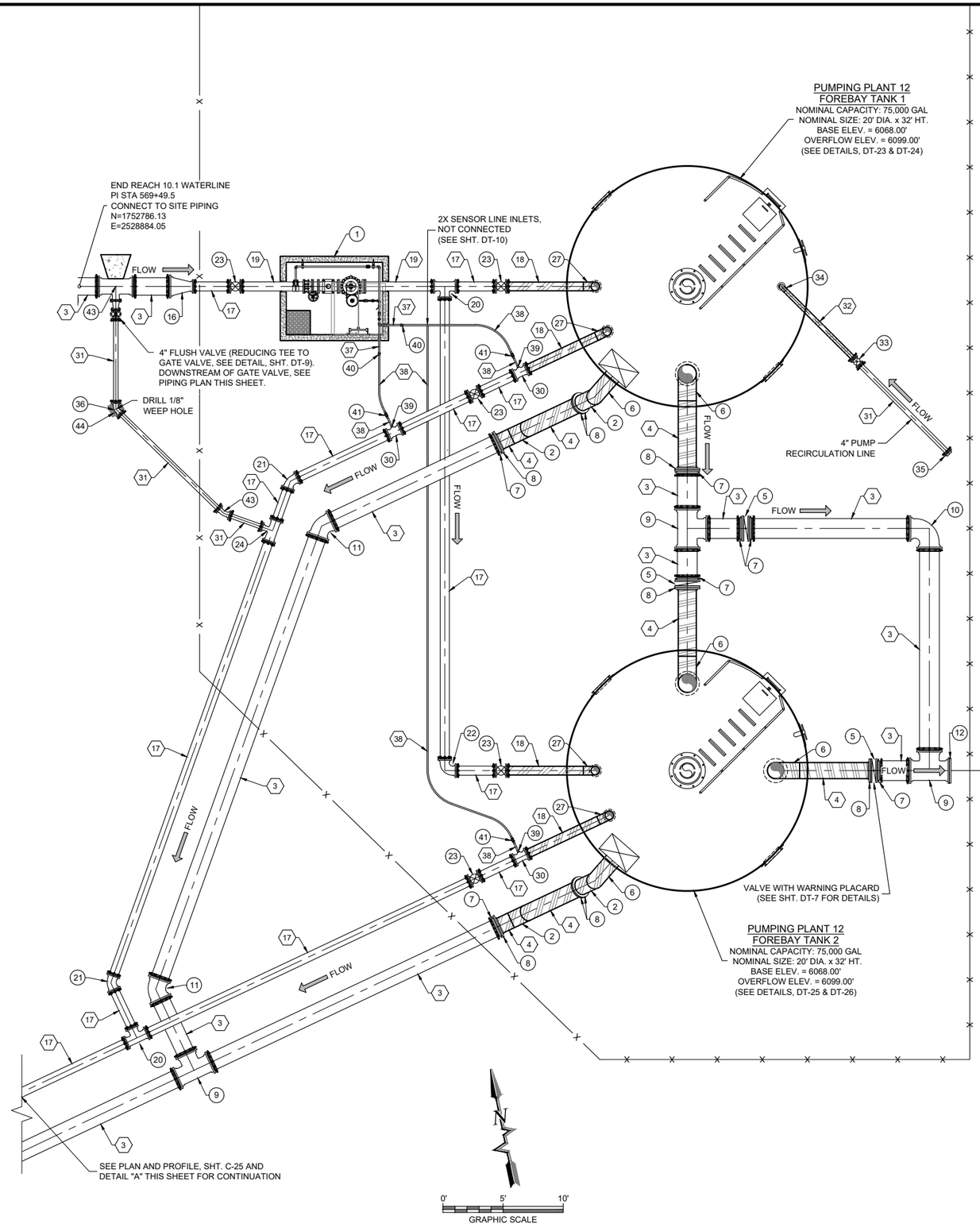
KEYED NOTES
PUMPING PLANT 12 SITE

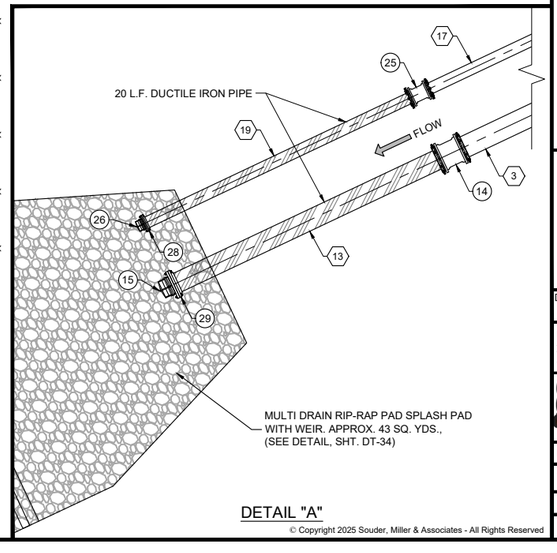
ITEM NO.	DESCRIPTION
1	8" ALTITUDE CONTROL VALVE VAULT (SEE DETAIL, SHTS. DT-10 AND DT-11)
2	16" 45° BEND, WELDED STEEL
3	16" PVC DR18 PIPE
4	16" STEEL PIPE, STANDARD WALL
5	16" FL x FL BUTTERFLY VALVE (SEE DETAIL, SHT. DT-7) 250 psi
6	16" 90° BEND, WELDED STEEL
7	16" MJ FLANGE ADAPTER, FBE-COATED WITH SS 304 BOLTS, MEGAFLANGE SERIES 2100, 235 psi, OAE
8	16" FLANGE, WELDED STEEL
9	16" MJ TEE, DI
10	16" MJ 90° BEND, DI
11	16" MJ 45° BEND, DI
12	16" MJ PLUG, DI
13	16" DUCTILE IRON PIPE
14	16" MJ SHORT SLEEVE, DI
15	16" CAST IRON FLAP VALVE (SEE DETAIL, SHT. DT-33)
16	16" x 8" MJ REDUCER, D.I.
17	8" PVC DR18 PIPE
18	8" STEEL PIPE, STANDARD WALL
19	8" DUCTILE IRON PIPE
20	8" MJ TEE, DI
21	8" MJ 45° BEND, DI
22	8" MJ 90° BEND, DI
23	8" MJ x MJ GATE VALVE (SEE DETAIL, SHT. DT-7) 250 psi
24	8" x 4" MJ REDUCING TEE, D.I.
25	8" MJ SHORT SLEEVE, DI
26	8" CAST IRON FLAP VALVE (SEE DETAIL, SHT. DT-33)
27	8" 90° BEND, WELDED STEEL
28	8" EZ FLANGE
29	16" EZ FLANGE
30	8" x 1" MJ TAPPED TEE, NPT, DI
31	4" PVC DR14 PIPE
32	4" STEEL PIPE, STANDARD WALL
33	4" MJ x MJ GATE VALVE (SEE DETAIL DT-7) 250 psi
34	4" 90° BEND, WELDED STEEL
35	4" MJ CAP, DI
36	4" MJ 45° BEND, DI
37	1" STEEL PIPE, NPT, SS 304 (SEE DETAIL, SHT. DT-10)
38	1" ANNEALED STAINLESS STEEL TUBING
39	1" MNPT x COMPRESSION COUPLING
40	1" FNPT x COMPRESSION COUPLING
41	1" MUELLER 300 BALL CURB VALVE, 300 psi OAE WITH COUPLINGS (SEE DETAIL, SHT. DT-11)
42	4" FLUSH VALVE ASSEMBLY (REDUCING TEE TO GATE VALVE ONLY, SEE DETAIL, SHT. DT-9)
43	4" MJ 22.55° BEND, DI
44	ROUNDED ROCK (1.5 CU. YD.)

NOTES:

1. CONTRACTOR SHALL FIELD SURVEY ELEVATION OF OVERFLOW WEIR OF BOTH TANKS AND ENSURE OVERFLOW WEIR ELEVATIONS MATCH (WITHIN A TOLERANCE OF ±1/2").
2. NO HIGH SPOTS PERMITTED ON SITE PIPING. ALL SITE PIPING (INCLUDING SENSOR LINES) SHALL SLOPE UP TOWARDS TANK OR VACUUM BREAKER / AIR RELEASE VALVE VAULT, (MIN. 1%).
3. ALL MATERIALS, FITTINGS AND APPURTENANCES SHALL BE RATED TO AT LEAST 235 psi, UNLESS OTHERWISE NOTED.
4. ALL PIPE AND FITTINGS UNDERNEATH AND WITHIN 5' OF TANK FOUNDATION SHALL BE STEEL AND SHALL BE SHOP WELDED, SHOP COATED, X-RAY TESTED AND PRESSURE TESTED PRIOR TO PLACING FOUNDATION. SHOP COATINGS SHALL BE APPLIED AFTER WELDING.
5. ALL VALVES AND STEEL-TO-PVC COUPLINGS AT TANK SHALL BE LOCATED AT LEAST 5' FROM EDGE OF FOUNDATION. COORDINATE WITH TANK FOUNDATION PROFESSIONAL ENGINEER DESIGN.
6. ALL BURIED NON-STAINLESS STEEL PIPE AND FITTINGS SHALL BE WAX TAPE-COATED, PER SPECIFICATIONS.
7. ALL BURIED STEEL PIPE, WELDED FITTINGS AND OTHER COMPONENTS SHALL BE EXTERIOR COATED W/ COAL TAR EPOXY AND COLD APPLIED TAPE COATING PER SPECIFICATIONS, AND INTERIOR COATED TO MATCH TANK INTERIOR SIDE WALL.
8. ALL BURIED DUCTILE IRON PIPE AND ALL DUCTILE IRON FITTINGS SHALL BE DOUBLE-WRAPPED POLYETHYLENE, PER SPECIFICATIONS. INNER JACKET SHALL BE V-BIO ENHANCED, MIN. 8-MIL. OUTER JACKET SHALL BE STANDARD PE, MIN. 8-MIL.
9. ALL BURIED DUCTILE IRON FITTINGS SHALL BE MJ. ALL BURIED DUCTILE IRON PIPES SHALL BE SOLID PIECES. NO DUCTILE IRON PIPE JOINTS ALLOWED.
10. ALL PRESSURE BEARING PIPES WITHIN SITE SHALL BE SHALL BE HYDROSTATIC PRESSURE TESTED AND FULLY RESTRAINED. ALL PVC PIPE JOINTS LARGER THAN 2" SHALL BE FUSED. REFER TO DETAIL, SHT. DT-3.
11. STEEL OVERFLOW PIPING SHALL BE SHOP COATED WITH UV RESISTANT POLYAMIDE EPOXY PER TECHNICAL SPECIFICATIONS.
12. FLANGES SHALL BE ANSI CLASS 125 (IRON) / ANSI CLASS 150 (STEEL).
13. INSTALL ADDITIONAL 1" SS 304 FITTINGS AND DRESSER COUPLINGS AS NEEDED TO FACILITATE SENSOR LINE INSTALLATION.
14. ALL MJ DI FITTINGS AND VALVES SHALL BE RESTRAINED WITH EBAA IRON MEGALUG MECHANICAL JOINT RESTRAINTS, OAE.



PUMPING PLANT 12 SITE PIPING PLAN



DETAIL "A"

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Location: Coyote Canyon, NM
Client: The Navajo Nation

PUMPING PLANT 12 SITE PIPING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 1, T. 18 N., R. 16 W.

TROY T. A. DAN — NEW MEXICO — 21073 — 12-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Project No: 6922268
Sheet: C-26

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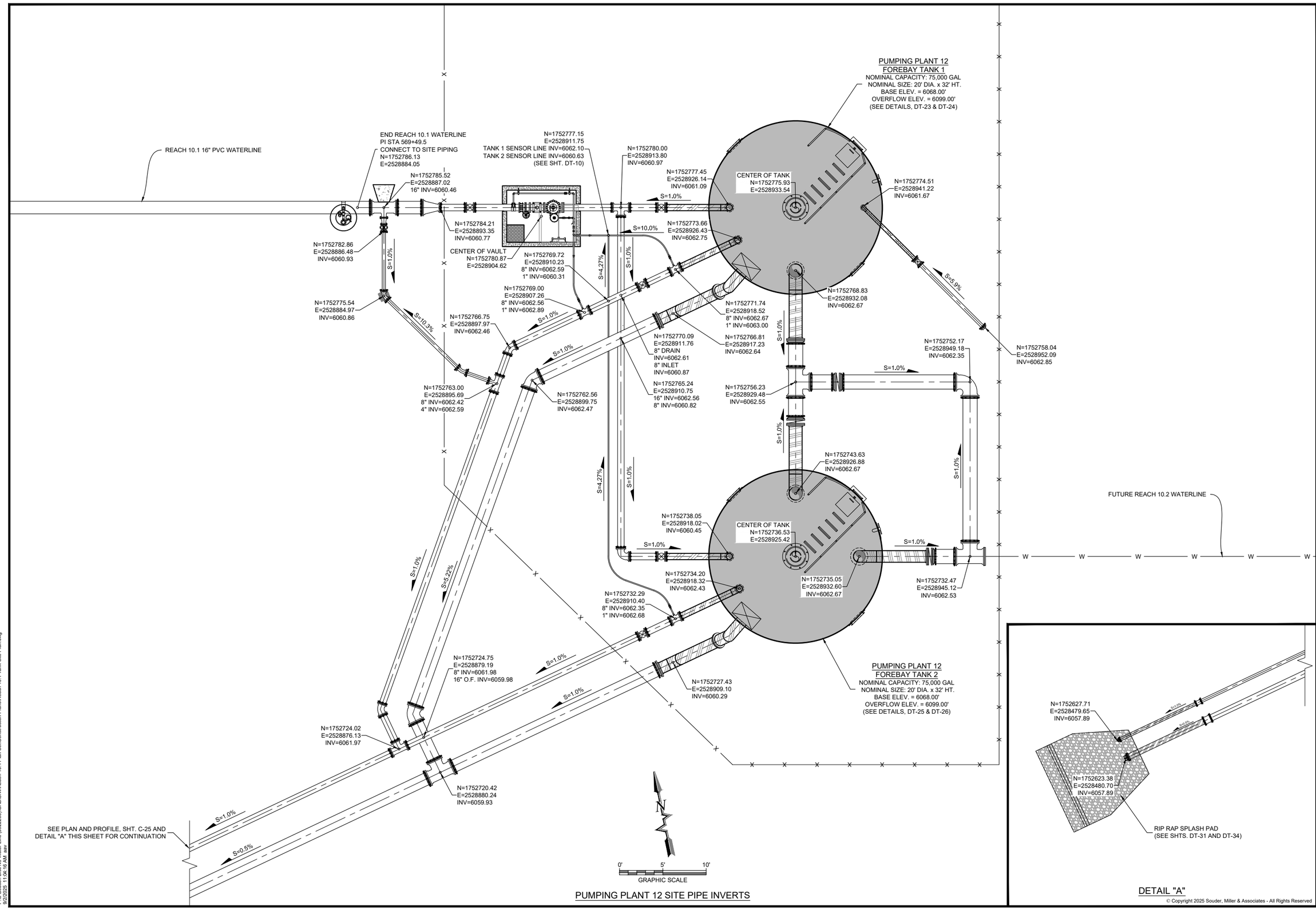

PUMPING PLANT 12 SITE PIPE INVERTS

DETAIL "A"

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Revision	Date	Description	By	Chkd

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

PUMPING PLANT 12 SITE PIPE INVERTS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 1, T. 18 N., R. 16 W.

TOBY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 9-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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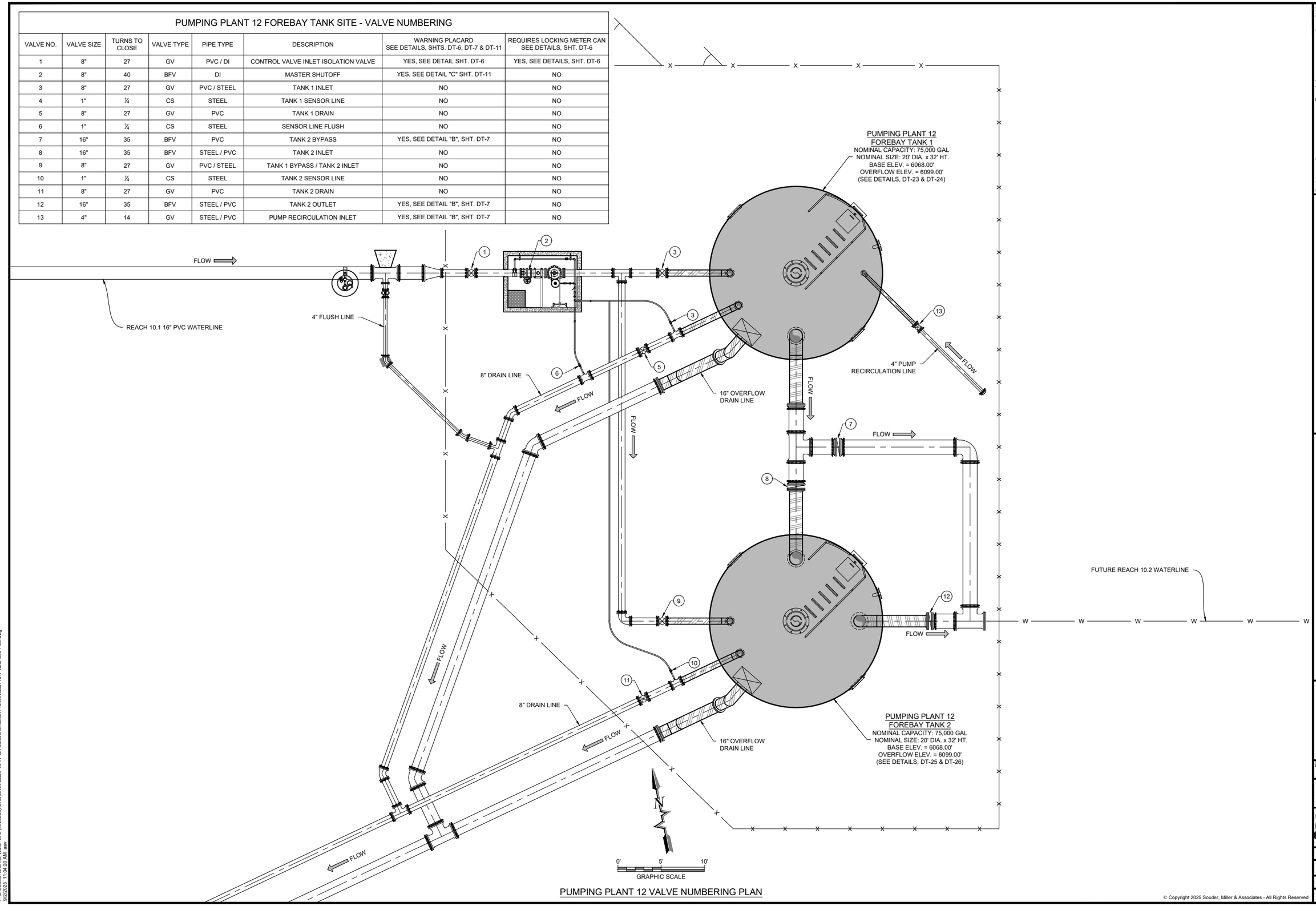
PUMPING PLANT 12 FOREBAY TANK SITE - VALVE NUMBERING

VALVE NO.	VALVE SIZE	TURNS TO CLOSE	VALVE TYPE	PIPE TYPE	DESCRIPTION	WARNING PLACARD SEE DETAILS, SHTS. DT-6, DT-7 & DT-11	REQUIRES LOCKING METER CAN SEE DETAILS, SHT. DT-6
1	8"	27	GV	PVC / DI	CONTROL VALVE INLET ISOLATION VALVE	YES, SEE DETAIL SHT. DT-6	YES, SEE DETAILS, SHT. DT-6
2	8"	40	BFV	DI	MASTER SHUTOFF	YES, SEE DETAIL "C" SHT. DT-11	NO
3	8"	27	GV	PVC / STEEL	TANK 1 INLET	NO	NO
4	1"	¼	CS	STEEL	TANK 1 SENSOR LINE	NO	NO
5	8"	27	GV	PVC	TANK 1 DRAIN	NO	NO
6	1"	¼	CS	STEEL	SENSOR LINE FLUSH	NO	NO
7	16"	35	BFV	PVC	TANK 2 BYPASS	YES, SEE DETAIL "B", SHT. DT-7	NO
8	16"	35	BFV	STEEL / PVC	TANK 2 INLET	NO	NO
9	8"	27	GV	PVC / STEEL	TANK 1 BYPASS / TANK 2 INLET	NO	NO
10	1"	¼	CS	STEEL	TANK 2 SENSOR LINE	NO	NO
11	8"	27	GV	PVC	TANK 2 DRAIN	NO	NO
12	16"	35	BFV	STEEL / PVC	TANK 2 OUTLET	YES, SEE DETAIL "B", SHT. DT-7	NO
13	4"	14	GV	STEEL / PVC	PUMP RECIRCULATION INLET	YES, SEE DETAIL "B", SHT. DT-7	NO



PUMPING PLANT 12 VALVE NUMBERING PLAN

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PUMPING PLANT 12 VALVE NUMBERING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1

McKINLEY COUNTY, NEW MEXICO
SECTION 1, T. 18 N., R. 16 W.

TOBY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 9-29-25

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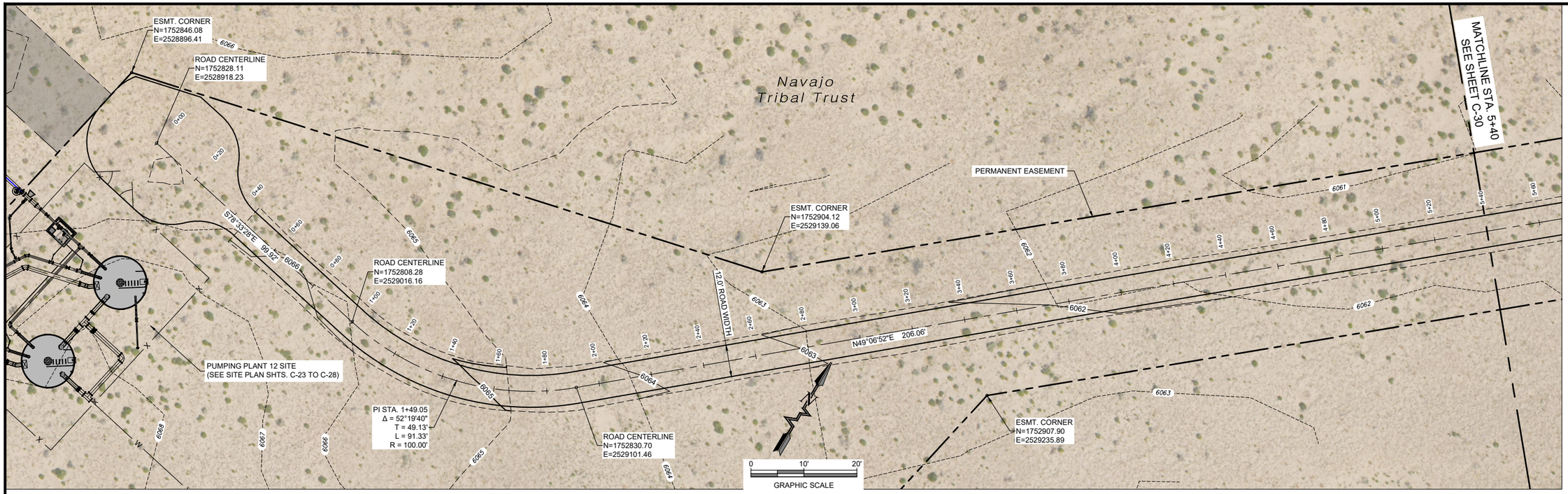
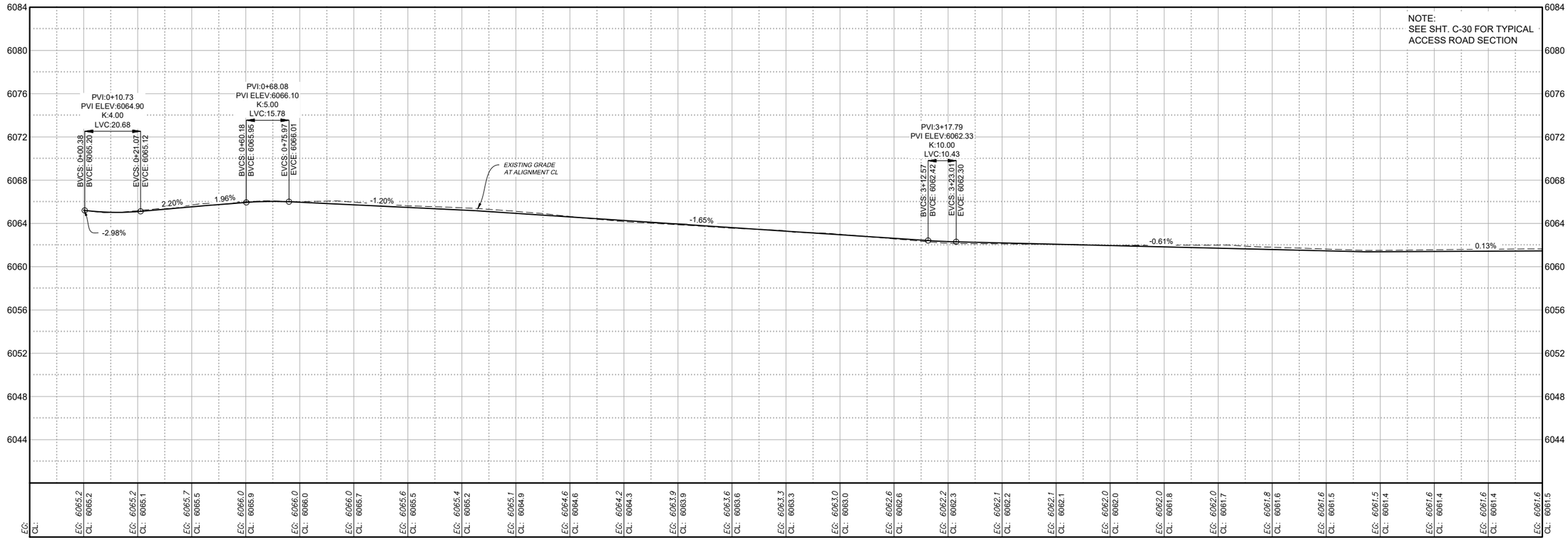
Sheet: C-28



PLAN VIEW
PUMPING PLANT 12 ACCESS ROAD



PROFILE VIEW
PUMPING PLANT 12 ACCESS ROAD

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PUMPING PLANT 12 ACCESS RD. STA 0+00 To 5+40
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 1, T. 18 N., R. 16 W.

TROY T. ADAMS
NEW MEXICO
21073
12-9-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
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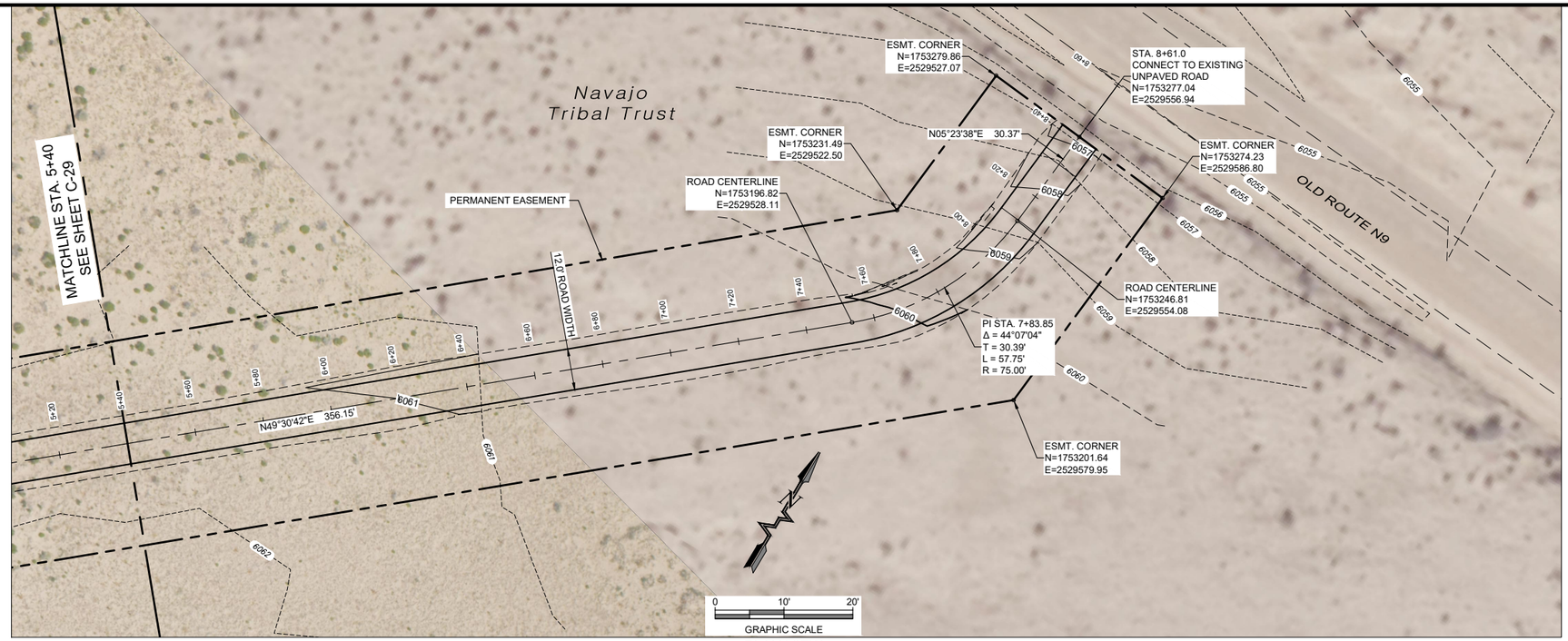
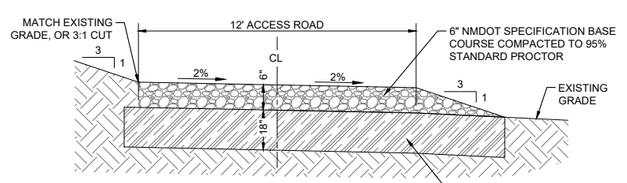
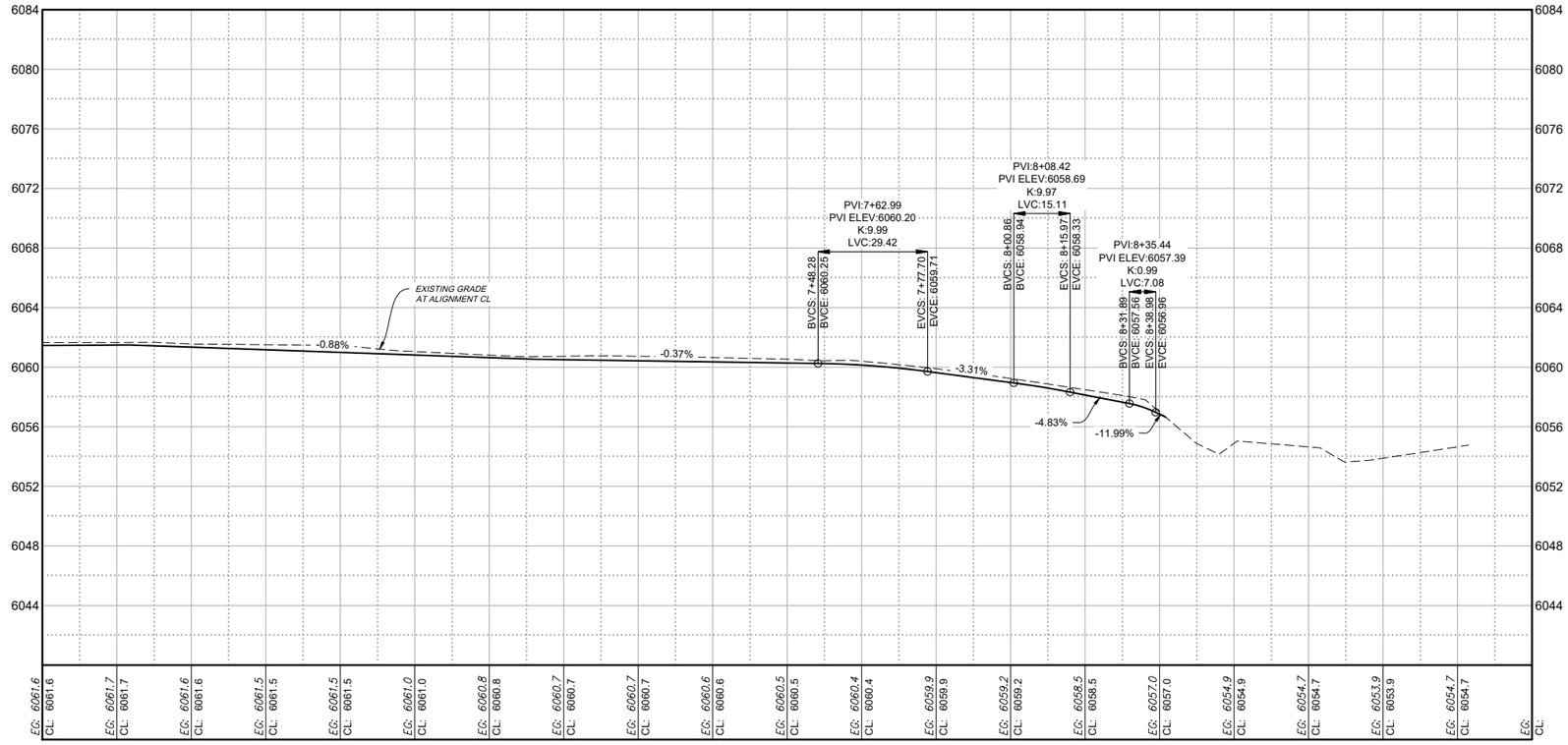


PLAN VIEW
PUMPING PLANT 12 ACCESS ROAD



TYPICAL ACCESS ROAD SECTION
NOT TO SCALE



PROFILE VIEW
PUMPING PLANT 12 ACCESS ROAD

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

PUMPING PLANT 12 ACCESS RD. STA 5+40 To 8+61
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 1, T. 18 N., R. 16 W.

TERRY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 9-29-25

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ESMT. CORNER
N=1754537.89
E=2517483.12

ESMT. CORNER
N=1754512.54
E=2517452.18

WIRE CAGED RIP-RAP OR CABLE CRETE BLANKET, 12" THICK, APPROX. 3 SQ. YDS., EXACT QUANTITY AND DIMS. TO BE DETERMINED IN FIELD BY ENGINEER. (SEE DETAILS, SHTS. DT-31 & DT-33)

4" FLAP VALVE POINTED NORTHWEST (SEE DETAIL DT-33)

4" EZ FLANGE

4" DUCTILE IRON PIPE, 20 LF

4" MJ x MJ SLEEVE, DI

Navajo Tribal Trust

EXISTING DIRT ROAD

30' TEMP. CONST. ESMT.

40' PERMANENT R.O.W.

40'

180 L.F. @ 0.88%
4" PVC DR18 DRAIN LINE

ESMT. CORNER
N=1754434.48
E=2517567.87

4" MJ 90° BEND, DI

ESMT. CORNER
N=1754428.46
E=2517628.44

ESMT. CORNER
N=1754440.07
E=2517511.57

FENCE CORNER
N=1754424.93
E=2517562.77

4" MJ 45° BEND, DI

60.0'

FENCE CORNER
N=1754419.00
E=2517622.47

REACH 10.1 16" PVC WATERLINE
(SEE SHT. C-17)

8' HIGH CHAIN LINK FENCE
APPROX. 220 L.F. INCLUDING GATE
(SEE SHT. DT-35)

STA 451+30.0
12" GATE VALVE ASSEMBLY
N=1754412.94
E=2517582.32

STA 451+62.0
12" GATE VALVE ASSEMBLY
N=1754409.78
E=2517614.15

450+00

451+00

452+00

ESMT. CORNER
N=1754421.03
E=2517414.88

ESMT. CORNER
N=1754411.71
E=2517508.76

3' PEDESTRIAN GATE
(SEE DETAIL SHT. DT-35)

STA 451+46.0
SURGE TANK CONNECTION
N=1754411.36
E=2517598.25

STA 451+53.5
4" FLUSH VALVE ASSEMBLY
(SEE SHT. DT-9)
N=1754410.62
E=2517605.75

FENCE CORNER
N=1754402.05
E=2517560.50

BLDG. COR.
N = 1754398.42
E = 2517586.93

BLDG. COR.
N = 1754396.37
E = 2517607.50

50.0'

16' DOUBLE SWING GATE
(SEE DETAIL SHT. DT-35)

FENCE CORNER
N=1754386.13
E=2517558.91

BLDG. COR.
N = 1754384.48
E = 2517585.55

BLDG. COR.
N = 1754382.44
E = 2517606.12

OHE

15' WIDE SURGE TANK SITE MAINTENANCE DRIVEWAY AND TURNAROUND LOOP. 6" BASE COURSE, 417 SQ. YDS, GRADE AND LEVEL WITH 2% CROSS SLOPE.

FENCE CORNER
N=1754375.18
E=2517557.83

SURGE TANK BUILDING
F.F. ELEV. 6019.50
(SEE DETAIL SHTS. DT-13 TO DT-20)

POWER POLE

FENCE CORNER
N=1754369.25
E=2517617.53

ESMT. CORNER
N=1754382.17
E=2517411.02

ESMT. CORNER
N=1754370.41
E=2517504.66

ESMT. CORNER
N=1754365.23
E=2517556.84

271 SQ. YDS. 2" GRAVEL OVER 4" NMDOT SPECIFICATION BASE COURSE, COMPACTED TO MIN. 95% STANDARD PROCTOR FOR ENTIRE FENCED AREA

ESMT. CORNER
N=1754358.80
E=2517621.52

ESMT. CORNER
N=1754379.44
E=2517413.70

ESMT. CORNER
N=1754356.46
E=2517503.27

ESMT. CORNER
N=1754351.28
E=2517555.45

N

0' 10' 20'
GRAPHIC SCALE

SURGE TANK SITE PLAN

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Client: The Navajo Nation
Location: Coyote Canyon, NM

SURGE TANK SITE PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 3, T. 18 N., R. 16 W.

TERRY T. ADAMS
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
9-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Project No: 6922268

Sheet: C-31

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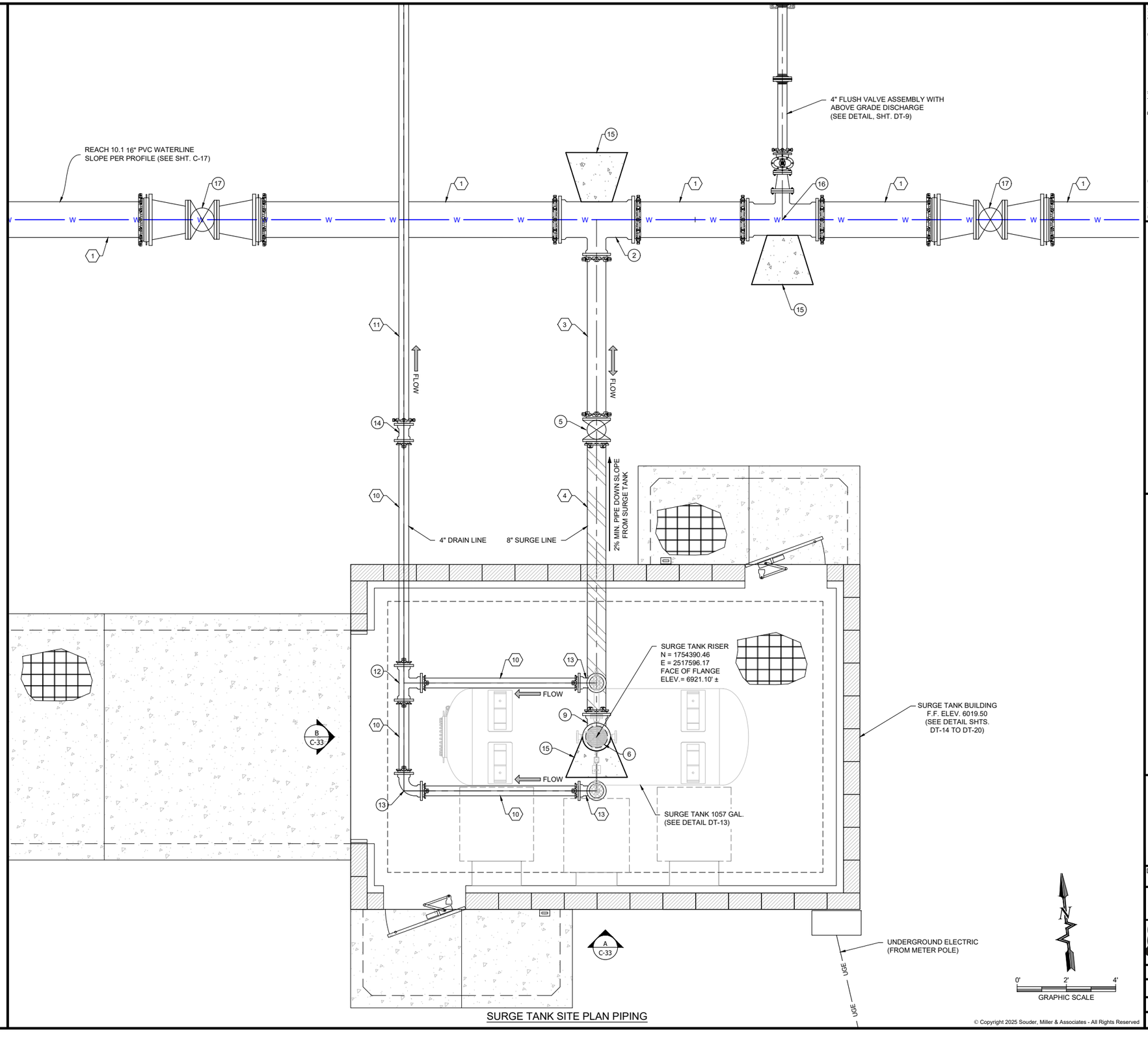
KEYED NOTES - SURGE TANK SITE	
Item No.	Description
1	16" PVC DR 18 PIPE
2	16" x 16" x 8" MJ x MJ REDUCING TEE, D.I. 350 psi
3	8" PVC DR 18 PIPE
4	8" DUCTILE IRON PIPE, 350 psi
5	8" MJ x MJ GATE VALVE (SEE DETAIL DT-7) 250 psi
6	8" ANSI CLASS 125/150 WELDED FLANGE (SEE NOTE #13, THIS SHEET)
7	8" PROCO FITTING, 200 psi (SEE NOTE #13, THIS SHEET)
8	NOT USED
9	8" MJ x MJ 90° BEND, D.I. 350 psi
10	4" DUCTILE IRON PIPE, 350 psi
11	4" PVC DR18 PIPE
12	4" MJ x MJ TEE, D.I. 350 psi
13	4" MJ x MJ 90° ELL, D.I. 350 psi
14	4" MJ x MJ SLEEVE, D.I. 350 psi
15	THRUST BLOCK (SEE DETAIL DT-3)
16	4" FLUSH VALVE ASSEMBLY WITH ABOVE GRADE DISCHARGE (SEE DETAIL, SHT. DT-9)
17	12" GATE VALVE ASSEMBLY WITH REDUCER (SEE SHT. DT-6)

NOTES:

1. PROVIDE COMPACTION AND FILL REQUIREMENTS FOR BUILDING AND TANK SUB GRADE AND SITE GRADING IN ACCORDANCE WITH GEOTECHNICAL REPORT.
2. DO NOT INSTALL PIPE WITH ANY HIGH POINTS WITHOUT AN APPROVED AIR VALVE.
3. ALL PIPE, FITTINGS, VALVES AND APPURTENANCES SHALL BE RATED TO AT LEAST 235 psi., UNLESS OTHERWISE NOTED.
4. ALL BURIED PIPING WITHIN 5 FEET OF BUILDING FOUNDATIONS SHALL BE PRESSURE TESTED PRIOR TO POURING FOUNDATION.
5. ALL BURIED DUCTILE IRON PIPE AND FITTINGS SHALL BE DOUBLE-WRAPPED IN POLYETHYLENE, PER SPECIFICATIONS. INNER JACKET SHALL BE V-BIO ENHANCED, MIN. 8-MIL. OUTER JACKET SHALL BE STANDARD PE, MIN. 8-MIL.
6. ALL BURIED DUCTILE IRON FITTINGS SHALL BE MJ. ALL BURIED DUCTILE IRON PIPES SHALL BE SOLID PIECES. NO DUCTILE IRON PIPE JOINTS ALLOWED.
7. FLANGE LOCATION AND ELEVATION ARE APPROXIMATE. CONTRACTOR WHOLLY RESPONSIBLE TO VERIFY LOCATION AND ELEVATION OF ALL FLANGE CONNECTIONS TO SURGE TANK AND COORDINATE WITH MATERIAL SUPPLIERS PRIOR TO INSTALLATION. CONTRACTOR WHOLLY RESPONSIBLE TO ALIGN FOUNDATIONS, PIPING INLETS/OUTLETS AND DRAINS WITH ACTUAL SURGE TANK LAYOUT IN FIELD.
8. ALL PRESSURE BEARING PIPES WITHIN SITE SHALL BE FULLY RESTRAINED. REFER TO DETAIL, SHEET DT-3.
9. CONTRACTOR RESPONSIBLE TO VERIFY AND ALIGN ACTUAL FOUNDATION DIMENSIONS AND LOCATIONS OF PIPING INLETS, OUTLETS AND DRAINS IN THE FIELD AND COORDINATE WITH SURGE TANK MANUFACTURERS PRIOR TO CONSTRUCTION. CENTER FLOOR DRAINS UNDER PIPE OUTLETS.
10. FIELD LOCATE CONDUITS PER REVIEW WITH ELECTRICIAN.
11. INSTALL FLANGE ISOLATION KITS W/ BOLT ISOLATING SLEEVES BETWEEN THE SURGE TANK RISER PIPE FLANGE AND PROCO FITTING.
12. PROCO JOINT COMPRESSION SHALL BE WITHIN MANUFACTURER'S RECOMMENDED TOLERANCES. DO NOT ALLOW BOLTS TO MAKE CONTACT WITH RUBBER JOINT. FIELD VERIFY CONTROL BOLT LENGTHS BEFORE FOUNDATION CONSTRUCTION.
13. INSTALL TEMPORARY 8-INCH ANSI CLASS 125/150 BLIND FLANGE PRIOR TO FILLING AND FLUSHING PIPELINE. UTILIZE FLUSH VALVE AT SURGE TANK TO FLUSH MAINLINE. COMPLETE HYDROSTATIC TESTING OF PIPING UNDERNEATH AND WITHIN SURGE TANK BUILDING PRIOR TO REMOVING BLIND FLANGE. REMOVE BLIND FLANGE AND INSTALL 8-INCH PROCO FITTING AFTER THIS SECTION OF LINE FLUSHING AND HYDROSTATIC PRESSURE TESTING IS COMPLETE, BUT PRIOR TO STARTING UP SURGE TANK. DO NOT INSTALL PROCO FITTING UNTIL LINE FLUSHING AT THE SURGE TANK IS COMPLETE. DO NOT AIR CHARGE SURGE TANK UNTIL PROCO FITTING IS INSTALLED. DO NOT OPERATE THE PROJECT UNTIL SURGE TANK IS STARTED UP AND OPERATIONAL. DO NOT ALLOW FOREIGN OBJECTS OR DEBRIS ENTER SURGE TANK. DO NOT BRING SURGE TANK ONLINE UNTIL MAINLINE HAS BEEN THOROUGHLY FLUSHED.
14. ALL DRAINS SHALL HAVE REMOVABLE GRATES.
15. ALL MJ DI FITTINGS AND VALVES SHALL BE RESTRAINED WITH EBAA IRON MEGALUG MECHANICAL JOINT RESTRAINTS, OAE.



SURGE TANK SITE PIPING PLAN

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Client: The Navajo Nation
Location: Coyote Canyon, NM

SURGE TANK SITE PIPING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1

McKINLEY COUNTY, NEW MEXICO
SECTION 3, T. 18 N., R. 16 W.

TODD A. TAYLOR NEW MEXICO 21073 LICENSED PROFESSIONAL ENGINEER 7-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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KEYED NOTES - SURGE TANK SITE	
Item No.	Description
1	16" PVC DR 18 PIPE
2	16" x 16" x 8" MJ x MJ REDUCING TEE, D.I. 350 psi
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7	8" PROCO FITTING, 200 psi (SEE NOTE #13, THIS SHEET)
8	NOT USED
9	8" MJ x MJ 90° BEND, D.I. 350 psi
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14	4" MJ x MJ SLEEVE, D.I. 350 psi
15	THRUST BLOCK (SEE DETAIL DT-3)
16	4" FLUSH VALVE ASSEMBLY WITH ABOVE GRADE DISCHARGE (SEE DETAIL, SHT. DT-9)
17	12" GATE VALVE ASSEMBLY WITH REDUCER (SEE SHT. DT-6)

NOTES:

1. PROVIDE COMPACTION AND FILL REQUIREMENTS FOR BUILDING AND TANK SUB GRADE AND SITE GRADING IN ACCORDANCE WITH GEOTECHNICAL REPORT.
2. DO NOT INSTALL PIPE WITH ANY HIGH POINTS WITHOUT AN APPROVED AIR VALVE.
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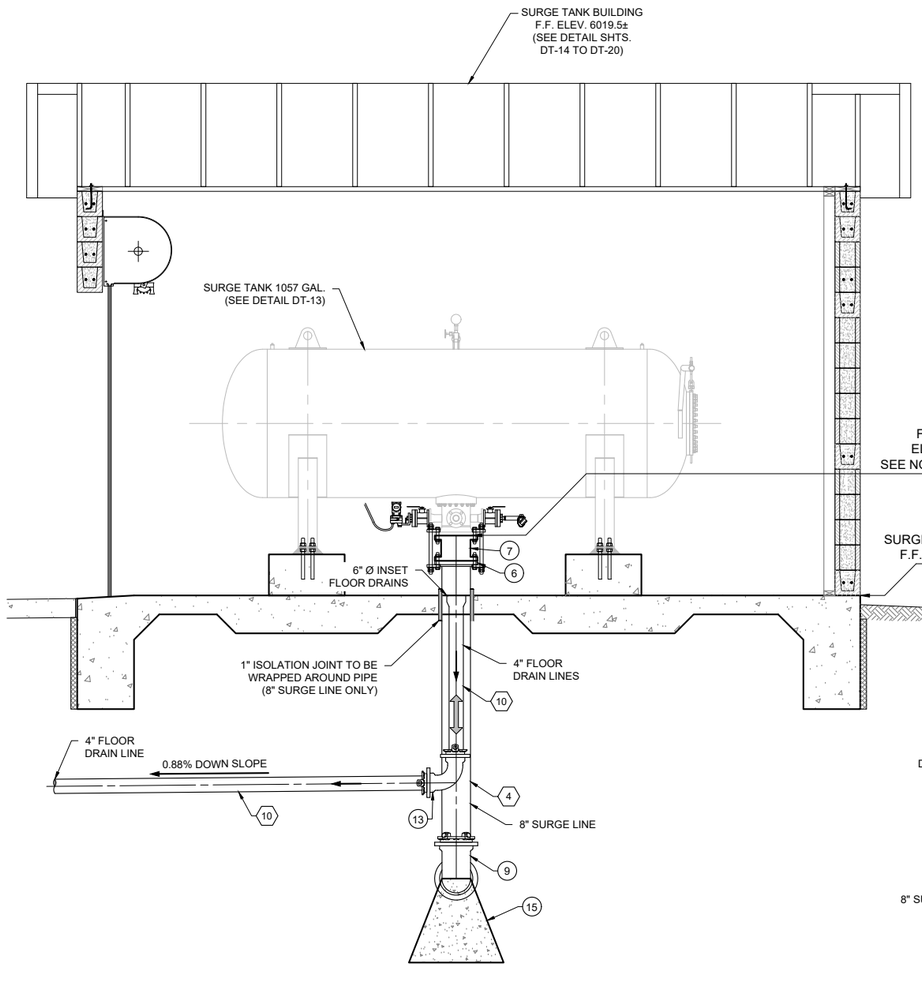
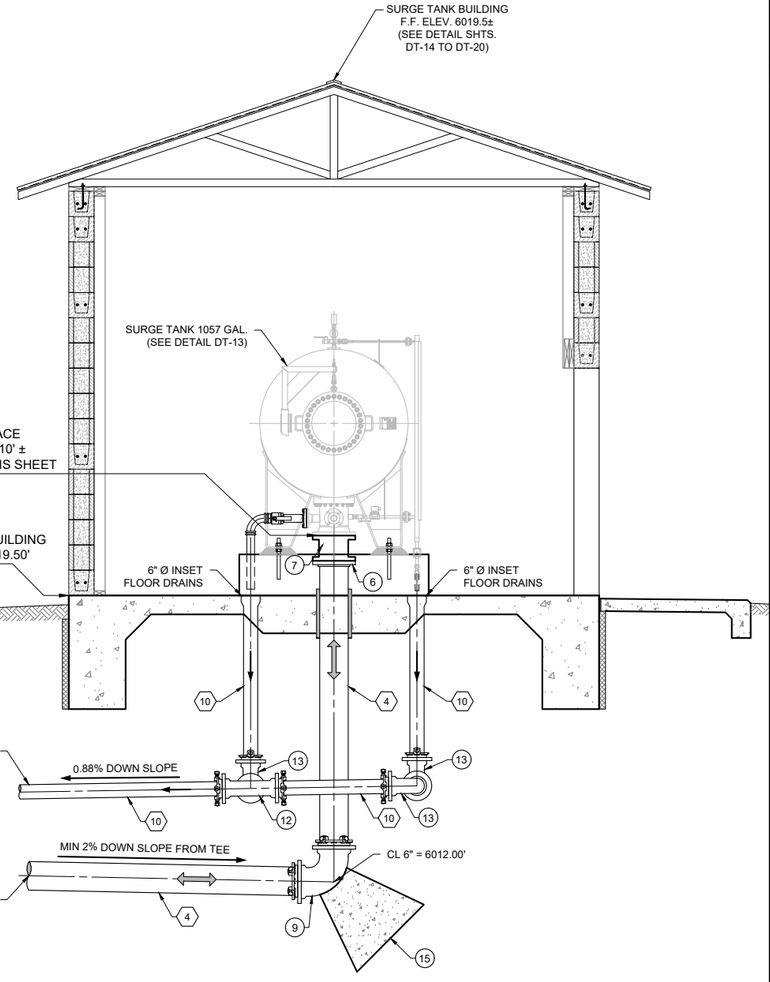
8. ALL PRESSURE BEARING PIPES WITHIN SITE SHALL BE FULLY RESTRAINED. REFER TO DETAIL, SHEET DT-3.
9. CONTRACTOR RESPONSIBLE TO VERIFY AND ALIGN ACTUAL FOUNDATION DIMENSIONS AND LOCATIONS OF PIPING INLETS, OUTLETS AND DRAINS IN THE FIELD AND COORDINATE WITH SURGE TANK MANUFACTURERS PRIOR TO CONSTRUCTION. CENTER FLOOR DRAINS UNDER PIPE OUTLETS.
10. FIELD LOCATE CONDUITS PER REVIEW WITH ELECTRICIAN.
11. INSTALL FLANGE ISOLATION KITS W/ BOLT ISOLATING SLEEVES BETWEEN THE SURGE TANK RISER PIPE FLANGE AND PROCO FITTING.
12. PROCO JOINT COMPRESSION SHALL BE WITHIN MANUFACTURER'S RECOMMENDED TOLERANCES. DO NOT ALLOW BOLTS TO MAKE CONTACT WITH RUBBER JOINT. FIELD VERIFY CONTROL BOLT LENGTHS BEFORE FOUNDATION CONSTRUCTION.
13. INSTALL TEMPORARY 8-INCH ANSI CLASS 125/150 BLIND FLANGE PRIOR TO FILLING AND FLUSHING PIPELINE. UTILIZE FLUSH VALVE AT SURGE TANK TO FLUSH MAINLINE. COMPLETE HYDROSTATIC TESTING OF PIPING UNDERNEATH AND WITHIN SURGE TANK BUILDING PRIOR TO REMOVING BLIND FLANGE. REMOVE BLIND FLANGE AND INSTALL 8-INCH PROCO FITTING AFTER THIS SECTION OF LINE FLUSHING AND HYDROSTATIC PRESSURE TESTING IS COMPLETE, BUT PRIOR TO STARTING UP SURGE TANK. DO NOT INSTALL PROCO FITTING UNTIL LINE FLUSHING AT THE SURGE TANK IS COMPLETE. DO NOT AIR CHARGE SURGE TANK UNTIL PROCO FITTING IS INSTALLED. DO NOT OPERATE THE PROJECT UNTIL SURGE TANK IS STARTED UP AND OPERATIONAL. DO NOT ALLOW FOREIGN OBJECTS OR DEBRIS ENTER SURGE TANK. DO NOT BRING SURGE TANK ONLINE UNTIL MAINLINE HAS BEEN THOROUGHLY FLUSHED.
14. ALL DRAINS SHALL HAVE REMOVABLE GRATES.
15. ALL MJ DI FITTINGS AND VALVES SHALL BE RESTRAINED WITH EBAA IRON MEGALUG MECHANICAL JOINT RESTRAINTS, OAE.



VIEW A



VIEW B

0' 2' 4'
GRAPHIC SCALE

SURGE TANK PIPING ELEVATION

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

SURGE TANK PIPING ELEVATION VIEW
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 3, T. 18 N., R. 16 W.

TROY T. ADAMS — NEW MEXICO — 21073 — 12-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Date: September 2025
Scale: Horiz: 1" = 4'
Vert: N/A
Project No: 6922268
Sheet: C-33

P:\6-Beacon Bisti N9 Water Line (6922268)\CAD\Civil\Reach 10.1 Plan Set\Construction Plans\Reach 10.1 Surge tank Siteplan.dwg
8/2/2025 11:05:47 AM aav

ESMT. CORNER
N=1754537.89
E=2517483.12

Navajo
Tribal Trust

WIRE CAGED RIP-RAP OR CABLE CRETE BLANKET, 12" THICK, APPROX. 3 SQ. YDS., EXACT QUANTITY AND DIMS. TO BE DETERMINED IN FIELD BY ENGINEER. (SEE DETAILS, SHTS. DT-31 & DT-33)

ESMT. CORNER
N=1754512.54
E=2517452.18

4" FLAP VALVE
POINTED NORTHWEST
(SEE DETAIL DT-33)

4" EZ FLANGE

INV 4" = 6013.67
FG = 6013.00
EG = 6014.00
N=1754497.83
E=2517489.45

4" DUCTILE IRON
PIPE, 20 LF

4" MJ x MJ SLEEVE, DI

EXISTING DIRT ROAD

30' TEMP. CONST. ESMT.

40' PERMANENT R.O.W.

180 L.F. @ 0.88%
4" PVC DR18 DRAIN LINE

INV 4" = 6014.84
EG = 6019.07
N=1754427.06
E=2517591.94

ESMT. CORNER
N=1754434.48
E=2517567.87

ESMT. CORNER
N=1754428.46
E=2517628.44

ESMT. CORNER
N=1754440.07
E=2517511.57

REACH 10.1 16" PVC WATERLINE
(SEE SHT. C-17)

INV 4" = 6014.42
EG = 6017.45
N=1754432.46
E=2517543.67

EG = 6018.07
FENCE CORNER
N=1754424.93
E=2517562.77

FG = 6018.49
FG = 6018.78
INV 4" = 6014.97
TP 16" = 6013.13
N=1754412.14
E=2517590.46

FENCE CORNER
N=1754419.00
E=2517622.47

EG = 6018.41
FG = 6018.83

450+00
451+00
452+00

ESMT. CORNER
N=1754421.03
E=2517414.88

15' WIDE SURGE TANK SITE MAINTENANCE DRIVEWAY AND TURNAROUND LOOP. 6" BASE COURSE, GRADE AND LEVEL WITH 2% CROSS SLOPE.

ESMT. CORNER
N=1754411.71
E=2517508.76

FENCE CORNER
N=1754402.05
E=2517560.50
FG = 6018.31

CONTRACTOR TO CLEAR AND GRUB SITE TO 1' PAST THE FENCE LINE. OVERLAY EXISTING GROUND WITH 2" GRAVEL OVER 4" BASE COURSE.

MATCH EXISTING
EG = 6014.47

MATCH EXISTING
EG = 6016.37

15.00'

S = 2% MIN.

16' DOUBLE SWING GATE
(SEE DETAIL SHT. DT-35)

MATCH EXISTING
EG = 6014.75

MATCH EXISTING
EG = 6016.67

FENCE CORNER
N=1754386.13
E=2517558.91
FG = 6018.23

FENCE CORNER
N=1754375.18
E=2517557.83

MATCH EXISTING
EG = 6016.86

MATCH EXISTING
EG = 6017.90

FF = 6019.50
INV 4" = 6015.25
N=1754388.28
E=2517595.95

60.0'

FG = 6018.32

FG = 6018.69

EG = 6018.28

FENCE CORNER
N=1754369.25
E=2517617.53

SURGE TANK BUILDING
(SEE SHTS. DT-13 TO DT-22)
(SEE DETAILED GRADING SHT. C-35)

ESMT. CORNER
N=1754358.80
E=2517621.52

MATCH EXISTING
EG = 6013.64

ESMT. CORNER
N=1754382.17
E=2517411.02

MATCH EXISTING
EG = 6013.56

ESMT. CORNER
N=1754379.44
E=2517413.70

ESMT. CORNER
N=1754370.41
E=2517504.66

ESMT. CORNER
N=1754365.23
E=2517556.84

ESMT. CORNER
N=1754356.46
E=2517503.27

MATCH EXISTING
EG = 6017.21

ESMT. CORNER
N=1754351.28
E=2517555.45

N

0' 10' 20'
GRAPHIC SCALE

SURGE TANK SITE GRADING PLAN

SURGE TANK SITE CUT/FILL DATA

MATERIAL TYPE	CUT	FILL	EXPORT/IMPORT
*NATIVE SOILS	39 CU. YDS.	-- CU.YDS	39 CU. YDS. EXPORT
SURFACING MATERIAL - SITE ONLY (4" BASE COURSE)	0 CU. YDS	30 CU. YDS	30 CU. YDS. IMPORT
SURFACING MATERIAL - SITE ONLY (2" GRAVEL)	0 CU. YDS	15 CU. YDS	15 CU. YDS. IMPORT
SURFACING MATERIAL - ENTRY DRIVE (6" BASE COURSE ONLY)	0 CU. YDS	70 CU. YDS	70 CU. YDS. IMPORT
RIP RAP (CAGED)	---	1 CU. YDS	1 CU. YDS. IMPORT

NOTE:
THESE EARTHWORK QUANTITIES ARE ESTIMATES, PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. BIDDER IS NOT ENTITLED TO BASE HIS/HER BID ON THESE QUANTITIES, NOR TO SUBMIT ANY CLAIM IN THE EVENT THAT ACTUAL EARTHWORK QUANTITIES DIFFER FROM THESE ESTIMATES.

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Client: The Navajo Nation
Location: Coyote Canyon, NM

SURGE TANK SITE GRADING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 3, T. 18 N., R. 16 W.

TROY T. ADAMS
NEW MEXICO
21073
7-29-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Vert: N/A
Project No: 6922268
Sheet: C-34

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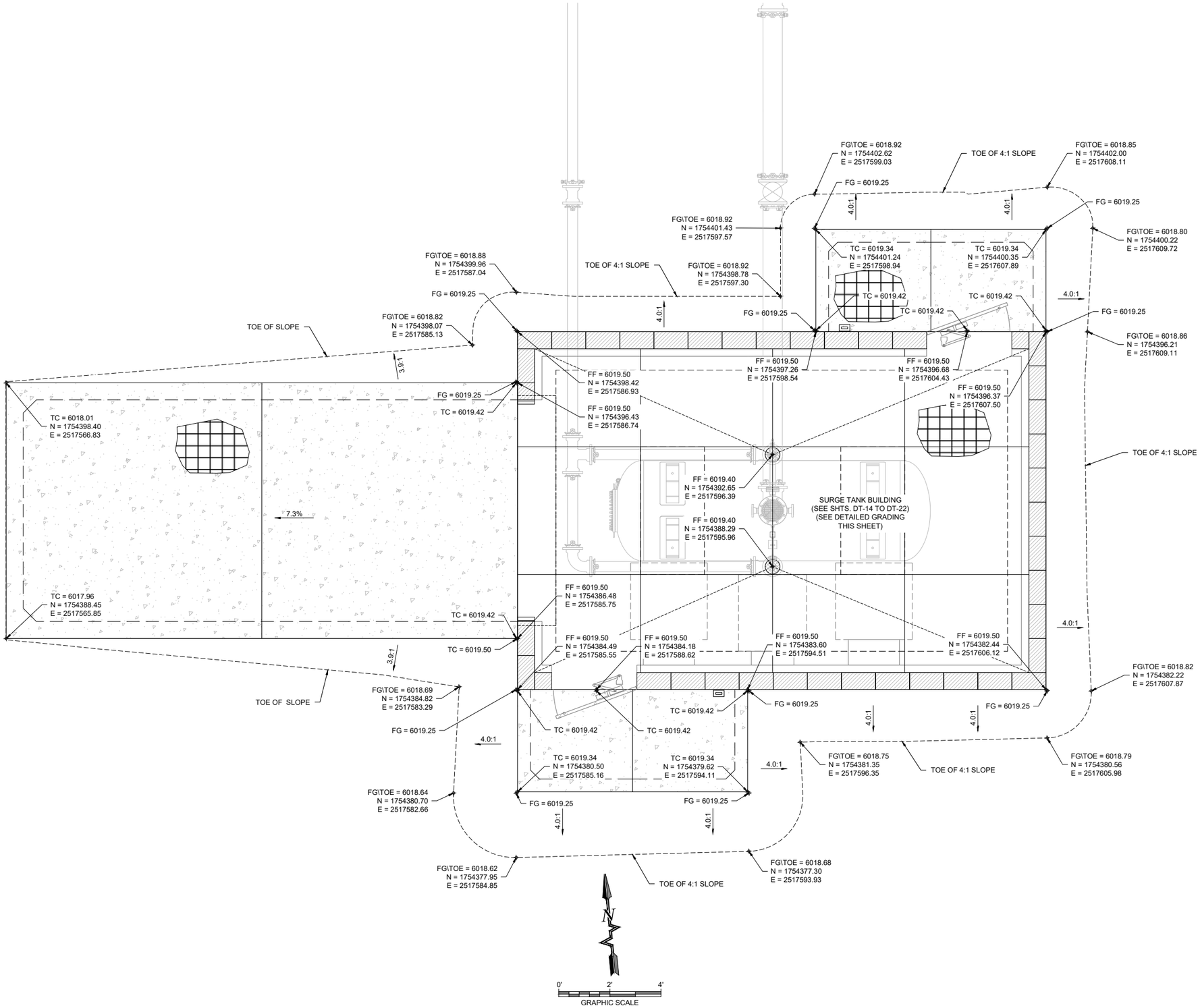

SURGE TANK BUILDING DETAILED GRADING

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Location: Coyote Canyon, NM

SURGE TANK BUILDING DETAILED GRADING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 3, T. 18 N., R. 16 W.

TERRY T. ADAMS
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
9-29-25

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Project No: 6922268

Sheet: C-35

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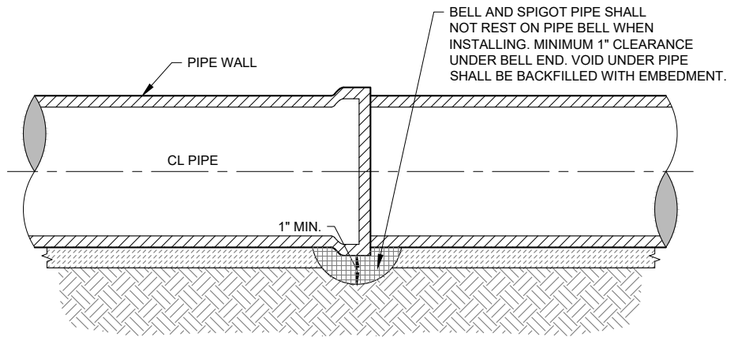
NOTES:

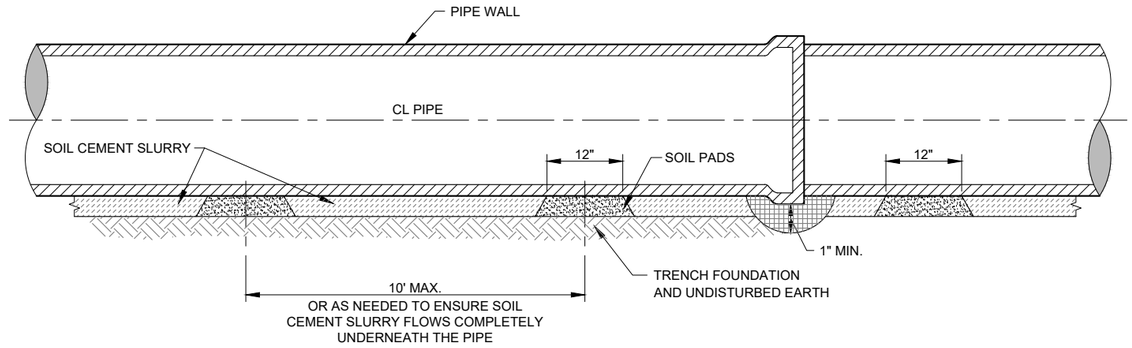
1. SOIL CEMENT SLURRY MAY BE USED IN LIEU OF COMPACTED SELECT MATERIAL AT CONTRACTOR'S OPTION AND EXPENSE.
2. ANY SECTION OF PIPE EMBEDDED IN COMPACTED SELECT MATERIAL THAT FAILS TO MEET SOIL CLASSIFICATION AND/OR COMPACTION REQUIREMENTS SHALL BE DUG UP, RE-BURIED, RE-COMPACTED AND RE-TESTED AT CONTRACTOR'S SOLE EXPENSE.
3. MINIMUM CLEARANCES BETWEEN PIPE AND TRENCH WALL MUST BE MET PRIOR TO PLACING EMBEDMENT (WHETHER COMPACTED SELECT MATERIAL OR SOIL CEMENT SLURRY). INCREASE CLEARANCES AND/OR TRENCH WIDTH AS NEEDED TO ALLOW FOR COMPACTION AND/OR TO ENSURE ADEQUATE SOIL CEMENT SLURRY LAYER THICKNESS IN HAUNCH AREAS AND PIPE SPRING LINE. DO NOT ALLOW PIPE TO REST AGAINST TRENCH WALL.
4. ROUNDED TRENCH BOTTOMS MAY BE USED IN CONJUNCTION WITH SOIL CEMENT SLURRY, PROVIDED THE THICKNESS OF SOIL CEMENT AROUND THE PIPE IS AT NO POINT LESS THAN 3".



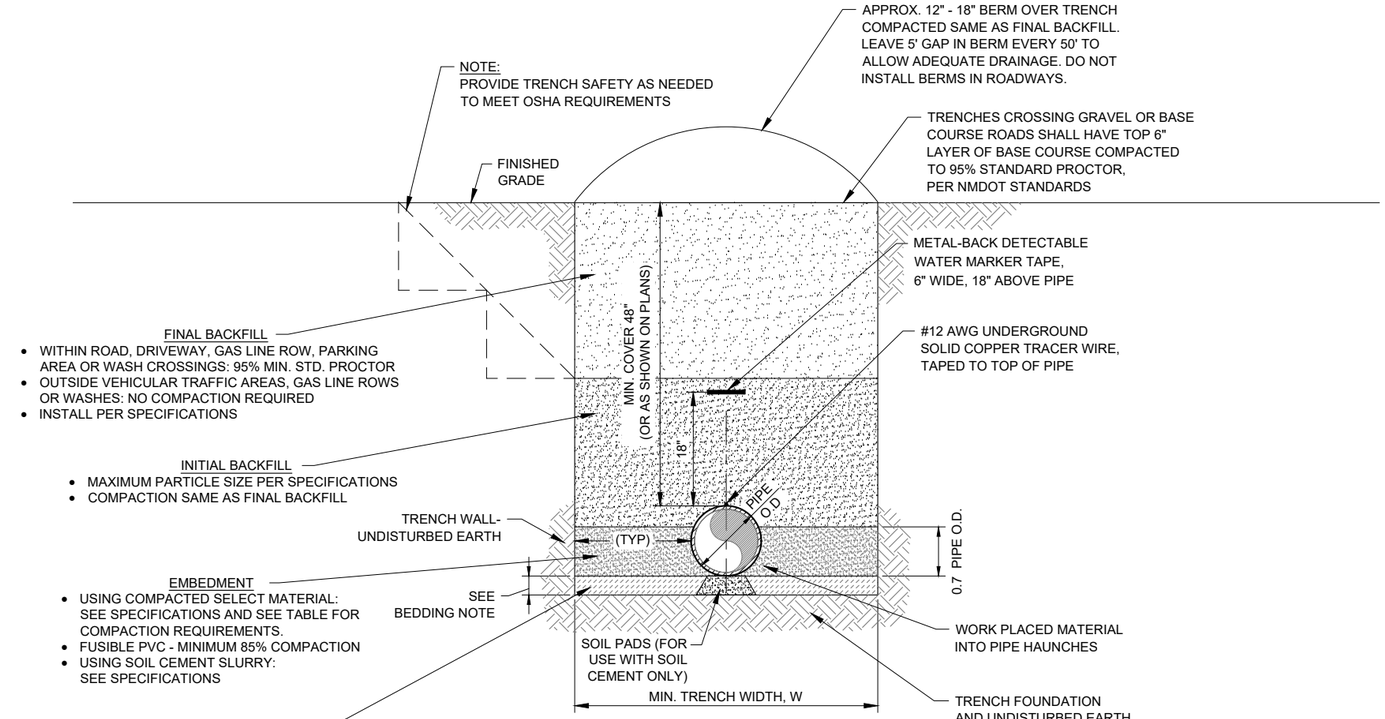
TYPICAL BELL HOLE DETAIL
NOT TO SCALE

MINIMUM PERCENT COMPACTION FOR EMBEDMENT OUTSIDE TRAFFIC AREAS, GAS LINES ROW, WASH CROSSINGS	
CLEAN COARSE-GRAINED SOILS	
	PVC Pipe
Cover Depth	Minimum Compaction
4' to 20'	85%
> 20'	95%
Coarse-grained soils (sand or gravel), GW, GP, SW, SP, with less than 12% fines	
SANDY OR GRAVELLY FINE-GRAINED SOILS & COARSE-GRAINED SOILS WITH FINES	
	PVC Pipe
Cover Depth	Minimum Compaction
4' to 14'	85%
14' to 20'	90%
> 20'	95%
Fine-grained soils (LL<50) Soils with medium to no plasticity, CL, ML, ML-CL, with more than 30% coarse-grained particles, or Coarse-grained soils (sand or gravel), GM, GC, SM, SC, with more than 12% fines	

NOTES ON COMPACTION:
1. ALL COMPACTION VALUES BASED ON STD. PROCTOR, ASTM D698. SOIL CLASSIFICATIONS BASED ON ASTM D2487.
2. EMBEDMENT WITHIN DRIVING SURFACES OF ALL ROADS, AND DRIVEWAYS AS WELL AS WASH CROSSINGS, AROUND VAULTS AND METER CANS SHALL BE COMPACTED TO AT LEAST 95% STD. PROCTOR, REGARDLESS OF SOIL TYPE. SOIL CEMENT MAY BE USED IN LIEU OF COMPACTED SELECT MATERIAL.
3. COMPACTION REQUIRED WHERE SHOWN ON DRAWINGS.



SOIL CEMENT INSTALLATION WITH SOIL PADS
NOT TO SCALE



TYPICAL TRENCH DETAIL
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Location: Coyote Canyon, NM
Client: The Navajo Nation

TRENCH DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TERRY T. ADAMS — NEW MEXICO — 21073 — 12-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Date: September 2025
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Project No: 6922268
Sheet: DT-1

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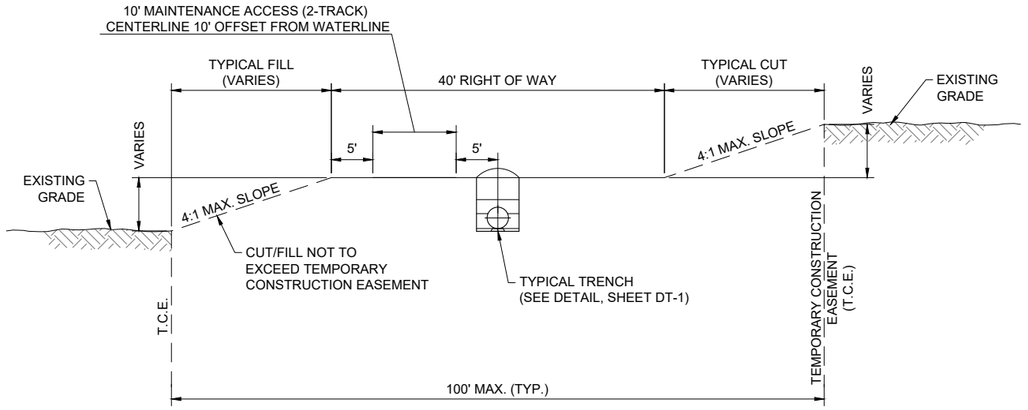
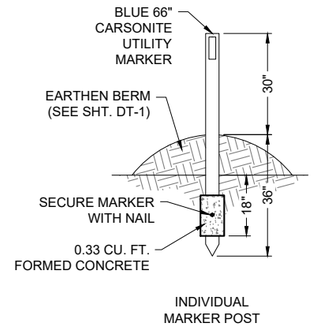


TYPICAL PIPELINE ROW FINISHED GRADING DETAIL

NOT TO SCALE

NOTES:

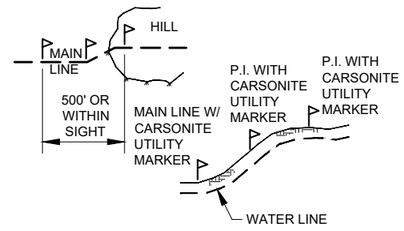
1. ALL DISTURBED EARTH SHALL BE COMPACTED AND RESEEDED AS REQUIRED PER DT-1 AND SPECIFICATIONS.
2. TOTAL WIDTH REDUCED IN AREAS WHERE TEMPORARY CONSTRUCTION EASEMENT IS TRUNCATED DUE TO ADJACENT CULTURALLY SENSITIVE AREAS.
3. FINAL GRADING AND SLOPE STABILIZATION MUST BE APPROVED BY ENGINEER.
4. IF MAINTENANCE ROAD CROSSES WATERLINE, 95% COMPACTION IS REQUIRED AT CROSSING.
5. MAINTENANCE ROAD IS INCIDENTAL TO PIPE CONSTRUCTION.

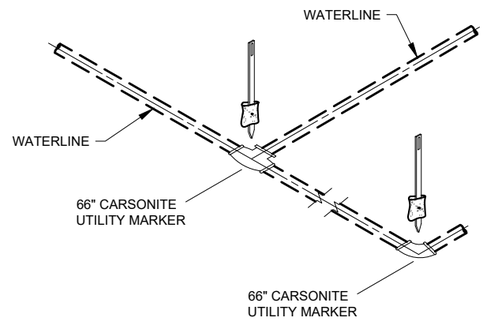


INDIVIDUAL
MARKER POST

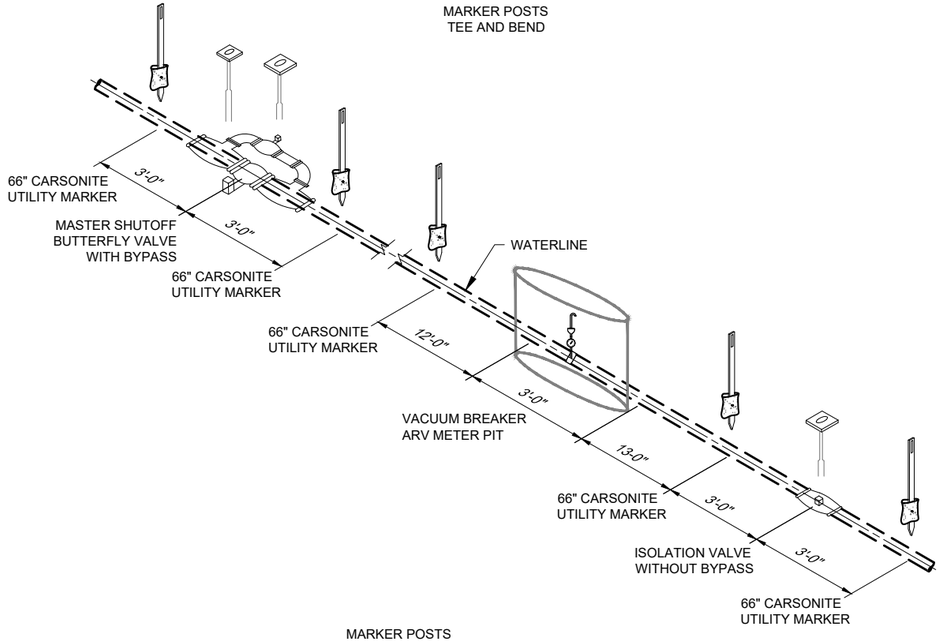
NOTE:

1. CARSONITE UTILITY MARKER ON ALL P.I.'S AND GRADE CHANGES.
2. MAXIMUM DISTANCE BETWEEN CARSONITE UTILITY MARKERS SHALL BE 1500 LF.





MARKER POSTS
TEE AND BEND



MARKER POSTS
GATE VALVE WITHOUT BYPASS,
VACUUM BREAKER / ARV METER PIT
& BUTTERFLY VALVE WITH BYPASS

TYPICAL MARKER POSTS

NOT TO SCALE

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Client: The Navajo Nation
Location: Coyote Canyon, NM

MISCELLANEOUS CONSTRUCTION DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TADAYON
NEW MEXICO
21073
9-29-25
LICENSED PROFESSIONAL ENGINEER

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Project No: 6922268

Sheet: DT-2

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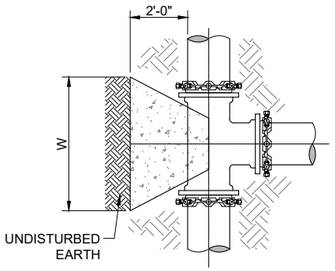
Thrust Block Dimension Schedule

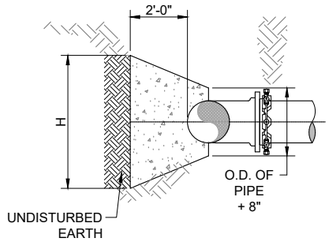
Pipe	Fitting	Required Thrust Block Area (ft^2)	Design Thrust Block Size (H x W x T) (ft)
16"	Flush Valve (4" Tee)	2.4	2' x 2' x 2'
8"	Surge Tank Connection Line (Tee)	8.8	3' x 3' x 2'
8"	Surge Tank Connection Line (90° Ell)	12.4	3.5' x 3.5' x 2'

GENERAL NOTES

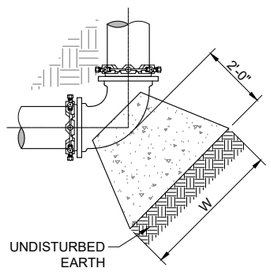
1. ASSUMED SOIL BEARING OF 1500 PSF.
2. ALL CONCRETE SHALL BE 3000 psi, MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS.



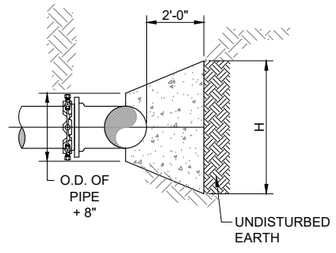
PLAN VIEW
CONCRETE BLOCKING FOR TEE



SECTION VIEW
CONCRETE BLOCKING FOR TEE



PLAN VIEW
CONCRETE BLOCKING FOR ELBOW



SECTION VIEW
CONCRETE BLOCKING FOR ELBOW

THRUST BLOCK DETAIL
NOT TO SCALE

Minimum Required Restraint Lengths for Individual

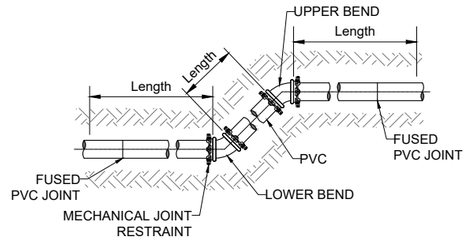
Reach 10.1 - 16" DR18 PVC				
Fitting	Pipe Size	Pipe DR	Test Pressure (psi)	Design Restraint Length (ft)
Isolation Valve/Dead End [1]	16	18	235	160
Isolation Valve/Dead End [1]	8	18	235	90
From End of Casing	16	18	235	100
Horizontal Bend or Sweep				
90°	16	18	235	60
45°	16	18	235	25
22.5°	16	18	235	20
11.25°	16	18	235	20
Vertical Bend or Sweep [2]				
45°, upper bend	16	18	235	70
45°, lower bend	16	18	235	20
22.5°, upper bend	16	18	235	35
22.5°, lower bend	16	18	235	20
11.25°, upper bend	16	18	235	20
11.25°, lower bend	16	18	235	20

[1] All of the isolation valve assemblies on the 16" mainline are 12" Gate Valve Assemblies. However, the isolation valve restraint lengths are calculated using a 16" diameter in order to be conservative

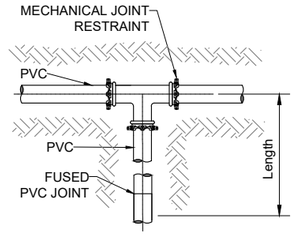
[2] Gives the required restraint length on each side of the specified bend, using a low side depth (from ground surface to top of the lower pipe) of 6-ft.

NOTES:

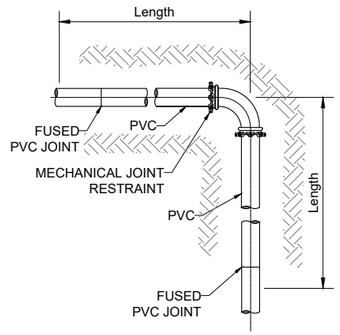
1. MECHANICAL JOINT RESTRAINTS SHALL BE RATED TO PIPE PRESSURE RATINGS.
2. MECHANICAL JOINT RESTRAINTS INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
3. ALL BURIED METALLIC WATER BEARING COMPONENTS SHALL BE COATED WITH FUSION BONDED EPOXY, INTERIOR AND EXTERIOR.
4. APPLY CATHODIC PROTECTION TO ALL BURIED METALLIC COMPONENTS LOCATED WITHIN CORROSIVE SOILS ZONES, AS DESIGNATED IN PLANS AND/OR SPECIFICATIONS.
5. ALL RESTRAINED PIPE JOINTS SHALL BE FUSIBLE PVC. NO BELL HARNESS RESTRAINTS SHALL BE ALLOWED.
6. ALL SITE PIPING SHALL BE FULLY RESTRAINED WITH FUSIBLE PVC EXCLUDING DRAIN LINES.
7. WHERE MULTIPLE FITTING / VALVE RESTRAINT LENGTHS OVERLAP, THE RESTRAINT LENGTHS FOR EACH APPURTENANCE SHALL BE SHOWN ON PLANS. CONTRACTOR TO NOTIFY ENGINEER IF NOT SHOWN.
8. FOR ANY FITTING OR APPURTENANCE NOT EXPRESSLY CALLED OUT IN PLANS, REFER TO THIS SHEET FOR RESTRAINT LENGTH REQUIREMENTS.
9. NO VERTICAL BENDS SHALL BE ALLOWED THAT ARE NOT SHOWN ON DRAWINGS WITHOUT ENGINEER'S PRIOR APPROVAL. IN THE EVENT VERTICAL BENDS ARE ADDED, ADDITIONAL JOINT RESTRAINT SHALL BE REQUIRED AT CONTRACTOR'S EXPENSE.
10. FOR RESTRAINED LENGTHS 20 LF OR LESS, JOINTED PVC PIPE MAY BE USED IN LIEU OF FUSIBLE PVC, PROVIDED THAT THERE ARE NO BELL AND SPIGOT JOINTS WITHIN REQUIRED RESTRAINT LENGTH.
11. ALL MJ DI FITTINGS AND VALVES SHALL BE RESTRAINED WITH EBAA IRON MEGALUG MECHANICAL JOINT RESTRAINTS, OAE, UNLESS OTHERWISE NOTED.
12. EMBEDMENT FOR FUSIBLE PVC MUST BE COMPACTED TO 85%, SEE SHT. DT-1.



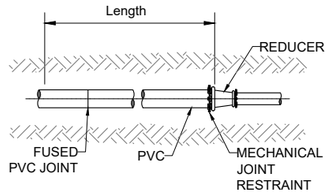
ELEVATION VIEW
MECHANICAL JOINT RESTRAINT FOR VERTICAL OFFSET



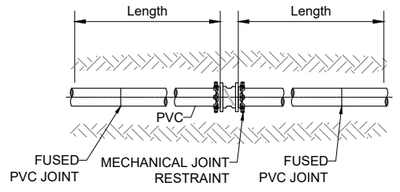
PLAN VIEW
MECHANICAL JOINT RESTRAINT
FOR TEE



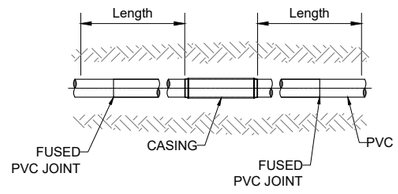
PLAN VIEW
MECHANICAL JOINT RESTRAINT
FOR HORIZONTAL BEND



PLAN VIEW
MECHANICAL JOINT RESTRAINT
FOR REDUCERS



PLAN VIEW
MECHANICAL JOINT RESTRAINT
FOR ISOLATION VALVE



PLAN VIEW
FUSED JOINT RESTRAINT
FOR CASING

MECHANICAL / FUSED JOINT RESTRAINTS
NOT TO SCALE

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Revision | Date | Description | By | Chkd

Client: The Navajo Nation
Location: Coyote Canyon, NM

THRUST BLOCK & JOINT RESTRAINT DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TERRY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 12-29-25

Designed	Drawn	Checked
EAP	Mvrt/AaV	TTT

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Date: September 2025
Scale: Horiz: N/A Vert: N/A
Project No: 6922268
Sheet: DT-3

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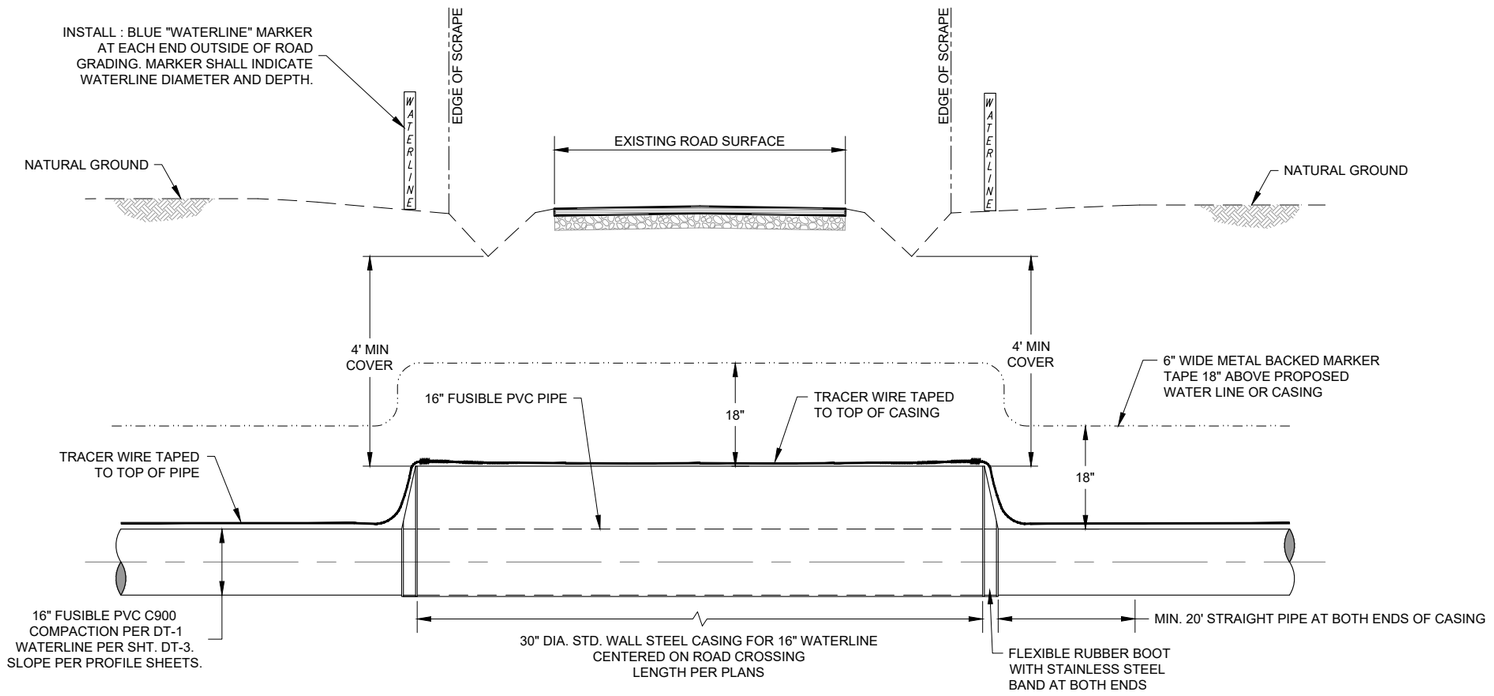

TYPICAL OPEN CUT ROAD CROSSING

NOT TO SCALE

CONSTRUCTION NOTES:

1. EXCAVATIONS OUTSIDE THE ROADWAY BAR DITCH SHALL BE COMPACTED AS SPECIFIED IN THE CONSTRUCTION DOCUMENTS. EXCAVATION WITHIN THE TOE OF THE BAR DITCH SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY (STANDARD PROCTOR).
2. APPLY CATHODIC PROTECTION TO ALL BURIED METALLIC CASINGS LOCATED WITHIN CORROSIVE SOIL ZONES, AS DESIGNATED IN THE PLANS AND/OR SPECIFICATIONS.
3. ALL METALLIC PIPE, WHETHER CATHODICALLY PROTECTED OR NOT, SHALL BE PROVIDED WITH CORROSION MONITORING SYSTEMS.
4. TRACER WIRE CONTINUITY SHALL BE MAINTAINED ACROSS THE ROAD CROSSING.
5. FOR MINIMUM FUSIBLE PVC PIPE RESTRAINTS REQUIREMENTS ON EACH SIDE OF CASING, SEE TABLE SHEET DT-3.
6. THE INSIDE OF THE CASING AND THE OUTSIDE OF THE CARRIER PIPE MUST BE FREE OF ANY IRREGULARITIES THAT WOULD CAUSE A POINT LOAD ON CARRIER PIPE. ENGINEER RESERVES THE RIGHT TO REQUIRE SPACERS (MAX. 10' APART) IF CASING OR CARRIER PIPE ARE NOT SUFFICIENTLY SMOOTH AND REGULAR. EXTERIOR WELD BEADS SHALL BE REMOVED FROM FUSIBLE PVC CARRIER PIPE.
7. FOR MCKINLEY COUNTY, NAVAJO DIVISION OF TRANSPORTATION AND BIA ROADS, ADHERE TO ANY ADDITIONAL CROSSING PERMIT REQUIREMENTS.
8. OPEN CUT CASINGS SHALL BE ASPHALTIC COATED PER AWW C104.
9. ROAD SURFACE TO BE RESTORED TO ORIGINAL CONDITION OR BETTER. THIS INCLUDES INSTALLATION OF GRAVEL, ASPHALT, OR BASE COURSE SURFACING MATERIAL.

Revision	Date	Description	By	Chkd

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Client: The Navajo Nation
Location: Coyote Canyon, NM

CASED ROAD CROSSING DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TARY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 9-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Scale: Horiz: N/A
Vert: N/A

Project No: 6922268

Sheet: DT-4

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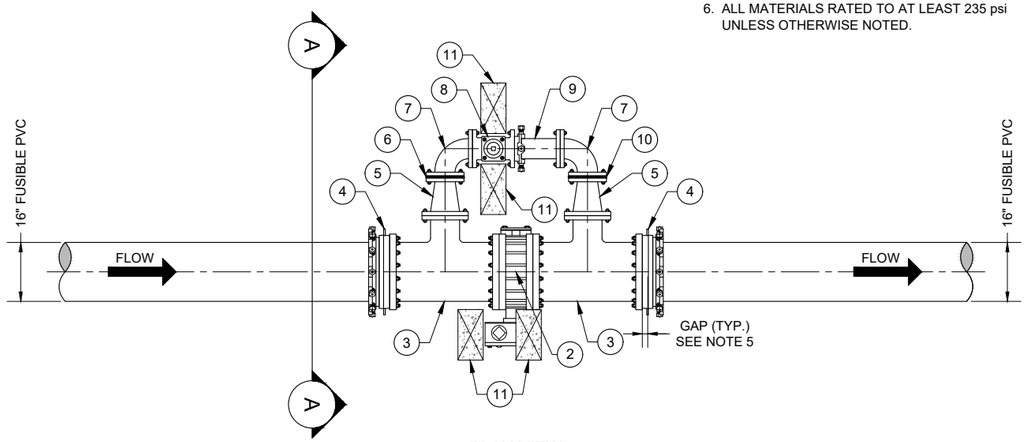
KEYED NOTES - MAINLINE MASTER SHUT OFF BUTTERFLY VALVE

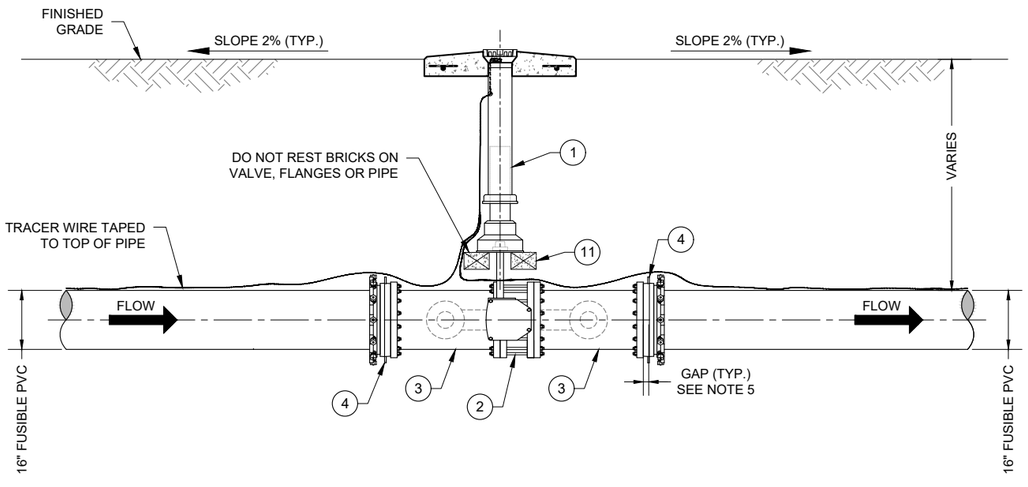
ITEM NO.	DESCRIPTION
1	CAST IRON SLIP TYPE VALVE BOX WITH LOCKABLE COVER
2	16" FL X FL BUTTERFLY VALVE W/ MANUAL BURIED SERVICE ACTUATOR AWWA C504, 250B, PER PLANS, CLOSE OVER 180 SECONDS
3	16" x 6" D.I. REDUCING TEE, FLANGED, 250 psi, PER PLANS
4	16" MJ FLANGE ADAPTER, FBE COATED, W/ SS 304 BOLTS, MEGAFLANGE SERIES 2100, OAE, 235 psi
5	6" x 4" D.I. REDUCER, FLANGED, 250 psi,
6	9" O.D. STAINLESS STEEL SPACER TO MATCH 4" FLANGE, 3/8" THICK
7	4" D.I. 90° ELL, FLANGED, 250 psi
8	4" FL x MJ GATE VALVE WITH VALVE BOX, 350 psi
9	4" D.I. SPOOL, FL x PLAIN END, 250 psi
10	9" O.D. STAINLESS STEEL ORIFICE PLATE TO MATCH 4" FLANGE (SEE DETAIL / TABLE THIS SHEET)
11	12" x 6" x 4" BRICKS, ORIENTATION PER PLAN VIEW

NOTES:

1. ALL BURIED METALLIC PIPE, VALVES AND FITTINGS SHALL BE COATED WITH FUSION BONDED EPOXY, INTERIOR AND EXTERIOR. ALL BURIED METALLIC PIPE SHALL ALSO BE WAX TAPE-COATED, PER SPECIFICATIONS.
2. APPLY CATHODIC PROTECTION TO ALL BURIED METALLIC PRESSURE-BEARING COMPONENTS LOCATED WITHIN CORROSIVE SOIL ZONES, AS DESIGNATED IN THE PLANS AND/OR SPECIFICATIONS.
3. FLANGES SHALL BE ANSI CLASS 125 (IRON).
4. CONTRACTOR SHALL SCRIBE CONCRETE COLLARS PER DETAIL THIS SHEET. CONCRETE SHALL BE SCRIBED PRIOR TO CURING, OR ETCHED AFTER CURING WITH 4" GRINDER.
5. CONTRACTOR SHALL LEAVE A 3/4" MIN. TO 1" MAX. GAP BETWEEN PVC PIPE END AND FLANGE FACE INSIDE MJ FLANGE ADAPTER, TO FACILITATE FUTURE DISASSEMBLY.
6. ALL MATERIALS RATED TO AT LEAST 235 psi UNLESS OTHERWISE NOTED.



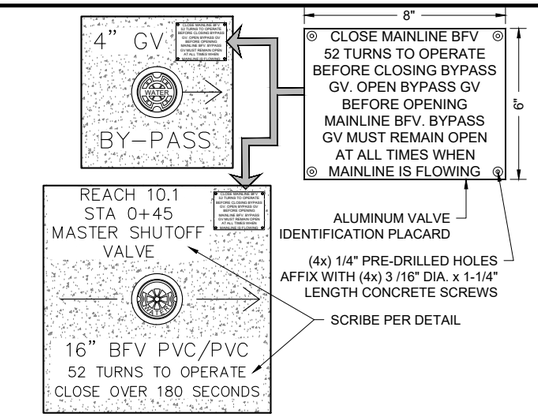
PLAN VIEW



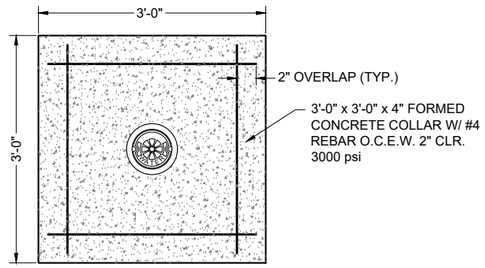
ELEVATION VIEW

STA 0+45 MASTER SHUT OFF BUTTERFLY VALVE ASSEMBLY WITH BYPASS

0' 3' 6'



PLAN VIEW - SURFACE



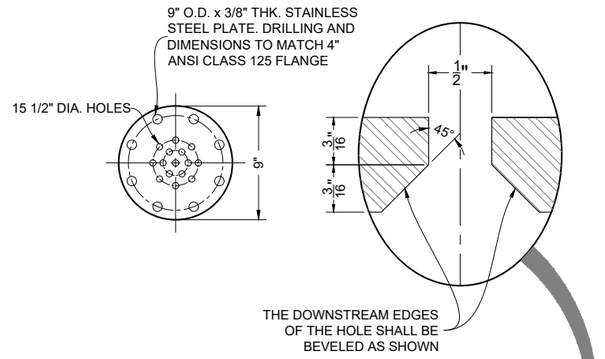
PLAN VIEW - REBAR

STA 0+45 MASTER SHUTOFF BUTTERFLY VALVE CONCRETE COLLAR ETCHING AND ID PLACARD DETAIL

NOT TO SCALE

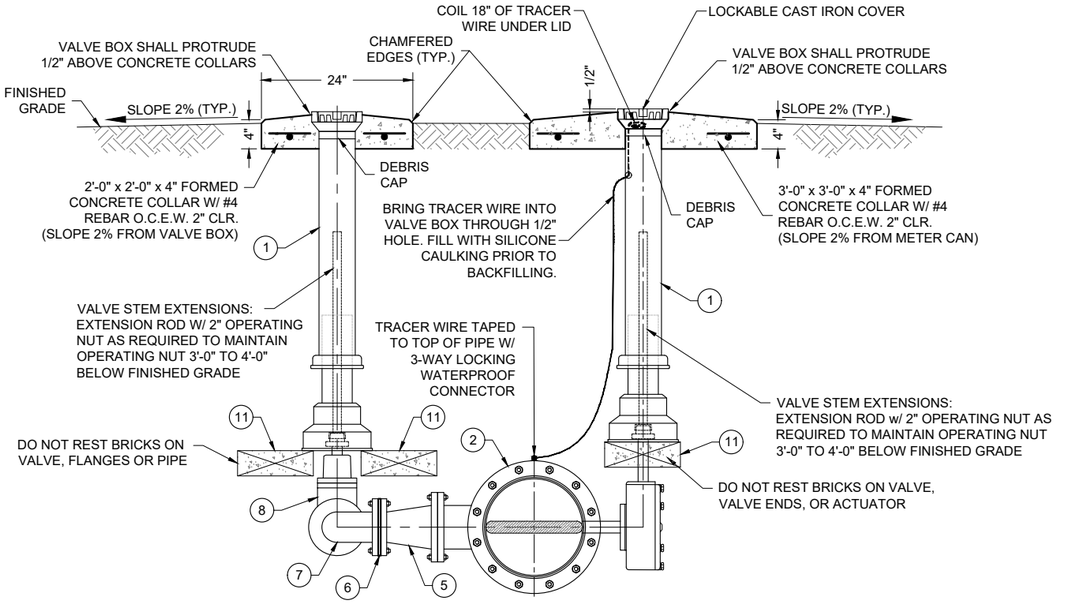
NOTE:

1. ALL HOLES TO BE DRILLED INSIDE 4" FLOW AREA OF PLATE.
2. ALL MJ DI FITTINGS AND VALVES SHALL BE RESTRAINED WITH EBAA IRON MEGALUG MECHANICAL JOINT RESTRAINTS, OAE.



ORIFICE PLATE ASSEMBLY

NOT TO SCALE



ELEVATION VIEW "A-A"

0' 2' 4'

STA 0+45 MASTER SHUT OFF BUTTERFLY VALVE ASSEMBLY WITH BYPASS

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Coyote Canyon, NM

MAINLINE BUTTERFLY VALVE WITH BYPASS DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
MCKINLEY COUNTY, NEW MEXICO

TERRY T. ADAMS
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Project No: 6922268

Sheet: DT-5

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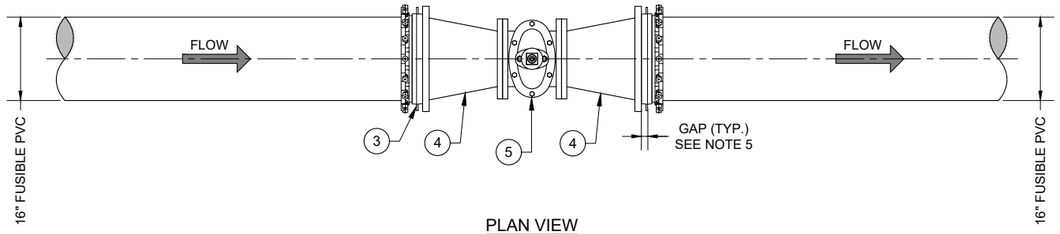
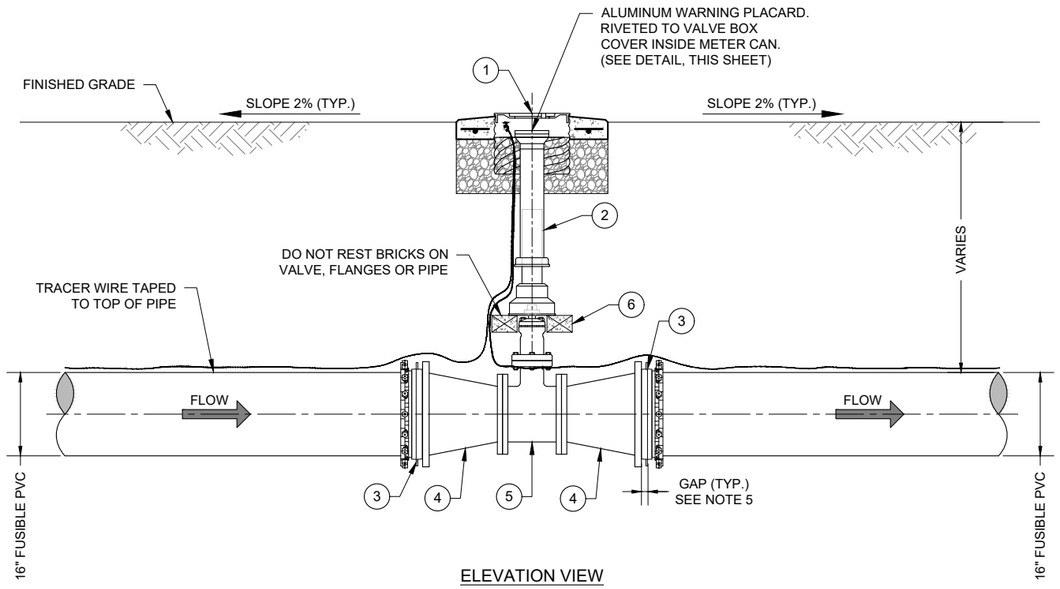
KEYED NOTES - MAINLINE GATE VALVE	
Item No.	DESCRIPTION
1	18" DIA. HEAVY DUTY, TRAFFIC-RATED METER CAN (PAINTED BLUE) W/ LOCKING COVER AND FORMED CONCRETE COLLAR, (3000 psi W/ #4 REBAR)
2	CAST IRON SLIP TYPE VALVE BOX WITH LOCKABLE COVER
3	16" MJ FLANGE ADAPTER, FBE COATED, W/ SS 304 BOLTS, MEGAFLANGE SERIES 2100, OAE, RATED TO PRESSURE RATING OF PIPE
4	16" x 12" FL x FL REDUCER WITH RUBBER ANNULAR RING FLANGE GASKET, 350 PSI
5	12" FL x FL GATE VALVE, 350 psi (SEE SHT. DT-7)
6	12" x 6" x 4" BRICKS, ORIENTATION PER PLAN VIEW

NOTES:

1. ALL BURIED METALLIC PIPE, VALVES AND FITTINGS SHALL BE COATED WITH FUSION BONDED EPOXY, INTERIOR AND EXTERIOR. ALL BURIED METALLIC PIPE, VALVES AND FITTINGS SHALL ALSO BE WAX TAPE-COATED, PER SPECIFICATIONS.
2. APPLY CATHODIC PROTECTION TO ALL BURIED METALLIC PRESSURE-BEARING COMPONENTS LOCATED WITHIN CORROSIVE SOIL ZONES, AS DESIGNATED IN THE PLANS AND/OR SPECIFICATIONS.
3. FLANGES SHALL BE ANSI CLASS 125 (IRON).
4. CONTRACTOR SHALL SCRIBE ALL CONCRETE COLLARS PER DETAIL THIS SHEET. CONCRETE SHALL BE SCRIBED PRIOR TO CURING, OR ETCHED AFTER CURING WITH 4" GRINDER.
5. CONTRACTOR SHALL LEAVE A 3/4" MIN. TO 1" MAX. GAP BETWEEN PVC PIPE END AND FLANGE FACE INSIDE MJ FLANGE ADAPTER, TO FACILITATE FUTURE DISASSEMBLY.
6. ALL MATERIALS RATED TO PRESSURE RATING OF PIPE UNLESS OTHERWISE NOTED.



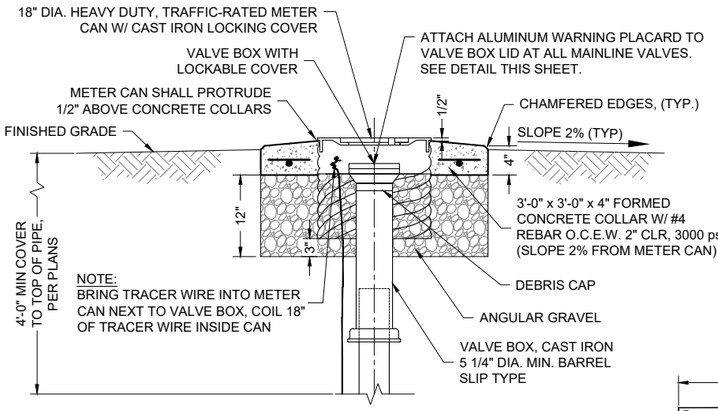
PLAN VIEW



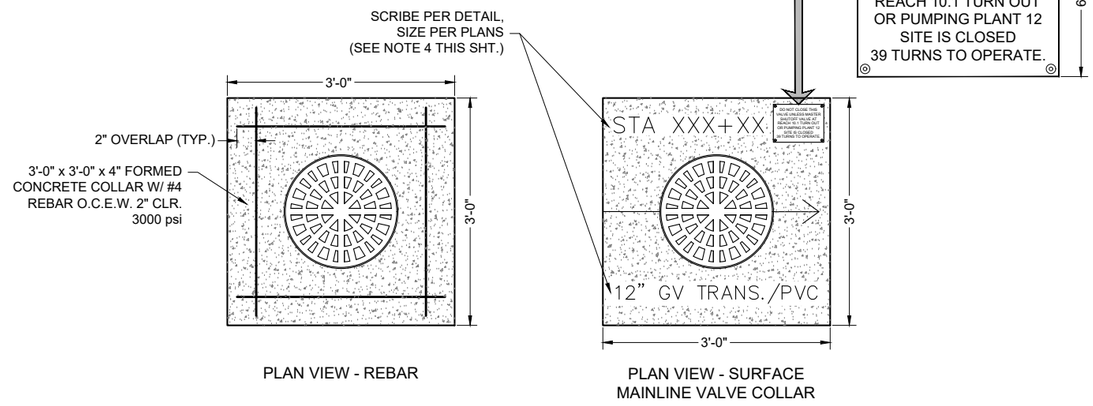
ELEVATION VIEW

MAINLINE GATE VALVE WITH REDUCER ASSEMBLY

0' 3' 6'



ELEVATION VIEW

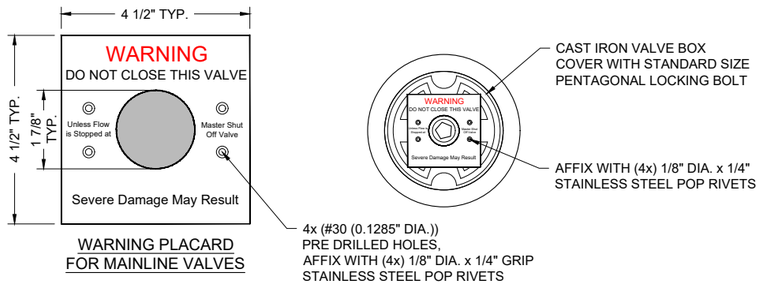


PLAN VIEW - REBAR

PLAN VIEW - SURFACE
MAINLINE VALVE COLLAR

TYPICAL MAINLINE VALVE BOX, COLLAR AND VALVE ID PLACARD DETAIL

NOT TO SCALE



WARNING PLACARD
FOR MAINLINE VALVES

PLAN VIEW

TYPICAL MAINLINE GATE VALVE WARNING PLACARD DETAIL

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Revision	Date	Description	By	Chkd

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Client: The Navajo Nation
Location: Coyote Canyon, NM

MAINLINE GATE VALVE WITH REDUCER ASSEMBLY
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TODD A. TADANO — NEW MEXICO — 21073 — 10-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Date: September 2025
Scale: Horiz: 1" = 3'
Vert: N/A
Project No: 6922268
Sheet: DT-6

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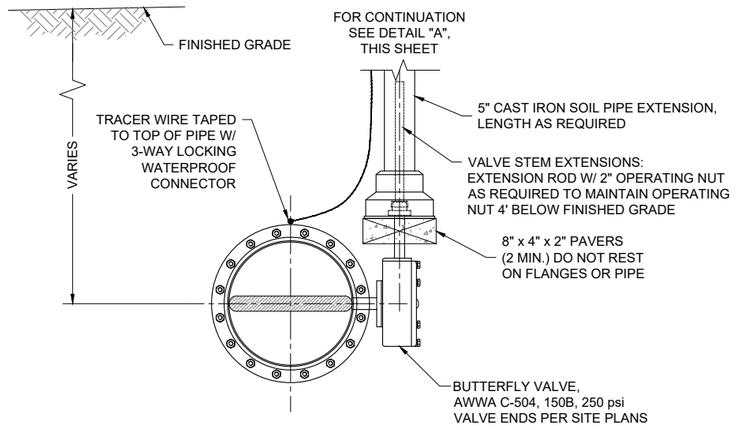
NOTES:

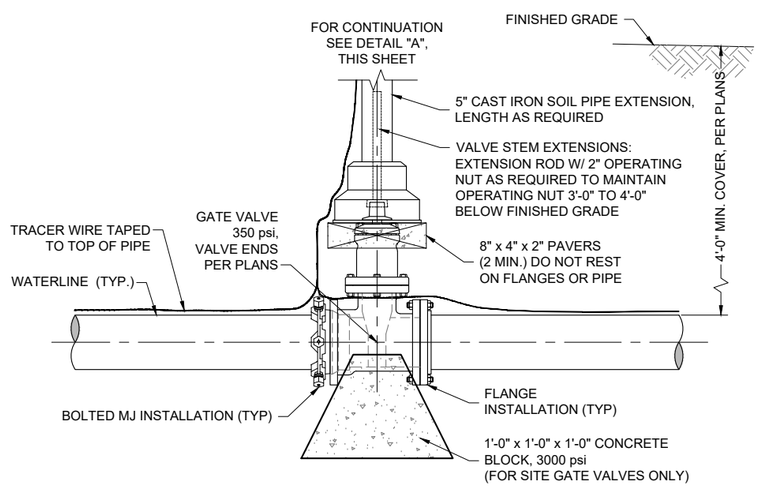
1. CONTRACTOR SHALL SCRIBE ALL CONCRETE VALVE COLLARS, PER DETAIL "A" THIS SHEET. CONCRETE SHALL BE SCRIBED PRIOR TO CURING OR ETCHED AFTER CURING WITH 4" GRINDER.
2. AFFIX ALUMINUM VALVE IDENTIFICATION PLATES TO ALL SITE VALVE COLLARS, PER DETAILS "A" & "B" THIS SHEET. REFER TO SHEET C-28 FOR VALVE-SPECIFIC LABELING.
3. ALL MATERIALS SHALL BE WORKING PRESSURE RATED TO AT LEAST THE PRESSURE RATING OF THE PIPE, UNLESS OTHERWISE NOTED.
4. ALL BURIED VALVES SHALL BE COATED WITH FUSION BONDED EPOXY, INTERIOR AND EXTERIOR.
5. APPLY CATHODIC PROTECTION TO ALL BURIED METALLIC PRESSURE-BEARING COMPONENTS LOCATED WITHIN CORROSIVE SOIL ZONES, AS DESIGNATED IN THE PLANS AND/OR SPECIFICATIONS.
6. FLANGES SHALL BE ANSI CLASS 125 (IRON).
7. ALL MJ DI FITTINGS AND VALVES SHALL BE RESTRAINED WITH EBAA IRON MEGALUG MECHANICAL JOINT RESTRAINTS, OAE.



END VIEW

TYPICAL SITE BUTTERFLY VALVE DETAIL WITHOUT BYPASS

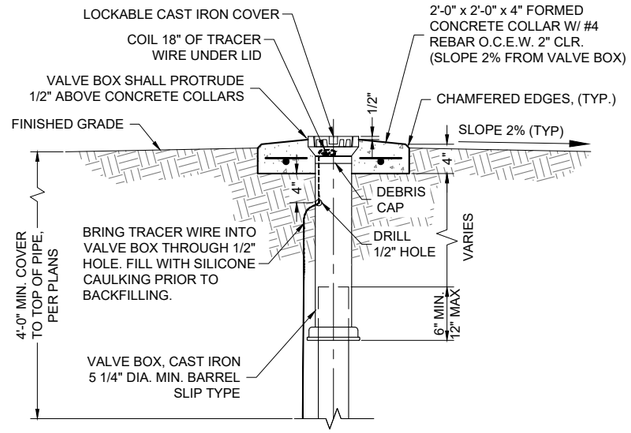
NOT TO SCALE



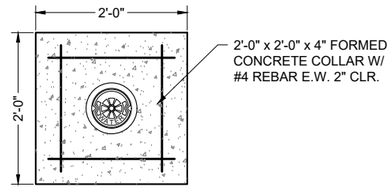
ELEVATION VIEW

TYPICAL GATE VALVE DETAIL

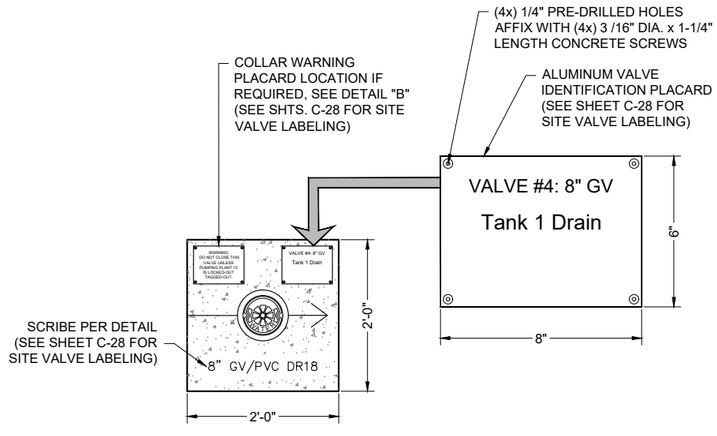
NOT TO SCALE



ELEVATION VIEW



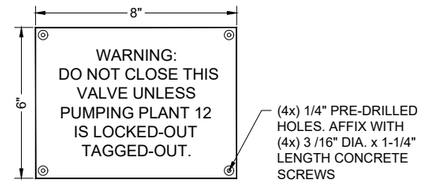
PLAN VIEW - REBAR



PLAN VIEW - SURFACE

DETAIL "A" TYPICAL SITE VALVE BOX, COLLAR AND VALVE ID PLACARD DETAIL

NOT TO SCALE



DETAIL "B" ALUMINUM VALVE COLLAR WARNING PLACARD FOR SITE VALVES

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

BUTTERFLY AND GATE VALVE DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TADAYON NEW MEXICO 21073 LICENSED PROFESSIONAL ENGINEER 12-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Project No: 6922268
Sheet: DT-7

P:\6-Beacon Bisti N9 Water Line (6922268)\CAD\Civil\Reach 10.1 Plan Set\Construction Plans\Reach 10.1 BFV Detail.dwg
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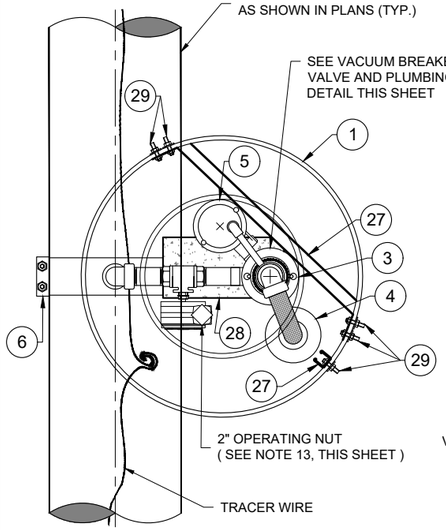
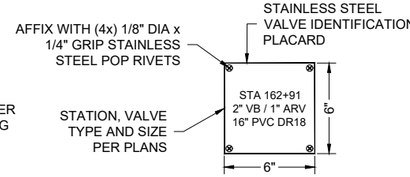
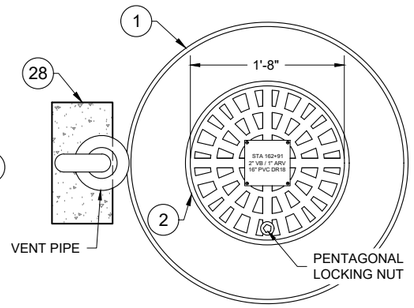


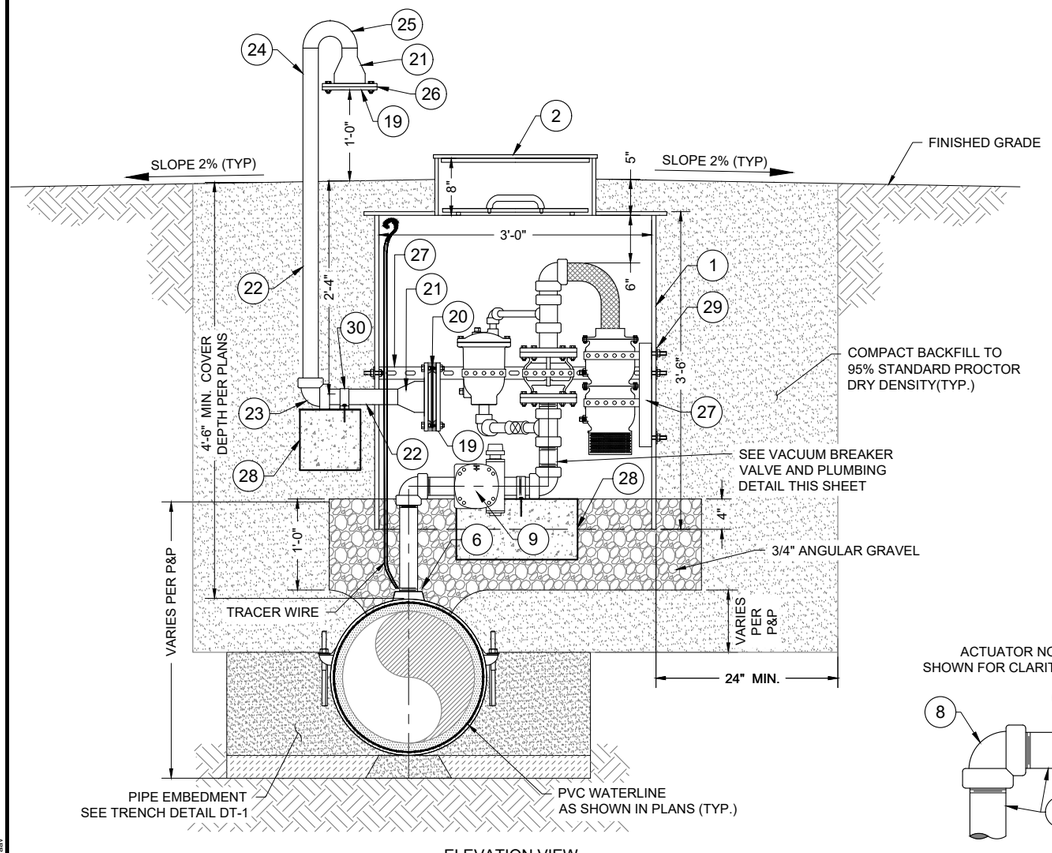
PLAN VIEW



VALVE IDENTIFICATION PLACARD



PLAN VIEW - COVER & VENT PIPE



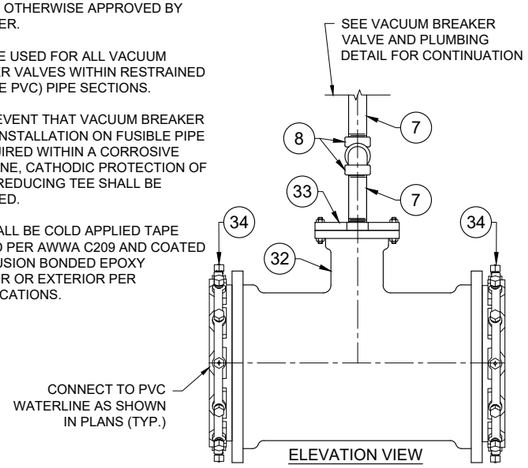
ELEVATION VIEW

VACUUM BREAKER VALVE DETAIL

0' 10" 20"

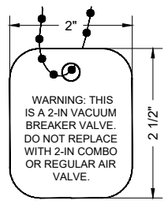
ALTERNATIVE CONFIGURATION "A" NOTES:

1. TO BE USED ONLY IN NON-CORROSIVE SOILS, AS INDICATED ON PLAN SHEETS, UNLESS OTHERWISE APPROVED BY ENGINEER.
2. MUST BE USED FOR ALL VACUUM BREAKER VALVES WITHIN RESTRAINED (FUSIBLE PVC) PIPE SECTIONS.
3. IN THE EVENT THAT VACUUM BREAKER VALVE INSTALLATION ON FUSIBLE PIPE IS REQUIRED WITHIN A CORROSIVE SOIL ZONE, CATHODIC PROTECTION OF THE DI REDUCING TEE SHALL BE PROVIDED.
4. TEE SHALL BE COLD APPLIED TAPE COATED PER AWWA C209 AND COATED WITH FUSION BONDED EPOXY INTERIOR OR EXTERIOR PER SPECIFICATIONS.



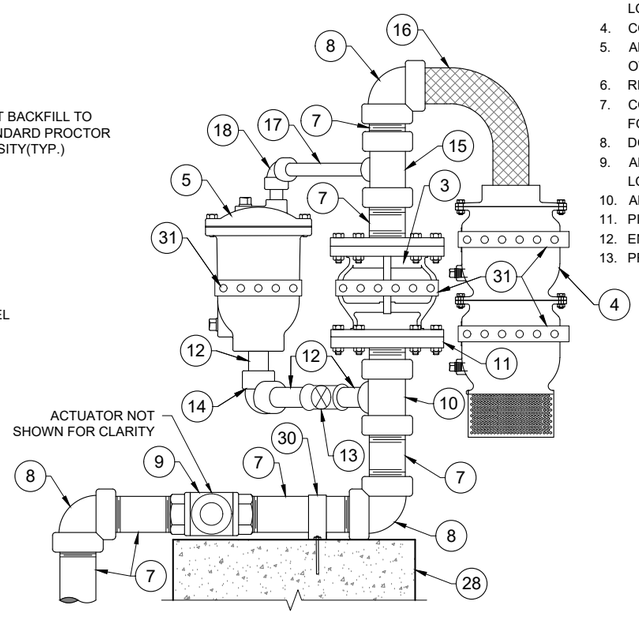
ELEVATION VIEW

ALTERNATIVE CONFIGURATION "A"



VALVE WARNING TAG DETAIL

(HANG FROM 2" VACUUM BREAKER VALVE)



VACUUM BREAKER VALVE AND PLUMBING DETAIL

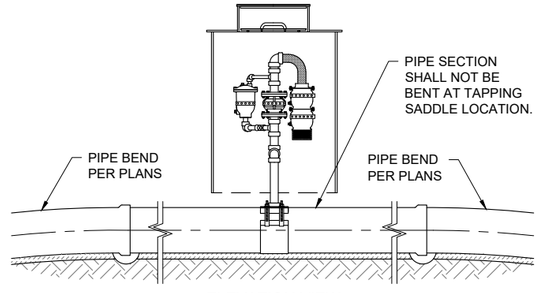
N.T.S.

KEYED NOTES - 2" VACUUM BREAKER WITH 1" AIR RELEASE VALVE

Item No.	Description
1	36" DIA. PLASTIC (METER) PIT WITH REMOVABLE FROST LID
2	20" METER PIT LOCKING COVER(CAST IRON)WITH FROST PROOF INNER LID
3	2" VALMATIC MODEL NO. 1852VB.3XFSVH VACUUM BREAKER VALVE W/ SCREENED HOOD, ANSI CLASS 250 FLANGE, 400 psi WP
4	2" VALMATIC FLOODSAFE INFLOW PREVENTER
5	1" VALMATIC MODEL NO. 38HPDISVH AIR RELEASE VALVE, 500 psi WP
6	16" x 2" TAPPING SADDLE, D.I. W/ FUSION BONDED NYLON COATING, SS 304 DUAL STRAPS AND SS 304 BOLT KIT, FNPT, ROMAC 202 NS, OAE, 350 psi WP
7	2" NIPPLE, SS 304, NPT
8	2" 90° ELBOW, SS 304, NPT, SCHEDULE 40
9	2" BALL VALVE, SS 304, STANDARD PORT, NPT, W/ AUMA WORM GEARBOX W/ SQUARE OPERATING NUT, 1500 psi
10	2" x 2" x 1" REDUCING TEE, SS 304, NPT, SCHEDULE 40
11	2" FLANGE (THREADED), ANSI CLASS 300, SS 304, FLAT FACE
12	1" x 2" LENGTH NIPPLE, SS 304, NPT
13	1" BALL VALVE, SS 304, NPT, 2000 psi
14	1" 90° ELBOW, SS 304, NPT, SCHEDULE 40
15	2" x 1/2" REDUCING TEE, SS 304, NPT, SCHEDULE 40
16	2" STAINLESS STEEL BRAIDED HOSE, NPT
17	1/2" NIPPLE, SS 304, NPT
18	1/2" 90° ELBOW, SS 304, NPT, SCHEDULE 40
19	4" GALVANIZED IRON COMPANION FLANGE, DRILLED TO FIT
20	4" FREEZE PREVENTION DRAFT DAMPENER. VALMATIC FROSTSAFE MODEL #1504, OAE
21	4" FLANGED x 2" WELDED GALVANIZED IRON REDUCER (PIPE EXTERIOR PAINTED BLUE)
22	2" STD. GALVANIZED IRON PIPE, THREADED END (BELOW GRADE, PIPE EXTERIOR COLD-APPLIED TAPE COATED)
23	2" GALVANIZED IRON 90° ELBOW, THREADED (PIPE EXTERIOR COLD-APPLIED TAPE COATED)
24	2" STD. GALVANIZED IRON PIPE (ABOVE GRADE, PIPE EXTERIOR PAINTED BLUE)
25	2" GALVANIZED IRON LONG RADIUS WELDED RETURN (PIPE EXTERIOR PAINTED BLUE)
26	VARMINT SCREEN
27	1 5/8" GALVANIZED UNI-STRUT (ADJUST AS NEEDED TO FIT BOTH VALVES AND PIPING)
28	CONCRETE SUPPORT BLOCK, SOLID 8" x 8" x 16"
29	2" SS 304 ANCHOR BOLTS, NUTS AND FENDER WASHERS (2x EACH SIDE)
30	1" WIDE PIPE STRAP, BOLT TO SUPPORT BLOCK (3" BOLTS)
31	STAINLESS STEEL PERFORATED METAL HANGER STRAP
32	16" x 16" x 6" MJ x MJ REDUCING TEE, D.I., 350 psi WP
33	6" x 2" TAPPED THREADED MJ PLUG, D.I., 350 psi, FBE COATED
34	16" EBAA MEGALUG, OAE

NOTES:

1. ALL FLANGES SHALL BE FLAT FACED, UNLESS OTHERWISE NOTED.
2. ALL NON-STAINLESS METALLIC PIPE IN CONTACT WITH SOIL SHALL BE WAX TAPE-COATED PER AWWA C209.
3. FOR VACUUM BREAKERS LOCATED AT HIGH POINTS, VACUUM BREAKER TO BE LOCATED IN THE FIELD AT THE LOCALIZED HIGH POINT.
4. COIL TRACER WIRE ON INSIDE WALLS AT TOP OF METER PIT.
5. ALL STAINLESS STEEL PIPE AND FITTINGS SHALL HAVE A WORKING PRESSURE OF AT LEAST 350 psi, UNLESS OTHERWISE NOTED.
6. REMOVE ALL PVC CUTTINGS FROM INSIDE MAIN LINE AFTER TAPPING.
7. CONTRACTOR SHALL ATTACH PLACARD TO ALL VACUUM BREAKER METER BOX LIDS, INFORMATION AS FOLLOWS: PIPE STATION, VALVE SIZE, "VB / ARV", PIPE SIZE AND MATERIAL. SEE DETAIL, THIS SHEET.
8. DO NOT TAP FUSIBLE OR RESTRAINED PIPE. USE ALTERNATIVE CONFIGURATION "A" IN LIEU OF TAPPING.
9. APPLY CATHODIC PROTECTION TO ALL NON-STAINLESS METALLIC COMPONENTS IN CONTACT WITH SOIL LOCATED WITHIN CORROSIVE SOIL ZONES, AS DESIGNATED IN THE PLANS AND/OR SPECIFICATIONS.
10. ALL MATERIALS RATED TO AT LEAST THE MAINLINE PIPE PRESSURE RATING UNLESS OTHERWISE NOTED.
11. PIPE SECTION SHALL NOT BE BENT AT VACUUM BREAKER INSTALLATION LOCATIONS, SEE DETAIL THIS SHEET.
12. ENSURE ALL BALL VALVE HANDLES ARE UNIMPEDED THROUGH THEIR FULL RANGE OF MOTION.
13. PROVIDE MIN. 3" HORIZONTAL CLEARANCE ON ALL SIDES AROUND 2" BALL VALVE OPERATING NUT.



ELEVATION VIEW

PIPE BENDING RESTRICTIONS FOR USE WITH TAPPING SADDLE

N.T.S.

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Client: The Navajo Nation
Location: Coyote Canyon, NM

2 INCH VACUUM BREAKER WITH 1 INCH ARV DETAIL
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TADY J. TADANO
NEW MEXICO
21073
-29-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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Sheet: DT-8

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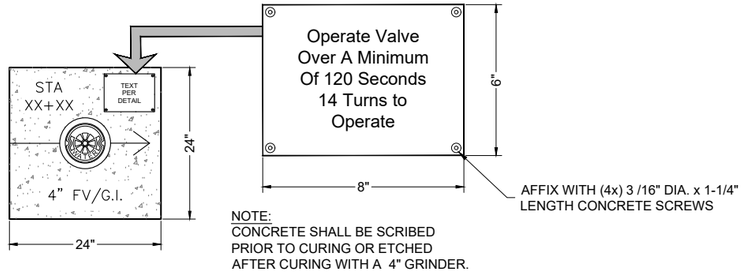
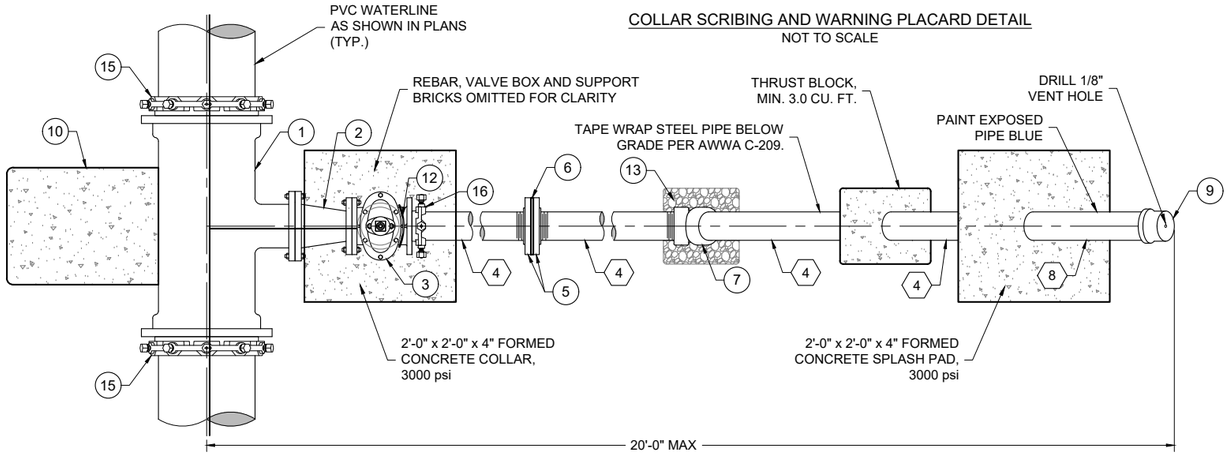
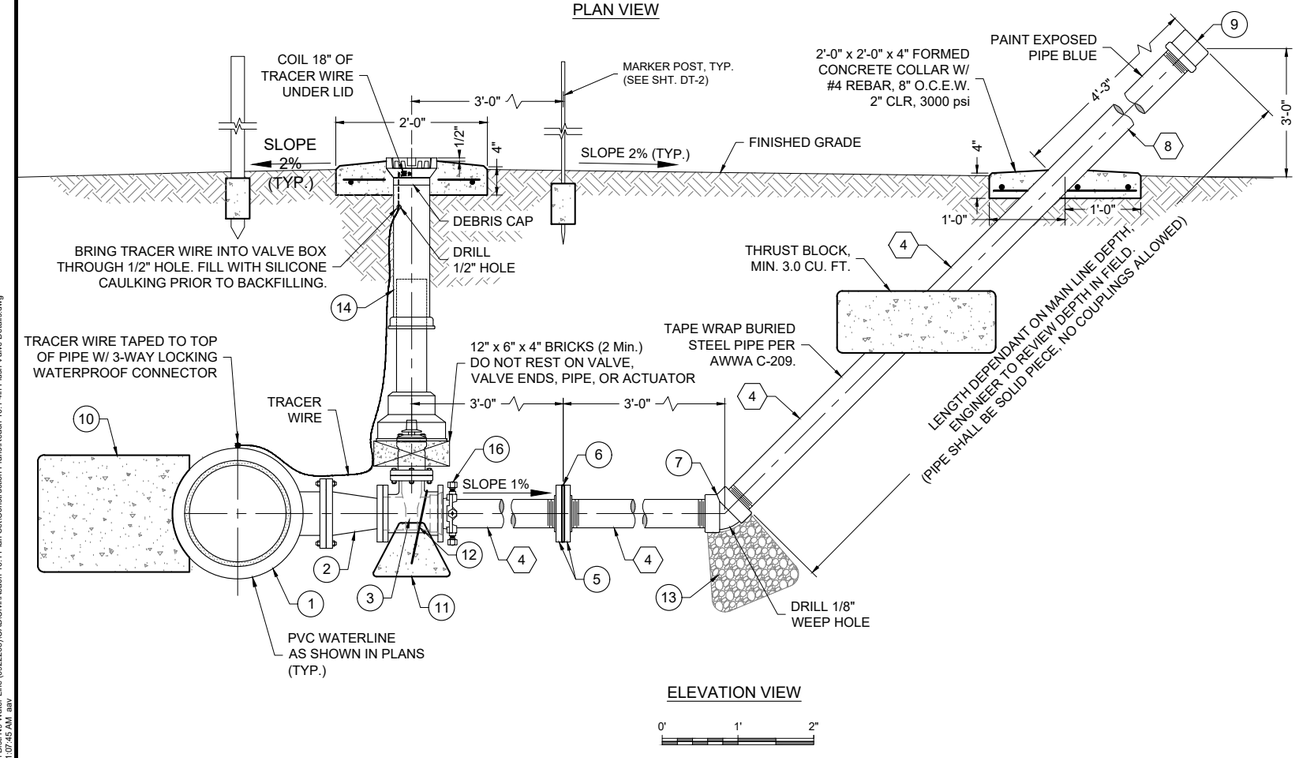


COLLAR SCRIBING AND WARNING PLACARD DETAIL
NOT TO SCALE



PLAN VIEW



ELEVATION VIEW

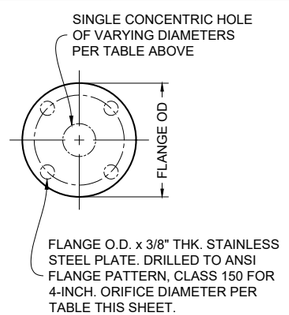
0' 1' 2"

4" FLUSH VALVE WITH ABOVE GRADE DISCHARGE DETAIL

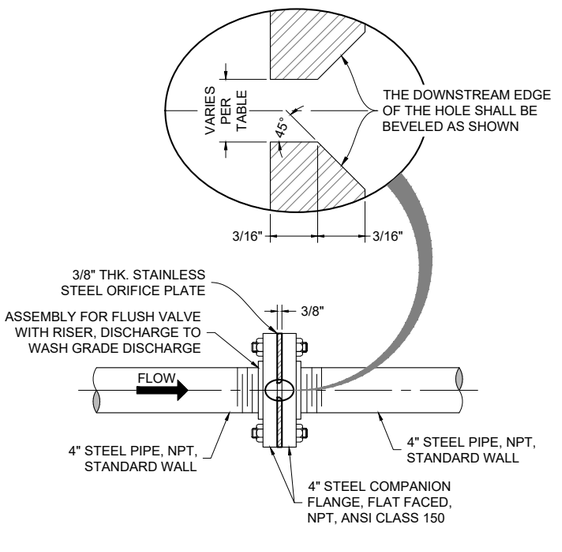
KEYED NOTES - 4" FLUSH VALVE WITH ABOVE GRADE DISCHARGE	
ITEM NO.	DESCRIPTION
1	16" x 6" MJ x FL REDUCING TEE, D.I., 250 psi
2	6" x 4" FL x FL REDUCER, D.I., 250 psi
3	4" GATE VALVE, FL x MJ, 350 psi (SEE TYPICAL GATE VALVE DETAIL, SHT. DT-7)
4	4" G.I. PIPE, STANDARD WALL, NPT, TAPE COATED BELOW GRADE
5	4" G.I.-HUB, FLAT FACED, COMPANION FLANGE, NPT, SS 304, ANSI CLASS 150
6	3/8" THK. STAINLESS STEEL ORIFICE PLATE, ANSI CLASS 150 DRILLING PATTERN (SEE DETAIL, THIS SHEET)
7	4" G.I. 45° ELL, NPT, 300 psi
8	4" G.I. PIPE, STANDARD WALL, NPT, PAINTED BLUE ABOVE GRADE
9	4" G.I. CAP, NPT, 300 psi, W/ 1/8" VENT HOLE
10	THRUST BLOCK (SEE DETAIL DT-3)
11	1'-0" x 1'-0" x 1'-0" CONCRETE BLOCK, 3000 psi
12	#4 REBAR RESTRAINT
13	ROUNDED ROCK (1.5 CU. YD.)
14	VALVE BOX SLIP TYPE WITH LOCKING CAST IRON COVER (SEE TYPICAL GATE VALVE DETAIL, SHT. DT-7)
15	16" EBAA MEGALUG, OAE
16	4" EBAA MEGALUG, OAE

NOTES:
1. ALL FLANGES SHALL BE ANSI CLASS 125 or 150.
2. ALL NON STAINLESS STEEL PIPE AND FITTINGS SHALL BE TWO-PART EPOXY COATED, INTERIOR AND EXTERIOR. ALL NON STAINLESS METALLIC PIPE IN CONTACT WITH SOIL SHALL ALSO BE WAX TAPE-COATED PER AWWA C-209 AND SPECIFICATIONS.
3. ORIENTATION AND LOCATION OF OUTLET TO BE DETERMINED IN FIELD BY ENGINEER.
4. APPLY CATHODIC PROTECTION TO ALL BURIED METALLIC WATER-CARRYING COMPONENTS LOCATED WITHIN CORROSIVE SOIL ZONES, AS DESIGNATED IN THE PLANS AND/OR SPECIFICATIONS.
5. ALL STEEL PIPE AND FITTINGS SHALL BE STANDARD WALL.
6. ALL COMPONENTS SHALL REMAIN WITHIN THE 40' PERMANENT RIGHT-OF-WAY.
7. ALL MATERIALS RATED TO AT LEAST MAINLINE PIPE PRESSURE RATING, UNLESS OTHERWISE NOTED.
9. SEE TABLE FOR ORIFICE PLATE DRILLING AND FLUSH VALVE TYPE REQUIREMENTS.

SUMMARY OF FLUSH VALVE WITH ABOVE GRADE DISCHARGE ORIFICE PLATE DRILLING			
Station	Required	Orifice Plate Hole Ø (in.)	Elevation
48+50.0	YES	3.0	5995.5
75+54.7	YES	3.0	5972.8
136+00.0	YES	3.0	5941.3
187+50.0	YES	3.0	5929.4
233+00.0	YES	3.0	5922.3
286+25.0	YES	3.0	5909.2
371+60.0	YES	3.0	5955.7
451+53.5	YES	3.0	6012.4
524+30.9	YES	3.0	6016.0
PP12 SITE	NO	-	6061.1



ORIFICE PLATE
NOT TO SCALE



4" FLUSH VALVE
ORIFICE PLATE ASSEMBLY
NOT TO SCALE

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Location: Coyote Canyon, NM
Client: The Navajo Nation

4 INCH FLUSH ABOVE-GRADE DISCHARGE DETAIL
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

Designed	Drawn	Checked
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Revision	Date	Description	By	Chkd

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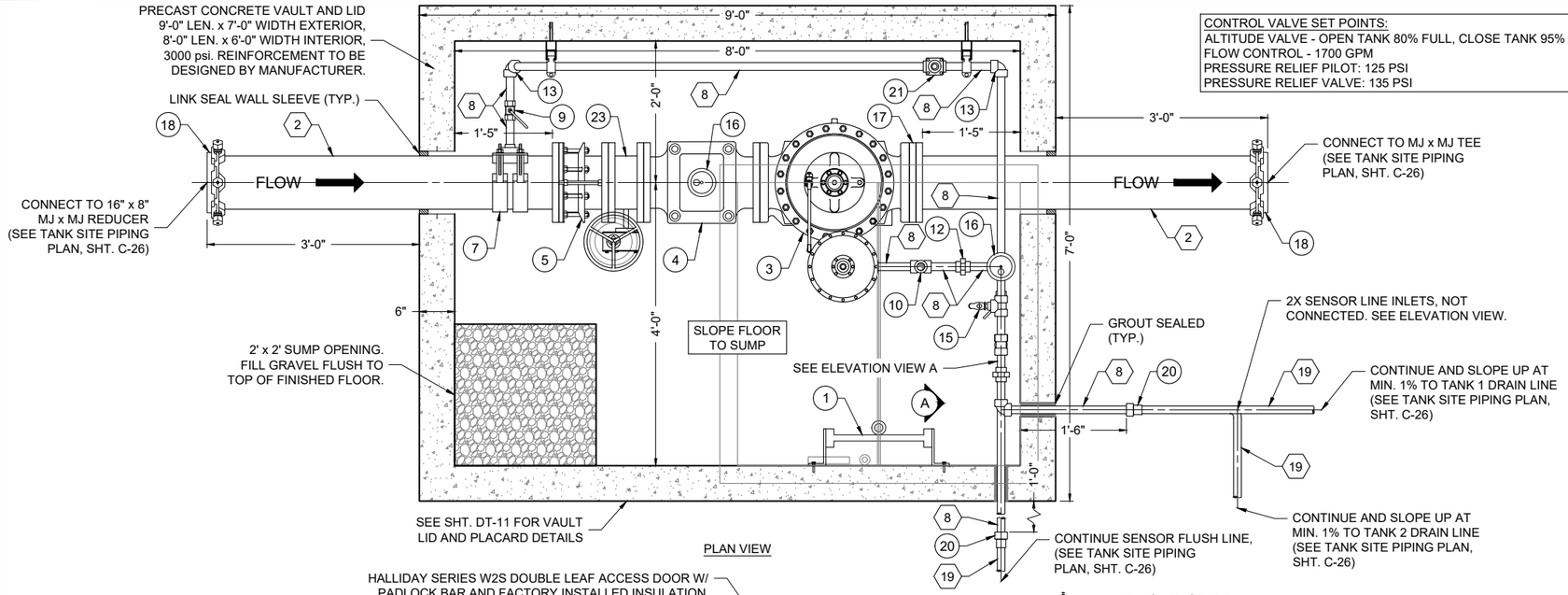
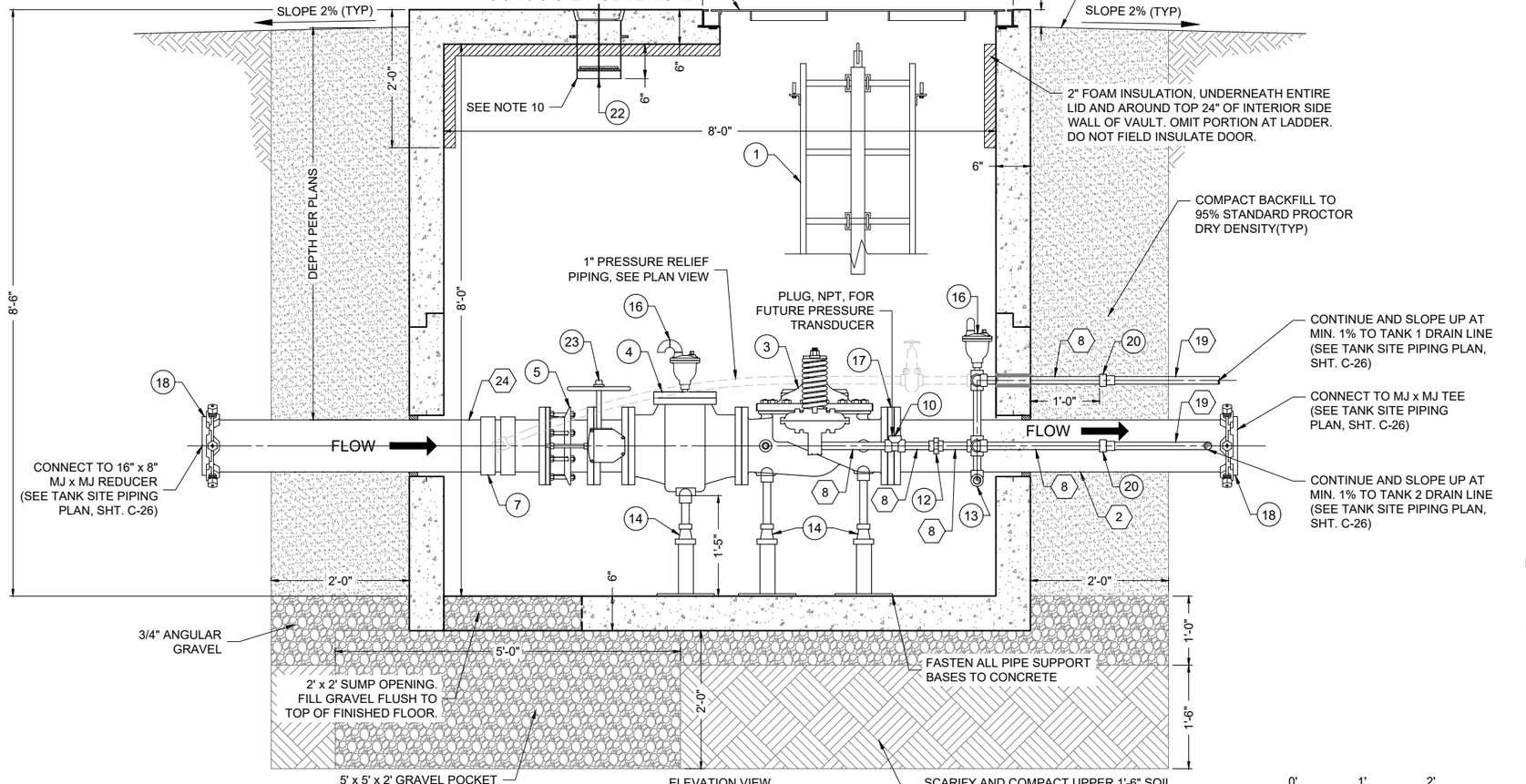


CONTROL VALVE SET POINTS:
ALTITUDE VALVE - OPEN TANK 80% FULL, CLOSE TANK 95% FULL
FLOW CONTROL - 1700 GPM
PRESSURE RELIEF PILOT: 125 PSI
PRESSURE RELIEF VALVE: 135 PSI

KEYED NOTES - 8" ALTITUDE, FLOW CONTROL, PRESSURE RELIEF VALVE ASSEMBLY

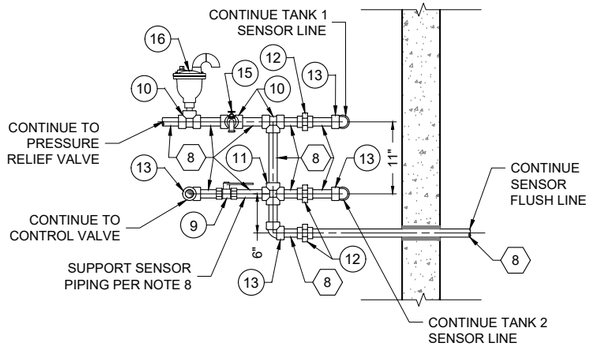
Item No.	Description
1	ALUMINUM LADDER W/ SAFETY POST ANCHORED TO VAULT OPENING AND FLOOR
2	8" FL x PE SPOOL, DUCTILE IRON
3	8" COMBINATION ALTITUDE, FLOW CONTROL, PRESSURE RELIEF VALVE, CLA-VAL, OAE
4	8" H STYLE STRAINER, CLA-VAL, OAE
5	8" DISMANTLING JOINT, FBE COATED W/ 304 SS BOLTS, ROMAC MODEL DJ400, AWWA C207 CLASS E FLANGE, OAE
6	8" MJ FLANGE ADAPTER, FBE-COATED WITH SS 304 BOLTS, MEGAFLANGE SERIES 2100, 235 psi, OAE
7	8" x 1" TAPPING SADDLE, ROMAC 202N
8	1" STEEL PIPE, NPT, SS 304
9	1" BALL VALVE, SS 304
10	1" TEE, NPT, SS 304
11	1" CROSS, NPT, SS 304
12	1" UNION, NPT, SS 304
13	1" 90° BEND, NPT, SS 304
14	ADJUSTABLE PIPE SUPPORT W/ CRADLE
15	3/4" HOSE BIB WITH VACUUM BREAKER
16	1/2" AIR RELEASE VALVE
17	8" CLA-VAL FLOW CONTROL ORIFICE PLATE
18	8" EBAA MEGALUG, OAE
19	1" ANNEALED STAINLESS STEEL TUBING
20	1" FNPT x COMPRESSION COUPLING
21	1" CLA-VAL PRESSURE RELIEF VALVE 55L-60. STAINLESS STEEL WITH 100-300 psi SPRING
22	CAST IRON VALVE BOX W/ LOCKING LID
23	8" FL x FL BUTTERFLY VALVE WITH GEARED ACTUATOR, AUMA GS100.3, 160:1 REDUCTION RATIO, 250 psi, CLOSE OVER 120 SECONDS

NOTES:
1. CONTROL VALVE ASSEMBLY WITH MASTER ISOLATION VALVE SHALL BE A PREMANUFACTURED VAULT SYSTEM SUPPLIED AS A COMPLETE PACKAGE.
2. ALL FLANGES SHALL BE ANSI CLASS 150 (STEEL) OR ANSI CLASS 125 (IRON). CONTRACTOR SHALL ENSURE ALL FLANGES / GASKETS ARE COMPATIBLE.
3. CONTRACTOR SHALL ETCH VAULT LID WITH 4" GRINDER AS FOLLOWS: PIPE STATION, VALVE SIZE, "ALTITUDE VALVE ", PIPE AND MATERIAL, WITH DIRECTIONAL ARROWS.
4. ALL MATERIALS RATED TO AT LEAST MAINLNE PRESSURE RATING UNLESS OTHERWISE SPECIFIED.
5. FIELD INSULATE PILOT SYSTEM BY WRAPPING WITH BATT INSULATION.
6. SENSOR LINE PENETRATIONS SHALL BE COMPLETED IN THE FIELD AFTER VERIFICATION OF EXACT LINE LOCATIONS.
7. ALL 8" PIPE SHALL BE FULLY SUPPORTED. SOME PIPE SUPPORTS NOT SHOWN FOR CLARITY.
8. ALL 1" PIPE TO BE SECURED WITH PIPE CLAMPS MOUNTED TO UNISTRUTS OR THE WALL. PIPE SUPPORTS NOT SHOWN FOR CLARITY.
9. SLOPE VAULT FLOOR TO SUMP OPENING.
10. CAST IRON VALVE BOX TO BE INSTALLED DIRECTLY ABOVE 8" BUTTERFLY VALVE OPERATING NUT ON-SITE BY CONTRACTOR ONCE FINAL VALVE LOCATION VERIFIED.



ELEVATION VIEW

ALTITUDE, FLOW CONTROL, PRESSURE RELIEF VALVE ASSEMBLY DETAIL



ELEVATION VIEW A

SENSOR LINE ASSEMBLY DETAIL

0' 1' 2'

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Client: The Navajo Nation
Location: Coyote Canyon, NM

8 INCH ALTITUDE CONTROL VALVE VAULT
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TERRY TADANO — NEW MEXICO — 21073 — 12-29-25 — LICENSED PROFESSIONAL ENGINEER

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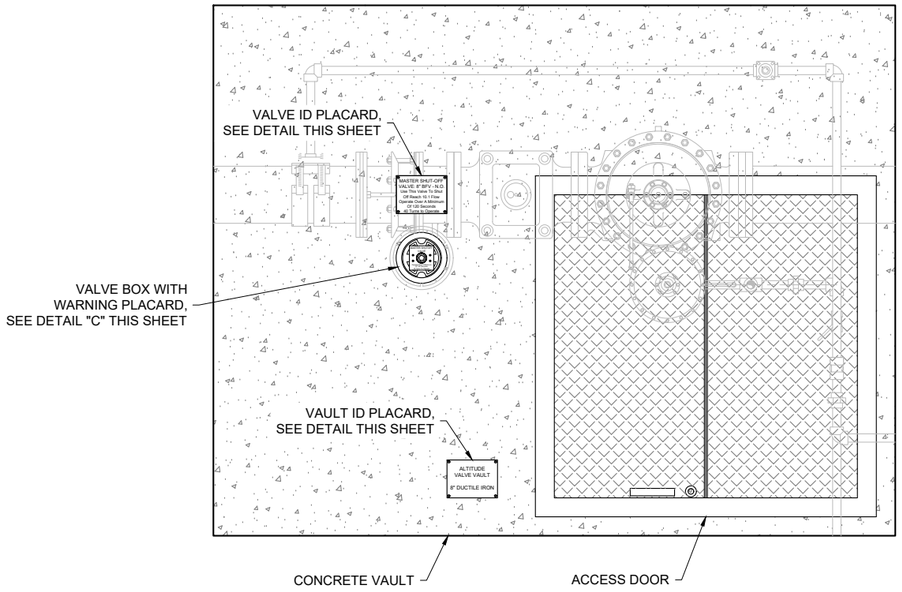
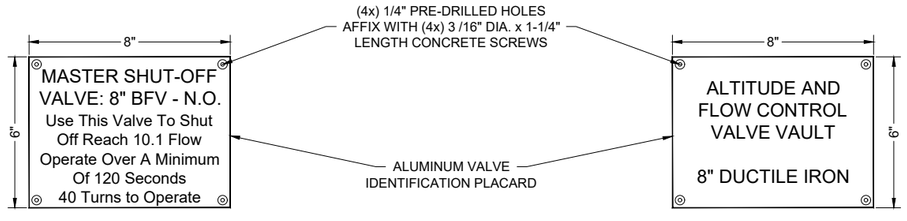


ALTITUDE AND CONTROL VALVE VAULT LID DETAIL

NOT TO SCALE



PLAN VIEW - SURFACE

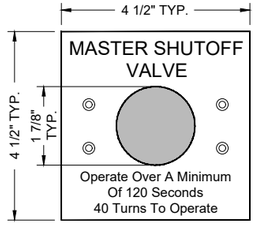
VALVE ID PLACARD DETAIL

NOT TO SCALE

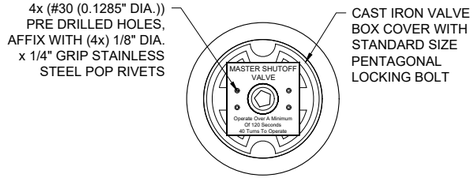
PLAN VIEW - SURFACE

VAULT ID PLACARD DETAIL

NOT TO SCALE



DETAIL "C"
WARNING PLACARD FOR MASTER SHUTOFF VALVE
ALTITUDE AND CONTROL VALVE VAULT
AT PUMPING PLANT 12



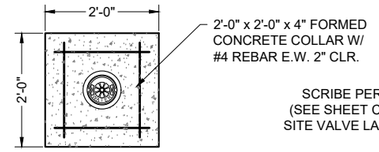
TYPICAL WARNING
PLACARD DETAIL

KEYED NOTES - 1" SENSOR LINE AND CURB VALVE

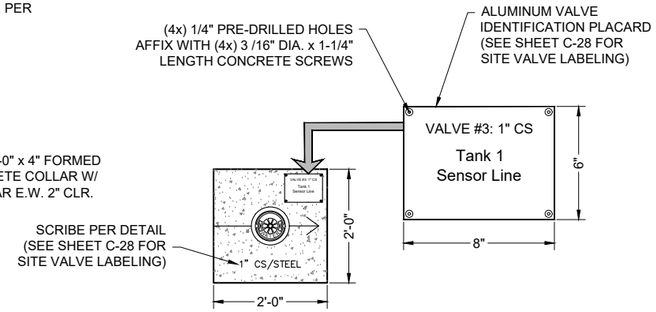
ITEM NO.	DESCRIPTION
1	1" BALL CURB VALVE, FNPT, MINNEAPOLIS PATTERN, MUELLER B-20287, OAE WP 300 psi, OAE (COVER PAINTED BLUE)
2	1" ANNEALED STAINLESS STEEL TUBING, 100 psi (SEE NOTE #2)
3	1" MNPT x COMPRESSION COUPLING
4	CURB STOP BOX, EXTENSION TYPE MUELLER H-10302, OAE W/ MUELLER STATIONARY ROD WHICH EXTENDS 2'-4" BELOW CURB BOX LID, TOP PAINTED BLUE

NOTES:

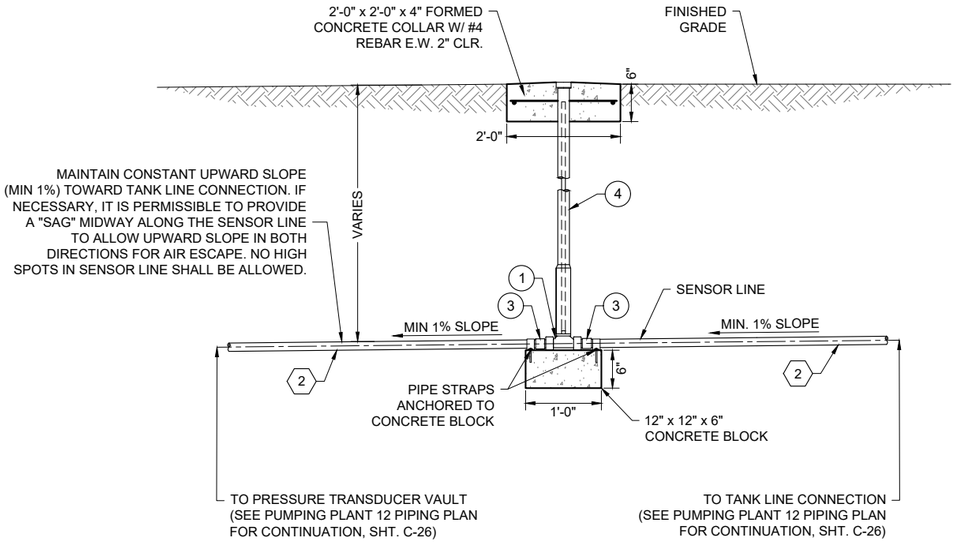
1. ALL MATERIALS, FITTINGS, AND APPURTENANCES SHALL BE RATED TO AT LEAST 150 psi, UNLESS OTHERWISE NOTED.
2. ALL STEEL PIPE AND FITTINGS SHALL BE STANDARD WALL, UNLESS OTHERWISE NOTED.
3. ALL NON-STAINLESS METALLIC PIPE, VALVES AND FITTINGS IN CONTACT WITH SOIL SHALL BE WAX TAPE-COATED PER SPECIFICATIONS.
4. CONTRACTOR SHALL SCRIBE ALL CONCRETE VALVE COLLARS, PER DETAIL THIS SHEET. CONCRETE SHALL BE SCRIBED PRIOR TO CURING OR ETCHED AFTER CURING WITH 4" GRINDER.



PLAN VIEW - REBAR



PLAN VIEW - SURFACE



1" TYPICAL SENSOR LINE AND CURB VALVE

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

ALTITUDE VAULT LID AND SENSOR LINE DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TERRY T. TADANO
NEW MEXICO
21073
7-29-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Project No: 6922268

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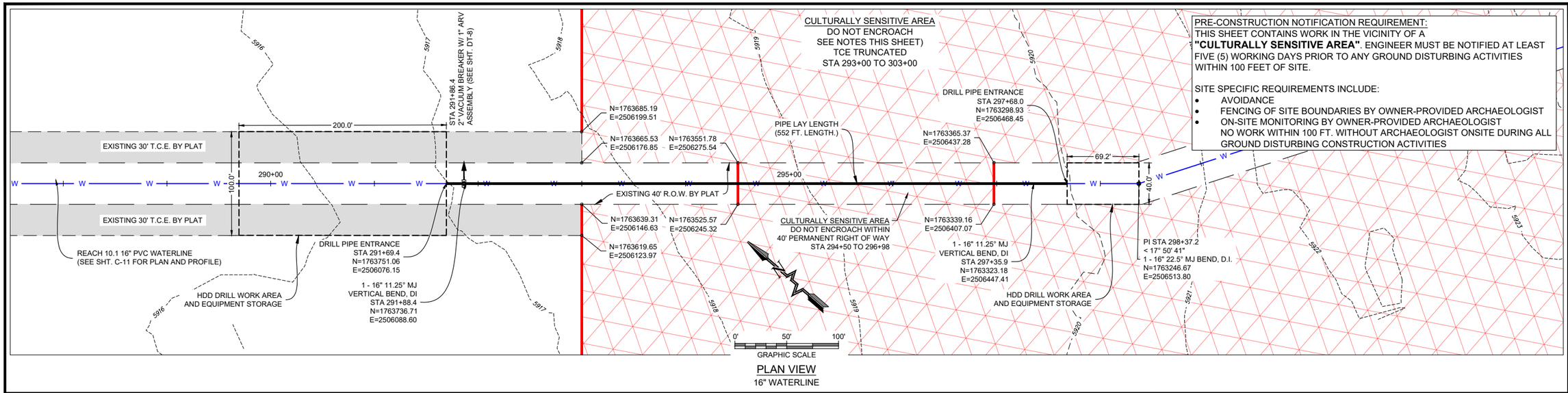
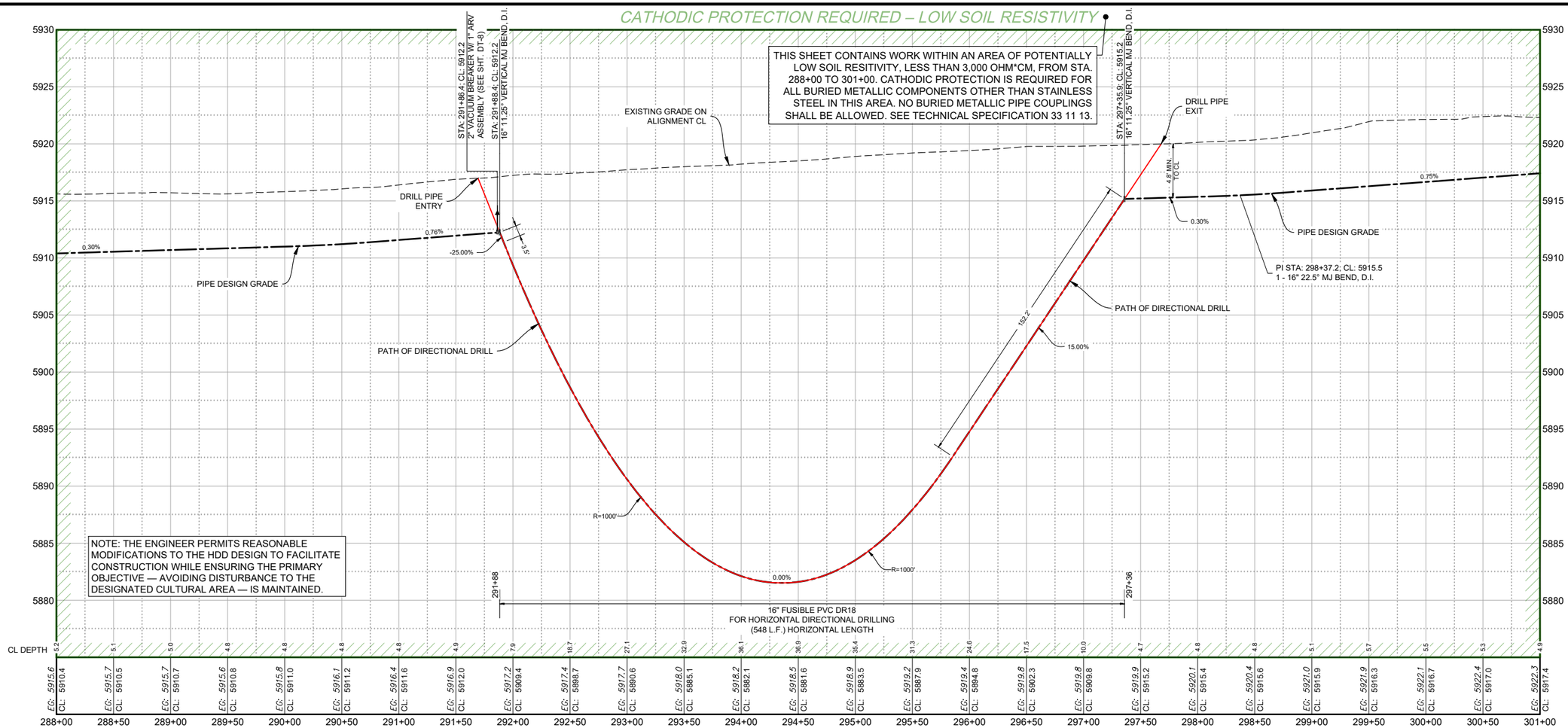


PLAN VIEW
16" WATERLINE

CATHODIC PROTECTION REQUIRED – LOW SOIL RESISTIVITY

THIS SHEET CONTAINS WORK WITHIN AN AREA OF POTENTIALLY LOW SOIL RESITIVITY, LESS THAN 3,000 OHM*CM, FROM STA. 288+00 TO 301+00. CATHODIC PROTECTION IS REQUIRED FOR ALL BURIED METALLIC COMPONENTS OTHER THAN STAINLESS STEEL IN THIS AREA. NO BURIED METALLIC PIPE COUPLINGS SHALL BE ALLOWED. SEE TECHNICAL SPECIFICATION 33 11 13.



NOTE: THE ENGINEER PERMITS REASONABLE MODIFICATIONS TO THE HDD DESIGN TO FACILITATE CONSTRUCTION WHILE ENSURING THE PRIMARY OBJECTIVE — AVOIDING DISTURBANCE TO THE DESIGNATED CULTURAL AREA — IS MAINTAINED.

PROFILE VIEW
16" WATERLINE

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

STATION 294+80 PIPELINE HDD DETAIL
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO
SECTION 29, T. 19 N., R. 16 W.

TERRY T. ADAMS
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
9-29-25

Designed	Drawn	Checked
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Sheet: DT-12

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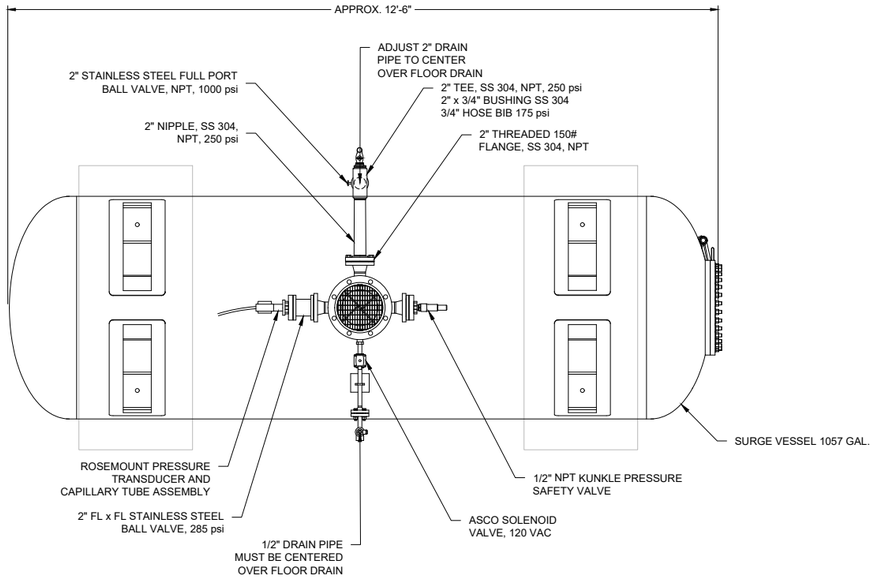
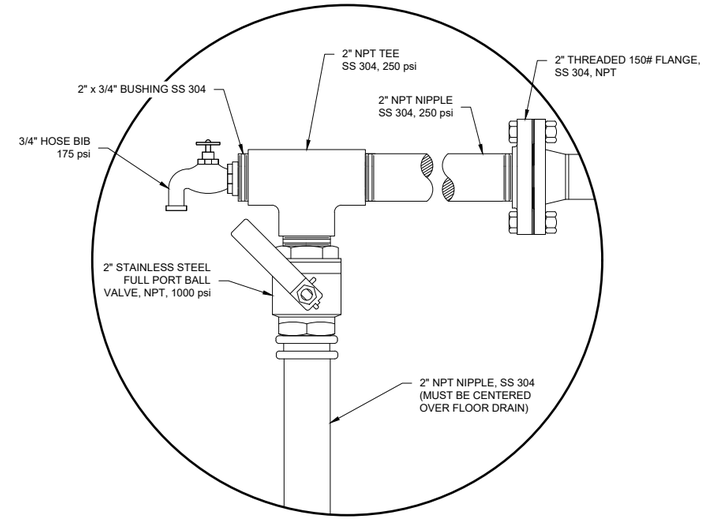
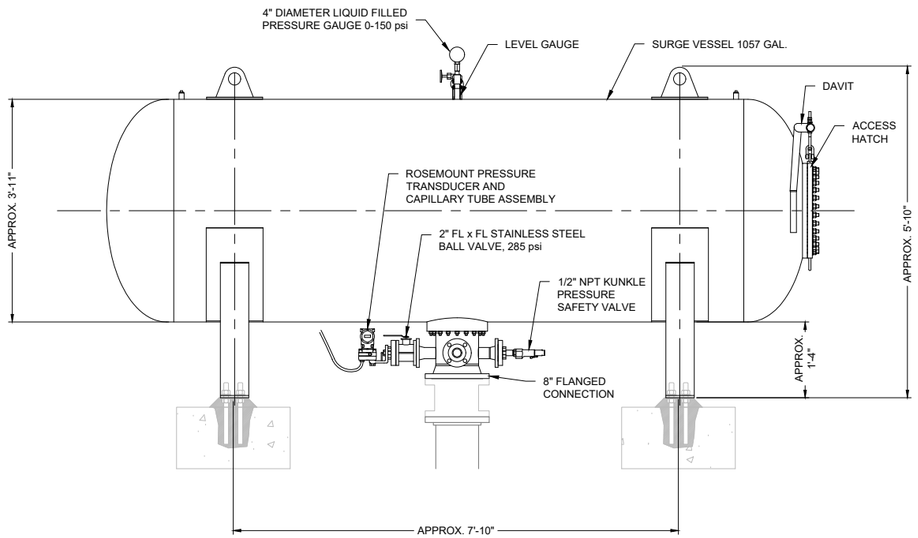


UNDERSIDE VIEW OF SURGE TANK
3/8" = 1' - 0"



DETAIL "A"
NOT TO SCALE

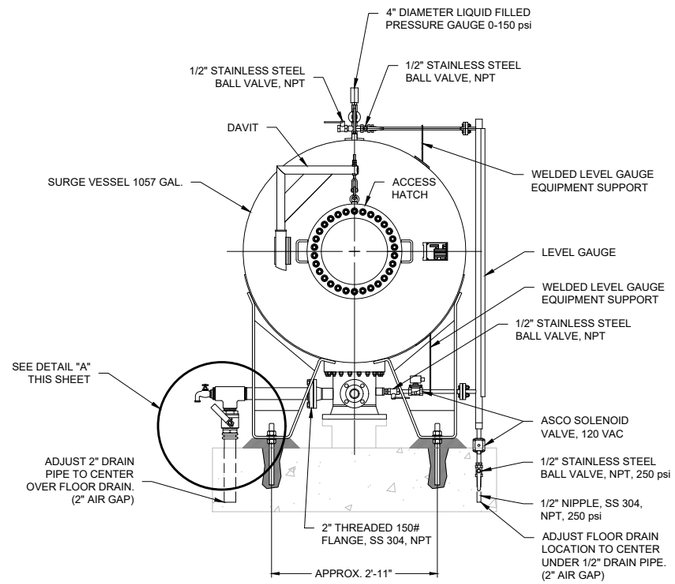
NOTE:
ALL DIMENSIONS RELATED TO TANK SIZES, LEG SPACING, ETC. ARE APPROXIMATE, CONTRACTOR TO FIELD VERIFY ACTUAL TANK DIMENSIONS BEFORE FOUNDATION CONSTRUCTION OR DRAIN PIPE INSTALLATION. PROVIDE MEASUREMENTS TO ENGINEER AS SUBMITTAL.



ELEVATION VIEW OF SURGE TANK
3/8" = 1' - 0"

0' 16" 32"

GRAPHIC SCALE



END VIEW OF SURGE TANK
3/8" = 1' - 0"

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www.soudermiller.com

Location: Coyote Canyon, NM
Client: The Navajo Nation

SURGE TANK DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TROY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 12-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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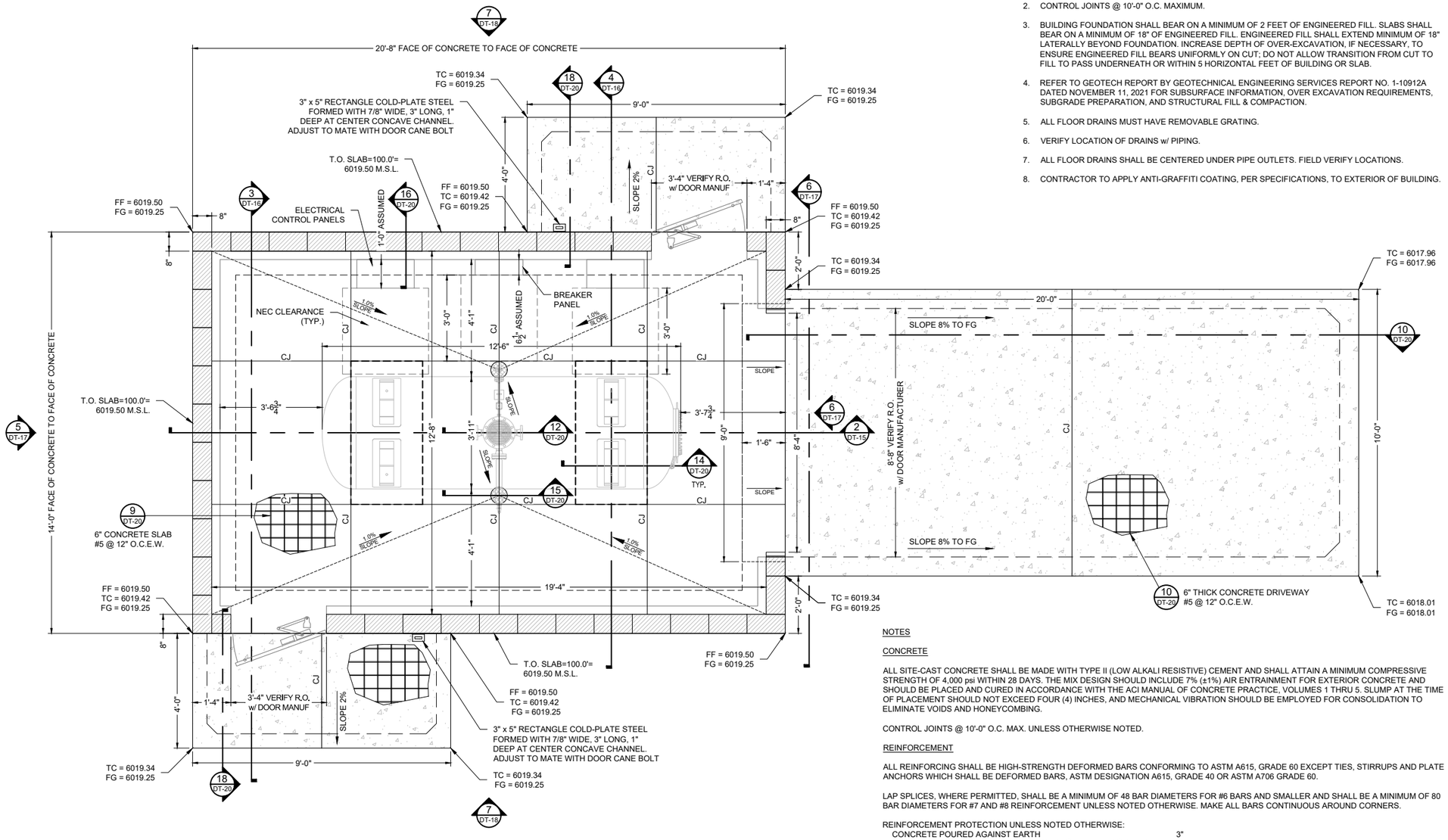
NOTES

1. 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.
2. CONTROL JOINTS @ 10'-0" O.C. MAXIMUM.
3. BUILDING FOUNDATION SHALL BEAR ON A MINIMUM OF 2 FEET OF ENGINEERED FILL. SLABS SHALL BEAR ON A MINIMUM OF 18" OF ENGINEERED FILL. ENGINEERED FILL SHALL EXTEND MINIMUM OF 18" 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.
4. REFER TO GEOTECH REPORT BY GEOTECHNICAL ENGINEERING SERVICES REPORT NO. 1-10912A DATED NOVEMBER 11, 2021 FOR SUBSURFACE INFORMATION, OVER EXCAVATION REQUIREMENTS, SUBGRADE PREPARATION, AND STRUCTURAL FILL & COMPACTION.
5. ALL FLOOR DRAINS MUST HAVE REMOVABLE GRATING.
6. VERIFY LOCATION OF DRAINS w/ PIPING.
7. ALL FLOOR DRAINS SHALL BE CENTERED UNDER PIPE OUTLETS. FIELD VERIFY LOCATIONS.
8. CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, PER SPECIFICATIONS, TO EXTERIOR OF BUILDING.



CODE INFORMATION

2015 NEW MEXICO COMMERCIAL BUILDING CODE
2015 INTERNATIONAL BUILDING CODE
ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
RISK CATEGORY III (POTABLE WATER)

LOADS

ROOF DEAD LOAD	15 PSF
ROOF LIVE LOAD	20 PSF
ROOF SNOW LOAD	10 PSF (p_s, SLOPED ROOF)

SEISMIC FORCE RESISTING SYSTEM:
ORDINARY REINFORCED MASONRY SHEAR WALLS (R = 2.0)
FLEXIBLE DIAPHRAGM

SEISMIC IMPORTANCE FACTOR	1.25
SITE SOIL CLASS	D
Ss	0.187
S1	0.056
Sds	0.200
Sd1	0.089
SEISMIC DESIGN CATEGORY	B
SEISMIC RESPONSE COEFF.	0.125 (C_s)

MAIN WIND FORCE RESISTING SYSTEM (MWFRS):
BUILDING CONSIDERED RIGID FOR WIND
FLEXIBLE DIAPHRAGM

BASIC WIND SPEED	120 MPH
WIND EXPOSURE	C

COMPONENTS AND CLADDING NET WIND PRESSURES (+PRESSURE/-SUCTION) (PSF):
BASED ON (38) PSF EFFECTIVE WIND AREA

ROOF ZONE 1	+11/-30	
ROOF ZONE 2	+11/-43	
ROOF ZONE 3	+11/-55	
WALL ZONE 4	+29/-31	
WALL ZONE 5	+29/-37	
WINDWARD PARAPET ZONE 4	72	(LOAD CASE A = +WALL 4 + |-ROOF 2|)
WINDWARD PARAPET ZONE 5	84	(LOAD CASE A = +WALL 5 + |-ROOF 3|)
LEEWARD PARAPET ZONE 4	60	(LOAD CASE B = +WALL 4 + |-WALL 4|)
LEEWARD PARAPET ZONE 5	66	(LOAD CASE B = +WALL 5 + |-WALL 5|)

COMPONENTS AND CLADDING NOTES:
1. THE PRESSURES LISTED ARE IN ACCORDANCE IBC AND ASCE 7 AND THE DESIGN FORCES USED BY THE SUBCONTRACTOR FOR HIS SPECIFIC APPLICATION ARE HIS RESPONSIBILITY.
2. WIND PRESSURES ARE ULTIMATE DESIGN LEVEL.
3. REFERENCE ASCE 7 FIGS. 30.4-1 & 30.4-2 FOR ZONE DEFINITIONS AND EXTENT OF ZONES.
4. SUBMIT DESIGN CALCULATIONS PREPARED BY A NEW MEXICO LICENSED PROFESSIONAL ENGINEER FOR ANY DESIRED MODIFICATION OF THE STATED PRESSURES.

1 FOUNDATION PLAN

1/4"=1'-0"

0' 2' 4'

GRAPHIC SCALE

NOTES

CONCRETE

ALL SITE-CAST CONCRETE SHALL BE MADE WITH TYPE II (LOW ALKALI RESISTIVE) CEMENT AND SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4,000 psi WITHIN 28 DAYS. THE MIX DESIGN SHOULD INCLUDE 7% (±1%) AIR ENTRAINMENT FOR EXTERIOR CONCRETE AND SHOULD BE PLACED AND CURED IN ACCORDANCE WITH THE ACI MANUAL OF CONCRETE PRACTICE, VOLUMES 1 THRU 5. SLUMP AT THE TIME OF PLACEMENT SHOULD NOT EXCEED FOUR (4) INCHES, AND MECHANICAL VIBRATION SHOULD BE EMPLOYED FOR CONSOLIDATION TO ELIMINATE VOIDS AND HONEYCOMBING.

CONTROL JOINTS @ 10'-0" O.C. MAX. UNLESS OTHERWISE NOTED.

REINFORCEMENT

ALL REINFORCING SHALL BE HIGH-STRENGTH DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60 EXCEPT TIES, STIRRUPS AND PLATE ANCHORS WHICH SHALL BE DEFORMED BARS, ASTM DESIGNATION A615, GRADE 40 OR ASTM A706 GRADE 60.

LAP SPLICES, WHERE PERMITTED, SHALL BE A MINIMUM OF 48 BAR DIAMETERS FOR #6 BARS AND SMALLER AND SHALL BE A MINIMUM OF 80 BAR DIAMETERS FOR #7 AND #8 REINFORCEMENT UNLESS NOTED OTHERWISE. MAKE ALL BARS CONTINUOUS AROUND CORNERS.

REINFORCEMENT PROTECTION UNLESS NOTED OTHERWISE:

CONCRETE POURED AGAINST EARTH	3"
CONCRETE POURED IN FORMS (EXPOSED TO WEATHER OR EARTH)	2"
COLUMNS AND BEAMS (TIE BARS)	1-1/2"
SLABS AND WALLS (NOT EXPOSED TO WEATHER)	3/4"

FOUNDATION

BUILDING FOUNDATION SHALL BEAR ON A MINIMUM OF 1 FOOT OF ENGINEERED FILL. SLABS SHALL BEAR ON A MINIMUM OF 1 FOOT OF ENGINEERED FILL. ENGINEERED FILL SHALL EXTEND MINIMUM OF 1 FOOT 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 GEO-TEST INC. REPORT NO. 1-10912A DATED NOVEMBER 11, 2021 FOR SUBSURFACE INFORMATION, OVER EXCAVATION REQUIREMENTS, SUBGRADE PREPARATION, AND STRUCTURAL FILL & COMPACTION.

MASONRY

CONCRETE MASONRY UNITS (CMU) SHALL CONFORM TO ASTM C90, GRADE N. BRICK SHALL FULFILL ASTM C62, C216 OR C652. MORTAR SHALL BE ASTM C270 TYPE S.

THE MINIMUM NET AREA COMPRESSIVE STRENGTH OF THE MASONRY , f'm, SHALL BE 2000 PSI.

HORIZONTAL REINFORCING SHALL BE CONTINUOUS AROUND CORNERS.

UNLESS NOTED OTHERWISE, MASONRY WALLS SHALL ALSO BE REINFORCED WITH ONE(#5) VERTICALLY AT WALL ENDS, CORNERS, EACH SIDE OF DOOR OR WINDOW OPENINGS AND AT NOT OVER (4) FEET ON CENTER TYPICALLY. REINFORCEMENT SHALL BE FULLY GROUTED IN PLACE. GROUT SHALL DEVELOP 3000 PSI IN 28 DAYS AND MEET ASTM C476.

ALL CMU WALLS REQUIRE A MINIMUM OF (2) (#5) IN BOND BEAM ABOVE ALL DOORS AND WINDOWS, AT FLOOR AND ROOF LINES, AND TOP OF PARAPETS UNLESS OTHERWISE NOTED.

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Client: The Navajo Nation
Location: Coyote Canyon, NM

SURGE TANK BUILDING FOUNDATION PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

Designed	Drawn	Checked
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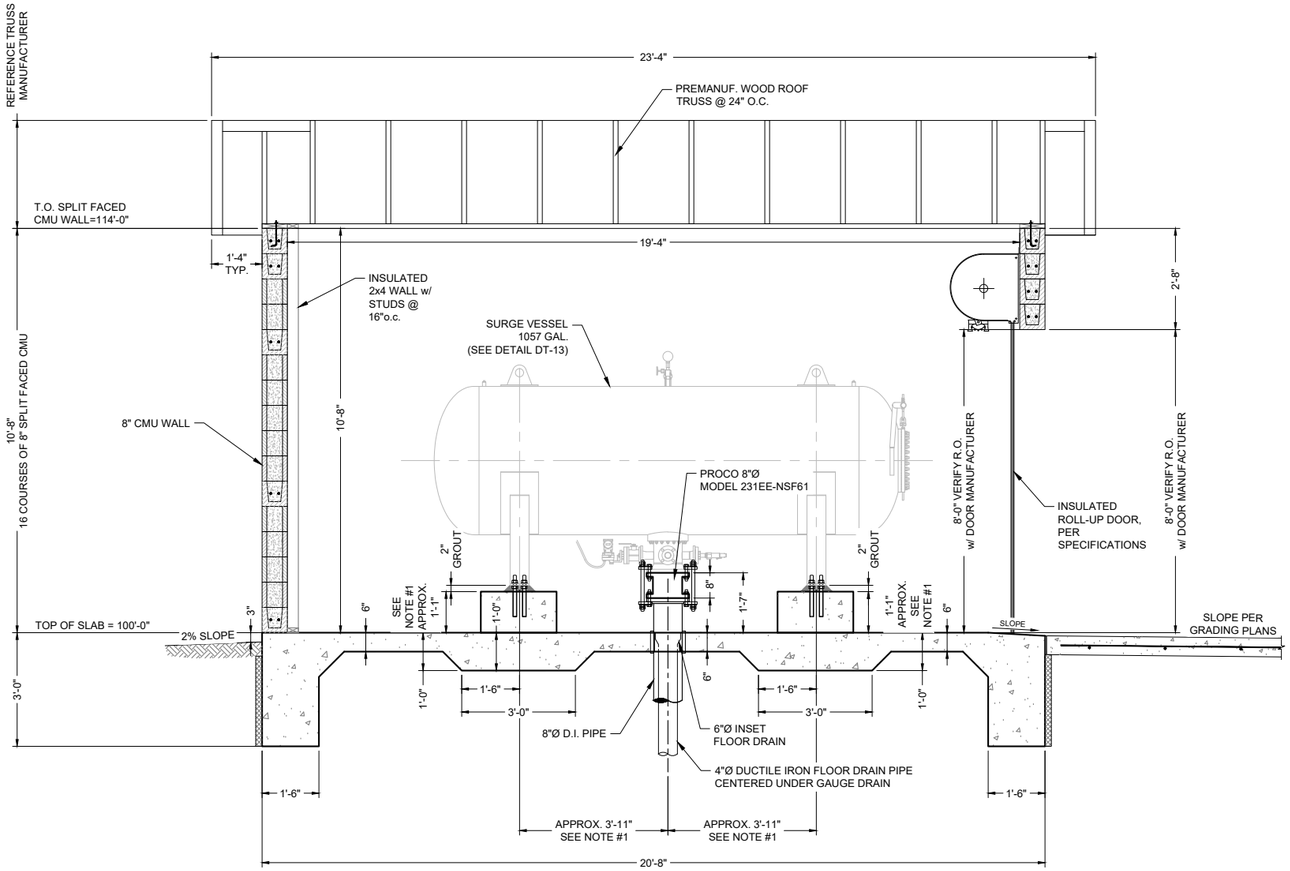

2 SECTION

1/4"=1'-0"

0' 2' 4'

GRAPHIC SCALE

NOTES

1. 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.
2. REFERENCE DETAILS DT-20 FOR ALL ARCHITECTURAL DETAILING NOT SHOWN HERE.
3. FOR CONTINUATION OF SURGE TANK UNDERGROUND PIPING SEE SURGE TANK PIPING PLAN SHEETS C-32 & C-33.
4. ALL FLOOR DRAINS MUST HAVE REMOVABLE GRATING.
5. ALL DUCTILE IRON PIPE SHALL BE 350 psi WP RATED AND SHALL BE ENCASED IN TWO LAYERS OF POLYETHYLENE, PER SPECIFICATIONS.
6. ALL BURIED PIPING WITHIN 5 FEET OF BUILDING FOUNDATIONS SHALL BE PRESSURE TESTED PRIOR TO POURING FOUNDATIONS.
7. VERIFY LOCATION OF DRAIN W/ PIPING.
8. ALL FLOOR DRAINS SHALL BE CENTERED UNDER PIPE OUTLETS. FIELD VERIFY LOCATIONS & TOP OF SLAB.
9. PROCO JOINT COMPRESSION SHALL BE WITHIN MFGR'S RECOMMENDED TOLERANCES. DO NOT ALLOW BOLTS TO MAKE CONTACT WITH RUBBER JOINT. FIELD VERIFY CONTROL BOLT LENGTHS BEFORE FOUNDATION CONSTRUCTION.
10. INSTALL TEMPORARY 8-INCH ANSI CLASS 125 BLIND FLANGE PRIOR TO FILLING AND FLUSHING PIPELINE. UTILIZE FLUSH VALVE AT PUMP STATION TO FLUSH MAINLINE. COMPLETE HYDROSTATIC TESTING OF PIPING UNDERNEATH AND WITHIN SURGE TANK BUILDING PRIOR TO REMOVING BLIND FLANGE. REMOVE BLIND FLANGE AND INSTALL 8-INCH PROCO FITTING AFTER THIS SECTION OF LINE FLUSHING AND HYDROSTATIC PRESSURE TESTING IS COMPLETE, BUT PRIOR TO STARTING UP SURGE TANK. DO NOT INSTALL PROCO FITTING UNTIL LINE FLUSHING AT THE PUMP STATION IS COMPLETE. DO NOT AIR CHARGE SURGE TANK UNTIL PROCO FITTING IS INSTALLED. DO NOT OPERATE THE PROJECT OR FLUSH BEYOND THE FIRST FLUSH VALVE UNTIL SURGE TANK IS STARTED UP AND OPERATIONAL. DO NOT ALLOW FOREIGN OBJECTS OR DEBRIS ENTER SURGE TANK. DO NOT BRING SURGE TANK ONLINE UNTIL SITE PIPING HAS BEEN THOROUGHLY FLUSHED.
11. USE DOUBLE NUTS AT TANK PEDESTALS TO ADJUST SURGE TANK HEIGHT AND LEVEL. DO NOT PLACE NON-SHRINK GROUT BETWEEN PEDESTAL AND TANK BASE UNTIL BLIND FLANGE IS REMOVED, PROCO FITTING INSTALLATION IS FINALIZED, AND TANK HEIGHT AND PROCO COMPRESSION ARE APPROVED IN THE FIELD BY ENGINEER.
12. CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, PER SPECIFICATIONS, TO EXTERIOR OF BUILDING.

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Client: The Navajo Nation
Location: Coyote Canyon, NM

SURGE TANK BUILDING SECTION (1 of 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

Designed	Drawn	Checked
HCR	MvH/AaV	TTT

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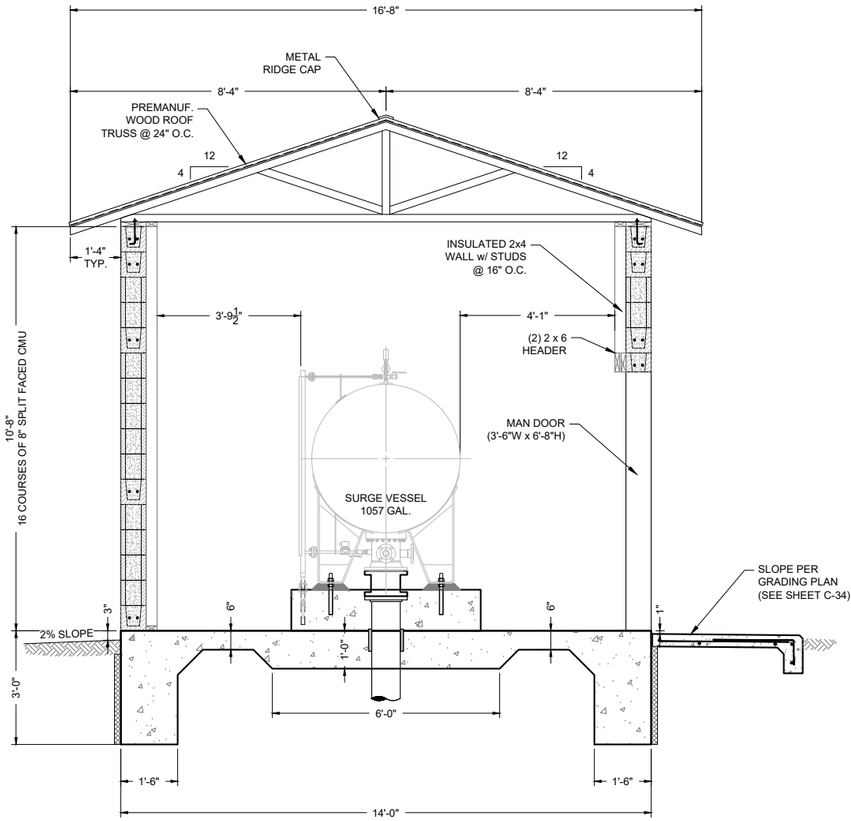
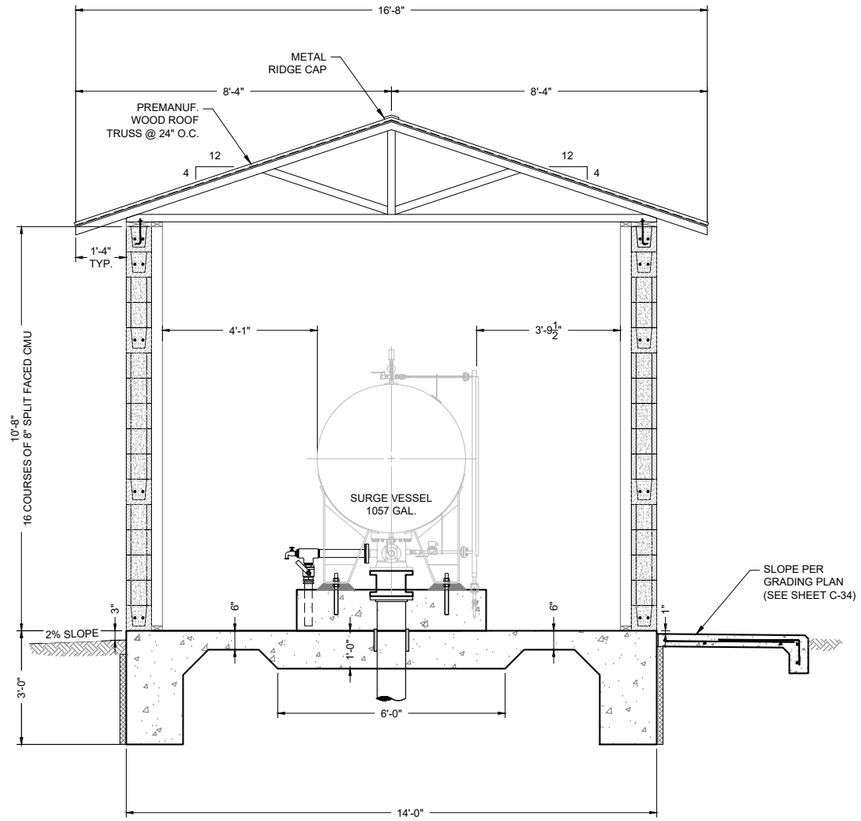


3 SECTION

1/4"=1'-0"

0' 2' 4'

GRAPHIC SCALE



4 SECTION

1/4"=1'-0"

0' 2' 4'

GRAPHIC SCALE

NOTES

1. 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.

2. INSTALL TEMPORARY 8-INCH ANSI CLASS 125 BLIND FLANGE PRIOR TO FILLING AND FLUSHING PIPELINE. UTILIZE FLUSH VALVE AT PUMP STATION TO FLUSH MAINLINE. COMPLETE HYDROSTATIC TESTING OF PIPING UNDERNEATH AND WITHIN SURGE TANK BUILDING PRIOR TO REMOVING BLIND FLANGE. REMOVE BLIND FLANGE AND INSTALL 8-INCH PROCO FITTING AFTER THIS SECTION OF LINE FLUSHING AND HYDROSTATIC PRESSURE TESTING IS COMPLETE, BUT PRIOR TO STARTING UP SURGE TANK. DO NOT INSTALL PROCO FITTING UNTIL LINE FLUSHING AT THE PUMP STATION IS COMPLETE. DO NOT AIR CHARGE SURGE TANK UNTIL PROCO FITTING IS INSTALLED. DO NOT OPERATE THE PROJECT OR FLUSH BEYOND THE FIRST FLUSH VALVE UNTIL SURGE TANK IS STARTED UP AND OPERATIONAL. DO NOT ALLOW FOREIGN OBJECTS OR DEBRIS ENTER SURGE TANK. DO NOT BRING SURGE TANK ONLINE UNTIL SITE PIPING HAS BEEN THOROUGHLY FLUSHED.

3. USE DOUBLE NUTS AT TANK PEDESTALS TO ADJUST SURGE TANK HEIGHT AND LEVEL. DO NOT PLACE NON-SHRINK GROUT BETWEEN PEDESTAL AND TANK BASE UNTIL BLIND FLANGE IS REMOVED, PROCO FITTING INSTALLATION IS FINALIZED, AND TANK HEIGHT AND PROCO COMPRESSION ARE APPROVED IN THE FIELD BY ENGINEER.

4. CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, PER SPECIFICATIONS, TO EXTERIOR OF BUILDING.

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

SURGE TANK BUILDING SECTION (2 of 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

Designed	Drawn	Checked
HCR	MvH/AaV	TTT

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Project No: 6922268

Sheet: DT-16

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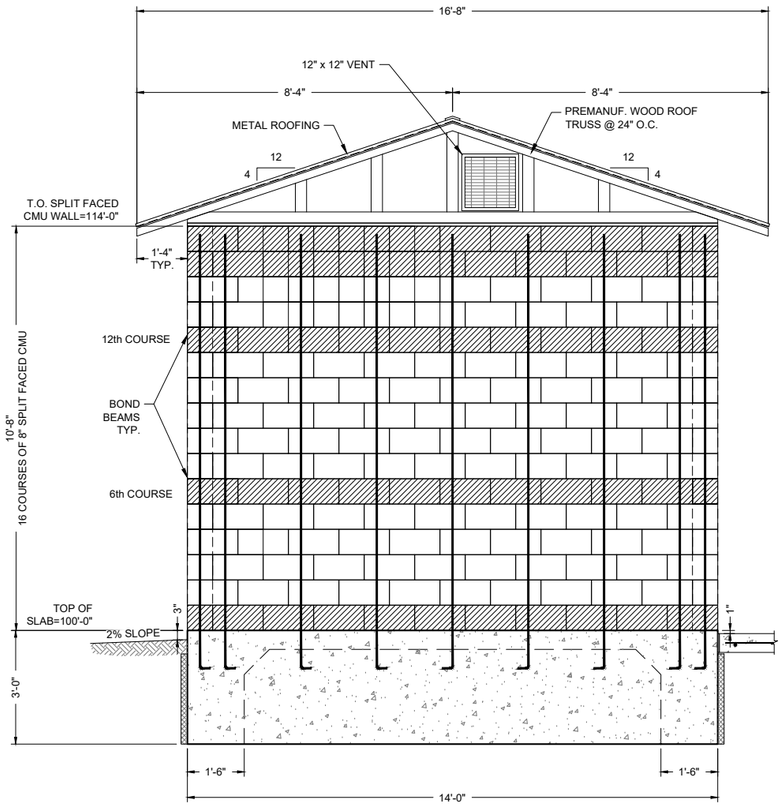
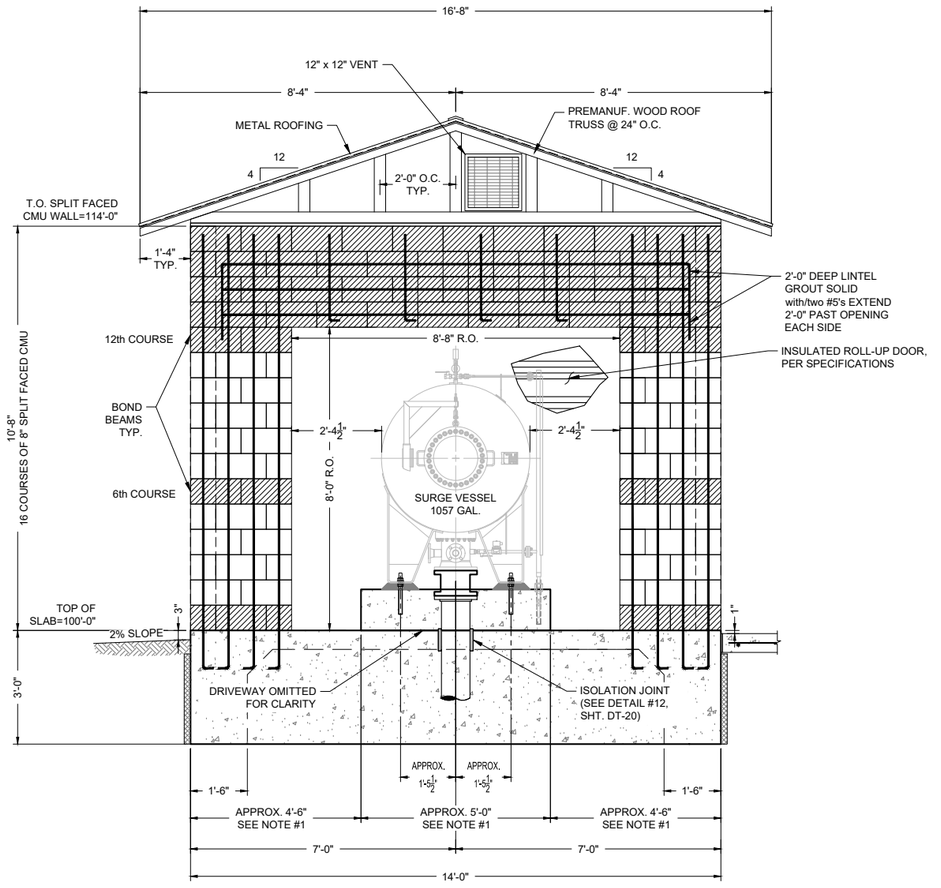


5 END VIEW
1/4"=1'-0"

0' 2' 4'

GRAPHIC SCALE



6 END VIEW
1/4"=1'-0"

0' 2' 4'

GRAPHIC SCALE

NOTES

1. 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.
2. FOR CONTINUATION OF SURGE TANK UNDERGROUND PIPING SEE SURGE TANK SITE PIPING PLAN, SHEETS C-32 & C-33.
3. FOR BLOCK PATTERN DETAILS, SEE SHEETS DT-21 & DT-22.
4. CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, PER SPECIFICATIONS, TO EXTERIOR OF BUILDING.

LEGEND

BOND BEAM

Revision	Date	Description	By	Chkd

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Client: The Navajo Nation
Location: Coyote Canyon, NM

SURGE TANK BUILDING END VIEW
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

Designed	Drawn	Checked
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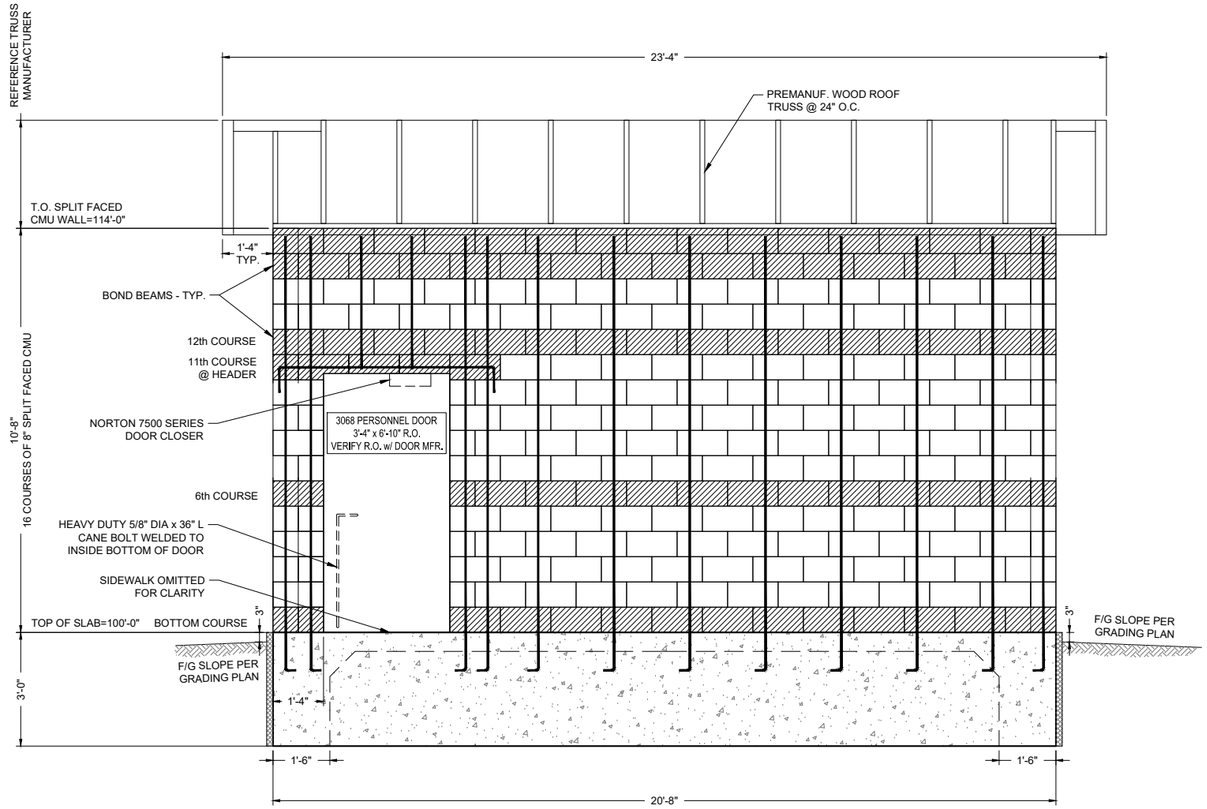

7 ELEVATION W/ PANEL REINFORCING @ PERSONNEL-DOOR

1/4"=1'-0"

0' 2' 4'

GRAPHIC SCALE

NOTES

1. FOR BLOCK PATTERN DETAILS, SEE SHEETS DT-21 & DT-22.
2. CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, PER SPECIFICATIONS, TO EXTERIOR OF BUILDING.

LEGEND

BOND BEAM

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Location: Coyote Canyon, NM

SURGE TANK BUILDING ELEVATION
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

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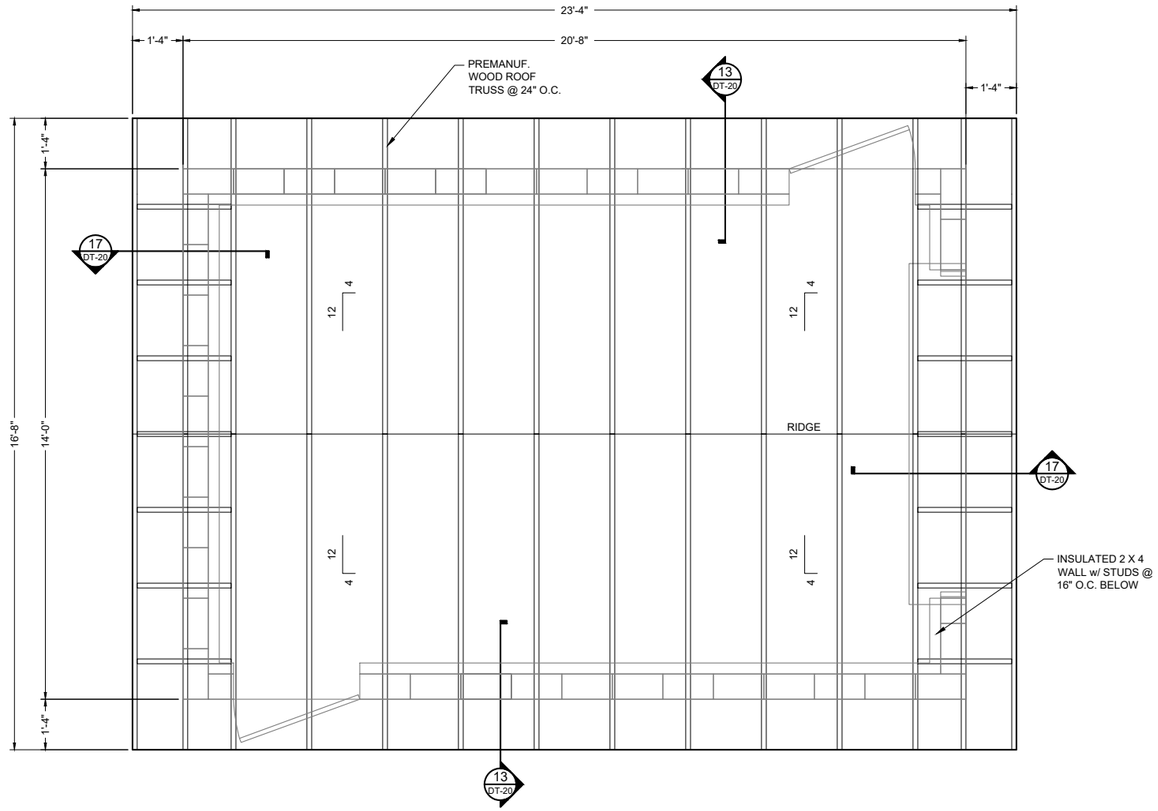

8 ROOF PLAN

1/4"=1'-0"

0' 2' 4'

GRAPHIC SCALE

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Location: Coyote Canyon, NM

SURGE TANK BUILDING ROOF PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

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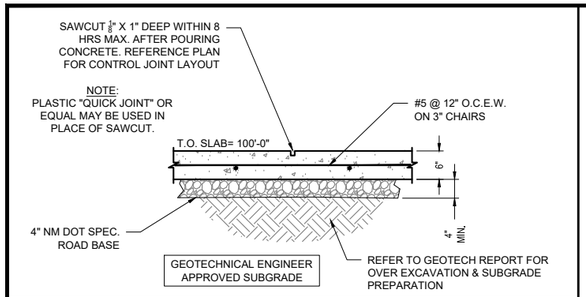
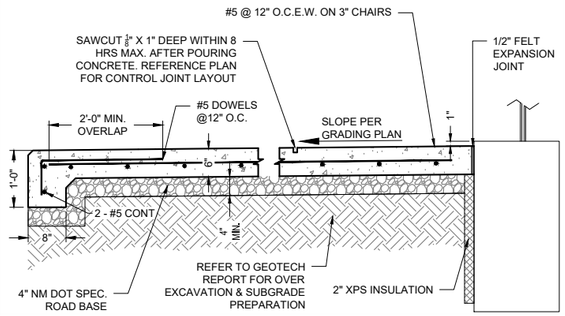
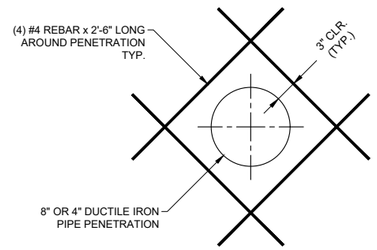


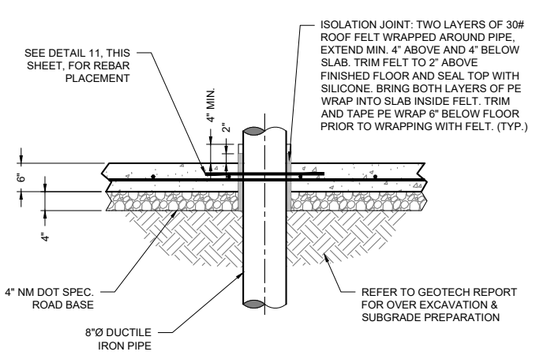
9 6" SLAB SECTION WITH CONTROL JOINT
3/8"=1'-0"



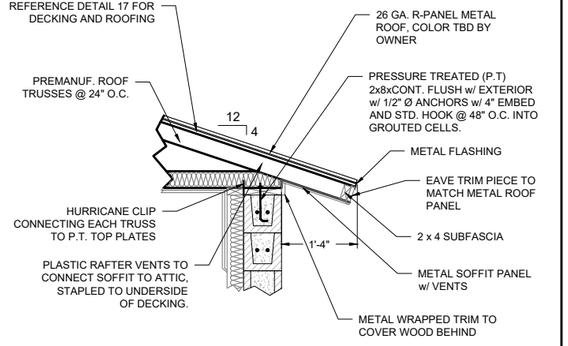
10 6" DRIVEWAY SECTION WITH CONTROL JOINT
3/8"=1'-0"



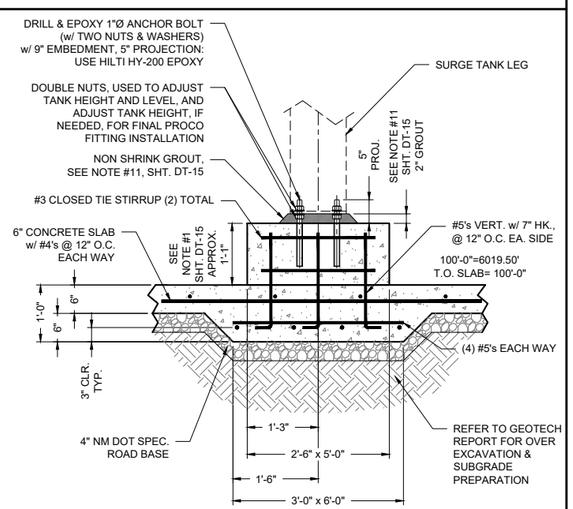
11 PIPE PENETRATION REBAR
3/8"=1'-0"



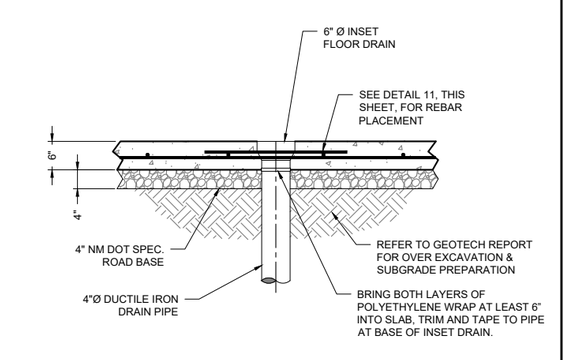
12 PIPE PENETRATION AND SLAB DETAIL
3/8"=1'-0"



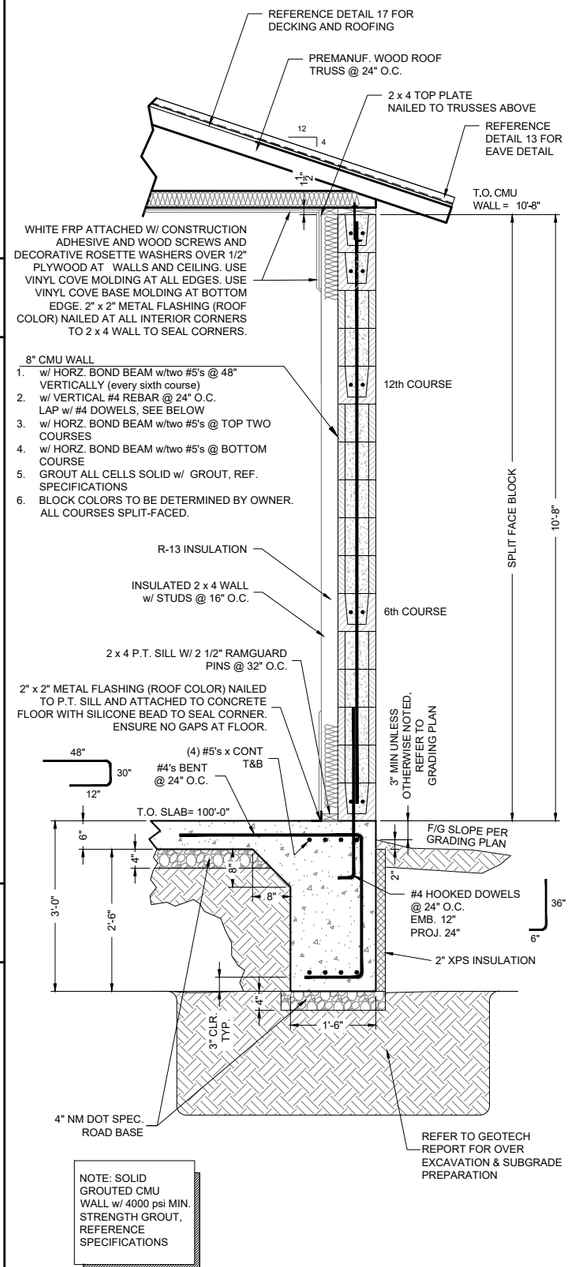
13 EAVE DETAIL
3/8"=1'-0"



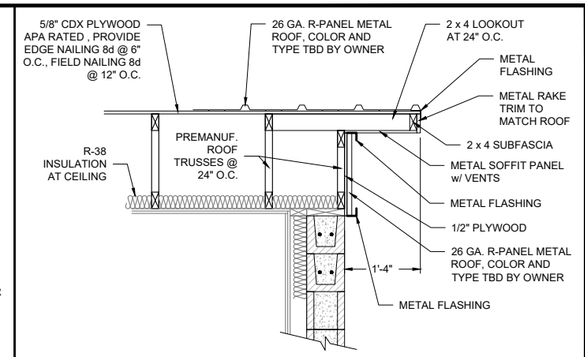
14 TANK PEDESTAL & THICKENED SLAB DETAIL
3/8"=1'-0"



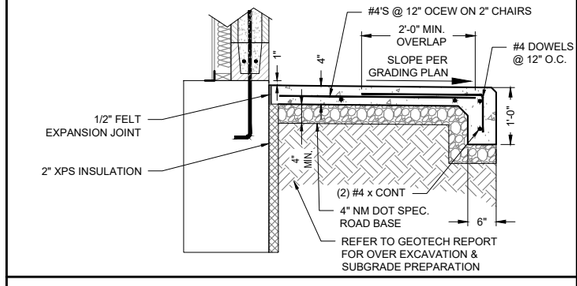
15 DRAIN PIPE PENETRATION AND SLAB DETAIL
3/8"=1'-0"



16 WALL AND FOUNDATION SECTION
3/8"=1'-0"



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



18 4" PORCH SECTION
3/8"=1'-0"

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Revision | Date | Description | By | Chkd

Client: The Navajo Nation
Location: Coyote Canyon, NM

SURGE TANK BUILDING DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

Designed	Drawn	Checked
HCR	MvH/AaV	TTT

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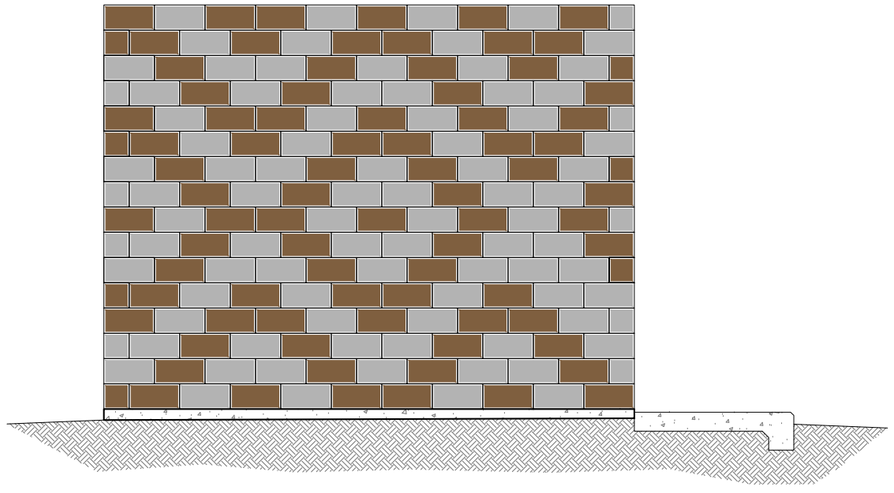
CMU BLOCK COLOR LEGEND

- CANYON BROWN
- GRAY

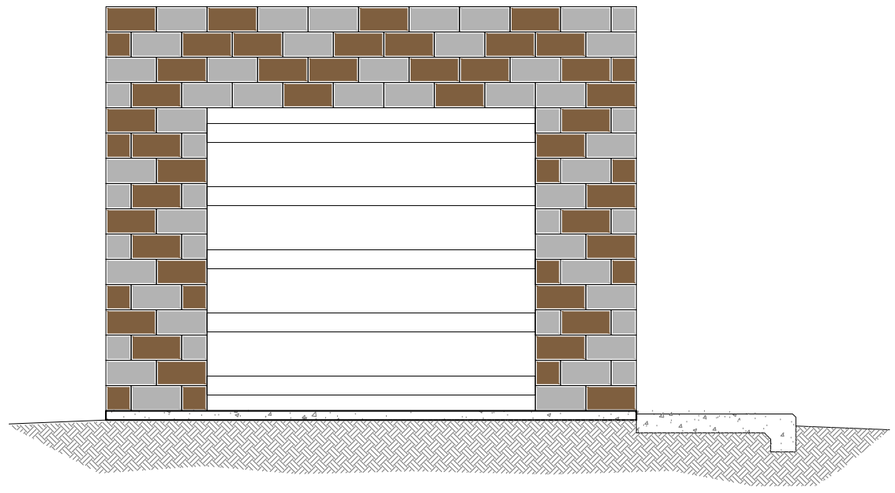
SURGE BUILDING BLOCK QUANTITIES		
COLOR	FULL BLOCK 16" LENGTH	HALF BLOCK 8" LENGTH (AROUND DOOR)
CANYON BROWN	325	13
GRAY	331	19

NOTES:
1. QUANTITIES TABLE REFLECTS ENTIRE SURGE TANK BUILDING.
2. CONTRACTOR SHALL VERIFY QUANTITIES PRIOR TO PURCHASING.
3. MORTAR COLOR TO MATCH COLOR OF ADJACENT BLOCK.
4. CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, PER SPECIFICATIONS, TO EXTERIOR OF BUILDING.



5 CMU BLOCK PATTERN END VIEW
1/4"=1'-0"

0' 2' 4'
GRAPHIC SCALE



6 CMU BLOCK PATTERN END VIEW
1/4"=1'-0"

0' 2' 4'
GRAPHIC SCALE

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Client: The Navajo Nation
Location: Coyote Canyon, NM

SURGE TANK BUILDING BLOCK DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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CMU BLOCK COLOR LEGEND

- CANYON BROWN
- GRAY

SURGE BUILDING BLOCK QUANTITIES		
COLOR	FULL BLOCK 16" LENGTH	HALF BLOCK 8" LENGTH (AROUND DOOR)
CANYON BROWN	325	13
GRAY	331	19

NOTES:
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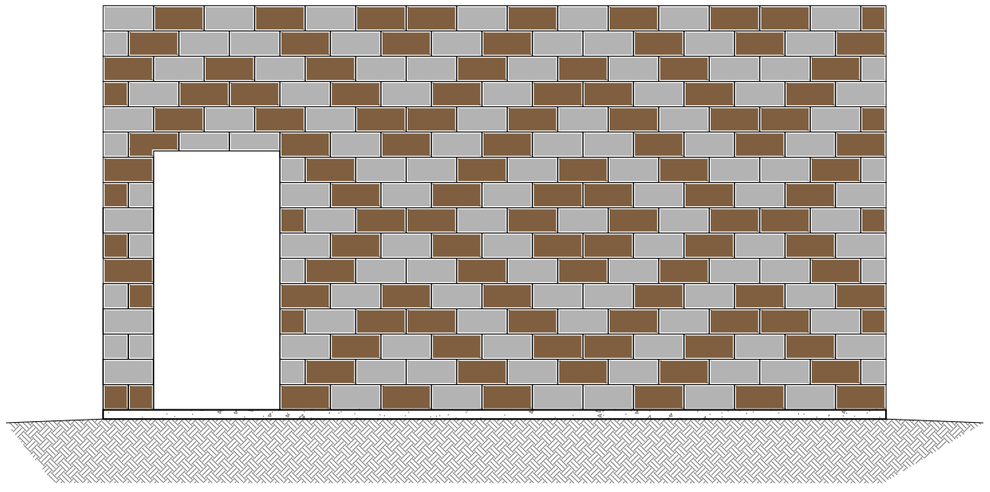
2. CONTRACTOR SHALL VERIFY QUANTITIES PRIOR TO PURCHASING.
3. MORTAR COLOR TO MATCH COLOR OF ADJACENT BLOCK.
4. CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, PER SPECIFICATIONS, TO EXTERIOR OF BUILDING.



7 CMU BLOCK PATTERN FRONT VIEW AND BACK VIEW
1/4"=1'-0"

0' 2' 4'
GRAPHIC SCALE

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Location: Coyote Canyon, NM

SURGE TANK BUILDING BLOCK DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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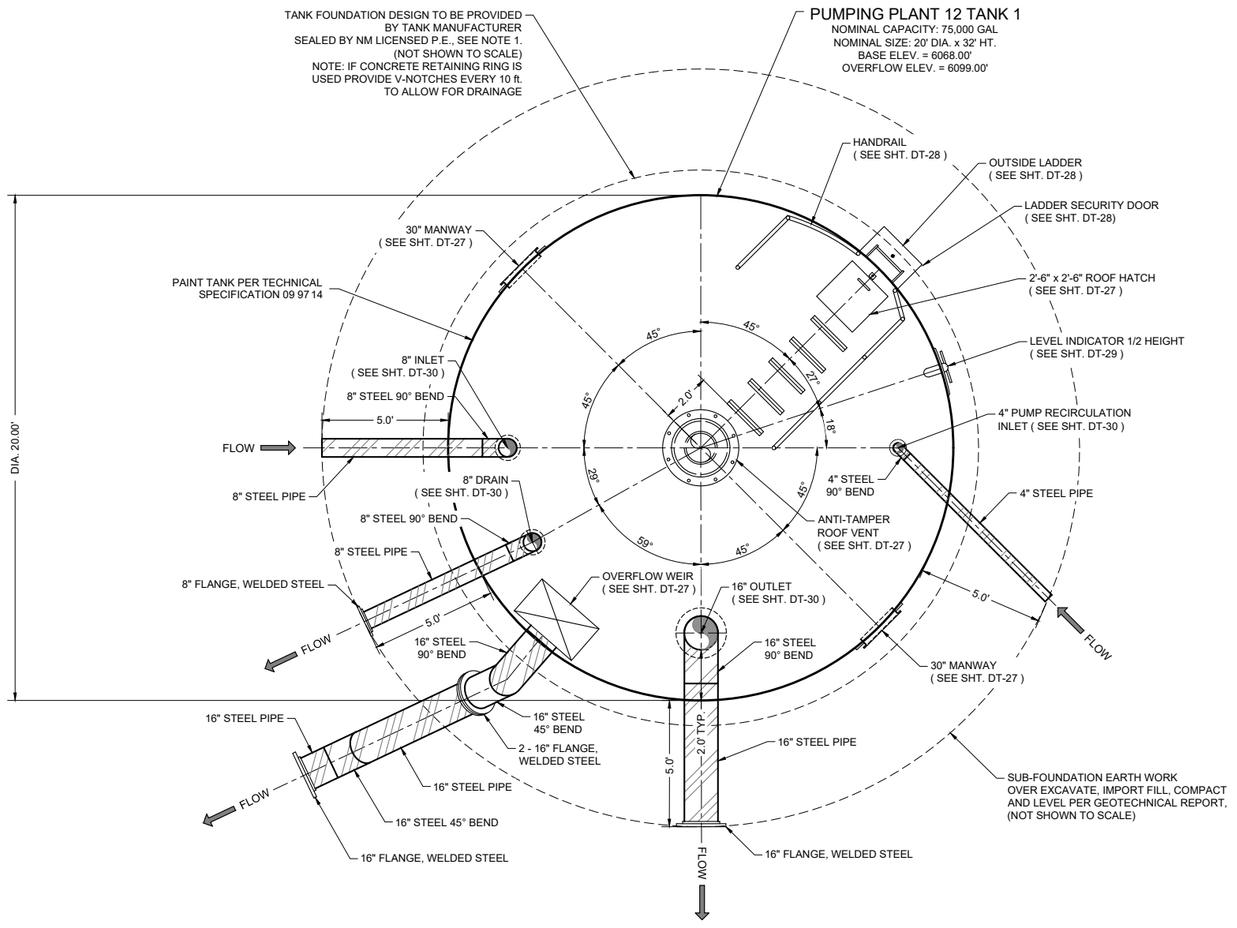
Project No: 6922268
Sheet: DT-22

NOTES:

1. FOUNDATION, TANK ROOF AND STRUCTURAL DESIGN DRAWINGS AND CALCULATIONS (SEALED BY NEW MEXICO-LICENSED PROFESSIONAL ENGINEER) TO BE PROVIDED BY TANK MANUFACTURER..
2. TANK FOUNDATIONS MUST BE CONCRETE RING WALL TYPE FOUNDATION. STEEL RETAINING RING NOT ALLOWED. REFER TO GEO-TEST GEOTECHNICAL ENGINEERING SERVICES REPORT NO. 1-00908, DATED DECEMBER 1, 2020 AND ADDENDUM DATED SEPTEMBER 24, 2021, FOR SUBSURFACE INFORMATION, OVER EXCAVATION REQUIREMENTS, SUBGRADE PREPARATION, AND STRUCTURAL FILL & COMPACTION.
3. CONTRACTOR SHALL FIELD SURVEY ELEVATION OF OVERFLOW WEIR OF BOTH REGULATING TANKS AND ENSURE OVERFLOW WEIR ELEVATIONS MATCH (WITHIN A TOLERANCE OF ±1/2" INCH).
4. STATED TANK VOLUMES ARE NOMINAL. ACTUAL TANK VOLUMES SHALL BE WITHIN 2% OF THE STATED NOMINAL VALUE.
5. TANK COLOR TO BE TAN.
6. ALL COURSE OF TANK WALLS SHALL BE 1/4" THICK STEEL.
7. TANK APPURTENANCES SHOWN IN ELEVATION VIEW HAVE BEEN ROTATED INTO VIEW FOR DEPICTION PURPOSES.
8. STEEL OVERFLOW PIPING SHALL BE SHOP COATED WITH UV RESISTANT POLYAMIDE EPOXY PER TECHNICAL SPECIFICATIONS.
9. ALL UNDERGROUND NON STAINLESS STEEL PIPE AND FITTINGS SHALL BE WAX TAPE-COATED EXTERIOR.
10. ALL STEEL PIPE AND FITTINGS UNDERNEATH AND WITHIN 5' OF TANKS OR BUILDINGS SHALL BE SHOP WELDED AND COATED, X-RAY TESTED AND PRESSURE TESTED PRIOR TO POURING FOUNDATIONS.
11. ALL STEEL PIPE AND FITTINGS SHALL BE STANDARD WALL UNLESS OTHERWISE NOTED.
12. SANDBLASTING WASTE SHALL BE DISPOSED OF OFF-SITE AT AN APPROVED SOLID WASTE FACILITY AT THE CONTRACTOR'S EXPENSE.
13. ALL BASE AND OVERFLOW ELEVATIONS PROVIDED IN THESE DRAWINGS ARE APPROXIMATE.
14. ALL STEEL PIPE FLANGES SHALL BE ANSI CLASS 150.
15. EXACT ORIENTATION OF ALL TANK FEATURES AND PIPE PENETRATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER. TANK MANUFACTURER SHALL CONFIRM ALL LOCATIONS W/ ENGINEER PRIOR TO FABRICATION. SOME FEATURES MAY BE ROTATED IN ELEVATION VIEW FOR CLARITY.
16. IMPRESSED CURRENT CATHODIC PROTECTION REQUIRED.
17. REFER TO PUMPING PLANT 12 SITE PIPING PLAN SHT. C-26 FOR CONTINUATION.



PLAN VIEW

0' 3' 6'

PUMPING PLANT 12 TANK 1 DETAIL

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Client: The Navajo Nation
Location: Coyote Canyon, NM

PP 12 TANK 1 DETAILS (1 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TAYLOR T. TADANO — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 9-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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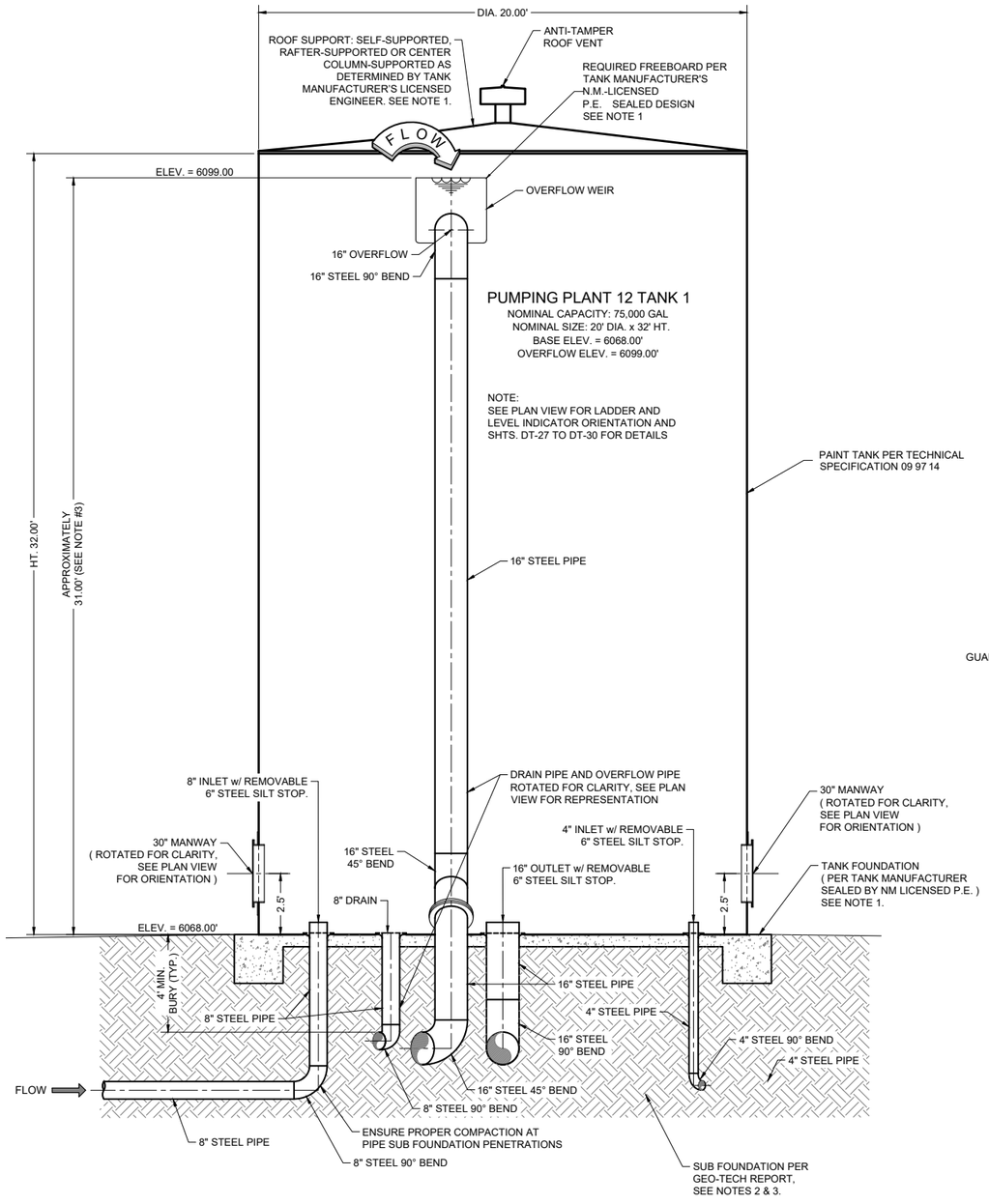
811 Know what's BELOW. CALL before you dig.

Date: September 2025
Scale: Horiz: 1" = 6'
Vert: N/A
Project No: 6922268
Sheet: DT-23

P:\6-Beacon Bisti N9 Water Line (6922268)\CAD\Civil\Reach 10.1 Plan Set\Construction Plans\Reach 10.1 Tank Details.dwg
9/29/2025 11:09:37 AM mav

NOTES:

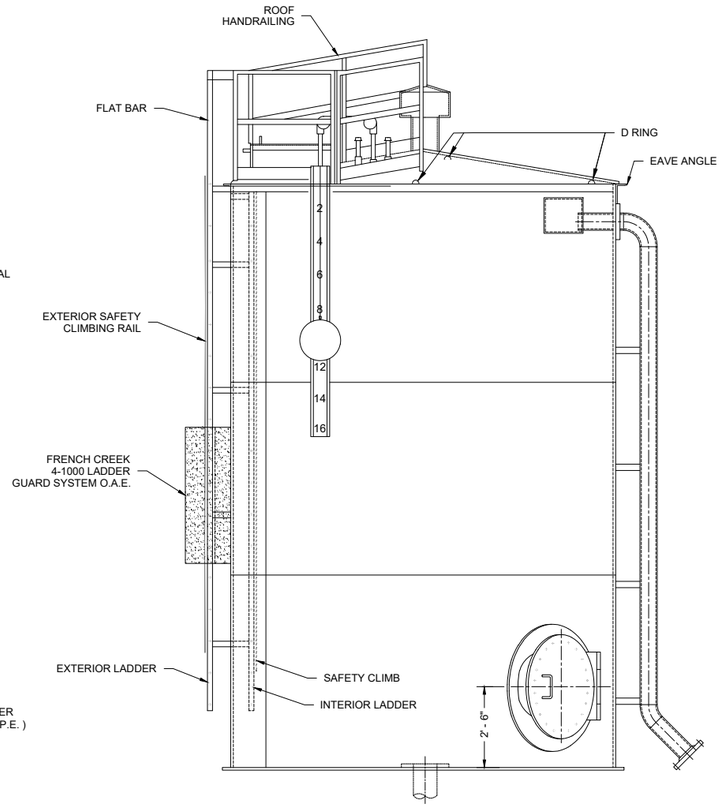
1. FOUNDATION, TANK ROOF AND STRUCTURAL DESIGN DRAWINGS AND CALCULATIONS (SEALED BY NEW MEXICO-LICENSED PROFESSIONAL ENGINEER) TO BE PROVIDED BY TANK MANUFACTURER..
2. TANK FOUNDATIONS MUST BE CONCRETE RING WALL TYPE FOUNDATION. STEEL RETAINING RING NOT ALLOWED. REFER TO GEO-TEST GEOTECHNICAL ENGINEERING SERVICES REPORT NO. 1-00908, DATED DECEMBER 1, 2020 AND ADDENDUM DATED SEPTEMBER 24, 2021, FOR SUBSURFACE INFORMATION, OVER EXCAVATION REQUIREMENTS, SUBGRADE PREPARATION, AND STRUCTURAL FILL & COMPACTION.
3. CONTRACTOR SHALL FIELD SURVEY ELEVATION OF OVERFLOW WEIR OF BOTH REGULATING TANKS AND ENSURE OVERFLOW WEIR ELEVATIONS MATCH (WITHIN A TOLERANCE OF ±1/2" INCH).
4. STATED TANK VOLUMES ARE NOMINAL. ACTUAL TANK VOLUMES SHALL BE WITHIN 2% OF THE STATED NOMINAL VALUE.
5. TANK COLOR TO BE TAN.
6. ALL COURSE OF TANK WALLS SHALL BE 1/4" THICK STEEL.
7. TANK APPURTENANCES SHOWN IN ELEVATION VIEW HAVE BEEN ROTATED INTO VIEW FOR DEPICTION PURPOSES.
8. STEEL OVERFLOW PIPING SHALL BE SHOP COATED WITH UV RESISTANT POLYAMIDE EPOXY PER TECHNICAL SPECIFICATIONS.
9. ALL UNDERGROUND NON STAINLESS STEEL PIPE AND FITTINGS SHALL BE WAX TAPE-COATED EXTERIOR.
10. ALL STEEL PIPE AND FITTINGS UNDERNEATH AND WITHIN 5' OF TANKS OR BUILDINGS SHALL BE SHOP WELDED AND COATED, X-RAY TESTED AND PRESSURE TESTED PRIOR TO POURING FOUNDATIONS.
11. ALL STEEL PIPE AND FITTINGS SHALL BE STANDARD WALL UNLESS OTHERWISE NOTED.
12. SANDBLASTING WASTE SHALL BE DISPOSED OF OFF-SITE AT AN APPROVED SOLID WASTE FACILITY AT THE CONTRACTOR'S EXPENSE.
13. ALL BASE AND OVERFLOW ELEVATIONS PROVIDED IN THESE DRAWINGS ARE APPROXIMATE.
14. ALL STEEL PIPE FLANGES SHALL BE ANSI CLASS 150.
15. EXACT ORIENTATION OF ALL TANK FEATURES AND PIPE PENETRATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER. TANK MANUFACTURER SHALL CONFIRM ALL LOCATIONS W/ ENGINEER PRIOR TO FABRICATION. SOME FEATURES MAY BE ROTATED IN ELEVATION VIEW FOR CLARITY.
16. IMPRESSED CURRENT CATHODIC PROTECTION REQUIRED.
17. REFER TO PUMPING PLANT 12 SITE PIPING PLAN SHT. C-26 FOR CONTINUATION.



ELEVATION VIEW

0' 3' 6'

PUMPING PLANT 12 TANK 1 DETAIL



TYPICAL SELF-SUPPORTED CONE ROOF EXTERIOR ELEVATION VIEW TANK DETAIL

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Revision	Date	Description	By	Chkd

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

PP 12 TANK 1 DETAILS (2 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TERRY T. ADAMS — NEW MEXICO — 21073 — 9-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Date: September 2025
Scale: Horiz: 1" = 6'
Vert: N/A
Project No: 6922268
Sheet: DT-24

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9/22/2025 11:09:41 AM aav

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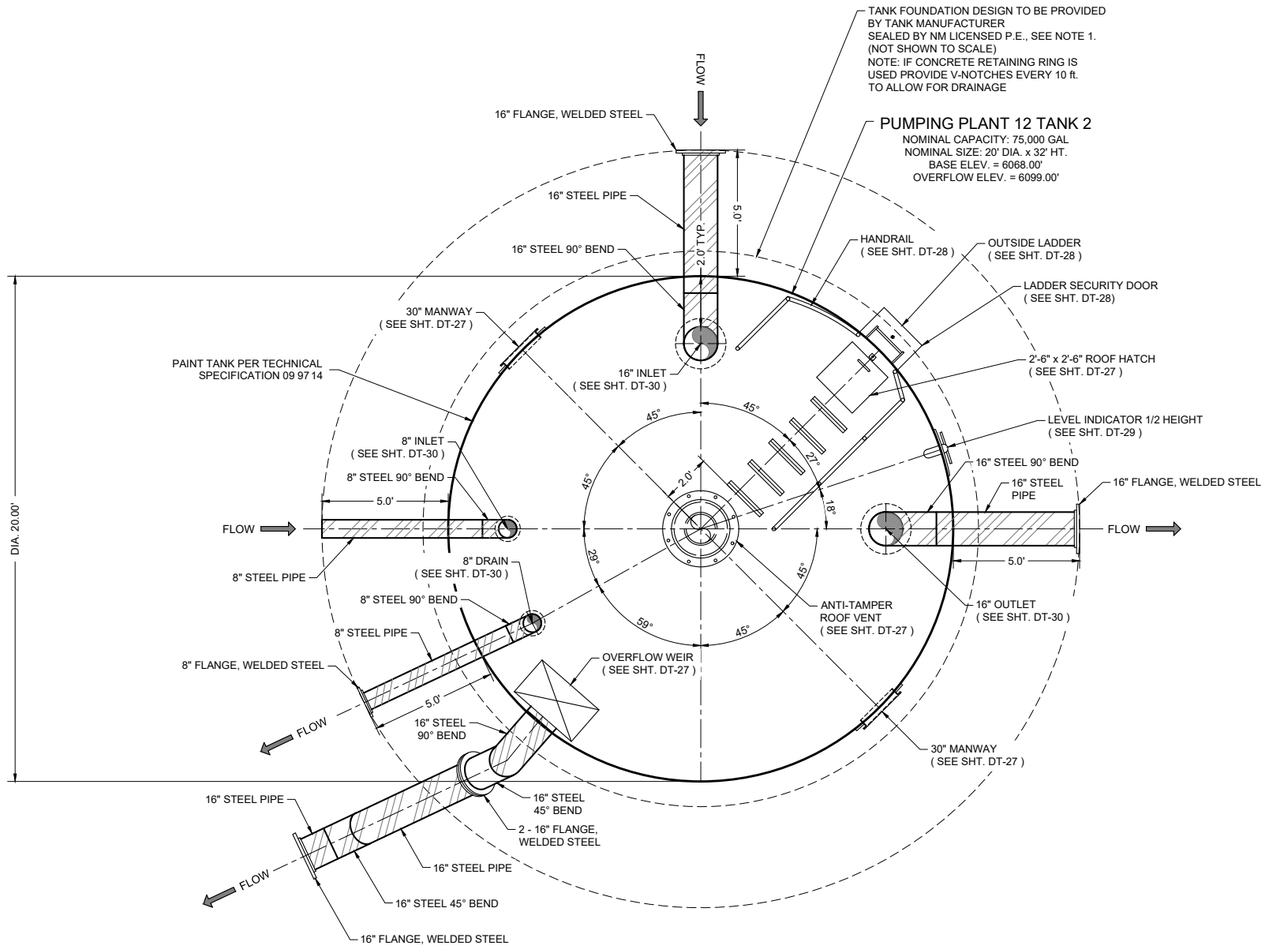

N

PLAN VIEW

0' 3' 6'

PUMPING PLANT 12 TANK 2 DETAIL

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Revision	Date	Description	By	Chk'd

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www.soudermiller.com

Location: Coyote Canyon, NM
Client: The Navajo Nation

PP 12 TANK 2 DETAILS (1 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TERRY TADANO — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 9-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Vert: N/A
Project No: 6922268
Sheet: DT-25

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9/29/2025 11:09:45 AM aav

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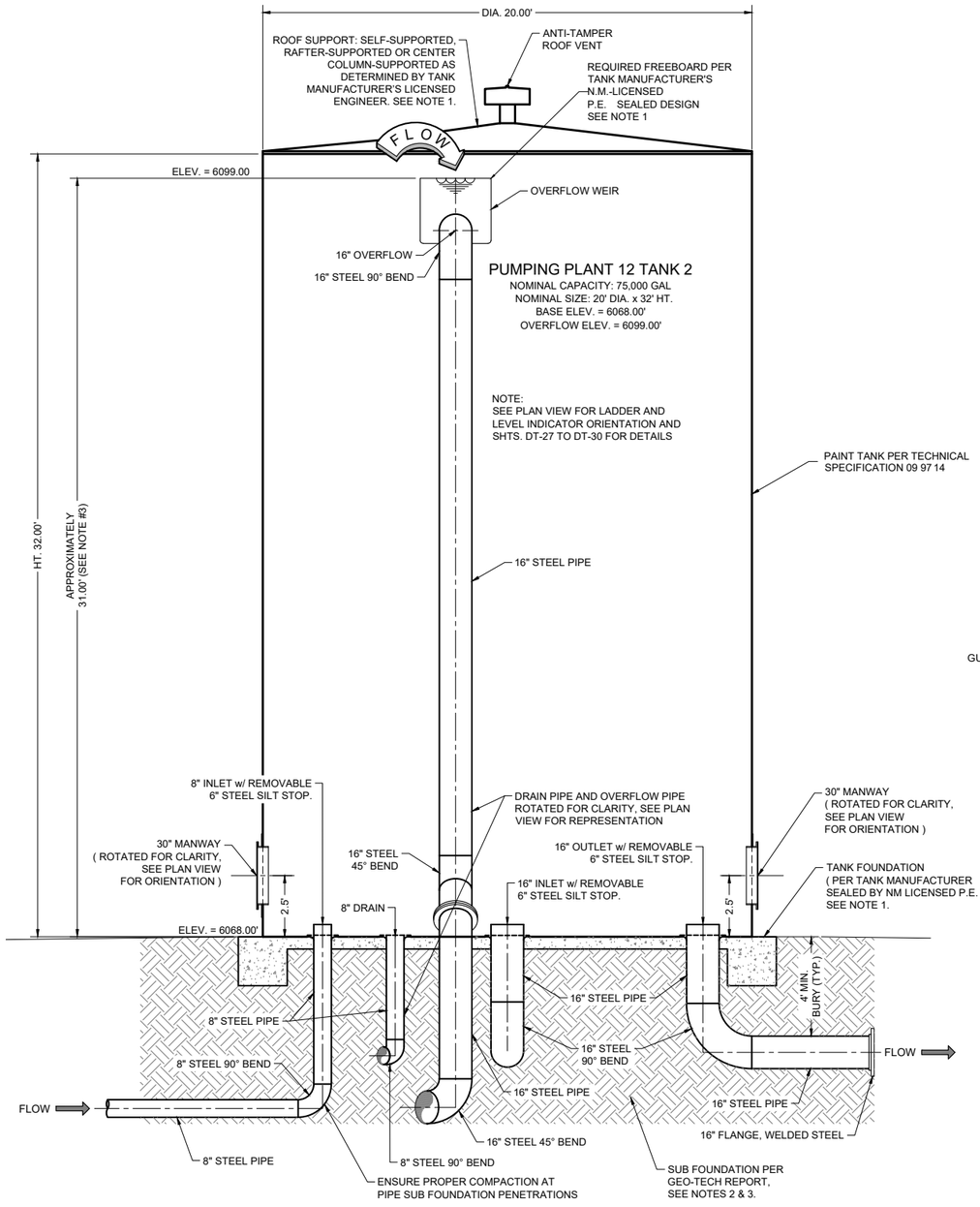
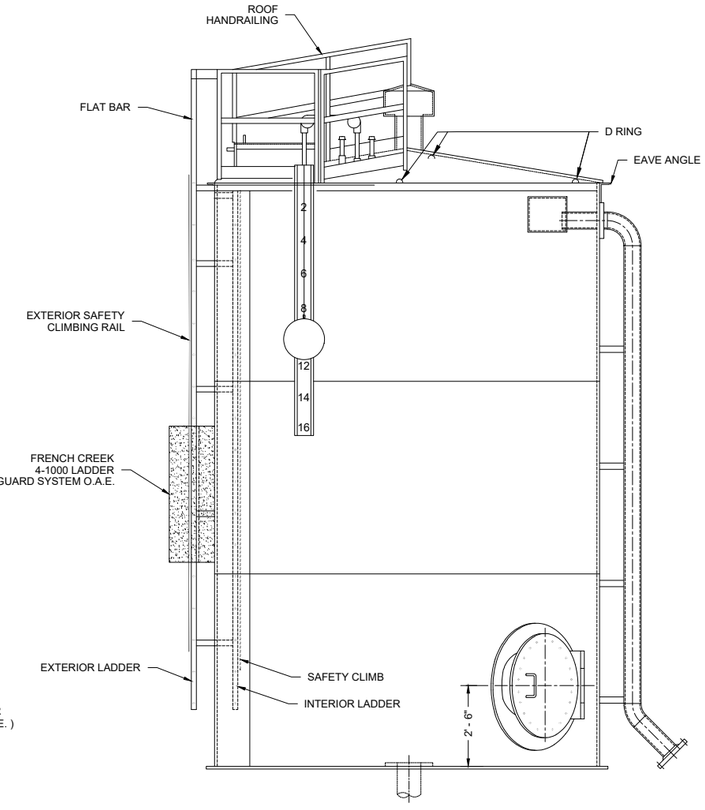


ELEVATION VIEW

0' 3' 6'

PUMPING PLANT 12 TANK 2 DETAIL



TYPICAL SELF-SUPPORTED CONE ROOF EXTERIOR ELEVATION VIEW TANK DETAIL

NOT TO SCALE

Revision	Date	Description	By	Chkd

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

PP 12 TANK 2 DETAILS (2 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TROY T. ADAMS — NEW MEXICO — 21073 — 12-31-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVrt/AaV	TTT

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Project No: 6922268
Sheet: DT-26

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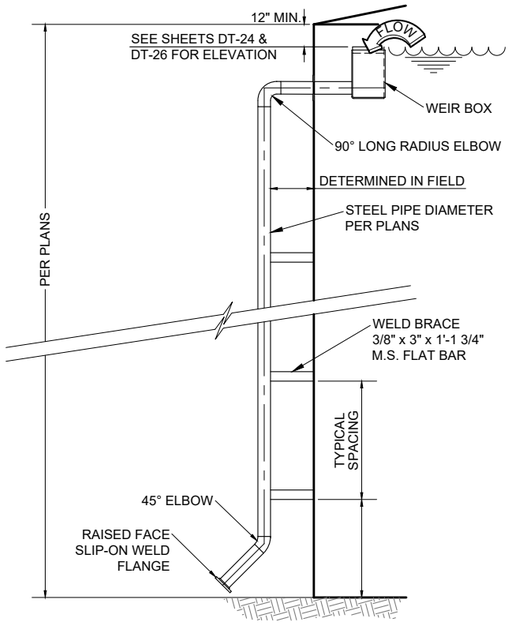


ELEVATION VIEW

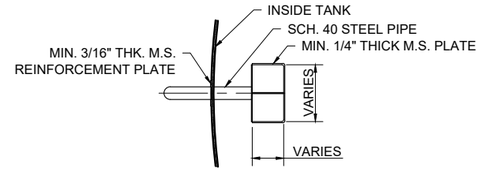
TYPICAL TANK OVERFLOW DETAIL

NOT TO SCALE

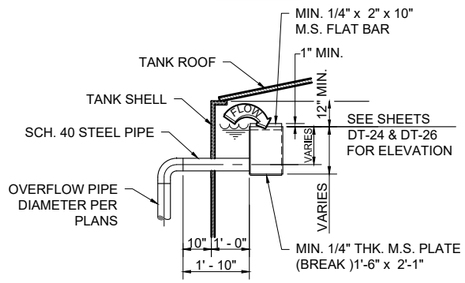
SEE TANK PLAN AND ELEVATION SHEETS DT-23 TO DT-26, FOR PIPE SIZE, HEIGHT AND ELEVATION.

NOTES:

1. DIMENSIONS INDICATING SEPARATION BETWEEN WEIR FROM ROOF ARE MINIMUMS ONLY. ACTUAL DIMENSIONS MAY BE GREATER TO ACCOMMODATE SLOSH WAVE, AS CALCULATED BY TANK MANUFACTURER.
2. TANK MANUFACTURER SHALL PROVIDE DESIGN CALCULATIONS AND FABRICATION DRAWINGS SEALED BY A NEW MEXICO LICENSED PROFESSIONAL ENGINEER.
3. OVERFLOW WEIR BOX SHALL BE DESIGNED TO ACCOMMODATE A ANTICIPATED FLOWRATE OF 1,571 GPM OR HIGHER.



PLAN VIEW

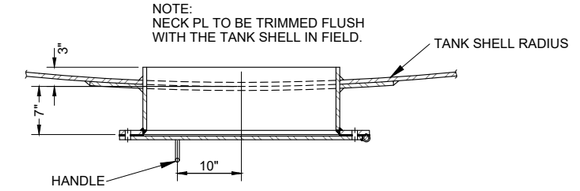


ELEVATION VIEW

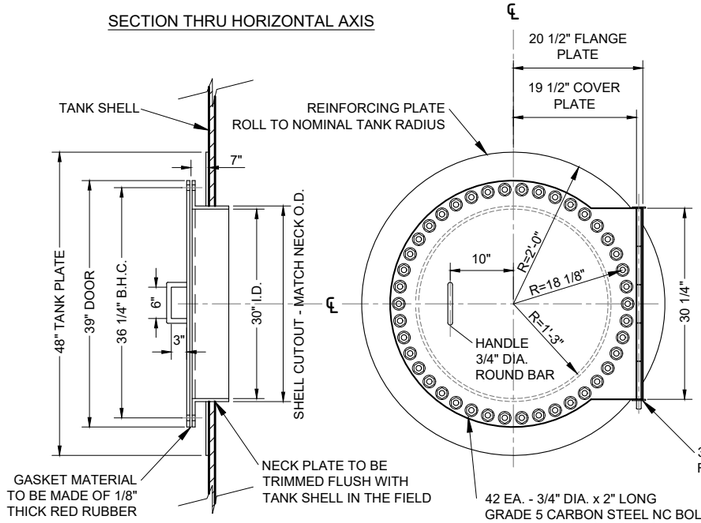
TYPICAL OVERFLOW WEIR DETAIL

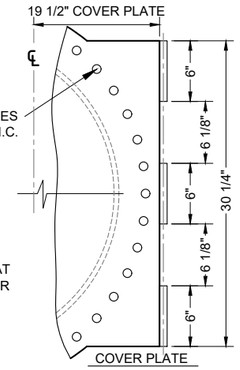
NOT TO SCALE

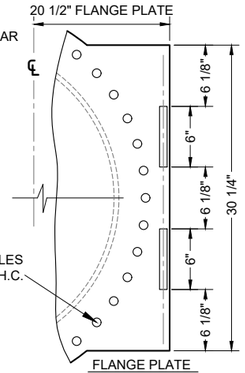
NOTE:
DIMENSIONS OF WEIR AND APPURTENANCES PROVIDED ARE MINIMUMS. ACTUAL DIMENSIONS MAY BE LARGER TO PROVIDE FOR DESIGN FLOW RATES SPECIFIED IN THE TECHNICAL SPECIFICATIONS. ACTUAL WEIR DIMENSIONS SHALL BE PROVIDED AS PART OF THE TANK MANUFACTURER'S PROFESSIONAL ENGINEER SEALED DESIGN.



SECTION THRU HORIZONTAL AXIS





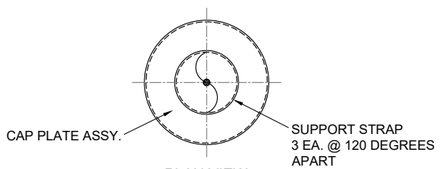


NOTE:
NECK PL TO BE TRIMMED FLUSH
WITH THE TANK SHELL IN FIELD.

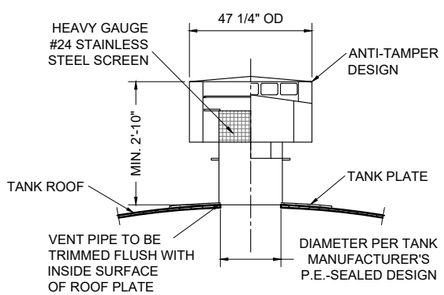
SECTION THRU VERTICAL AXIS

TYPICAL 30" MANWAY DETAIL

NOT TO SCALE



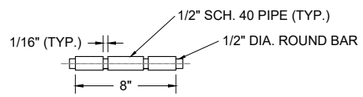
PLAN VIEW



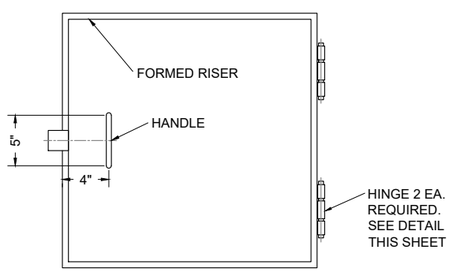
VERTICAL C/L OF TANK AND VENT

NOT TO SCALE

NOTE:
1. VENT SHALL BE DESIGNED TO ACCOMMODATE A ANTICIPATED FLOWRATE OF 1,571 GPM OR GREATER.



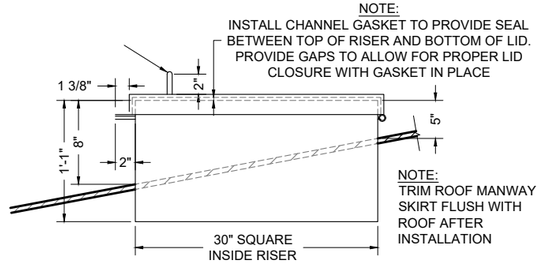
HINGE DETAIL - 2 EA. REQ'D



PLAN VIEW

30" SQUARE ROOF HATCH DETAIL

NOT TO SCALE



ELEVATION VIEW

30" SQUARE ROOF HATCH DETAIL

NOT TO SCALE

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Client: The Navajo Nation
Location: Coyote Canyon, NM

TYPICAL WATER STORAGE TANK DETAILS (1 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TROY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 9-29-25

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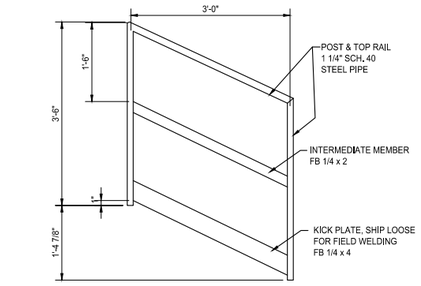
9/29/2025, 1:10:56 AM, aav

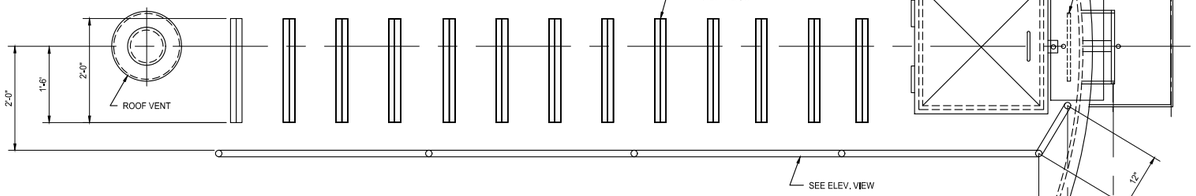
NOTE:

* ROOF SINGLE HANDRAILING IS DEPICTED AS CLOSE AS POSSIBLE DUE TO THE CONE ROOF CONFIGUTATION. THEREFORE, ALL DIMENSIONS FOR HANDRAILING SHOULD BE VERIFIED DURING FABRICATION.

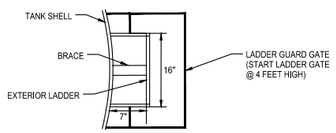
* (4) D-RINGS WELDED ON TOP ROOF FOR TIE-IN OF PERSONNEL - SAFETY REASONS FOR FALL PROTECTION



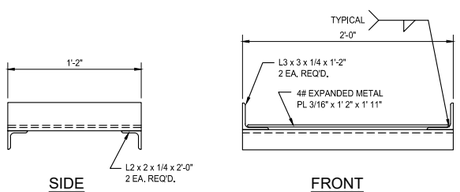
HANDRAIL B2 DETAIL - ONE REQ'D.



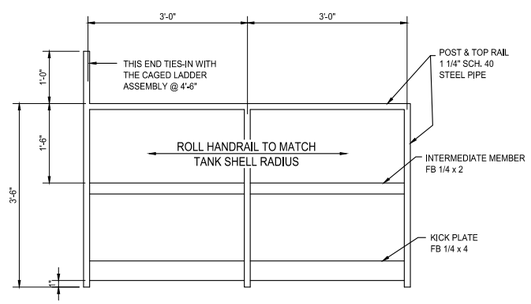
B PLAN VIEW



A VIEW - LOOKING UP



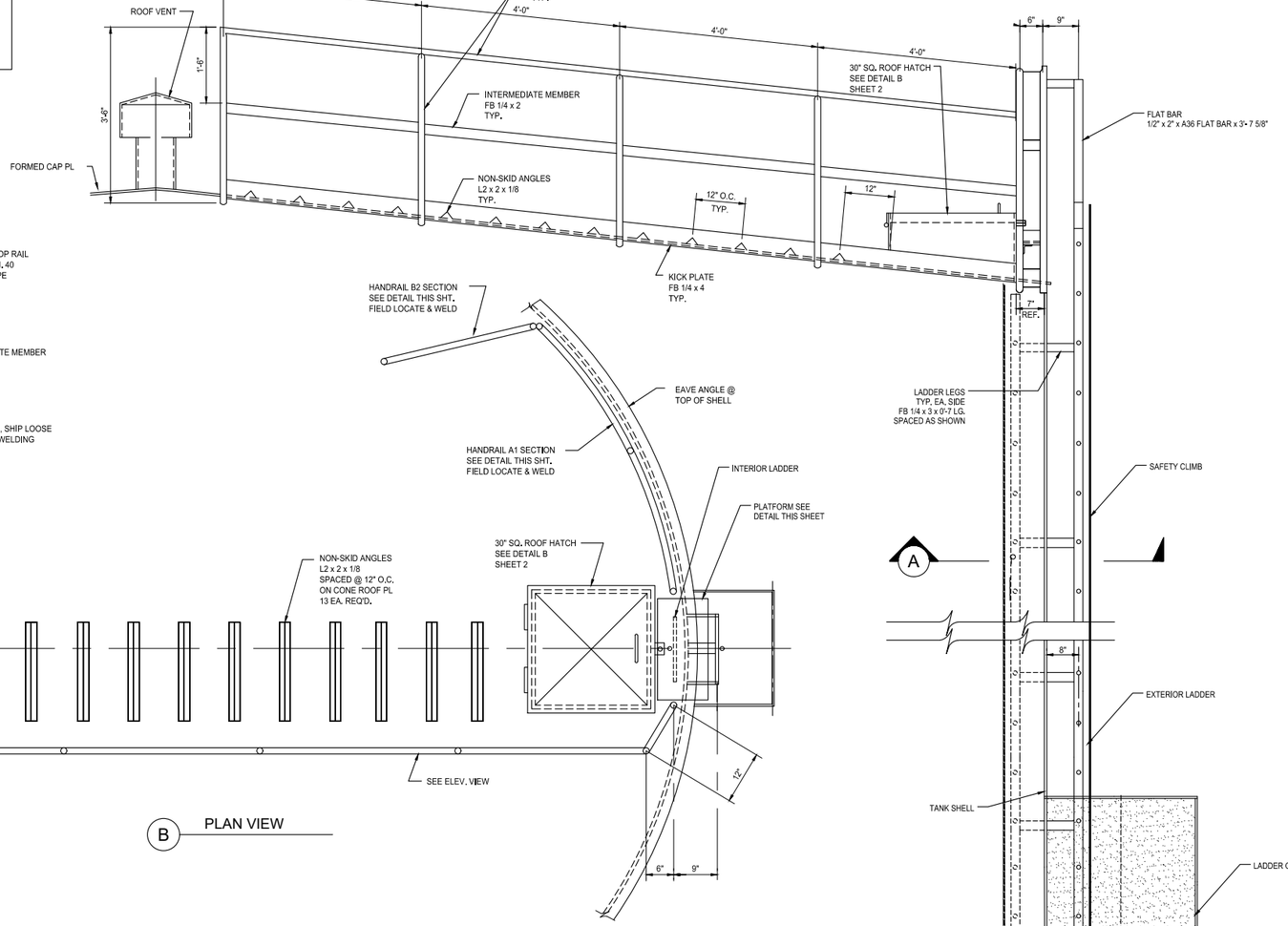
PLATFORM ASSY. DETAIL - ONE REQ'D.

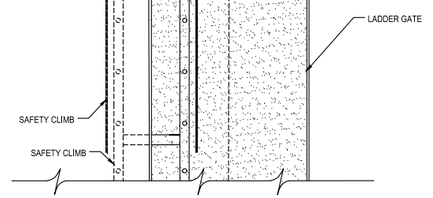


HANDRAIL A1 DETAIL - ONE REQ'D.

G EXTERIOR ROOF HANDRAILING

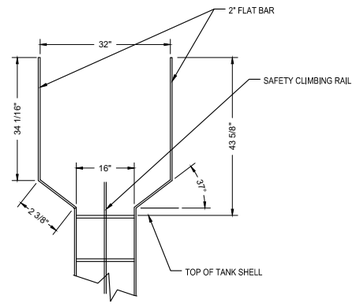
FOR ALL TANKS



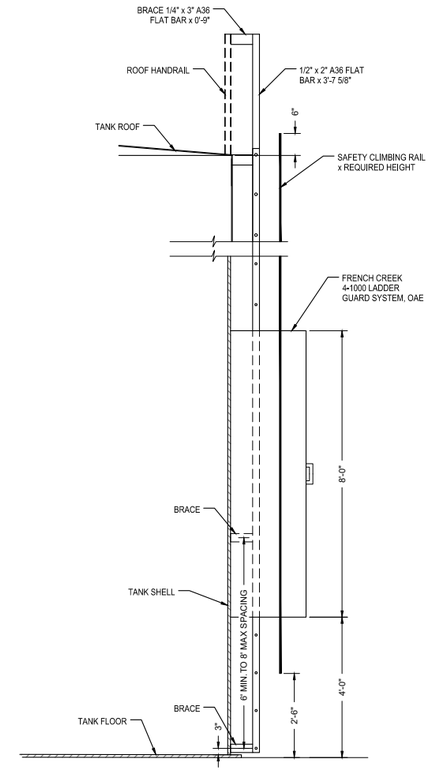


TANK CUTAWAY ELEVATION - UPPER HALF

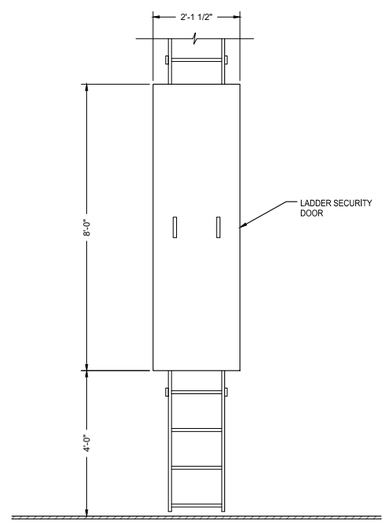
FOR ALL TANKS



LADDER TOP DETAIL (TYPICAL)



SIDE VIEW



FRONT VIEW

LADDER SECURITY DOOR DETAILS

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Location: Coyote Canyon, NM

TYPICAL WATER STORAGE TANK DETAILS (2 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TERRY TADANO — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 9-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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Project No: 6922268
Sheet: DT-28

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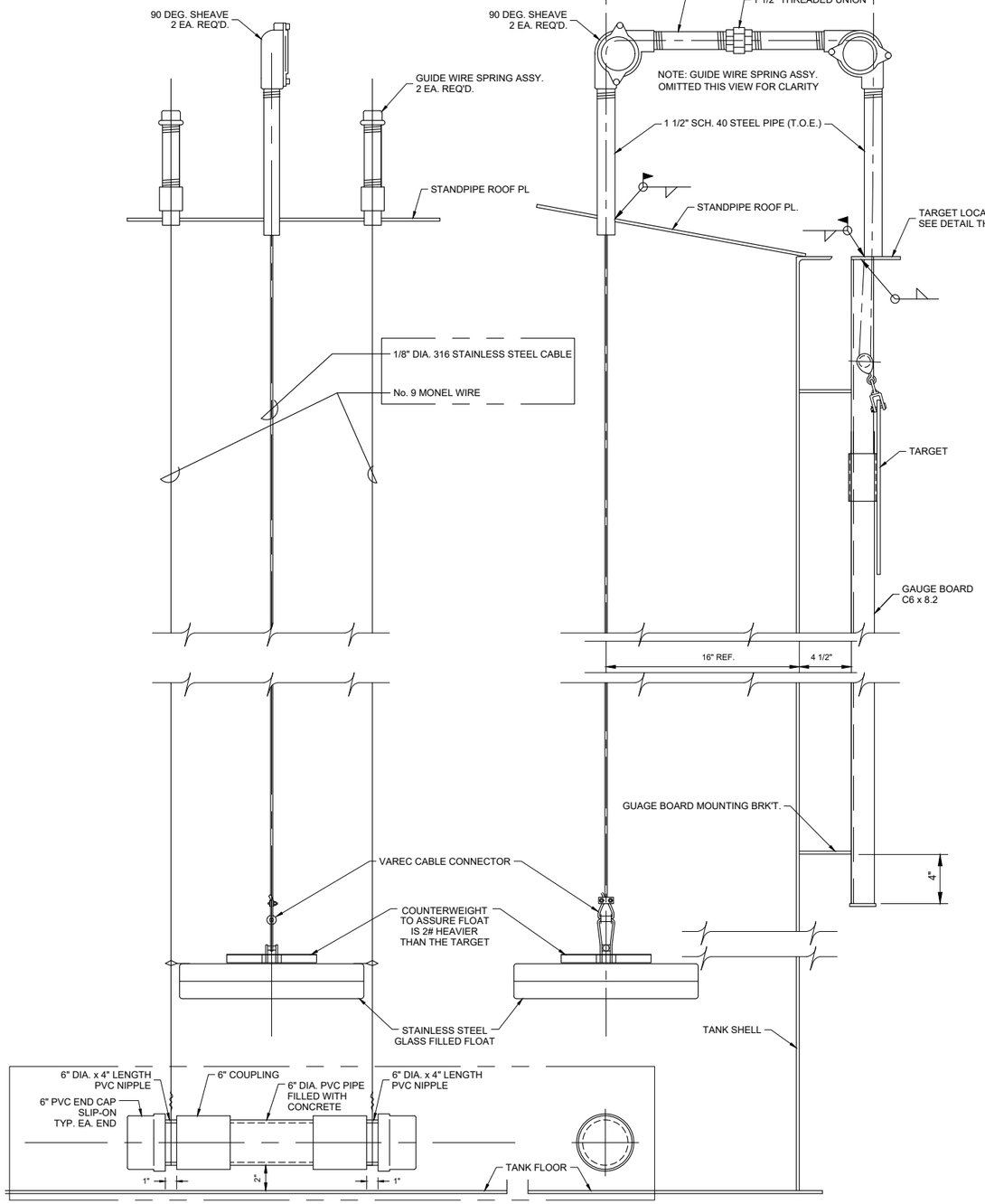
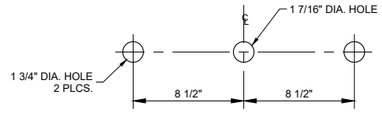
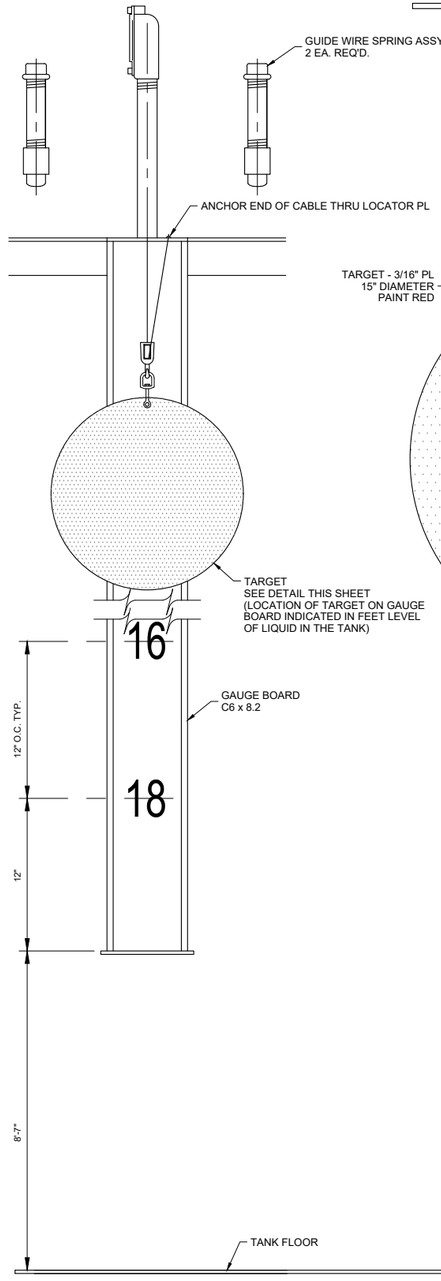


REAR VIEW (FROM INSIDE OF TANK)

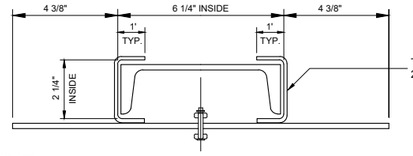
SIDE VIEW



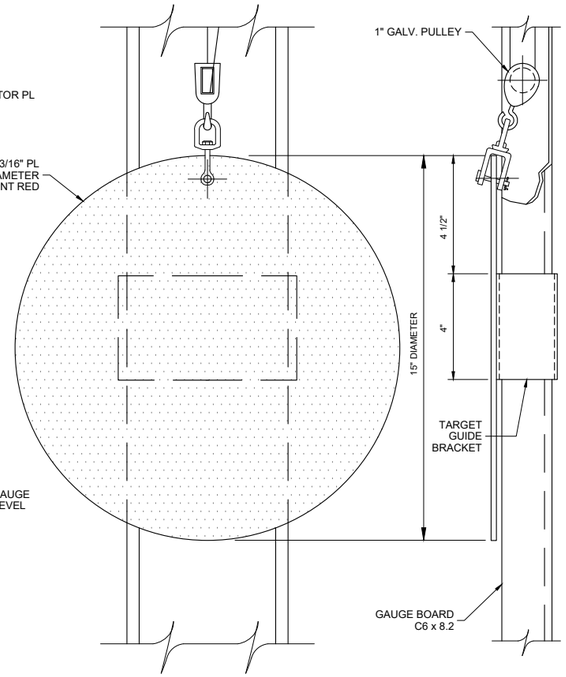
HOLE LAYOUT - PLAN VIEW



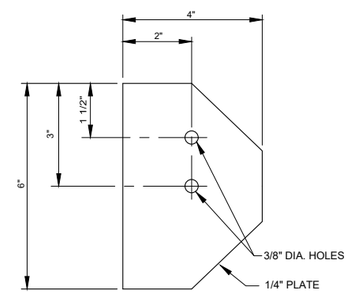
FRONT VIEW



PLAN VIEW



ENLARGED VIEW-TARGET & BRACKET DETAIL



TARGET LOCATOR PL DETAIL - ONE REQ'D.

HALF HEIGHT LIQUID LEVEL INDICATOR DETAILS

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TYPICAL WATER STORAGE TANK DETAILS (3 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TROY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 12-29-25

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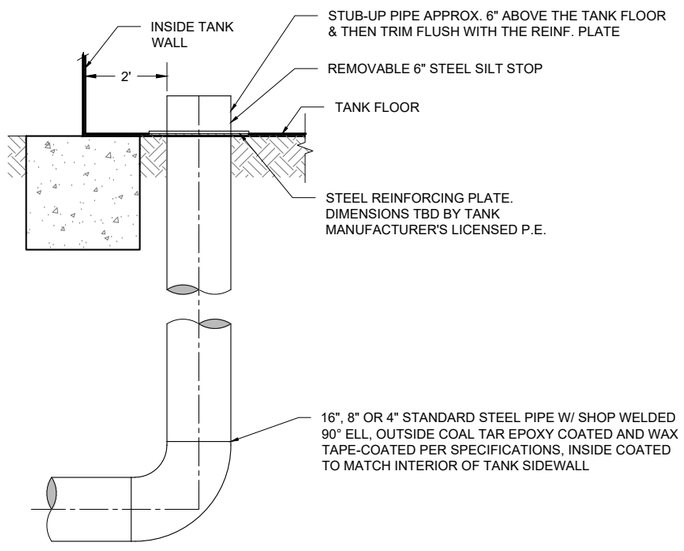
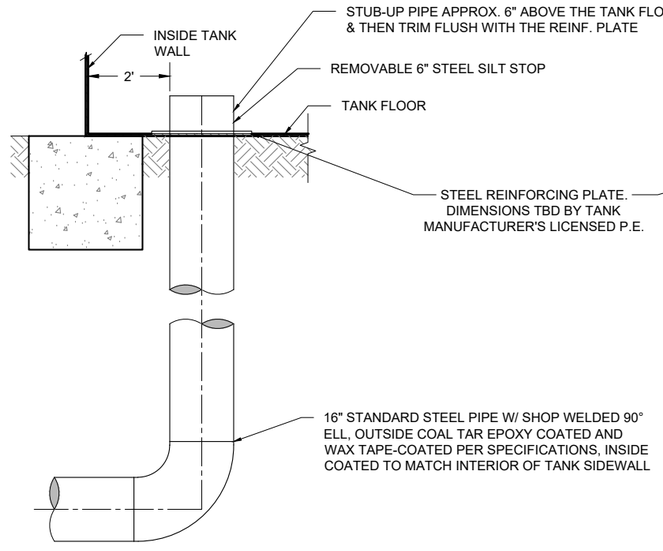


ELEVATION VIEW

16", 8" OR 4" INLET DETAIL

NOT TO SCALE



ELEVATION VIEW

16" OUTLET DETAIL

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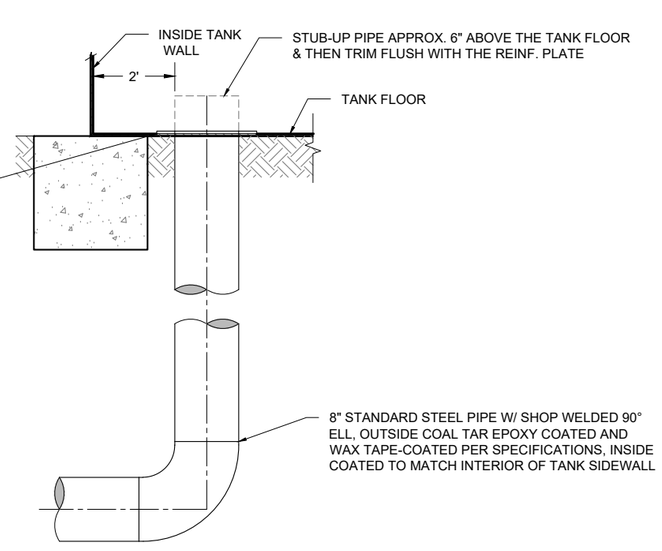

ELEVATION VIEW

8" TANK FLOOR DRAIN DETAIL

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TYPICAL WATER STORAGE TANK DETAILS (4 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TRACY TADANO
NEW MEXICO
21073
12-29-25
LICENSED PROFESSIONAL ENGINEER

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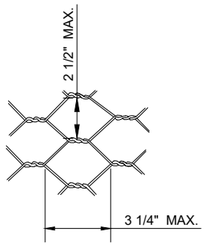

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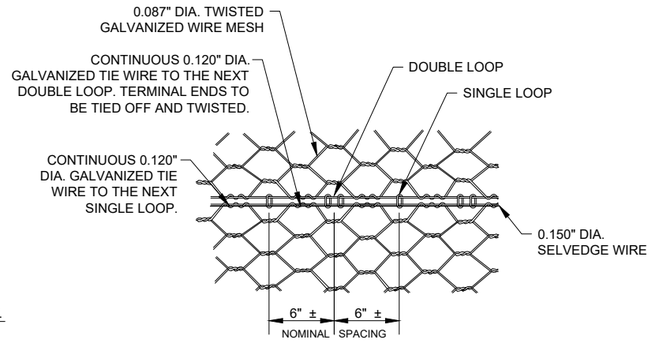

STANDARD JOINT CONNECTION DETAIL
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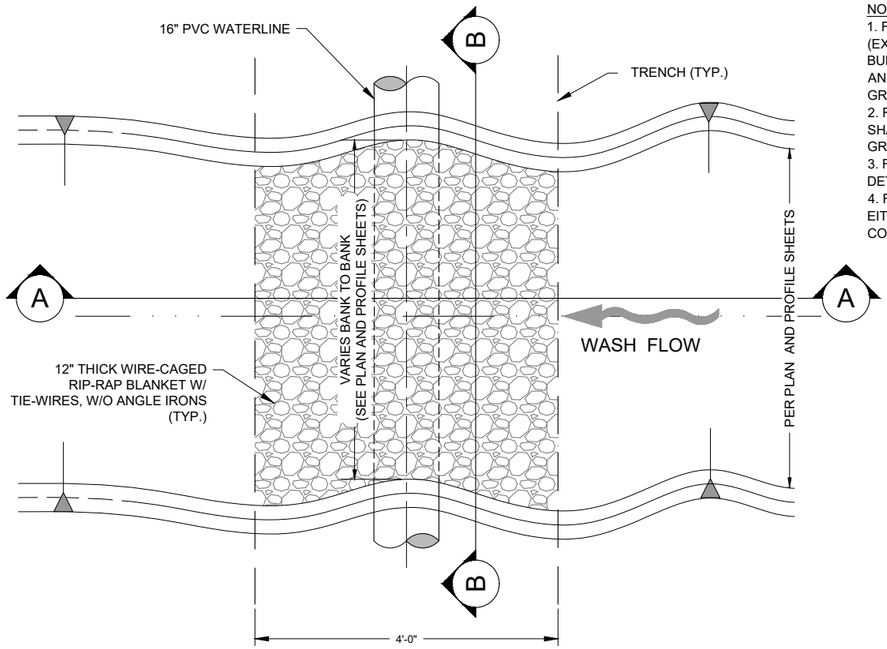
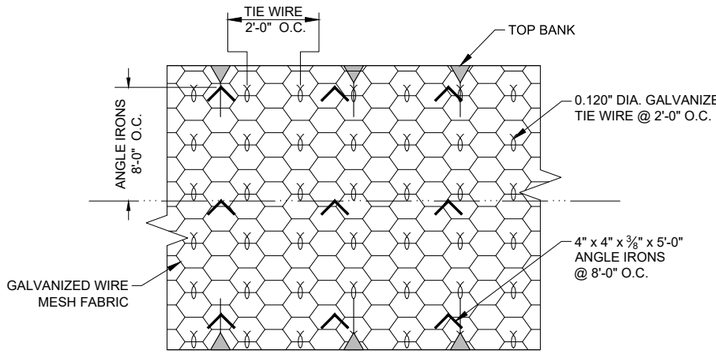


PLAN VIEW

NOTE:
1. FOR RIP-RAP BLANKETS IN NATURAL WATERWAYS (EXCEPT FLUSH VALVE OUTLETS), BLANKET SHALL BE BURIED AS SHOWN. COVER BLANKET WITH NATURAL SOIL AND REGRADE TO RESTORE WASH FLOWLINE TO NATURAL GRADE.
2. RIP-RAP BLANKETS AT SITES AND FLUSH VALVE OUTLETS SHALL BE INSTALLED FLUSH WITH SURROUNDING FINISHED GRADE.
3. FINAL QUANTITIES, DIMENSIONS AND LOCATIONS TO BE DETERMINED IN FIELD BY ENGINEER.
4. FOR ALL WASH CROSSINGS AND FLUSH VALVE OUTLETS, EITHER RIP-RAP OR CABLE CONCRETE MAY BE USED AT CONTRACTOR'S OPTION



TYP. 12" RIP-RAP CAGE & ANCHORING
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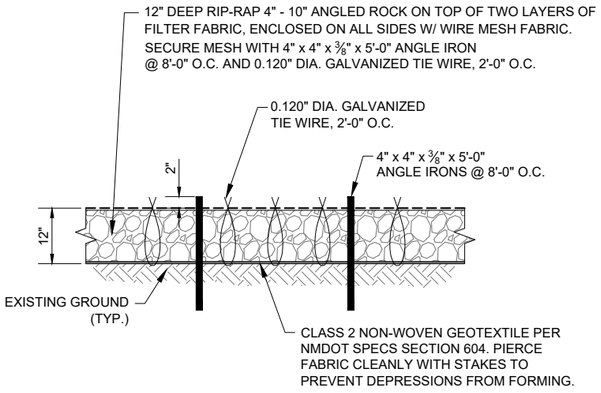

CROSS SECTION

TYPICAL 12" RIP-RAP DETAIL
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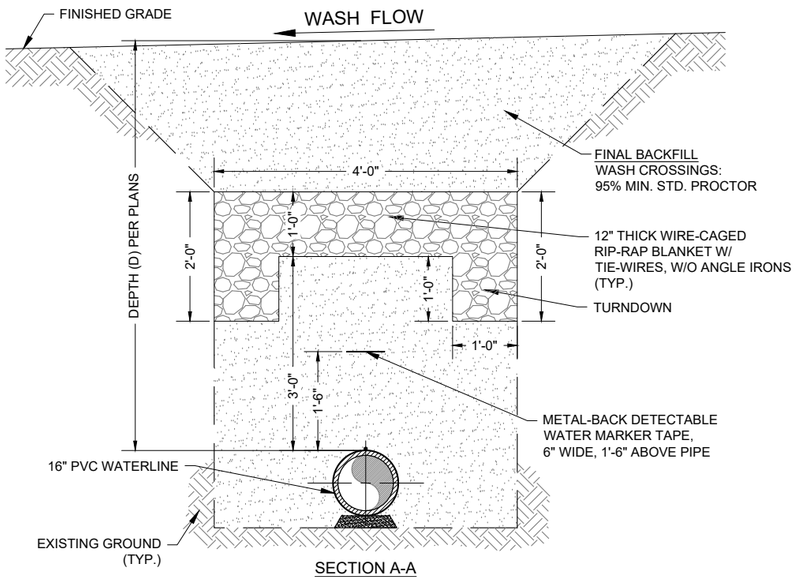
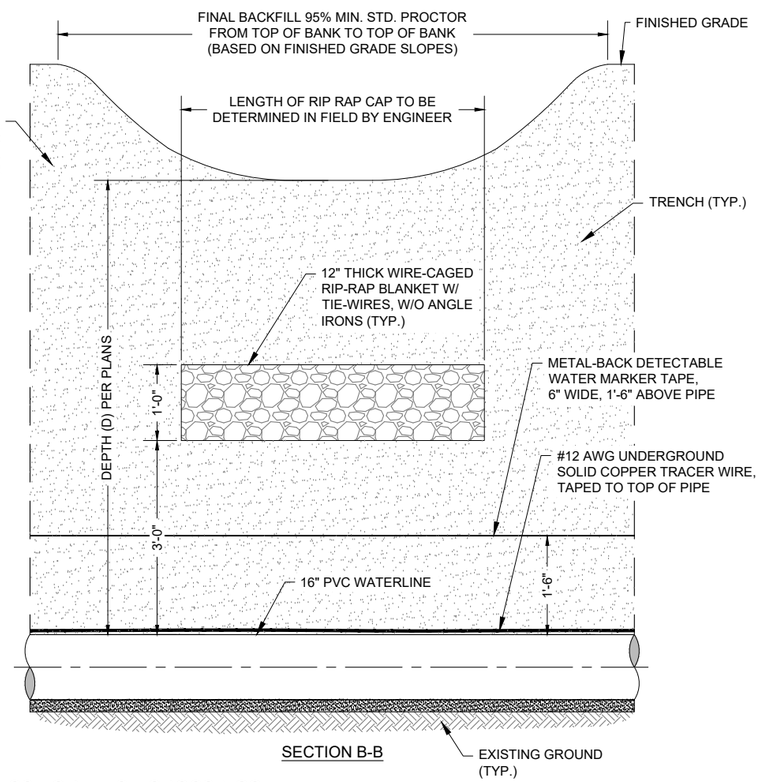


SECTION A-A



SECTION B-B

TYPICAL BURIED 12" RIP-RAP MATTRESS FOR WASH CROSSINGS
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Location: Coyote Canyon, NM

EROSION CONTROL DETAILS (1 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TERRY T. ADAMS NEW MEXICO 21073 LICENSED PROFESSIONAL ENGINEER 12-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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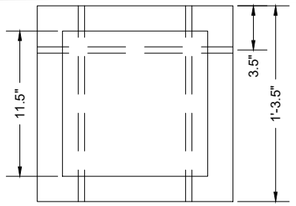
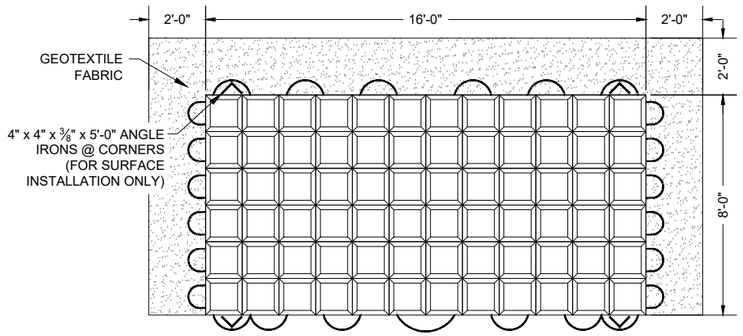
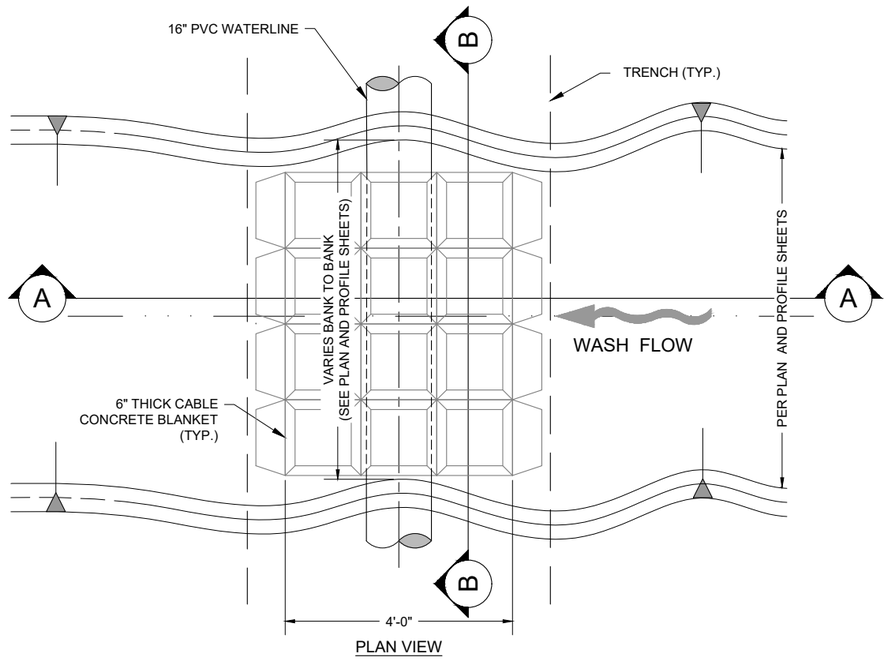


PLAN VIEW ELEVATION VIEW



TYPICAL 6" CC-45 CLOSED CELL CABLE CONCRETE DETAIL

NOT TO SCALE



PLAN VIEW

NOTE:
1. FOR CABLE CONCRETE BLANKETS IN NATURAL WATERWAYS (EXCEPT FLUSH VALVE OUTLETS), BLANKET SHALL BE BURIED AS SHOWN. COVER BLANKET WITH NATURAL SOIL AND REGRADE TO RESTORE WASH FLOWLINE TO NATURAL GRADE.
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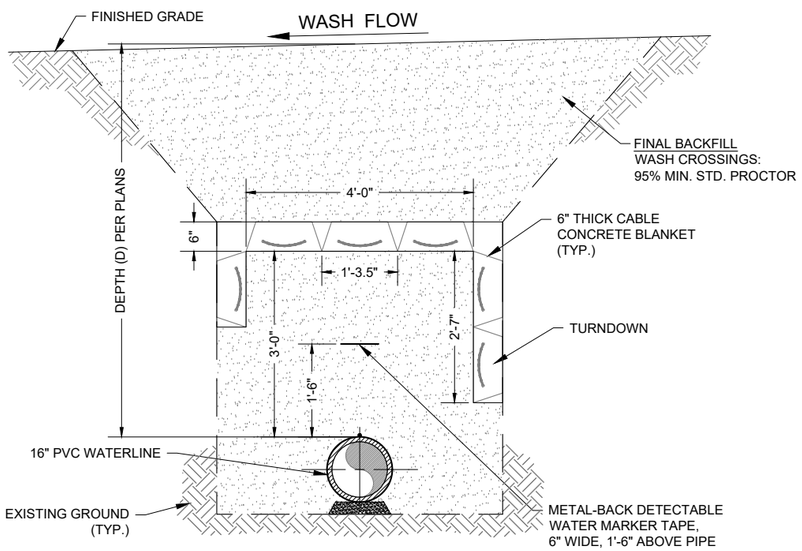

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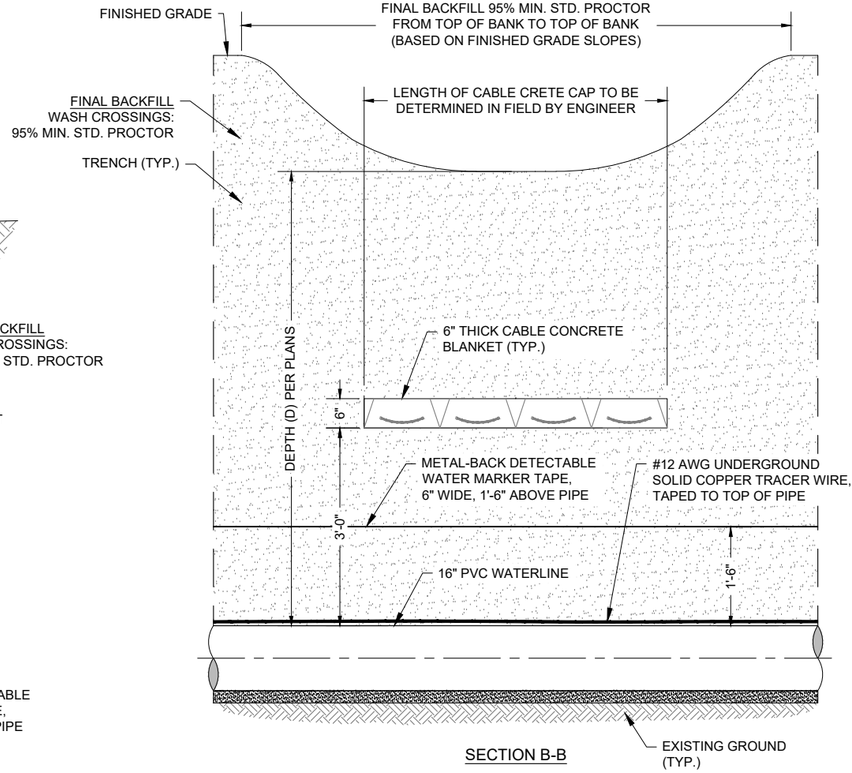

SECTION B-B

TYPICAL BURIED 6" CABLE CONCRETE MATTRESS FOR WASH CROSSINGS

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Client: The Navajo Nation

EROSION CONTROL DETAILS (2 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TROY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 12-29-25

Designed	Drawn	Checked
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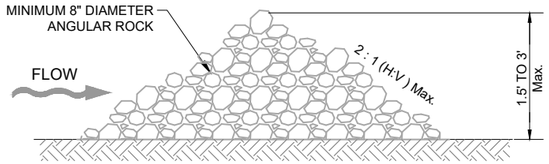

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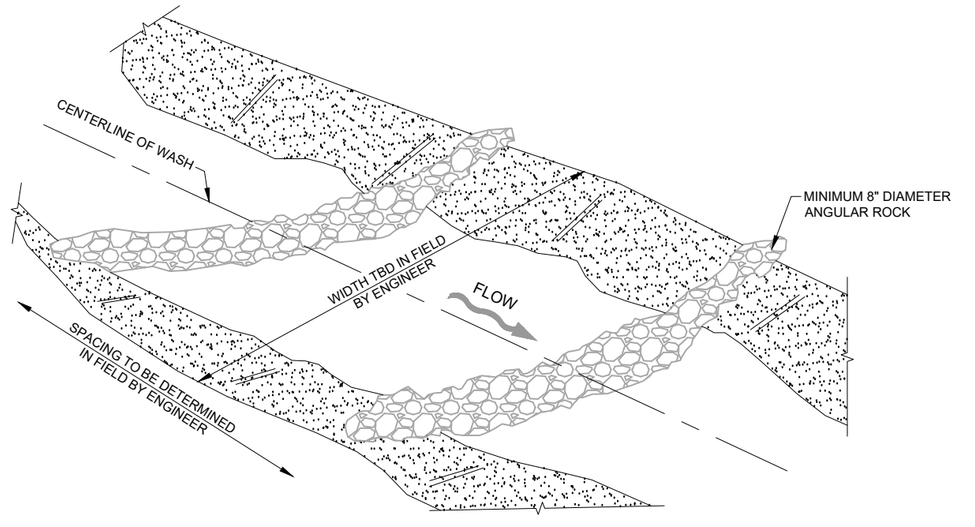

ISOMETRIC VIEW

ROCK CHECK DAM DETAIL

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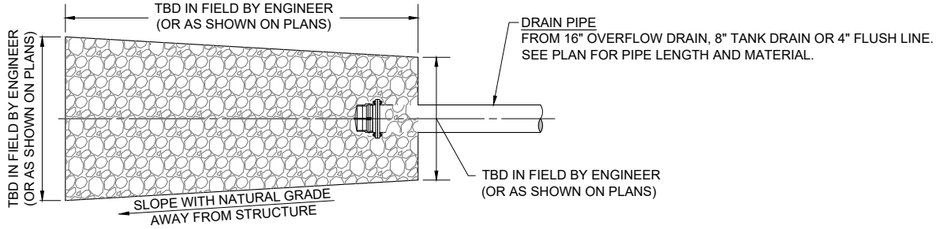
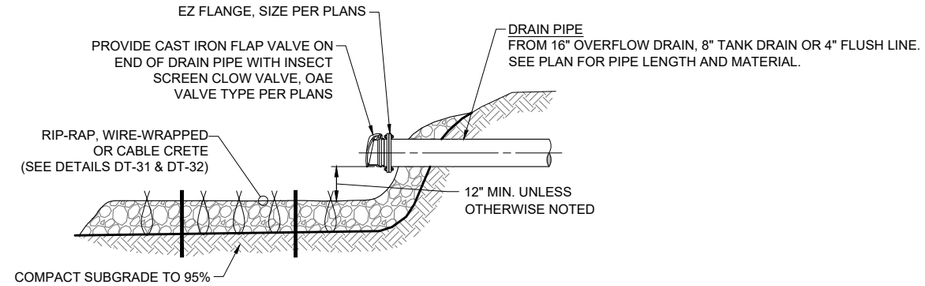


PLAN VIEW



ELEVATION VIEW

TYPICAL SPLASH PAD DETAIL

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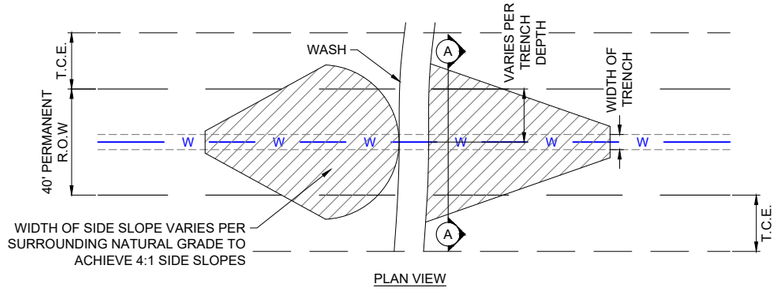

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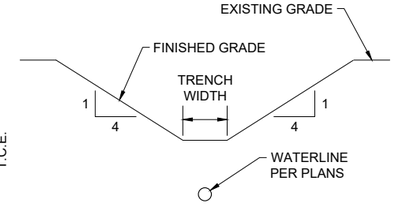

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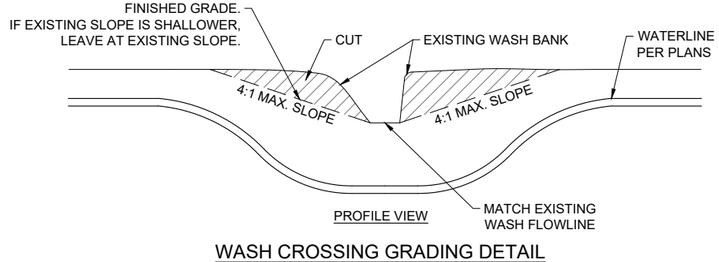

PROFILE VIEW

WASH CROSSING GRADING DETAIL

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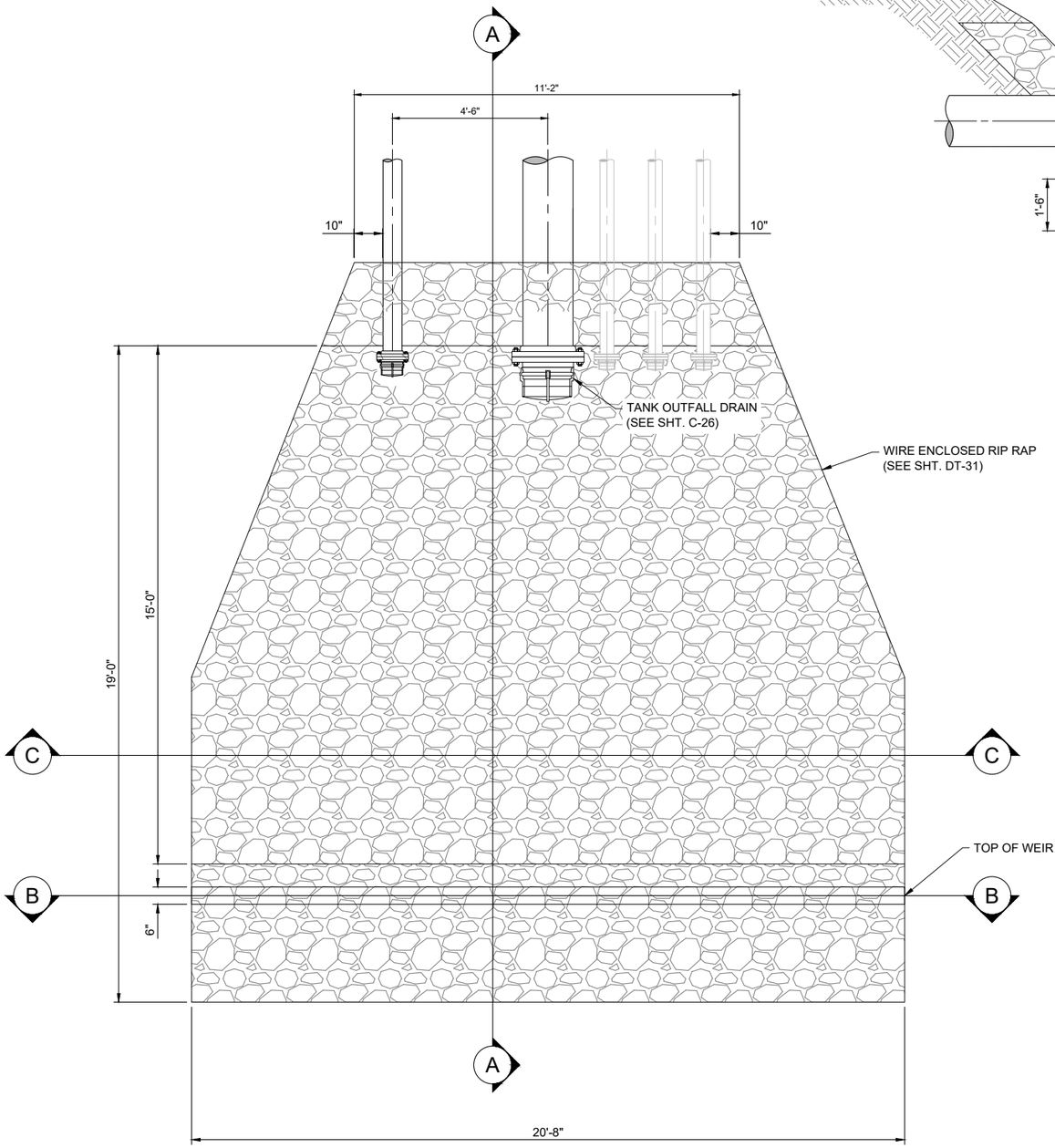
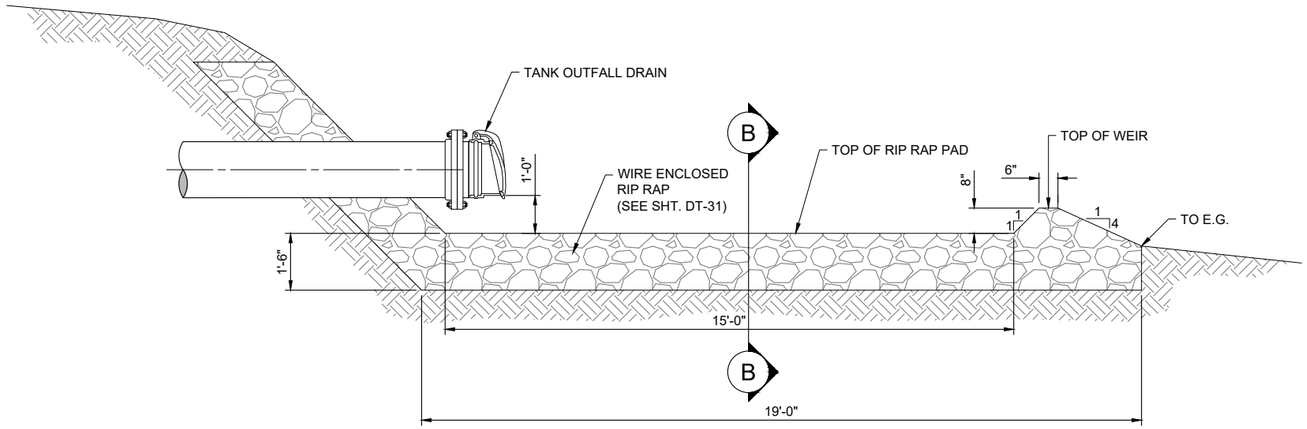
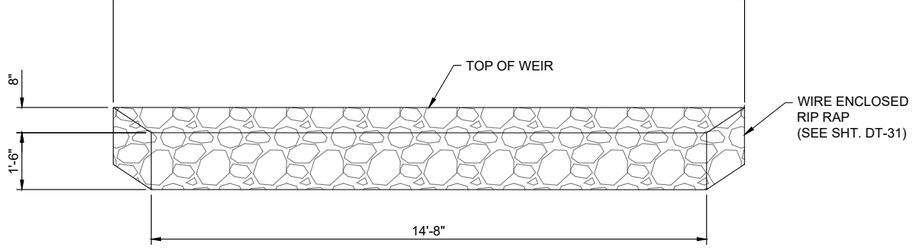


PLAN VIEW



SECTION A



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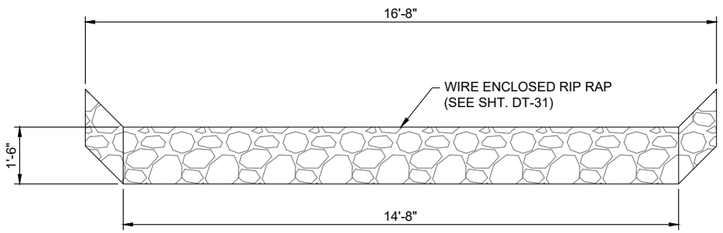

SECTION C

PP 12 SITE SPLASH PAD WITH WEIR DETAIL

SCALE: 1" = 2'

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Client: The Navajo Nation
Location: Coyote Canyon, NM

EROSION CONTROL DETAILS (4 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TROY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 12-29-25

Designed	Drawn	Checked
EAP	MvH/AaV	TTT

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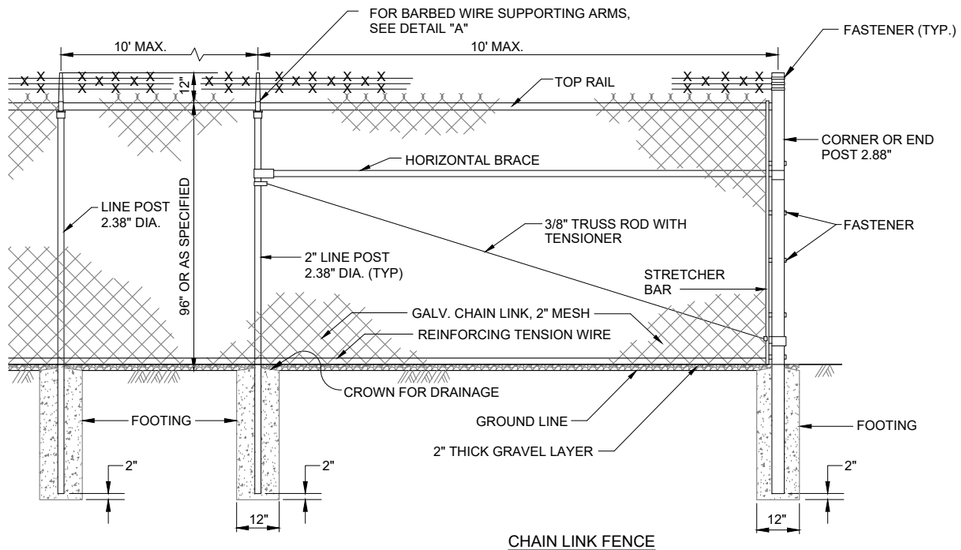
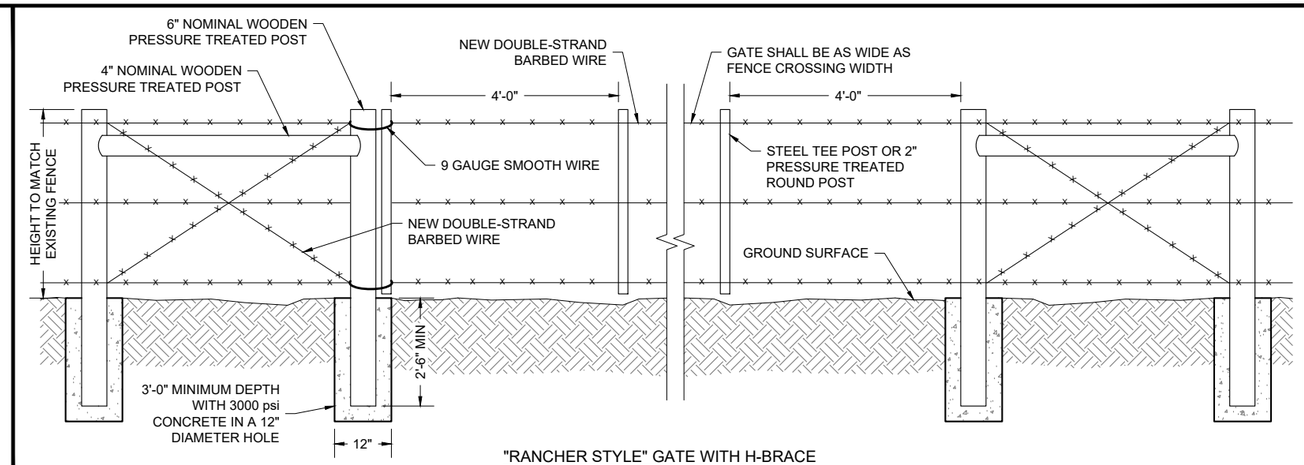


CHAIN LINK FENCE

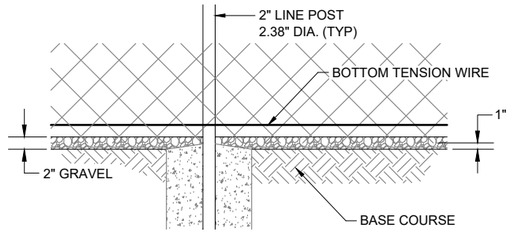
NOT TO SCALE

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.



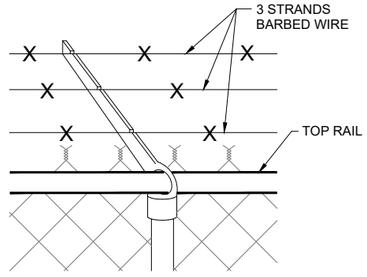
"RANCHER STYLE" GATE WITH H-BRACE
PULL ASSEMBLY AT EXISTING WIRE FENCE CROSSING

NOT TO SCALE



BASE COURSE AND GRAVEL DETAIL

NOT TO SCALE



DETAIL "A" SUPPORTING ARM & BARBED WIRE

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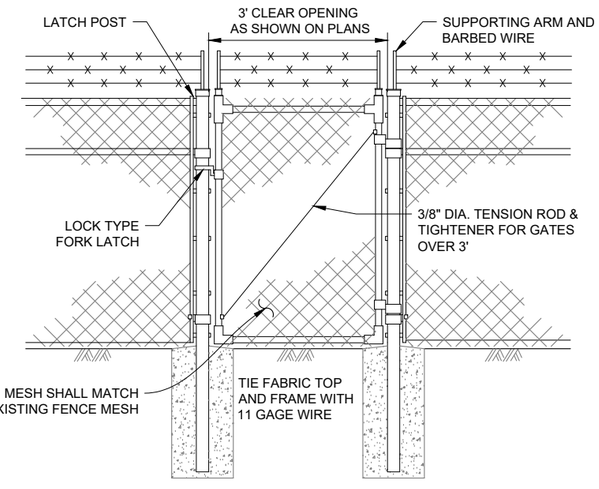

PEDESTRIAN GATE

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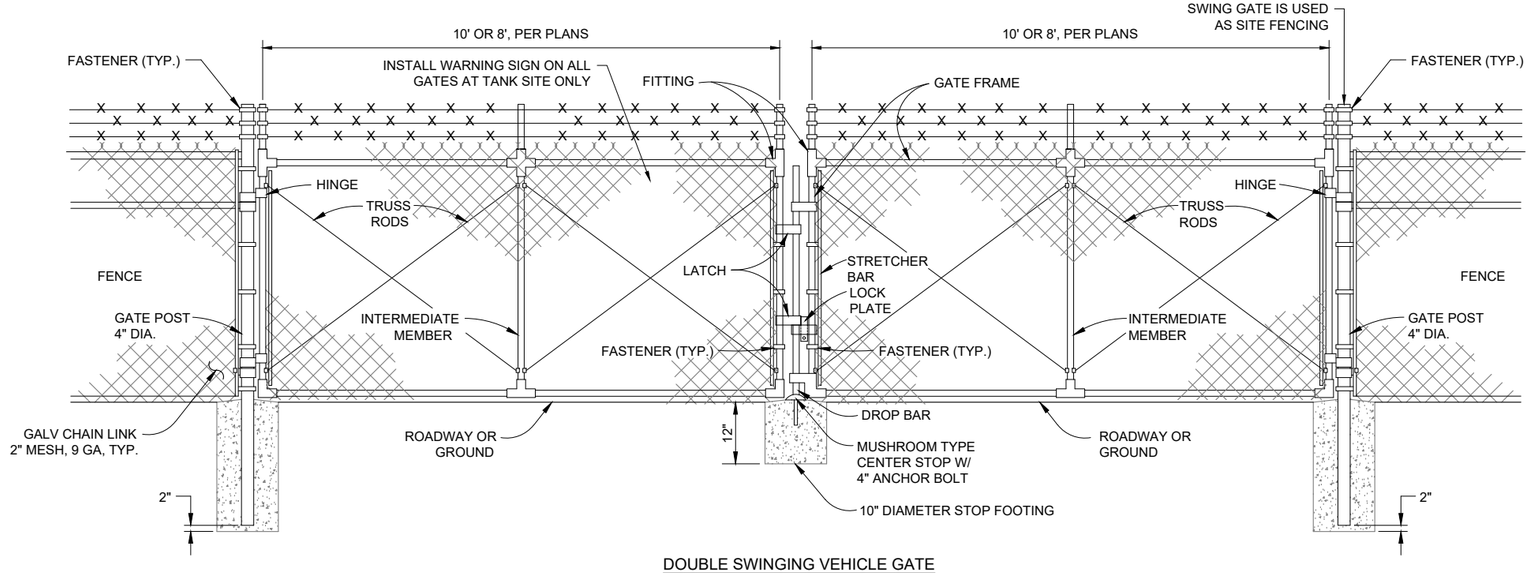


DOUBLE SWINGING VEHICLE GATE

NOT TO SCALE

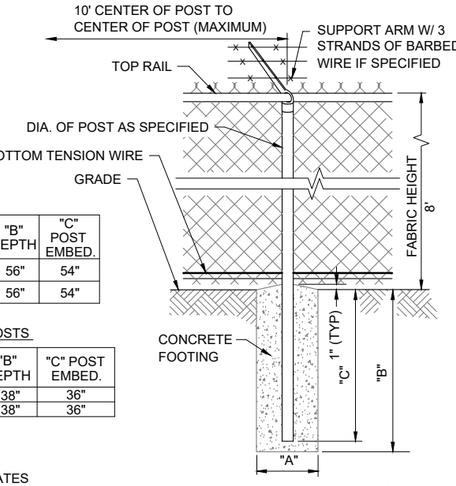
GATE POST

GATE LEAF WIDTH	GATE POST (OD)	FABRIC HEIGHT	"A" DIAM	"B" DEPTH	"C" POST EMBED.
10	4"	8'	16"	56"	54"
3'	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"

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



CHAIN LINK FENCE FOUNDATION

NOT TO SCALE

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www.soudermiller.com

Location: Coyote Canyon, NM
Client: The Navajo Nation

FENCE DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TERRY T. TADANO — NEW MEXICO — 21073 — 09-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
EAP	MVH/AaV	TTT

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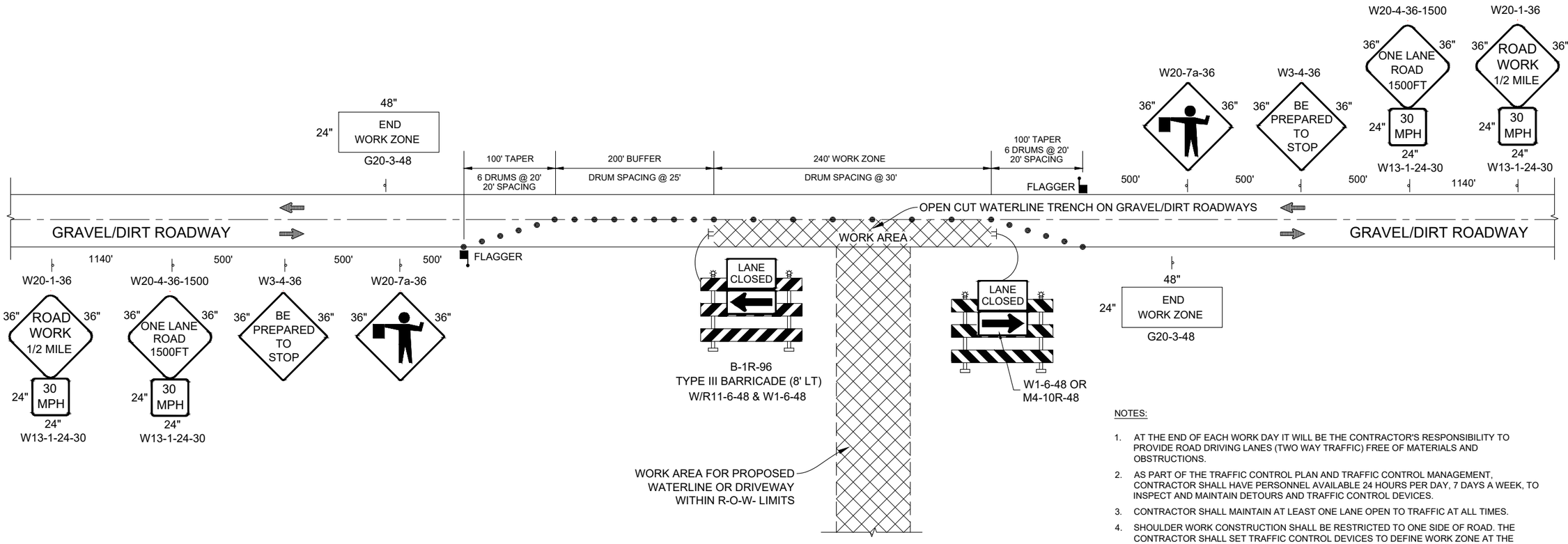
ALL SIGNS ARE BLACK ON ORANGE
UNLESS OTHERWISE SPECIFIED

EACH SIGN FACE SHOWN ON PLANS SHALL MEET THE SPECIFICATIONS IN THE STANDARD HIGHWAY SIGNS MANUAL (CURRENT EDITION) FOR PROPER ARRANGEMENT AND SPACING OF LETTERS, LETTER HEIGHT, LETTER SERIES, SYMBOLS, AND BORDERS FOR THE SPECIFIED SIZE AND MESSAGE AS SHOWN ON THE PLANS.



TRAFFIC CONTROL LAYOUT - LANE CLOSURE OF GRAVEL/DIRT ROADWAY FOR CONSTRUCTION OF WATERLINE CROSSING OR CONSTRUCTION OF DRIVEWAY

LANE CLOSURE (LEFT AND RIGHT)
OPEN CUT GRAVEL/DIRT ROADWAYS

NMDOT CHANNELIZATION DEVICES, TYPE: DRUM, NO. 702525. TOTAL OF 26 DRUMS REQUIRED.

NOTES:

1. AT THE END OF EACH WORK DAY IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ROAD DRIVING LANES (TWO WAY TRAFFIC) FREE OF MATERIALS AND OBSTRUCTIONS.
2. AS PART OF THE TRAFFIC CONTROL PLAN AND TRAFFIC CONTROL MANAGEMENT, CONTRACTOR SHALL HAVE PERSONNEL AVAILABLE 24 HOURS PER DAY, 7 DAYS A WEEK, TO INSPECT AND MAINTAIN DETOURS AND TRAFFIC CONTROL DEVICES.
3. CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE OPEN TO TRAFFIC AT ALL TIMES.
4. SHOULDER WORK CONSTRUCTION SHALL BE RESTRICTED TO ONE SIDE OF ROAD. THE CONTRACTOR SHALL SET TRAFFIC CONTROL DEVICES TO DEFINE WORK ZONE AT THE BEGINNING OF EACH WORK DAY. THERE SHALL BE A MAXIMUM OF THREE WORK ZONES FOR THE ENTIRE PROJECT LENGTH AT ANY GIVEN TIME. SHOULDER WORK SHALL BE DEFINED AS ANY ACTIVITY OR CONSTRUCTION EQUIPMENT WITHIN THE ROAD R/W BUT MORE THAN 18 FT. FROM THE EDGE OF THE DRIVING LANE.
5. DURING NON-WORKING HOURS, THE CONTRACTOR SHALL MOVE DRUMS, SIGNS, AND OTHER TRAFFIC CONTROL DEVICES TO R/W FENCE AND LAY SIGNING DOWN AWAY FROM TRAFFIC.
6. NIGHT-TIME CONDITIONS: THE CONTRACTOR SHALL NOT PARK CONSTRUCTION EQUIPMENT, OR LEAVE MATERIALS WITHIN 24 FT. OF THE EDGE OF DRIVING LANE.
7. THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL DRIVEWAYS AND TURNOUTS AT ALL TIMES.
8. LANE CLOSURE SHALL BE USED WHEN ANY CONSTRUCTION EQUIPMENT, CONSTRUCTION MATERIAL, OR CONSTRUCTION OBJECTS ARE WITHIN 18 FT. FROM EDGE OF DRIVING LANE.
9. ALL CONSTRUCTION TRAFFIC CONTROL DEVICES SHALL COMPLY WITH BIA-NAVAJO REGIONAL OFFICE DEPARTMENT OF TRANSPORTATION REQUIREMENTS, SANDOVAL COUNTY ROAD DEPARTMENT / PUBLIC WORKS REQUIREMENTS, THE NEW MEXICO STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, LATEST EDITION, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
10. EXCEPT DURING AN EMERGENCY, NO NIGHT-TIME WORK TO BE PERFORMED.
11. ALL STAGING AREAS AND MATERIAL AND EQUIPMENT STORAGE SHALL BE CONFINED TO PROJECT R/W AND ARE SUBJECT TO THE SAME RESTRICTIONS AS THE WORK AREAS AS SET FORTH ABOVE.

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Client: The Navajo Nation
Location: Coyote Canyon, NM

TRAFFIC CONTROL (GRAVEL AND DIRT ROAD)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

TROY T. ADAMS
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
7-29-25

Designed	Drawn	Checked
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ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
	WALL OUTLET AND SURFACE MOUNTED FIXTURE
	LED OUTLET AND FIXTURE
	SINGLE POLE SWITCH, FLUSH MOUNTED 48" A.F.F.
	DUPLEX CONVENIENCE OUTLET, 18" A.F.F.
WP	WEATHERPROOF DUPLEX CONVENIENCE OUTLET, 18" A.F.F.
GFCI	DUPLEX CONVENIENCE OUTLET, GROUND FAULT CIRCUIT INTERRUPTER, 18" A.F.F.
J	JUNCTION BOX INSTALLED ABOVE LAY-IN CEILING WITH FLEXIBLE CONDUIT CONNECTION TO LAY-IN FIXTURES. MAXIMUM 4'-0" LENGTH OF CONDUIT, WITH REQUIRED CONDUCTORS ALONG WITH GREEN GROUND CONDUCTOR
J	JUNCTION BOX FLUSH IN WALL, HEIGHT AS INDICATED ON DRAWINGS, WITH CONNECTION TO EQUIPMENT
	CONCEALED BRANCH CIRCUIT WITH CONDUCTORS AS INDICATED. NEUTRAL, HOT, SWITCH LEG AND GROUND RESPECTIVELY
	BRANCH CIRCUIT OR CONDUIT INSTALLED UNDERGROUND OR UNDER FLOOR
P2-2,4	HOMERUN TO PANELBOARD WITH BRANCH CIRCUIT NUMBERS INDICATED
SV	SOLENOID VALVE
LS	LIMIT SWITCH
PT	PRESSURE TRANSMITTER
	FIRE ALARM SMOKE AND HEAT DETECTOR, PHOTOELECTRIC TYPE, 120V AUX CONTACTS
P	MOTOR CONNECTION FOR FRACTIONAL HP MOTOR (1/3 HP OR LESS). PROVIDE THERMAL OVERLOAD SWITCH (WEATHERPROOF IF OUTSIDE) ADJACENT TO MOTOR UNLESS SWITCH IS SHOWN ELSEWHERE ON PLANS
#	MOTOR CONNECTION FOR MOTOR WITH HP INDICATED
	DISCONNECT SWITCH, POLES AND RATING AS INDICATED OR AS REQUIRED, NEMA 3R IF INSTALLED OUTSIDE
F	FUSED DISCONNECT SWITCH, FUSE, POLES AND RATING AS INDICATED OR AS REQUIRED, NEMA 3R IF INSTALLED OUTSIDE
	COMBINATION MAGNETIC MOTOR CONTROLLER/DISCONNECT SWITCH. SIZE, POLES, FUSES AND OVERLOADS PER MOTOR SERVED
	MAGNETIC MOTOR CONTROLLER, SIZE AND POLES PER MOTOR SERVED
T	TRANSFORMER, DRY TYPE, SIZE AS INDICATED
T	THERMOSTAT(M), 48" A.F.F.
	120V PANELBOARD, REFER TO PANEL SCHEDULE
	277V PANELBOARD, REFER TO PANEL SCHEDULE
	SPECIAL PURPOSE CABINET, AS INDICATED ON DRAWINGS
DC	INTRUSION ALARM DOOR CONTACT MAGNETIC
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
C	CONTACTOR
OL'S	MOTOR OVERLOADS
	RED PILOT LIGHT
	GREEN PILOT LIGHT
	TRANSFORMER
R	RELAY
	SWITCH
	FUSE(S)
	CIRCUIT BREAKER
PLC	PROGRAMMABLE LOGIC CONTROLLER
RTU	REMOTE TERMINAL UNIT
T	THERMOSTAT
WP	WEATHERPROOF (NEMA 3R)
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE

NOTES:
- LIGHTING FIXTURES ARE OF TYPE AS INDICATED ON LIGHT FIXTURE SCHEDULE U.N.O.
- MOUNTING HEIGHTS FOR DEVICES CALLED OUT AT 18" A.F.F. ARE TO THE BOTTOM OF THE DEVICE UNLESS OTHERWISE NOTED.
- MOUNTING HEIGHTS FOR DEVICES CALLED OUT AT 48" A.F.F. ARE TO THE TOP OF THE DEVICE UNLESS OTHERWISE NOTED.
- ANY SPECIFIC DETAILS ABOVE (MOUNTING HEIGHTS, PART NUMBERS, CONNECTION METHODS, ETC.) MAY BE MODIFIED OR REPLACED BY INFORMATION ON PLANS, SCHEDULES, DETAILS, RISERS, ETC. DETAILS NOT SPECIFICALLY MODIFIED REMAIN AS GIVEN ABOVE.

GENERAL NOTES

SPECIFICATIONS

G1) IF THERE IS A CONFLICT BETWEEN PLANS/SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS FOR ANY DEVICE, PART, OR MATERIAL USED IN THE PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY IN WRITING THE ENGINEER FOR CLARIFICATION.

G2) THE CONTRACTOR SHALL FAMILIARIZE HIM/HERSELF WITH THE PLANS, AND THE SITE CONDITIONS PRIOR TO BID OPENING AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY AMBIGUITIES, CONTRADICTIONS OR IRREGULARITIES IN THE PLANS.

G3) IF, DURING BIDDING OR CONSTRUCTION, THE CONTRACTOR IS IN DOUBT AS TO THE TRUE MEANING OF ANY PART OF THE PLANS, SPECIFICATIONS, OR OTHER CONTRACT DOCUMENTS, OR DISCREPANCIES IN OR POSSIBLE OMISSIONS FROM THE DRAWINGS OR SPECIFICATIONS, THEY SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND REQUEST AN INTERPRETATION OF CORRECTION THEREOF. DURING THE BIDDING PROCESS AN ADDENDUM (IF NEEDED) WILL BE ISSUED.

G3.1) THE CONTRACT, IF AWARDED, WILL BE ON THE BASIS OF MATERIAL AND EQUIPMENT SPECIFIED OR DESCRIBED IN THE BIDDING DOCUMENTS WITHOUT CONSIDERATION OF POSSIBLE SUBSTITUTE OR "OR EQUAL" ITEMS. WHEREVER A BRAND NAME IS SPECIFIED OR DESCRIBED IN THE BIDDING DOCUMENTS A SUBSTITUTE OR "OR EQUAL" ITEM OF MATERIAL OR EQUIPMENT MAY BE FURNISHED OR USED BY CONTRACTOR IF ACCEPTABLE TO ENGINEER, APPLICATION FOR SUCH ACCEPTANCE WILL NOT BE CONSIDERED BY ENGINEER UNTIL AFTER THE EFFECTIVE DATE OF AGREEMENT. THE PROCEDURE FOR SUBMISSION OF ANY SUCH APPLICATION BY CONTRACTOR AND CONSIDERATION BY ENGINEER IS SET FORTH IN THE GENERAL CONDITIONS.

EXISTING UTILITIES & OBSTACLES TO WORK

G4) THE CONTRACTOR IS RESPONSIBLE TO INSTALL ALL ITEMS DESCRIBED IN THESE PLANS IN A MANNER THAT PROTECTS THE EXISTING FACILITY. THE CONTRACTOR MUST CONTACT THE ENGINEER IMMEDIATELY IF HE IS UNABLE TO PERFORM THIS WORK WITHOUT DAMAGE TO THE EXISTING FACILITY. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING INFORMATION SHOWN ON THESE PLANS. DESIGN ELEMENTS OF THIS PROJECT WILL NOT CHANGE WITHOUT CHANGE ORDER UNLESS THE CONTRACTOR NOTIFIES THE ENGINEER IN A TIMELY MANNER REGARDING ITEMS DESCRIBED IN THIS NOTE. CHANGES IN ALIGNMENT CAUSED BY UNKNOWN OR UNANTICIPATED SITE CONDITIONS SHALL BE ACCOUNTED FOR BY THE APPROPRIATE UNIT PRICES, AS RECOMMENDED BY THE ENGINEER AND APPROVED BY THE OWNER.

G5) THE EXISTENCE, CONDITION AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN IN THESE PLANS WAS OBTAINED BY A CAREFUL SEARCH OF AVAILABLE RECORDS. TO THE BEST OF THE ENGINEERS KNOWLEDGE, THERE ARE NO EXISTING UNDERGROUND UTILITIES EXCEPT THOSE SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN, AND ANY OTHER LINES OR STRUCTURES NOT SHOWN ON THESE PLANS, AND IS RESPONSIBLE FOR THEIR LOCATING, PROTECTION OF, OR ANY DAMAGE TO THESE LINES OR STRUCTURES. THIS DOES NOT RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES AND OBTAIN LINE SPOTS.

G6) THE FOLLOWING IS A LIST OF POSSIBLE OBSTRUCTIONS AND SHALL NOT BE CONSIDERED A COMPLETE LIST OF POSSIBLE OBSTRUCTIONS: EXISTING UTILITIES, STRUCTURE, GEOTECHNICAL FEATURES, ALL CONDUIT, CABLES, PIPES, WATERLINES, SEWER LINES, GAS LINES, POWER LINES, TELEPHONE AND TELEGRAPH LINES, TREES, MONUMENTS, TRAFFIC CONTROL DEVICES AND OTHER STRUCTURES, BOTH BELOW AND ABOVE GROUND.

G7) CONTRACTOR SHALL BE HELD RESPONSIBLE FOR COSTS OF REPAIR OF ANY AND ALL DAMAGE TO ANY UTILITY (WHICH IS PREVIOUSLY KNOWN AND DISCLOSED TO HIM BY THE UTILITY OR SHOWN ON THESE PLANS) AS MAY BE CAUSED BY HIS OPERATIONS.

G8) FIVE (5) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE-CALL SYSTEM, INC. (505) 260-1990, FOR LOCATION OF EXISTING UTILITIES.

G9) CONTRACTOR SHALL GIVE ALL PUBLIC AND PRIVATE UTILITY COMPANIES NOTICE AS SOON AS POSSIBLE, IN NO EVENT LESS THAN FORTY EIGHT (48) HOURS, FOR ANY WORK THAT IS UNDERSTOOD TO INTERFERE WITH THE SERVICE OF ANY EXISTING PUBLIC OR PRIVATE UTILITY. IF SUCH PUBLIC OR PRIVATE UTILITY DOES NOT COOPERATE FOR THE PROTECTION OF ITS SERVICES, CONTRACTOR SHALL NOTIFY ENGINEER.

G10) CONTRACTOR SHALL IMMEDIATELY REPORT ANY DAMAGES TO PUBLIC OR PRIVATE PROPERTY TO THE OWNER OF THE PROPERTY INVOLVED AND TO THE ENGINEER. CONTRACTOR SHALL REPAIR OR RESTORE AT HIS OWN EXPENSE ANY DAMAGE TO PUBLIC OR PRIVATE PROPERTY, FOR WHICH THEY ARE DIRECTLY OR INDIRECTLY RESPONSIBLE, TO A CONDITION EQUAL TO THAT EXISTING BEFORE DAMAGE. CONTRACTOR SHALL PROMPTLY NOTIFY HIS INSURANCE CARRIER OF SUCH DAMAGE. IF CONTRACTOR FAILS TO GIVE SUCH NOTICE TO HIS INSURANCE CARRIER OR REFUSES TO EFFECT SUCH REPAIRS OR RESTORATION UPON RECEIPT OF NOTICE, THE ENGINEER MAY CAUSE SUCH REPAIRS OR RESTORATION AND DEDUCT THE COST THEREOF FROM MONEYS DUE, OR WHICH MAY BECOME DUE, TO THE CONTRACTOR.

G11) CONTRACTOR IS RESPONSIBLE FOR RECORDING EXISTING CONDITIONS IN ACCORDANCE WITH THE SUPPLEMENTARY CONDITIONS OF THE CONTRACT BEFORE CONSTRUCTION BEGINS. THE RECORD OF EXISTING CONDITIONS SHALL BE USED AS THE "EQUAL CONDITION BEFORE DAMAGE" IN THE EVENT OF DAMAGE TO PUBLIC OR PRIVATE PROPERTY. CONTRACTOR FAILURE TO RECORD EXISTING CONDITIONS WILL MAKE THE OWNERS CLAIM OF "EQUAL CONDITION BEFORE DAMAGE" THE STANDARD THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING AND THE ENGINEER WILL BE IN THE POSITION OF NOT BEING ABLE TO SUPPORT THE CONTRACTOR IN THE MEDIATION OF ANY DISPUTE.

G12) THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF LOCATION OF ALL EXISTING UTILITIES..

SITE CONDITIONS

G13) CONTRACTOR SHALL MAINTAIN ACCESS TO ALL FACILITIES ADJACENT TO THE CONSTRUCTION AREA.

G14) THE CONTRACTOR SHALL USE WATERING EQUIPMENT FOR DUST POLLUTION ABATEMENT AS REQUIRED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND SUPPLYING WATER. THIS WORK AND MATERIAL SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.

G15) EPA STORM WATER DISCHARGE REGULATIONS. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE TO APPLICABLE PORTIONS OF THE EPA STORM WATER DISCHARGE REGULATIONS.

SITE DESIGN

G16) SUBGRADE. ALL SUBGRADE AND TRENCH BACKFILL SHALL BE COMPACTED TO 95 % OF STANDARD PROCTOR. ALL SUBGRADE AND BACKFILL SHALL BE COMPACTED IN MAXIMUM 8" LOOSE LIFTS. MOISTURE CONTENT AT THE TIME OF COMPACTION SHALL NOT EXCEED OPTIMUM OR BE LESS THAN 5 PERCENTAGE POINTS BELOW OPTIMUM. DRIVEWAYS, APRONS, FILLETS, CURB AND GUTTER, AND OTHER CONCRETE PAVEMENT SHALL BE PLACED ON 6" OF COMPACTED SUBGRADE.

G17) RESTORE SURFACE AT TRENCH TO EXISTING CONDITIONS.

COMMUNICATION

G18) CONTRACTOR SHALL KEEP THE OWNER AND THE ENGINEER UPDATED WEEKLY ON THE CONSTRUCTION SCHEDULE AND/OR PHASE SCHEDULE, AND PROGRESS TO DATE.

STAGING STORAGE & DEBRIS DISPOSAL

G19) DEBRIS GENERATED BY CONSTRUCTION ACTIVITIES SHALL BE DISPOSED OF AT A PERMITTED LANDFILL OR OTHER DULY CERTIFIED REFUSE FACILITY. THE DISPOSAL OF DEBRIS IS NOT A PAY ITEM.

RECORD DRAWINGS

G20) THE CONTRACTOR SHALL PROVIDE A RECORD SKETCH ON THESE PLANS FOR THE AS-CONSTRUCTED CONDITIONS.

PHASE AND SCHEDULE

G21) CONTRACTOR SHALL PHASE AND SCHEDULE WORK IN SUCH A WAY AS TO PROVIDE MINIMAL POWER OUTAGES AT THE FACILITY. A PROJECT SCHEDULE SHALL BE SUBMITTED TO THE OWNER FOR REVIEW PRIOR TO ISSUANCE OF NOTICE-TO-PROCEED. CHANGES IN SCHEDULE SHALL BE PRESENTED TO OWNER AND ENGINEER AT LEAST 7 DAYS PRIOR TO PROPOSED IMPLEMENTATION. THESE SCHEDULES, SCHEMATICS AND DIAGRAMS SHALL BE UPDATED WEEKLY AS THE WORK PROGRESSES. MOST CHANGE OVER SHALL BE DONE ON WEEKENDS OR AFTER HOURS.

SUBMITTALS

G22) CONTRACTOR SHALL PROVIDE SUBMITTALS FOR ALL EQUIPMENT, MATERIALS, PROCESSES AND SCHEDULES AND AS REQUESTED BY ENGINEER.

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Client: The Navajo Nation

ELECTRICAL LEGEND AND PROJECT NOTES
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

THOMAS F. RHYNE NEW MEXICO 25211 PROFESSIONAL ENGINEER 11/4/21

21359

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Date: 11-3-2021

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Project No: 6922268

Sheet: E-01

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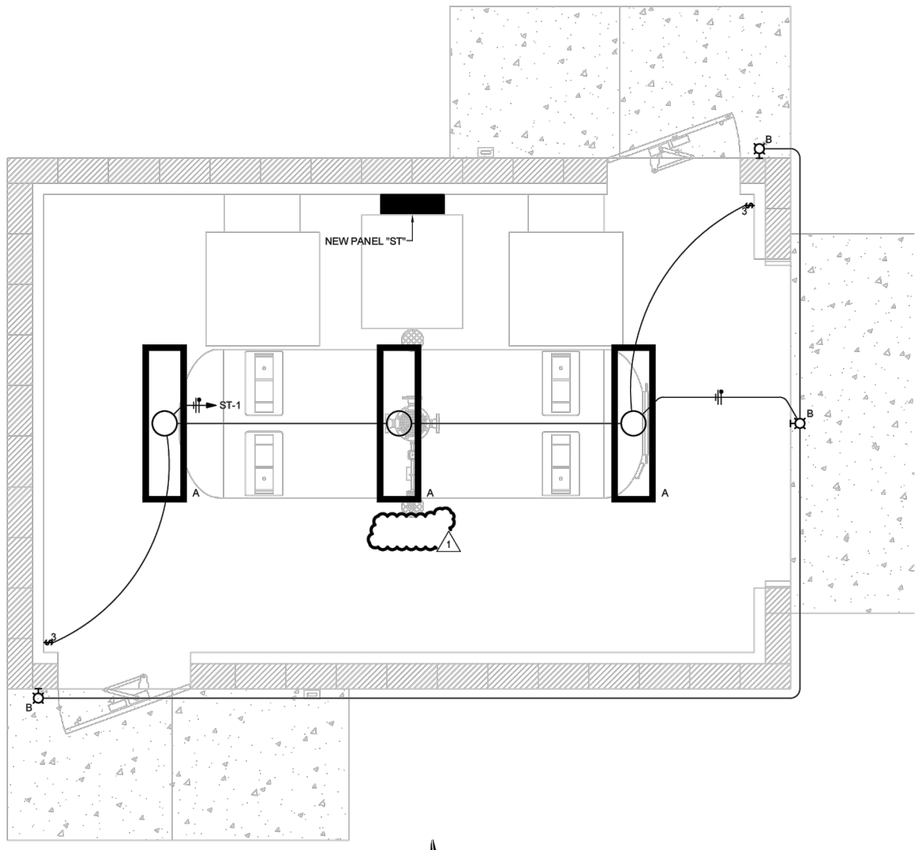

SURGE TANK BUILDING LIGHTING PLAN

LIGHT FIXTURE SCHEDULE

TYPE	FIXTURE DESCRIPTION	LAMPS	MOUNTING
A	VAPOR TIGHT LED FIXTURE, UL LISTED FOR WET LOCATIONS, UNIVERSAL VOLTAGE METALUX #4VT2-LD5-4-DR-UNV-L840-WL-U	LED (30W) 4000°K 4000 LM	CEILING SURFACE
B	LED WALL PACK, FULL CUTOFF, PHOTOCELL, 120V LUMARK #LDWP-FC-4B-120V-PE	32W LED	SURFACE MOUNTED AT +8'-0" A.F.F.

COMcheck Software Version 4.1.5.3

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title:
Project Type: New Construction

Construction Site: Owner/Agent: Designer/Contractor:

Additional Efficiency Package(s)
Credits: 1.0 Required 0.0 Proposed

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Common Space Types:Electrical/Mechanical	227	0.43	98
		Total Allowed Watts =	98

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Common Space Types:Electrical/Mechanical				
LED 1: Other	1	3	30	90
		Total Proposed Watts =		99

Interior Lighting PASSES: Design 8% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.3 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Thomas F. Ruehle, P.E. — Name - Title
Signature
11/3/2021 — Date

Project Title:
Data filename: F:\21359 - Reach Jan 10.1 Surge Tank\Electrical\2-Design\5-Calculations\ComCheck.cck
Report date: 10/07/21
Page 1 of 7

COMcheck Software Version 4.1.5.3

Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title:
Project Type: New Construction
Exterior Lighting Zone 1 (Developed rural area (LZ1))

Construction Site: Owner/Agent: Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Pedestrian and vehicular entrances and exits	15 ft of door	14	Yes	210
		Total Tradable Watts (a) =		210
		Total Allowed Watts =		210
		Total Allowed Supplemental Watts (b) =		300

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 300 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Pedestrian and vehicular entrances and exits (15 ft of door width): Tradable Wattage				
LED 1: Other	1	3	32	96
		Total Tradable Proposed Watts =		69

Exterior Lighting PASSES: Design 83% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.3 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Thomas F. Ruehle, P.E. — Name - Title
Signature
11/3/2021 — Date

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Data filename: F:\21359 - Reach Jan 10.1 Surge Tank\Electrical\2-Design\5-Calculations\ComCheck.cck
Report date: 10/07/21
Page 2 of 7

KEYED NOTES

1. NOT USED.
2. NOT USED.

Revision	Date	Description	By	Chk'd
1	10-19-2022	CHANGES	RHP	TFR

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Client: The Navajo Nation
Location: Coyote Canyon, NM

SURGE TANK - LIGHTING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

THOMAS F. RUEHLE — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 11/4/21

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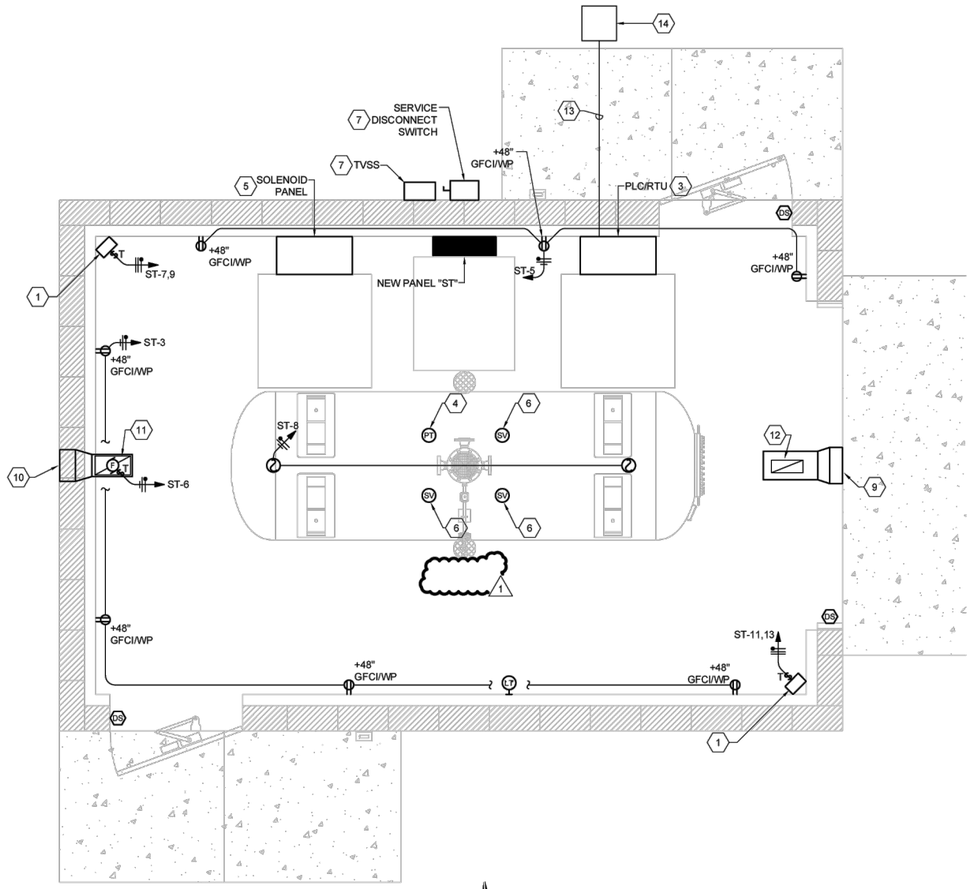
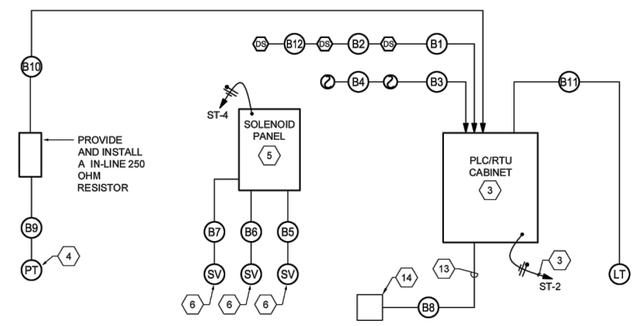


SURGE TANK BUILDING POWER AND SPECIAL SYSTEMS PLAN

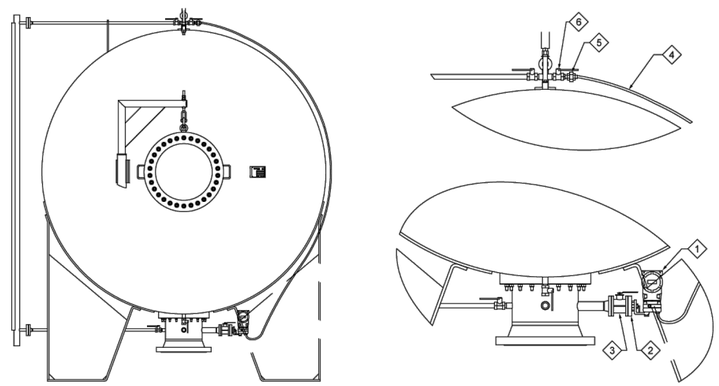


SURGE TANK BUILDING - CONTROL RISER DIAGRAM

SCALE: NONE

KEYED NOTES

1. PROVIDE AND INSTALL A 2.6 KW 240 VOLTS, SINGLE PHASE ELECTRIC WALL MOUNTED HEATER WITH INTEGRAL THERMOSTAT. HOMERUN 3 # 10 - ¾" CONDUIT TO CIRCUIT INDICATED. HEATER SHALL BE AS MANUFACTURED BY CHROMALOX #HVH-02-1-00-TL-D-00-0-0-S-HVW-1
2. NOT USED. (1)
3. NEW PLC/FIBER OPTIC TRANSMITTER CABINET. CABINET SHALL BE A NEMA 4X ENCLOSURE. PLC CONFIGURED TO OWNER STANDARDS AND REQUIREMENTS. REFER TO SHEETS E-31 THROUGH E-33 AND SPECIFICATIONS. MOUNT ON WALL ADJACENT TO PLC CABINET. REFER TO CONTROL WIRING SCHEDULE ON SHEET E-51 FOR ADDITIONAL INFORMATION.
4. FIELD COORDINATE THE LOCATION OF THE PRESSURE TRANSMITTER PRIOR TO THE EXTENSION OF THE CONTROL WIRING. PRESSURE TRANSMITTER SHALL BE AS MANUFACTURED BY ROSEMOUNT # 3051L, RANGE 2-5, COORDINATE ALL ADDITIONAL OPTIONS REQUIRED FOR A COMPLETE FUNCTIONAL SYSTEM WITH THE EQUIPMENT SUPPLIER.
5. FIELD COORDINATE THE LOCATION OF THE SOLENOID VALVE CONTROL PANEL PRIOR TO THE EXTENSION OF POWER AND CONTROL WIRING. SOLENOID LEVEL INDICATION SYSTEM CONTROL PANEL SHALL BE AS MANUFACTURED BY GOLDER., NEMA 3R ENCLOSURE.
6. FIELD COORDINATE THE LOCATION OF THE SURGE TANK SOLENOID VALVE LOCATIONS PRIOR TO THE EXTENSION OF CONTROL WIRING. SOLENOID VALVES SHALL BE AS MANUFACTURED BY ASCO, SERIES 8210,304 STAINLESS STEEL, #238610 & SERIES 8262, 304 STAINLESS STEEL, # 238210. COORDINATE ALL ADDITIONAL OPTIONS REQUIRED FOR A COMPLETE FUNCTIONAL SYSTEM WITH THE SUPPLIER.
7. REFER TO POWER RISER DIAGRAM ON SHEET E-51 FOR SERVICE EQUIPMENT SIZES AND WIRING.
8. NOT USED. (1)
9. 18x18 AIR INTAKE GRILLE - RUSKIN ELF375 OR EQUAL. INSTALL IN GABLE BETWEEN ROOF TRUSSES. DIMENSIONS MAY BE MODIFIED TO EQUIVALENT PERFORMANCE TO ACCOMMODATE STRUCTURAL CONSTRAINTS. PROVIDE DUCTWORK TRANSITION AS REQUIRED.
10. 18x18 EXHAUST GRILLE - RUSKIN ELF375 OR EQUAL. INSTALL IN GABLE BETWEEN ROOF TRUSSES. DIMENSIONS MAY BE MODIFIED TO EQUIVALENT PERFORMANCE TO ACCOMMODATE STRUCTURAL CONSTRAINTS. PROVIDE DUCTWORK TRANSITION FROM EXHAUST FAN.
11. CEILING EXHAUST FAN. GREENHECK SP-A 1050. 885 CFM, .0375"WC, 5.5 SONES, 420 WATTS, 6.3 AMPS. OVERALL DIMENSIONS 14.5" TALL, 23.75"WIDE, 14.5" DEEP. CONTROL FROM LINE VOLTAGE WALL THERMOSTAT WITH ON/OFF OVERRIDE.
12. 12X24 TITUS MODEL EGC CEILING RETURN GRILLE. 18X12 AIR INTAKE METAL DUCTWORK. TRANSITION FROM OUTSIDE LOUVER. INSULATE WITH 1-1/2" FIBERGLASS ALUMINUM FACED SEALED WITH TAPED JOINTS.
13. 2" CONDUIT WITH LONG SWEEPING BENDS FOR FIBER OPTIC CABLE. COORDINATE EXACT LOCATION WITH ENDPOINT OF FIBER OPTIC CABLE. EXTEND CONDUIT TO PLC/RTU CABINET AND FLUSH IN GRADE QUAZITE BOX. CONDUIT SHALL BE BURIED A MINIMUM OF 36" BELOW FINISHED GRADE. PROVIDE RED WARNING TAPE 12" ABOVE CONDUIT. MAKE ALL REQUIRED CONNECTIONS FOR A COMPLETE AND OPERATIONAL SYSTEM.
14. PROVIDE AND INSTALL FLUSH IN GRADE TRAFFIC RATED QUAZITE BOX FOR FIBER OPTIC CABLE. COORDINATE EXACT LOCATION WITH ENDPOINT OF FIBER OPTIC CABLE.



ITEM	DESCRIPTION
1	PRESSURE DIFFERENTIAL TRANSMITTER ROSEMOUNT 3051
2	2" FLANGED CONNECTION HIGH PRESSURE DIAPHRAGM SEAL
3	2" BALL VALVE
4	STAINLESS STEEL FLEXIBLE TUBING TEFLON LINED
5	1/2" NPT UNION FITTING
6	1/2" NPT BALL VALVE

ROSEMOUNT - PRESSURE DIFFERENTIAL TRANSMITTER - CONNECTION DETAIL

SCALE: NONE

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1	10-19-2022	CHANGES	RHP	TFR

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Location: Coyote Canyon, NM

SURGE TANK - POWER AND SPECIAL SYSTEMS PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

THOMAS R. GRAHAM EXP 12-31-22 25211 PROFESSIONAL ENGINEER 11/4/21

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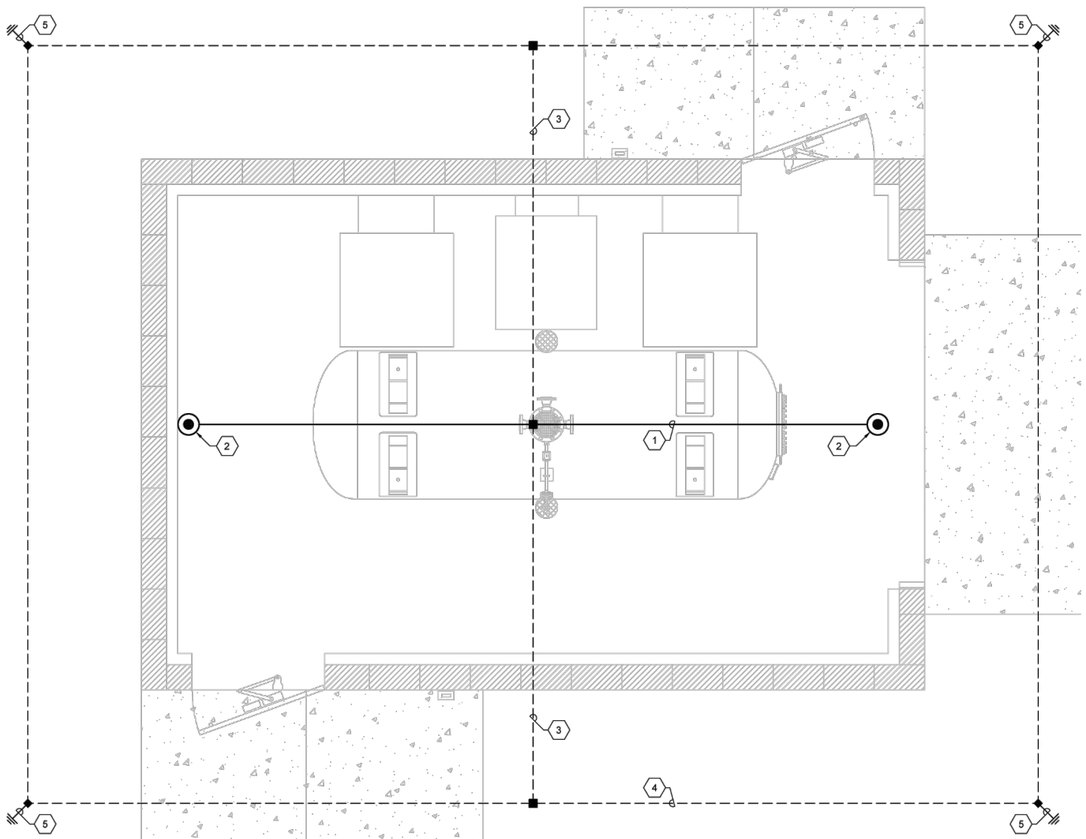

SURGE TANK BUILDING LIGHTNING PROTECTION PLAN

6

KEYED NOTES

1. LIGHTNING PROTECTION CLASS 1 ROOF-MOUNTED LATERAL CONDUCTOR AND MOUNTING HARDWARE.
2. LIGHTNING PROTECTION AERIAL TERMINAL. 1/2" x 18" TUBULAR COPPER AERIAL TERMINAL AND MOUNTING HARDWARE, MOUNTED AT ROOF PARAPET, PENTHOUSE AND ROOFTOP UNITS AS INDICATED.
3. LIGHTNING PROTECTION 4/0 BARE ALUMINUM DOWN-CONDUCTOR. SPLICE ALUMINUM CONDUCTOR TO 2/0 BARE COPPER CONDUCTOR USING ALUMINUM TO COPPER SPLICE KIT. PROVIDE AND INSTALL 1" CONDUIT FOR COPPER CONDUCTOR WHERE CONDUCTOR IS EXPOSED ABOVE GROUND.
4. LIGHTNING PROTECTION COUNTERPOISE SYSTEM. ALL CONNECTIONS SHALL BE EXO-THERMIC WELDS.
5. 3/4" X 10'-0" GROUND ROD.
6. LIGHTNING PROTECTION SYSTEM LAYOUT ON THIS PLAN IS FOR BIDDING PURPOSES ONLY. INSTALLATION TO BE PER NFPA-780, U.S. GOVERNMENT STANDARDS. SYSTEM SHALL BE PROVIDED WITH A MASTER LABEL.

SYMBOL LEGEND - LIGHTNING PROTECTION

- LIGHTNING AIR TERMINAL
- LIGHTNING CABLE CADWELD
- GROUND ROD
- EXPOSED #4/0 BARE ALUMINUM GROUND CABLE
- CONCEALED BELOW GRADE #2/0 BARE COPPER GROUND CABLE COUNTER POISE

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Client: The Navajo Nation

SURGE TANK - LIGHTNING PROTECTION PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
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McKINLEY COUNTY, NEW MEXICO

THOMAS R. GALLEHER
NEW MEXICO
25211
PROFESSIONAL ENGINEER
11/4/21

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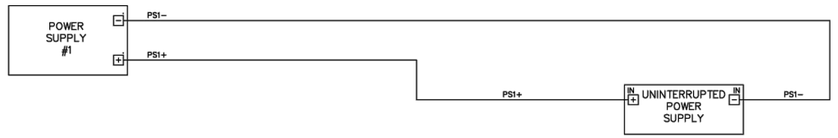
24VDC DISTRIBUTION



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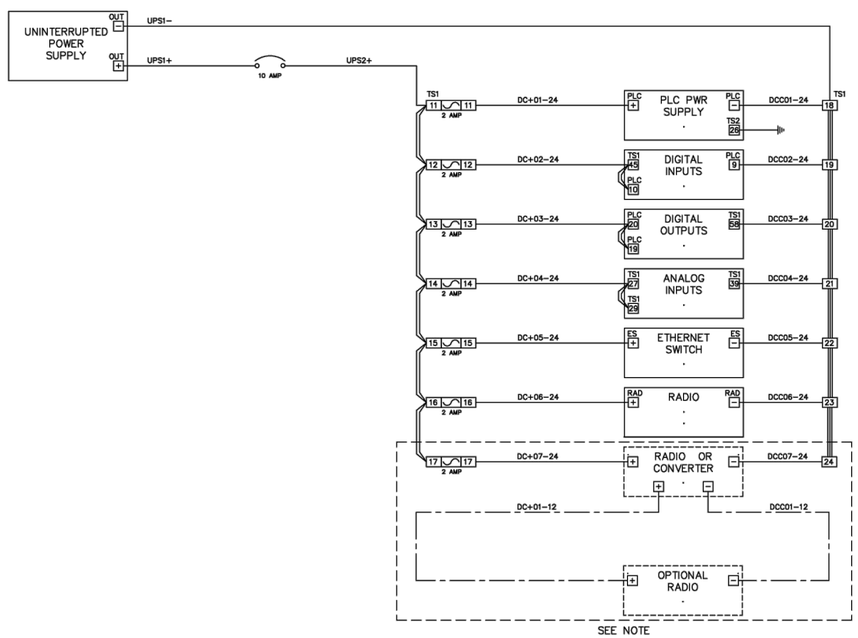

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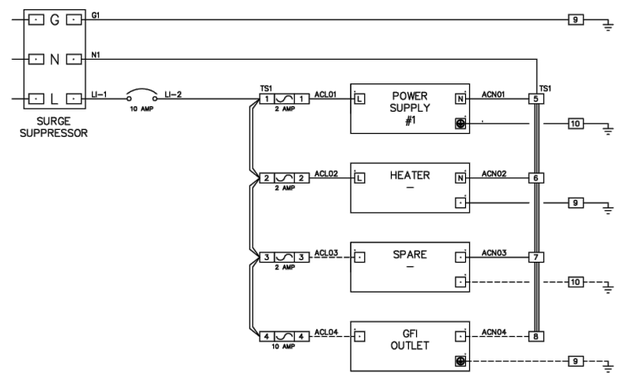
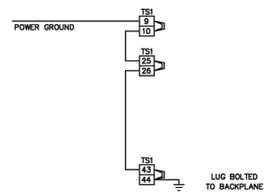


GRND



NOTE: SEE OPTIONS BELOW IF ADDITIONAL RADIO IS REQUIRED, IMPLEMENT ONE OF THE TWO OPTIONS BELOW. OTHERWISE, THIS AREA CAN BE LEFT VACANT FOR ANY FUTURE POWER REQUIREMENTS:

OPTION #1; WHEN INSTALLING A 24 VDC RADIO, WIRE RADIO DIRECTLY TO TERMINALS 17 & 24 ON TS1.
OPTION #2; WHEN INSTALLING A 12–13.8 VDC RADIO, INSTALL DC/DC CONVERTER POWERED BY TERMINALS 17 & 24 ON TS1, THEN WIRE RADIO DIRECTLY TO THE DC/DC CONVERTER.

LEGEND

Field Terminations ----------

Panel Wiring ——————

NO.	DATE	DESCRIPTION	BY
01	3/19	DWG UPDATES	NTUA

NAVAJO TRIBAL UTILITY AUTHORITY

SCALE:	REVISIONS	BY	DATE
DATE:			
DRN. CKD.			
APVD.			

TITLE: AC TANK CONTROL PANEL
POWER DISTRIBUTION

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SHEET 4 OF 6

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NTUA DIAGRAM
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BEACON BISTI N9 - REACH 10.1
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THOMAS E. RAMSEY — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 11/4/21

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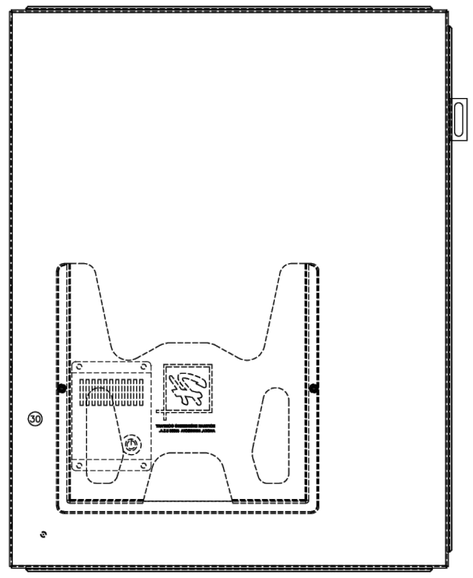

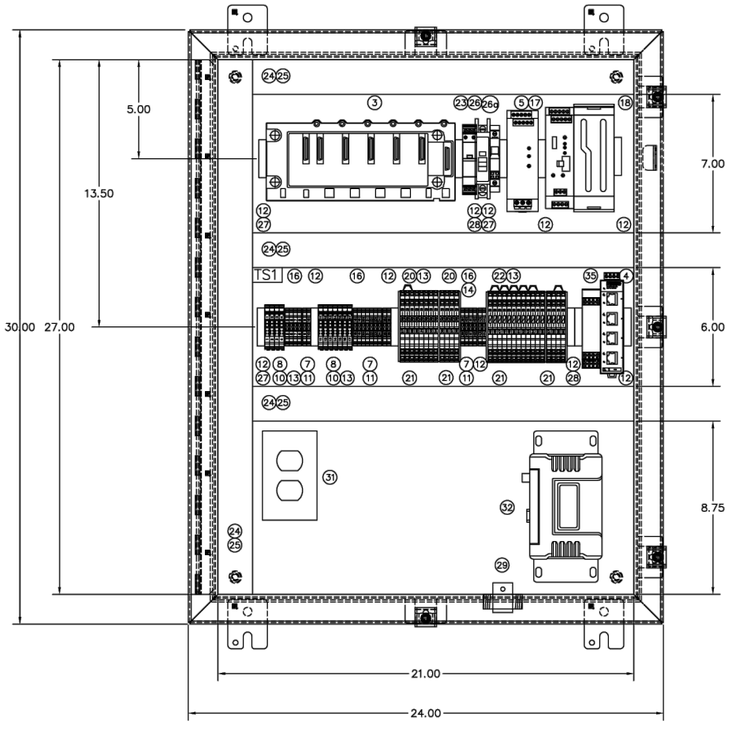

BILL OF MATERIALS

ITEM	QTY	PART NO.	DESCRIPTION	MFG
1	1	A30H24DLP	SINGLE-DOOR TYPE 4 ENCLOSURE	HOFFMAN
2	1	A30P24	BACKPLANE	HOFFMAN
3*	.	M340	MODICON M340 BOM	SCHNEIDER ELECTRIC
3a	1	BMXXBM0400	4-SLOT RACK MODULE	SCHNEIDER ELECTRIC
3b	1	BMXCPS3020	POWER SUPPLY MODULE	SCHNEIDER ELECTRIC
3c	1	BMXP342020	CPU PROCESSOR MODULE	SCHNEIDER ELECTRIC
3d	1	BMXDDM16025	DIGITAL INPUT/OUTPUT MODULE	SCHNEIDER ELECTRIC
3e	1	BMXAMM0600	ANALOG INPUT/OUTPUT MODULE	SCHNEIDER ELECTRIC
3f	2	BMXFTB2010	REMOVABLE CONNECTION	SCHNEIDER
3g*	1	BMXNOM0200	BLOCK - SCREW CLAMP SERIAL LINK MODULE	ELECTRIC SCHNEIDER ELECTRIC
4	1	FL SWITCH SFN 5TX	INDUSTRIAL ETHERNET SWITCH	PHOENIX CONTACT
5	1	QUINT4-PS/1AC/ 24DC/5	POWER SUPPLY 22.5-28.5V ADJUSTABLE	PHOENIX CONTACT
6	.	.	.	.
7	14	UT2,5	UT2,5 TERMINALS	PHOENIX CONTACT
8	10	UT4TG	FUSE TERMINAL BASE	PHOENIX CONTACT
9	7	P-FU5X20LED24	FUSE PLUG	PHOENIX CONTACT
10	4	P-FU5X20LA250	FUSE PLUG	PHOENIX CONTACT
11	6	UT2,5PE	GROUNDING TERMINAL	PHOENIX CONTACT
12	15	E/NS35N	END CLAMP	PHOENIX CONTACT
13	3	FBS 20-6 BU #3032208	FIXED BRIDGE	PHOENIX CONTACT
14	3	FBS 20-5 BU #3036929	INSERTION BRIDGE	PHOENIX CONTACT
15	8	D-UT2,5/10	END COVER	PHOENIX CONTACT
16	4	ATP-UT	PARTITION PLATES	PHOENIX CONTACT
17	2	QUINT4-UPS/24DC /24DC/10	UNINTERRUPTIBLE POWER SUPPLY	PHOENIX CONTACT
18	2	UPS-BAT/VRLA/ 24DC/1.3AH	ENERGY STORAGE	PHOENIX CONTACT
19	.	.	.	PHOENIX CONTACT
20	12	TTC-6-TVSD-C-24DC-UT-I	SURGE PROTECTION #2906831	PHOENIX CONTACT
21	6	TTC-6-LCP #2908729	END COVER	PHOENIX CONTACT
22	16	TTC-6-MOV-C-24DC-UT-I	SURGE PROTECTION # 2906837	PHOENIX CONTACT
23	1	PLT-SEC-T3-120 -FM #2905228	TYPE 3 SURGE PROTECTION DEVICE	PHOENIX CONTACT
24	AN	F2X4LG6	TYPE F NARROW SLOT WIRING DUCT	PANDUIT
25	AN	C2LG6	WRING DUCT COVER	PANDUIT
26	1	TMC 61C 10A #0902072	CIRCUIT BREAKER	PHOENIX CONTACT
26a	1	UT6-TMCM 10A #0916610	CIRCUIT BREAKER	PHOENIX CONTACT
27	AN	1492DR6	EXTENDED DIN RAIL	ALLEN BRADLEY
28	AN	1492-DR5	DIN RAIL	ALLEN BRADLEY
29	1	IS-50NX-C2	LIGHTNING ARRESTER	POLYPHASER
30	1	D-AH1001A	HEATER 100W 115V .9A	HOFFMAN
31	1	DRUBGFI15	DIN RAIL UTILITY BOX	HUBBELL
32	1	ORBIT OR TRANSNET	902 - 928 MHz RADIO SPREAD SPECTRUM	GEMDS
33	1	CAT6	CABLE - PLC TO HMI	BELDEN
34*	1	.	CABLE - PLC TO MODEM (TO LENGTH)	.
35*	1	MINI-PS-12-24 DC/5-15/2	DC/DC CONVERTER	PHOENIX CONTACT

AN - As needed
3* - BOM - To include items 3a-3g.
3g* - Include in the event item 35* is required.
34* - Include (1) additional in the event item 33* is required.
35* - Include in the event a 13.8 VDC radio is required.

NO.	DATE	DESCRIPTION	BY
01	3/19	DWG UPDATES	NTUA

NAVAJO TRIBAL UTILITY AUTHORITY

SCALE: NONE

REVISIONS	BY	DATE
.	.	.
.	.	.

DATE: .
DRN: . CKD: .
APVD: .

TITLE: AC TANK CONTROL PANEL
BACKPLANE

W.O.#

SHEET 5 OF 6

THE RESPONSE GROUP, INC.
An Electrical Engineering Corporation
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Revision	Date	Description	By	Chk'd

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www.soudermiller.com

Client: The Navajo Nation
Location: Coyote Canyon, NM

NTUA DIAGRAM
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.1
McKINLEY COUNTY, NEW MEXICO

THOMAS F. BARKLEY
NEW MEXICO
25211
PROFESSIONAL ENGINEER
11/4/21

21359

Designed	Drawn	Checked
TRG/rhp	TRG/rhp	TRG/tfr

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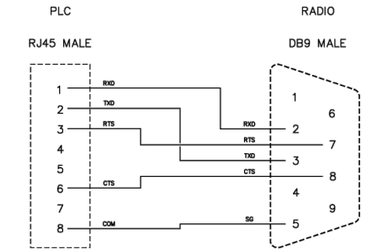
811 Know what's BELOW. CALL before you dig.

Date: 11-3-2021
Scale: Horiz:
Vert:
Project No: 6922268
Sheet: E-32



A CABLE DIAGRAM: PLC TO RADIO

NO.	DATE	DESCRIPTION	BY
01	3/19	DWG UPDATES	NTUA

NAVAJO TRIBAL UTILITY AUTHORITY

SCALE: NONE	REVISIONS	BY	DATE
DATE: -		-	-
DRN. - CKD. -		-	-
APVD. -			

TITLE: AC TANK CONTROL PANEL CABLE PINOUT

W.O.#

SHEET 6 OF 6

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PANEL SCHEDULE - NEW PANEL "ST"

LOCATION: Surge Tank Building | VOLTAGE: 120/240V-1P-3W | AMPACITY: 100A | Main: 100A/2P MCB
FED FROM: 100 Amp Fusible Disconnect | ENCLOSURE: NEMA 3R | MOUNTING: SURFACE | AIC: 10,000

BKR SIZE	DESCRIPTION	DEMAND CODE	LOAD (VA)	Ckt #	LOAD (VA) PHASE A	LOAD (VA) PHASE B	Ckt #	LOAD (VA)	DEMAND CODE	DESCRIPTION	BKR SIZE
20A-1P	LIGHTING	LTG	186	1	386		2	200	EQP	PLC/RTU CABINET	20A-1P
20A-1P	RECEPTACLES	REC	720	3		920	4	200	EQP	SOLENOID PANEL	20A-1P
20A-1P	RECEPTACLES	REC	540	5	1370		6	830	MECH	EXHAUST FAN	20A-1P
30A-2P	UNIT HEATER	LMECH	2066	7		2166	8	100	EQP	SMOKE DETECTORS	20A-1P
		LMECH	2066	9	2066		10			SPARE	20A-1P
30A-2P	UNIT HEATER	MECH	2066	11		2066	12			SPARE	20A-1P
		MECH	2066	13	2066		14			SPARE	20A-1P
20A-1P	SPARE			15			16			SPARE	20A-1P
20A-1P	SPARE			17			18			SPARE	20A-1P
20A-1P	SPARE			19			20			SPARE	20A-1P
20A-1P	SPARE			21			22			SPARE	20A-1P
20A-1P	SPARE			23			24			SPARE	20A-1P
1P	SPACE ONLY			25			26			SPACE ONLY	1P
1P	SPACE ONLY			27			28			SPACE ONLY	1P
1P	SPACE ONLY			29			30			SPACE ONLY	1P

Total Phase Loads (VA): 5,888 | 5,152
Total Phase Loads (Amps): 49.1 | 42.9
Total Connected Loads (kVA): 11.0

Notes:
1. New Panelboard
2. 30-Circuit, Lockable Enclosure
3. Copper Neutral and Ground Bus Bars
4. Door-in-Door Enclosure.

LOAD CALCULATIONS - NEW PANEL "ST"

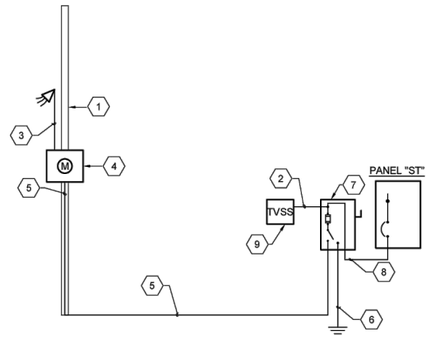
		Connected (kVA) by Type:		Estimated Demand (kVA) by Type:		
LTG	Lighting	0.2	Lighting at 125% (kVA)	0.2	Total Estimated Demand (kVA)	12.1
REC	Receptacles	1.3	Receptacles:	1.3	Amps at 120/240V-1 Phase (Amps)	50.5
			10kVA at 100% (kVA)	1.3	Panel Ampacity (Rating)	100
			Rest at 50% (kVA)	0.0		
EQP	Equipment	0.5	Eqp at 100% (kVA)	0.5	Spare Capacity	49.5%
LMECH	Largest Mech	4.1	Largest at 125% (kVA)	5.2		
MECH	Mechanical	5.0	Rest at 100% (kVA)	5.0		

Control Wiring Schedule - Surge Tank Building

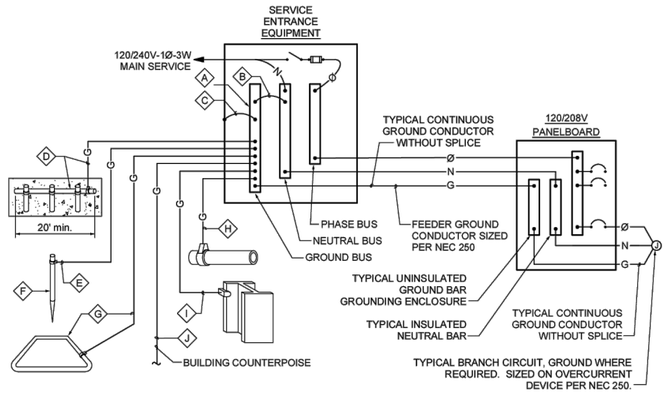
TAG #	FED FROM	TO	WIRE REQUIRMENTS
B1	Door Switch	PLC Panel	2 # 14, 1 # 14 Gnd - 1/2" Conduit
B2	Door Switch	Door Switch	2 # 14, 1 # 14 Gnd - 1/2" Conduit
B3	Smoke Detector	PLC Panel	2 # 14, 1 # 14 Gnd - 1/2" Conduit
B4	Smoke Detector	Smoke Detector	2 # 14, 1 # 14 Gnd - 1/2" Conduit
B5	Solenoid Valve	Solenoid Panel	3 # 14, 1 # 14 Gnd - 1/2" Conduit
B6	Solenoid Valve	Solenoid Panel	3 # 14, 1 # 14 Gnd - 1/2" Conduit
B7	Solenoid Panel	Solenoid Panel	3 # 14, 1 # 14 GND - 1/2" Conduit
B8	Fiber Optic Transmitter Unit	Quazite Box	2" Conduit
B9	250 OHM resistor	Pressure Transmitter	2/C #18 Twisted Pair Shielded Cable - 1/2" Conduit
B10	250 OHM resistor	PLC	2/C #18 Twisted Pair Shielded Cable - 3/4" Conduit
B11	Low Temperature Sensor	PLC	2 # 14, 1 # 14 Gnd - 1/2" Conduit
B12	Door Switch	Door Switch	2 # 14, 1 # 14 Gnd - 1/2" Conduit

DISCRETE & ANALOG I/O LIST

Site Name	I/O Name	Tag	Point	Type	Local	SCADA	Notes
Surge Tank Building							Remote I/O talks to SCADA system through Fiber Optic Cable. Relays info to and from 1
	Surge Bldg. Intrusion Man Door		I1	DI		Yes	
	Surge Bldg. Intrusion Roll Up Door		I2	DI		Yes	
	Surge Bldg. Smoke Detector		I3	DI		Yes	
	Low Pressure Alarm		I4	DI		Yes	
	Low Temperature Sensor		I5	DI		Yes	
	Pulse Modular Low Battery		I8	DI		Yes	
	Surge Bldg Intrusion North Door		I11	DI		Yes	
	Surge Tank Level		AI1	AI		Yes	
	Pressure Transmitter		AI3	AI		Yes	



POWER RISER DIAGRAM



GROUNDING SYSTEM DIAGRAM - 120/240 VOLT SYSTEM

NOT TO SCALE

GROUNDING SYSTEM GENERAL NOTES

A. THE GROUNDING ELECTRODE SYSTEM SHALL CONSIST OF ITEMS (A) (B) (C) (D) (E) (F) AND (G), WHERE APPLICABLE.

B. ITEMS (H) (I) AND (J) MUST BE BONDED TOGETHER AND TO THE GROUNDING ELECTRODE SYSTEM WHEN THEY ARE PRESENT.

C. ITEM (D) CONCRETE ENCASED ELECTRODE (UFER) SHALL HAVE UFER SUPPORT CONSISTING OF 5/8" x 10' COPPER GROUND ROD CUT INTO 2' SECTIONS AND DRIVEN FOR SUPPORT OF UFER CONDUCTOR. ONLY COPPER TO COPPER CONNECTIONS ARE ACCEPTABLE. DO NOT USE RE-BAR FOR UFER SUPPORT. (THIS IS TO AVOID THE HARMFUL EFFECTS OF DISSIMILAR METALS IN CONTACT.) A U.L. LISTED COPPER TO RE-BAR CLAMP (SUCH AS GRAVES "JONES BOND" SYSTEM) IS AN APPROVED ALTERNATIVE.

D. THIS DETAIL IS PROVIDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, ARTICLE 250, PERTAINING TO THE ``GROUNDING ELECTRODE SYSTEM".

E. ALL SPLICING SHALL BE ACCOMPLISHED VIA EXOTHERMIC WELD (CAD-WELD) ONLY.

F. ALL CONDUCTOR SIZING INDICATED ON THE GROUNDING SCHEDULE ARE FOR COPPER CONDUCTORS. ALUMINUM IS NOT PERMITTED.

G. ANY VARIANCES FROM THIS DIAGRAM AND ASSOCIATED SCHEDULE AND NOTES MUST BE REQUESTED AND APPROVED IN WRITING PRIOR TO INSTALLATION.

H. ALL INSTALLATIONS SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF N.E.C. ARTICLE 250 (ALL SUBPARAGRAPHS) AND ALL STATE AND LOCAL REQUIREMENTS.

I. THE GROUNDING SYSTEM SHALL PROVIDE LESS THAN (4) FOUR OHMS RESISTANCE TO GROUND AT THE SERVICE CONNECTION. THE RESULTS SHALL BE VERIFIED BY AN INDEPENDENT TESTING AGENCY VIA GROUND TEST (FALL-OF-POTENTIAL) AND SUBMITTED TO ELECTRICAL ENGINEER UPON COMPLETION OF PROJECT.

GROUNDING SCHEDULE

	(A) FACTORY INSTALLED GROUND BUS BAR	(B) INTEGRATED BUS BAR MAIN BOND JUMPER	(C) INTEGRATED BUS BAR CASE BOND JUMPER	(D) CONCRETE ENCASED ELECTRODE (UFER)	(E) GROUNDING ELECTRODE CONDUCTOR TO ROD, PIPE OR PLATE	(F) CU or CU-CLAD STEEL GROUND ROD	(G) COPPER GROUND RING CONDUCTOR	(H) METALLIC PIPING BONDING CONDUCTOR	(I) BUILDING STEEL BONDING CONDUCTOR	(J) BUILDING COUNTER POISE
CODE REFERENCE AMPACITY		N.E.C. 250.102	N.E.C. 250.102	N.E.C. 250.50(c) 250.66(b)	N.E.C. 250.52(c) 250.52(d) 250.66(a)	N.E.C. 250.52(c)(2)	N.E.C. 250.50(d) 250.66(c)	N.E.C. 250.50(a) 250.66	N.E.C. 250.50(b) 250.66	N.E.C. 250.66
100 AMP		#4	#4	#4	#6	5/8"x8'	#2	#4	#4	#2/0
225 AMP		#2	#2	#4	#6	5/8"x8'	#2	#2	#2	#2

SHALL BE SIZED TO ACCOMMODATE ALL GROUND WIRE LUGS AS INDICATED ON GROUNDING DIAGRAM AND/OR REFERENCED ELSEWHERE ON PLANS OR SPECIFICATIONS

KEYED NOTES

1. PROVIDE AND INSTALL A 25'-0" SOUTHERN PINE CLASS 4 WOOD POLE FOR THE INSTALLATION OF RISER, METER AND DISCONNECT.
2. 4#8 THWN Cu IN 1" CONDUIT BETWEEN TVSS AND PANEL.
3. PROVIDE A 2" RGS CONDUIT ON POLE RISER WITH CONDUCTORS. COORDINATE INSTALLATION WITH UTILITY COMPANY PRIOR TO PROCEEDING WITH INSTALLATION OF CONDUITS
4. PROVIDE AND INSTALL A 100 AMP 120/240 VOLT METER SOCKET PER THE LOCAL UTILITY COMPANY REQUIREMENT FACING FENCE.
5. 3 #2 CONDUCTORS IN 2" CONDUIT
6. REFER TO "GROUNDING SYSTEM DIAGRAM - 120/240 VOLT SYSTEM" ON THIS SHEET FOR ADDITIONAL INFORMATION.
7. PROVIDE AND INSTALL A FUSIBLE DISCONNECT SWITCH, 100 AMPS, 250 VOLTS, 2 POLE, SOLID NEUTRAL AND GROUND LUG, NEMA 3R ENCLOSURE. FUSE AT 100 AMPS. PROVIDE A MINIMUM WORKING CLEARANCE OF 3'-0" WIDE IN FRONT OF DISCONNECT SWITCH PER NEC.
8. 3#2 THWN Cu AND 1#8 THWN Cu GROUND IN 1 1/4" CONDUIT.
9. PROVIDE AND INSTALL A TRANSIENT VOLTAGE SURGE SUPPRESSION DEVICE. THE TVSS SHALL BE MANUFACTURED BY RAYCAP #120-2S-M3-3-06-A-H OR APPROVED EQUAL, NEMA 3R ENCLOSURE.

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1	10-19-2022	CHANGES	RHP	TFR

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McKINLEY COUNTY, NEW MEXICO

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