NAVAJO GALLUP WATER SUPPLY PROJECT

BEACON BISTI N9

REACH 10.3

NGWSP BBN9 PUMPING PLANT 13 TO NAHODISHGISH TANK SITE

August 2025

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.

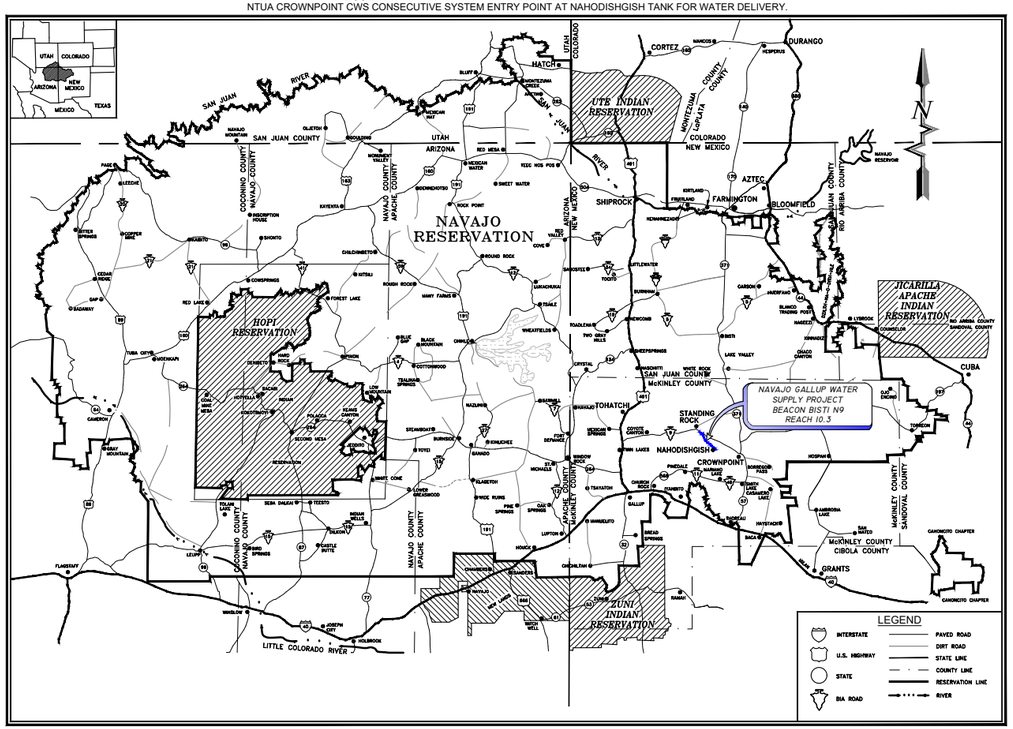
NGWSP BBN9 REACH 10.3 IS THE THIRD SEGMENT OF THE MAIN BBN9 LATERAL AND IS COMPRISED OF APPROXIMATELY 7.4 MILES OF 16" PVC WATERLINE, A PUMP STATION, A SURGE TANK, TWO (2) STORAGE TANKS, A CHLORINATOR, CONNECTION TO THE EXISTING NTUA NAHODISHGISH CWS AND ASSOCIATED APPURTENANCES. REACH 10.3 BEGINS AT THE SECOND PUMPING PLANT SITE OF THE BBN9 PROJECT, PUMPING PLANT 13 (PP13) AND PUMPS PROJECT WATER TO THE NEW REGULATING TANKS AT THE NAHODISHGISH TANK SITE.

THE PP13 SITE INCLUDES THE PP13 REGULATING TANKS (TO BE CONSTRUCTED AS PART OF REACH 10.2), PP13 BOOSTER STATION AND SURGE TANK BUILDING. WHEN THE NTUA NAHODISHGISH REGULATING TANKS WATER SURFACE DROPS TO 80% CAPACITY (MONITORED BY A PRESSURE TRANSDUCER), PP13 WILL TURN ON TO FILL THE TANK AT THE DESIGN FLOWRATE OF 1,346 GPM. THE SURGE TANK IS LOCATED ON THE DISCHARGE SIDE OF THE PUMP STATION (ASSISTS IN MITIGATING TRANSIENT PRESSURES FROM OPERATION OF THE TRANSMISSION SYSTEM).

THE NAHODISHGISH TANK SITE IS COMPRISED OF TWO (2) NEW REGULATING TANKS, A CHLORINATOR AND THE CONNECTION TO THE EXISTING NTUA CWS SYSTEM AT THE NAHODISHGISH DISTRIBUTION TANK. THE TWO (2) REGULATING TANKS PROVIDE STORAGE FOR PP14 ON REACH 10.3.1 AND THE NTUA CWS. A GAS CHLORINATOR IS LOCATED BETWEEN THE REGULATING TANKS AND THE DISTRIBUTION TANK AND INCLUDES AN ELECTRONIC CONTROL VALVE THAT PROVIDES ALTITUDE AND FLOW CONTROL FUNCTION. WHEN THE DISTRIBUTION TANK WATER SURFACE DROPS TO 80% CAPACITY (MONITORED BY A PRESSURE TRANSDUCER), THE ELECTRONIC CONTROL VALVE WILL MODULATE TO FILL THE DISTRIBUTION TANK AT THE DESIGN FLOWRATE. WHEN THE DISTRIBUTION TANK WATER SURFACE REACHES 100% FULL (MONITORED BY A PRESSURE TRANSDUCER), THE ELECTRONIC CONTROL VALVE WILL MODULATE CLOSED AND THE CHLORINATOR WILL CEASE TO DOSE CHLORINE.

PROJECT DESCRIPTION

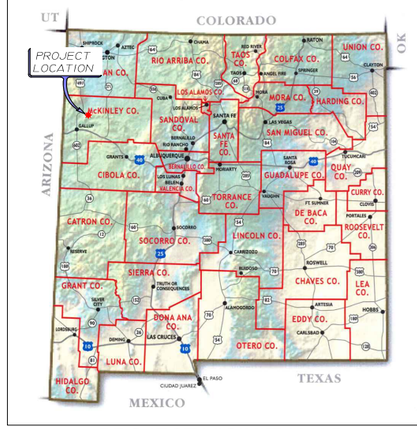
REACH 10.3 IS COMPRISED OF THE FOLLOWING FEATURES:
APPROXIMATELY 8,225 FEET OF 16-INCH PVC DR 14 TRANSMISSION PIPELINE AND APPURTENANCES;
APPROXIMATELY 5,466 FEET OF 16-INCH PVC DR 18 TRANSMISSION PIPELINE AND APPURTENANCES;
APPROXIMATELY 25,356 FEET OF 16-INCH PVC DR 21 TRANSMISSION PIPELINE AND APPURTENANCES;
APPROXIMATELY 420 OF 12-INCH PVC DR 18 REACH 10.3.1 CONNECTION PIPELINE AND APPURTENANCES
TWO (2) 75,000 GALLON REGULATING WATER STORAGE TANKS AND APPURTENANCES;
PUMPING PLANT NO. 13 INCLUDING BUILDING AND APPURTENANCES;
ONE (1) TRANSMISSION PIPELINE SURGE TANK INCLUDING BUILDING AND APPURTENANCES;
ONE (1) CHLORINATION STATION INCLUDING BUILDING AND APPURTENANCES.
NTUA CROWNPOINT CWS CONSECUTIVE SYSTEM ENTRY POINT AT NAHODISHGISH TANK FOR WATER DELIVERY.



NAVAJO RESERVATION
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PROJECT VICINITY MAP

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Revision	Date	Description	By	Chkd

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Location: Tse'iTah & Nahodishgish, NM

COVER SHEET & DRAWING INDEX
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

Designed	Drawn	Checked
CDB	WH/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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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) OR FUSIBLE PVC SWEEP(S) CALLED OUT. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE SPECIFIED FITTINGS AT EACH LOCATION. IN ADDITION TO THE SPECIFIED FITTINGS(S), USE JOINT DEFLECTION TO ACHIEVE THE SPECIFIED HORIZONTAL ANGLE. IF A LOCATION IS SHOWN WITHOUT SPECIFYING A FITTING, USE JOINT DEFLECTION TO ACHIEVE THE HORIZONTAL ANGLE.

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:

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NAVAJO TRIBAL UTILITY AUTHORITY (NTUA):

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UTILITY CONTACT INFORMATION:

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FRONTIER COMMUNICATIONS: 800-921-8101

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
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
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
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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Client: The Navajo Nation
Location: Tse'if'ahi & Nahodishgish, NM

GENERAL NOTES & LEGEND
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TORY J. TADANO — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 9-29-25

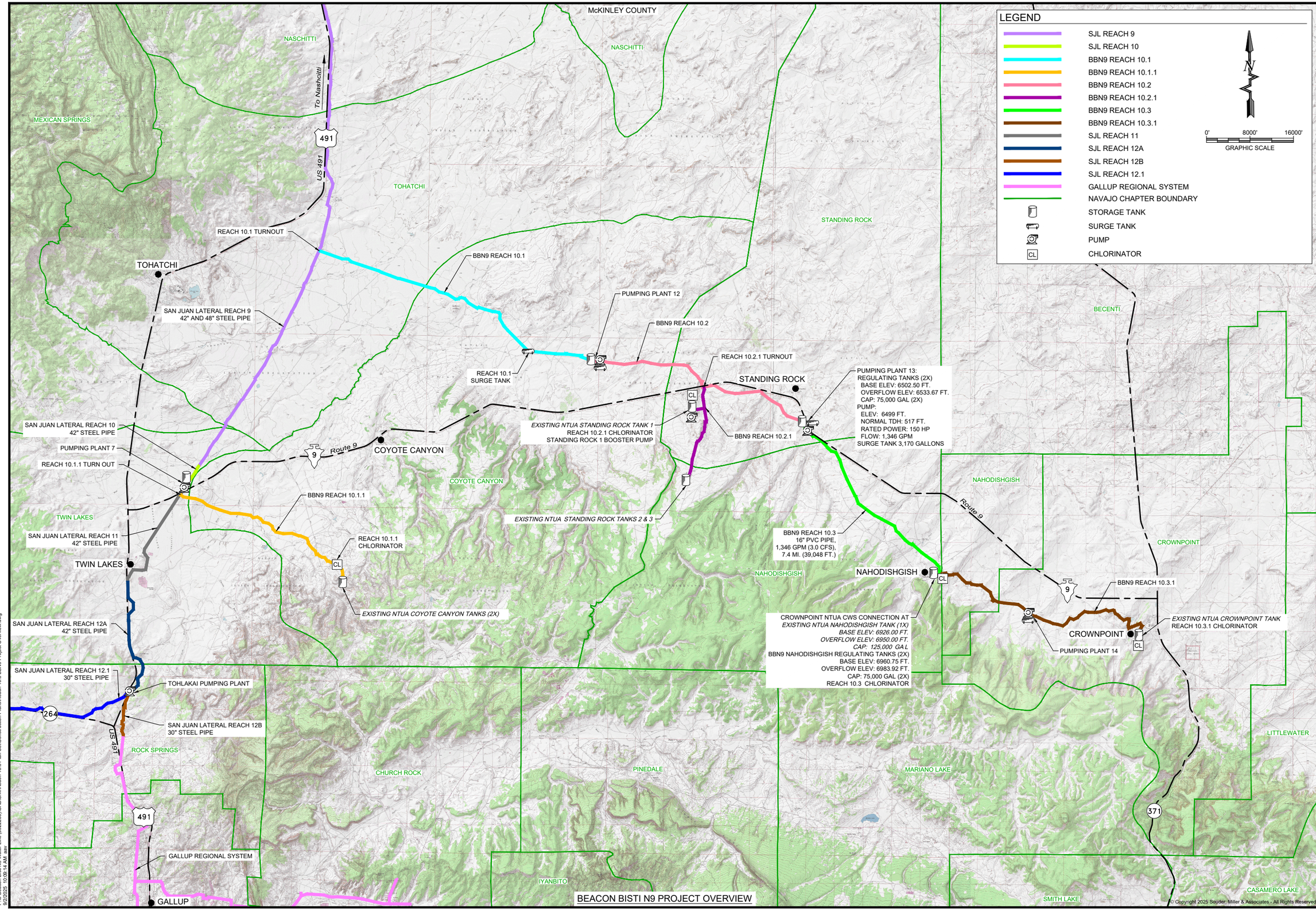
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Date: September 2025
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Project No: 6922268
Sheet: G-2

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BEACON BISTI N9 PROJECT OVERVIEW
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TOBY TADANO
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
9-29-25

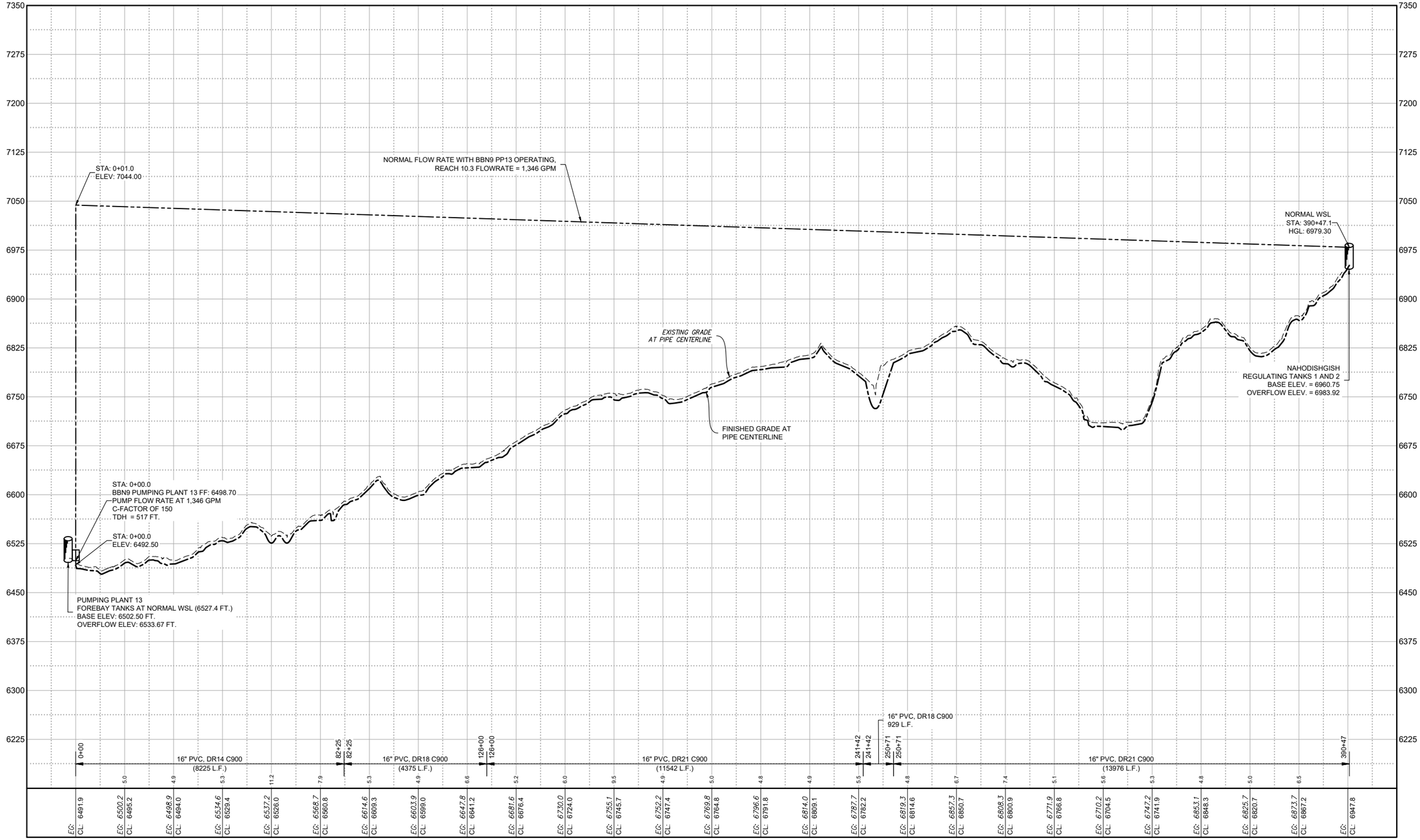
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0' 1500' 3000'

GRAPHIC SCALE

BBN9 REACH 10.3 HYDRAULIC PROFILE

16" WATERLINE

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HYDRAULIC PROFILE
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TROY T. A. DAWSON
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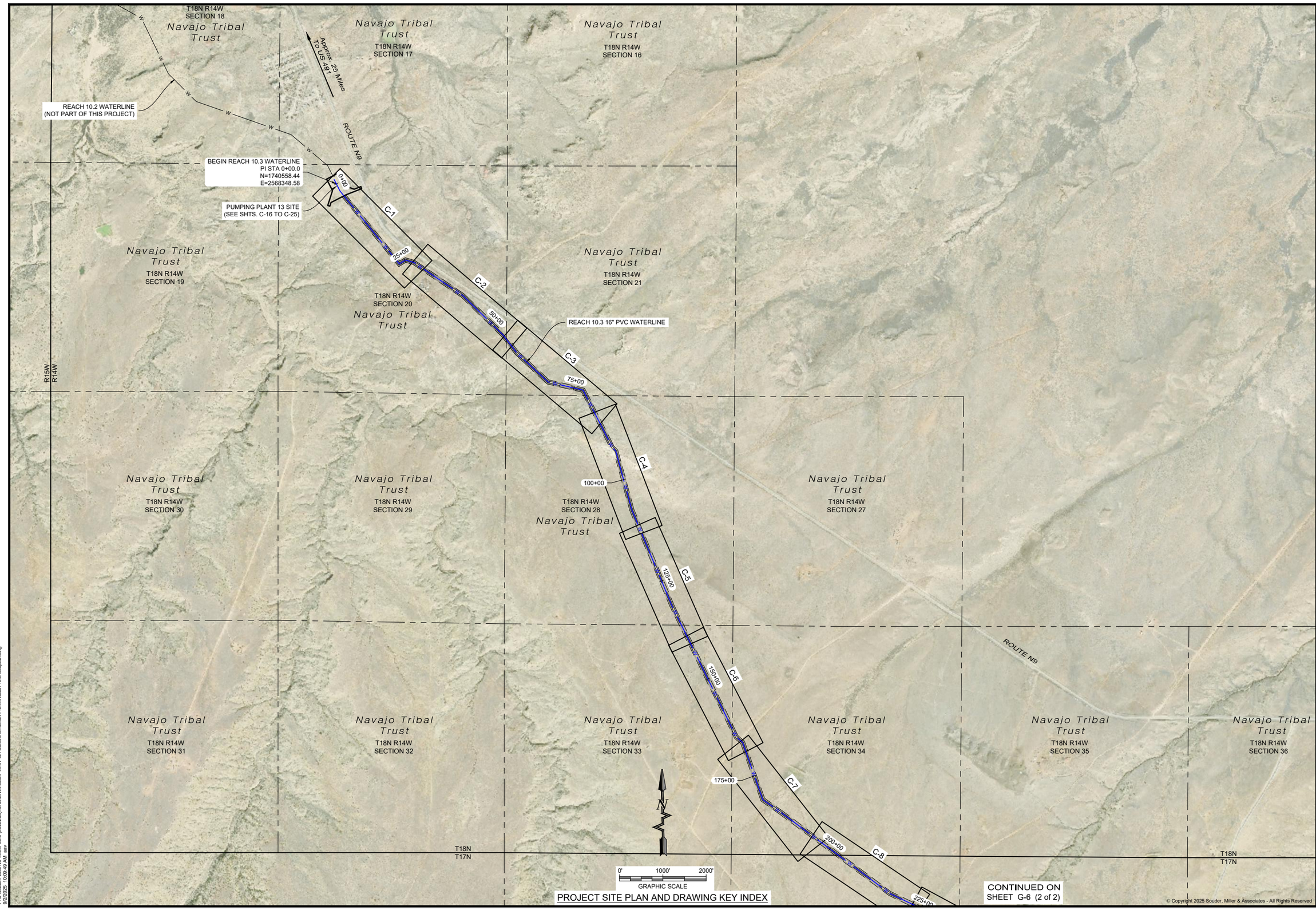
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PROJECT SITE PLAN AND DRAWING KEY INDEX

CONTINUED ON
SHEET G-6 (2 of 2)

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SITE PLAN AND DRAWING KEY INDEX (1 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TROY T. TADANO
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
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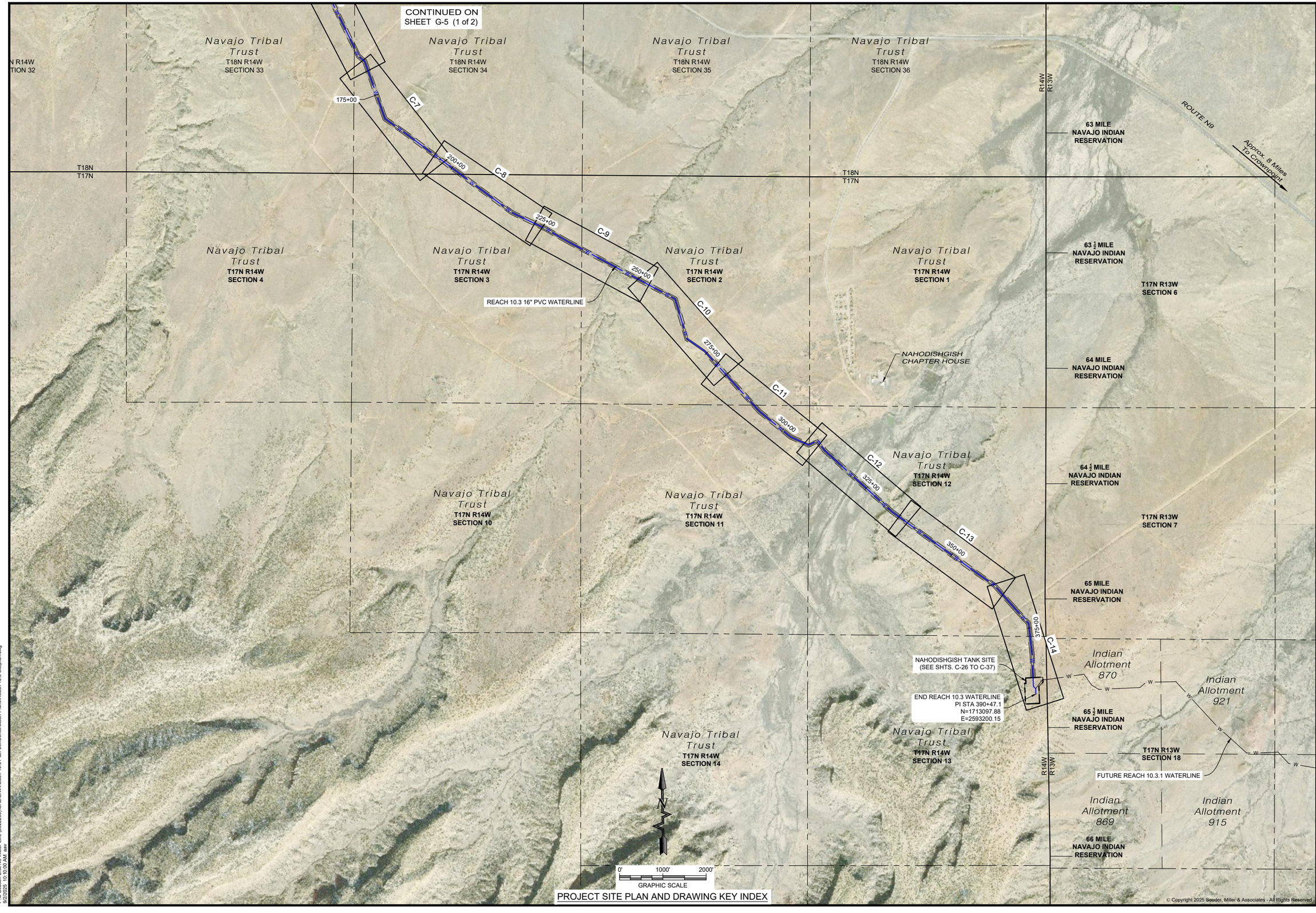
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PROJECT SITE PLAN AND DRAWING KEY INDEX

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Location: Tselʼiʼahi & Nahodishgish, NM

SITE PLAN AND DRAWING KEY INDEX (2 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TADAYNO LEE
NEW MEXICO
21073
12-29-25
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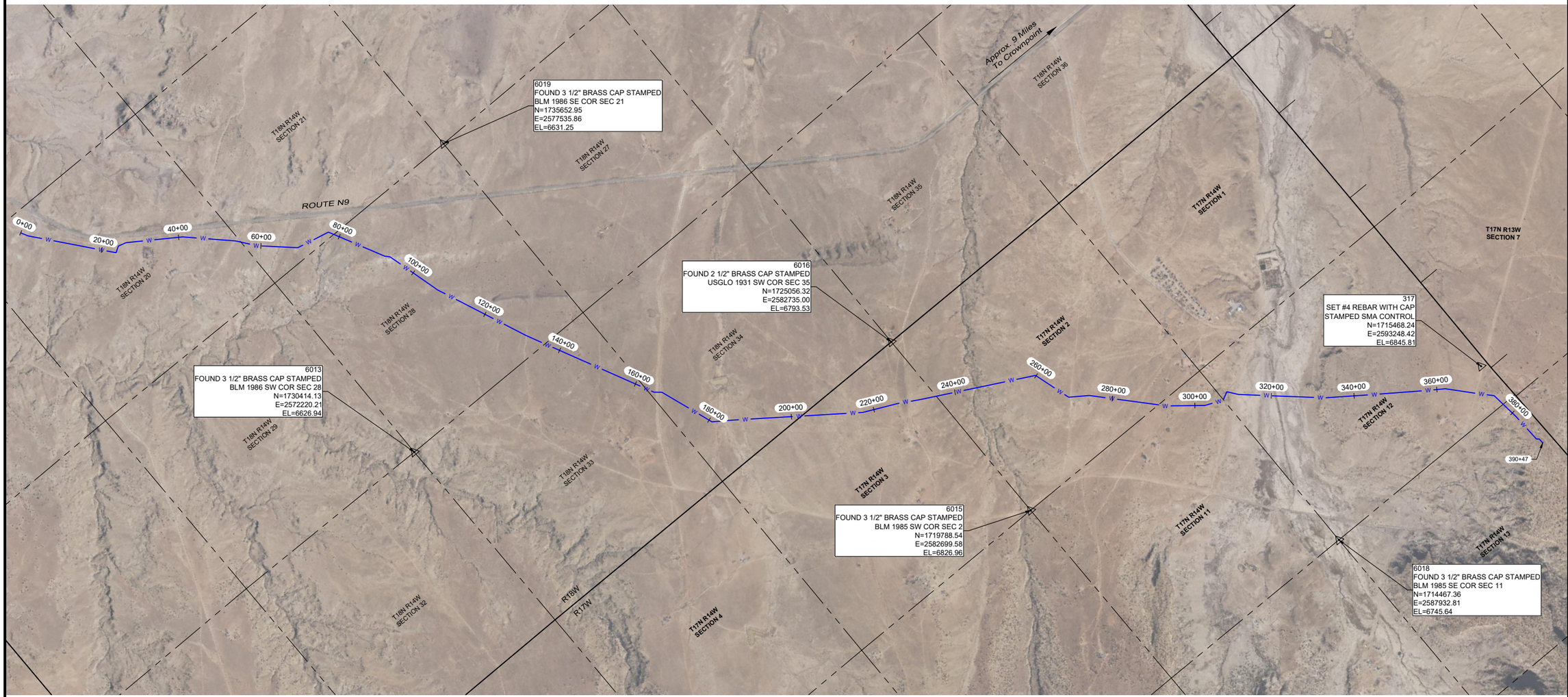
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SURVEY CONTROL SHEET
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9-REACH 10.3
MCKINLEY COUNTY, NEW MEXICO



BASIS OF BEARINGS:
REFERENCE FRAME: NAD 1983 (2011) (EPOCH 2010.000)
U.S. STATE PLANE NEW MEXICO WEST ZONE
ALL DISTANCES ARE GRID DISTANCES

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

METHODS:
ORIGINAL CONTROL ON THIS PROJECT WAS OBSERVED AND SET BETWEEN MAY 8, 2019 AND NOVEMBER 11, 2019 WITH FINAL ADJUSTMENTS MADE BY NOVEMBER 20, 2019. ALL POINTS WERE OBSERVED USING TRIMBLE S5 TOTAL STATION AND TRIMBLE R8 GPS RECEIVERS UTILIZING RTK GPS METHODS.

Point Table

Point #	Elevation	Northing	Easting	Description
317	6845.81	1715468.24	2593248.42	SET #4 REBAR WITH CAP STAMPED SMA CONTROL
6013	6626.94	1730414.13	2572220.21	FOUND 3 1/2" BRASS CAP STAMPED BLM 1986 SW COR SEC 28
6015	6826.96	1719788.54	2582699.58	FOUND 3 1/2" BRASS CAP STAMPED BLM 1985 SW COR SEC 2
6016	6793.53	1725056.32	2582735.00	FOUND 2 1/2" BRASS CAP STAMPED USGLO 1931 SW COR SEC 35
6018	6745.64	1714467.36	2587932.81	FOUND 3 1/2" BRASS CAP STAMPED BLM 1985 SE COR SEC 11
6019	6631.25	1735652.95	2577535.86	FOUND 3 1/2" BRASS CAP STAMPED BLM 1986 SE COR SEC 21

0' 1250' 2500'
GRAPHIC SCALE

SURVEY CONTROL PLAN

I, WILLIAM F. BREWSTER, NEW MEXICO PROFESSIONAL SURVEYOR NO. 10855, 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.

WILLIAM F. BREWSTER, N.M.P.S. 10855

STATE OF NEW MEXICO 10855 WILLIAM F. BREWSTER REGISTERED PROFESSIONAL SURVEYOR

DATE 5/06/2022

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Location: Tse'iTahi & Nahodishgish, NM

NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
SURVEY CONTROL
McKINLEY COUNTY, NEW MEXICO

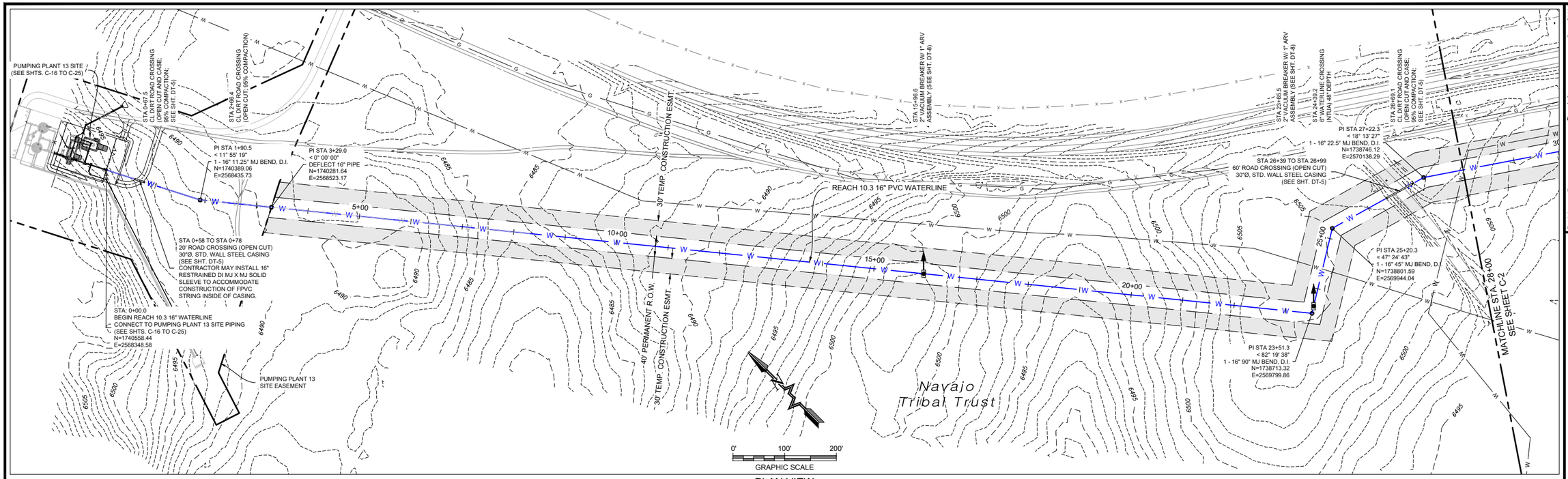
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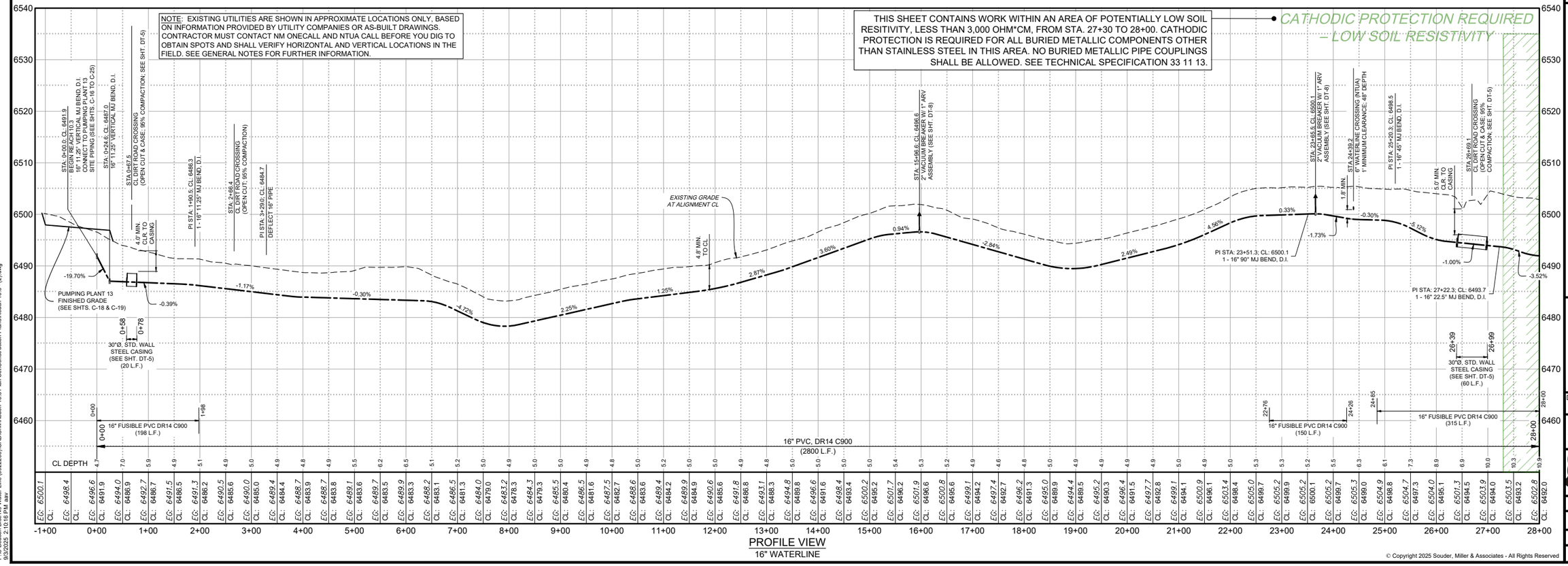
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PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Tse'iʼahi & Nahodishgish, NM

PLAN AND PROFILE STA 0+00 To STA 28+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

TROY T. ADAMS
NEW MEXICO
21073
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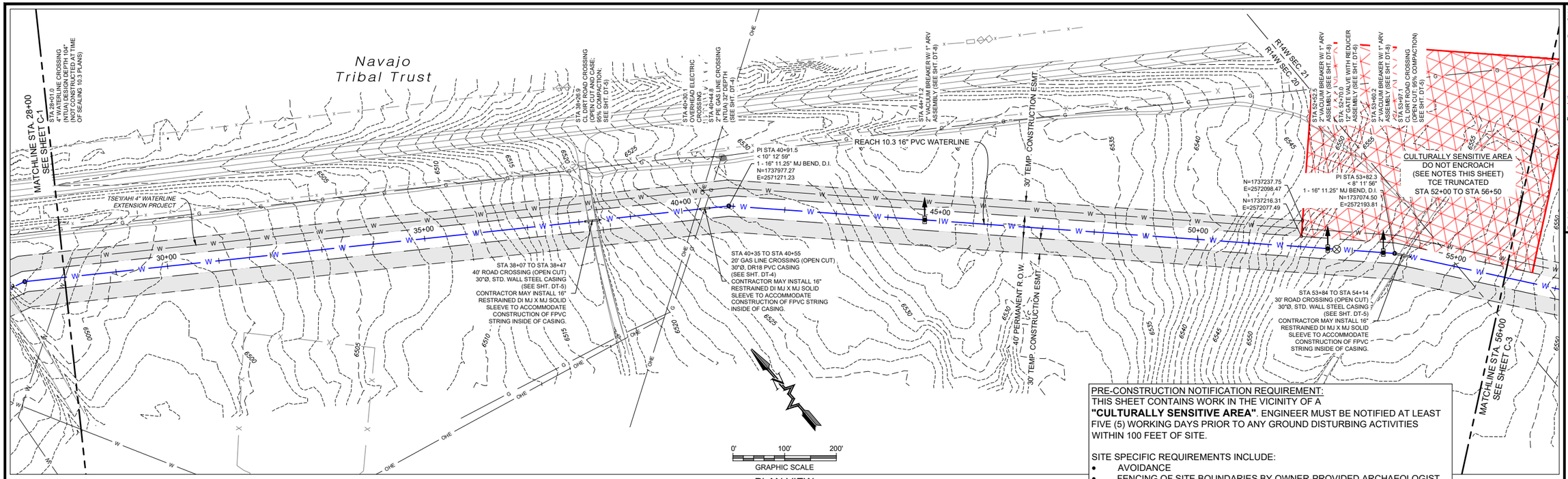
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Project No: 6922268
Sheet: C-1

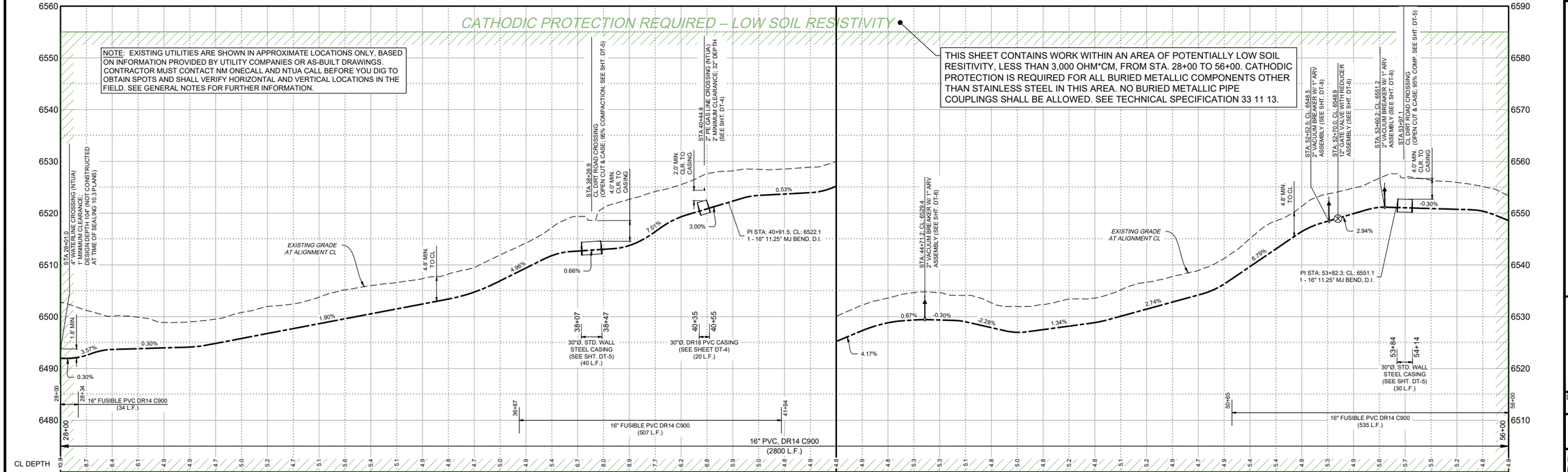
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PLAN VIEW
16" WATERLINE

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
- FENCING OF SITE BOUNDARIES BY OWNER-PROVIDED ARCHAEOLOGIST



PROFILE VIEW
16" WATERLINE

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By	Chk'd	Description	Date	Revision

Client: The Navajo Nation
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PLAN AND PROFILE STA 28+00 To STA 56+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20 AND 21, T. 18 N., R. 14 W.

NEW MEXICO 21073 REGISTERED PROFESSIONAL ENGINEER TROY T. DANN CO
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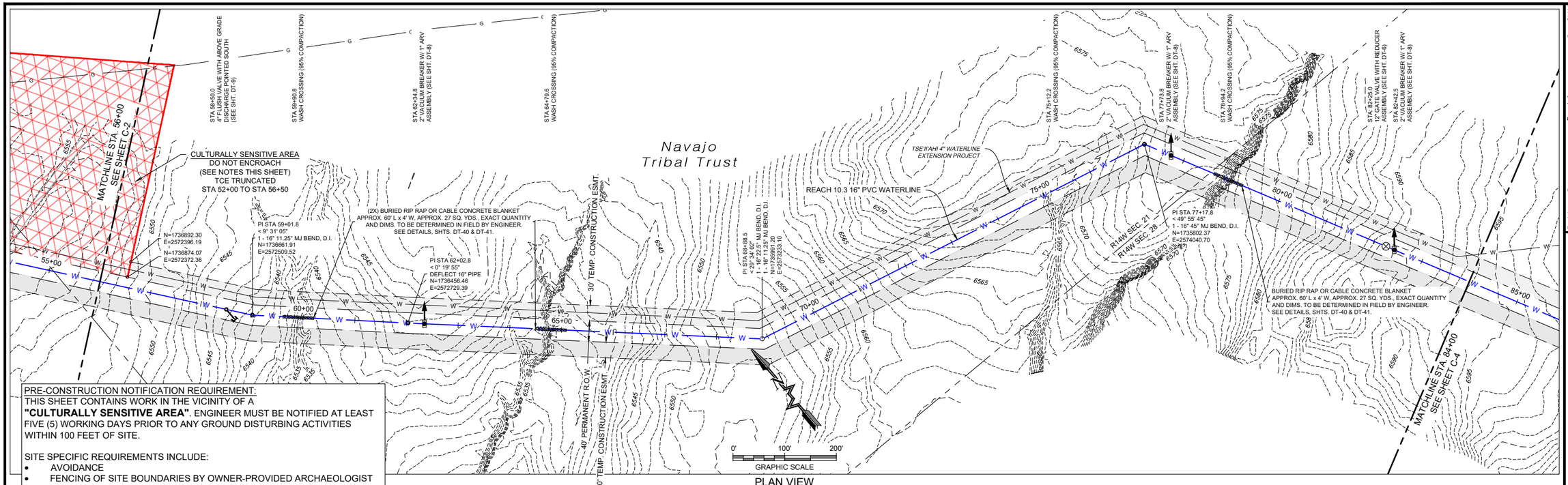
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PLAN VIEW
16" WATERLINE

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PROFILE VIEW
16" WATERLINE

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PLAN AND PROFILE STA 56+00 To STA 84+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 21 AND 28, T. 18 N., R. 14 W.

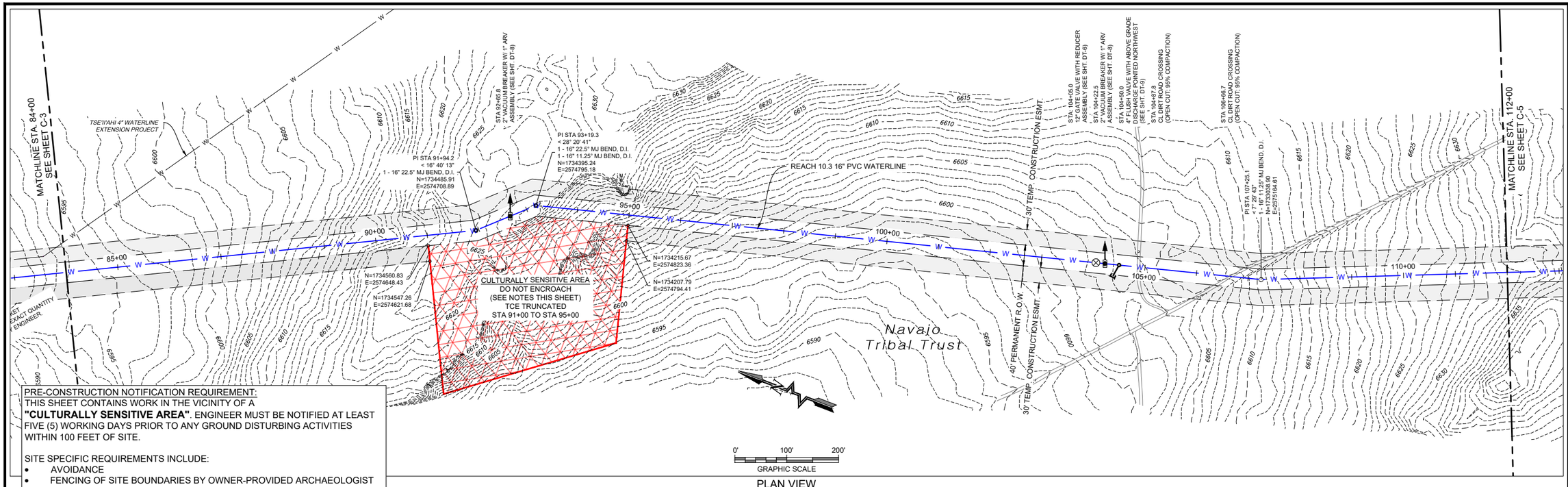
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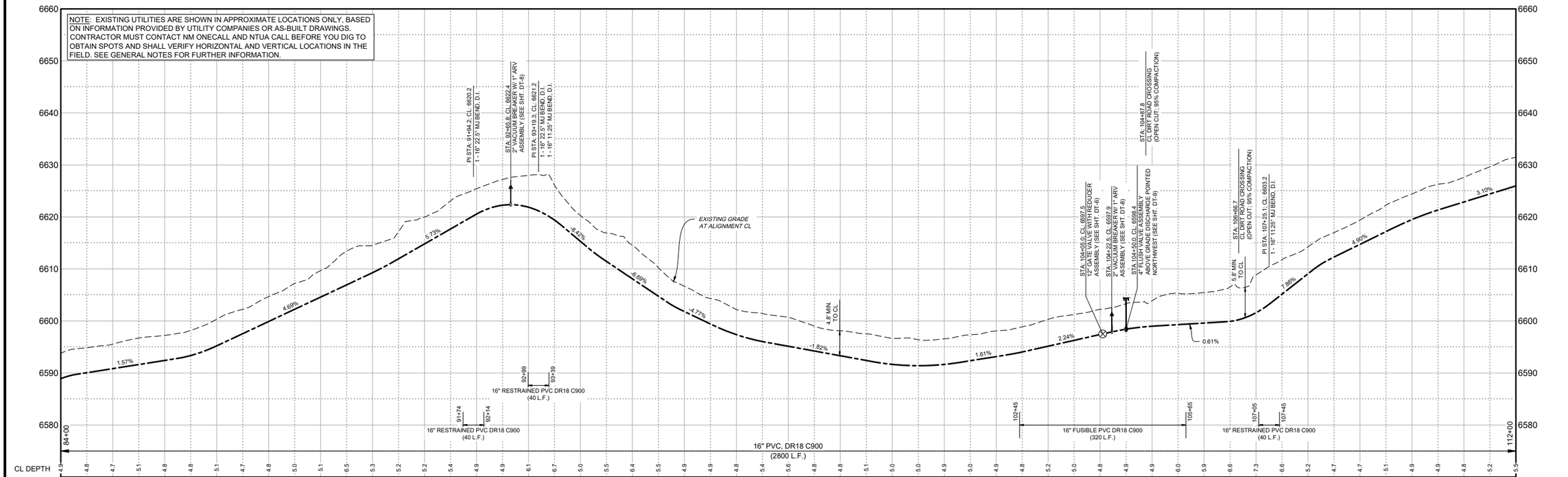


PLAN VIEW
16" WATERLINE

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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.



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CL DEPTH

PROFILE VIEW
16" WATERLINE

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Client: The Navajo Nation Location: Tse'iiʼahi & Nahodishgish, NM

PLAN AND PROFILE STA 84+00 To STA 112+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 28, T. 18 N., R. 14 W.

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

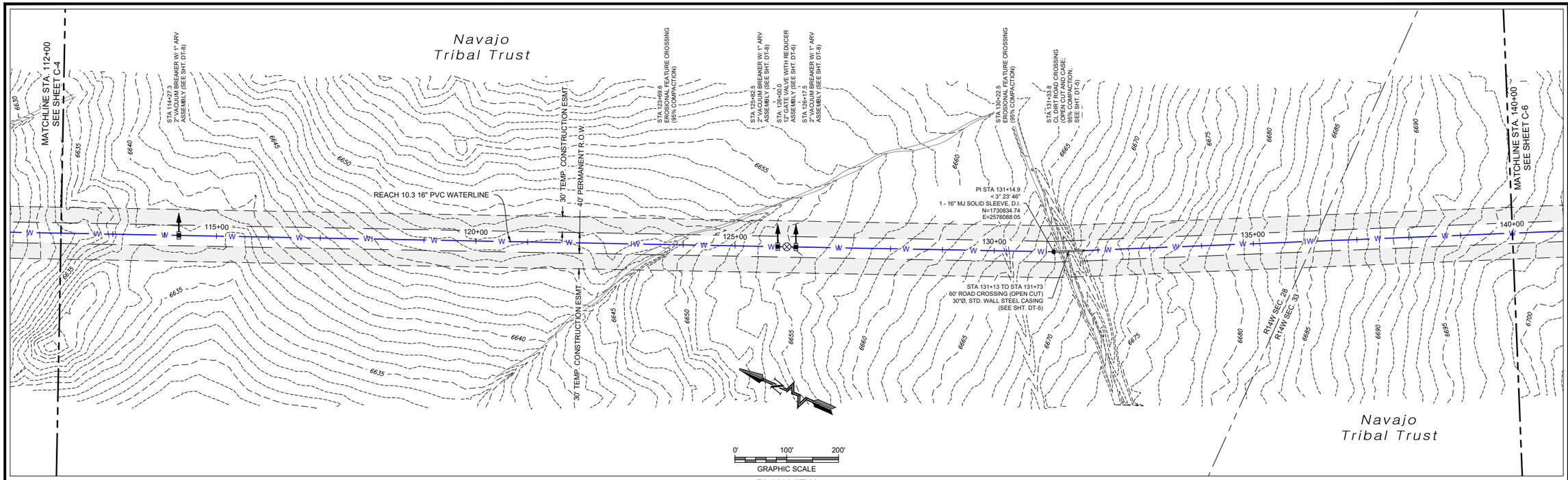
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CDB	MvH/AaV	TTT

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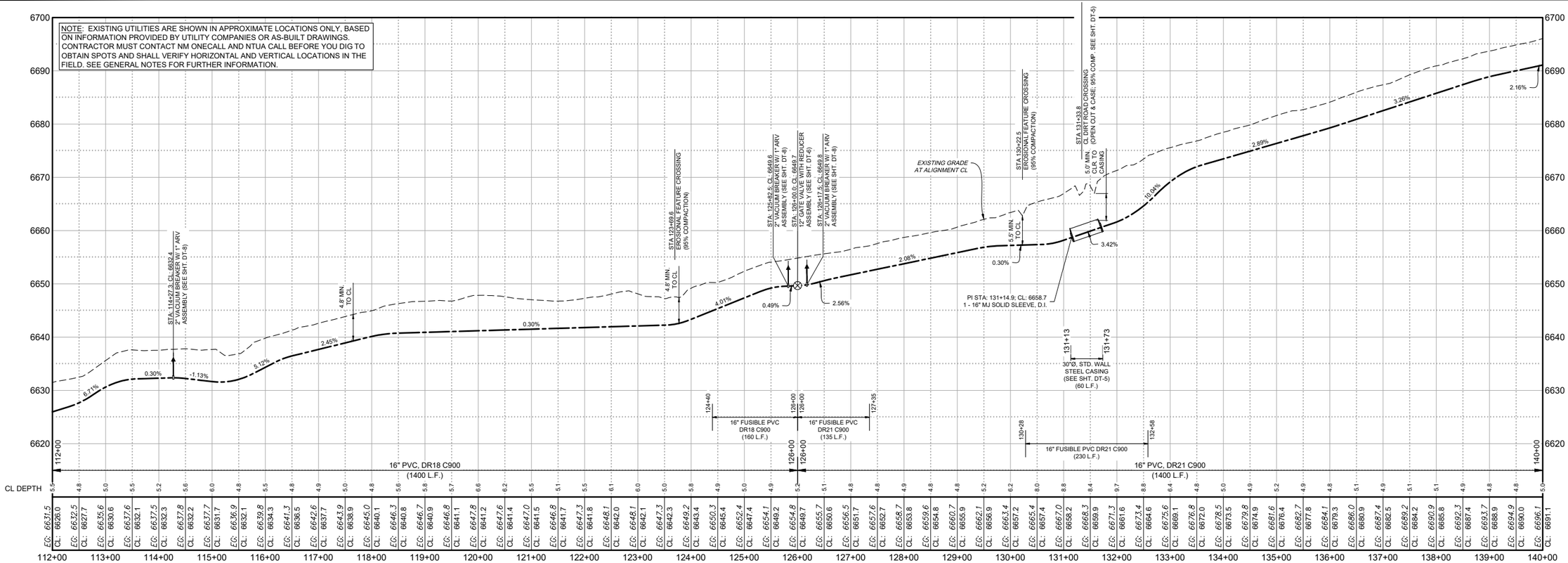
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PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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www.soudermiller.com

Client: The Navajo Nation
Location: Tsel'lahi & Nahodishgish, NM

PLAN AND PROFILE STA 112+00 To STA 140+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 28 AND 33, T. 18 N., R. 14 W.

TERRY TADAN
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
-29-25

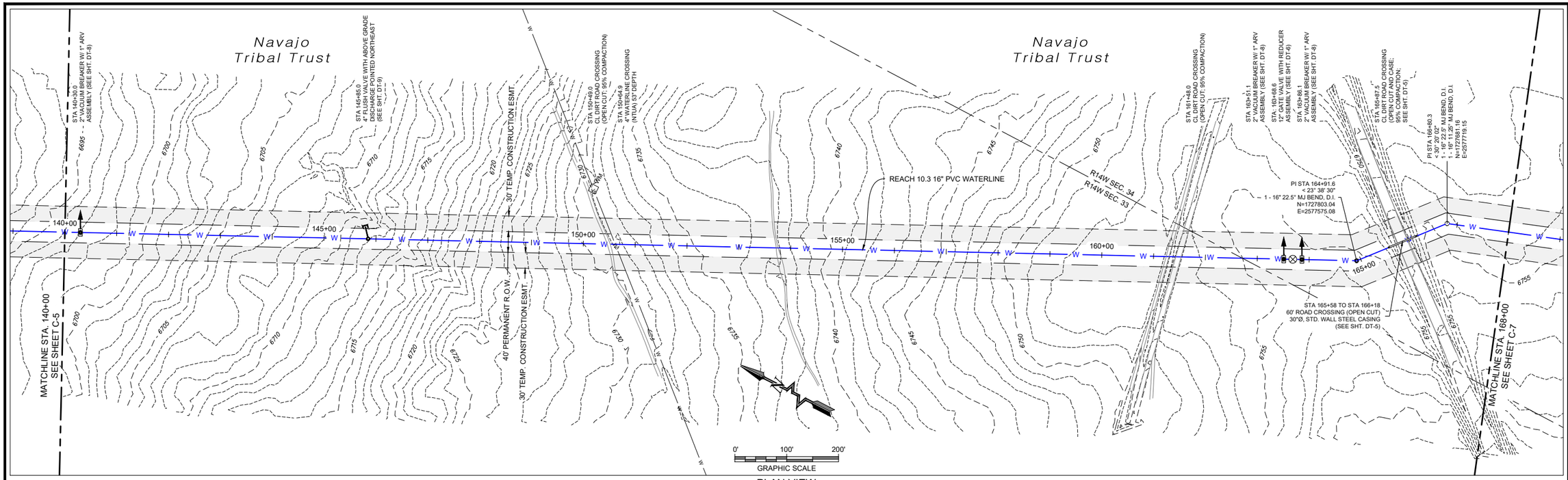
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PLAN VIEW
16" WATERLINE

PROFILE VIEW
16" WATERLINE

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www.soudermiller.com

Client: The Navajo Nation Location: Tse'iʼahi & Nahodishgish, NM

PLAN AND PROFILE STA 140+00 To STA 168+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 33 AND 34, T. 18 N., R. 14 W.

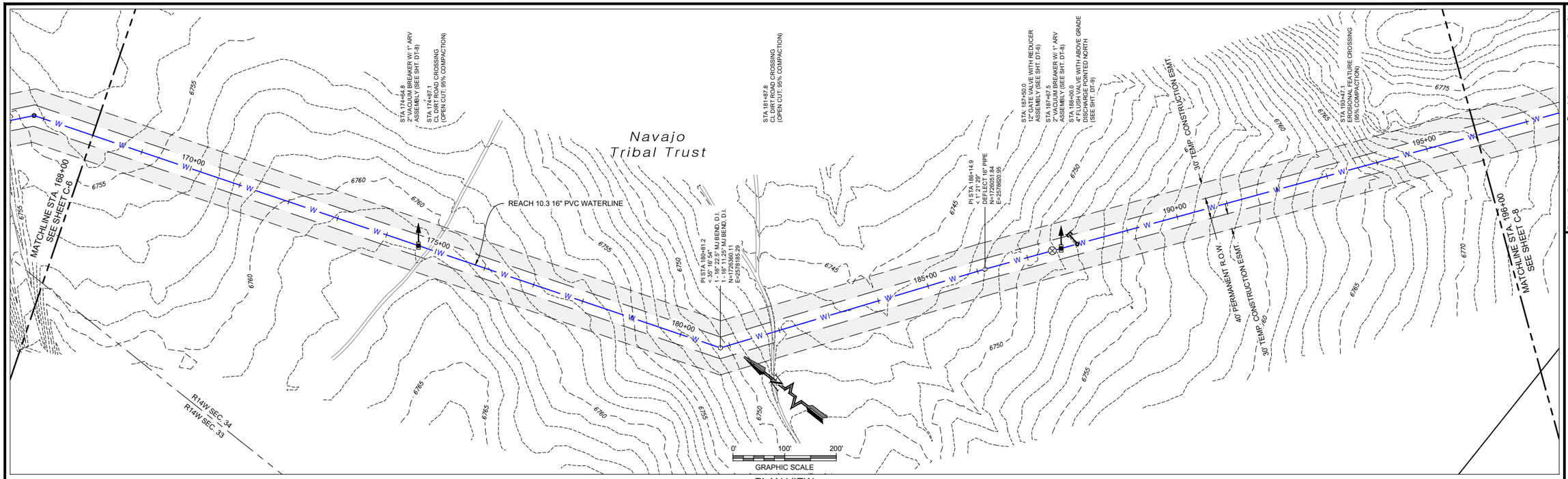
TROY TADANO — NEW MEXICO — 21073 — 12-9-25 — LICENSED PROFESSIONAL ENGINEER

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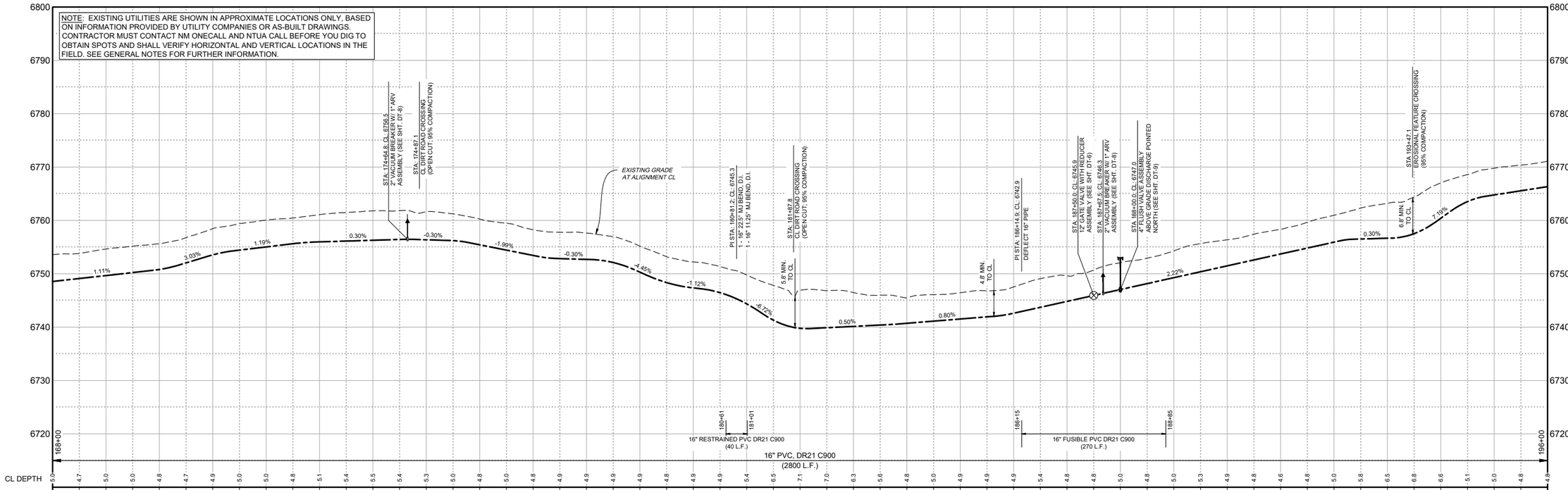
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Project No: 6922268
Sheet: C-6



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.



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168+00	169+00	170+00	171+00	172+00	173+00	174+00	175+00	176+00	177+00	178+00	179+00	180+00	181+00	182+00	183+00	184+00	185+00	186+00	187+00	188+00	189+00	190+00	191+00	192+00	193+00	194+00	195+00	196+00	

CL DEPTH

PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation Location: Tse'ii'ahi & Nahodishgish, NM

PLAN AND PROFILE STA 168+00 To STA 196+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 34, T. 18 N., R. 14 W.

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

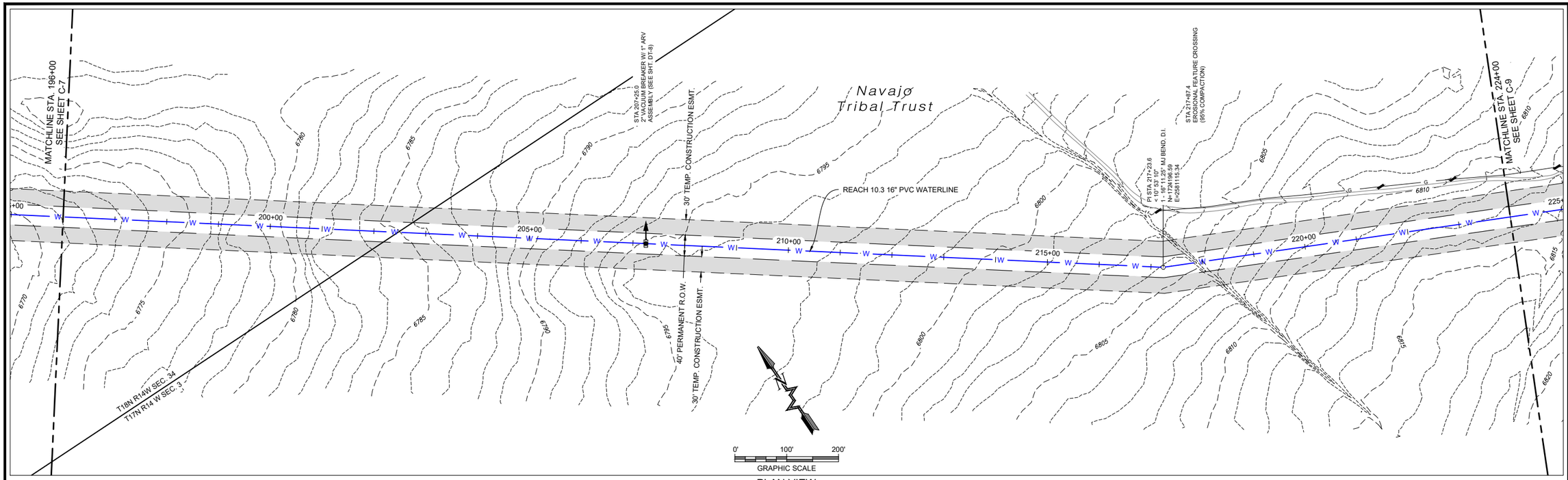
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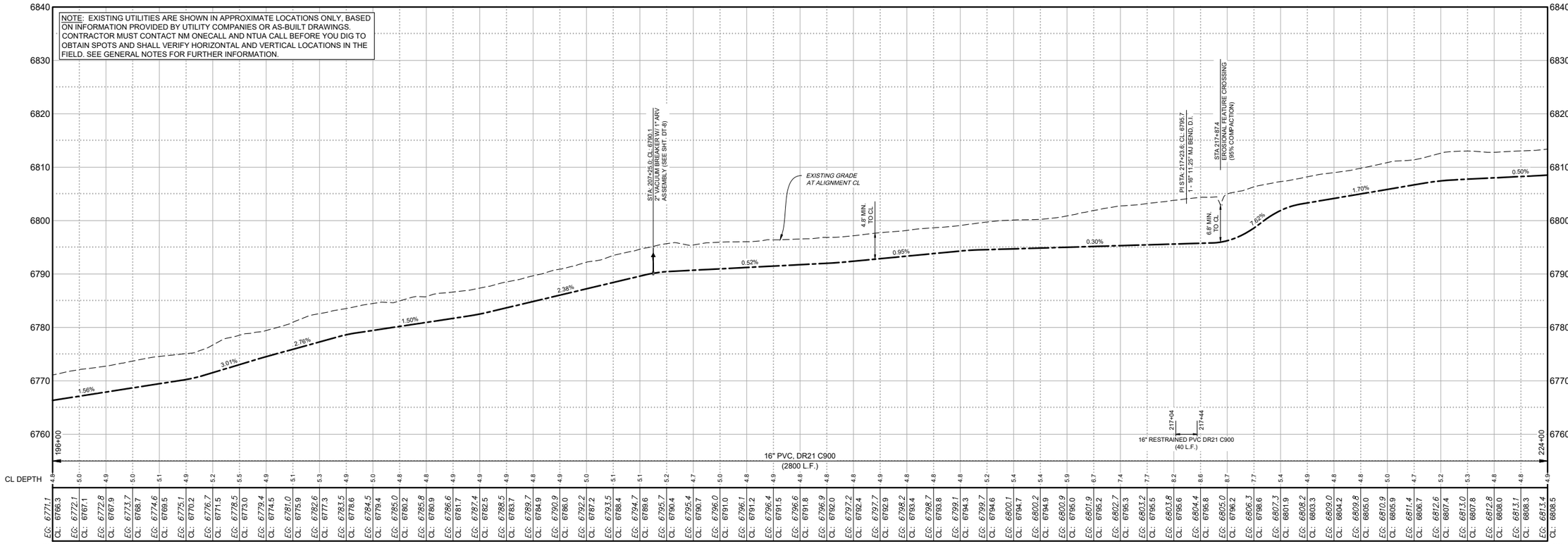
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Sheet: C-7

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PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Client: The Navajo Nation Location: Tse'ii'ahi & Nahodishgish, NM

PLAN AND PROFILE STA 196+00 To STA 224+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3

McKINLEY COUNTY, NEW MEXICO
SEC. 34, T. 18 N., R. 14W. AND SEC. 3, T. 17 N., R. 14 W.

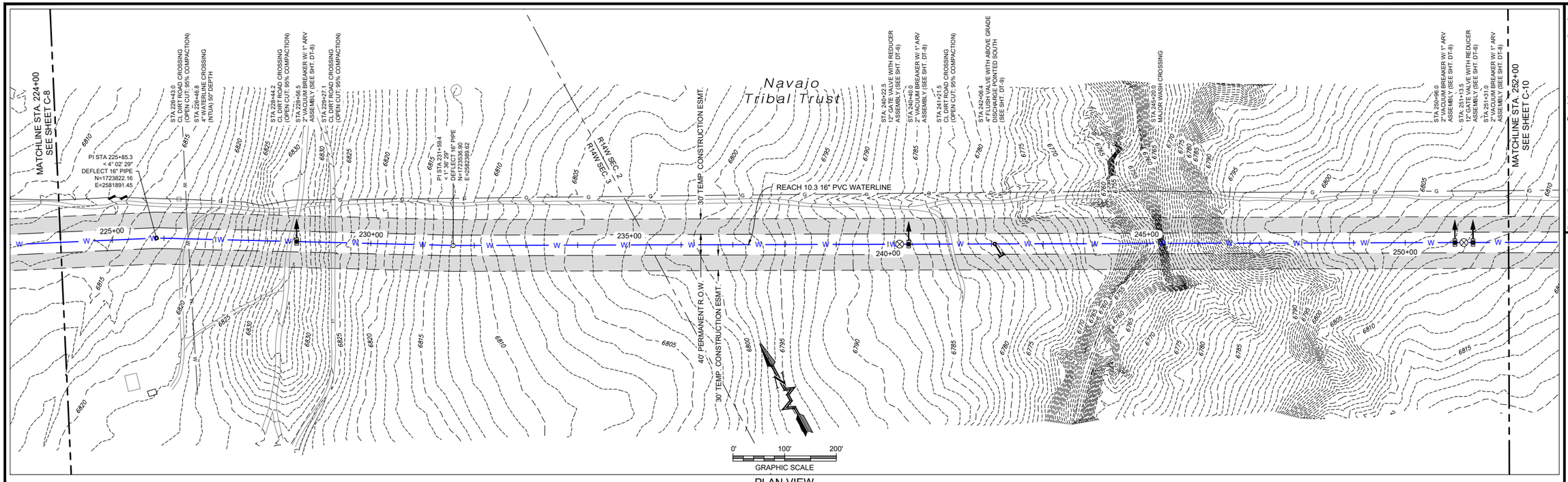
TROY T. ADAMS — NEW MEXICO — 21073 — LICENSED PROFESSIONAL ENGINEER — 12-29-25

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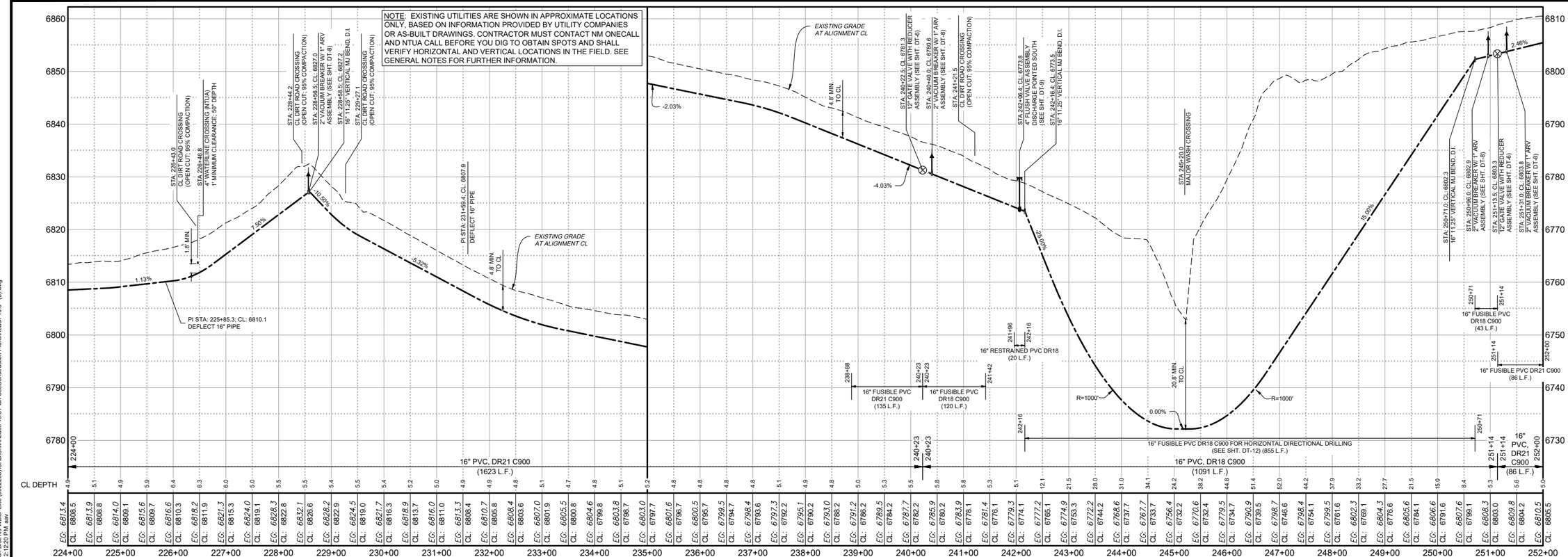
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PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

PLAN AND PROFILE STA 224+00 To STA 252+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 2 AND 3, T. 17 N., R. 14 W.

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

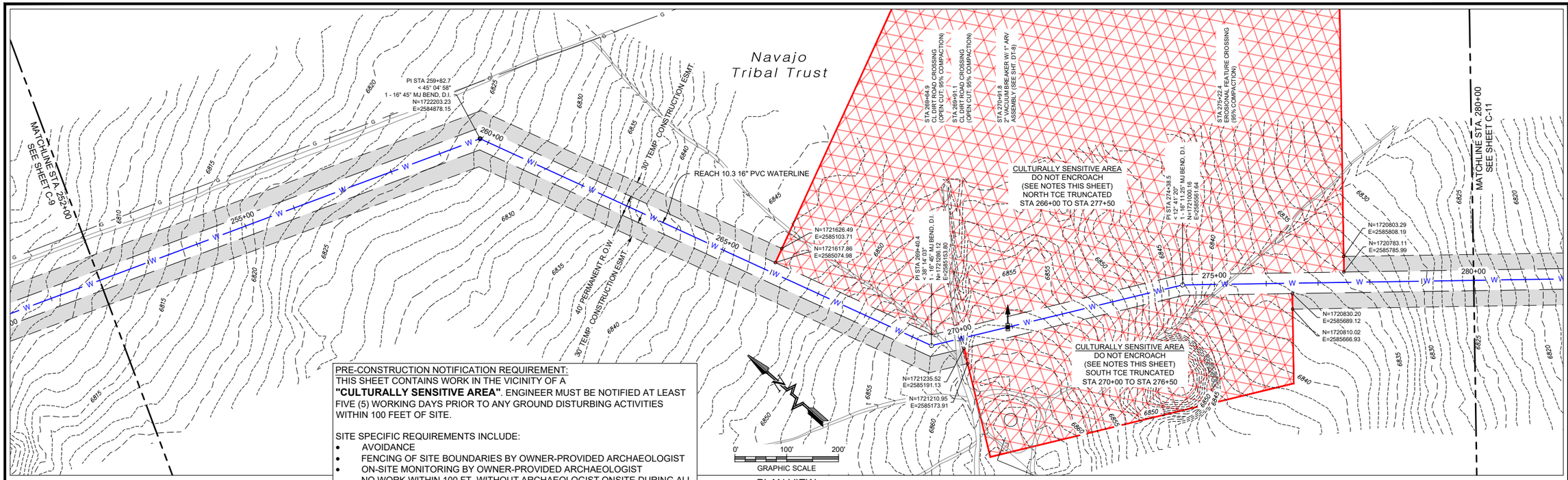
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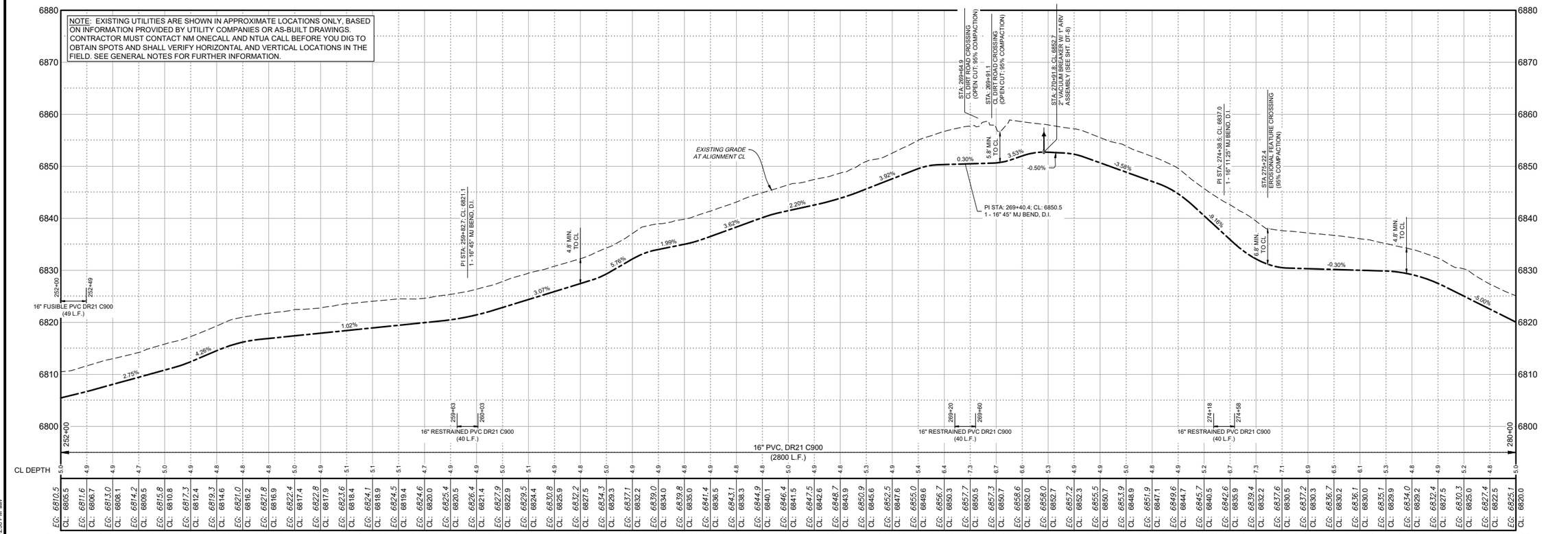
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PLAN VIEW
16" WATERLINE

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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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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

PLAN AND PROFILE STA 252+00 To STA 280+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 2, T. 17 N., R. 14 W.

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

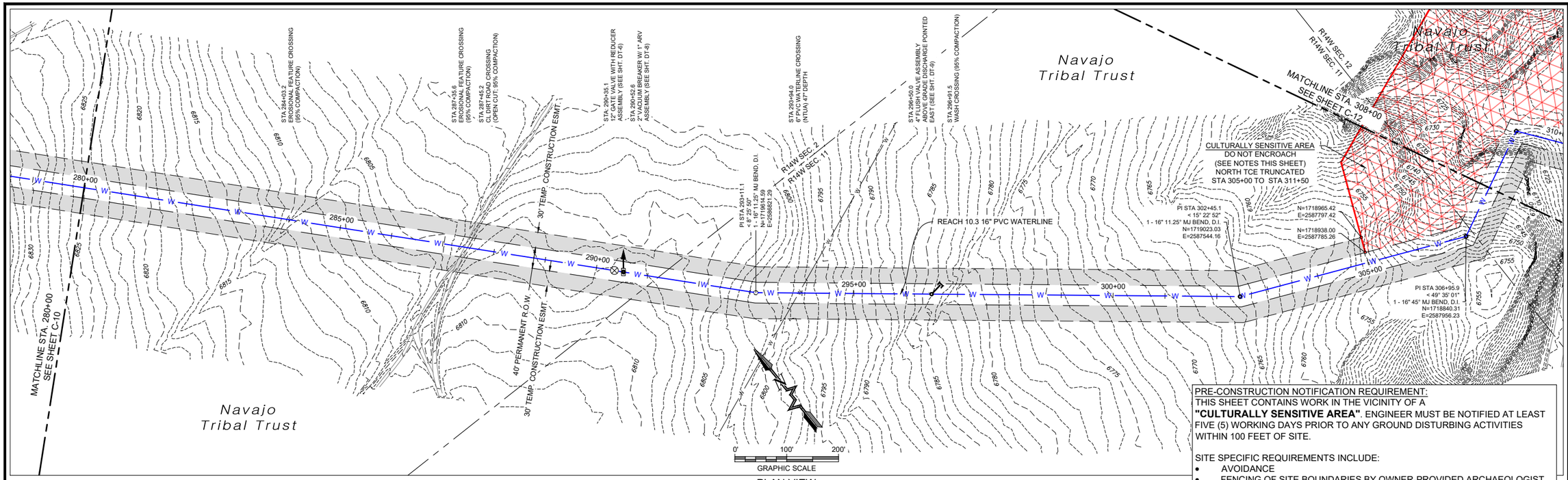
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Sheet: C-10

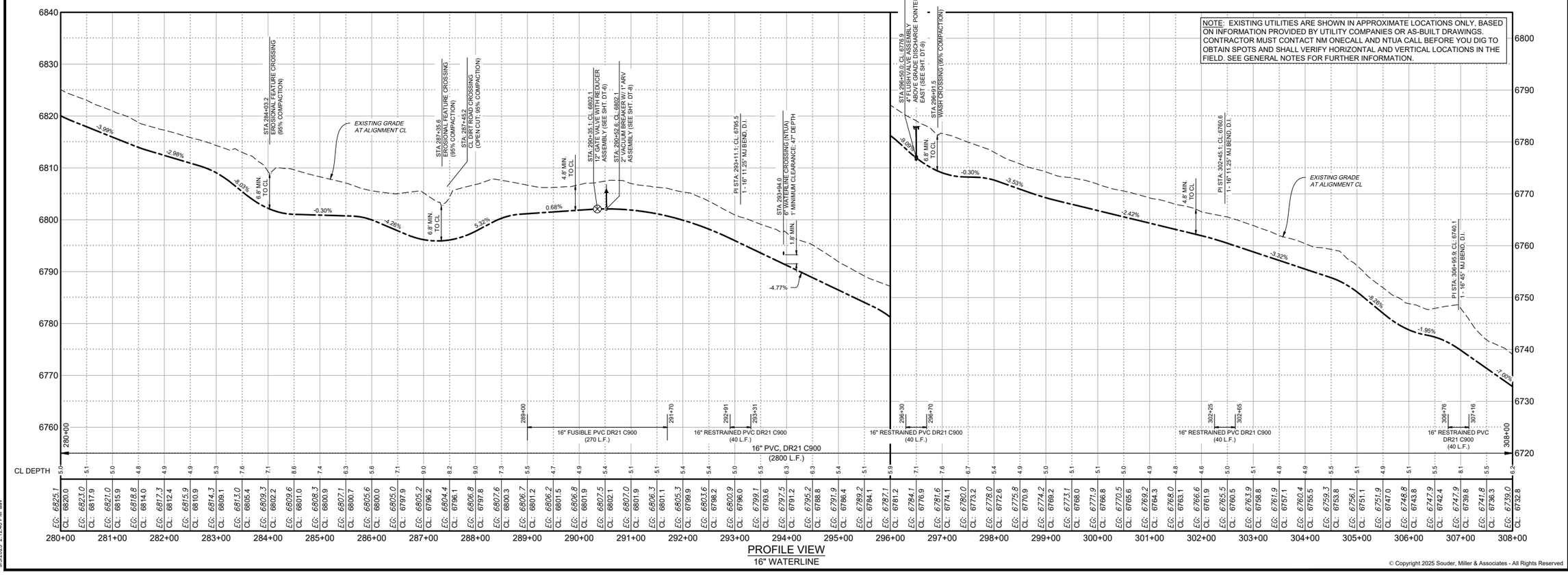
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PLAN VIEW
16" WATERLINE

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SITE SPECIFIC REQUIREMENTS INCLUDE:
- AVOIDANCE
- FENCING OF SITE BOUNDARIES BY OWNER-PROVIDED ARCHAEOLOGIST



PROFILE VIEW
16" WATERLINE

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Client: The Navajo Nation
Location: Tse'iʼahi & Nahodishgish, NM

PLAN AND PROFILE STA 280+00 To STA 308+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 2, 11 AND 12, T. 17 N., R. 14 W.

TODAY TADANN CO. NEW MEXICO 21073 LICENSED PROFESSIONAL ENGINEER 12-9-25

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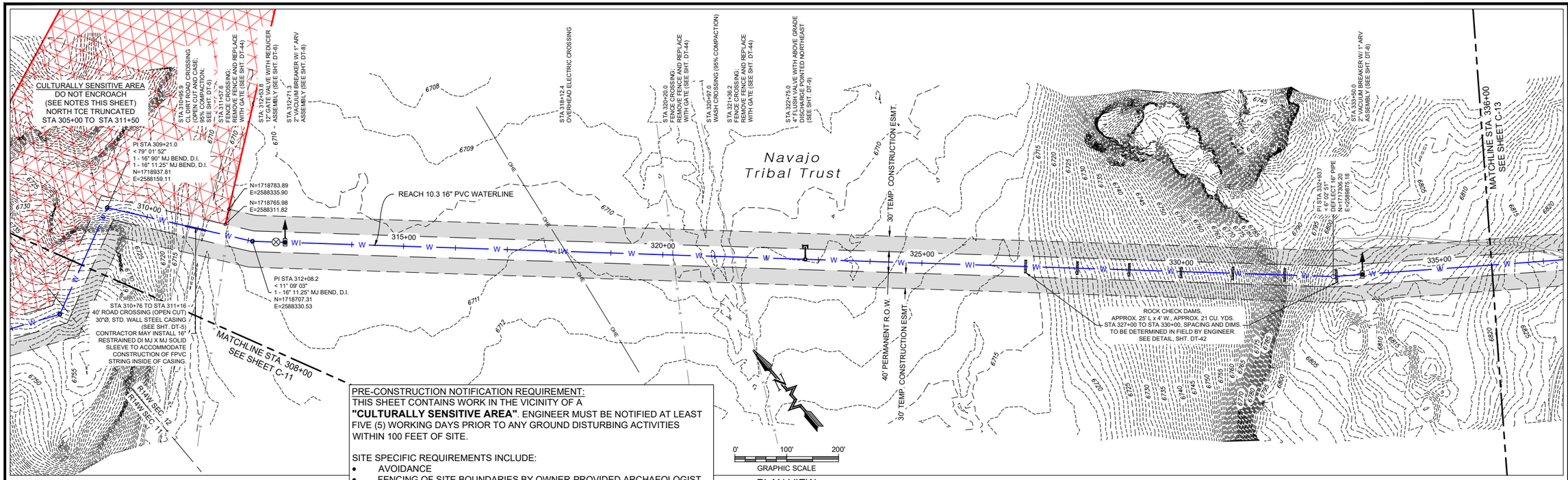
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Sheet: C-11

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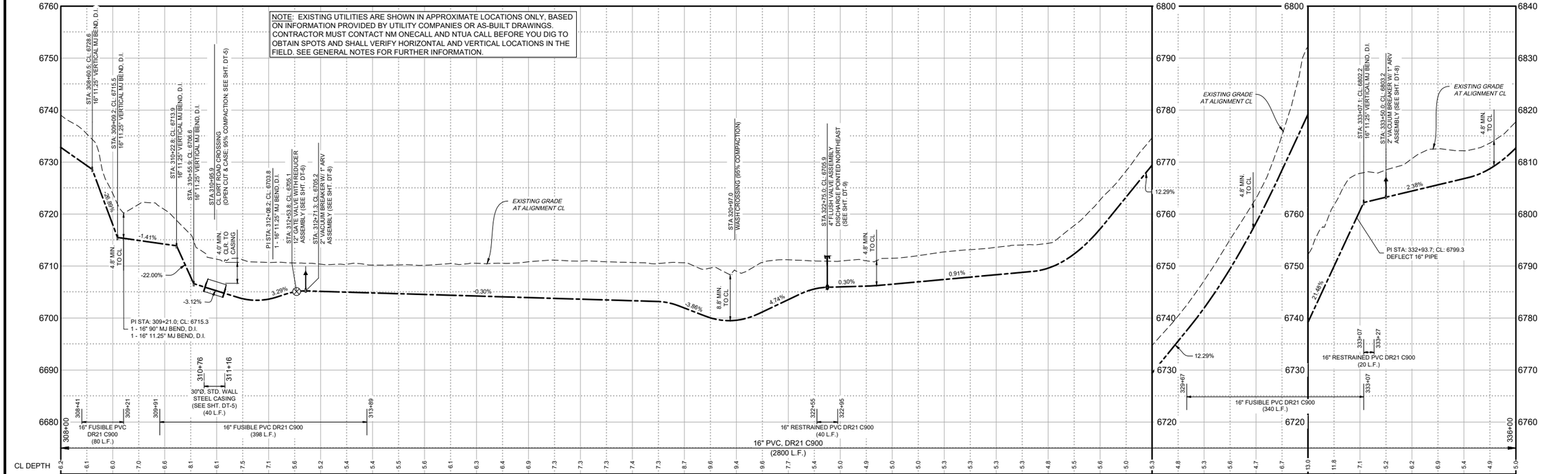
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SITE SPECIFIC REQUIREMENTS INCLUDE:
- AVOIDANCE
- FENCING OF SITE BOUNDARIES BY OWNER-PROVIDED ARCHAEOLOGIST

PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

PLAN AND PROFILE STA 308+00 To STA 336+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 12, T. 17 N., R. 14 W.

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

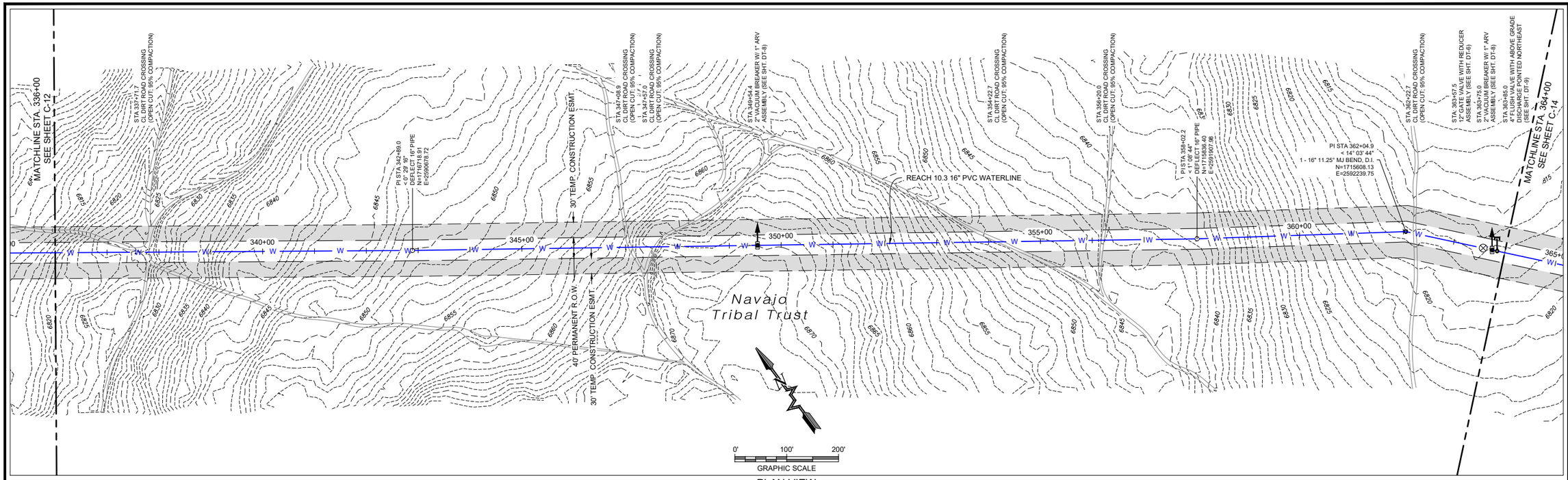
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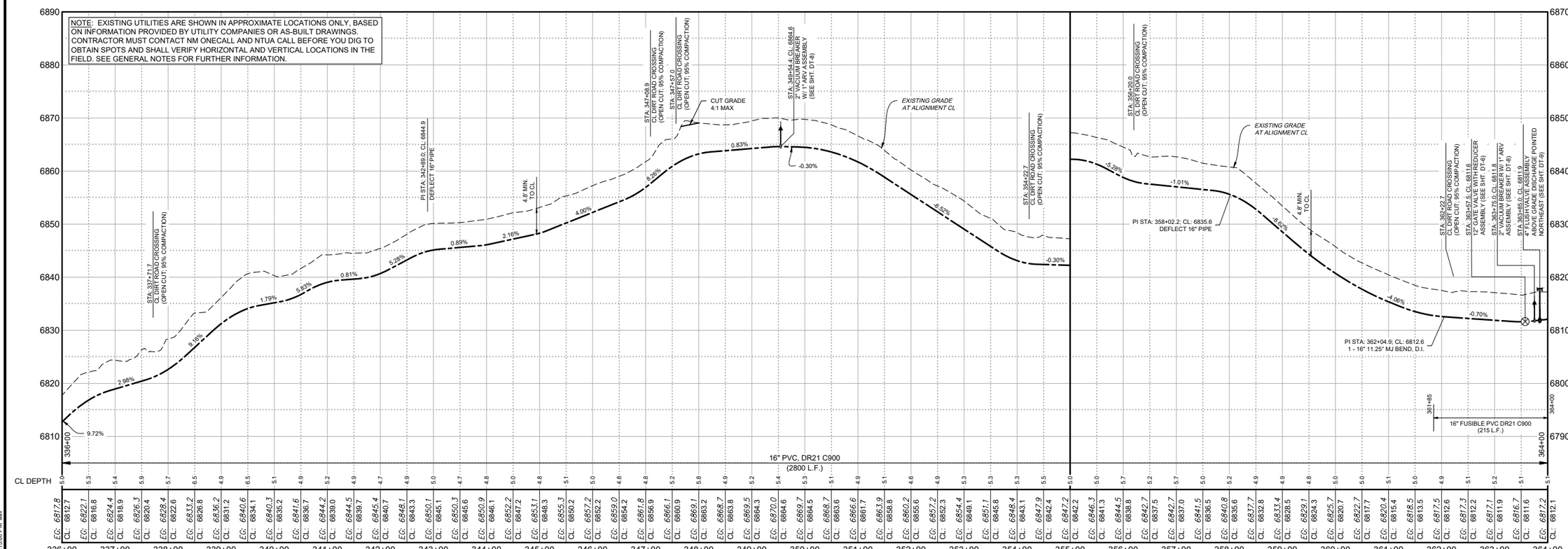
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PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Client: The Navajo Nation Location: Tse'ii'ahi & Nahodishgish, NM

PLAN AND PROFILE STA 336+00 To STA 364+00
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 12, T. 17 N., R. 14 W.

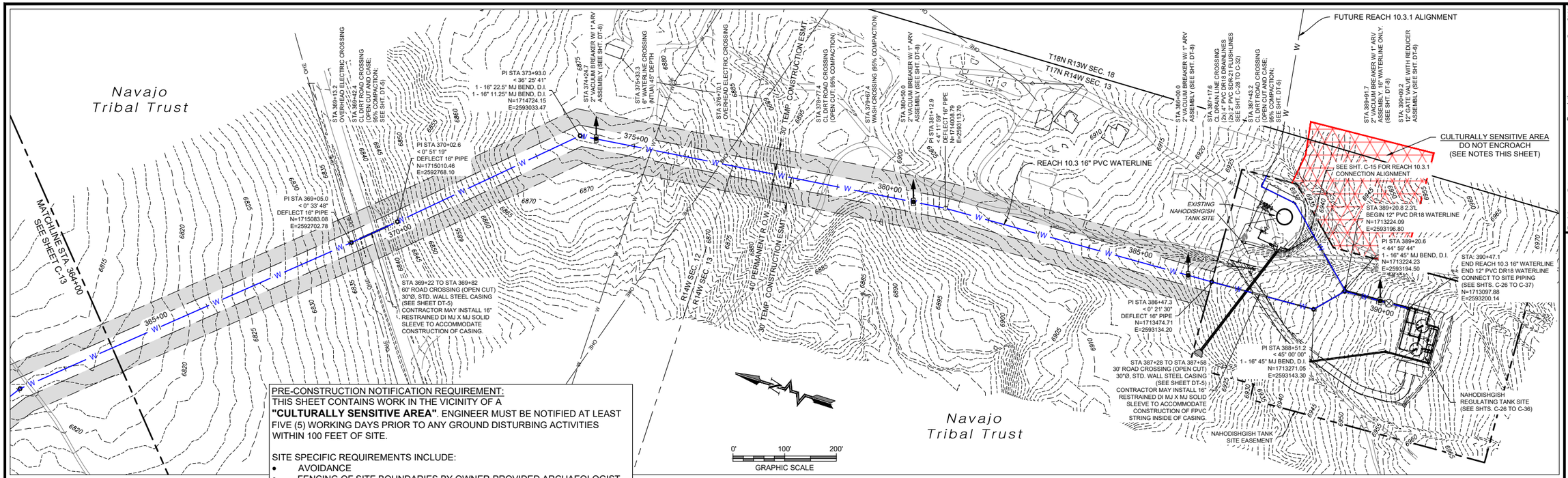
TODD T. ADAMS
NEW MEXICO
21073
9-29-25
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

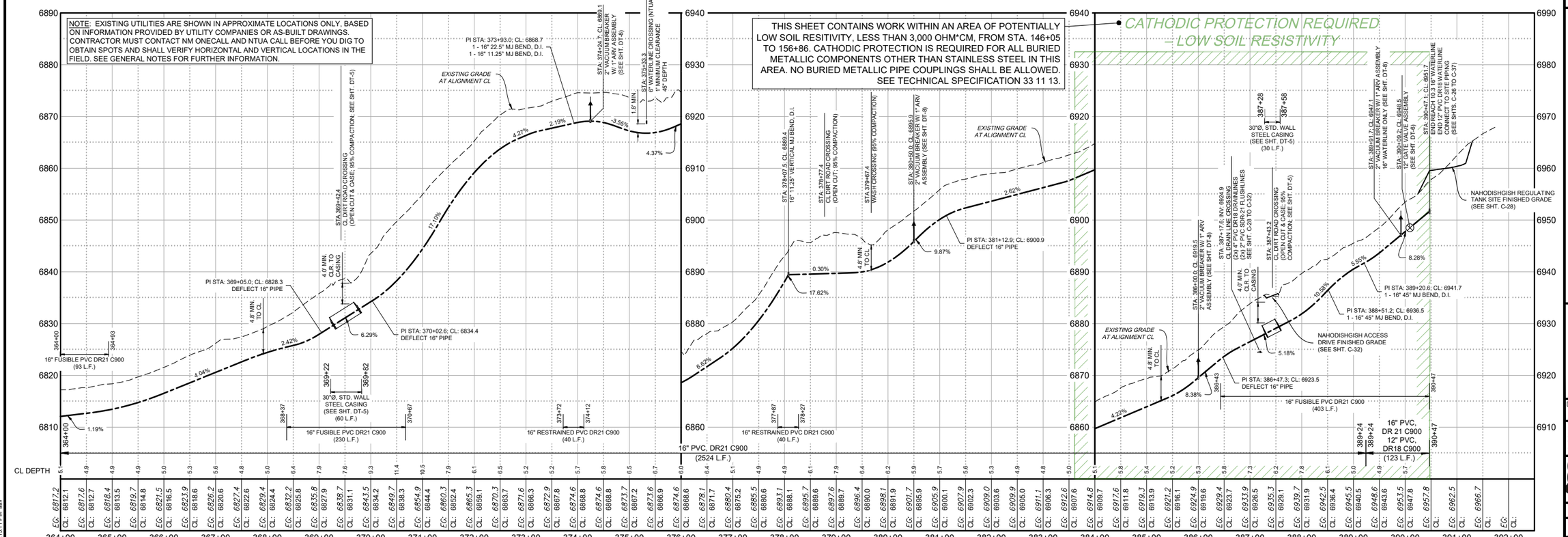
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Vert: 1" = 20'
Project No: 6922268
Sheet: C-13



PLAN VIEW
16" WATERLINE



PROFILE VIEW
16" WATERLINE

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Tséʼíłahi & Nahodishgish, NM

PLAN AND PROFILE STA 364+00 To STA 390+47.1
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 12 AND 13, T. 17 N., R. 14 W.

TOBY TADANO NEW MEXICO 21073 LICENSED PROFESSIONAL ENGINEER 9-29-25

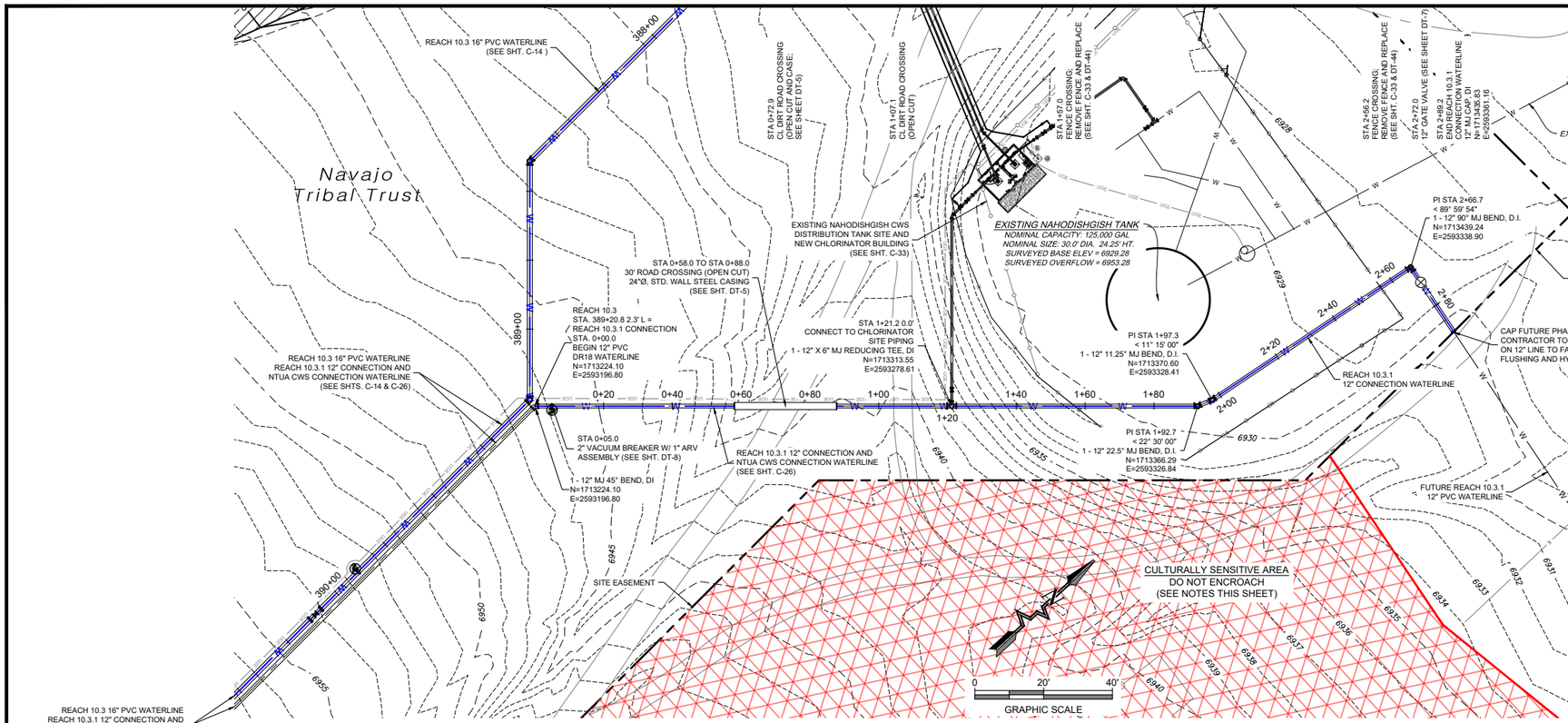
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Sheet: C-14

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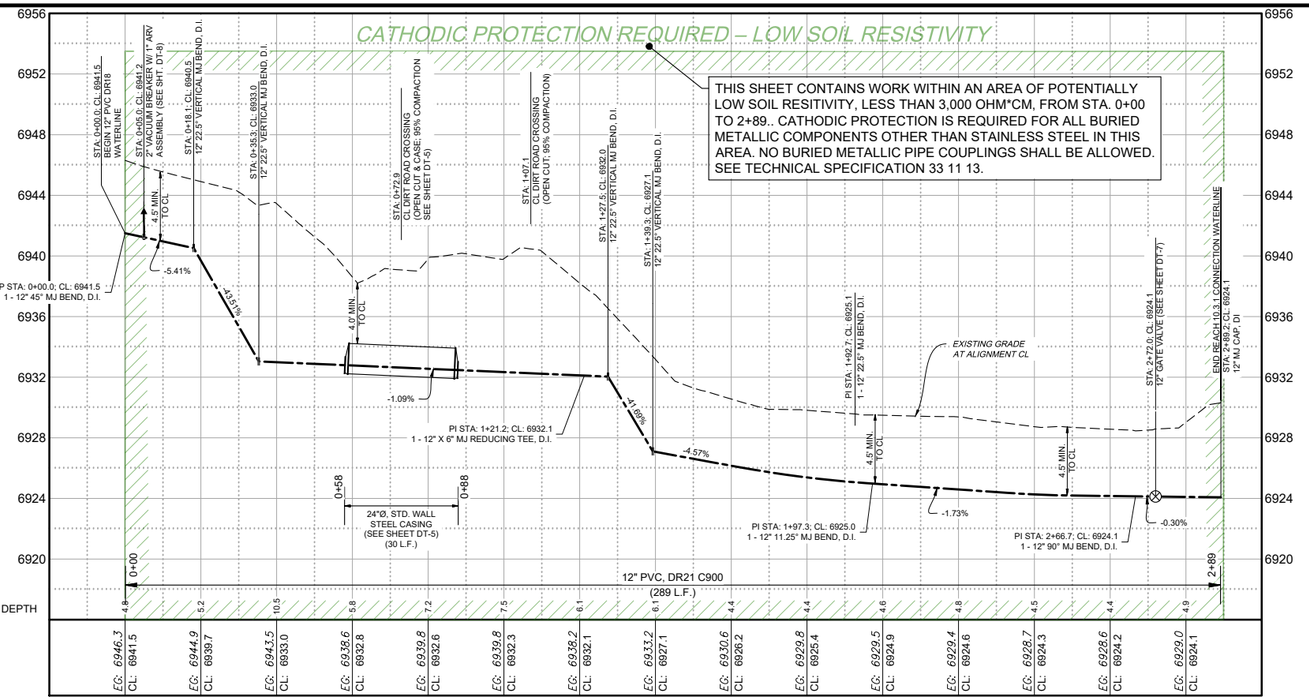


PLAN VIEW
REACH 10.3.1 12" CONNECTION WATERLINE

NOTE: PRIOR TO COMMENCING ACTIVITIES, CONTRACTOR SHALL COMPLETE EXPLORATORY POTHOLING AT THE CONNECTION LOCATION TO DETERMINE LOCATION AND DEPTH OF EXISTING WATERLINE. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DEVIATIONS FROM DESIGN LAYOUT IN ADVANCE OF CONSTRUCTION WITH ENOUGH NOTICE TO ENABLE DESIGN MODIFICATION IF NECESSARY.

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



PROFILE VIEW
REACH 10.3.1 12" CONNECTION WATERLINE

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Revision	Date	Description	By	Chkd

Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

NAHODISHGISH REACH 10.3.1 CONNECTION P&P
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

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

Designed	Drawn	Checked
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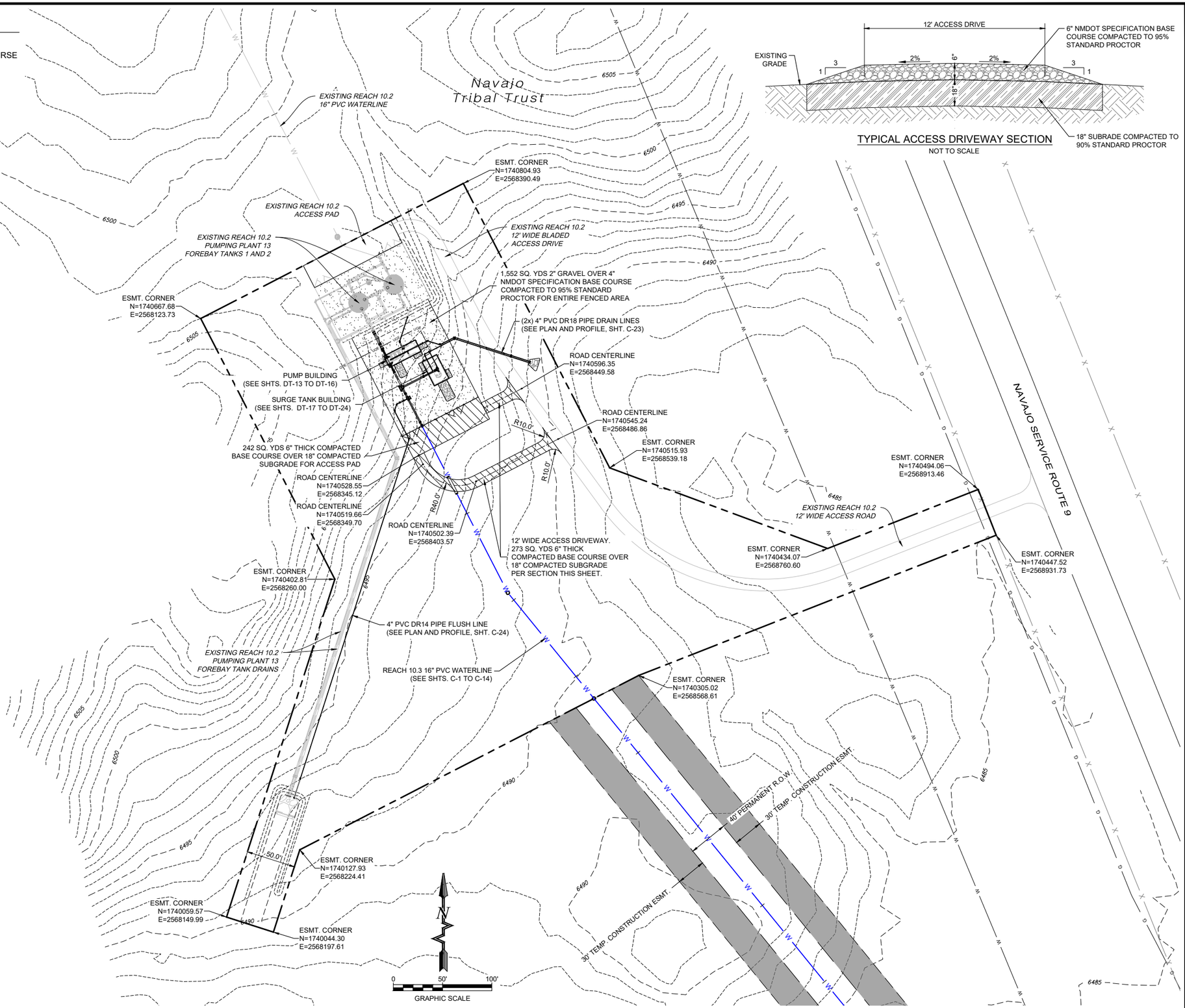
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LEGEND

- 2" GRAVEL OVER 4" NMDOT SPECIFICATION BASE COURSE
- 6" COMPACTED BASE COURSE ACCESS DRIVE OVER 18" OF COMPACTED SUBGRADE
- TEMPORARY CONSTRUCTION EASEMENT



TYPICAL ACCESS DRIVEWAY SECTION

NOT TO SCALE

PUMPING PLANT 13 OVERALL SITE PLAN

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www.soudermiller.com

Client: The Navajo Nation

Location: Tse'ii'ahi & Nahodishgish, NM

PUMPING PLANT 13 OVERALL SITE PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

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

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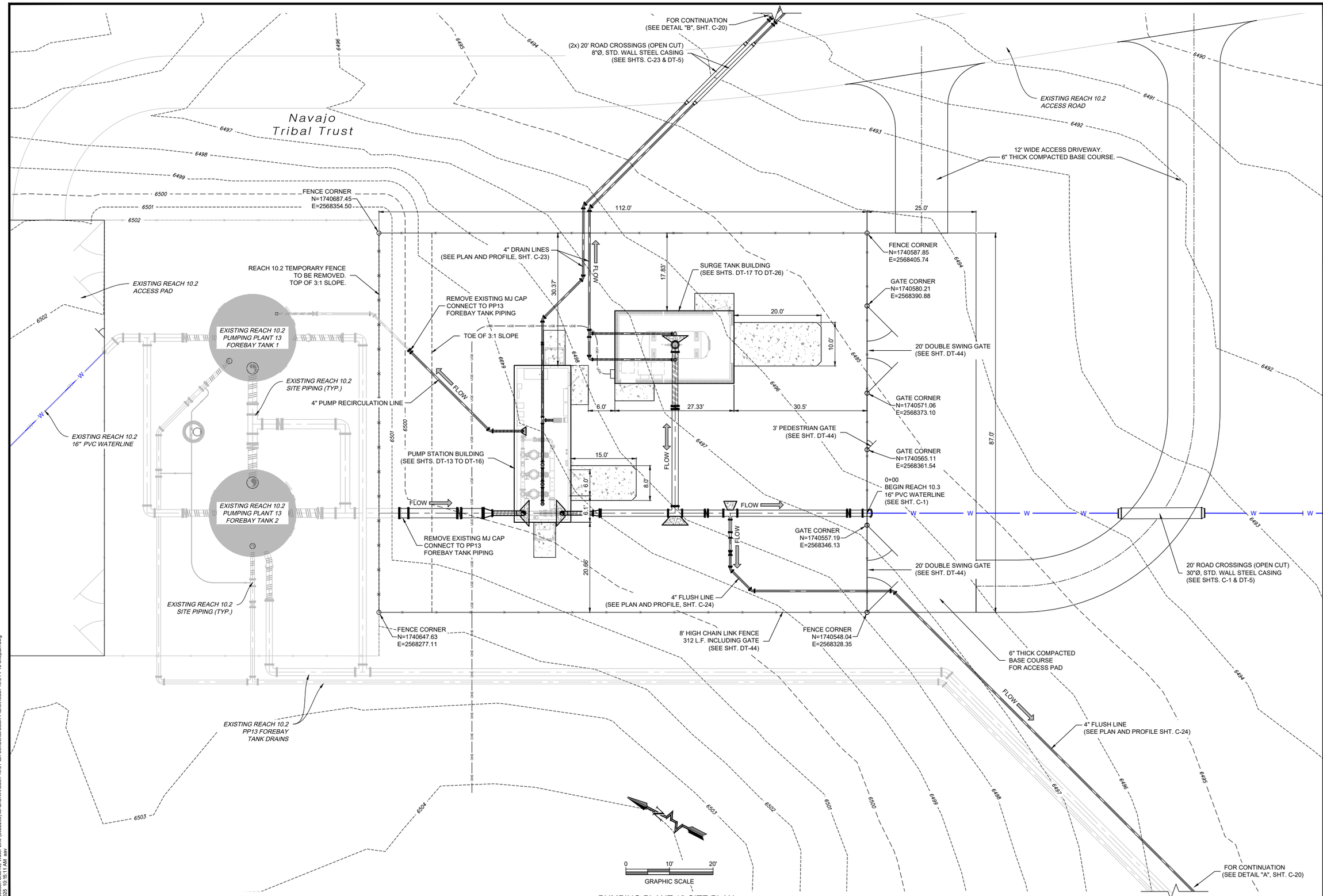
Date: September 2025

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

Project No: 6922268

Sheet: C-16

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PUMPING PLANT 13 SITE PLAN

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www.soudermiller.com

Client: The Navajo Nation Location: Tse'iTahi & Nahodishgish, NM

PUMPING PLANT 13 SITE PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

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

Designed	Drawn	Checked
CDB	MVrt/AaV	TTT

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NOTES:
1. CONTOURS SHOWN WITHIN FENCED AREA AND ACCESS DRIVE REFER TO FINISHED GRADE TOP OF SURFACING MATERIAL.
2. FG = TOP OF SURFACING MATERIAL OR NATIVE SOIL.

Navajo Tribal Trust

EXISTING REACH 10.2 PUMPING PLANT 13 FOREBAY TANK 1 BASE ELEV. = 6502.50

EXISTING REACH 10.2 16" PVC WATERLINE

EXISTING REACH 10.2 PUMPING PLANT 13 FOREBAY TANK 2 BASE ELEV. = 6502.50

EXISTING REACH 10.2 SITE PIPING (TYP.)

FG\TOP = 6499.4 N = 1740676.09 E = 2568349.53

FG\TOP = 6499.7 N = 1740667.29 E = 2568330.50

FG\TOP = 6499.9 N = 1740661.15 E = 2568317.39

FG\TOP = 6500.0 N = 1740655.06 E = 2568304.67

FG\TOP = 6501.0 N = 1740650.45 E = 2568289.16

FG\TOP = 6502.0 N = 1740646.17 E = 2568274.27

FG\TOP = 6502.5 N = 1740630.79 E = 2568270.46

FG\TOP = 6499.0 N = 1740677.09 E = 2568354.04

FG\TOE = 6497.0 N = 1740652.63 E = 2568374.81

FG = 6497.95 N = 1740676.64 E = 2568360.06

FG\TOE = 6497.6 N = 1740634.16 E = 2568361.92

FG\TOE = 6497.7 N = 1740642.68 E = 2568355.78

FG\TOE = 6497.8 N = 1740648.30 E = 2568340.54

FG = 6498.0 N = 1740625.17 E = 2568345.25

FG\TOE = 6497.8 N = 1740638.94 E = 2568322.36

FG = 6497.95 N = 1740653.60 E = 2568315.27

FG\TOE = 6497.8 N = 1740631.78 E = 2568308.44

FG = 6497.95 N = 1740636.83 E = 2568282.67

FG\TOE = 6497.7 N = 1740617.97 E = 2568303.29

FG\TOE = 6496.0 N = 1740643.24 E = 2568382.68

FG\TOE = 6495.0 N = 1740628.08 E = 2568393.33

FG\TOE = 6494.0 N = 1740602.70 E = 2568408.91

FG\TOE = 6493.0 N = 1740592.54 E = 2568428.43

FG\TOE = 6493.5 N = 1740591.30 E = 2568420.40

FG\TOE = 6493.7 N = 1740590.69 E = 2568415.50

FG\TOE = 6492.4 N = 1740582.84 E = 2568436.44

FG\TOE = 6493.0 N = 1740577.96 E = 2568431.32

FG\TOE = 6493.6 N = 1740571.77 E = 2568425.21

FG\TOE = 6493.5 N = 1740556.42 E = 2568421.91

FG\TOE = 6493.5 N = 1740544.63 E = 2568398.48

FG\TOE = 6494.0 N = 1740536.60 E = 2568379.78

FG\TOE = 6495.0 N = 1740529.86 E = 2568360.12

FG\TOE = 6496.4 N = 1740525.09 E = 2568338.39

SURGE TANK BUILDING FF = 6498.70 EG = 6497.00 (SEE SHTS. DT-17 TO DT-26)

PUMP STATION BUILDING FF = 6498.70 EG = 6499.00 (SEE SHTS. DT-13 TO DT-16)

FG = 6497.10 N = 1740587.85 E = 2568405.74

FG = 6497.00 N = 1740582.07 E = 2568408.72

FG = 6497.00 N = 1740571.40 E = 2568414.21

FG = 6496.90 N = 1740565.62 E = 2568417.18

FG = 6497.11 N = 1740580.21 E = 2568390.88

FG\TOE = 6497.19 N = 1740584.57 E = 2568378.75

FG = 6497.11 N = 1740571.06 E = 2568373.10

FG\TOE = 6497.4 N = 1740596.96 E = 2568357.31

FG\TOE = 6497.6 N = 1740623.12 E = 2568341.94

FG\TOE = 6497.55 N = 1740608.28 E = 2568330.72

FG = 6497.11 N = 1740557.19 E = 2568346.13

FG = 6497.11 N = 1740548.04 E = 2568328.35

FG = 6496.90 N = 1740531.30 E = 2568350.46

FG = 6496.90 N = 1740525.81 E = 2568339.79

FG\TOP = 6498.0 N = 1740546.28 E = 2568326.23

FG\TOP = 6499.0 N = 1740556.77 E = 2568317.85

FG\TOP = 6500.0 N = 1740570.08 E = 2568308.08

FG\TOP = 6501.0 N = 1740580.97 E = 2568299.49

FG\TOP = 6502.0 N = 1740597.50 E = 2568288.17

FG\TOP = 6502.5 N = 1740617.32 E = 2568276.94

EXISTING REACH 10.2 PP13 FOREBAY TANK DRAINS

0+00 BEGIN REACH 10.3 16" PVC WATERLINE (SEE SHT. C-1)

-0.85% -0.81% -0.80% -0.84% -5.48% -6.00% -0.84% -0.84% -0.84% -17.61% -3.0:1 -4.0:1

PUMP STATION SITE CUT/FILL DATA

MATERIAL TYPE	CUT	FILL	EXPORT/IMPORT
*NATIVE SOILS	331 CU. YDS.	477 CU. YDS.	146 CU. YDS. IMPORT
SURFACING MATERIAL (SITE 4" BASE COURSE AND 2" FINISH GRAVEL)	---	258 CU. YDS.	258 CU. YDS. IMPORT
SURFACING MATERIAL (ACCESS ROADS AND PAD 6" BASE COURSE)	---	86 CU. YDS.	86 CU. YDS. IMPORT
ENGINEERED FILL	---	78 CU. YDS.	78 CU. YDS. IMPORT
RIP RAP (UNCAGED)	---	3.5 CU. YDS.	3.5 CU. YDS. IMPORT

*BASED ON COMPACTION = 1.2, ASSUMED.

NOTES:
1. 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.
2. ALL GRADING WORKS SHALL BE COMPACTED TO 95% STANDARD PROCTOR.

0 10' 20'
GRAPHIC SCALE

PUMPING PLANT 13 SITE GRADING PLAN

Revision	Date	Description	By	Chkd

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www.soudermiller.com

Client: The Navajo Nation
Location: Tsé'ílʼahi & Nahodishgish, NM

PUMPING PLANT 13 SITE GRADING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

TROY T. ADAMS — NEW MEXICO — 21073 — 09-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
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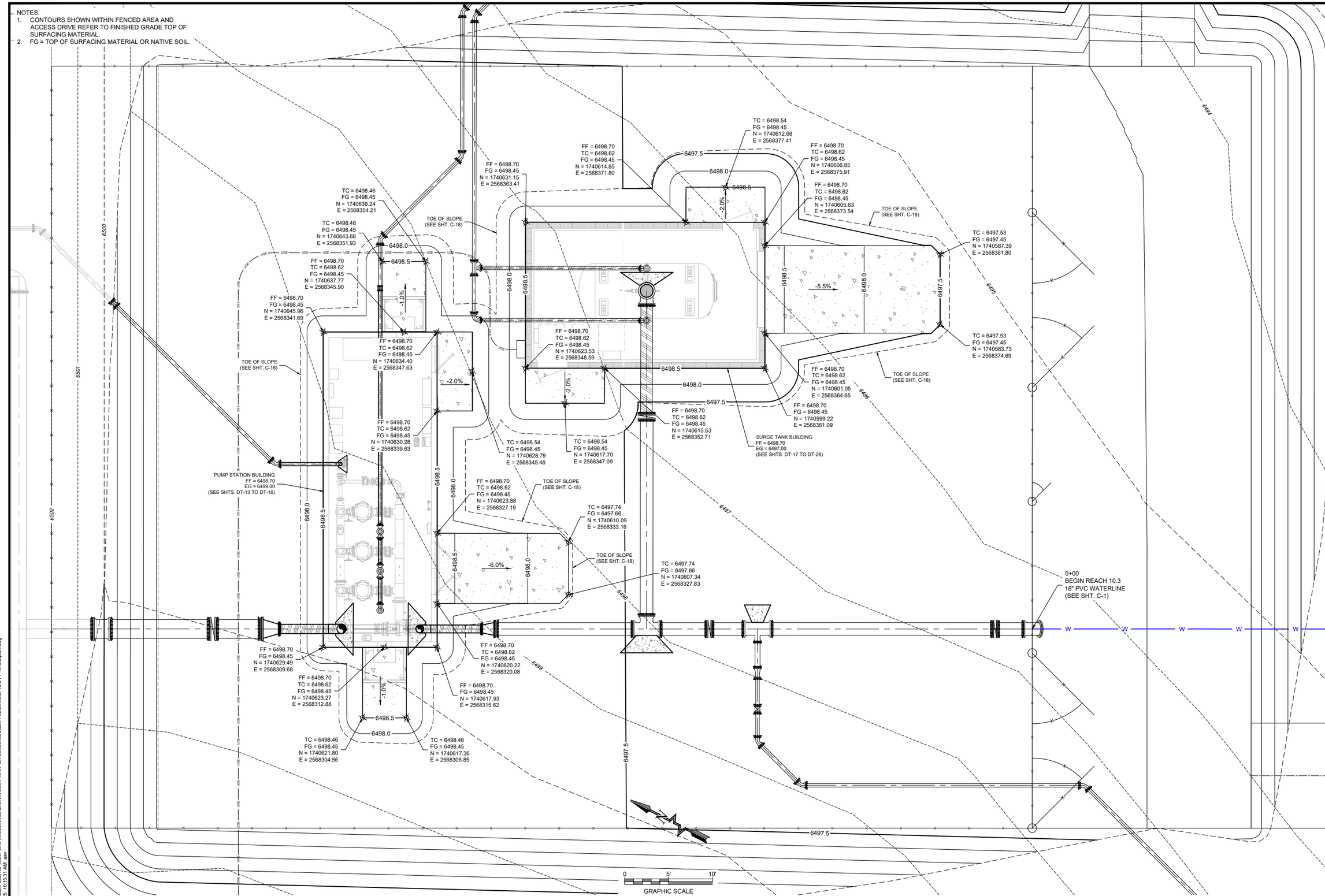
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NOTES:
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2. FG = TOP OF SURFACING MATERIAL OR NATIVE SOIL.



PUMPING PLANT 13 SITE DETAILED GRADING PLAN

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www.soudermiller.com

Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

PUMPING PLANT 13 SITE DETAILED GRADING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

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

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KEYED NOTES PUMPING PLANT 13 SITE

Item No.	Description
1	24" PVC DR21 PIPE, 200 psi
2	24" MJ SHORT SLEEVE, DI
3	24" MJ x MJ BUTTERFLY VALVE (SEE SHT. DT-7) 250 psi
4	24" MJ FLANGE ADAPTER, SS 304 BOLTS, MEGAFLANGE SERIES 2100, 235 psi, OAE
5	24" x 12" FL x FL REDUCER, DI
6	16" PVC DR14 PIPE, 305 psi
7	16" DUCTILE IRON PIPE
8	16" MJ 90° BEND, DI
9	16" MJ x MJ BUTTERFLY VALVE (SEE SHT. DT-7) 250 psi
10	16" MJ TEE, DI
11	16" MJ FLANGE ADAPTER, SS 304 BOLTS, MEGAFLANGE SERIES 2100, 235 psi, OAE
12	16" MJ 22.5° BEND, DI
13	16" x 10" FL x FL REDUCER, DI
14	16" x 6" MJ x MJ REDUCING TEE, DI
15	12" STEEL PIPE, STANDARD WALL
16	12" 90° BEND, WELDED STEEL
17	12" FLANGE, WELDED STEEL
18	10" STEEL PIPE, STANDARD WALL
19	10" 90° BEND, WELDED STEEL
20	10" FLANGE, WELDED STEEL
21	6" PVC DR14 PIPE, 305 psi
22	6" x 4" MJ x MJ REDUCER, DI
23	4" PVC DR18 PIPE, 235 psi
24	4" PVC DR14 PIPE, 305 psi
25	4" DUCTILE IRON PIPE
26	4" MJ x MJ GATE VALVE (SEE SHT. DT-7) 350 psi
27	4" MJ SHORT SLEEVE, DI
28	4" MJ 90° BEND, DI
29	4" MJ 45° BEND, DI
30	4" MJ TEE, DI
31	4" CAST IRON FLAP VALVE (SEE SHT. DT-42)
32	4" FL x PE DUCTILE IRON PIPE
33	THRUST BLOCK (SEE SHT. DT-3)
34	4" STEEL PIPE, STANDARD WALL
35	4" 90° BEND, WELDED STEEL

NOTES:

1. PROVIDE BUILDING SUB-FOUNDATION, OVER-EXCAVATION AND SITE GRADING IN ACCORDANCE WITH GEOTECHNICAL REPORT AND DETAILS DT-13 TO DT-26.
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 305 psi, UNLESS OTHERWISE NOTED.
4. ALL PIPE AND FITTINGS UNDERNEATH AND WITHIN 5' OF BUILDING FOUNDATIONS 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 BUILDINGS SHALL BE LOCATED AT LEAST 5' FROM EDGE OF FOUNDATION.
6. ALL BURIED NON-STAINLESS STEEL PIPE AND FITTINGS SHALL BE WAX TAPE-WRAPPED, PER SPECIFICATIONS.
7. ALL BURIED STEEL PIPE, WELDED FITTINGS AND OTHER COMPONENTS SHALL BE EXTERIOR COATED W/ COAL TAR EPOXY AND WAX TAPE-COATED PER SPECIFICATIONS
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 FULLY RESTRAINED. ALL PVC PIPE JOINTS LARGER THAN 2" SHALL BE FUSED. REFER TO DETAIL, SHEET DT-3.
11. FLANGES SHALL BE ANSI CLASS 125 (IRON) / ANSI CLASS 150 (STEEL).
12. ALL MJ DI FITTINGS AND VALVES SHALL BE RESTRAINED WITH EBAA IRON MEGALUG MECHANICAL JOINT RESTRAINTS, OAE, UNLESS OTHERWISE NOTED.
13. FIELD LOCATE CONDUITS PER REVIEW WITH ELECTRICIAN.

PUMPING PLANT 13
FOREBAY TANKS #1 AND #2
NOM. CAPACITY: 75,000 GAL
NOM. SIZE: 20' DIA. x 32' HT.

TANK #1

TANK #2

SEE DETAIL "B", THIS SHT. FOR CONTINUATION

SURGE TANK BUILDING (SEE SHTS. DT-17 TO DT-26)

REMOVE MJ CAP AND CONNECT TO RECIRCULATION LINE INLET

FLOW

(2x) 6"Ø INSET FLOOR DRAINS

CONNECT SUMP DRAIN TO 4" MAIN DRAIN

PUMP STATION BUILDING (SEE SHTS. DT-13 TO DT-16)

16" SURGE LINE

(3x) 6"Ø INSET FLOOR DRAINS

24" SUCTION

16" DISCHARGE

FLOW

0+00
BEGIN REACH 10.3
16" PVC WATERLINE
(SEE SHT. C-1)

REMOVE MJ CAP AND CONNECT TO EXISTING FOREBAY TANK OUTLET

EXISTING FOREBAY TANK DRAINS

FLOW

SEE DETAIL "A", THIS SHT. FOR CONTINUATION

(2x) 20' ROAD CROSSINGS (OPEN CUT)
8" Ø STD. WALL STEEL CASING
(SEE SHT. DT-5)

(2x) 4" DRAIN LINES
(SLOPE @ 1% MIN. TO DAYLIGHT)

MULTI-DRAIN SURFACE RIP-RAP OR CABLE CONCRETE SPLASH PAD. APPROX. 12 SQ. YDS., EXACT QUANTITY AND DIM. TBD IN FIELD BY ENGINEER. (SEE DETAILS DT-40 & DT-42)

20 L.F. DUCTILE IRON PIPE

DETAIL "B"

0' 8' 16'
GRAPHIC SCALE

PUMPING PLANT 13 SITE PIPING PLAN

EXISTING FOREBAY TANK DRAINS

DETAIL "A"

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Client: The Navajo Nation Location: Tse'ii'ahi & Nahodishgish, NM

PUMPING PLANT 13 SITE PIPING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

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

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

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Scale: Horiz: 1" = 16'
Vert: N/A

Project No: 6922268

Sheet: C-20

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Navajo Tribal Trust

FOR CONTINUATION (SEE DETAIL "B", SHT. C-20)

(2x) 20' ROAD CROSSINGS (OPEN CUT) 8"Ø, STD. WALL STEEL CASING (SEE SHTS. C-23 & DT-5)

(2x) INV 4" = EG = 6493.81 INV = 6491.30 N = 1740639.52 E = 2568409.87

(2x) 4" DRAIN LINES (SEE PLAN AND PROFILE, SHT. C-23)

(2x) INV 4" = EG = 6496.30 INV = 6493.03 N = 1740648.60 E = 2568381.53

EXISTING REACH 10.2 PUMPING PLANT 13 FOREBAY TANK 1

EXISTING REACH 10.2 16" PVC WATERLINE

EXISTING REACH 10.2 PUMPING PLANT 13 FOREBAY TANK 2

EXISTING REACH 10.2 SITE PIPING (TYP.)

FG = 6499.64 INV 4" = 6493.80 N = 1740668.77 E = 2568333.68

FG = 6500.42 INV 24" = 6492.04 N = 1740653.82 E = 2568299.52

FG = 6497.64 INV 4" = 6493.71 N = 1740633.98 E = 2568356.09

FG = 6497.66 INV 4" = 6493.69 N = 1740641.02 E = 2568366.72

FG = 6498.70 INV 4" = 6494.25 N = 1740616.43 E = 2568365.05

SURGE TANK BUILDING FF = 6498.70 (SEE SHTS. DT-17 TO DT-26)

FG = 6497.74 INV 4" = 6493.83 N = 1740645.06 E = 2568354.13

FG = 6497.64 INV 4" = 6493.77 N = 1740631.28 E = 2568350.79

FG = 6498.70 INV 16" = 6491.76 N = 1740615.26 E = 2568362.78

FF = 6498.70 INV 4" = 6493.47 N = 1740637.31 E = 2568329.18

FG = 6498.70 INV 16" = 6491.80 INV 4" = 6494.25 N = 1740613.71 E = 2568359.75

FG = 6497.63 INV 16" = 6492.30 N = 1740613.01 E = 2568320.50

FF = 6498.70 INV 4" = 6494.16 N = 1740629.76 E = 2568324.40

FF = 6498.70 INV 4" = 6494.21 N = 1740627.70 E = 2568320.40

FG = 6497.48 INV 16" = 6492.15 N = 1740597.62 E = 2568328.43

FG = 6497.15 INV 16" = 6491.44 N = 1740562.22 E = 2568346.64

0+00 BEGIN REACH 10.3 16" PVC WATERLINE (SEE SHT. C-1)

FG = 6497.11 INV 16" = 6491.33 N = 1740558.45 E = 2568348.58

FG = 6497.37 INV 4" = 6493.05 N = 1740580.45 E = 2568322.76

FG = 6497.33 INV 4" = 6493.00 N = 1740573.76 E = 2568320.62

FG = 6497.85 INV 24" = 6491.85 N = 1740636.69 E = 2568308.32

FF = 6498.70 INV 10" = 6492.64 N = 1740620.64 E = 2568316.58

FG = 6497.37 INV 16" = 6492.04 INV 4" = 6492.54 N = 1740586.35 E = 2568334.24

FF = 6498.70 INV 12" = 6492.45 N = 1740628.59 E = 2568312.50

FF = 6498.70 INV 4" = 6494.25 N = 1740625.64 E = 2568316.40

PUMP STATION BUILDING FF = 6498.70 (SEE SHTS. DT-13 TO DT-16)

EXISTING REACH 10.2 PP13 FOREBAY TANK DRAINS

4" FLUSH LINE (SEE PLAN AND PROFILE, SHT. C-24)

FOR CONTINUATION (SEE DETAIL "A", SHT. C-20)

0 10' 20'

GRAPHIC SCALE

PUMPING PLANT 13 SITE PIPE INVERTS

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Location: Tse'ilahi & Nahodishgish, NM

PUMPING PLANT 13 SITE PIPE INVERTS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

TODD A. TAYLOR NEW MEXICO 21073 LICENSED PROFESSIONAL ENGINEER 9-29-25

Designed	Drawn	Checked
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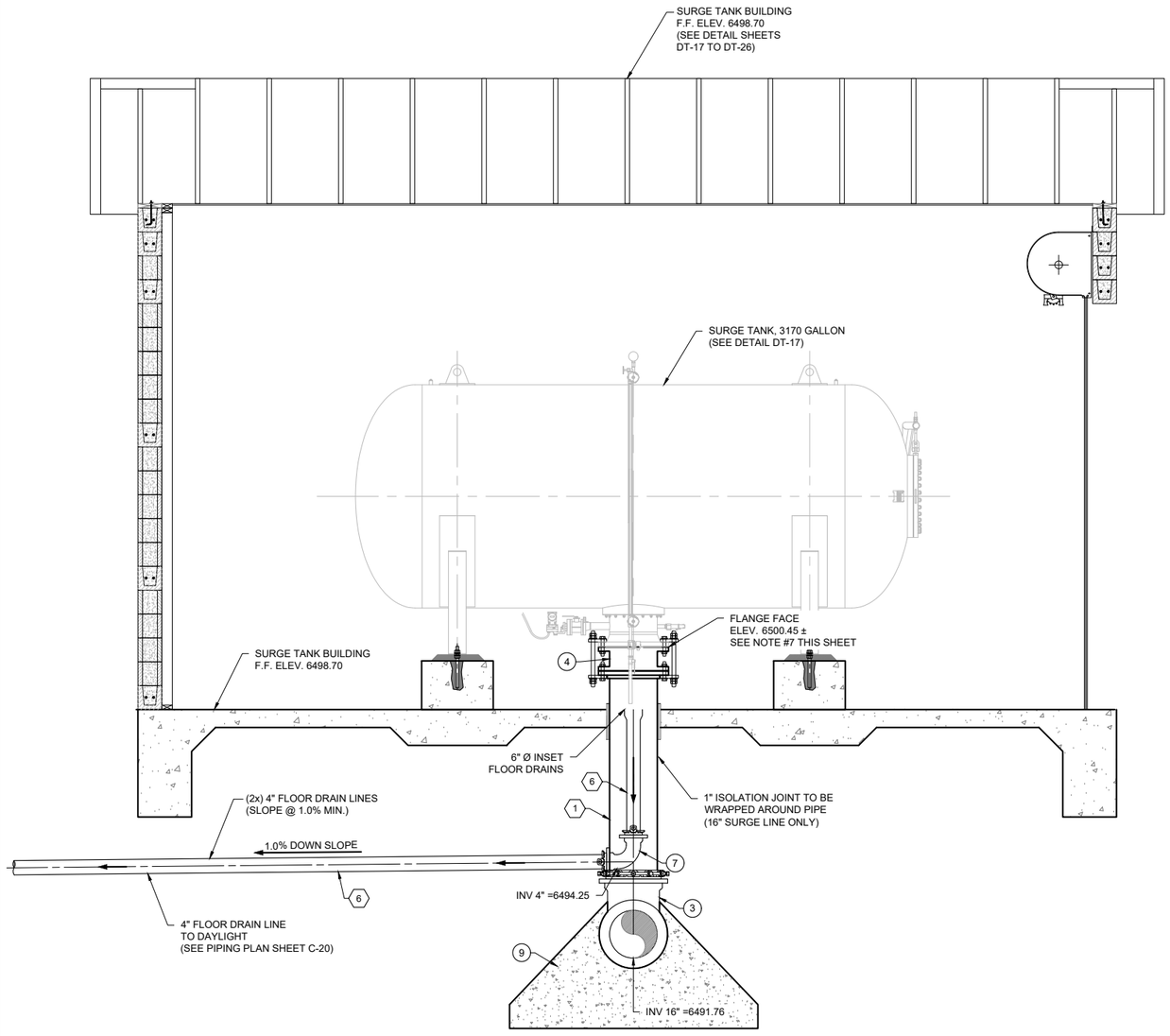
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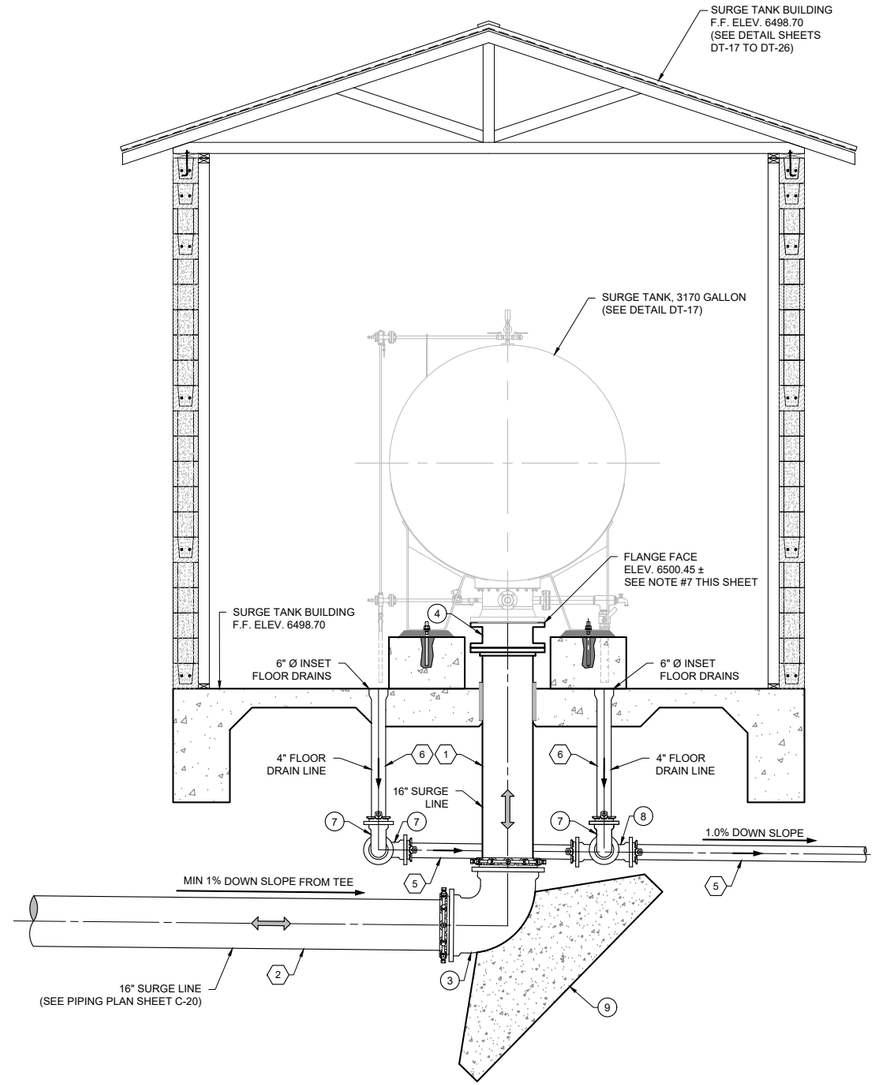
KEYED NOTES PP13 SURGE TANK BUILDING	
Item No.	Description
1	16" PE x FL PIPE, DI
2	16" DUCTILE IRON PIPE
3	16" MJ 90° BEND, DI
4	16" PROCO FITTING, 300 psi (SEE NOTE #13, THIS SHEET)
5	4" PVC DR18 PIPE
6	4" DUCTILE IRON PIPE
7	4" MJ 90° BEND, DI
8	4" MJ TEE, DI
9	THRUST BLOCK (SEE SHT. DT-3)

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 305 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 16-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 16-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 PUMPING PLANT 13 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.
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

PUMPING PLANT 13 SURGE TANK BUILDING PIPING ELEVATION VIEW

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PP 13 SURGE TANK BLDG PIPING ELEVATION VIEW
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

TROY T. ADAMS
NEW MEXICO
21073
12-31-25
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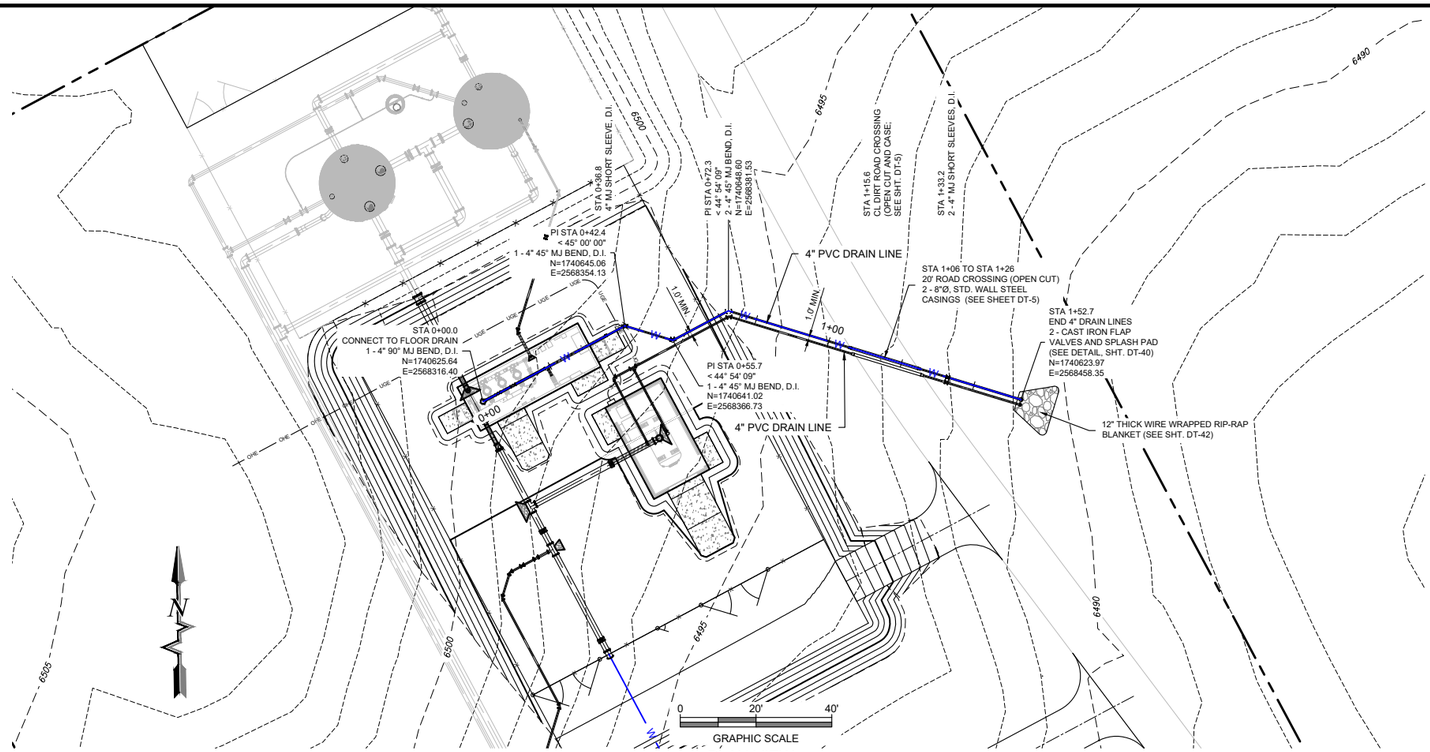
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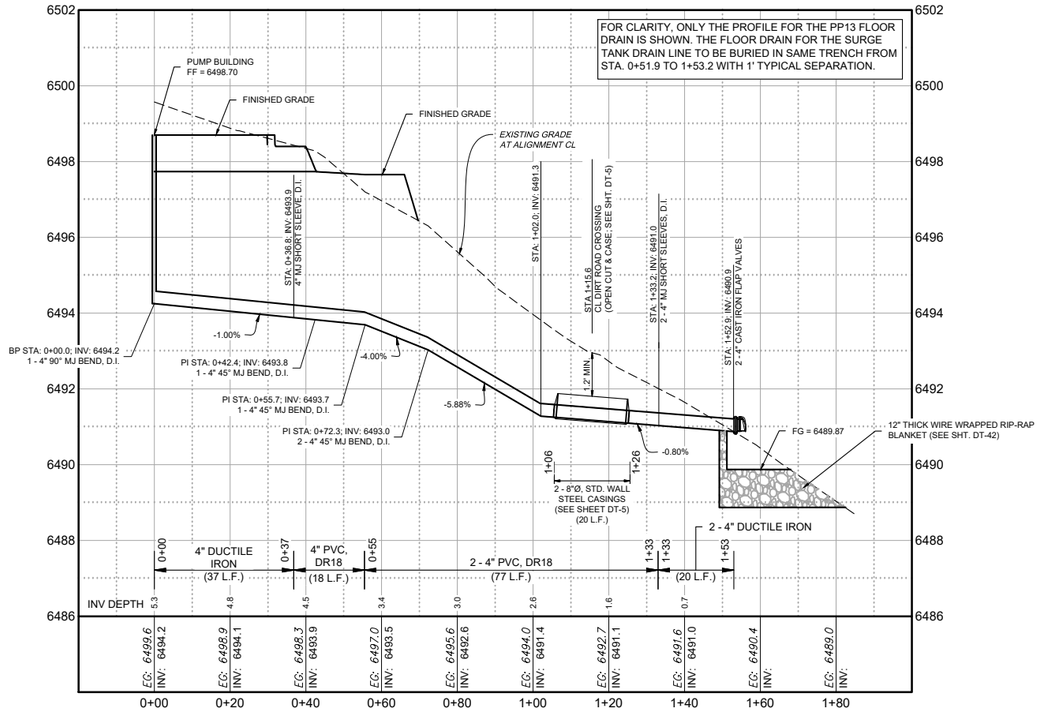
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PLAN VIEW

PUMPING PLANT 13 SITE - 4" BUILDING FLOOR DRAIN LINE



PROFILE VIEW

PUMPING PLANT 13 SITE - 4" BUILDING FLOOR DRAIN LINE

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PUMPING PLANT 13 DRAIN PLAN AND PROFILE
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

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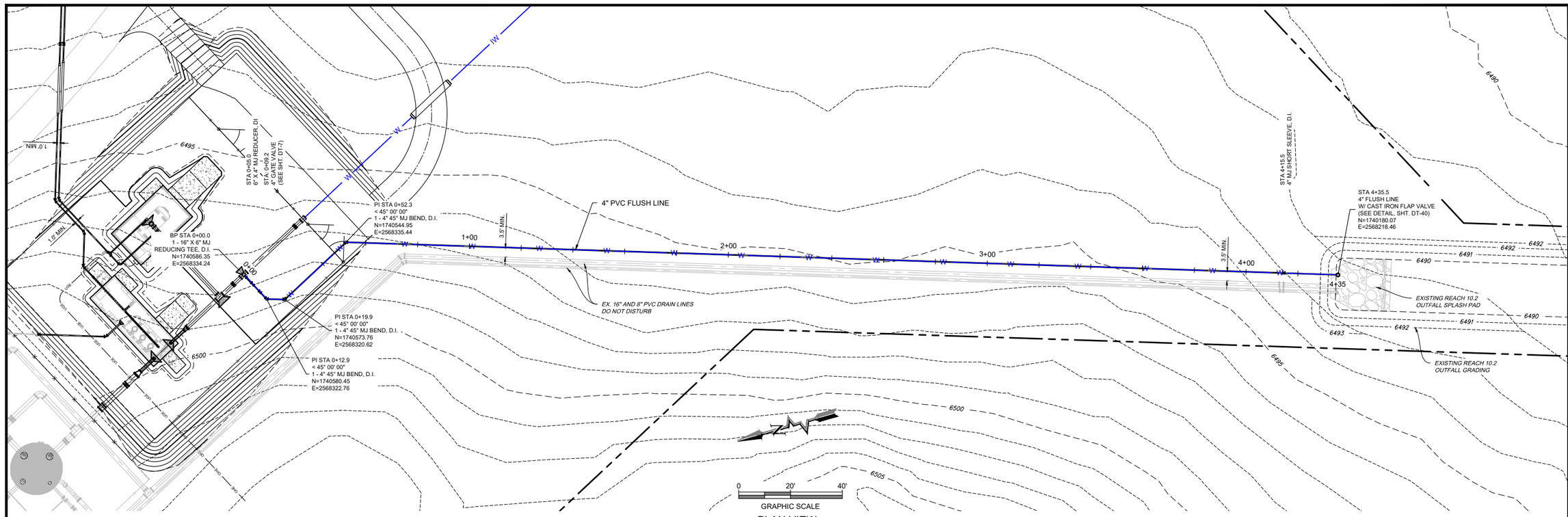
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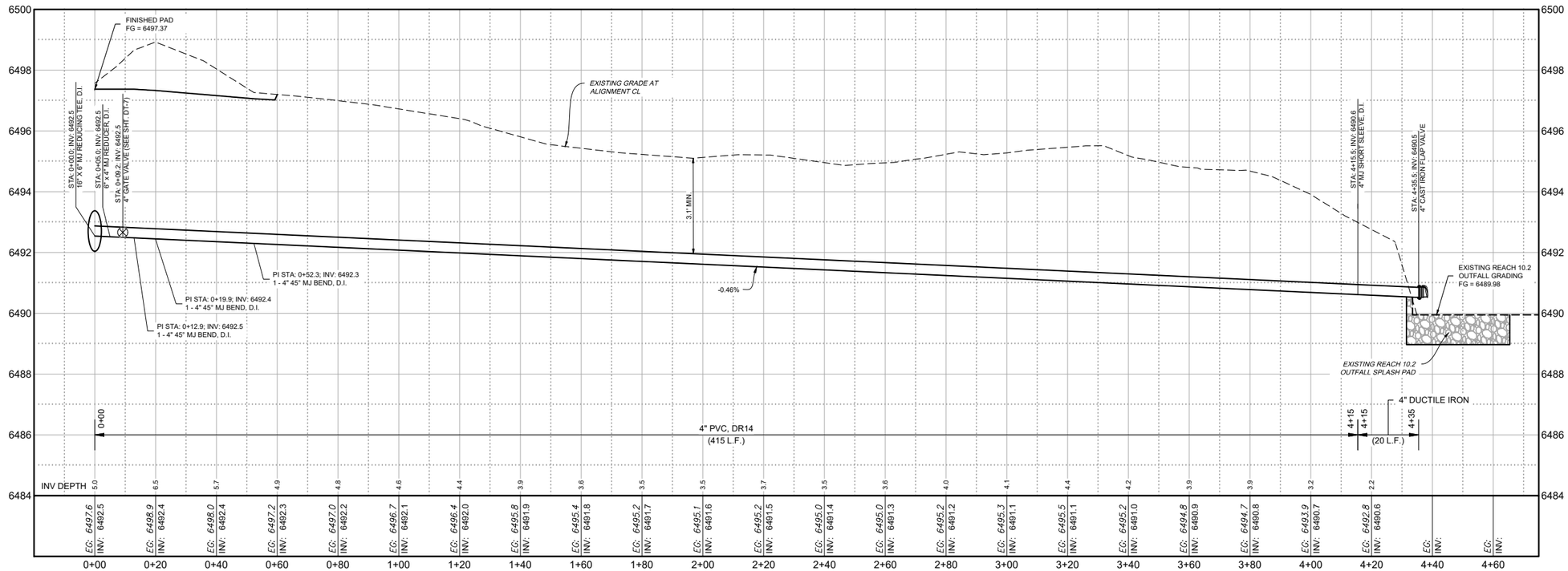
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PLAN VIEW

PUMPING PLANT 13 SITE - 4" FLUSH LINE



PROFILE VIEW

PUMPING PLANT 13 SITE - 4" FLUSH LINE

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PUMPING PLANT 13 FLUSH PLAN AND PROFILE
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BEACON BISTI N9 - REACH 10.3

McKINLEY COUNTY, NEW MEXICO
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TROY TADANO
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
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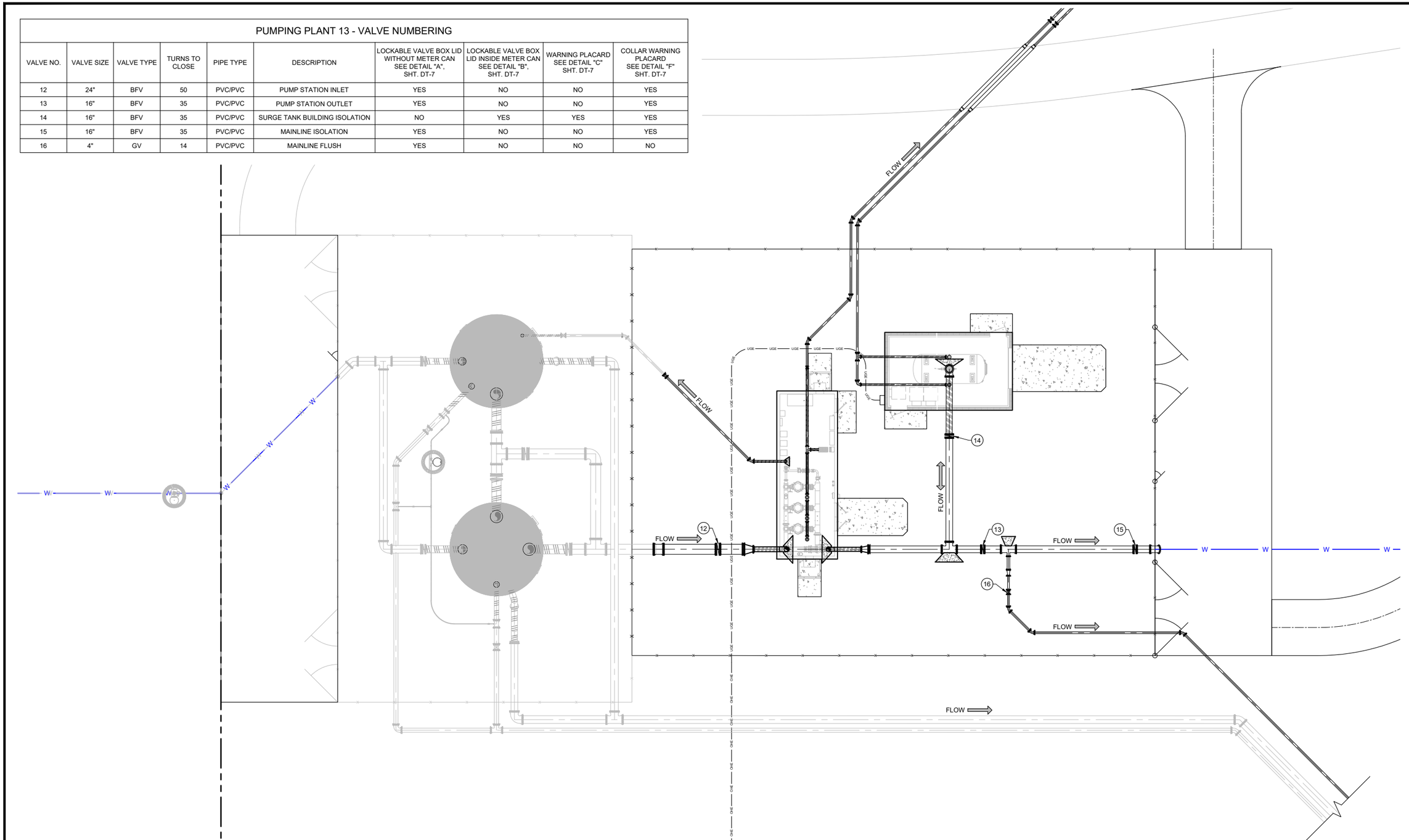
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PUMPING PLANT 13 - VALVE NUMBERING

VALVE NO.	VALVE SIZE	VALVE TYPE	TURNS TO CLOSE	PIPE TYPE	DESCRIPTION	LOCKABLE VALVE BOX LID WITHOUT METER CAN SEE DETAIL "A", SHT. DT-7	LOCKABLE VALVE BOX LID INSIDE METER CAN SEE DETAIL "B", SHT. DT-7	WARNING PLACARD SEE DETAIL "C" SHT. DT-7	COLLAR WARNING PLACARD SEE DETAIL "F" SHT. DT-7
12	24"	BFV	50	PVC/PVC	PUMP STATION INLET	YES	NO	NO	YES
13	16"	BFV	35	PVC/PVC	PUMP STATION OUTLET	YES	NO	NO	YES
14	16"	BFV	35	PVC/PVC	SURGE TANK BUILDING ISOLATION	NO	YES	YES	YES
15	16"	BFV	35	PVC/PVC	MAINLINE ISOLATION	YES	NO	NO	YES
16	4"	GV	14	PVC/PVC	MAINLINE FLUSH	YES	NO	NO	NO



0 10' 20'

GRAPHIC SCALE

PUMPING PLANT 13 SITE PLAN

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Location: Tse'iʼahi & Nahodishgish, NM

PUMPING PLANT 13 VALVE NUMBERING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3

McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

TROY TADANO — NEW MEXICO — 21073 — 12-31-25 — LICENSED PROFESSIONAL ENGINEER

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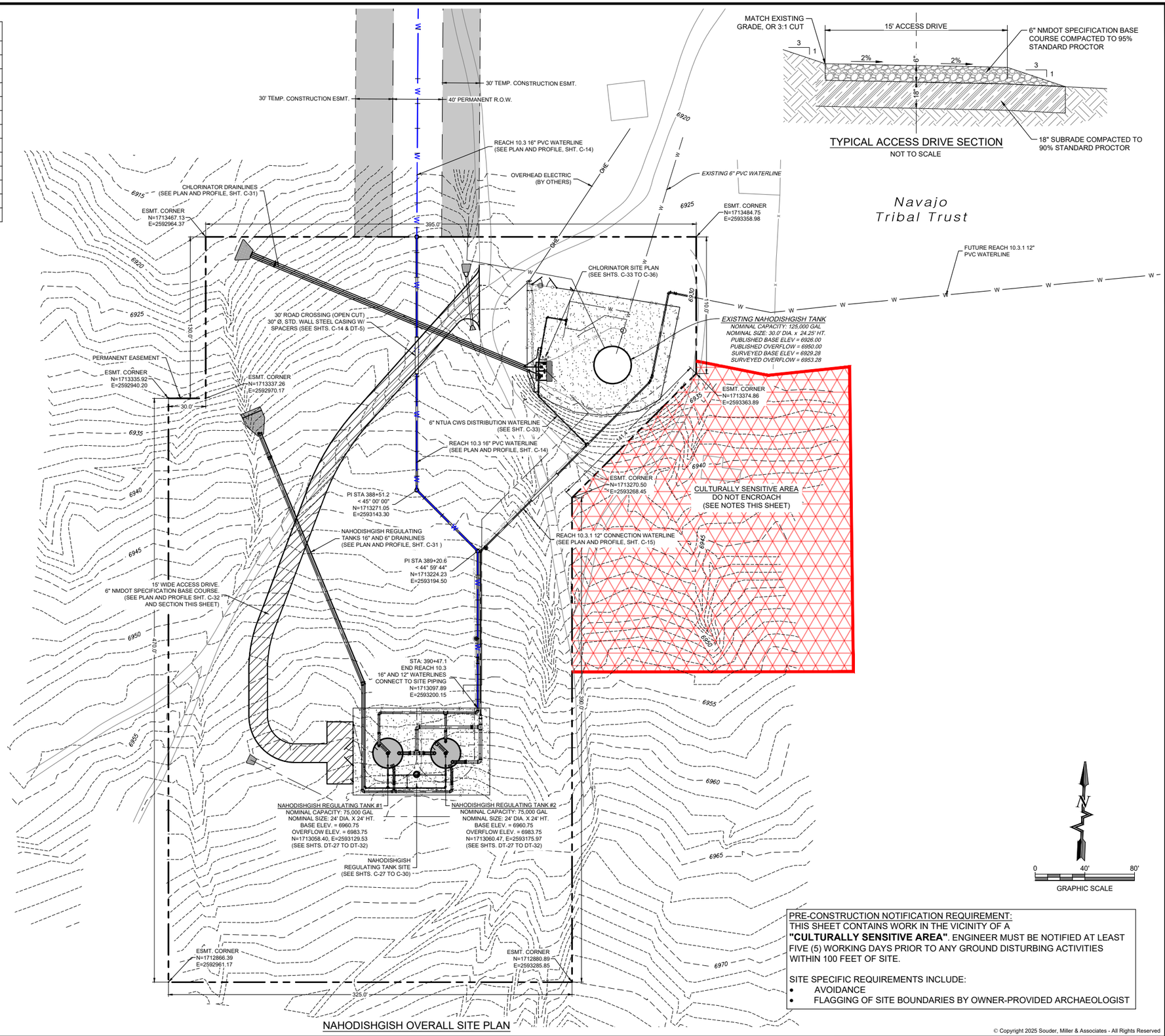
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NAHODISHGISH SITE SHEET LIST	
C-15	NAHODISHGISH REACH 10.3.1 CONNECTION P&P
C-26	NAHODISHGISH OVERALL SITE PLAN
C-27	NAHODISHGISH REGULATING TANK SITE PLAN
C-28	NAHODISHGISH REG. TANK SITE GRADING PLAN
C-29	NAHODISHGISH REG. TANK SITE PIPING PLAN
C-30	NAHODISHGISH REG. TANK SITE PIPE INVERTS
C-31	NAHODISHGISH REG. TANK DRAIN P & P
C-32	NAHODISHGISH ACCESS DRIVE PLAN & PROFILE
C-33	NAHODISHGISH CWS DISTRIBUTION SITE PLAN
C-34	NAHODISHGISH CWS DISTRIBUTION GRADING PLAN
C-35	NAHODISHGISH CWS DISTRIBUTION PIPING PLAN
C-36	NAHODISHGISH CHLORINATOR DRAIN P & P
C-37	NAHODISHGISH VALVE NUMBERING PLAN



NAHODISHGISH OVERALL SITE PLAN

TYPICAL ACCESS DRIVE SECTION
NOT TO SCALE

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Navajo Tribal Trust

LEGEND

- 2" GRAVEL OVER 4" NMDOT SPECIFICATION BASE COURSE
- 6" COMPACTED BASE COURSE ACCESS DRIVE OVER 18" OF COMPACTED SUBGRADE
- CONCRETE PAD

NOTE:
LOCATION OF EXISTING NAHODISHGISH NTUA CWS SITE PIPING IS APPROXIMATE. CONTRACTOR RESPONSIBLE TO DETERMINE EXACT LOCATION, DEPTH AND SIZE OF ALL BURIED UTILITY LINES AND TO COMPLY WITH ALL REQUIREMENTS SET FORTH IN THE ENCROACHMENT AGREEMENTS PROVIDED BY UTILITY OPERATORS AND IN THE DETAILS AND SPECIAL NOTES OF THESE DRAWINGS.

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
- FLAGGING OF SITE BOUNDARIES BY OWNER-PROVIDED ARCHAEOLOGIST

N

0 40' 80'
GRAPHIC SCALE

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NAHODISHGISH OVERALL SITE PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3

McKINLEY COUNTY, NEW MEXICO
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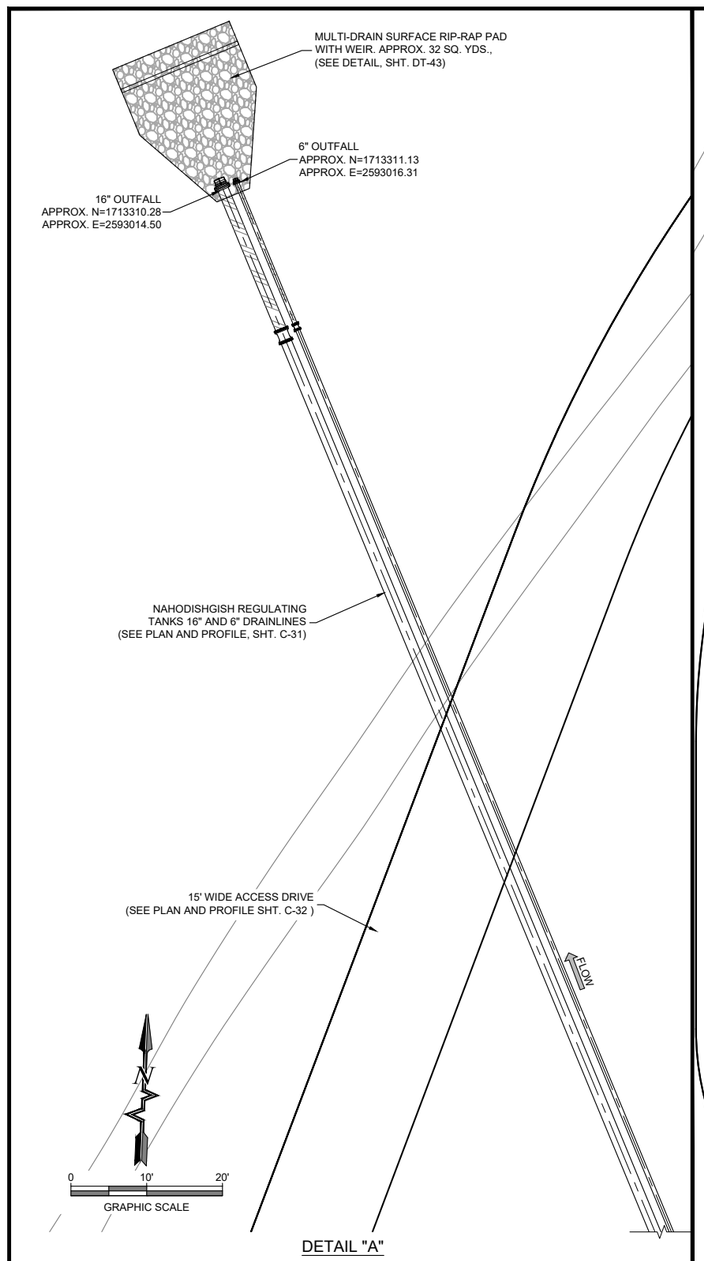
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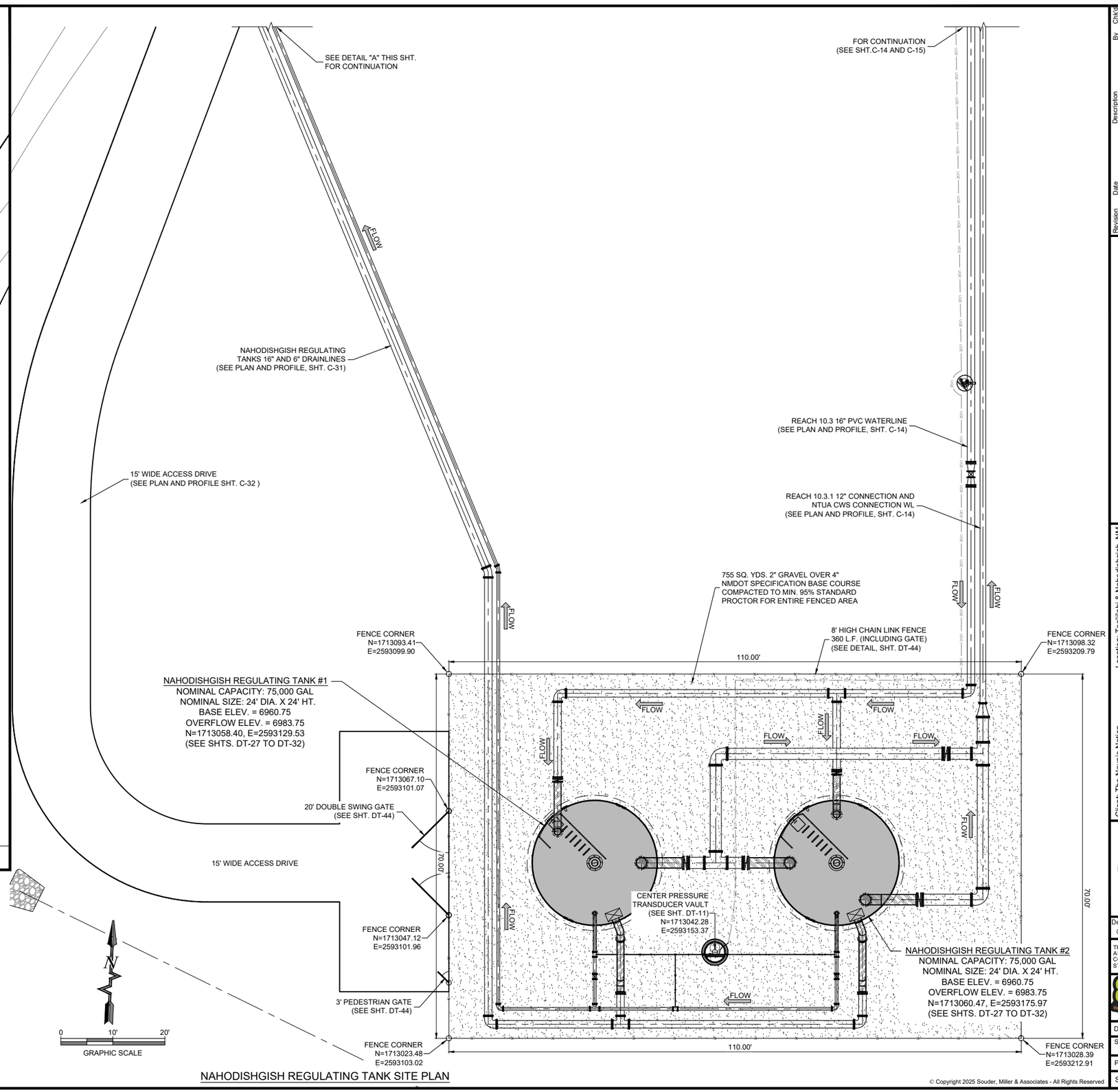
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DETAIL "A"



NAHODISHGISH REGULATING TANK SITE PLAN

NOTE:
LOCATION OF EXISTING NAHODISHGISH PIPING IS APPROXIMATE.
CONTRACTOR RESPONSIBLE TO DETERMINE EXACT LOCATION, DEPTH AND SIZE OF ALL BURIED UTILITY LINES AND TO COMPLY WITH ALL REQUIREMENTS SET FORTH IN THE ENCROACHMENT AGREEMENTS PROVIDED BY UTILITY OPERATORS AND IN THE DETAILS AND SPECIAL NOTES OF THESE DRAWINGS.

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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

NAHODISHGISH REGULATING TANK SITE PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3

McKINLEY COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

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

Designed	Drawn	Checked
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Scale: Horiz: 1" = 20'
Vert: N/A
Project No: 6922268
Sheet: C-27

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NOTES:
1. CONTOURS SHOWN WITHIN FENCED AREA AND ACCESS DRIVE REFER TO FINISHED GRADE TOP OF SURFACING MATERIAL.
2. FG = TOP OF SURFACING MATERIAL OR NATIVE SOIL.

15' WIDE ACCESS DRIVE
(SEE PLAN AND PROFILE, SHT. C-32)

NAHODISHGISH REGULATING TANK #1
NOMINAL CAPACITY: 75,000 GAL
NOMINAL SIZE: 24' DIA. X 24' HT.
BASE ELEV. = 6960.75

NAHODISHGISH REGULATING TANK #2
NOMINAL CAPACITY: 75,000 GAL
NOMINAL SIZE: 24' DIA. X 24' HT.
BASE ELEV. = 6960.75

FG\TOE = 6955.7
N = 1713111.51
E = 2593107.44

FG\TOE = 6956.0
N = 1713111.34
E = 2593103.66

FG\TOE = 6956.0
N = 1713113.13
E = 2593143.56

FG\TOE = 6956.0
N = 1713114.32
E = 2593170.31

FG\TOE = 6955.1
N = 1713120.40
E = 2593203.49

FG\TOE = 6956.0
N = 1713111.14
E = 2593222.07

FG\TOE = 6957.0
N = 1713105.70
E = 2593096.50

FG\TOE = 6958.0
N = 1713091.41
E = 2593092.06

FG = 6959.55
N = 1713095.70
E = 2593151.13

FG = 6959.55
N = 1713098.32
E = 2593209.79

FG\TOE = 6957.0
N = 1713100.31
E = 2593222.47

FG\TOE = 6958.0
N = 1713089.39
E = 2593218.88

FG = 6959.77
N = 1713082.38
E = 2593100.39

FG = 6959.77
N = 1713081.44
E = 2593079.41

FG = 6959.55
N = 1713093.41
E = 2593099.90

FG\TOE = 6959.0
N = 1713078.68
E = 2593215.41

CENTER OF TANK
N=1713058.40
E=2593129.53

CENTER OF TANK
N=1713060.47
E=2593175.97

FG = 6958.76
EG = 6961.11
N = 1713046.46
E = 2593022.99

FG = 6960.00
N = 1713060.58
E = 2593106.70

FG = 6960.00
N = 1713056.94
E = 2593152.87

FG = 6960.00
N = 1713060.98
E = 2593199.21

FG\TOP = 6961.0
N = 1713057.50
E = 2593213.51

FG = 6959.00
EG = 6961.11
N = 1713042.91
E = 2593031.10

FG = 6960.77
N = 1713032.43
E = 2593102.62

FG\TOP = 6962.0
N = 1713043.82
E = 2593216.29

12" THICK RIP-RAP PAD.
APPROX. 4.5 SQ. YDS.,
(SEE DETAIL, SHT. DT-40)

FG = 6960.77
N = 1713031.49
E = 2593081.64

FG\TOP = 6962.8
N = 1713026.11
E = 2593097.19

6" VAULT EXPOSURE
FG = 6960.50
N = 1713039.71
E = 2593153.48

CENTER OF
TRANSDUCER VAULT
TOP VAULT EL=6961.00
N=1713042.28
E=2593153.37

FG = 6960.45
N = 1713037.20
E = 2593177.01

FG\TOP = 6963.0
N = 1713032.68
E = 2593219.12

FG = 6960.95
N = 1713023.48
E = 2593103.02

FG = 6960.40
N = 1713035.12
E = 2593130.57

FG = 6960.95
N = 1713028.39
E = 2593212.91

FG\TOP = 6964.0
N = 1713020.83
E = 2593218.18

FG = 6960.00
EG = 6961.99
N = 1713027.92
E = 2593065.39

FG = 6962.00
EG = 6963.06
N = 1713014.53
E = 2593096.02

FG\TOP = 6965.0
N = 1713015.97
E = 2593207.32

FG = 6963.01
EG = 6964.56
N = 1713009.17
E = 2593107.69

FG = 6963.87
EG = 6964.78
N = 1713007.05
E = 2593125.37

FG = 6965.00
EG = 6965.00
N = 1713010.98
E = 2593213.28

-5.0:1 -1.40% -4.38% -1.29% -3.85% -5.68% 1.66% 1.66% -3.0:1

VARIES VARIES
3:1 3:1 3:1 3:1
DEPTH PER PLAN

PROPOSED TYPICAL SWALE
N.T.S.

N

0 10' 20'
GRAPHIC SCALE

NAHODISHGISH REGULATING TANK SITE GRADING PLAN

NOTE:
1. FG REFERS TO THE TOP OF SURFACING MATERIAL.

NAHODISHGISH REGULATING TANK SITE CUT/FILL DATA

MATERIAL TYPE	CUT	FILL	EXPORT/IMPORT
*NATIVE SOILS (ON SITE)	353 CU. YDS.	353 CU.YDS	0 CU. YDS. IMPORT
SURFACING MATERIAL (BASE COURSE AND FINISH GRAVEL)	----	126 CU.YDS	126 CU. YDS. IMPORT
ACCESS ROAD - NATIVE SOILS	15 CU. YDS.	---	15 CU. YDS. EXPORT
ACCESS ROAD - 6" BASE COURSE	---	153 CU. YDS.	153 CU. YDS. IMPORT
RIP RAP	---	4.5 SQ. YDS.	4.5 SQ. YDS. IMPORT

BASED ON COMPACTION = 1.20
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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NAHODISHGISH REG. TANK SITE GRADING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

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

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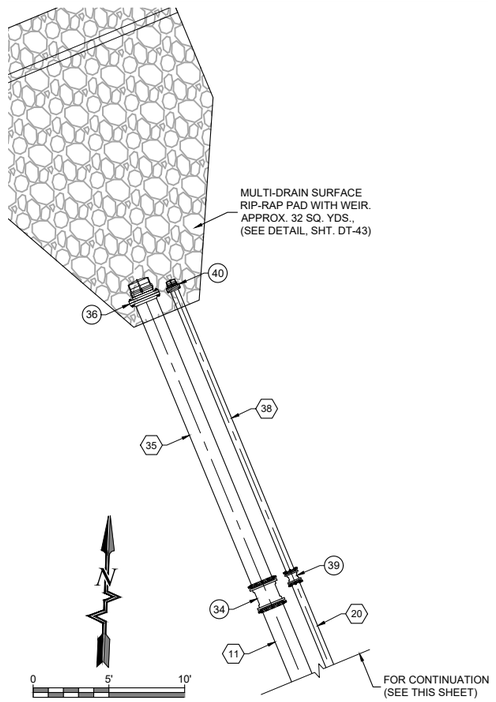
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KEYED NOTES - NAHODISHGISH REGULATING TANK SITE

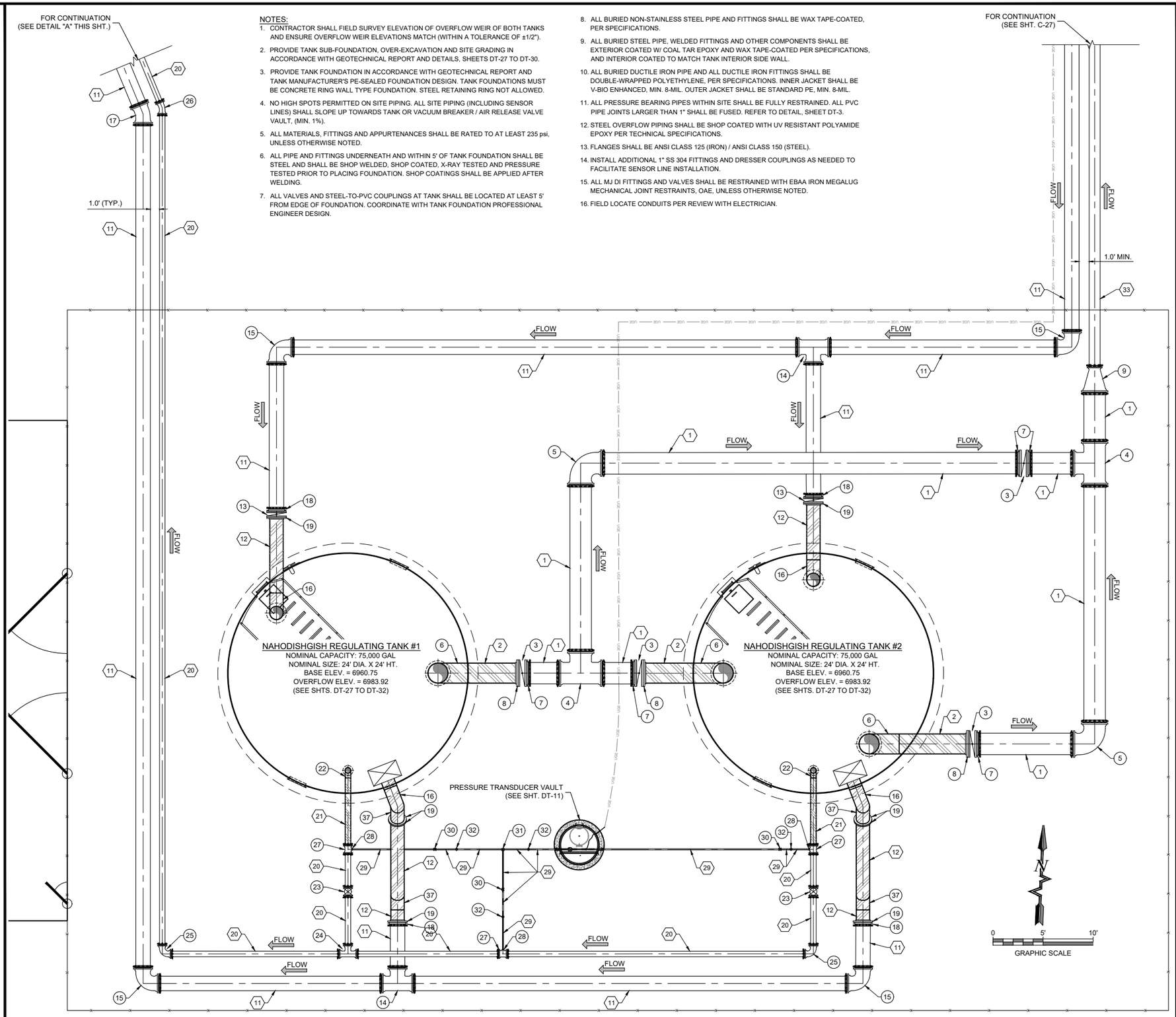
Item No.	Description
1	24" PVC DR21 PIPE, 200 psi
2	24" STEEL PIPE, STANDARD WALL
3	24" FL x FL BUTTERFLY VALVE (SEE DETAIL, SHT. DT-7) 350 psi
4	24" MJ TEE, DI 350 psi
5	24" MJ 90° BEND, DI 350 psi
6	24" 90° BEND, WELDED STEEL
7	24" MJ FLANGE ADAPTER, 304 BOLTS, MEGAFLANGE SERIES 2100, 235 psi, OAE
8	24" FLANGE, WELDED STEEL
9	24" x 12" MJ REDUCER, DI 350 psi
10	NOT USED
11	16" PVC DR21 PIPE, 200 psi
12	16" STEEL PIPE, STANDARD WALL
13	16" FL x FL BUTTERFLY VALVE (SEE DETAIL, SHT. DT-7) 350 psi
14	16" MJ TEE, DI 350 psi
15	16" MJ 90° BEND, DI 350 psi
16	16" 90° BEND, WELDED STEEL
17	16" MJ 22.5° BEND, DI 350 psi
18	16" MJ FLANGE ADAPTER, 304 BOLTS, MEGAFLANGE SERIES 2100, 235 PSI, OAE
19	16" FLANGE, WELDED STEEL
20	6" PVC DR18 PIPE, 235 psi
21	6" STEEL PIPE, STANDARD WALL
22	6" 90° BEND, WELDED STEEL
23	6" MJ x MJ GATE VALVE (SEE DETAIL, SHT. DT-7) 350 psi
24	6" MJ TEE, DI 350 psi
25	6" MJ 90° BEND, DI 350 psi
26	6" MJ 22.5° BEND, DI 350 psi
27	6" x 2" MJ TAPPED TEE, NPT, DI
28	2" MALE x 1" FEMALE REDUCING BUSHING, NPT, SS 304
29	1" STEEL PIPE, NPT, SS 304
30	1" MUELLER 300 BALL CURB VALVE, 300 psi OAE (SEE DETAIL, SHT. DT-10)
31	1" TEE, NPT, SS 304
32	1" DRESSER COUPLING
33	12" PVC DR18 PIPE, 235 psi
34	16" MJ SHORT SLEEVE, DI
35	16" FL x PE DUCTILE IRON PIPE, 20 L.F., 350 psi
36	16" FLANGED CAST IRON FLAP VALVE (SEE DETAIL, SHT. DT-42)
37	16" 45° BEND, WELDED STEEL
38	6" FL x PE DUCTILE IRON PIPE, 20 L.F., 350 psi
39	6" MJ SHORT SLEEVE, DI
40	6" FLANGED CAST IRON FLAP VALVE (SEE DETAIL, SHT. DT-42)



DETAIL "A"

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. PROVIDE TANK SUB-FOUNDATION, OVER-EXCAVATION AND SITE GRADING IN ACCORDANCE WITH GEOTECHNICAL REPORT AND DETAILS, SHEETS DT-27 TO DT-30.
3. PROVIDE TANK FOUNDATION IN ACCORDANCE WITH GEOTECHNICAL REPORT AND TANK MANUFACTURER'S PE-SEALED FOUNDATION DESIGN. TANK FOUNDATIONS MUST BE CONCRETE RING WALL TYPE FOUNDATION. STEEL RETAINING RING NOT ALLOWED.
4. 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%).
5. ALL MATERIALS, FITTINGS AND APPURTENANCES SHALL BE RATED TO AT LEAST 235 psi, UNLESS OTHERWISE NOTED.
6. 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.
7. 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.
8. ALL BURIED NON-STAINLESS STEEL PIPE AND FITTINGS SHALL BE WAX TAPE-COATED, PER SPECIFICATIONS.
9. ALL BURIED STEEL PIPE, WELDED FITTINGS AND OTHER COMPONENTS SHALL BE EXTERIOR COATED W/ COAL TAR EPOXY AND WAX TAPE-COATED PER SPECIFICATIONS, AND INTERIOR COATED TO MATCH TANK INTERIOR SIDE WALL.
10. 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.
11. ALL PRESSURE BEARING PIPES WITHIN SITE SHALL BE FULLY RESTRAINED. ALL PVC PIPE JOINTS LARGER THAN 1" SHALL BE FUSED. REFER TO DETAIL, SHEET DT-3.
12. STEEL OVERFLOW PIPING SHALL BE SHOP COATED WITH UV RESISTANT POLYAMIDE EPOXY PER TECHNICAL SPECIFICATIONS.
13. FLANGES SHALL BE ANSI CLASS 125 (IRON) / ANSI CLASS 150 (STEEL).
14. INSTALL ADDITIONAL 1" SS 304 FITTINGS AND DRESSER COUPLINGS AS NEEDED TO FACILITATE SENSOR LINE INSTALLATION.
15. ALL MJ DI FITTINGS AND VALVES SHALL BE RESTRAINED WITH EBAA IRON MEGALUG MECHANICAL JOINT RESTRAINTS, OAE, UNLESS OTHERWISE NOTED.
16. FIELD LOCATE CONDUITS PER REVIEW WITH ELECTRICIAN.



NAHODISHGISH REGULATING TANK SITE PIPING PLAN

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NAHODISHGISH REG. TANK SITE PIPING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3

McKINLEY COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

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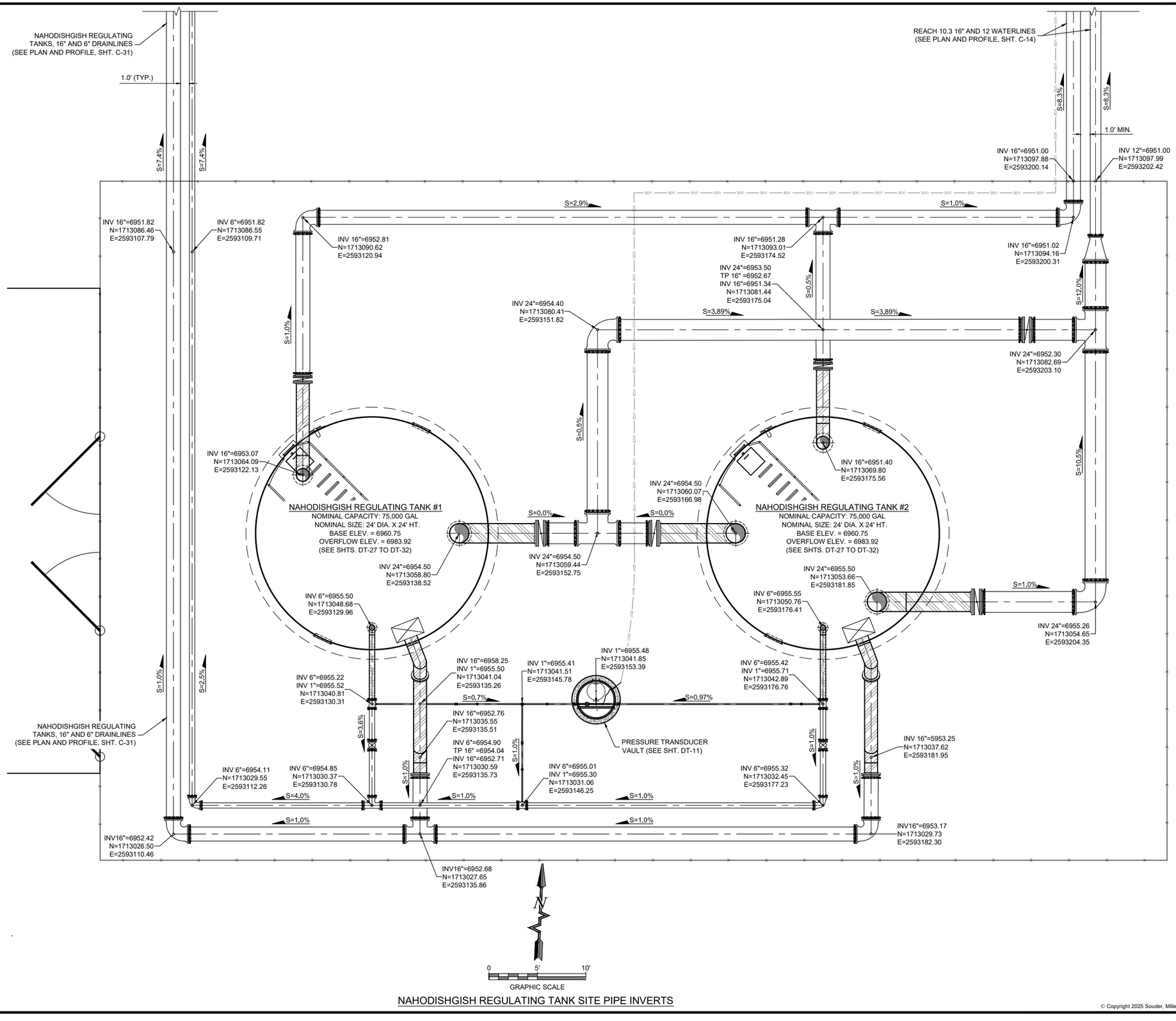
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NAHODISHGISH REGULATING TANK SITE PIPE INVERTS

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NAVAJO GALLUP WATER SUPPLY PROJECT
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McKINLEY COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

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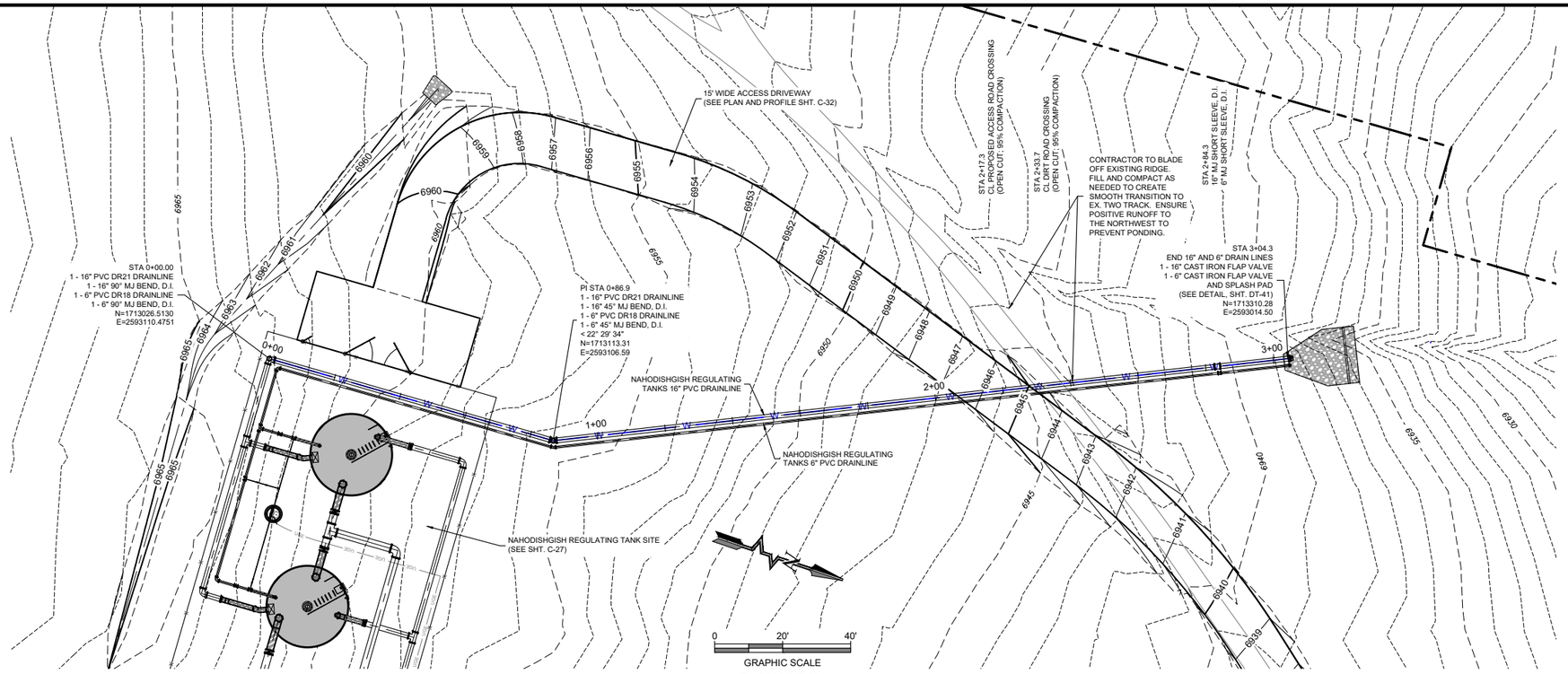
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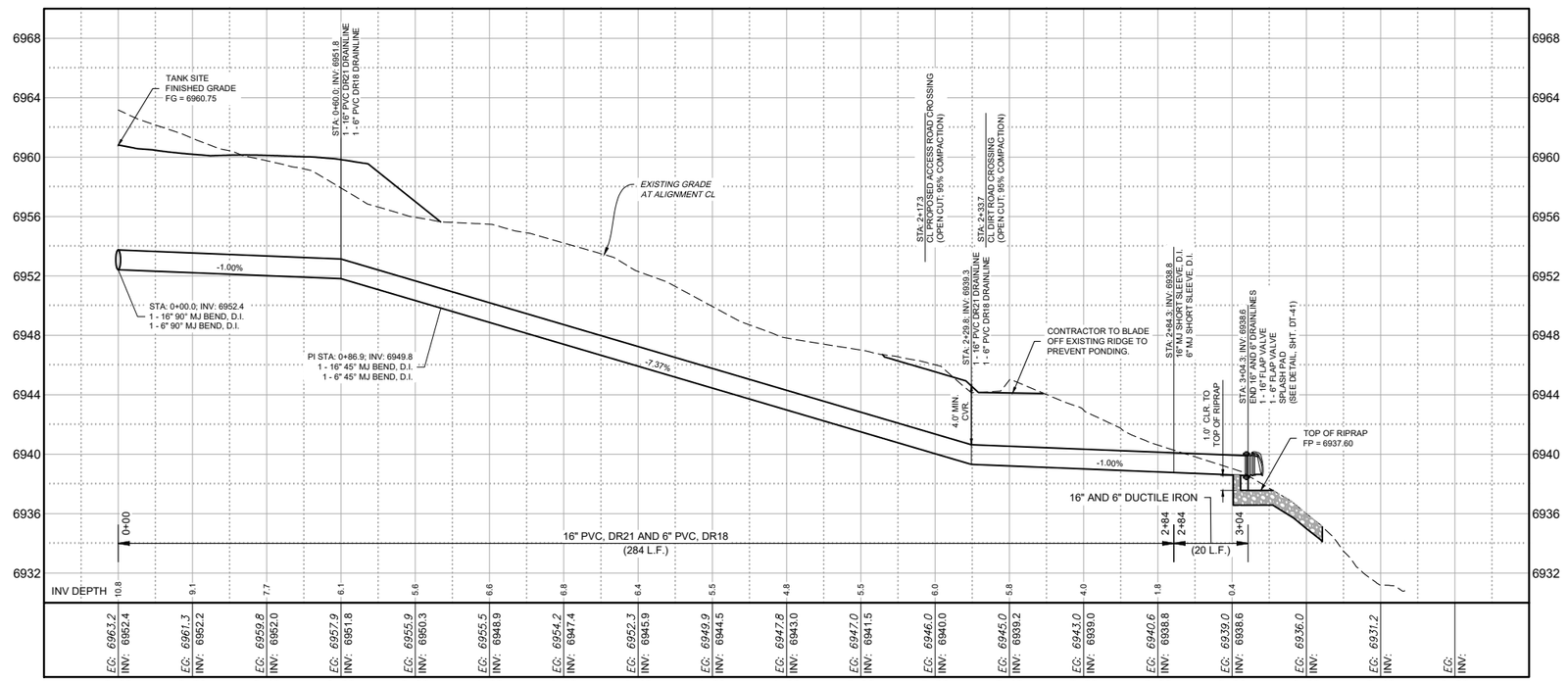
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Project No: 6922268
Sheet: C-30

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PLAN VIEW

NAHODISHGISH REGULATING TANK 16" AND 6" DRAIN LINES



PROFILE VIEW

NAHODISHGISH REGULATING TANK 16" AND 6" DRAIN LINES

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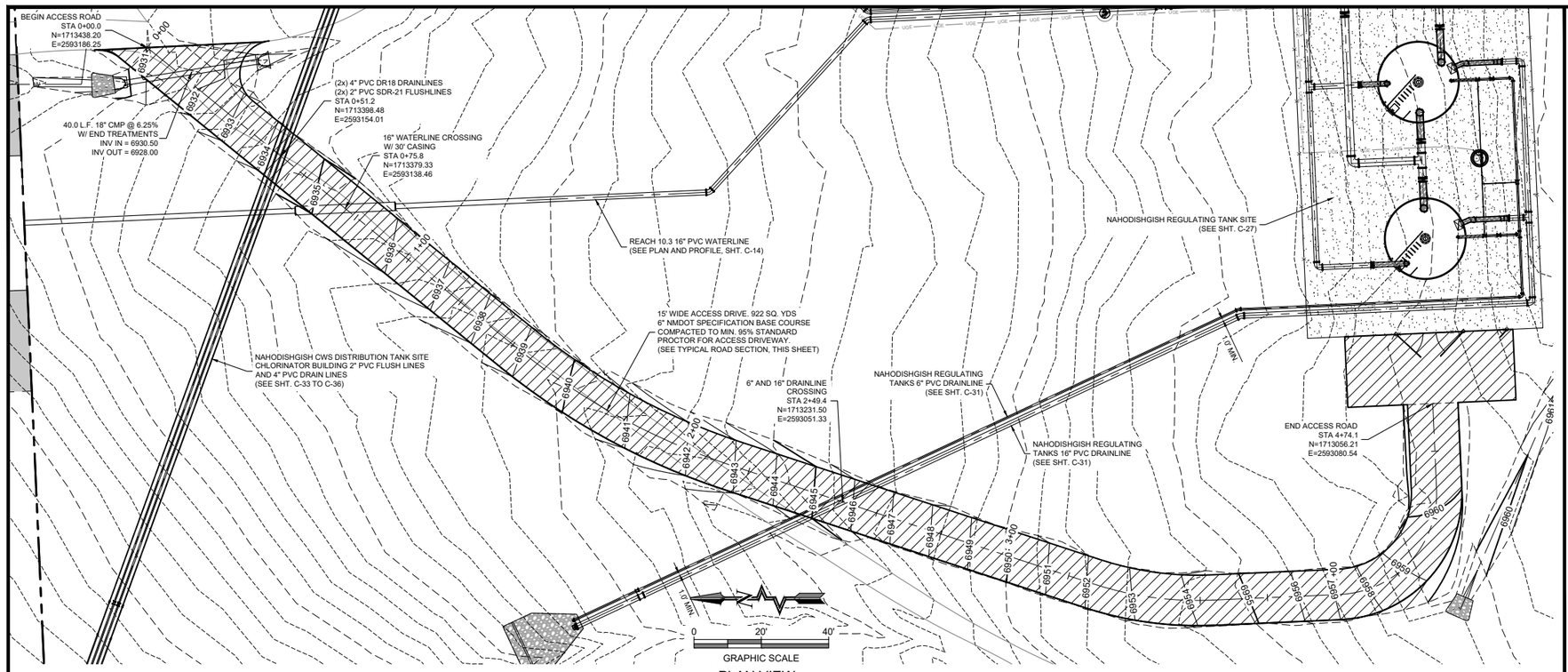
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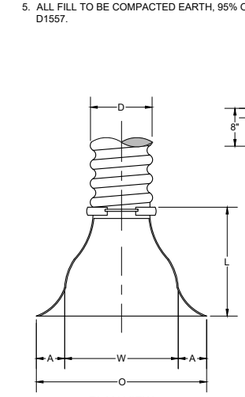


PLAN VIEW

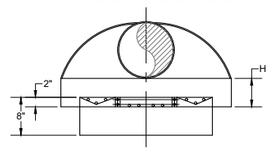
NAHODISHGISH REGULATING TANK ACCESS DRIVE

NOTES:

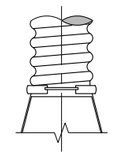
1. ALL 3 PIECE BODIES TO HAVE 12 GA. SIDES AND 10 GA. CENTER PANELS. WIDTH OF CENTER PANELS TO BE GREATER THAN 20% OF THE PIPE PERIPHERY. MULTIPLE PANEL BODIES TO HAVE LAP SEAMS WHICH ARE TO BE TIGHTLY JOINED BY ~6" GALVANIZED RIVETS OR BOLTS.
2. WELDING WILL NOT BE PERMITTED IN CONNECTING END SECTIONS TO CONNECTOR SECTIONS OR CONNECTOR SECTIONS TO PIPE.
3. TYPE 1 PIPE MAY BE USED WITH WELDED SEAM OR LOCKSEAM CONNECTED HELICALLY CORRUGATED PIPE WITH RE-ROLLED ENDS. RE-ROLLED ENDS SHALL INCLUDE A MINIMUM OF 2 ANNULAR CORRUGATIONS OF THE SAME SIZE AS THE PIPE CORRUGATIONS.
4. INSTALL 4x 66" CARSONITE UTILITY MARKERS, 2x AT EACH END, AT ALL CULVERT CROSSINGS OFFSET 12" FROM THE ROAD OR DRIVEWAY SURFACE.
5. ALL FILL TO BE COMPACTED EARTH, 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.



PLAN VIEW



ELEVATION VIEW

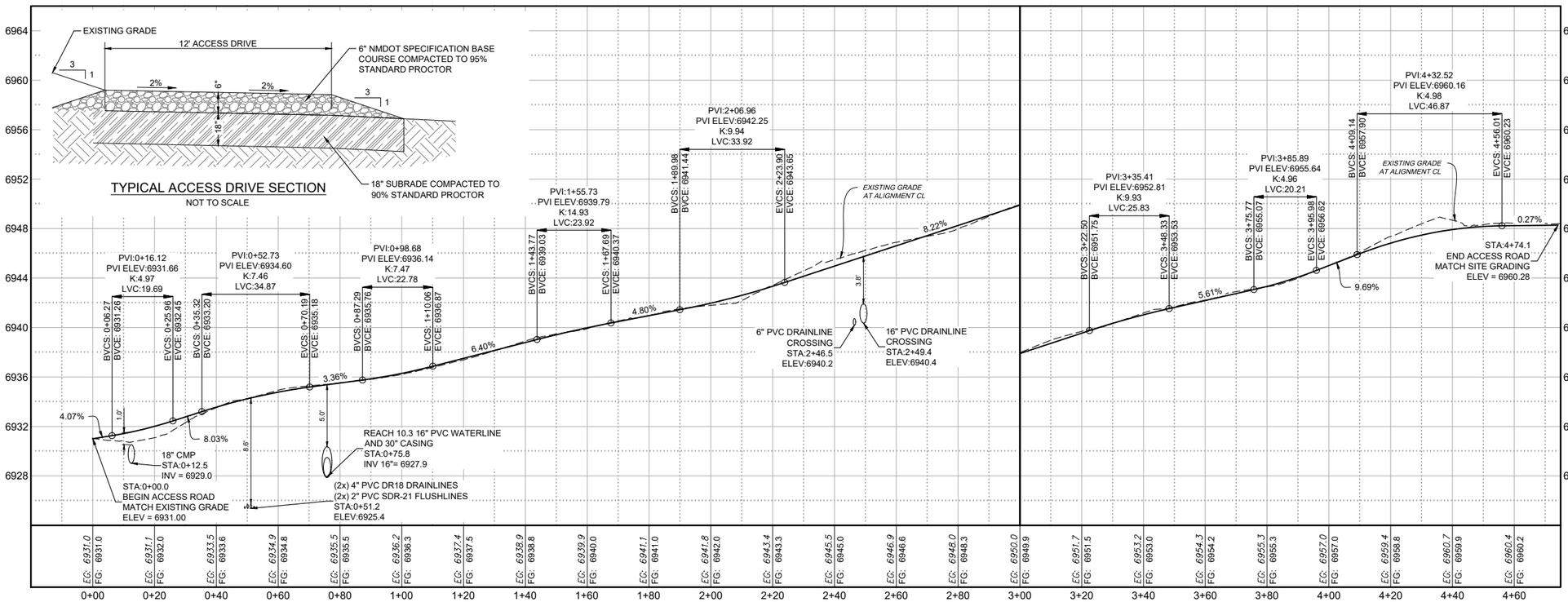


TYPE 1 STANDARD CONNECTION

END SECTIONS FOR ROUND PIPE						
D (Pipe Diameter) (Inches)	Gage	A (± 1") (Inches)	H (Min) (Inches)	L (± 2") (Inches)	W (± 2") (Inches)	O (Overall Width) (± 4") (Inches)
18"	16	8"	6"	31"	36"	52"

TYPICAL ACCESS DRIVE SECTION

NOT TO SCALE



PROFILE VIEW

NAHODISHGISH REGULATING TANK ACCESS DRIVE

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Project No: 6922268

Sheet: C-32

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LEGEND

2" GRAVEL OVER EXISTING SURFACE

FENCE CORNER
N=1713440.70
E=2593228.75

EXISTING GATE TO BE REMOVED AND REPLACED WITH 20' SWING GATE (SEE SHT. DT-44)

1056 SQ. YDS 2" GRAVEL. CONTRACTOR TO CLEAR AND GRUB EXISTING SURFACE MATERIAL. CONTRACTOR SHALL NOT DISTURB ANY EXISTING SURFACE APPURTENANCES, TO INCLUDE GATE VALVES, COLLARS, VAULTS AND RISERS.

FENCE CORNER
N=1713441.10
E=2593224.73

FENCE CORNER
N=1713438.73
E=2593248.66

3' PEDESTRIAN GATE (SEE SHT. DT-44)

EXISTING 6" PVC WATERLINE

EXISTING 6' FENCE TO BE REMOVED AND REPLACED

EXISTING 6' FENCE TO BE REMOVED

EXISTING 6" PVC WATERLINE

EXISTING 6" PVC DRAINLINE

CONNECT TO EXISTING 6" PVC TEMPORARY TANK LINE

EXISTING GATE VALVE

EXISTING GATE VALVE

EXISTING GATE VALVE

EXISTING 6" PVC OVERFLOW

FENCE CORNER
N=1713427.59
E=2593348.40

8' HIGH CHAIN LINK FENCE
400 L.F. INCLUDING GATE
(SEE SHT. DT-44)

SEE DETAIL "A" THIS SHT.
FOR CONTINUATION

EXISTING PRESSURE TRANSDUCER VAULT

EXISTING 4" TEMP TANK INLET

EXISTING 4" TEMP TANK DRAINLINE CONNECTION

CHLORINATOR BUILDING
(SEE SHTS. DT-35 TO DT-39)

EXISTING NAHODISHGISH TANK
NOMINAL CAPACITY: 125,000 GAL
NOMINAL SIZE: 30.0' DIA. x 24.25' HT.
SURVEYED BASE ELEV = 6929.28
SURVEYED OVERFLOW = 6953.28

EXISTING 6' FENCE TO BE REMOVED AND REPLACED

2 - 2" FLUSH LINES
2 - 4" DRAINLINES
(SEE PLAN AND PROFILE, SHT. C-31)

FENCE CORNER
N=1713369.78
E=2593227.84

EXISTING 6' FENCE TO BE REMOVED

REACH 10.3.1 12" CONNECTION WATERLINE
(SEE PLAN AND PROFILE, SHT. C-15)

FENCE CORNER
N=1713354.54
E=2593233.31

FENCE CORNER
N=1713346.18
E=2593249.14

FENCE CORNER
N=1713353.07
E=2593336.10

FENCE CORNER
N=1713339.44
E=2593267.30

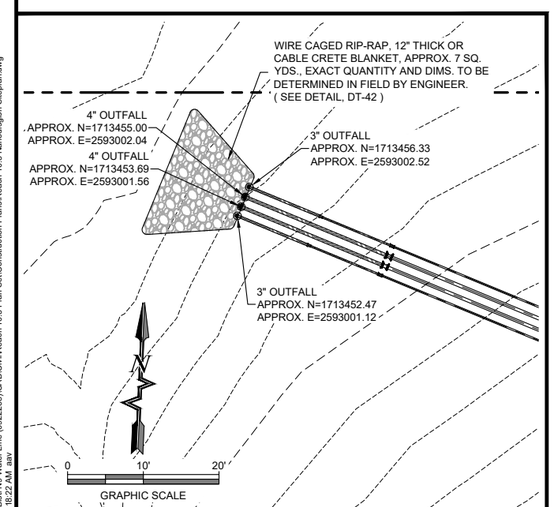
FENCE CORNER
N=1713337.84
E=2593289.32

FENCE CORNER
N=1713342.47
E=2593319.10

CULTURALLY SENSITIVE AREA
DO NOT ENCROACH

GRAPHIC SCALE
0 5' 10'

EXISTING NAHODISHGISH TANK SITE PLAN



DETAIL "A"

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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

NAHODISHGISH CWS DISTRIBUTION SITE PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

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

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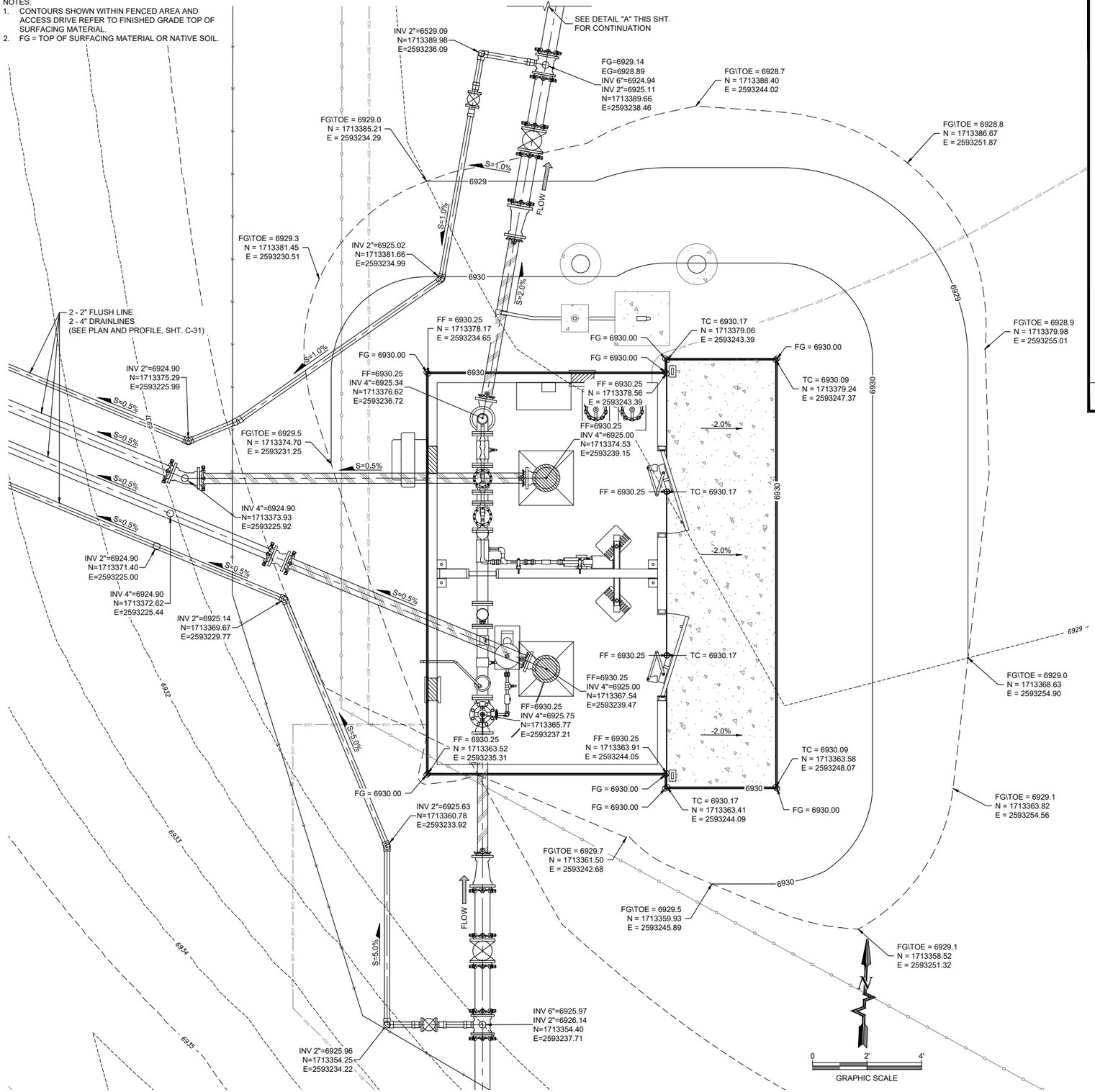
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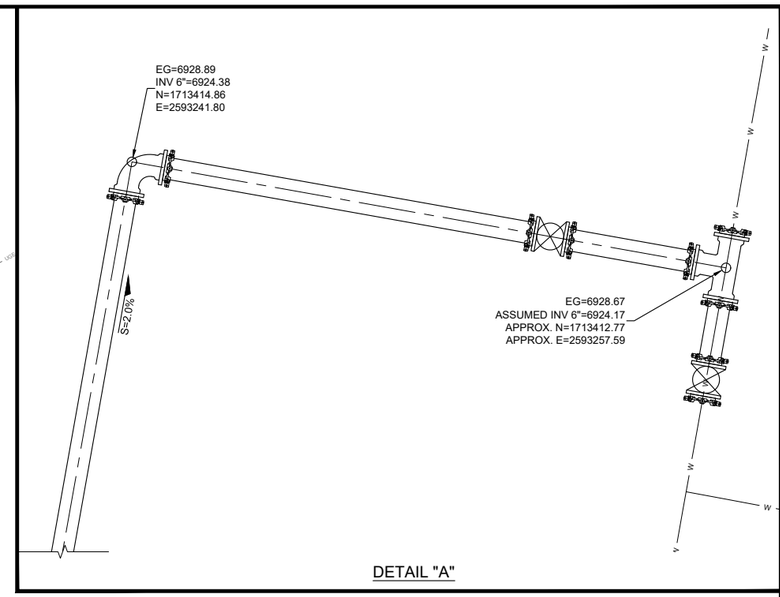
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NOTES:
1. CONTOURS SHOWN WITHIN FENCED AREA AND ACCESS DRIVE REFER TO FINISHED GRADE TOP OF SURFACING MATERIAL.
2. FG = TOP OF SURFACING MATERIAL OR NATIVE SOIL.





EXISTING NAHODISHGISH TANK SITE - GRADING PLAN

NOTE:
1. FG REFERS TO THE TOP OF SURFACING MATERIAL.

NAHODISHGISH CHLORINATOR SITE CUT/FILL DATA

MATERIAL TYPE	CUT	FILL	EXPORT/IMPORT
*NATIVE SOILS (ON SITE)	----	17 CU.YDS	17 CU. YDS. IMPORT
SURFACING MATERIAL (FINISH GRAVEL)	----	59 CU.YDS	59 CU. YDS. IMPORT

BASED ON COMPACTION = 1.20
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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Location: Tse'ii'ahi & Nahodishgish, NM

NAHODISHGISH CWS DISTRIBUTION GRADING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

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

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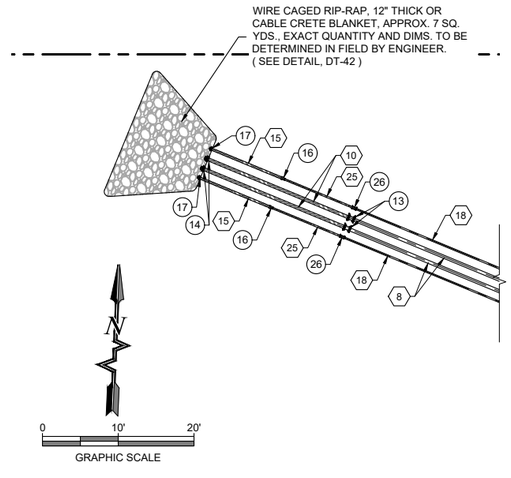
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KEYED NOTES - NAHODISHGISH EXISTING TANK SITE

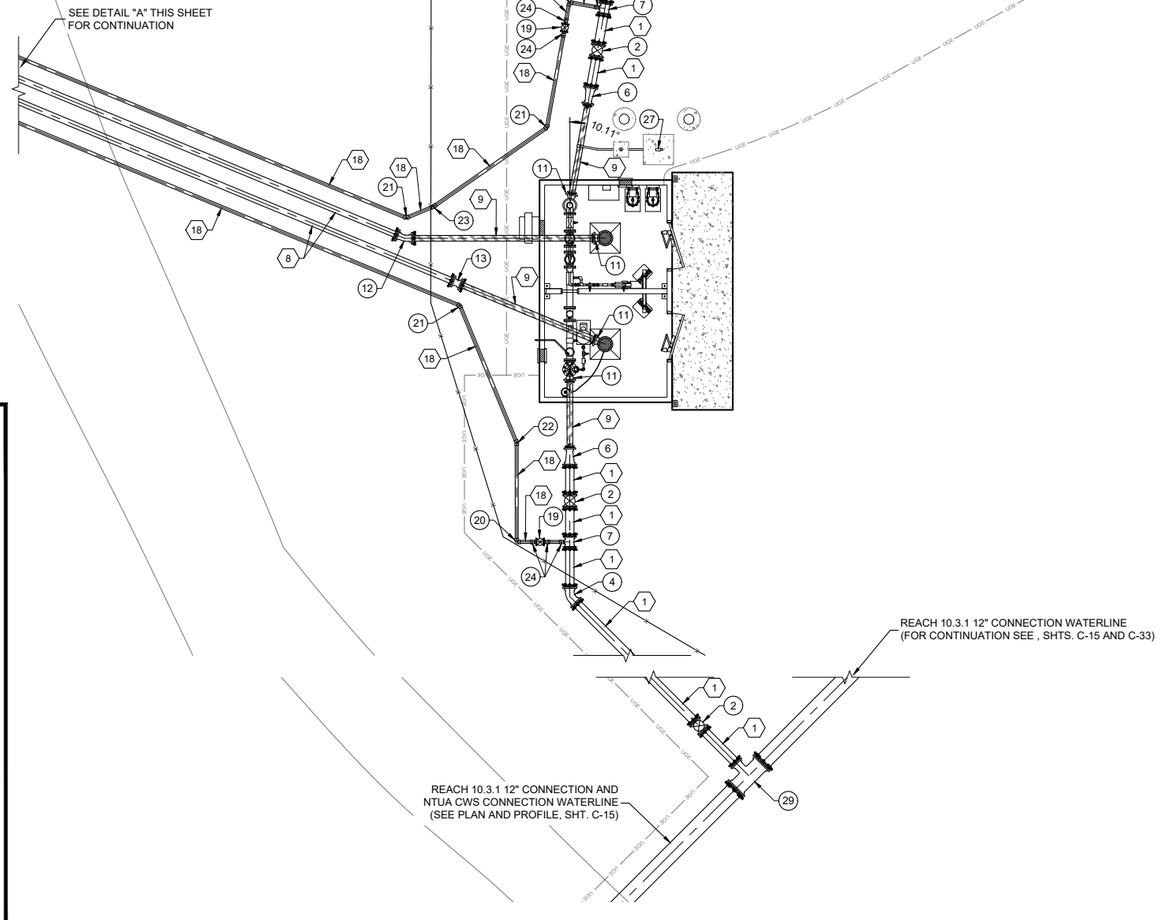
Item No.	Description
1	6" PVC DR18 PIPE
2	6" MJ x MJ GATE VALVE (SEE DETAIL, SHT. DT-7)
3	6" MJ 90° BEND, DI 350 psi
4	6" MJ 45° BEND, DI 350 psi
5	6" MJ x MJ TEE, D.I.
6	6" x 4" MJ REDUCER, D.I.
7	6" x 2" MJ x MJ TAPPED TEE, D.I.
8	4" PVC DR18 PIPE
9	4" DUCTILE IRON PIPE
10	4" FL x PE DUCTILE IRON PIPE, 20 L.F., 350psi
11	4" MJ 90° BEND, DI 350 PSI
12	4" MJ 22.5° BEND, DI 350 PSI
13	4" MJ SHORT SLEEVE, DI
14	4" CAST IRON FLAP VALVE (SEE DETAIL, SHT. DT-42)
15	3" G.I. PIPE, STANDARD WALL, NPT
16	3" x 2" G.I. REDUCER, NPT
17	3" CAST IRON FLAP VALVE (SEE DETAIL, SHT. DT-42)
18	2" PVC, SDR-21, 200 psi
19	2" MUELLER GATE VALVE, NPT, 350 PSI, OAE
20	2" 90° BEND, PVC
21	2" 45° BEND, PVC
22	2" 22.5° BEND, PVC
23	2" 11.25° BEND, PVC
24	2" ADAPTER, PVC, SLIP-GASKET x NPT, SDR-21, 200 psi
25	2" G.I. PIPE, STANDARD WALL
26	2" DRESSER COUPLING
27	1" YARD HYDRANT ASSEMBLY (SEE DETAIL, SHT. DT-10)
28	HORIZONTAL MOUNT PRESSURE TRANSDUCER 0-30 PSI, WIKA TYPE C10, W/ 1/4" SS 304 BALL VALVE, 2000 PSI (SECURED TO UNISTRUT SUPPORT) (SEE NOTE 9)
29	12" x 6" MJ REDUCING TEE, D.I.

NOTES:

1. NO HIGH SPOTS PERMITTED ON CONNECTION PIPING.
2. ALL MATERIALS, FITTINGS AND APPURTENANCES SHALL BE RATED TO AT LEAST 235 psi, UNLESS OTHERWISE NOTED.
3. ALL BURIED NON-STAINLESS STEEL PIPE AND FITTINGS SHALL BE WAX TAPE-COATED, PER SPECIFICATIONS.
4. 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.
5. ALL BURIED DUCTILE IRON FITTINGS SHALL BE MJ. ALL BURIED DUCTILE IRON PIPES SHALL BE SOLID PIECES. NO DUCTILE IRON PIPE JOINTS ALLOWED.
6. ALL PRESSURE BEARING PIPES WITHIN SITE SHALL BE FULLY RESTRAINED. ALL PVC PIPE JOINTS LARGER THAN 2" SHALL BE FUSED. REFER TO DETAIL, SHEET DT-3.
7. DO NOT ALLOW WATER OUTFLOW TO HIT UNARMORED SOIL.
8. ALL PIPE AND FITTINGS UNDERNEATH AND WITHIN 5' OF BUILDING FOUNDATIONS SHALL BE DUCTILE IRON.
9. PRESSURE TRANSDUCER TO BE INSTALLED INSIDE EXISTING NTUA CWS PRESSURE TRANSDUCER VAULT. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL PIPING AND FITTINGS REQUIRED TO TIE-IN TO EXISTING PRESSURE TRANSDUCER PLUMBING INCLUDING TEE, NIPPLES, ELLS, AND BUSHINGS, CIP.
10. ALL MJ DI FITTINGS AND VALVES SHALL BE RESTRAINED WITH EBAA IRON MEGALUG MECHANICAL JOINT RESTRAINTS, OAE, UNLESS OTHERWISE NOTED.



DETAIL "A"



EXISTING NAHODISHGISH TANK SITE PIPING PLAN

NOTE:
LOCATION OF EXISTING NAHODISHGISH PIPING IS APPROXIMATE. CONTRACTOR RESPONSIBLE TO DETERMINE EXACT LOCATION, DEPTH AND SIZE OF ALL BURIED UTILITY LINES AND TO COMPLY WITH ALL REQUIREMENTS SET FORTH IN THE ENCROACHMENT AGREEMENTS PROVIDED BY UTILITY OPERATORS AND IN THE DETAILS AND SPECIAL NOTES OF THESE DRAWINGS.

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Location: Tse'ii'ahi & Nahodishgish, NM

NAHODISHGISH CWS DISTRIBUTION PIPING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3

McKINLEY COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

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

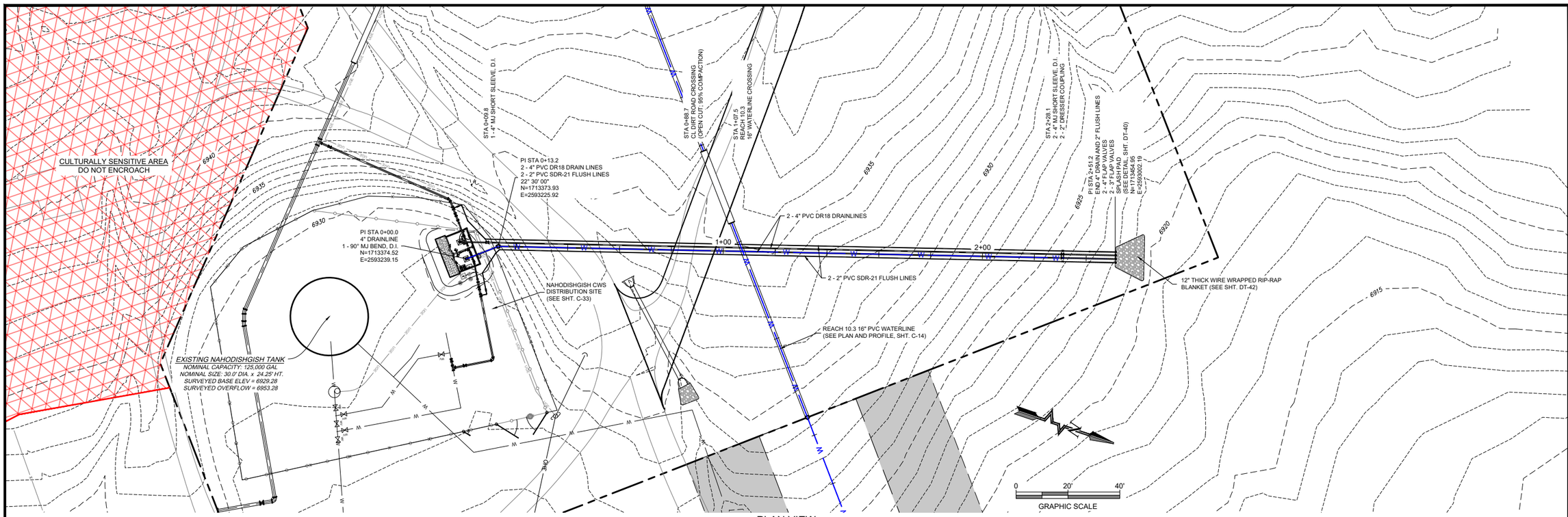
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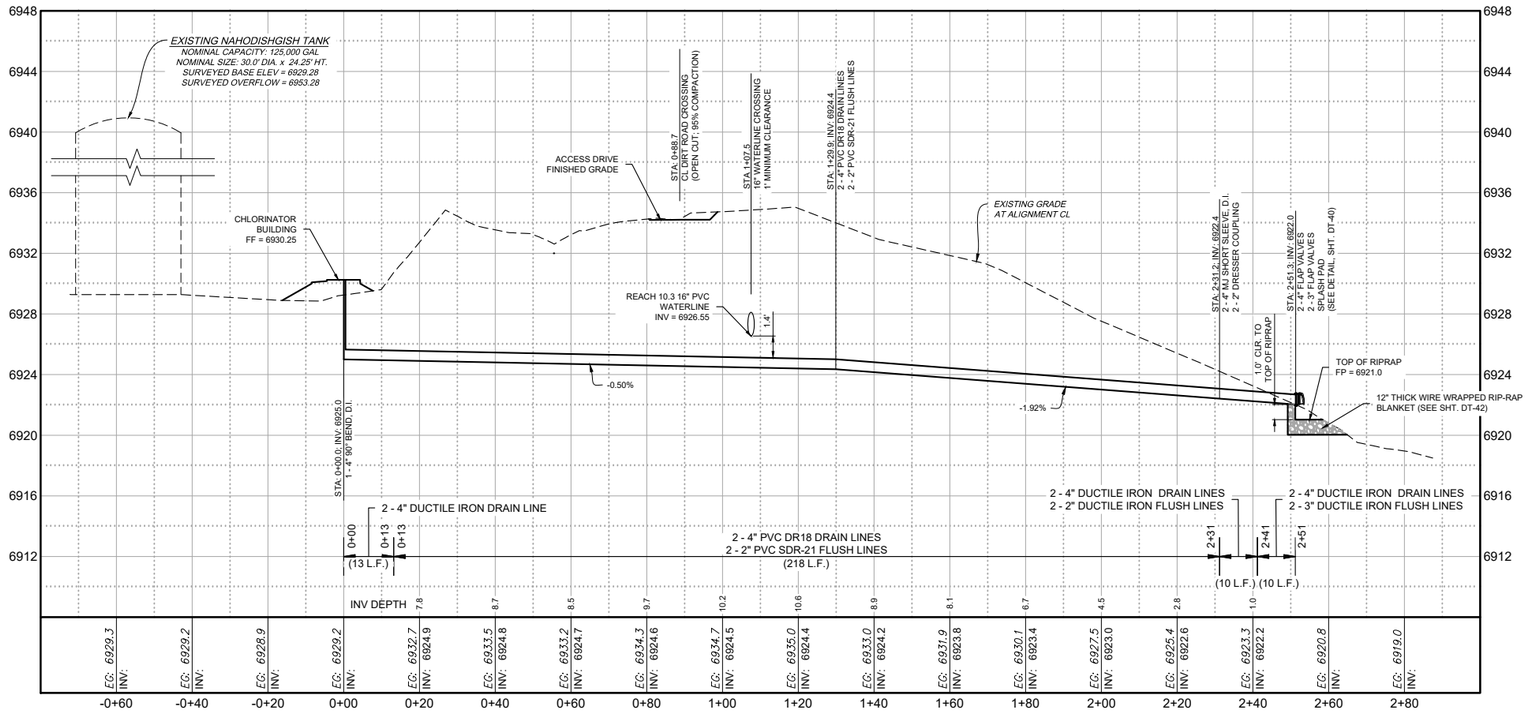
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PLAN VIEW

NAHODISHGISH CHLORINATOR 4" DRAIN LINES AND 2" FLUSH LINES



PROFILE VIEW

NAHODISHGISH CHLORINATOR 4" DRAIN LINES AND 2" FLUSH LINES

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NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

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

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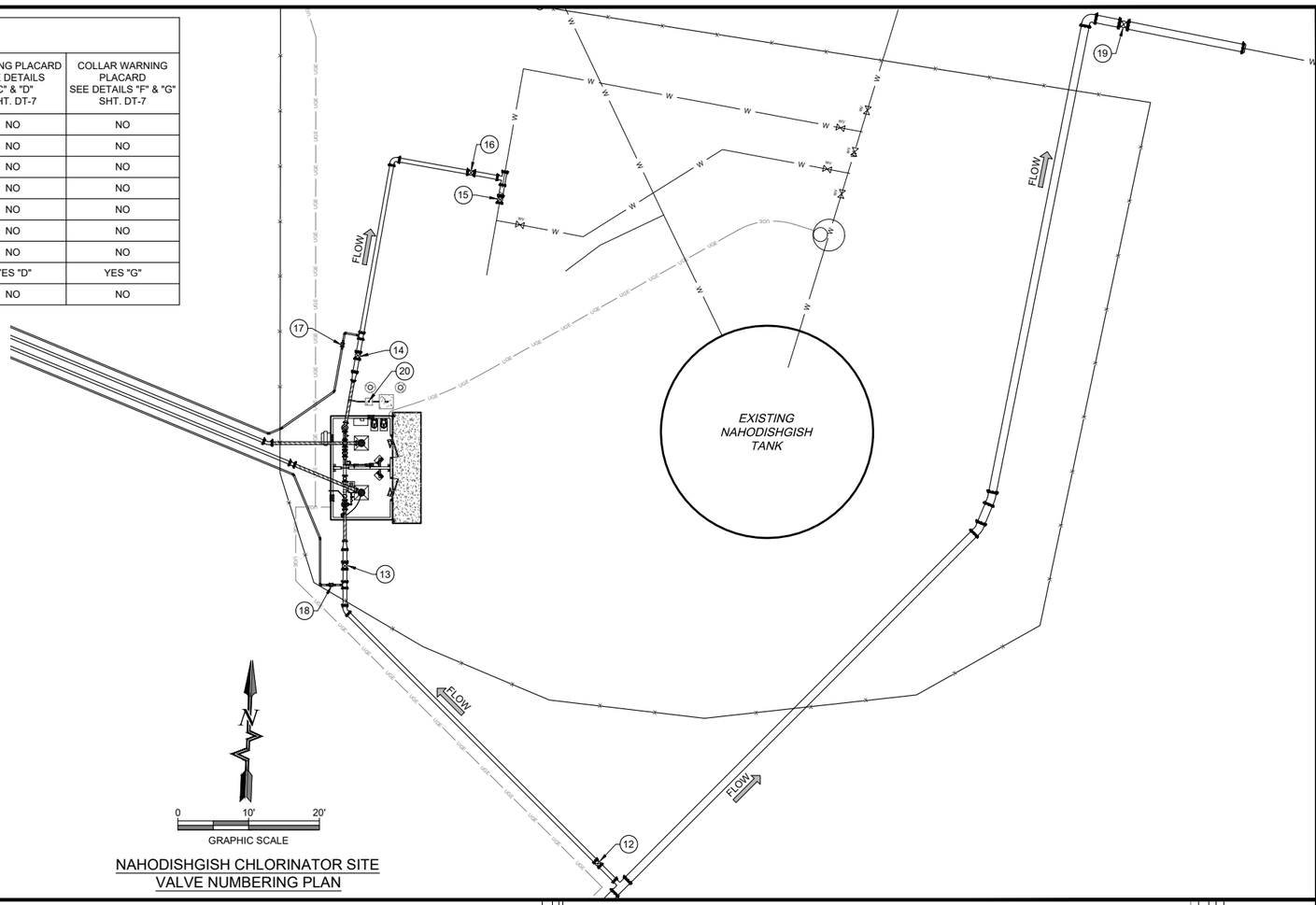
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NAHODISHGISH CWS CHLORINATOR SITE - VALVE NUMBERING

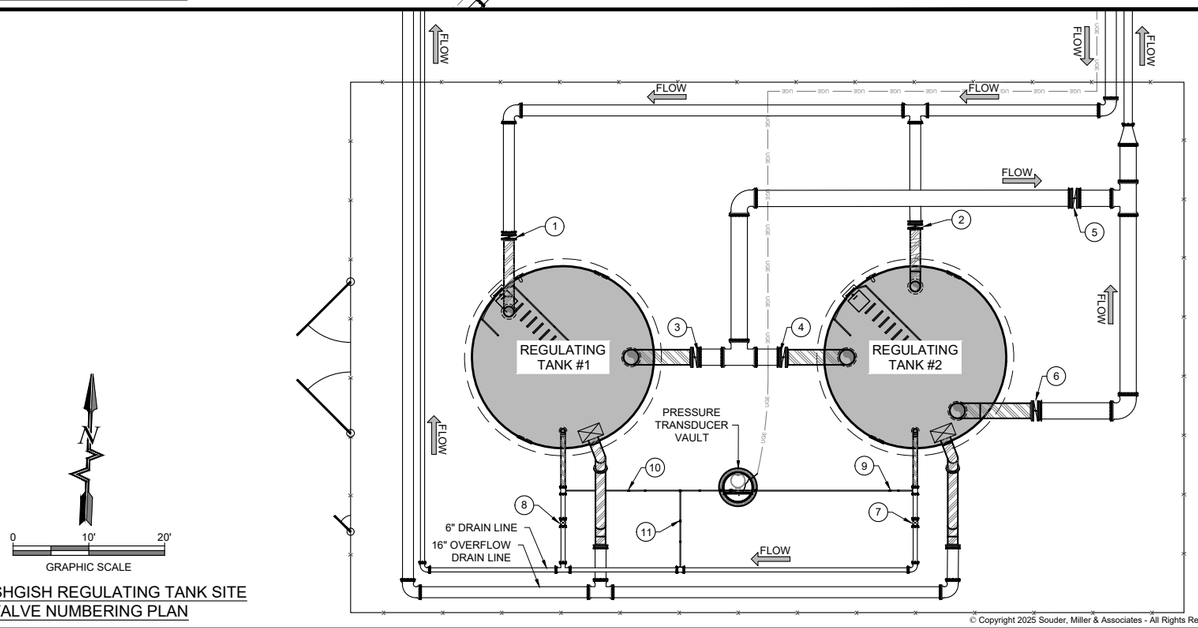
VALVE NO.	VALVE SIZE	VALVE TYPE	TURNS TO CLOSE	PIPE TYPE	DESCRIPTION	LOCKABLE VALVE BOX LID WITHOUT METER CAN SEE DETAIL "A", SHT. DT-7	LOCKABLE VALVE BOX LID INSIDE METER CAN SEE DETAIL "B", SHT. DT-7	WARNING PLACARD SEE DETAILS "C" & "D" SHT. DT-7	COLLAR WARNING PLACARD SEE DETAILS "F" & "G" SHT. DT-7
12	6"	GV	21	PVC	REGULATING TANKS TO CHLORINATOR	YES	NO	NO	NO
13	6"	GV	21	PVC	CHLORINATOR INLET	YES	NO	NO	NO
14	6"	GV	21	PVC	CHLORINATOR OUTLET	YES	NO	NO	NO
15	6"	GV	21	PVC	TEMPORARY TANK ISOLATION VALVE	YES	NO	NO	NO
16	6"	GV	21	PVC	NAHODISHGISH CWS SHUTOFF VALVE	YES	NO	NO	NO
17	2"	GV	8	PVC	POST CHLORINATION FLUSH	YES	NO	NO	NO
18	2"	GV	8	PVC	PRE CHLORINATION FLUSH	YES	NO	NO	NO
19	12"	GV	39	PVC	REACH 10.3.1 CONNECTION WATERLINE	NO	YES	YES "D"	YES "G"
20	1"	CS	1/4	PE	YARD HYDRANT	CS BOX (SEE SHT. DT-10)	NO	NO	NO



NAHODISHGISH CHLORINATOR SITE
VALVE NUMBERING PLAN

NAHODISHGISH REGULATING TANK SITE - VALVE NUMBERING

VALVE NO.	VALVE SIZE	VALVE TYPE	TURNS TO CLOSE	PIPE TYPE	DESCRIPTION	LOCKABLE VALVE BOX LID WITHOUT METER CAN SEE DETAIL "A", SHT. DT-7	COLLAR WARNING PLACARD SEE DETAILS "F" & "G" SHT. DT-7
1	16"	BFV	30	PVC / STEEL	REGULATING TANK 1 INLET	YES	YES "F"
2	16"	BFV	30	PVC / STEEL	REGULATING TANK 2 INLET/TANK 1 BYPASS	YES	YES "F"
3	24"	BFV	50	STEEL / PVC	REGULATING TANK 1 OUTLET	YES	YES "G"
4	24"	BFV	50	PVC / STEEL	REGULATING TANK 2 INLET	YES	YES "G"
5	24"	BFV	50	PVC	REGULATING TANK 2 BYPASS	YES	YES "G"
6	24"	BFV	50	STEEL / PVC	REGULATING TANK 2 OUTLET	YES	YES "G"
7	6"	GV	21	PVC	REGULATING TANK 2 DRAIN	YES	NO
8	6"	GV	21	PVC	REGULATING TANK 1 DRAIN	YES	NO
9	1"	CS	1/4	STEEL	REGULATING TANK 2 SENSOR	YES	NO
10	1"	CS	1/4	STEEL	REGULATING TANK 1 SENSOR	YES	NO
11	1"	CS	1/4	STEEL	REGULATING TANKS SENSOR FLUSH	YES	NO



NAHODISHGISH REGULATING TANK SITE
VALVE NUMBERING PLAN

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NAHODISHGISH VALVE NUMBERING PLAN
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BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

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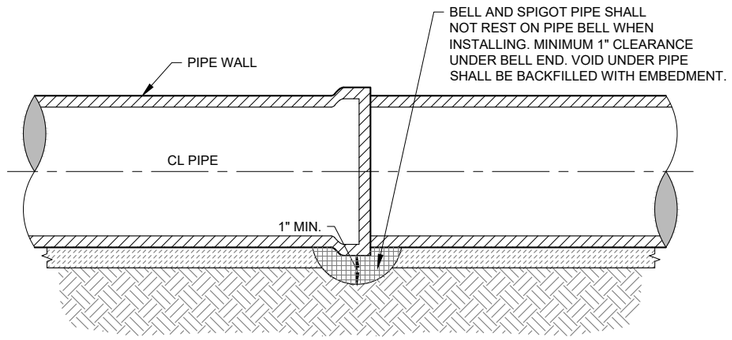
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NOTES:

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".

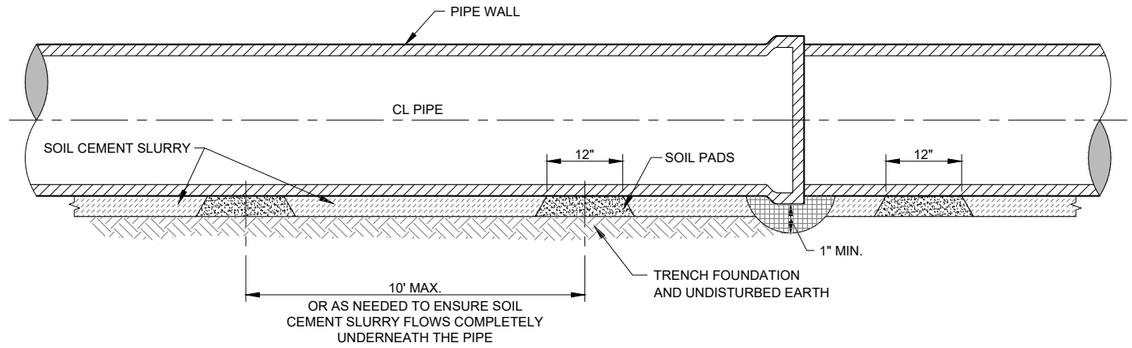


TYPICAL BELL HOLE DETAIL
NOT TO SCALE

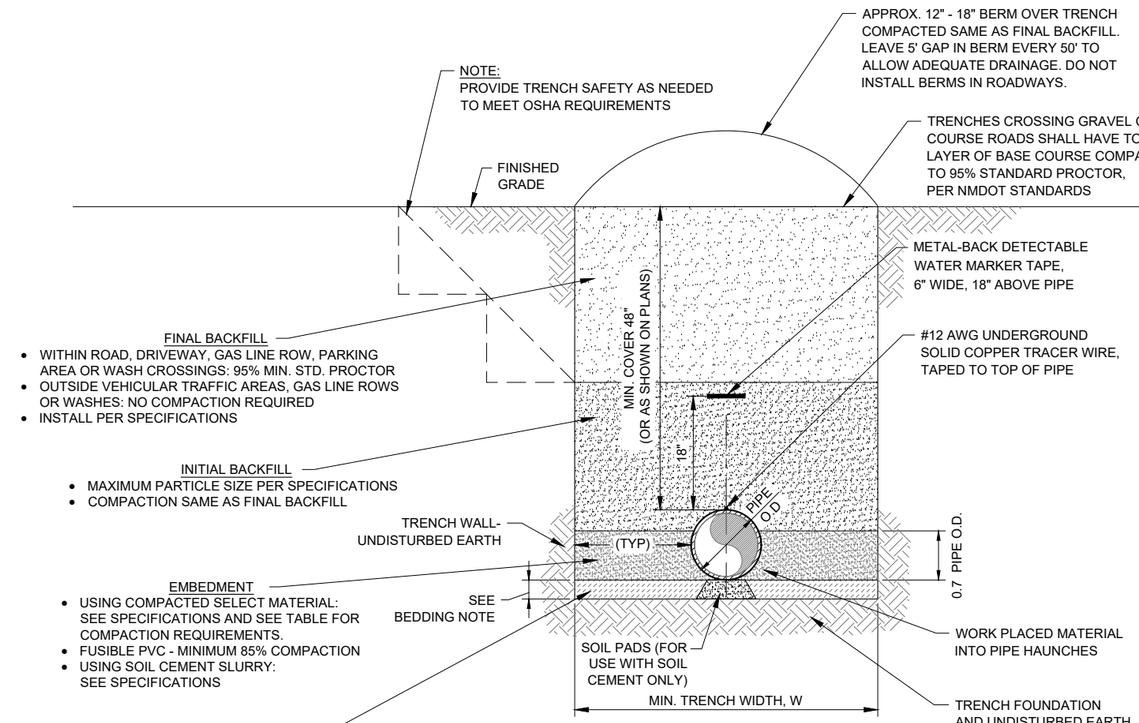
MINIMUM PERCENT COMPACTION FOR EMBEDMENT OUTSIDE TRAFFIC AREAS, GAS LINES ROW, WASH CROSSINGS	
CLEAN COARSE-GRAINED SOILS	
	PVC Pipe
Cover Depth	Minimum Compaction
4' to 20'	85%
> 20'	95%
Coarse-grained soils (sand or gravel), GW, GP, SW, SP, with less than 12% fines	
SANDY OR GRAVELLY FINE-GRAINED SOILS & 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
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TYPICAL TRENCH DETAIL
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Client: The Navajo Nation Location: Tse'iiTahi & Nahodishgish, NM

NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TRENCH DETAILS

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

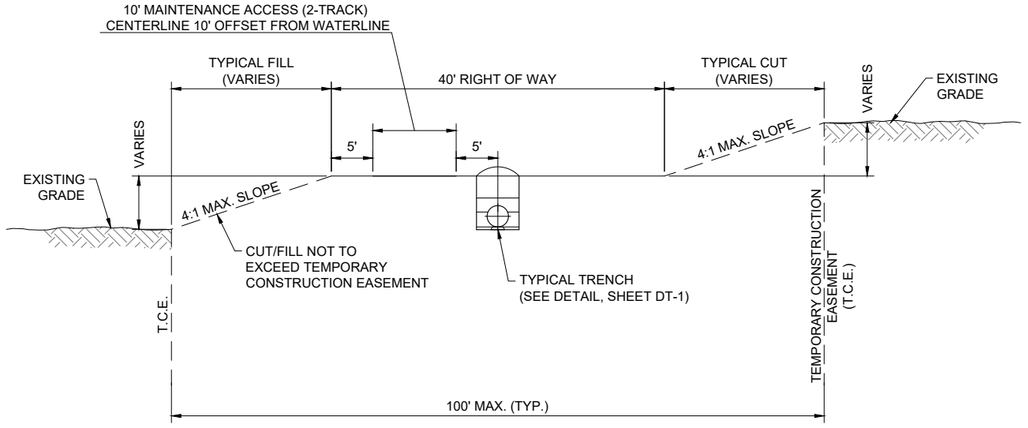
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Date: September 2025
Scale: Horiz: N/A Vert: N/A
Project No: 6922268
Sheet: DT-1

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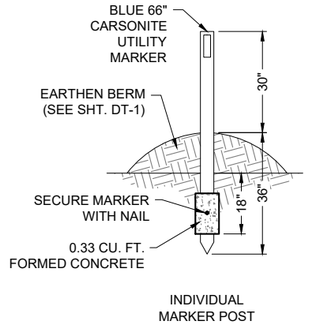


TYPICAL PIPELINE ROW FINISHED GRADING DETAIL

NOT TO SCALE

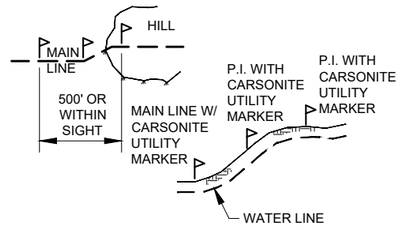
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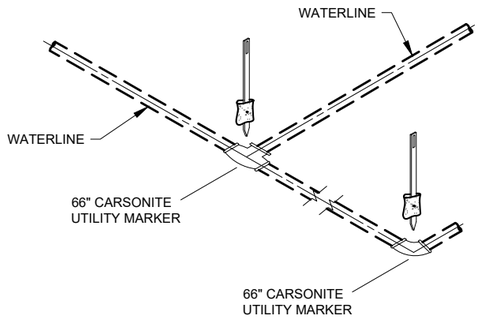
1. ALL DISTURBED EARTH SHALL BE COMPACTED AND RESEEDED AS REQUIRED PER DT-1 AND SPECIFICATIONS.
2. TOTAL WIDTH REDUCED IN AREAS WHERE TEMPORARY CONSTRUCTION EASEMENT IS TRUNCATED DUE TO ADJACENT CULTURALLY SENSITIVE AREAS.
3. FINAL GRADING AND SLOPE STABILIZATION MUST BE APPROVED BY ENGINEER.
4. IF MAINTENANCE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

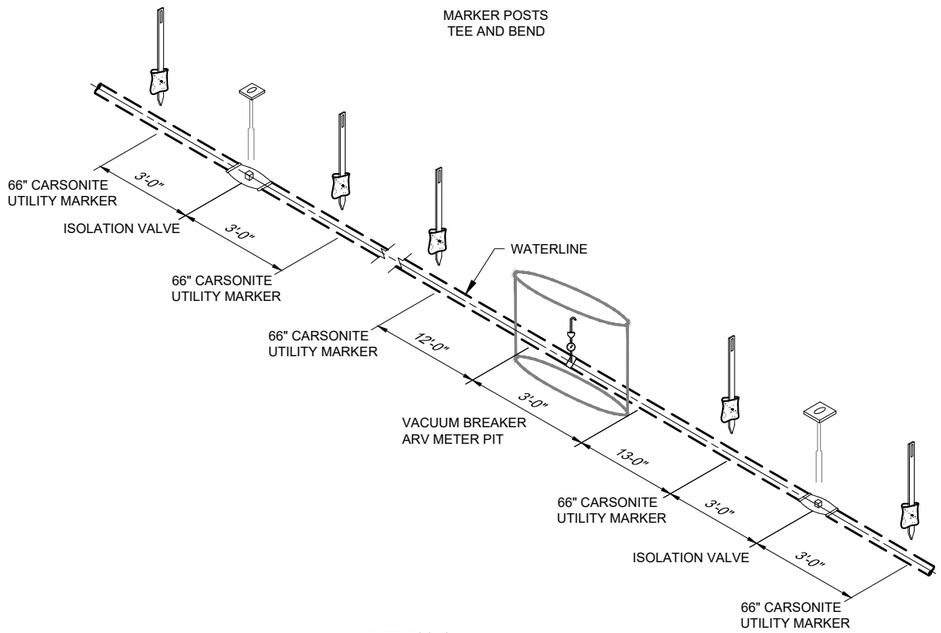


INDIVIDUAL
MARKER POST

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

TYPICAL MARKER POSTS

NOT TO SCALE

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Location: Tse'iTah & Nahodishgish, NM

MISCELLANEOUS CONSTRUCTION DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO



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Project No: 6922268

Sheet: DT-2

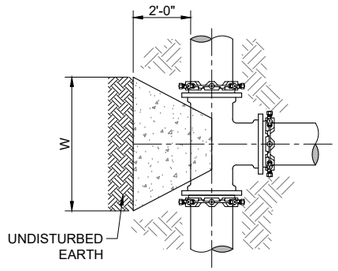
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Thrust Block Dimension Schedule

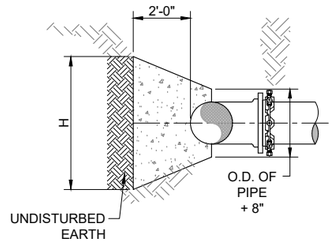
Fitting	Pipe in	Required Thrust Block Area ft^2	Design Thrust Block Size H x W x T
90˚ Ell Pump Station Inlet	12	21.3	5' x 5' x 2'
90˚ Ell Pump Station Outlet	10	22.6	5' x 5' x 2'
90˚ Ell Surge Tank Inlet/Outlet	16	49.8	7.5' x 7.5' x 2'
16" x 16" Tee Surge Tank Inlet/Outlet	16	35.2	6' x 6' x 2'
90˚ Ell Pump Station Recirculation Line	4	3.8	2' x 2' x 2'
16" x 6" Tee for 4" Flush Valve	16	5.6	3' x 3' x 2'
90˚ Ell Chlorinator, Inlet & Outlet	4	3.1	2' x 2' x 2'

GENERAL NOTES

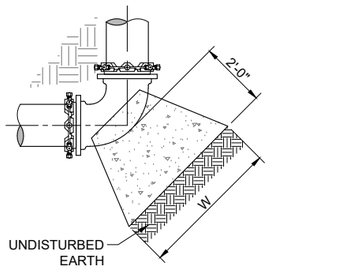
1. ASSUMED SOIL BEARING OF 1500 PSF.
2. ALL CONCRETE SHALL BE 3000 psi, MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS.
3. FOR SIZES GREATER THAN 4' X 4', SEE BOTTOM (2) DETAILS.



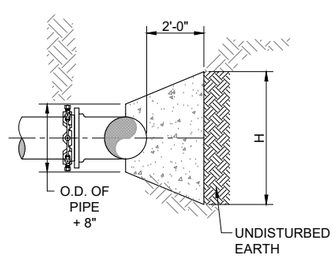
PLAN VIEW
CONCRETE BLOCKING FOR TEE



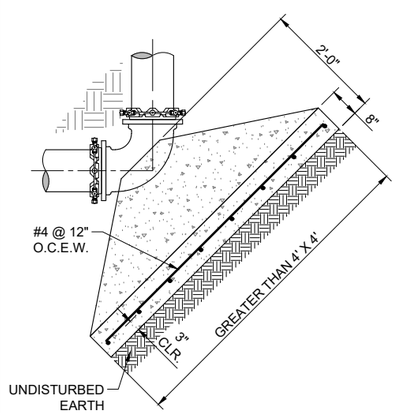
SECTION VIEW
CONCRETE BLOCKING FOR TEE



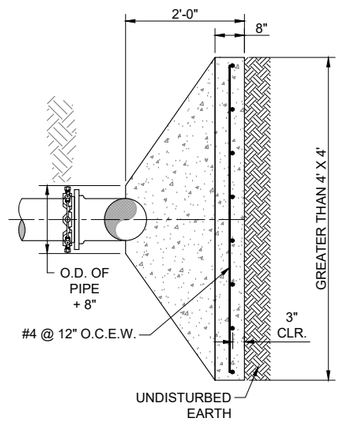
PLAN VIEW
CONCRETE BLOCKING FOR ELBOW



SECTION VIEW
CONCRETE BLOCKING FOR ELBOW



PLAN VIEW
CONCRETE BLOCKING FOR ELBOW



SECTION VIEW
CONCRETE BLOCKING FOR ELBOW

THRUST BLOCK DETAIL
NOT TO SCALE

Minimum Required Restraint Lengths for Individual Fittings

Reach 10.3 - 16" DR 14 PVC				
Fitting	Fitting Size in	Pipe DR -	Test Pressure psi	Design Restraint Length ft
Isolation Valve/Dead End [1]	16	14	305	205
From End of Casing	16	14	305	120
Horizontal Bend or Sweep				
90˚	16	14	305	75
45˚	16	14	305	35
22.5˚	16	14	305	20
11.25˚	16	14	305	20
Vertical Bend or Sweep [2]				
45˚, Upper Bend	16	14	305	85
45˚, Lower Bend	16	14	305	25
22.5˚, Upper Bend	16	14	305	45
22.5˚, Lower Bend	16	14	305	20
11.25˚, Upper Bend	16	14	305	25
11.25˚, Lower Bend	16	14	305	20

Reach 10.3 - 16" DR 18 PVC				
Fitting	Fitting Size in	Pipe DR -	Test Pressure psi	Design Restraint Length ft
Isolation Valve/Dead End [1]	16	18	235	160
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

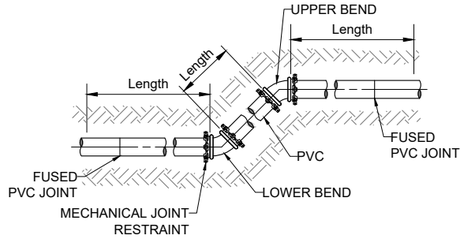
Reach 10.3 - 16" DR 21 PVC				
Fitting	Fitting Size in	Pipe DR -	Test Pressure psi	Design Restraint Length ft
Isolation Valve/Dead End [1]	16	21	200	135
From End of Casing	16	21	200	85
Horizontal Bend or Sweep				
90˚	16	21	200	50
45˚	16	21	200	20
22.5˚	16	21	200	20
11.25˚	16	21	200	20
Vertical Bend or Sweep [2]				
45˚, Upper Bend	16	21	200	60
45˚, Lower Bend	16	21	200	20
22.5˚, Upper Bend	16	21	200	30
22.5˚, Lower Bend	16	21	200	20
11.25˚, Upper Bend	16	21	200	20
11.25˚, Lower Bend	16	21	200	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

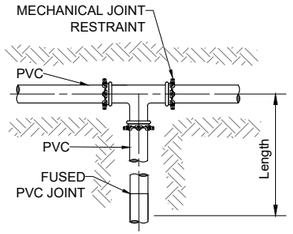
[2] Gives the required restraint length on each side of the specified bend, using a low side depth (from ground surface to top of the lower pipe) of 6-ft.

NOTES:

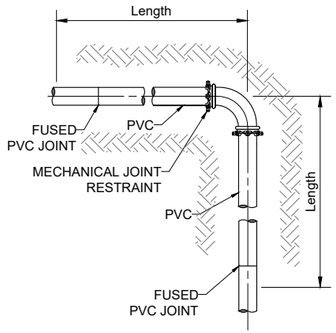
1. MECHANICAL JOINT RESTRAINTS SHALL BE RATED TO PIPE PRESSURE RATINGS.
2. MECHANICAL JOINT RESTRAINTS INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
3. ALL BURIED METALLIC WATER BEARING COMPONENTS SHALL BE COATED WITH FUSION BONDED EPOXY, INTERIOR AND EXTERIOR.
4. APPLY CATHODIC PROTECTION TO ALL BURIED 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.



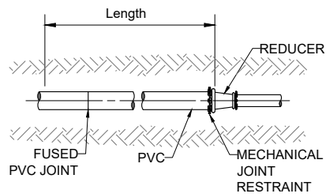
ELEVATION VIEW
MECHANICAL JOINT RESTRAINT FOR VERTICAL OFFSET



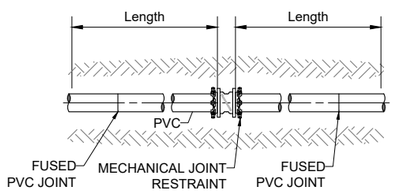
PLAN VIEW
MECHANICAL JOINT RESTRAINT
FOR TEE



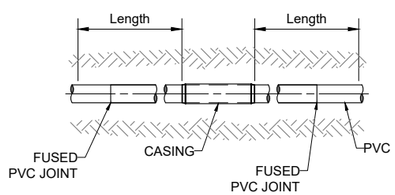
PLAN VIEW
MECHANICAL JOINT RESTRAINT
FOR HORIZONTAL BEND



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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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

THRUST BLOCK & JOINT RESTRAINT DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TODD T. ADAMS — NEW MEXICO — 21073 — 10-29-25 — LICENSED PROFESSIONAL ENGINEER

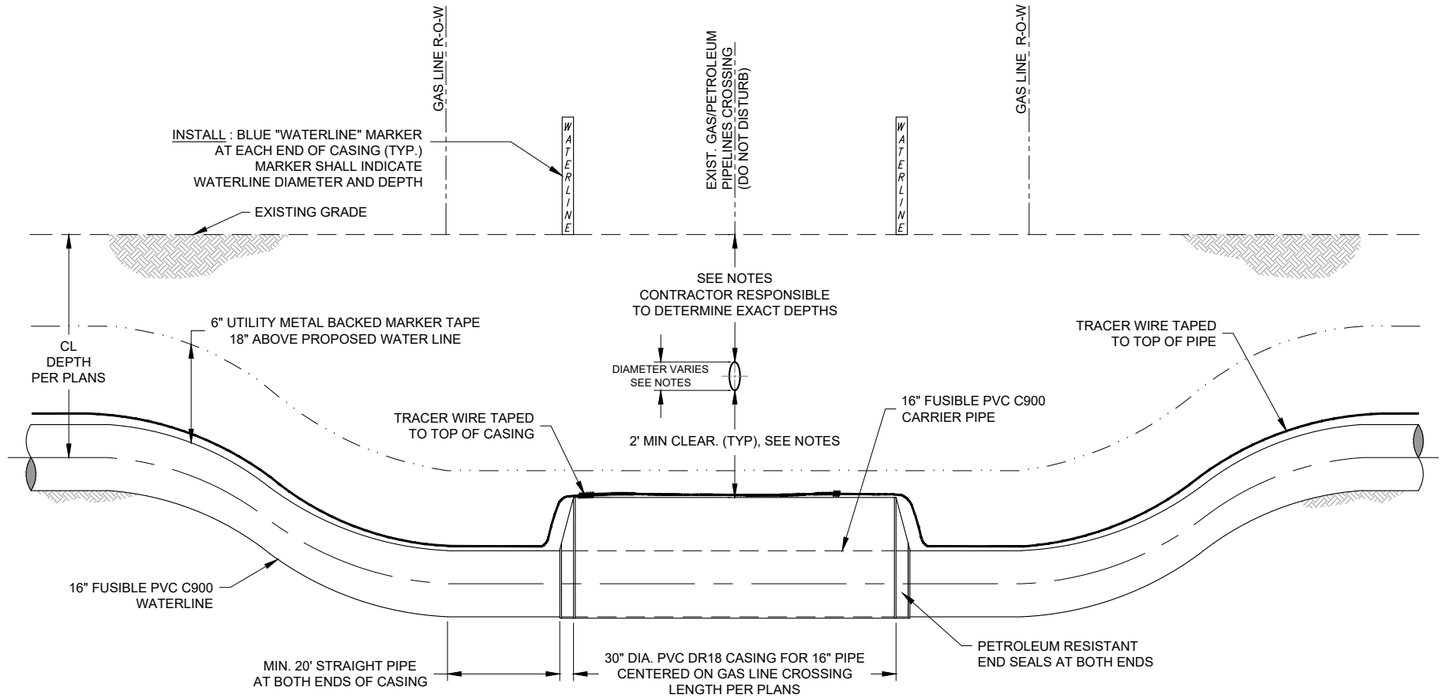
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TYPICAL GAS PIPELINE CROSSING DETAIL

NOT TO SCALE

SPECIAL NOTES AND CONTACTS-UTILITY PIPELINE CROSSINGS

NOTES:

1. NOTIFY GAS LINE COMPANIES (LISTED BELOW) 30 WORKING DAYS AND CALL NM ONE-CALL AT LEAST 3 WORKING DAYS PRIOR TO GRADING, CROSSING, MATERIAL STORAGE OR EQUIPMENT MOVING ACROSS GAS LINE RIGHT-OF-WAY OR ADJACENT ACCESS ROADS.
2. GAS LINE COMPANY REPRESENTATIVE MUST BE PRESENT DURING ALL CONSTRUCTION ACTIVITIES WITHIN GAS LINE RIGHT-OF-WAY, INCLUDING GRADING, EXCAVATION AND CLEANUP.
3. CONTRACTOR RESPONSIBLE TO LOCATE AND EXPOSE ALL EXISTING GAS / PETROLEUM LINES, IN ACCORDANCE WITH GAS COMPANY REQUIREMENTS.
4. EXCAVATE BY HAND OR VACUUM DRILL WITHIN 2 FEET OF GAS LINE. IF GAS LINE COMPANY APPROVES, CONTRACTOR MAY INSTALL CASING BY BORING, USING FUSIBLE PVC CASING WITH INTERIOR WELD BEAD REMOVED.
5. CROSS UNDER ALL GAS LINES. CROSSINGS REQUIRE 2' MIN. CLEARANCE FROM TOP OF CASING TO BOTTOM OF GAS LINE. WHERE MULTIPLE GAS LINES ARE CROSSED IN THE SAME ROW, MAINTAIN MIN. CLEARANCE UNDER THE LOWEST GAS LINE.
6. CONTRACTOR SHALL NOT SUSPEND EXISTING GAS LINE PIPE MORE THAN 12 FEET WITHOUT SOIL BEDDING OR OTHER SUPPORT APPROVED BY GAS LINE COMPANY.
7. COMPLETE ANY AND ALL ENCROACHMENT AGREEMENTS REQUIRED BY GAS LINE COMPANIES. ABIDE BY ALL CONDITIONS STIPULATED BY GAS LINE COMPANIES AND PROVIDE COPIES TO ENGINEER.
8. HEAVY EQUIPMENT MUST CROSS PIPELINE ONLY AT CROSSING LOCATIONS APPROVED BY GAS LINE COMPANIES.
9. FOR MINIMUM FUSIBLE PVC PIPE RESTRAINT REQUIREMENTS ON EACH SIDE OF CASING, SEE TABLE SHEET DT-3. ALL REMAINING CARRIER PIPE WITHIN A 200 FT. RADIUS OF LIQUID PETROLEUM LINE SHALL EITHER BE FUSIBLE PVC OR BELL-AND-SPIGOT PVC WITH PETROLEUM RESISTANT GASKETS. CASING SHALL EITHER BE FUSIBLE PVC WITH INTERIOR WELD BEAD REMOVED OR BELL AND SPIGOT PVC.
10. TRACER WIRE CONTINUITY SHALL BE MAINTAINED ACROSS THE GAS LINE XING.
11. 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.
12. APPROXIMATE DEPTH CALL OUTS OF GAS LINES ARE MEASURED FROM THE EXISTING GROUND TO THE TOP OF PIPE. APPROXIMATE DEPTH CALL OUTS OF CASING MEASURED FROM BOTTOM OF EXISTING GAS LINES TO TOP OF CASING.

(1x) STA 40+44.8 (APPROX.)
NAVAJO TRIBAL UTILITY AUTHORITY 1-800-528-5011
CONTACT NTUA HEADQUARTERS BEFORE ANY DISTURBANCE
FIELD CONTACT
NTUA 1-800-528-5011
1 GAS PIPELINE
(2" DIA. PE, 32" TO TOP)
SEC-20, T-18-N, R-14-W

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Client: The Navajo Nation
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GAS LINE CROSSING DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TADAY, TAHLY — NEW MEXICO — 21073 — 12-29-25 — LICENSED PROFESSIONAL ENGINEER

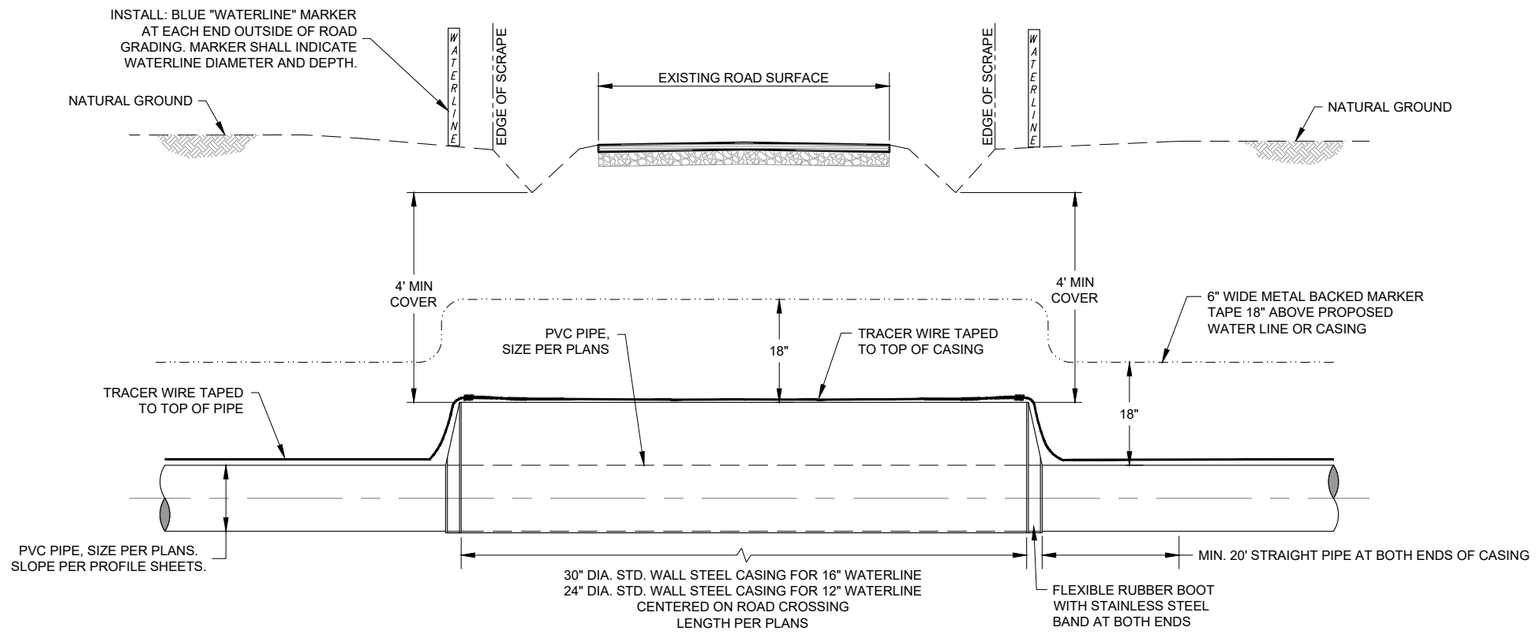
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TYPICAL OPEN CUT ROAD CROSSING

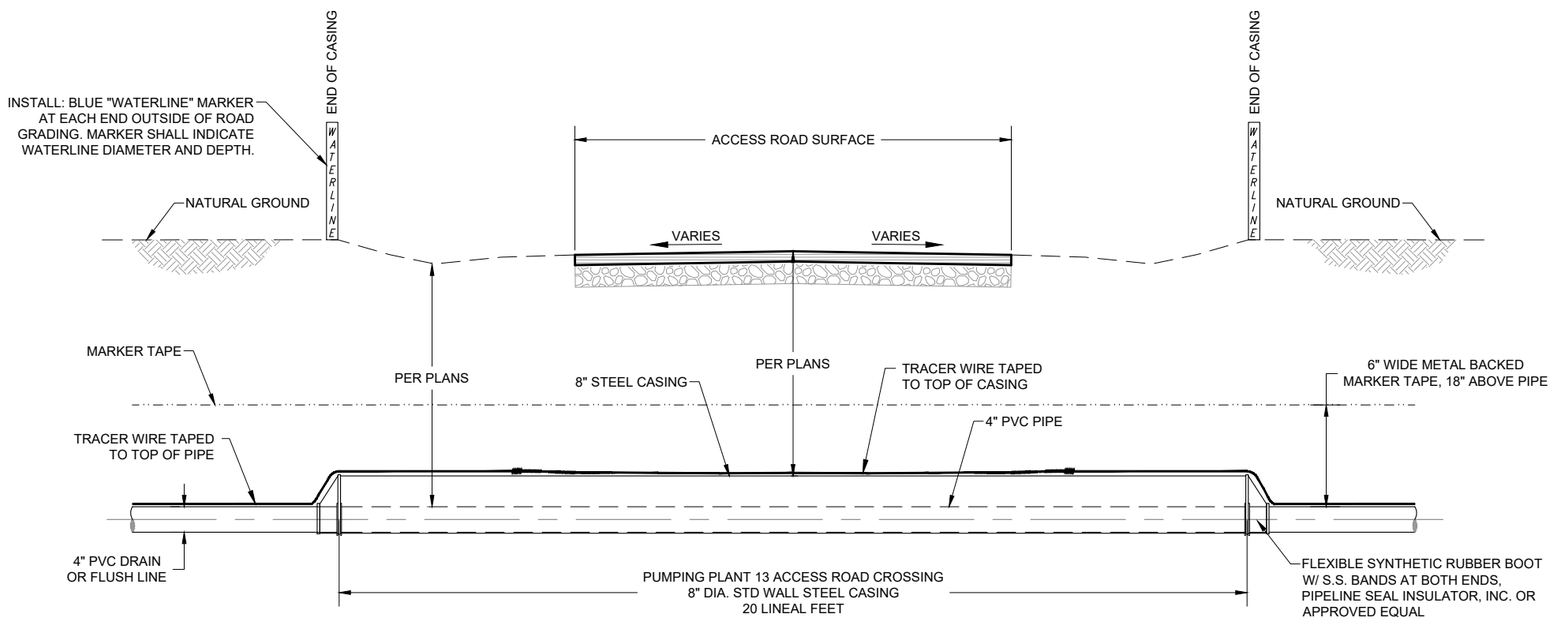
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CONSTRUCTION NOTES:

1. EXCAVATIONS OUTSIDE THE ROADWAY FORESLOPES SHALL BE COMPACTED PER SPECIFICATIONS. EXCAVATION WITHIN THE TOE OF THE FORESLOPES SHALL BE COMPACTED TO 95% STANDARD PROCTOR AS DETERMINED BY AASHTO METHOD T-99 OR EQUIVALENT.
2. PERMANENT CROSSING MARKERS SHALL BE PLACED AT THE ENDS OF THE CASINGS FOR ALL WATERLINE ROAD CROSSINGS.

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 XING FOR BOTH OPEN - CUT & BORED CROSSINGS.
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 AND BIA ROADS, ADHERE TO ANY ADDITIONAL CROSSING PERMIT REQUIREMENTS.
8. OPEN CUT CASINGS SHALL BE ASPHALTIC COATED PER AWWA C104. BORE AND JACK CASINGS, NO COATING REQUIRED.



CASED PUMPING PLANT 13 ACCESS ROAD CROSSING

NOT TO SCALE

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Revision	Date	Description	By	Chkd

Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

CASED ROAD CROSSING DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TADAY LARRY — NEW MEXICO — 21073 — 12-9-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

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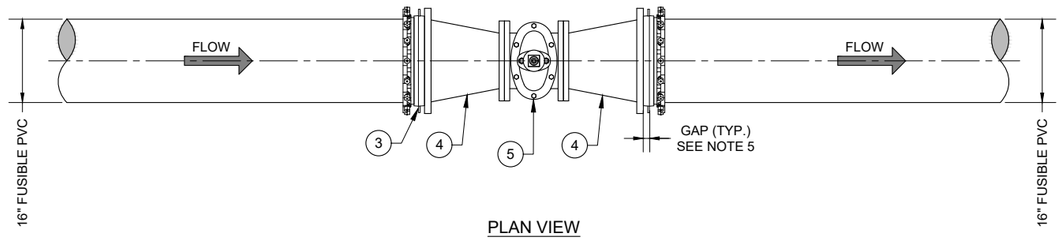
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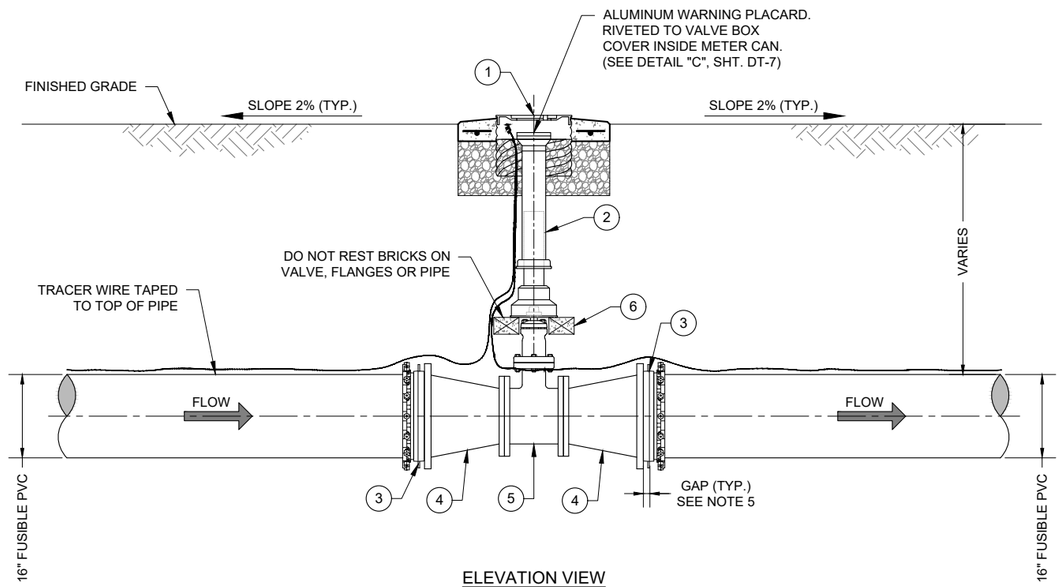
KEYED NOTES - MAINLINE GATE VALVE	
Item No.	DESCRIPTION
1	18" DIA. HEAVY DUTY, TRAFFIC-RATED METER CAN (PAINTED BLUE) W/ LOCKING COVER AND FORMED CONCRETE COLLAR, (3000 psi W/ #4 REBAR)
2	CAST IRON SLIP TYPE VALVE BOX WITH LOCKABLE COVER
3	16" MJ FLANGE ADAPTER, FBE COATED, W/ SS 304 BOLTS, MEGAFLANGE 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'

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Revision	Date	Description	By	Chkd

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Client: The Navajo Nation Location: Tse'ii'ahi & Nahodishgish, NM

MAINLINE GATE VALVE WITH REDUCER ASSEMBLY
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

Designed	Drawn	Checked
CDB	MVrt/AaV	TTT

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Date: September 2025

Scale: Horiz: AS SHOWN Vert: N/A

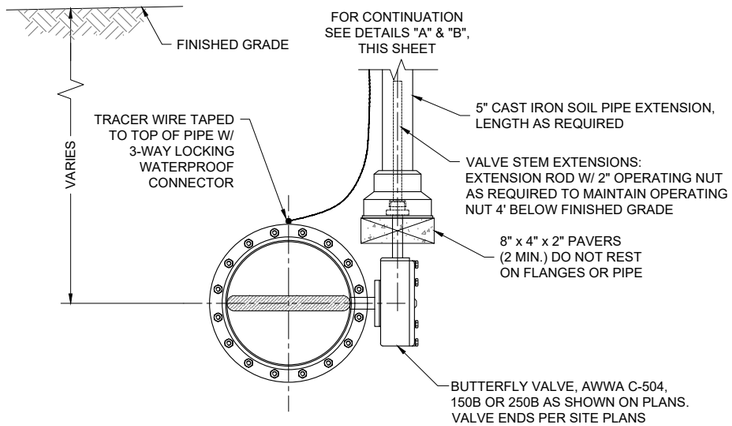
Project No: 6922268

Sheet: DT-6

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NOTES:

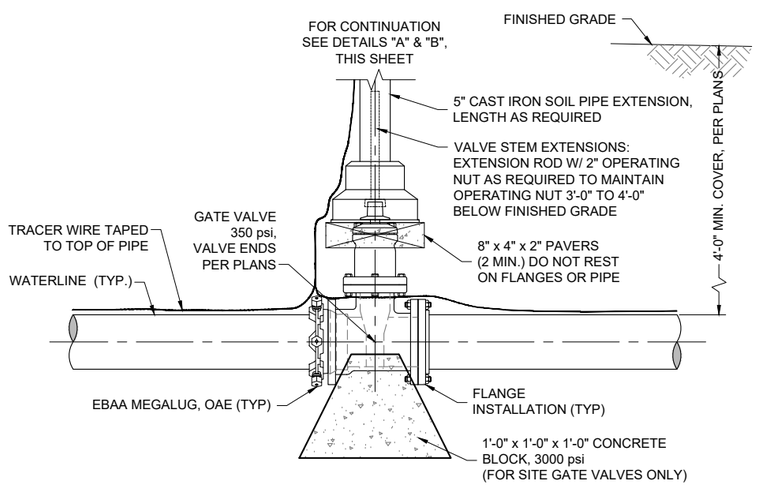
1. CONTRACTOR SHALL SCRIBE ALL CONCRETE VALVE COLLARS, PER DETAILS "A" & "B" THIS SHEET. CONCRETE SHALL BE SCRIBED PRIOR TO CURING OR ETCHED AFTER CURING WITH 4" GRINDER.
2. AFFIX WARNING PLACARD TO VALVE BOX COVER INSIDE METER CAN FOR ALL MAINLINE VALVES PER DETAILS "B", "C", "D" AND "E" THIS SHEET.
3. AFFIX ALUMINUM VALVE IDENTIFICATION AND COLLAR AWRNING PLACARDS TO ALL SITE VALVE COLLARS, PER DETAILS "A", "B", "F" AND "G" THIS SHEET. REFER TO SHEETS C-25 AND C-37 FOR VALVE-SPECIFIC LABELING.
4. AFFIX ALUMINUM COLLAR WARNING PLACARDS TO ALL MAINLINE VALVE COLLARS, PER DETAILS "B", "F" AND "G" THIS SHEET.
5. ALL MATERIALS SHALL BE WORKING PRESSURE RATED TO AT LEAST THE PRESSURE RATING OF THE PIPE, UNLESS OTHERWISE NOTED.
6. ALL BURIED VALVES SHALL BE COATED WITH FUSION BONDED EPOXY, INTERIOR AND EXTERIOR AND SHALL BE WAX TAPE-COATED, PER SPECIFICATIONS.
7. APPLY CATHODIC PROTECTION TO ALL BURIED METALLIC PRESSURE-BEARING COMPONENTS LOCATED WITHIN CORROSIVE SOIL ZONES, AS DESIGNATED IN THE PLANS AND/OR SPECIFICATIONS.
8. FLANGES SHALL BE ANSI CLASS 125 (IRON).



END VIEW

TYPICAL SITE BUTTERFLY VALVE DETAIL WITHOUT BYPASS

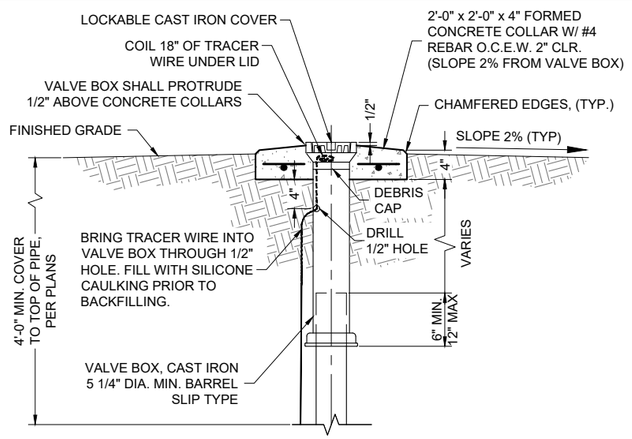
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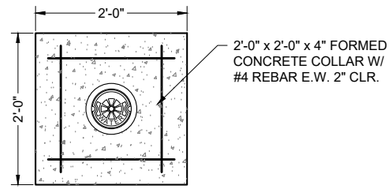
ELEVATION VIEW

TYPICAL GATE VALVE DETAIL

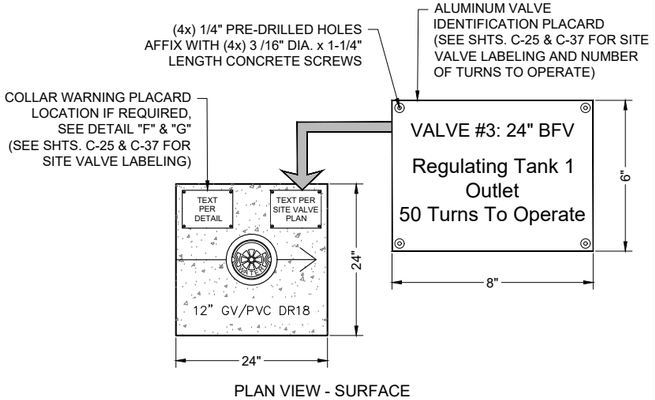
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ELEVATION VIEW



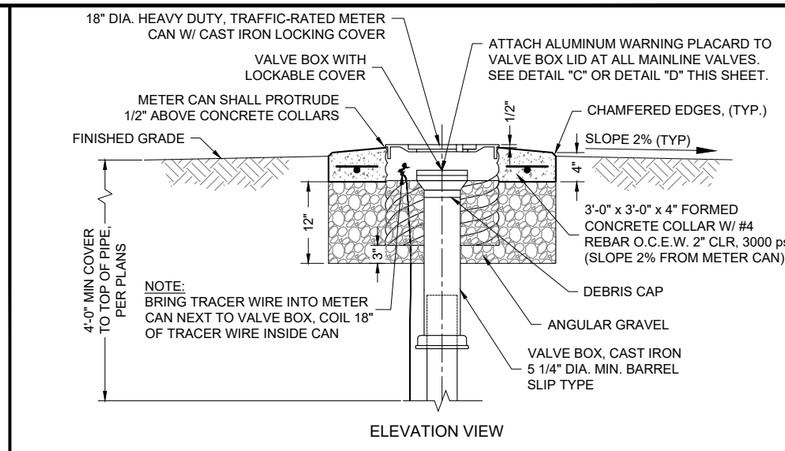
PLAN VIEW - REBAR



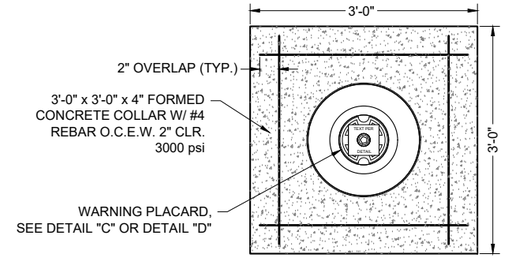
PLAN VIEW - SURFACE

DETAIL "A" TYPICAL SITE LOCKING VALVE BOX, COLLAR AND VALVE ID PLACARD(S) DETAIL

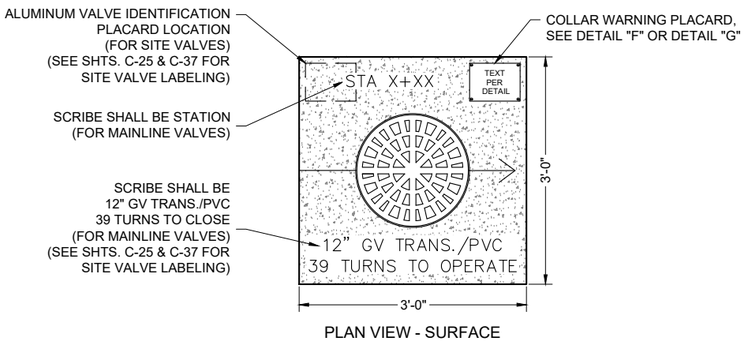
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ELEVATION VIEW



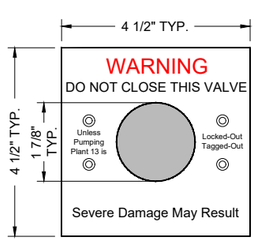
PLAN VIEW - REBAR



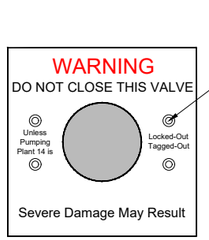
PLAN VIEW - SURFACE

DETAIL "B" TYPICAL MAINLINE OR SITE LOCKING METER CAN AND VALVE BOX, COLLAR AND VALVE ID PLACARD(S) DETAIL

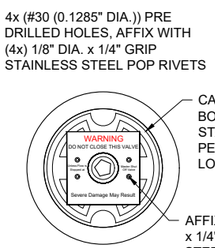
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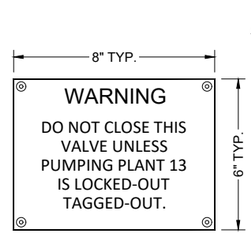
DETAIL "C" WARNING PLACARD FOR REACH 10.3 MAINLINE OR SITE VALVES



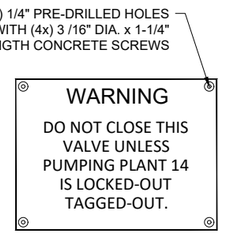
DETAIL "D" WARNING PLACARD FOR REACH 10.3.1 CONNECTOR VALVE AT STA 2+72



DETAIL "E" TYPICAL WARNING PLACARD DETAIL



DETAIL "F" ALUMINUM VALVE COLLAR WARNING PLACARD FOR REACH 10.3 MAINLINE AND SITE VALVES



DETAIL "G" ALUMINUM VALVE COLLAR WARNING PLACARD FOR REACH 10.3.1 CONNECTOR VALVE AT STA 2+72

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Revision | Date | Description | By | Chkd

Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

BUTTERFLY AND GATE VALVE DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TADAYON, TALBY — NEW MEXICO — 21073 — 10-29-25 — LICENSED PROFESSIONAL ENGINEER

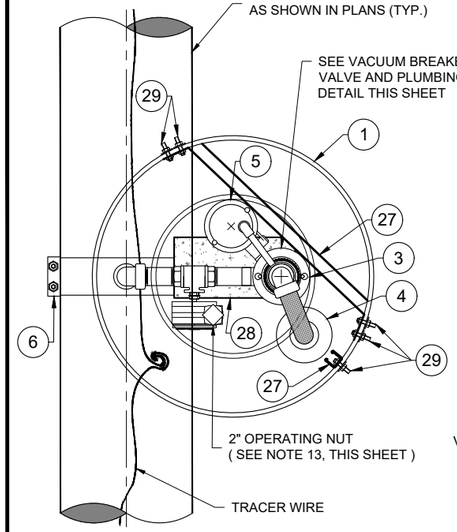
Designed	Drawn	Checked
CDB	MvH/AaV	TTT

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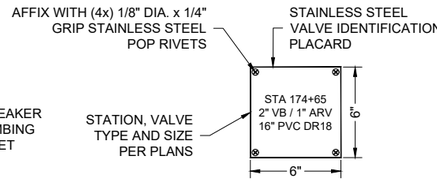
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Date: September 2025
Scale: Horiz: N/A Vert: N/A
Project No: 6922268
Sheet: DT-7

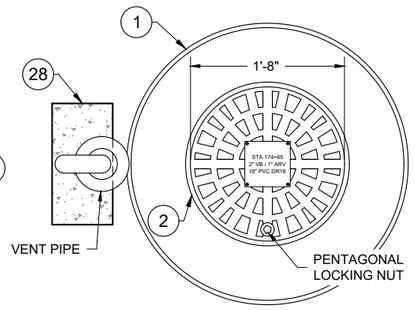
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PLAN VIEW



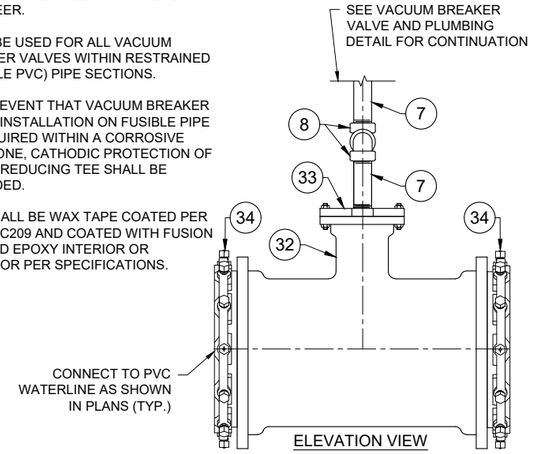
VALVE IDENTIFICATION PLACARD



PLAN VIEW - COVER & VENT PIPE

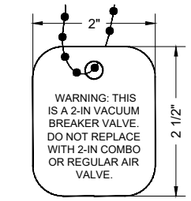
ALTERNATIVE CONFIGURATION "A" NOTES:

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 WAX TAPE COATED PER AWWA C209 AND COATED WITH FUSION BONDED EPOXY INTERIOR OR EXTERIOR PER SPECIFICATIONS.

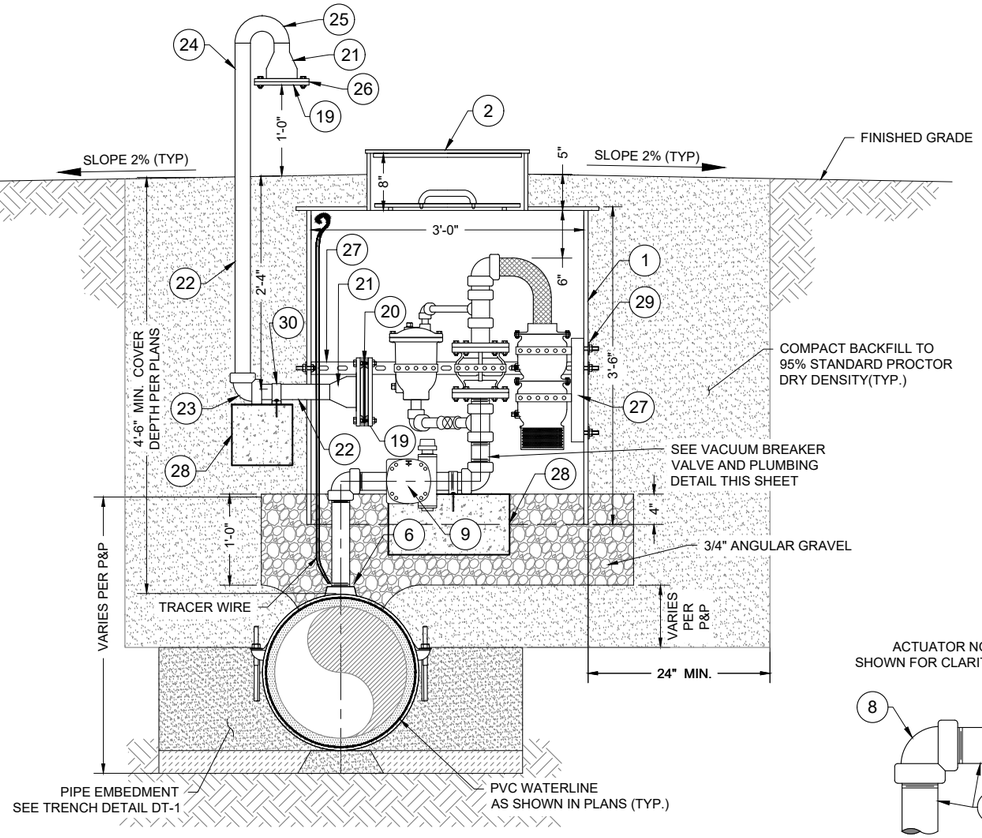


ELEVATION VIEW

ALTERNATIVE CONFIGURATION "A"



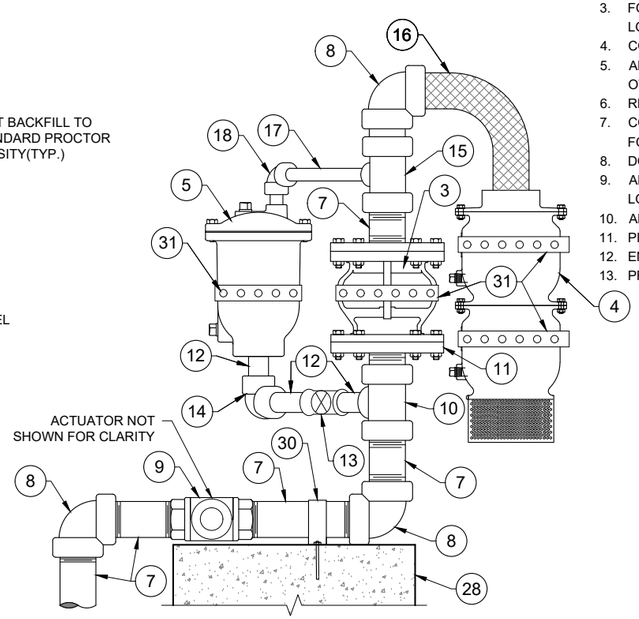
VALVE WARNING TAG DETAIL
(HANG FROM 2" VACUUM BREAKER VALVE)



ELEVATION VIEW

VACUUM BREAKER VALVE DETAIL

0' 10" 20"



VACUUM BREAKER VALVE AND PLUMBING DETAIL

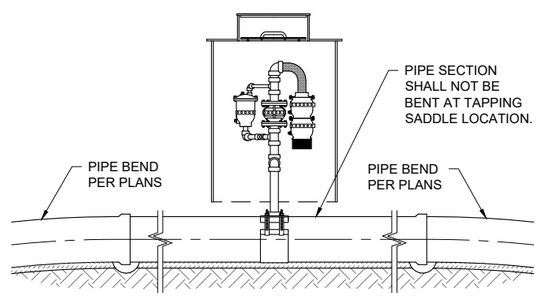
N.T.S.

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/ 2" 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, VALVES AND FITTINGS IN CONTACT WITH SOIL SHALL BE WAX TAPE-COATED PER SPECIFICATIONS.
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 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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Revision	Date	Description	By	Chkd

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Client: The Navajo Nation Location: Tse'ii'ahi & Nahodishgish, NM

2 INCH VACUUM BREAKER WITH 1 INCH ARV DETAIL
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

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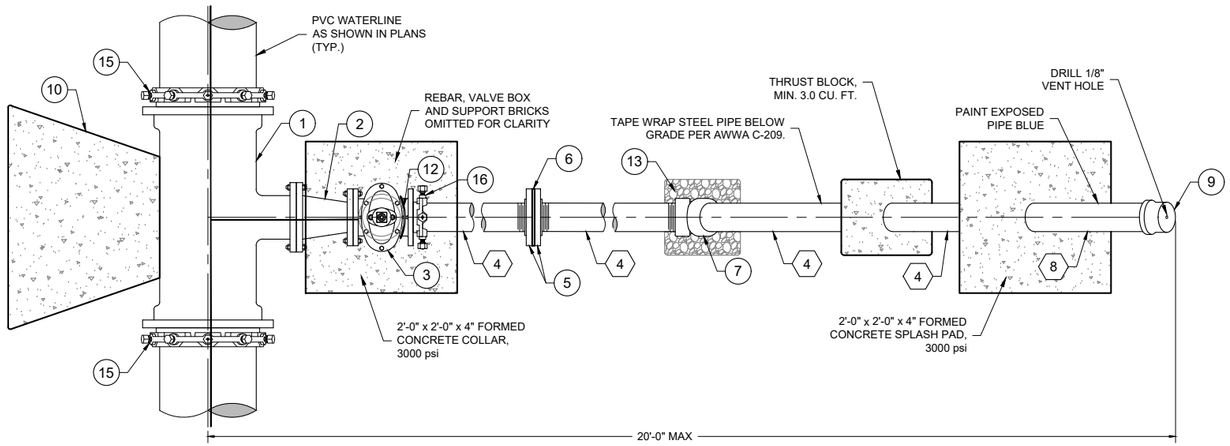
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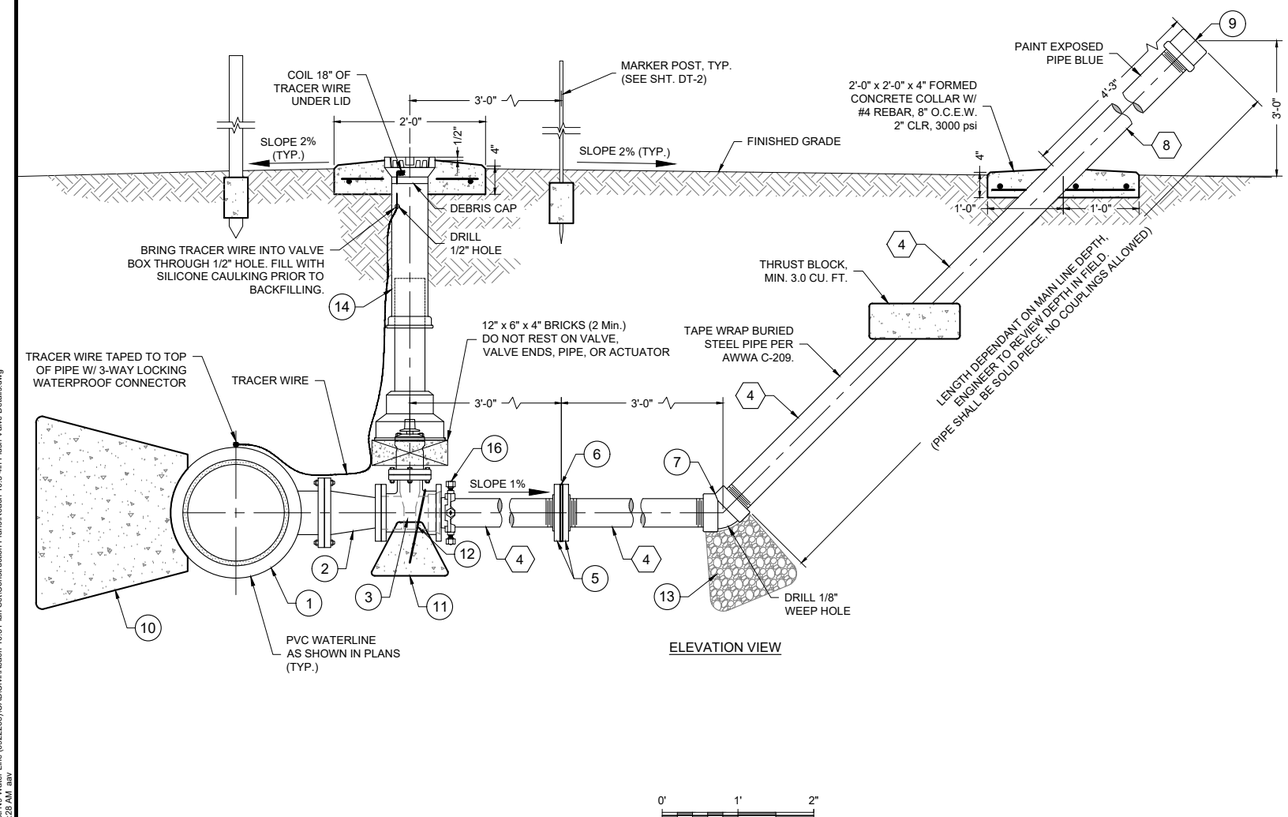
Project No: 6922268

Sheet: DT-8

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PLAN VIEW



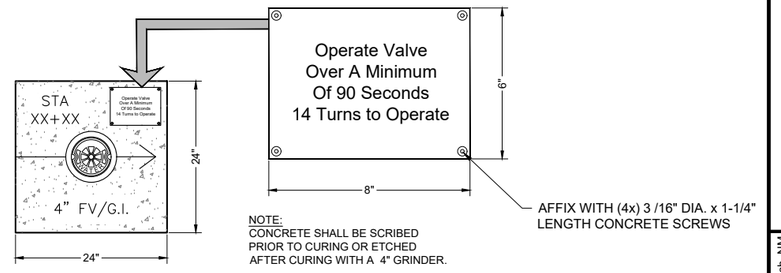
ELEVATION VIEW

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. 304 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, VALVES AND FITTINGS IN CONTACT WITH SOIL SHALL ALSO BE WAX TAPE-COATED PER 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.



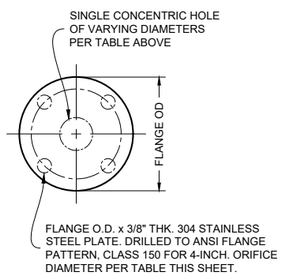
NOTE:
CONCRETE SHALL BE SCRIBED PRIOR TO CURING OR ETCHED AFTER CURING WITH A 4" GRINDER.

COLLAR SCRIBING AND WARNING PLACARD DETAIL
NOT TO SCALE

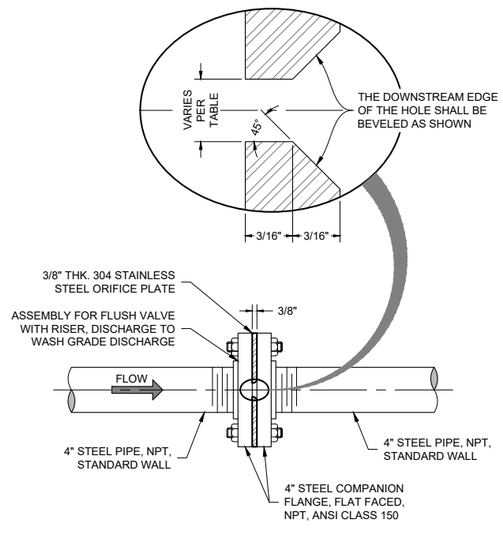
SUMMARY OF FLUSH VALVE ORIFICE PLATE DRILLING

Station	Elevation	Orifice Plate Hole Ø (in.)
58+50	6535	2.9
105+50	6600	3.0
146+50	6709	3.4
188+00	6747	3.5
242+06	6774	3.7
296+50	6777	3.7
322+75	6706	3.2
363+85	6812	3.8

NOTES:
1. HOLE TO BE DRILLED CENTERED ON THE ORIFICE PLATE.



ORIFICE PLATE
NOT TO SCALE



4" FLUSH VALVE

ORIFICE PLATE ASSEMBLY
NOT TO SCALE

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Revision	Date	Description	By	Chkd

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Client: The Navajo Nation
Location: Tselʼiʼahi & Nahodishgish, NM

4 INCH FLUSH ABOVE-GRADE DISCHARGE DETAIL
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TERRY T. ADAMS — NEW MEXICO — 21073 — 10-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

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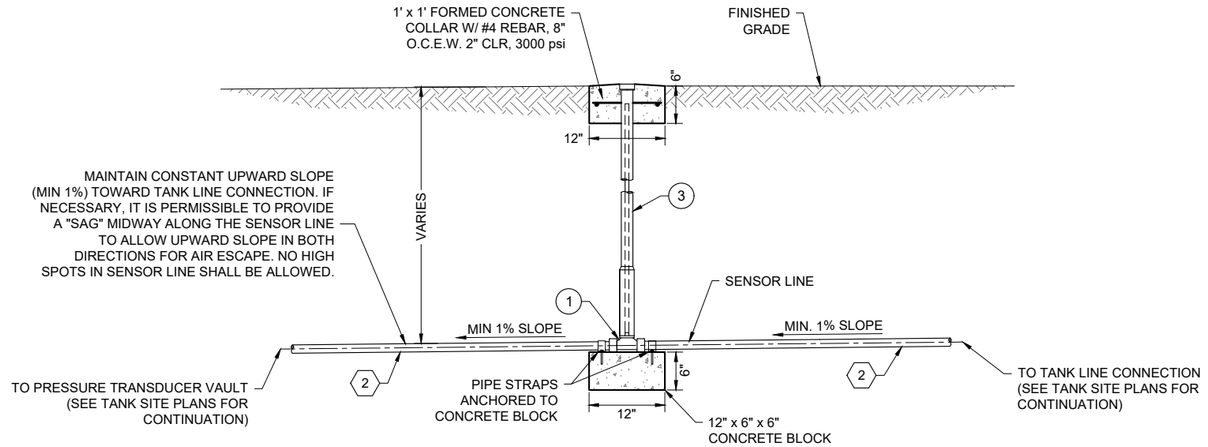
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Project No: 6922268
Sheet: DT-9

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KEYED NOTES - 1" SENSOR LINE AND CURB VALVE

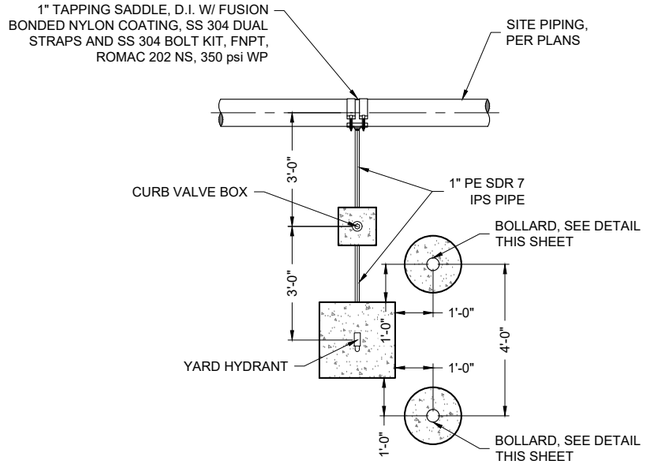
ITEM NO.	DESCRIPTION
1	1" BALL CURB VALVE, FNPT, MINNEAPOLIS PATTERN, MUELLER B-20287, OAE WP 300 psi, OAE (COVER PAINTED BLUE)
2	1" STAINLESS STEEL PIPE, NPT, SCHEDULE 40 (SEE NOTE #2, THIS SHEET)
3	CURB STOP BOX, EXTENSION TYPE MUELLER H-10302, OAE W/ MUELLER STATIONARY ROD WHICH EXTENDS 2"-4" BELOW 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.



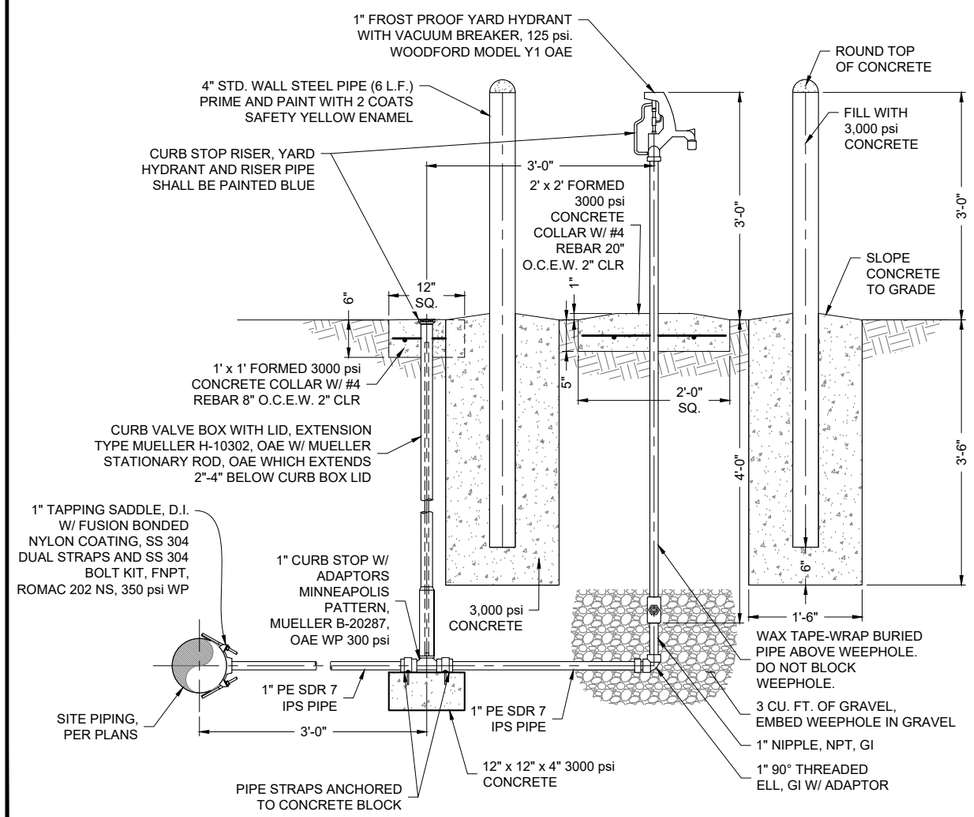
1" TYPICAL SENSOR LINE AND CURB VALVE

NOT TO SCALE



YARD HYDRANT AND ASSEMBLY PLAN VIEW DETAIL

NOT TO SCALE



YARD HYDRANT AND ASSEMBLY DETAIL

NOT TO SCALE

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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

SENSOR LINE & YARD HYDRANT DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

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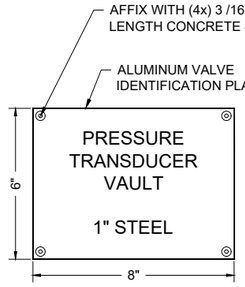
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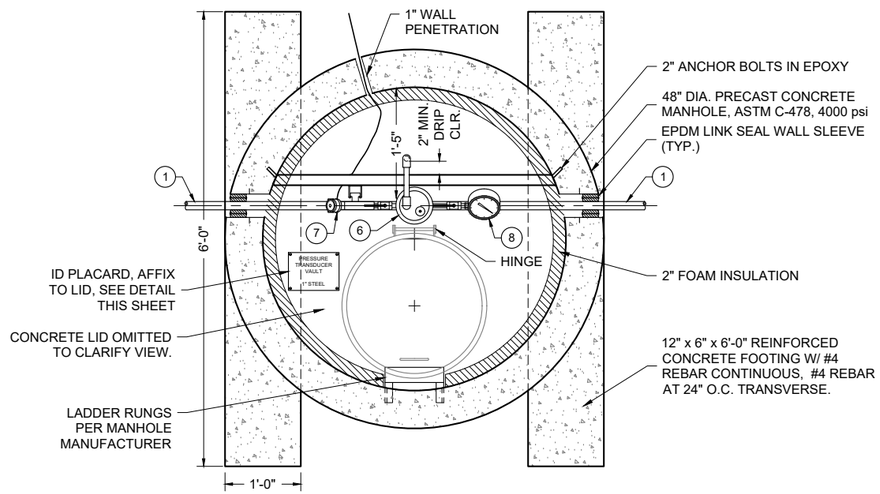
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KEYED NOTES - PRESSURE TRANSDUCER VAULT	
Item No.	Description
1	1" STEEL PIPE, SS 304, NPT, SCHEDULE 40
2	1" TEE, SS 304, NPT, SCHEDULE 40
3	1" CROSS, SS 304, NPT, SCHEDULE 40
4	1" x 1/2" REDUCING BUSHING, SS 304, NPT, SCHEDULE 40
5	1/2" SS 304 PIPE, NPT, SCHEDULE 40
6	AIR RELEASE VALVE, 1/2" VALMATIC 15ASV, 175 psi W/ 1/2" SS 304 BALL VALVE, 1500 psi & 1/2" SCHEDULE 80 PVC RETURN (SECURED TO UNISTRUT SUPPORT)
7	HORIZONTAL MOUNT PRESSURE TRANSDUCER 0-30 psi, WIKA MODEL S-20, W/ 1/4" SS 304 BALL VALVE, 2000 psi, 1" x 1/4" SS 304 REDUCING BUSHING & 1/4" SS 304 PIPE, NPT (SECURED TO UNISTRUT SUPPORT)
8	PRESSURE GAUGE 0-25 psi W/ 1/4" SS 304 BALL VALVE, 2000 psi, 1" x 1/4" SS 304 REDUCING BUSHING & 1/4" SS 304 PIPE, NPT
9	ADJUSTABLE PIPE SUPPORT W/ U-SHAPED CRADLE
10	1" BALL VALVE, NPT SS 304

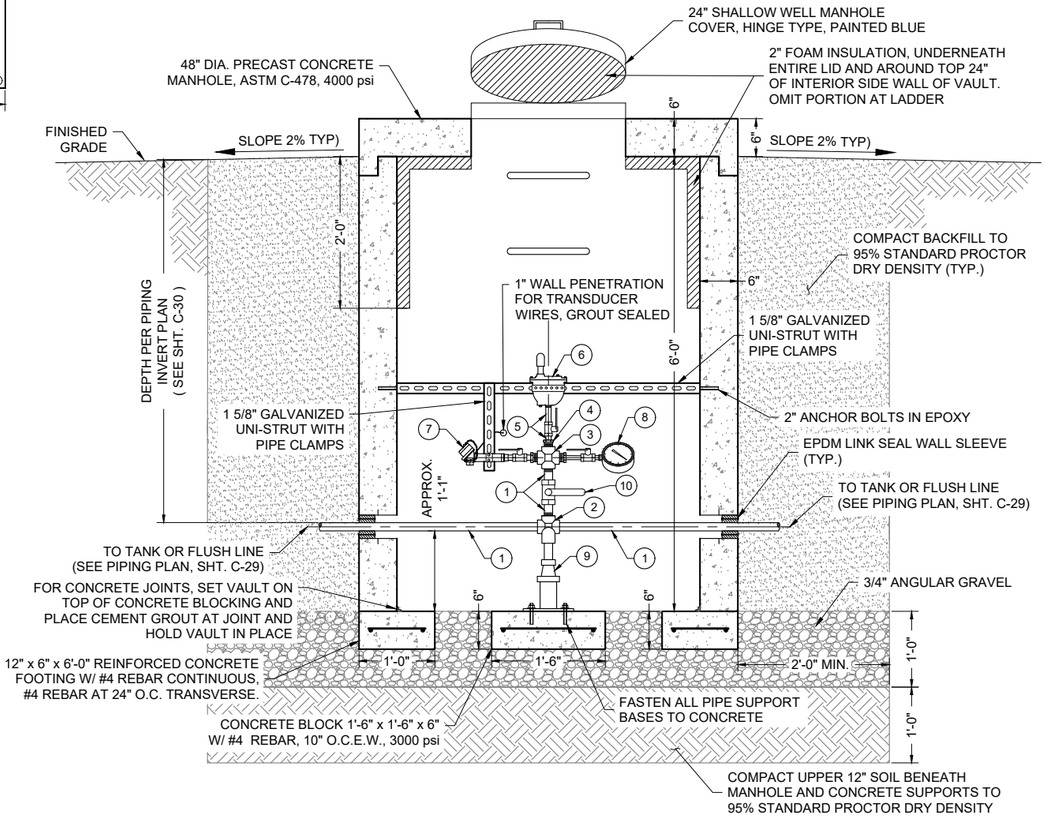
NOTE:
1. ALL STAINLESS STEEL PIPE AND FITTINGS SHALL HAVE A WORKING PRESSURE OF AT LEAST 350 psi, UNLESS OTHERWISE NOTED.



ID PLACARD



PLAN VIEW



ELEVATION VIEW

0' 1' 2'

PRESSURE TRANSDUCER VAULT DETAIL

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Revision	Date	Description	By	Chkd

Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

PRESSURE TRANSDUCER VAULT DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

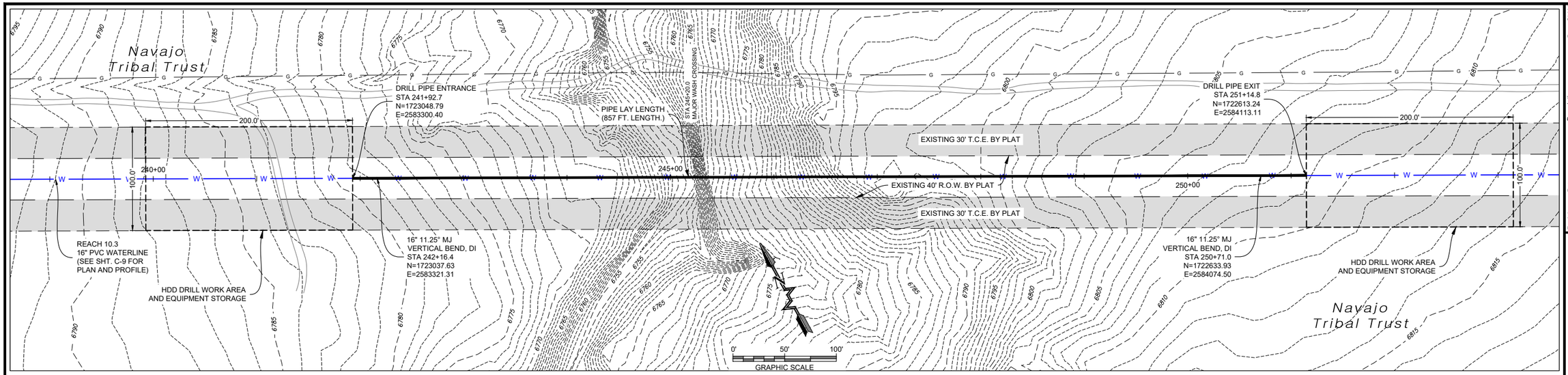
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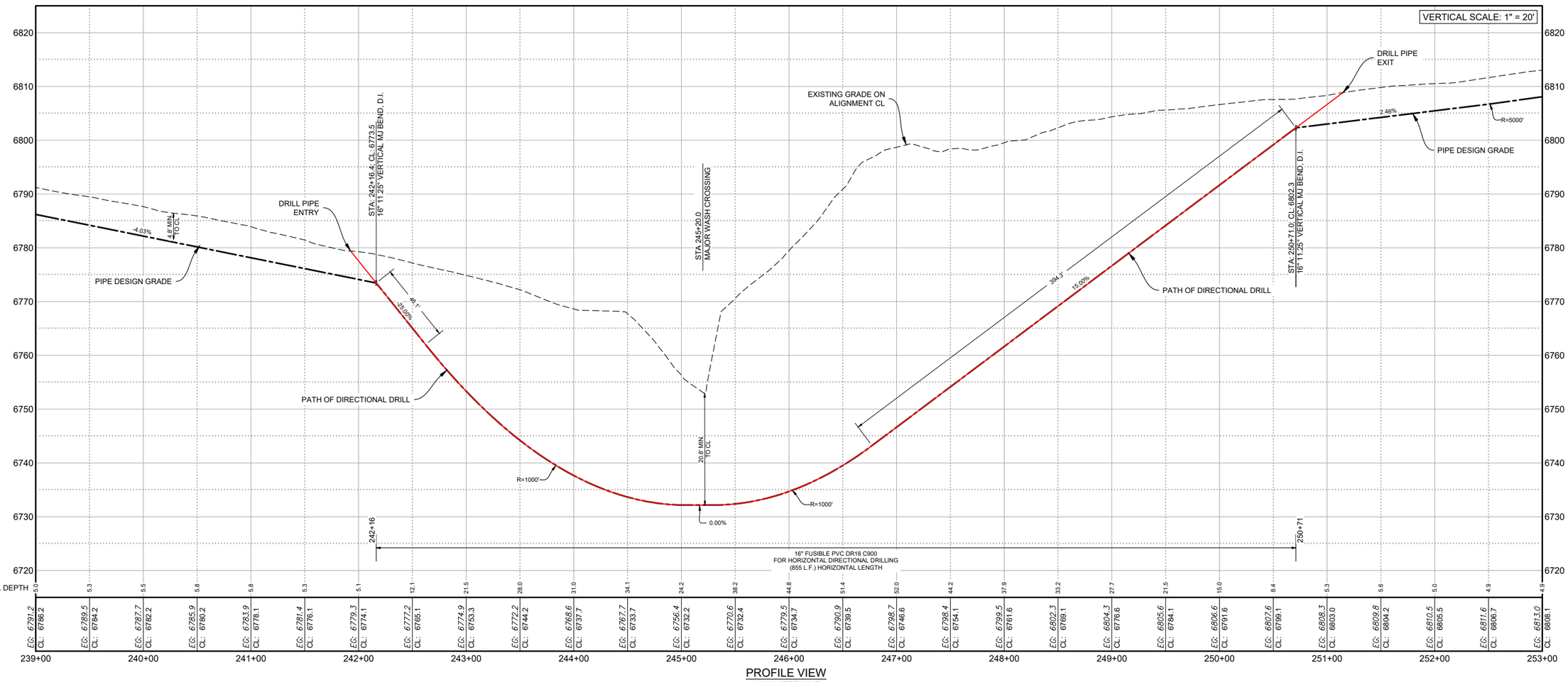
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Sheet: DT-11

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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: Tse'ii'ahi & Nahodishgish, NM

WASH CROSSING STA 245+20 PIPELINE HDD DETAIL
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 2, T. 17 N., R. 14 W.

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

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

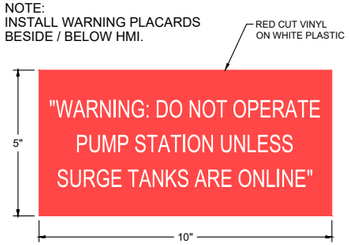
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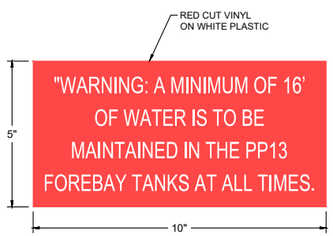
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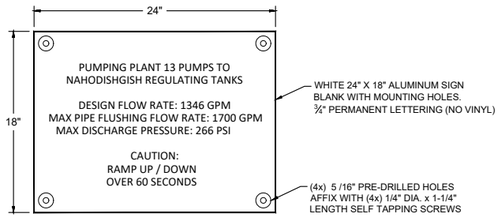
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INSTALL WARNING PLACARDS
BESIDE / BELOW HMI.



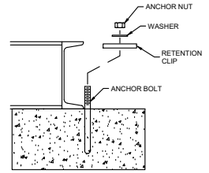
WARNING PLACARD DETAIL



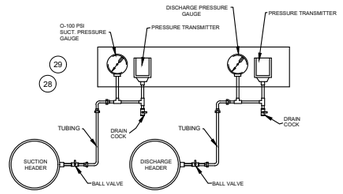
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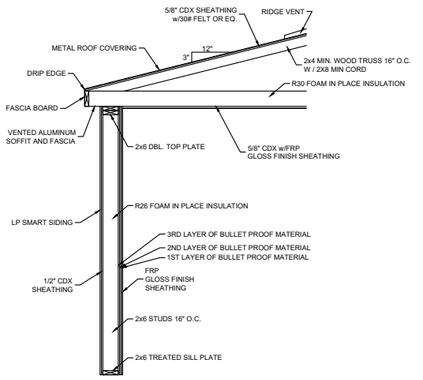
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SIGNAGE DETAIL



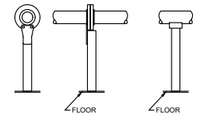
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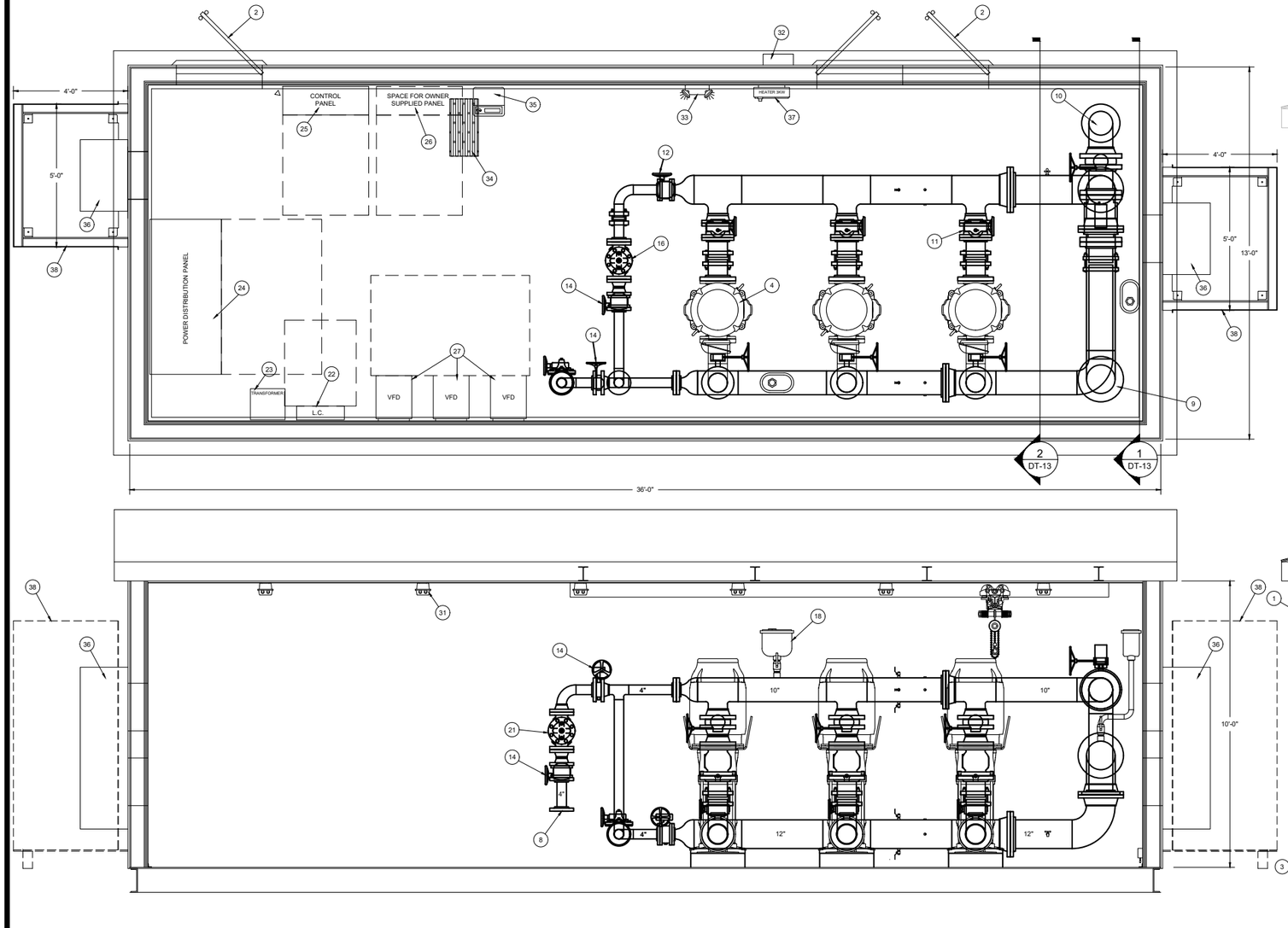
SUCTION/DISCHARGE PRESSURE
GAUGE/TRANSMITTER DETAIL



WALL SECTION

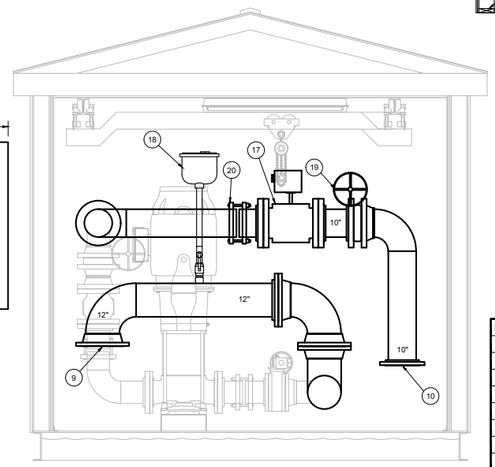


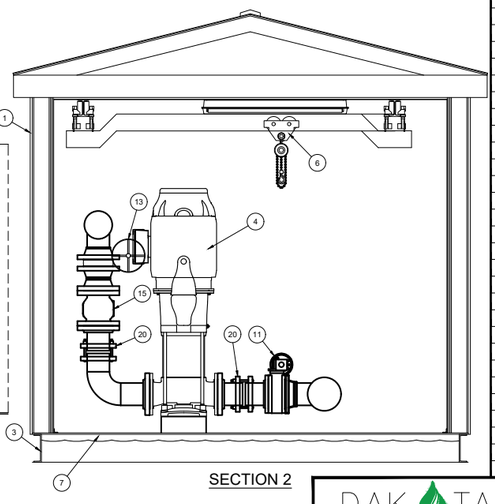
PIPE SUPPORT DETAIL



SECTION 1

SECTION 2





ITEM	QUANITY	DESCRIPTION
38	2	HVAC SHIELD
37	1	3000 WATT BACK UP HEATER
36	2	HVAC UNITS
35	1	DEHUMIDIFIER
34	1	FLOOR DRAIN OPENING
33	1	EMERGENCY LIGHT
32	1	EXTERIOR LED LIGHT
31	6	INTERIOR LED LIGHTS
30		
29	2	PRESSURE GAUGES
28	2	PRESSURE TRANSDUCERS
27	1	VARIABLE SPEED DRIVES
26	1	SPACE ALLOWANCE FOR OWNER SUPPLIED PANEL
25	1	CONTROL / PLC PANEL
24	1	SINGLE PHASE TRANSFORMER
23	1	SINGLE PHASE LOAD CENTER
22	1	480 VOLT POWER PANEL
21	1	4" HIGH PRESSURE BACK PRESSURE/SOLENOID
		SHUTOFF VALVE
20	8	COUPLINGS
19	1	10" HIGH PRESSURE BUTTERFLY VALVE WITH GEAR OP
18	2	AIR VALVES WITH BALL ISOLATION VALVES
17	1	10" HIGH PRESSURE FLOW METER
16	1	4" HIGH PRESSURE RELIEF VALVE
15	3	8" HIGH PRESSURE GLOBE STYLE CHECK VALVES
14	3	4" HIGH PRESSURE BUTTERFLY VALVES WITH GEAR OP
13	3	8" HIGH PRESSURE BUTTERFLY VALVES WITH GEAR OP
12	1	4" BUTTERFLY VALVE WITH GEAR OP
11	3	8" BUTTERFLY VALVES WITH GEAR OP
10	1	10" FLANGED DISCHARGE CONNECTION
9	1	12" FLANGED SUCTION CONNECTION
8	1	4" FLANGED DISCHARGE CONNECTION
7	-	POLYURETHANE BASE INSULATION
6	1	BI-DIRECTIONAL TROLLEY AND HOIST
5		
4	3	PUMPS & MOTORS GRUNDFOS CR185-3, 150 HP, 3550 RPM,
		480V/3PH/60HZ, CONDITIONS - 673 GPM @ 542' TDH
3	1	STEEL BASE - 1/2" FLOOR PLATE WITH STRUCTURAL REINF.
2	2	7' HIGH DOORs WITH HARDWARE - BULLET RESISTANT
1	1	DPI MODULAR BUILDING - BULLET RESISTANT

SHIMS (PROVIDED BY THE INSTALLING CONTRACTOR) AROUND THE PERIMETER BASE OF THE BUILDING MAY BE REQUIRED TO INSURE PROPER LEVEL. WITHOUT PROPER LEVEL, THE DOOR(S) MAY NOT OPERATE PROPERLY.

PLEASE CONFIRM THE FLOW DIRECTIONS AND THE SUCTION AND DISCHARGE LOCATIONS ARE IN CORRECT LOCATIONS.

DAKOTA PUMP
25524 413TH AVE
MITCHELL, SD 57301
t. (605)-996-6636
w. DakotaPump.com

PROJECT:
Navajo Gallup Water, New Mexico
Pumping Plant #13

DRAWN-BY: BILL | DATE: 03-21-25

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Phone: (505) 299-0942 Toll-Free (877) 299-0942 Fax (505) 293-3430
www.soudermiller.com

Client: The Navajo Nation
Location: Tse'ifahi & Nahodishgish, NM

PP 13 PUMP STATION (AS FURNISHED BY SUPPLIER)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BIST I N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TROY TADANO
NEW MEXICO
21073
LICENSED PROFESSIONAL ENGINEER
7-29-25

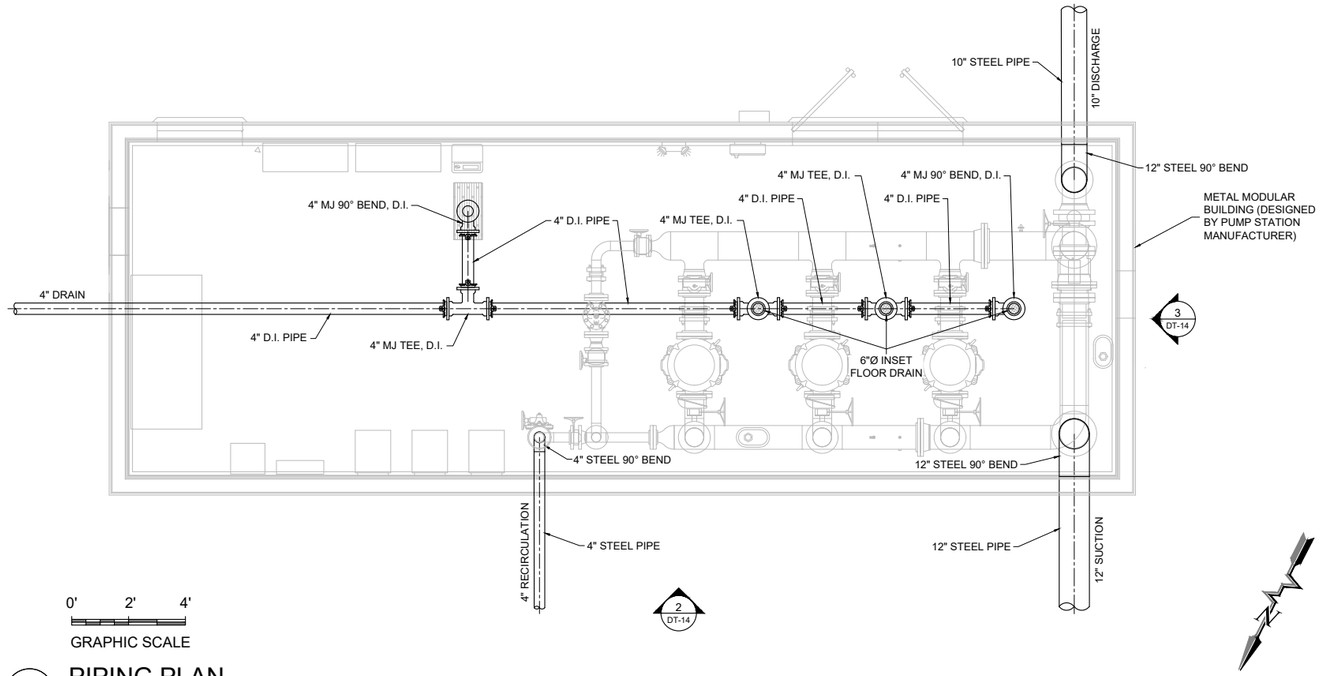
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CDB	MVrt/AaV	TTT

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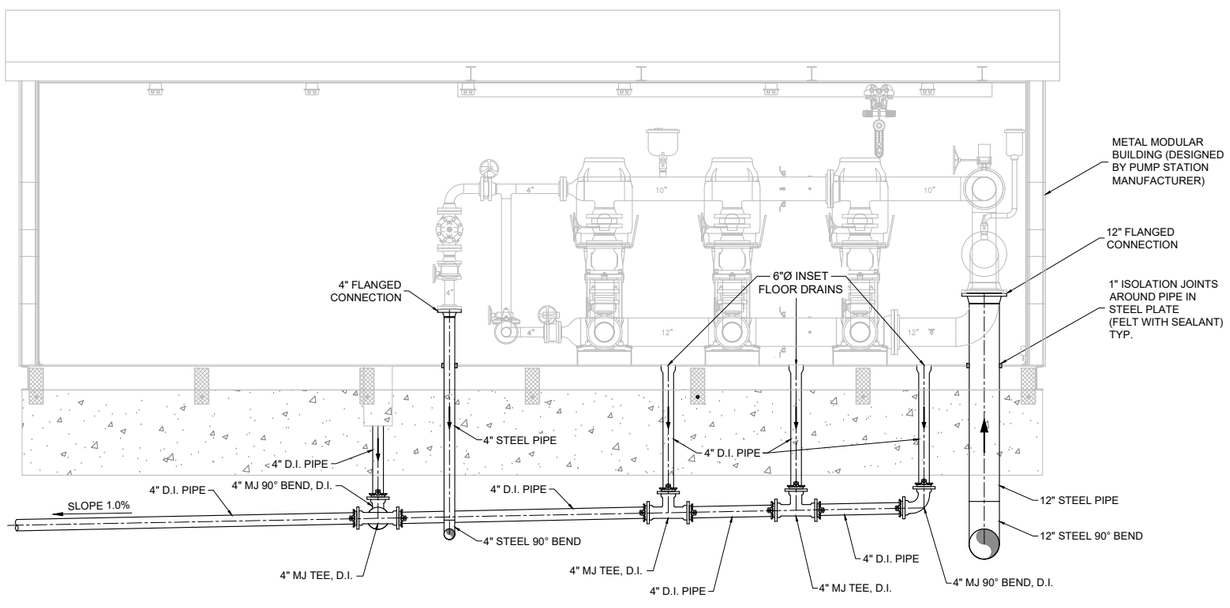
Date: September 2025
Scale: Horiz: AS SHOWN
Vert: N/A
Project No: 6922268
Sheet: DT-13

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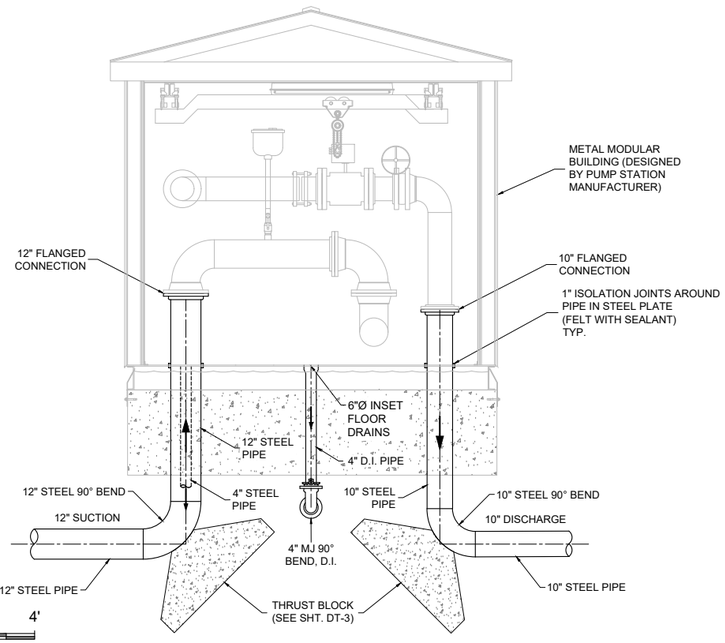
1 PIPING PLAN

3/16"=1'-0"



2 PIPING ELEVATION PLAN

3/16"=1'-0"



3 PIPING ELEVATION PLAN

3/16"=1'-0"

NOTES:

1. CONTRACTOR WHOLLY RESPONSIBLE TO VERIFY ACTUAL PRE-FAB PUMP STATION BUILDING AND PIPING DIMENSIONS AND COORDINATE WITH PUMP STATION MANUFACTURER PRIOR TO CONSTRUCTION. CONTRACTOR RESPONSIBLE TO ALIGN FOUNDATION, PIPING, INLETS & OUTLETS AND DRAINS WITH ACTUAL PUMP STATION LAY-OUT IN FIELD. VERIFY ALL BUILDING SKID BEAMS & MATING LINES PRIOR TO INSTALLING FOUNDATION.
2. FIELD LOCATE CONDUITS PER REVIEW WITH ELECTRICIAN.
3. CONTRACTOR SHALL GROUT UNDER SOLE PLATES OF PUMPS USING POLYMER TYPE GROUT. DO NOT LEAVE ANY VOIDS.
4. CONTRACTOR SHALL GROUT PIPE PENETRATIONS PER SPECIFICATIONS.
5. FOR CONTINUATION OF PUMP STATION UNDERGROUND PIPING SEE PUMP PLANT 13 PIPING PLAN, SHEET C-20.

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Location: Tselʼíʼahí & Nahodishgish, NM

PP 13 PUMP STATION PIPING PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TOBY TADANO NEW MEXICO 21073 LICENSED PROFESSIONAL ENGINEER 10-29-25

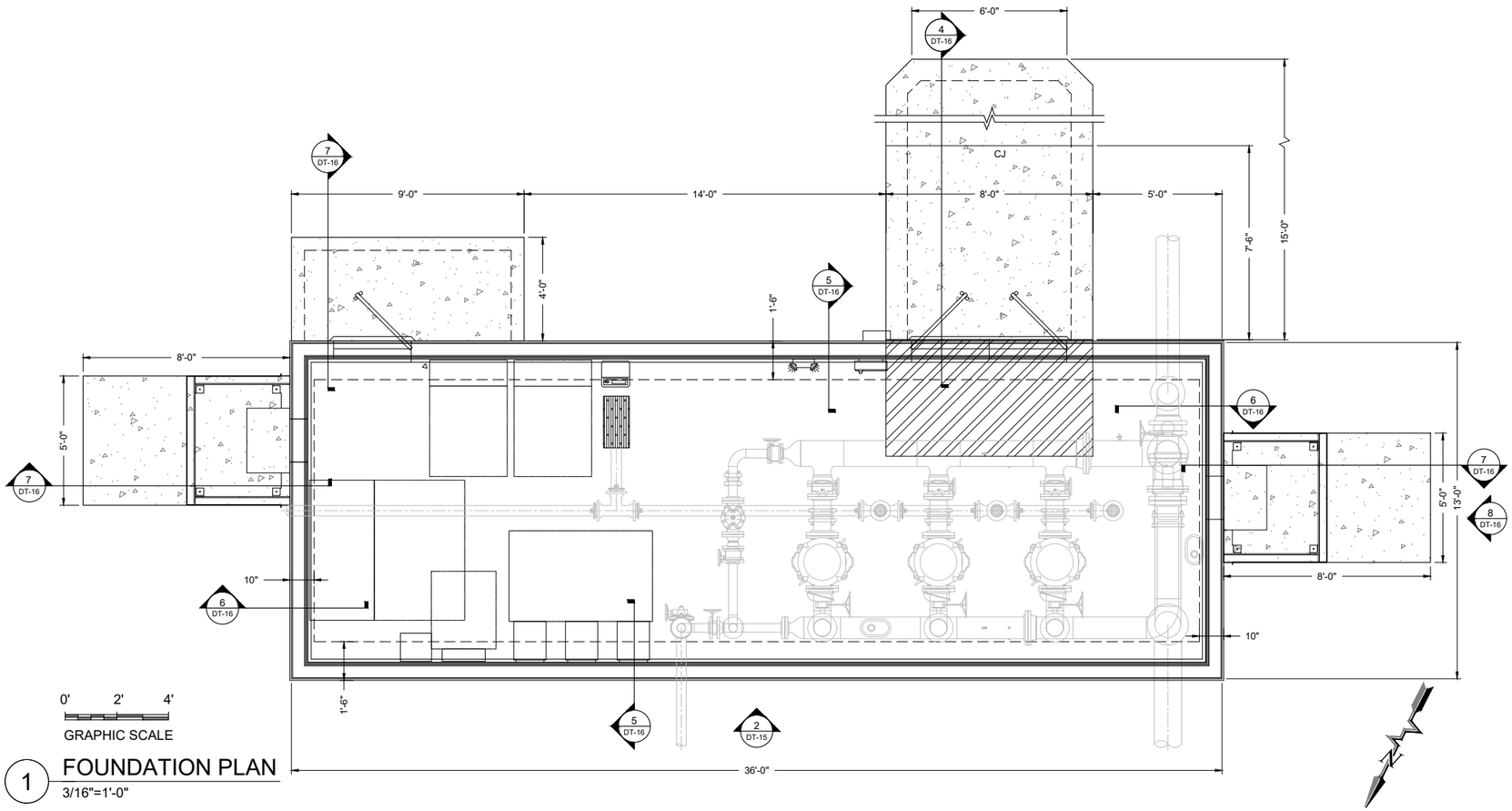
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CDB	MvH/AaV	TTT

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Date: September 2025
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Project No: 6922268
Sheet: DT-14

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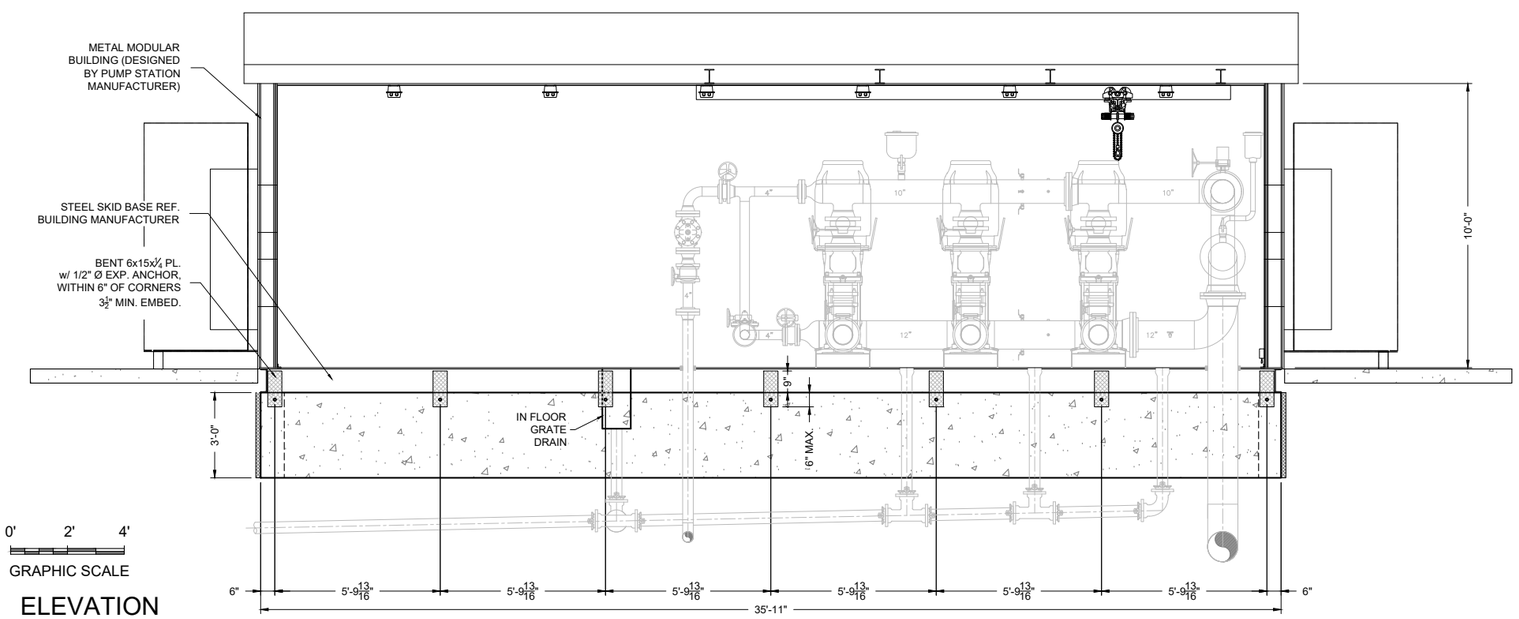


0' 2' 4'

GRAPHIC SCALE

1 FOUNDATION PLAN

3/16"=1'-0"



0' 2' 4'

GRAPHIC SCALE

2 ELEVATION

3/16"=1'-0"

CODE INFORMATION

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

LOAD

MINIMUM DESIGN LOADS:

ROOF DEAD LOAD	15 PSF
ROOF LIVE LOAD	20 PSF
GROUND SNOW LOAD (pg)	20PSF

WIND

BASIC WIND SPEED	120 MPH
EXPOSURE	C

SEISMIC

DESIGN CATEGORY	B
SITE SOIL CLASS	D
IMPORTANCE FACTORY (I)	1.25
S-S	0.199
S-1	0.060
S-DS	0.212
S-D1	0.095

CONCRETE

ALL SITE-CAST CONCRETE SHALL BE MADE WITH TYPE II (LOW ALKALI RESISTIVE) CEMENT AND SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 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.

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 FORM CUT TO FILL TO PASS UNDERNEATH OR WITHIN 5 HORIZONTAL FEET OF BUILDING OR SLAB.

REFER TO GEOTECH REPORT BY GEO-TEST INC. REPORT #1-00909, DATED DECEMBER 1, 2020 FOR SUBSURFACE INFORMATION, OVER EXCAVATION REQUIREMENTS, SUBGRADE PREPARATION, AND STRUCTURAL FILL & COMPACTION.

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Location: Tse'ii'ahi & Nahodishgish, NM

PP 13 PUMP STATION FOUNDATION PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

Jupiter C. Clark, New Mexico, 23567, Professional Engineer

Designed	Drawn	Checked
EUAM	AaV/DT	HCR

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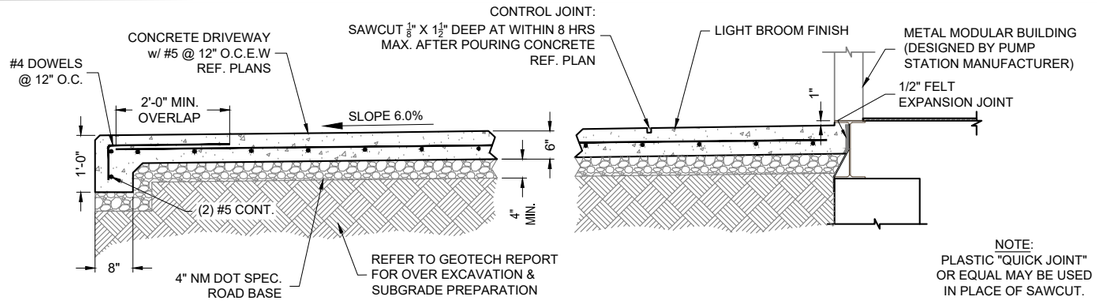
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Project No: 6922268

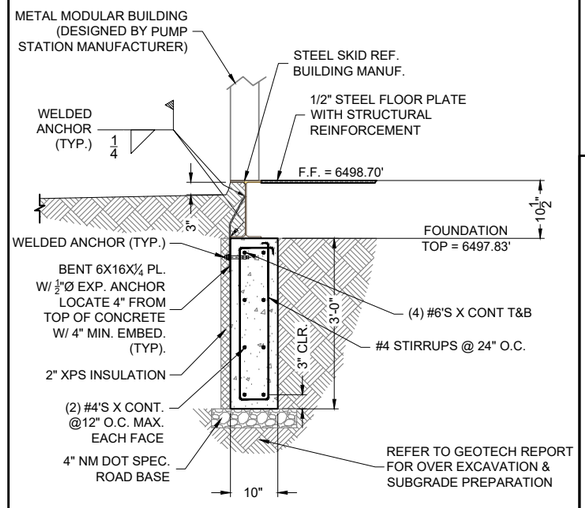
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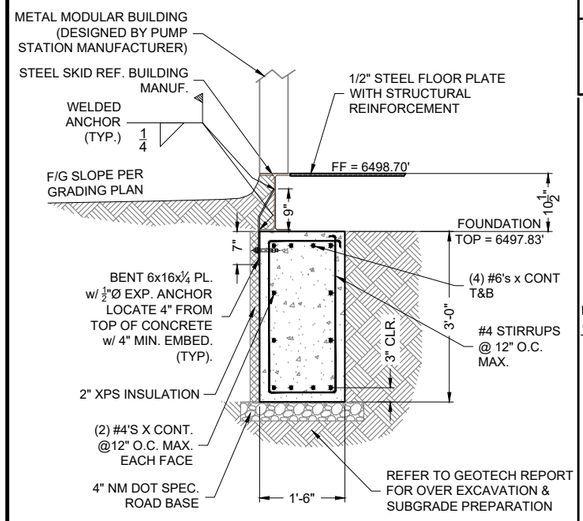
4 DRIVEWAY SECTION

3/8"=1'-0"



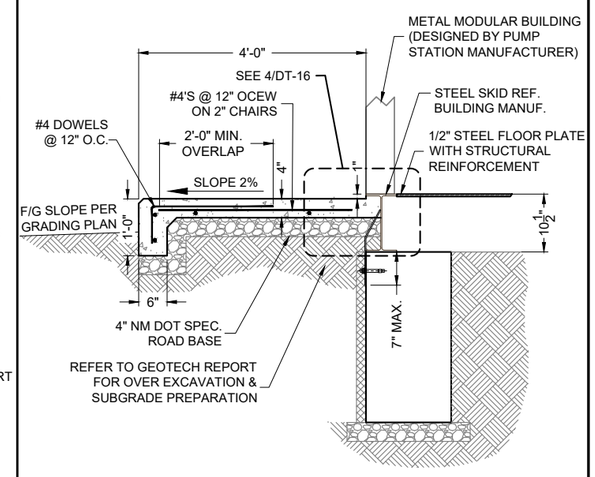
6 FOUNDATION SECTION

3/8"=1'-0"



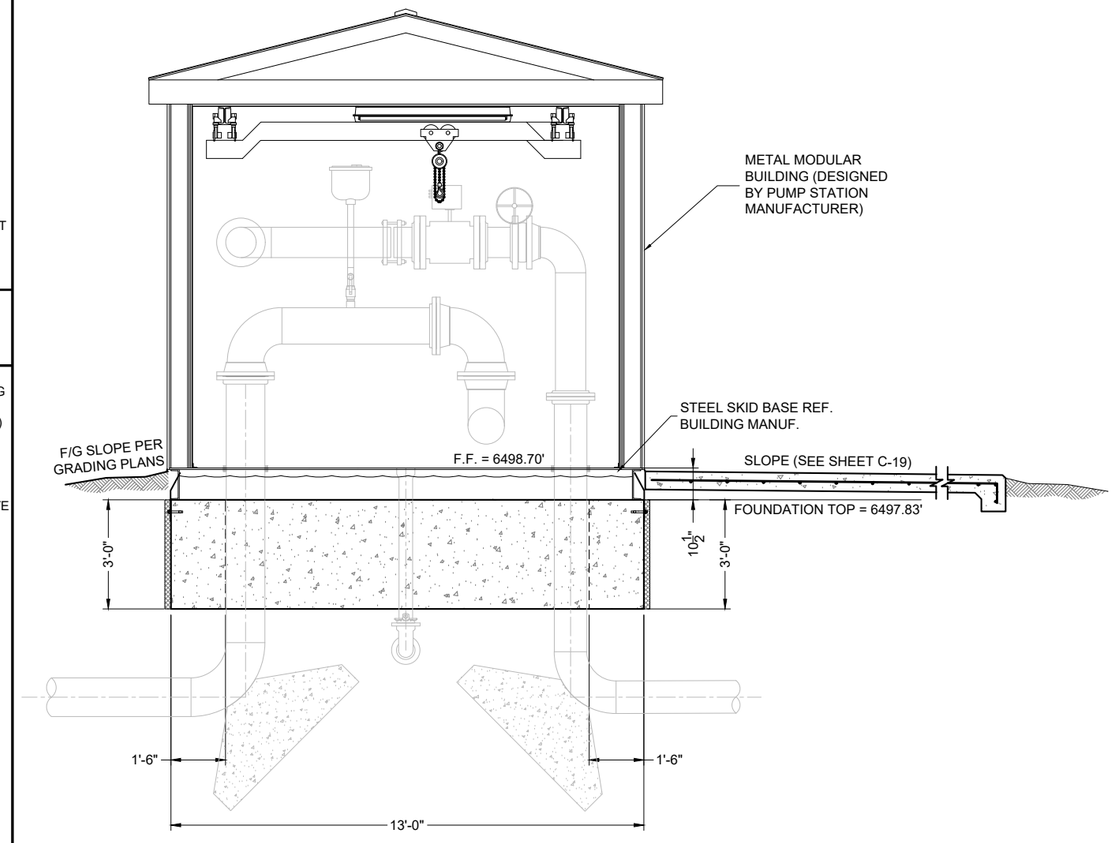
5 FOUNDATION SECTION

3/8"=1'-0"



7 FOUNDATION / WALKWAY SECTION

3/8"=1'-0"



8 ELEVATION

1/2"=1'-0"

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www.soudermiller.com

Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

PP 13 PUMP STATION FOUNDATION ELEVATION
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

Hunter C. Clark, New Mexico, 23567, Professional Engineer, 9-20-25

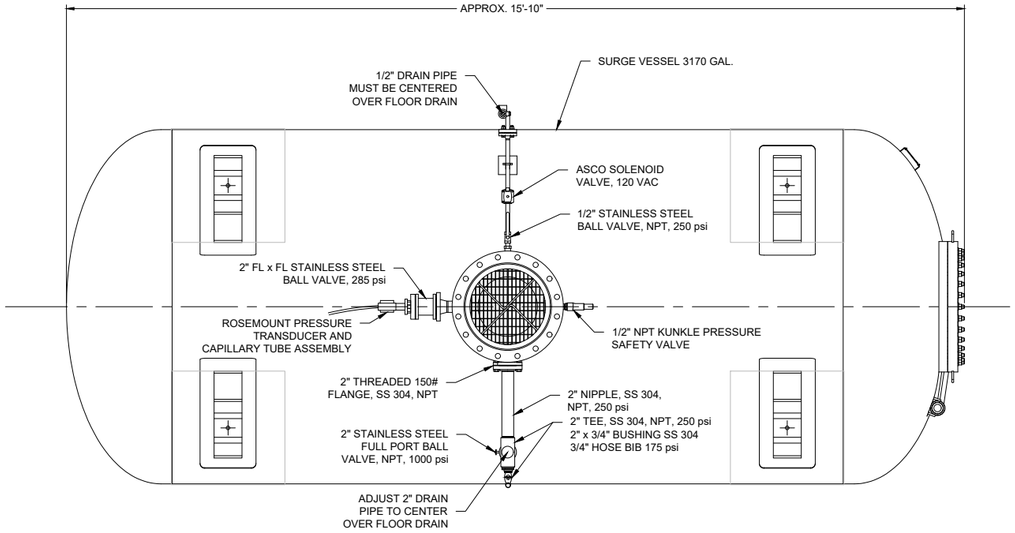
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EUAM	AaV/DT	HCR

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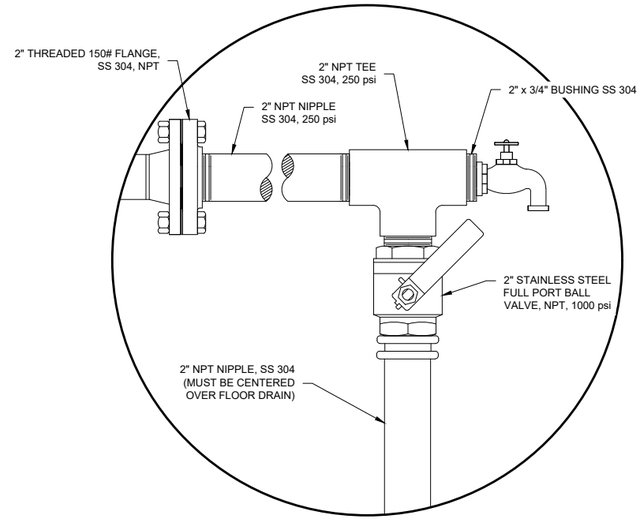
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UNDERSIDE VIEW OF SURGE TANK

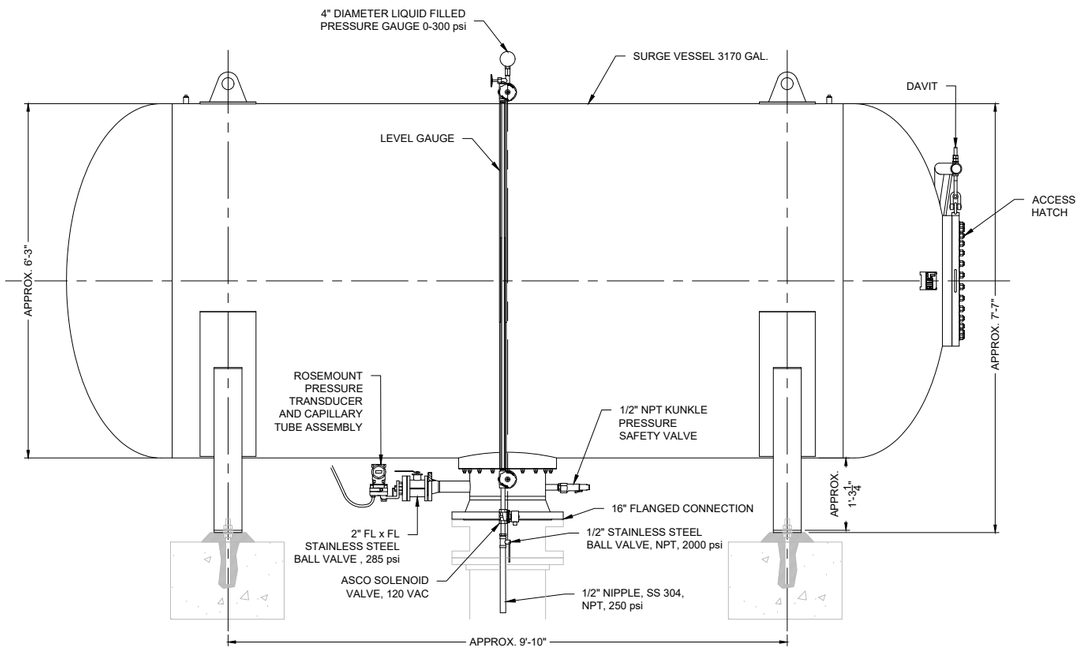
3/8" = 1' - 0"



DETAIL "A"

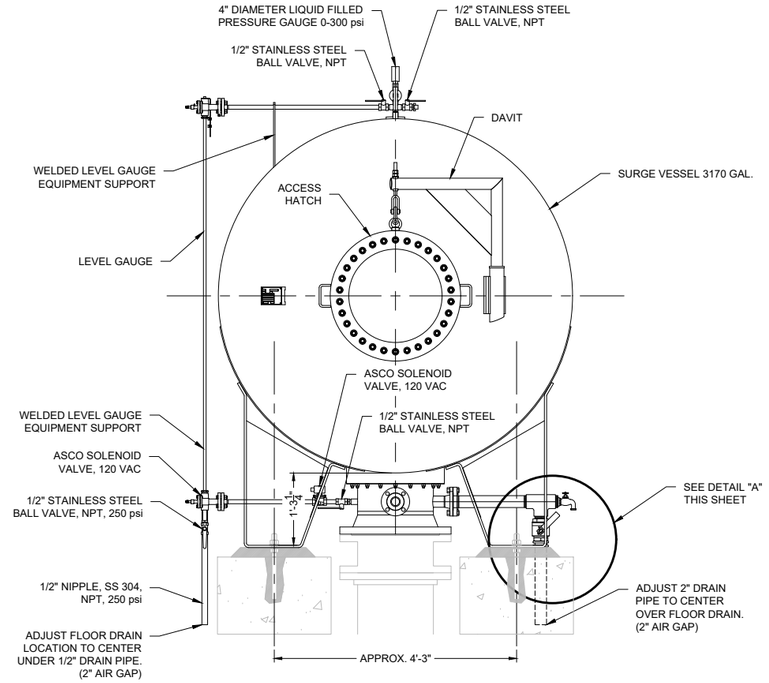
NOT TO SCALE

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"



END VIEW OF SURGE TANK

3/8" = 1' - 0"

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Client: The Navajo Nation Location: Tse'iʼahi & Nahodishgish, NM

PP 13 SURGE TANK DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TODD A. TERRY — NEW MEXICO — 21073 — 12-29-25 — LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

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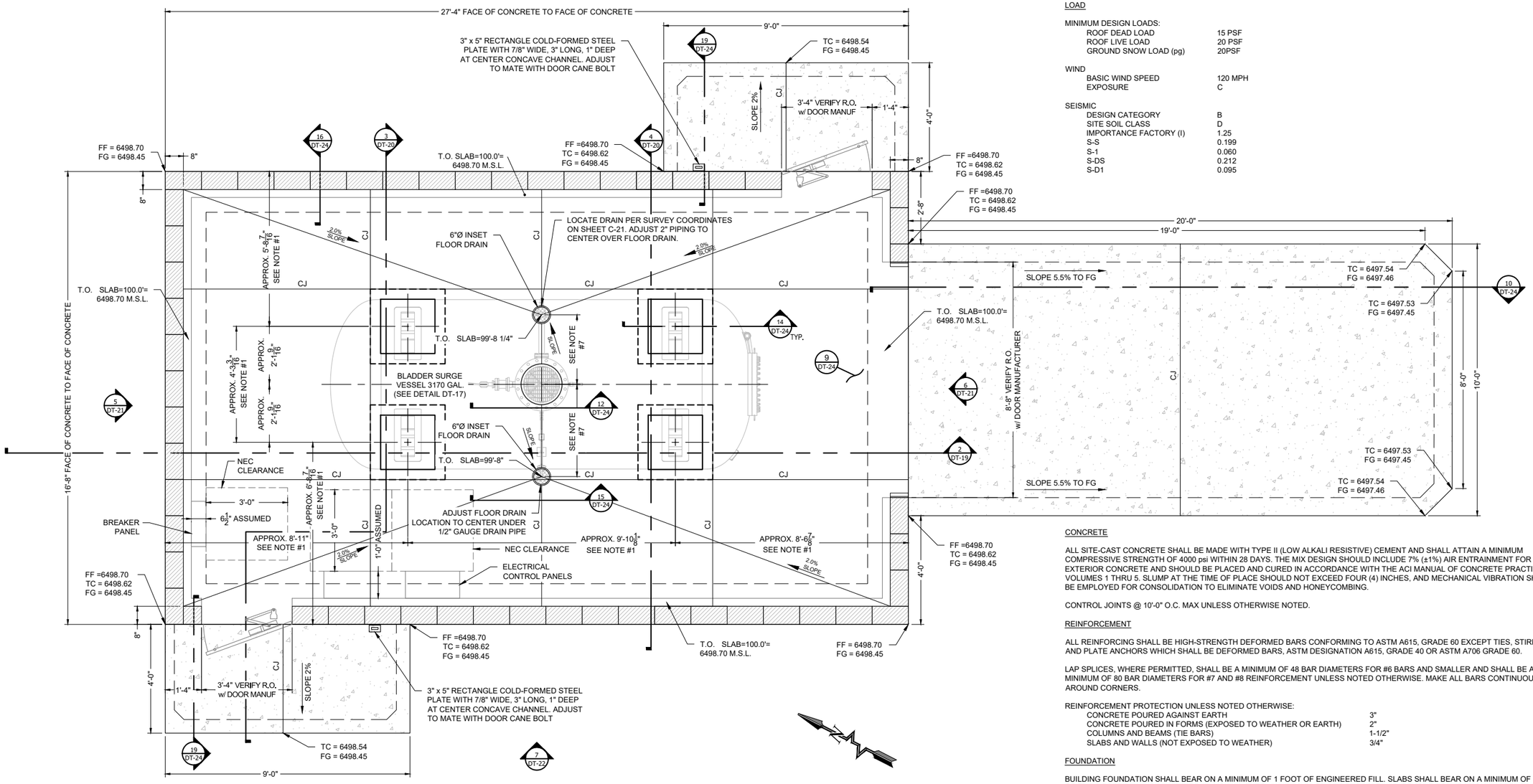
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Project No: 6922268

Sheet: DT-17

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1 FOUNDATION PLAN

1/4"=1'-0"

0' 2' 4'

GRAPHIC SCALE

CODE INFORMATION

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

LOAD

MINIMUM DESIGN LOADS:

ROOF DEAD LOAD	15 PSF
ROOF LIVE LOAD	20 PSF
GROUND SNOW LOAD (pg)	20PSF

WIND

BASIC WIND SPEED	120 MPH
EXPOSURE	C

SEISMIC

DESIGN CATEGORY	B
SITE SOIL CLASS	D
IMPORTANCE FACTORY (I)	1.25
S-S	0.199
S-1	0.060
S-DS	0.212
S-D1	0.095

CONCRETE

ALL SITE-CAST CONCRETE SHALL BE MADE WITH TYPE II (LOW ALKALI RESISTIVE) CEMENT AND SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 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 PLACE 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 BEAR UNIFORMLY ON CUT; DO NOT ALLOW TRANSITION FORM CUT TO FILL TO PASS UNDERNEATH OR WITHIN 5 HORIZONTAL FEET OF BUILDING OR SLAB.

REFER TO GEOTECH REPORT BY GEO-TEST INC. REPORT #1-00909, DATED DECEMBER 1, 2020 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 FUFILL 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 REINFORCEMENT SHALL BE CONTINUOUS AROUND CORNER.

UNLESS NOTED OTHERWISE, MASONRY WALLS SHALL ALSO BE REINFORCED WITH ONE (#5) VERTICALLY AT WALL ENDS, CORNERS, EACH SIDE OF DOOR OR WINDOW OPENING 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 BEAMS 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: Tse'ii'ahi & Nahodishgish, NM

PP 13 SURGE TANK BUILDING FOUNDATION PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

Hunter C. Clark NEW MEXICO 23567 PROFESSIONAL ENGINEER 12-20-25

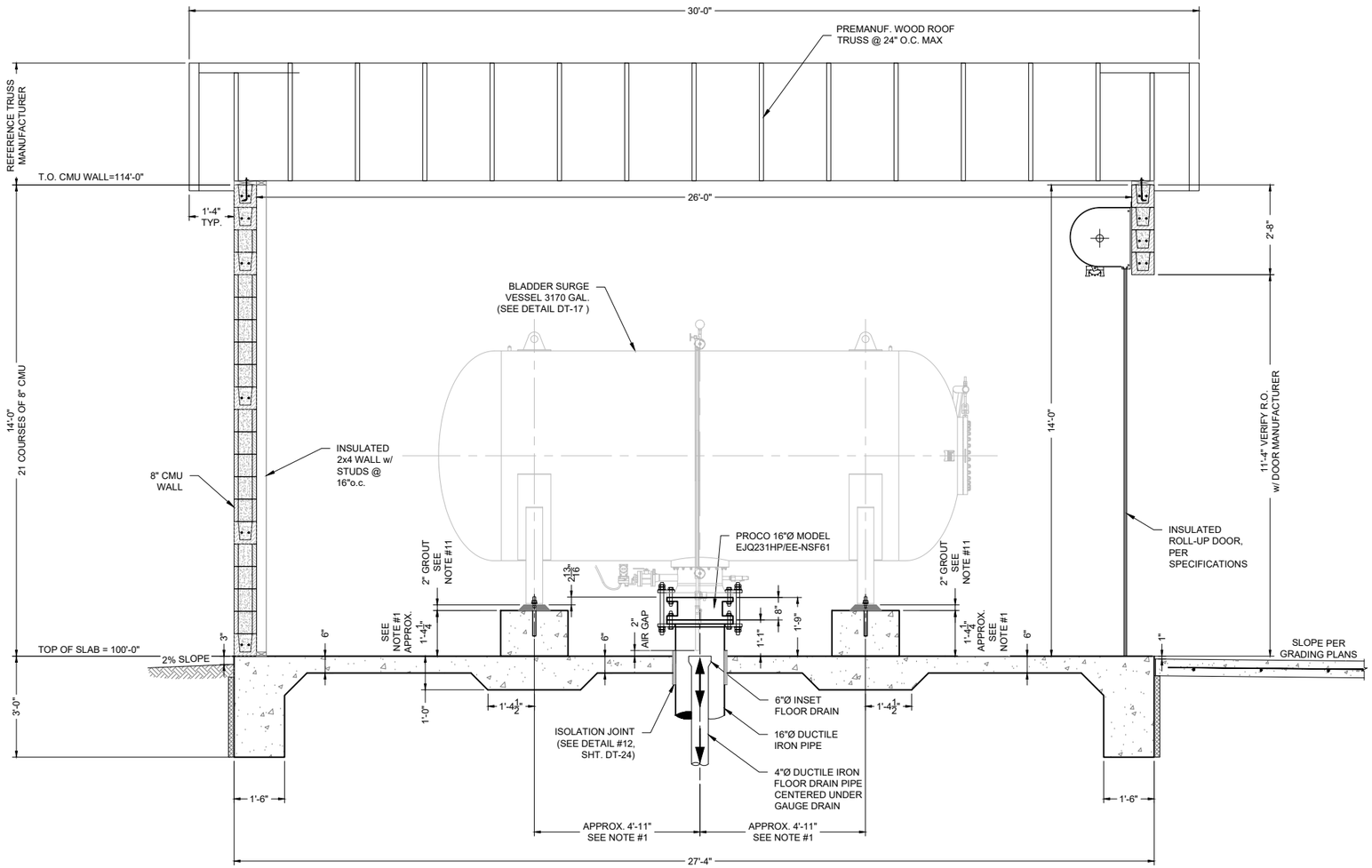
Designed	Drawn	Checked
EUAM	AaV/DT	HCR

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

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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-24 FOR ALL ARCHITECTURAL DETAILING NOT SHOWN HERE.
3. FOR CONTINUATION OF SURGE TANK UNDERGROUND PIPING SEE PUMP STATION PIPING PLAN SHEETS C-16 TO C-25.
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 16-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 16-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 PUMPING PLANT 13 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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www.soudermiller.com

Client: The Navajo Nation Location: Tselʼahí & Nahodishgish, NM

PP 13 SURGE TANK BUILDING SECTION (1 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

Hunter C. Clark
NEW MEXICO
23567
PROFESSIONAL ENGINEER
9-20-25

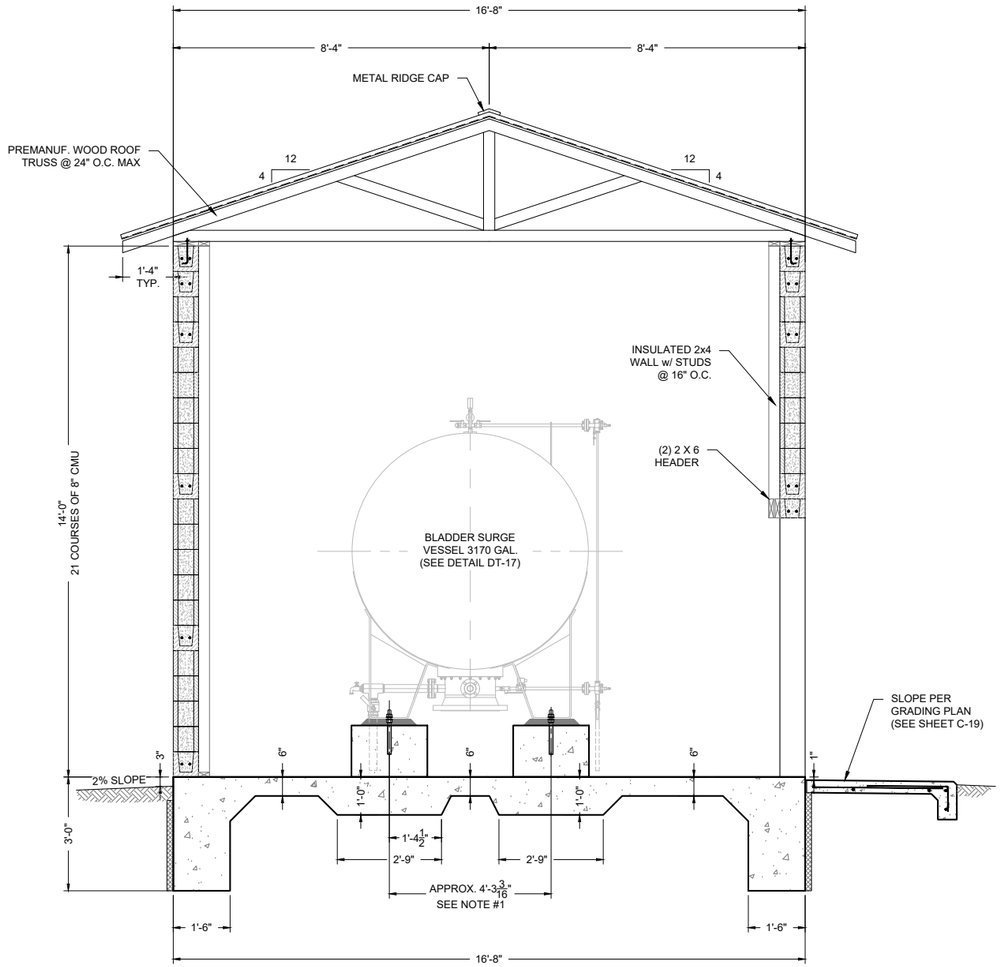
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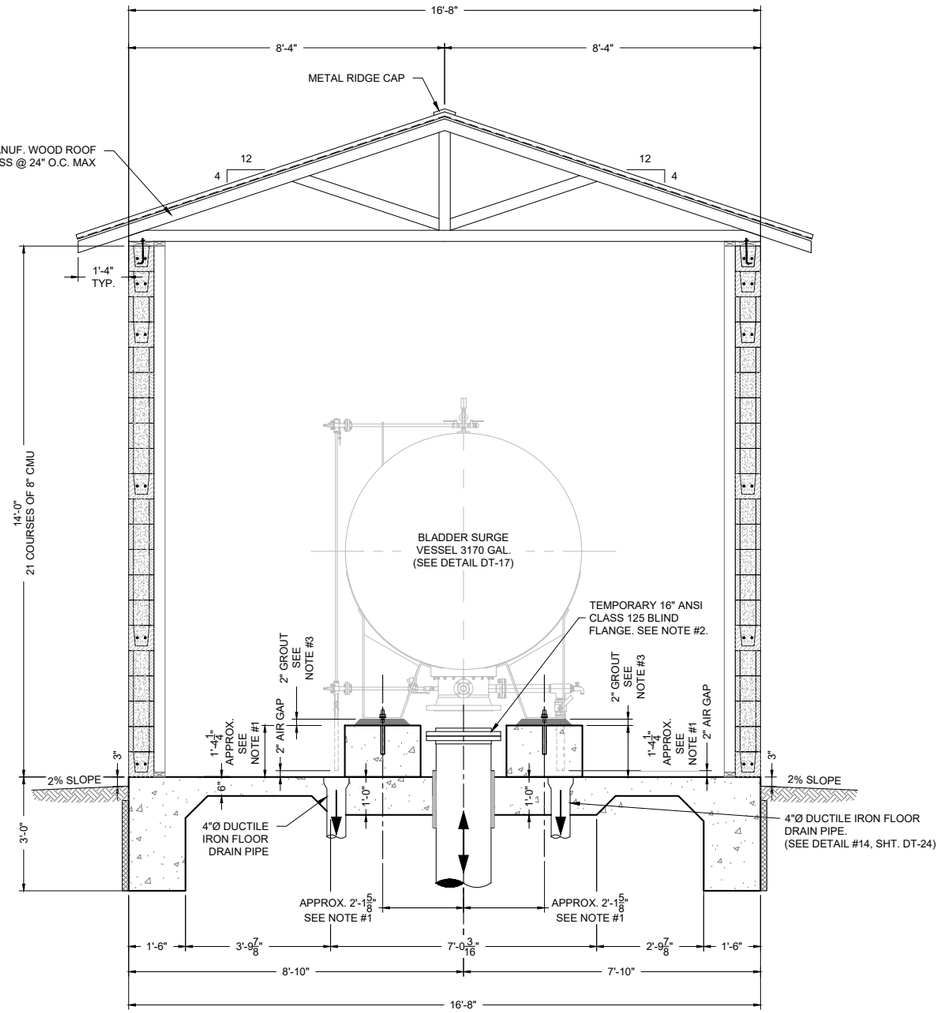
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Sheet: DT-19

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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 16-INCH ANSI CLASS 125 BLIND FLANGE ON RISER PIPE 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 16-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 PUMPING PLANT 13 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.

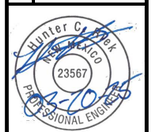
4. CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, PER SPECIFICATIONS, TO EXTERIOR OF BUILDING.

Revision	Date	Description	By	Chkd

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Client: The Navajo Nation Location: Tse'ii'ahi & Nahodishgish, NM

PP 13 SURGE TANK BUILDING SECTION (2 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO



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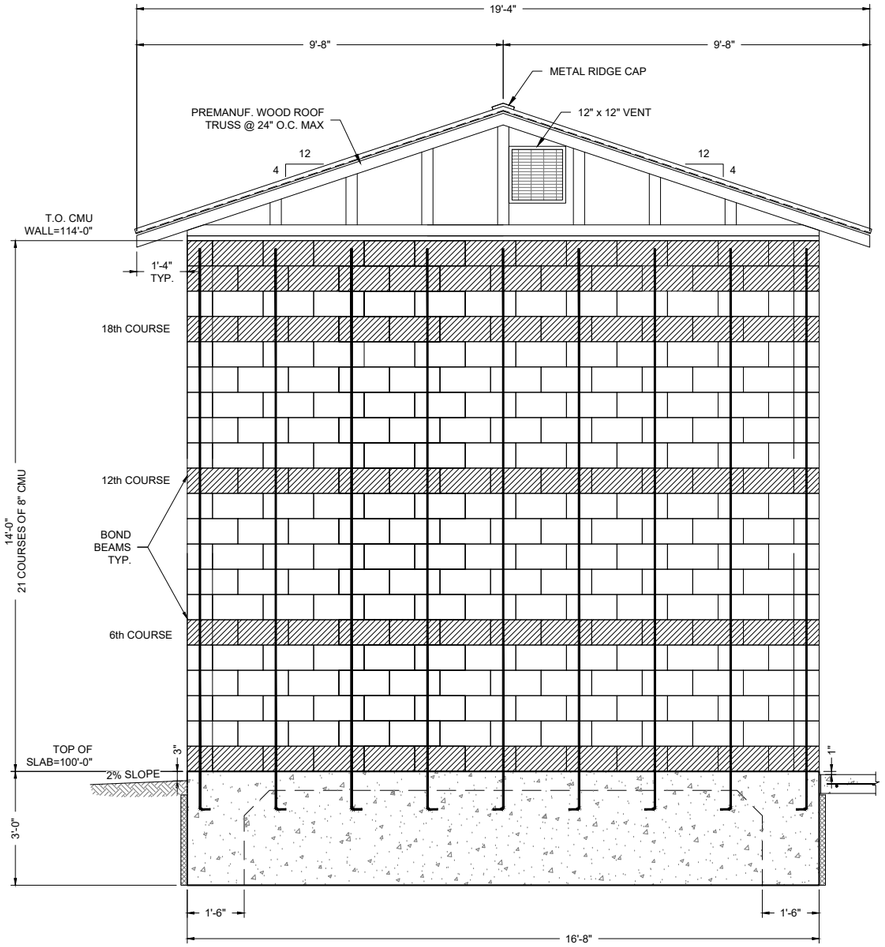
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Sheet: DT-20

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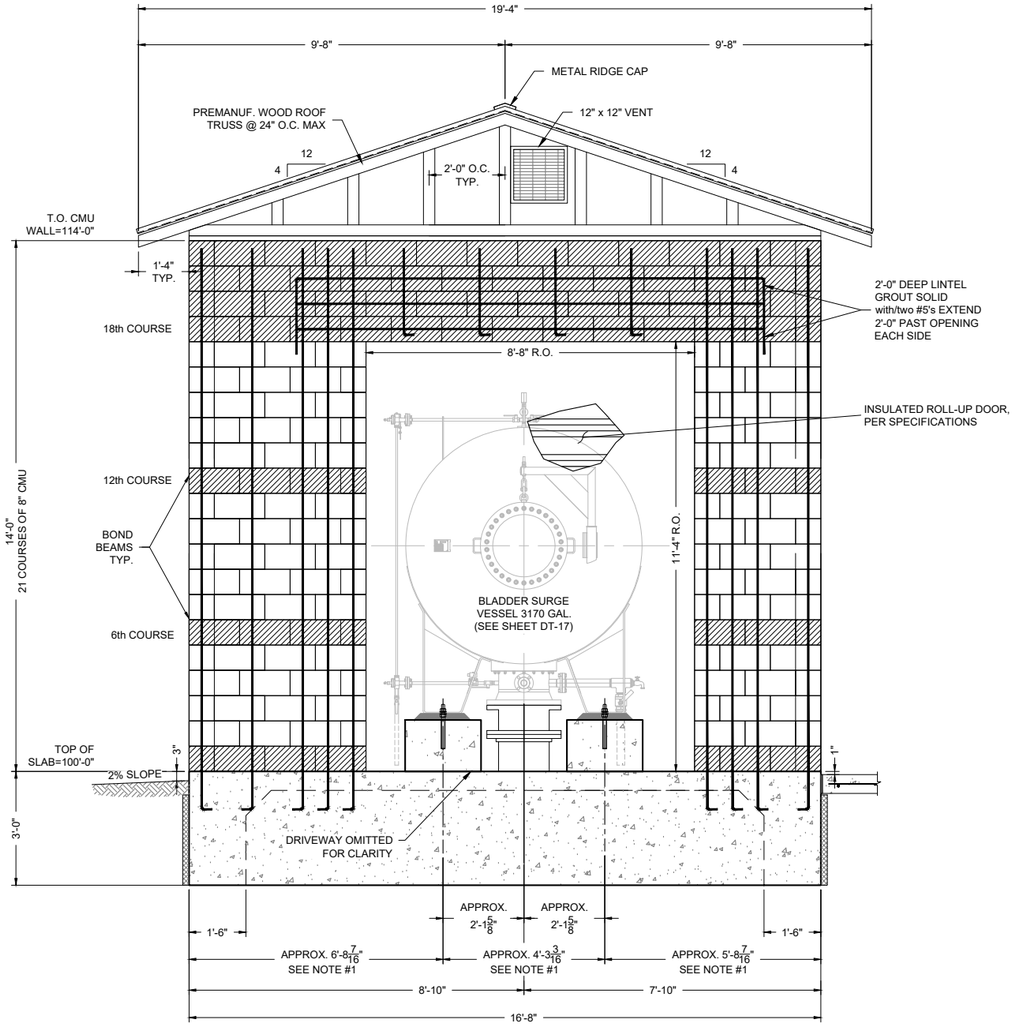


5 END VIEW

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 PLANS, SHEETS C-16 TO C-25.
3. FOR BLOCK PATTERN DETAILS, SEE SHEETS DT-25 & DT-26.
4. CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, PER SPECIFICATIONS, TO EXTERIOR OF BUILDING.

LEGEND

BOND BEAM

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Client: The Navajo Nation Location: Tselʼahi & Nahodishgish, NM

PP 13 SURGE TANK BUILDING END VIEW
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

Hunter C. Clark NEW MEXICO 23567 PROFESSIONAL ENGINEER 9-2-25

Designed	Drawn	Checked
EUAM	AaV/DT	HCR

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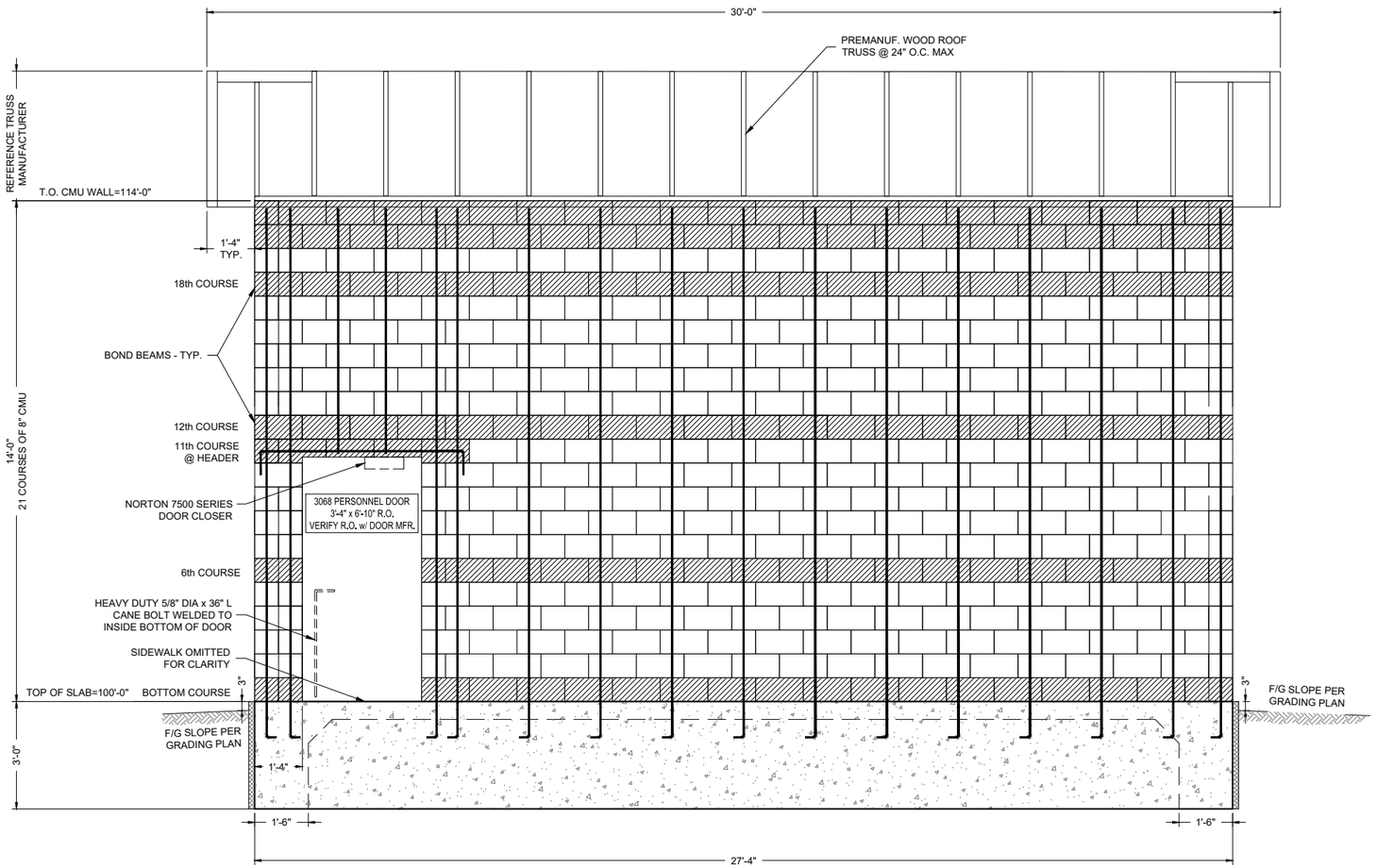
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Project No: 6922268

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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 SHEET DT-26.
2. CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, PER SPECIFICATIONS, TO EXTERIOR OF BUILDING.

LEGEND

BOND BEAM

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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

PP 13 SURGE TANK BUILDING ELEVATION
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

Hunter C. Clark NEW MEXICO 23567 PROFESSIONAL ENGINEER

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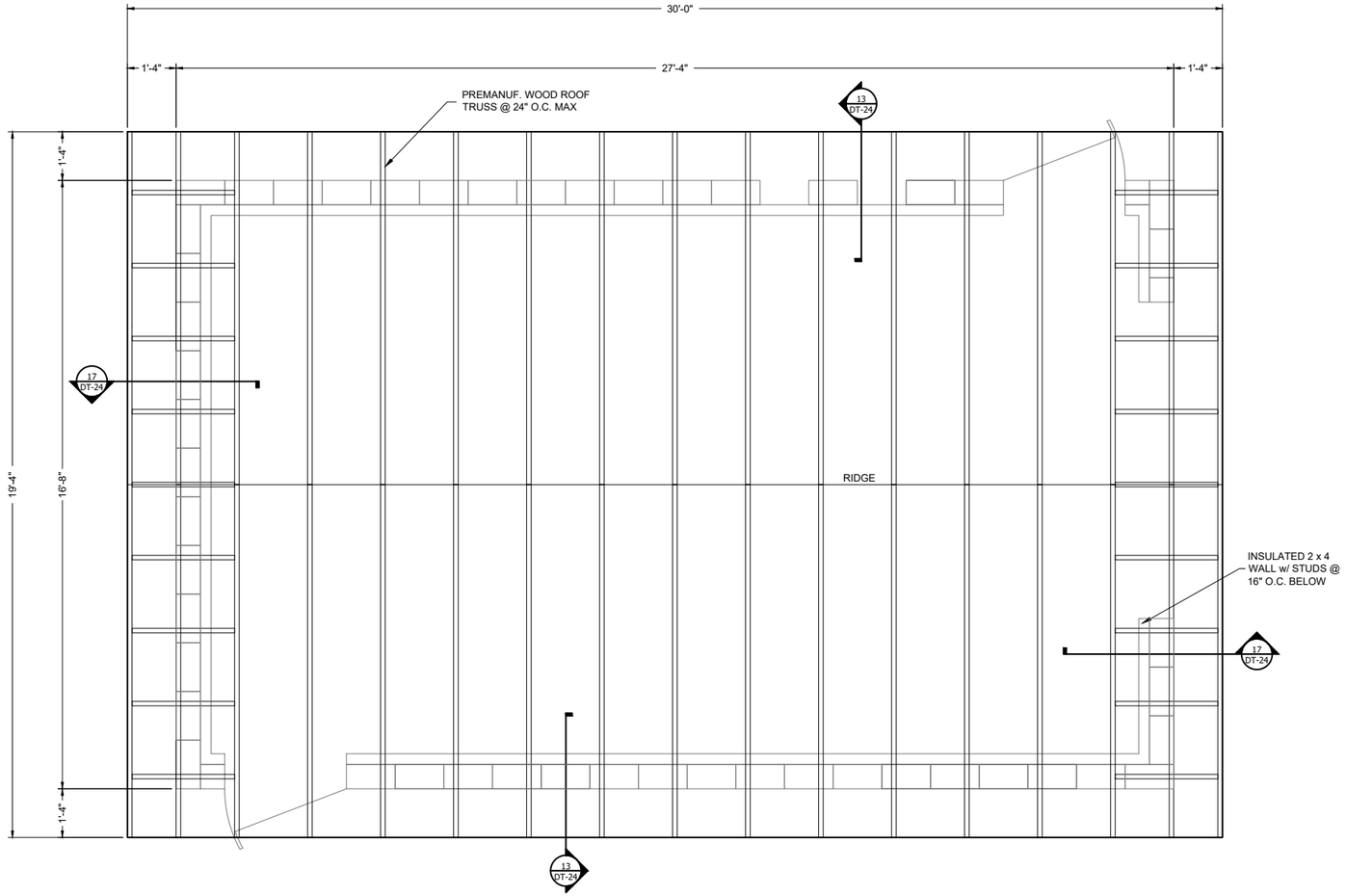
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8 ROOF PLAN

1/4"=1'-0"

0' 2' 4'

GRAPHIC SCALE

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www.soudermiller.com

Client: The Navajo Nation Location: Tse'ii'ahi & Nahodishgish, NM

PP 13 SURGE TANK BUILDING ROOF PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

Hunter C. Cheek NEW MEXICO 23567 PROFESSIONAL ENGINEER

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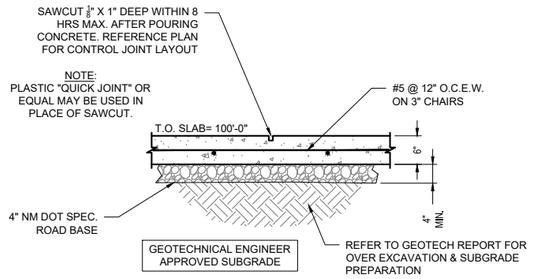
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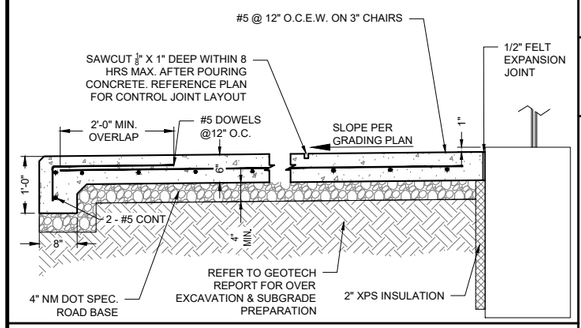
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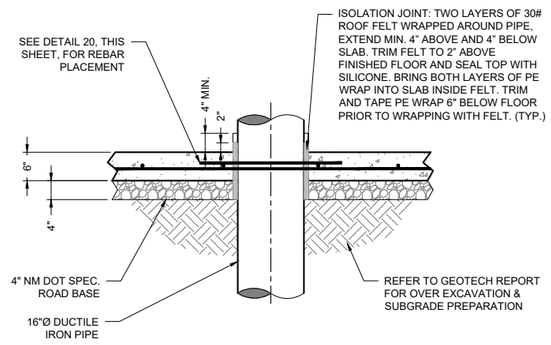


9 6" INTERIOR SLAB SECTION WITH CONTROL JOINT
3/8"=1'-0"

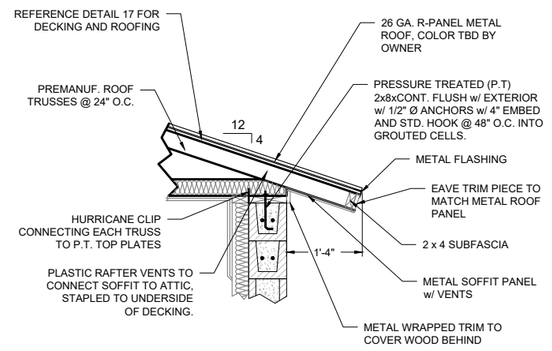


10 6" DRIVEWAY SECTION WITH CONTROL JOINT
3/8"=1'-0"

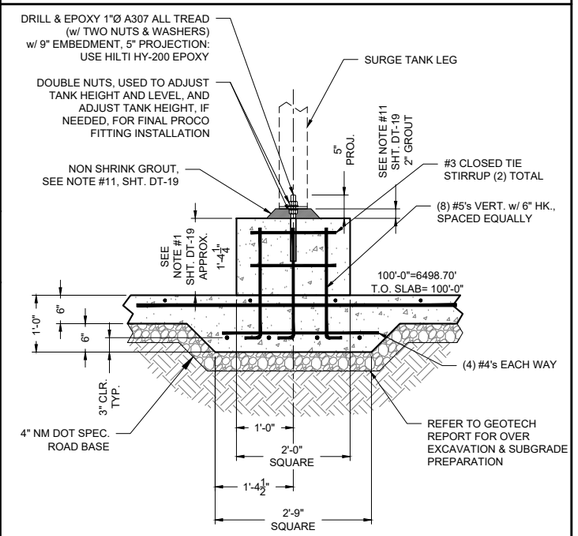
11 NOT USED



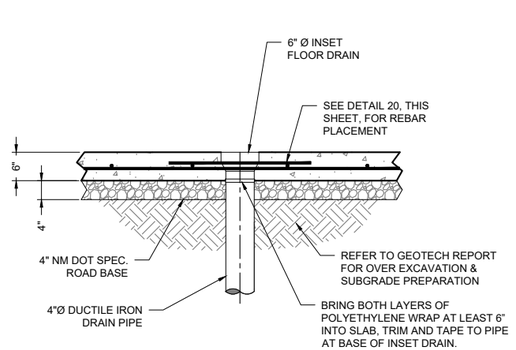
12 PIPE PENETRATION AND SLAB DETAIL
3/8"=1'-0"



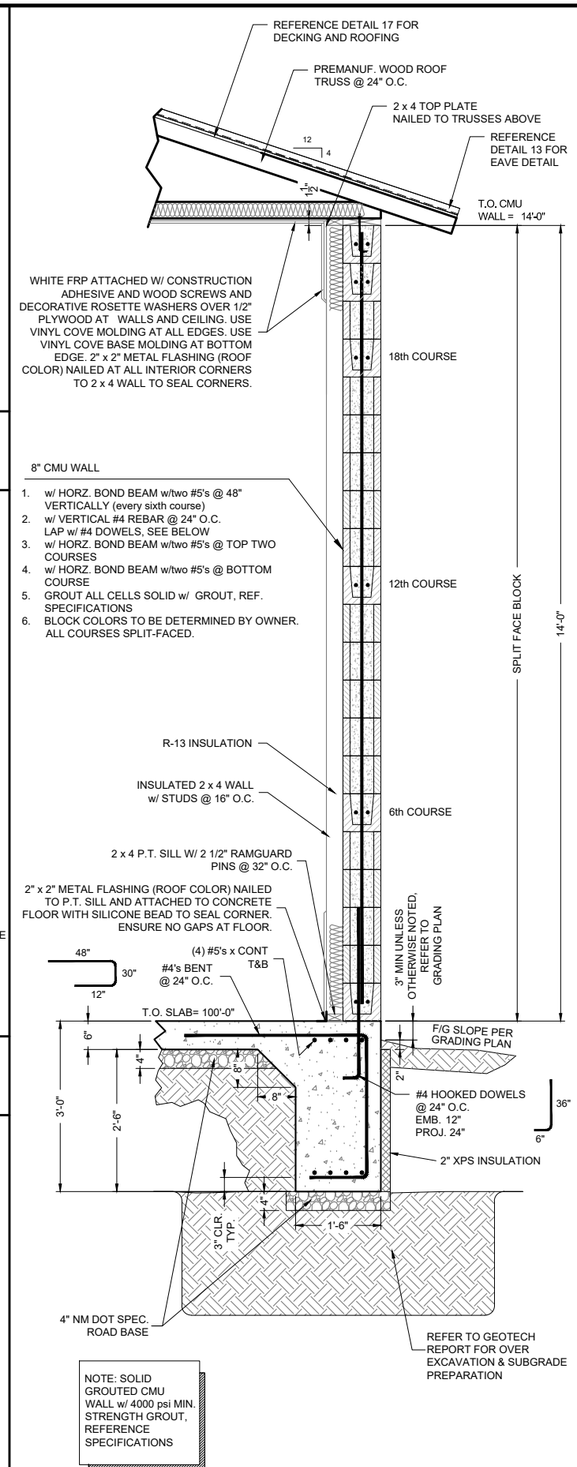
13 EAVE DETAIL
3/8"=1'-0"



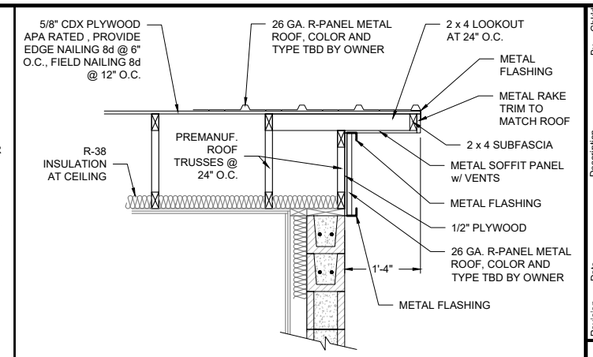
14 TANK PEDESTAL & THICKENED SLAB DETAIL
3/8"=1'-0"



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

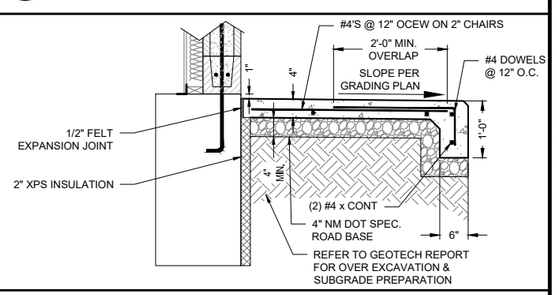


16 WALL AND FOUNDATION SECTION
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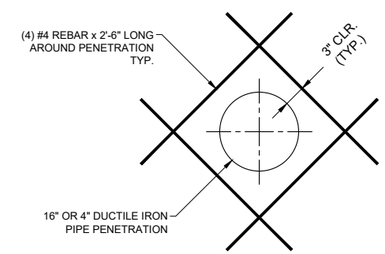


17 FRAMING DETAIL
3/8"=1'-0"

18 NOT USED



19 4" PORCH SECTION
3/8"=1'-0"



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

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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

PP 13 SURGE TANK BUILDING DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

Revision | Date | Description | By | Chkd

Designed EUAM | Drawn AaV/DT | Checked HCR

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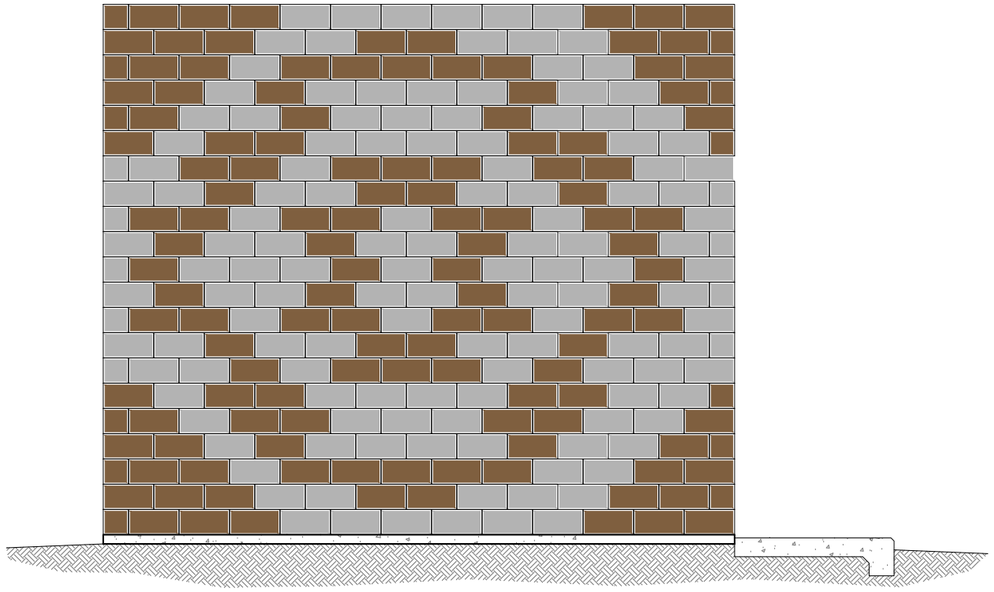
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CMU BLOCK COLOR LEGEND

- CANYON BROWN
- GRAY

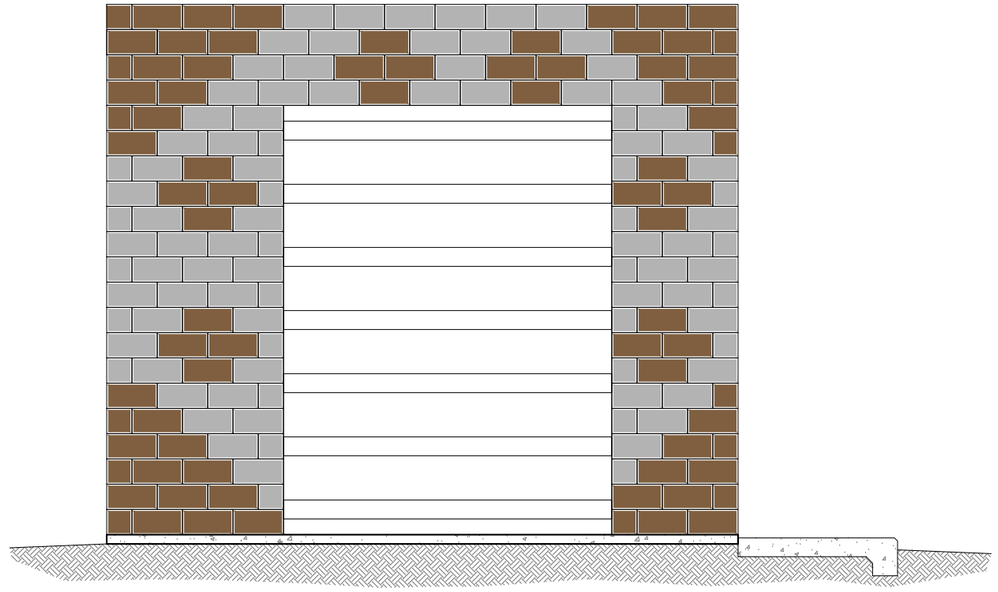
SURGE BUILDING BLOCK QUANTITIES		
COLOR	FULL BLOCK 16" LENGTH	HALF BLOCK 8" LENGTH (AROUND DOOR)
CANYON BROWN	542	9
GRAY	628	28

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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Revision	Date	Description	By	Chkd

Client: The Navajo Nation
Location: Tse'iʼahi & Nahodishgish, NM

PP 13 SURGE TANK BUILDING BLOCK DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

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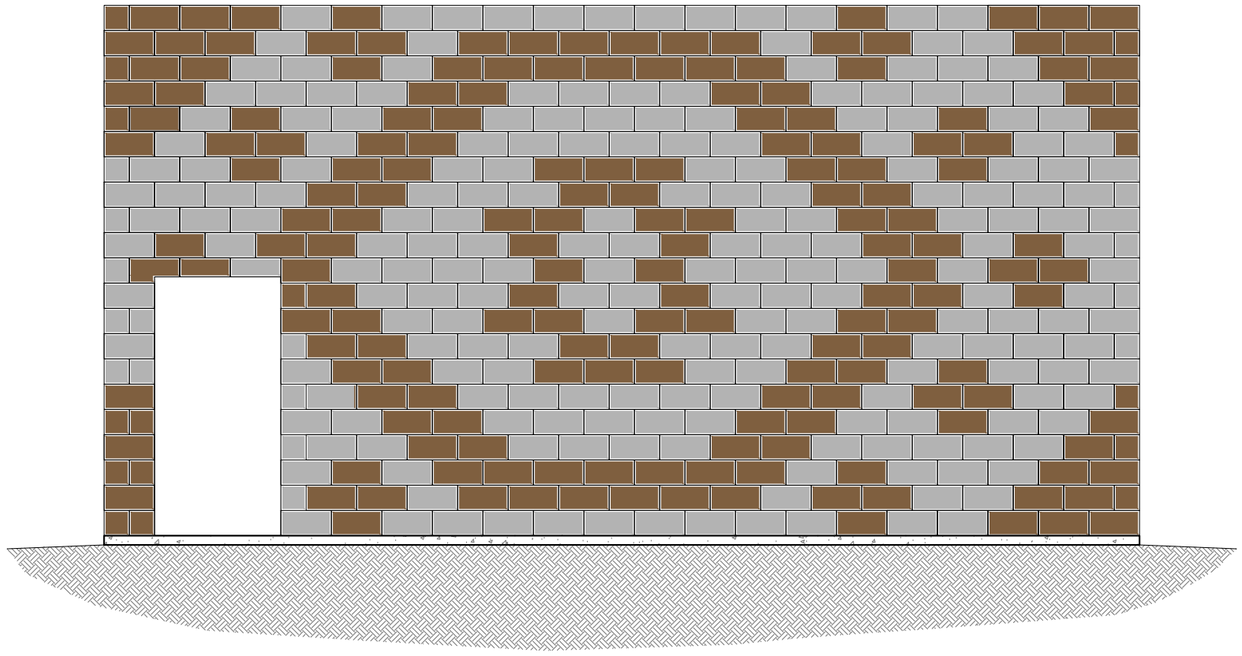
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CMU BLOCK COLOR LEGEND

- CANYON BROWN
- GRAY

SURGE BUILDING BLOCK QUANTITIES		
COLOR	FULL BLOCK 16" LENGTH	HALF BLOCK 8" LENGTH (AROUND DOOR)
CANYON BROWN	542	9
GRAY	628	28

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: Tse'ii'ahi & Nahodishgish, NM

PP 13 SURGE TANK BUILDING BLOCK DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TROY TADANO
NEW MEXICO
21073
12-31-26
LICENSED PROFESSIONAL ENGINEER

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

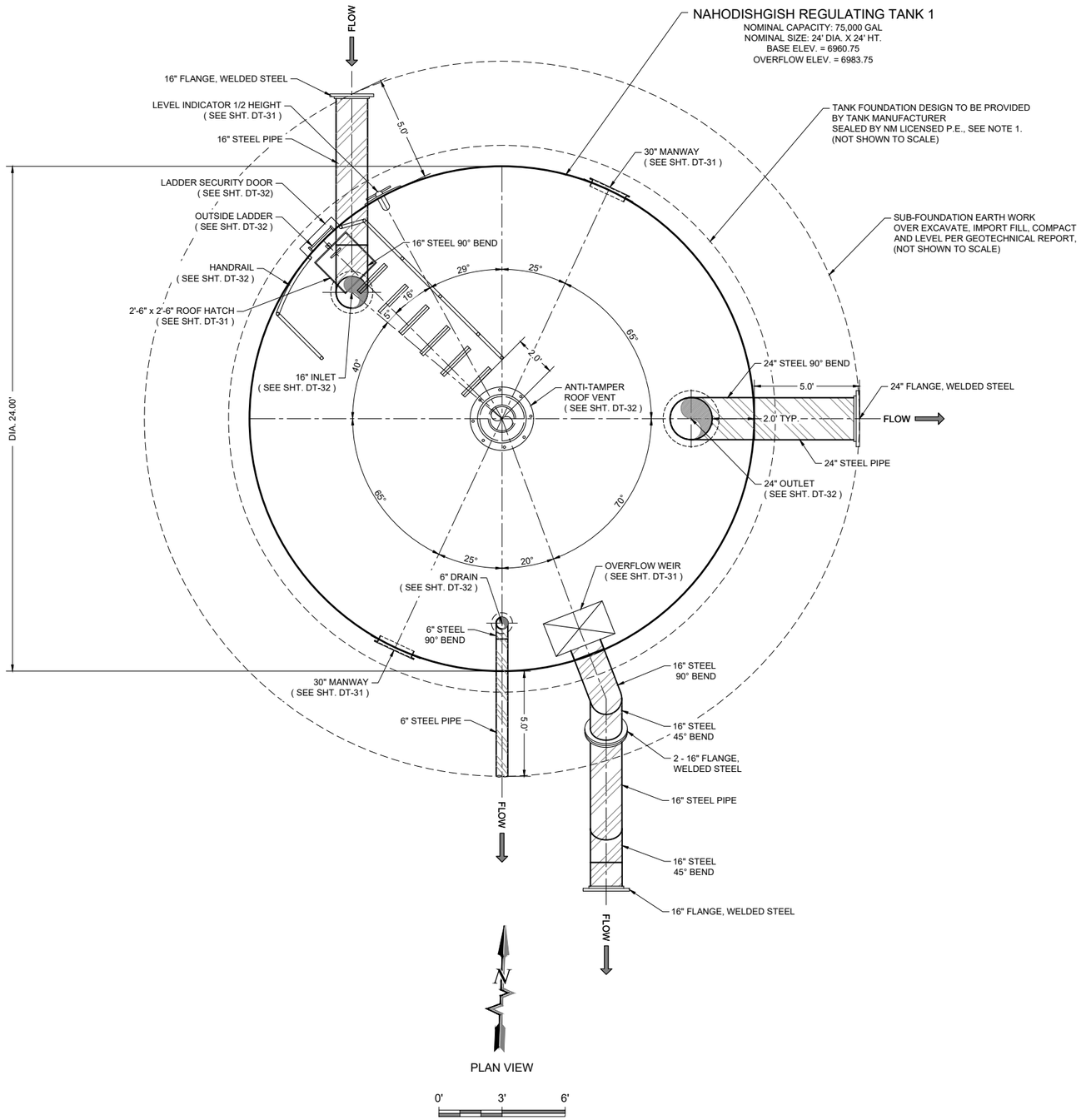
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811 Know what's BELOW. CALL before you dig.

Date: September 2025
Scale: Horiz: AS SHOWN
Vert: N/A
Project No: 6922268
Sheet: DT-26

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.1-11001A, DATED DECEMBER 14, 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.
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6. TANK APPURTENANCES SHOWN IN ELEVATION VIEW HAVE BEEN ROTATED INTO VIEW FOR DEPICTION PURPOSES.
7. STEEL OVERFLOW PIPING SHALL BE SHOP COATED WITH UV RESISTANT POLYAMIDE EPOXY PER TECHNICAL SPECIFICATIONS.
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13. ALL STEEL PIPE FLANGES SHALL BE ANSI CLASS 150.
14. 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.
15. IMPRESSED CURRENT CATHODIC PROTECTION REQUIRED.



NAHODISHGISH REGULATING TANK 1 DETAIL

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Revision	Date	Description	By	Chkd

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www.soudermiller.com

Client: The Navajo Nation
Location: Tse'li'ahi & Nahodishgish, NM

REGULATING TANK 1 DETAILS (1 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

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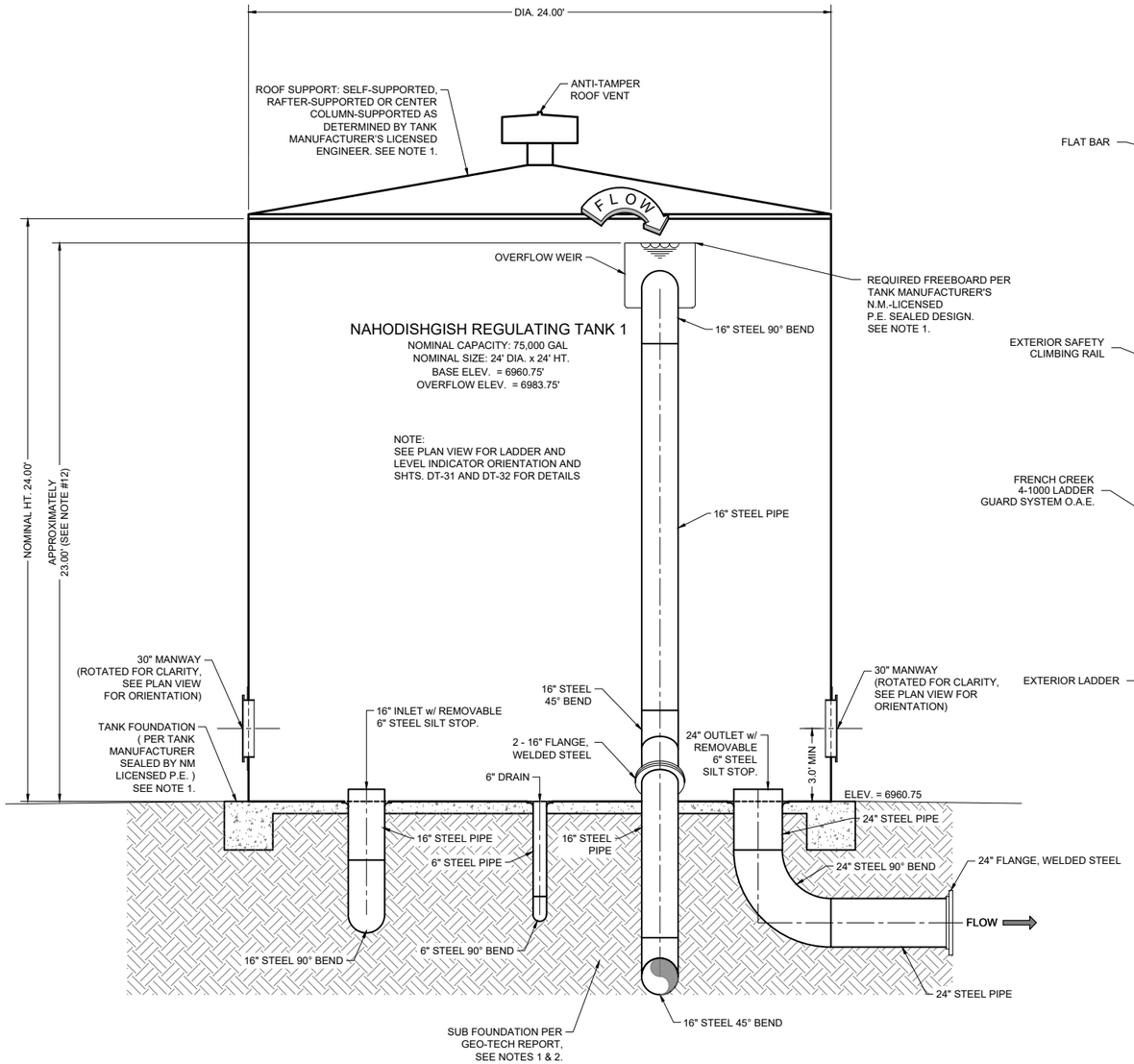
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Scale: Horiz: 1" = 6'
Vert: N/A
Project No: 6922268
Sheet: DT-27

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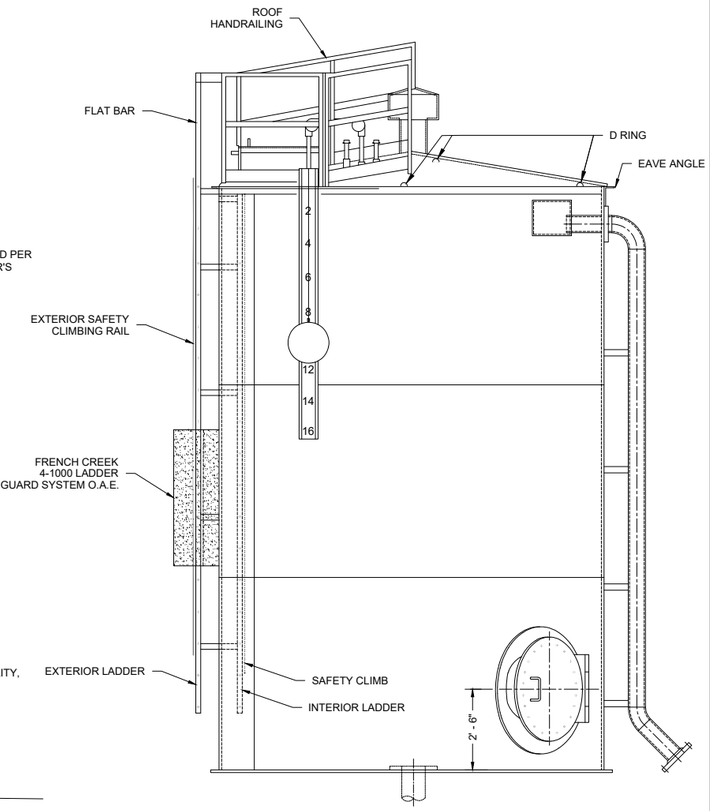
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ELEVATION VIEW

0' 3' 6'

NAHODISHGISH REGULATING TANK 1 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

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Location: Tse'ii'ahi & Nahodishgish, NM

REGULATING TANK 1 DETAILS (2 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

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Date: September 2025

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Vert: N/A

Project No: 6922268

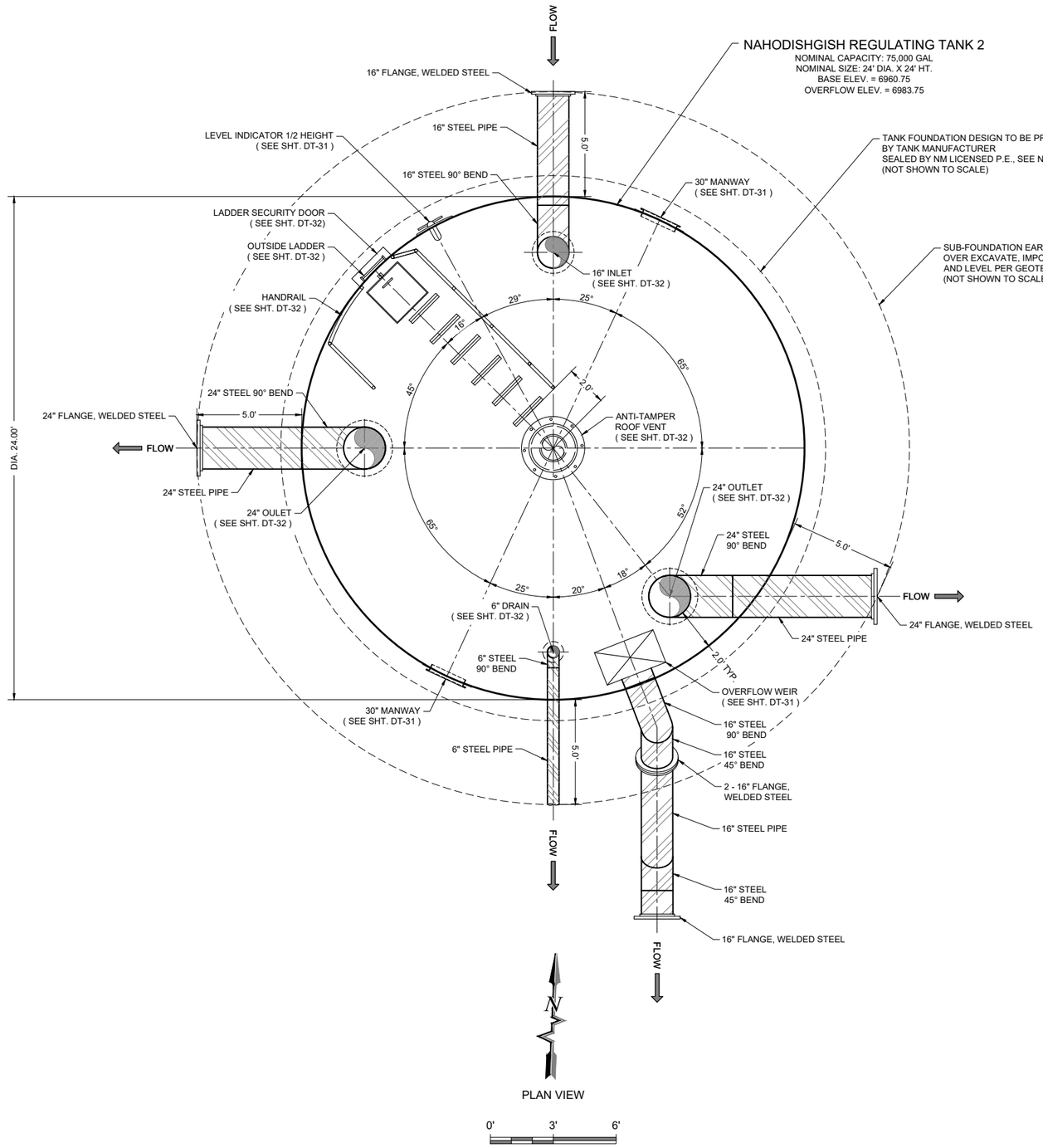
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NAHODISHGISH REGULATING TANK 2 DETAIL

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Client: The Navajo Nation
Location: Tse'iʼahi & Nahodishgish, NM

REGULATING TANK 2 DETAILS (1 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

Designed	Drawn	Checked
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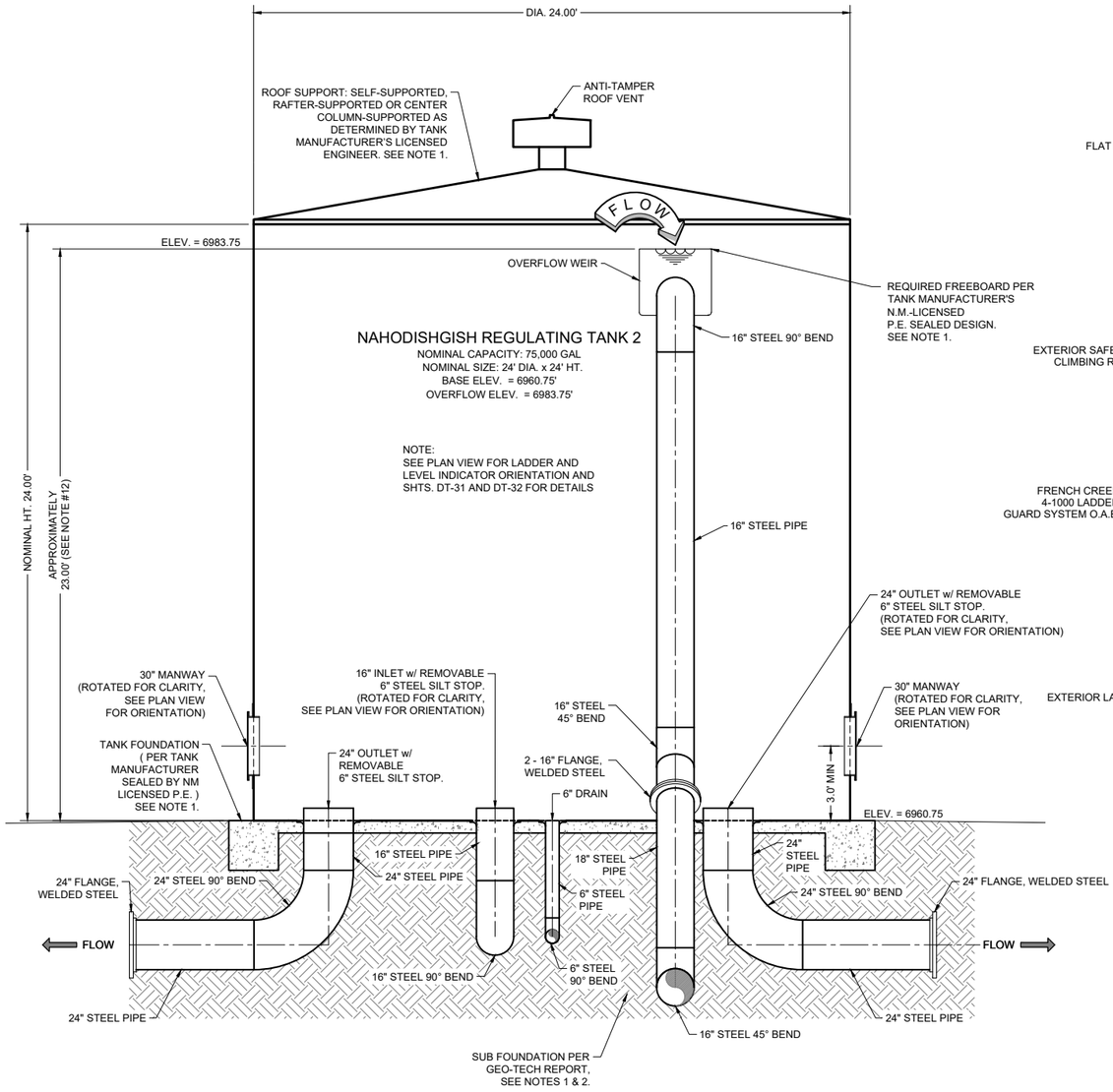
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Project No: 6922268
Sheet: DT-29

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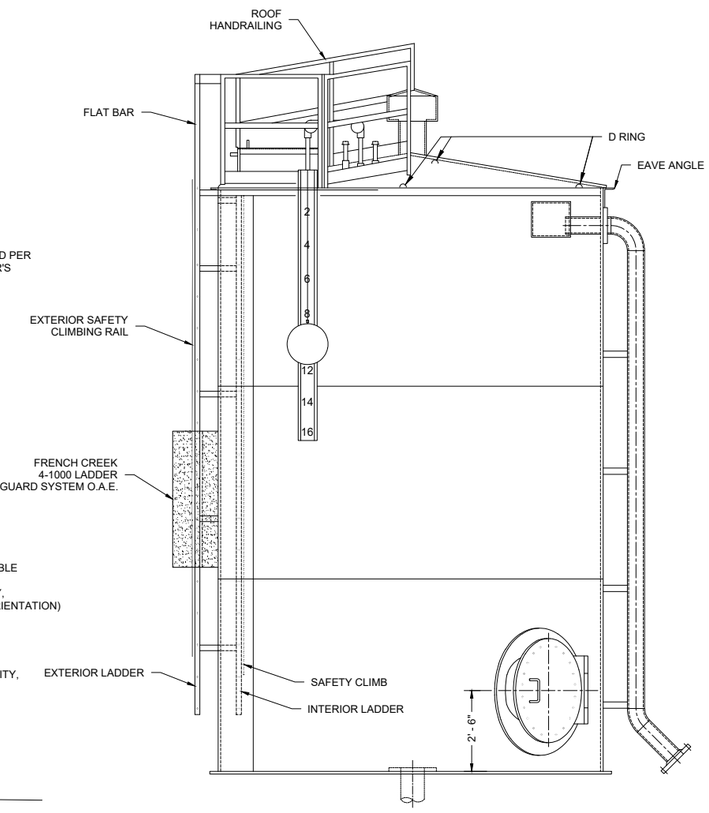
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ELEVATION VIEW

0' 3' 6'

NAHODISHGISH REGULATING TANK 2 DETAIL



TYPICAL SELF-SUPPORTED CONE ROOF EXTERIOR ELEVATION VIEW TANK DETAIL

NOT TO SCALE

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REGULATING TANK 2 DETAILS (2 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

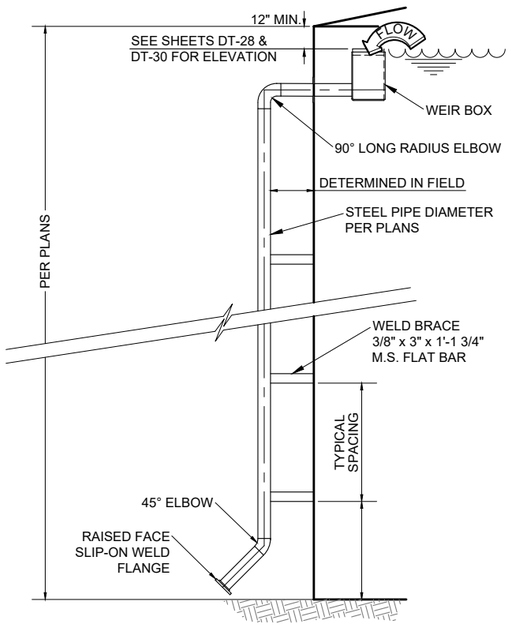
Designed	Drawn	Checked
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Date: September 2025
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Vert: N/A
Project No: 6922268
Sheet: DT-30

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ELEVATION VIEW

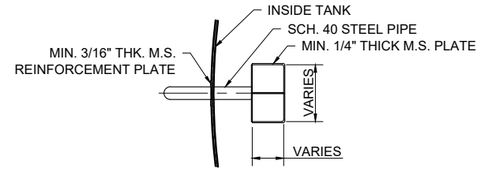
TYPICAL TANK OVERFLOW DETAIL

NOT TO SCALE

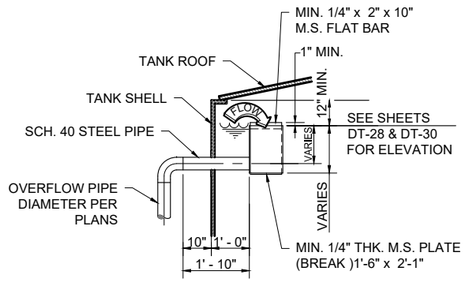
SEE TANK PLAN AND ELEVATION SHEETS DT-27 TO DT-30, FOR PIPE SIZE, HEIGHT AND ELEVATION.

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 1,346 GPM OR HIGHER.



PLAN VIEW

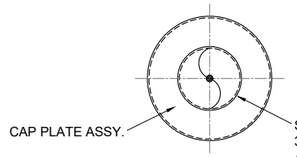


ELEVATION VIEW

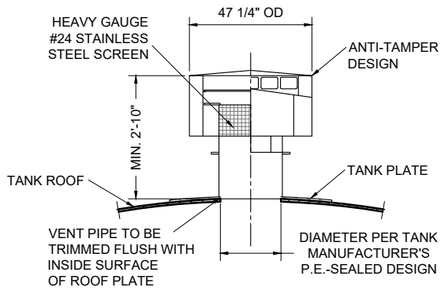
TYPICAL OVERFLOW WEIR DETAIL

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.



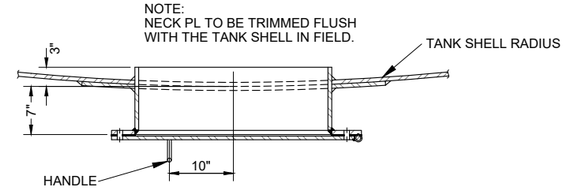
PLAN VIEW



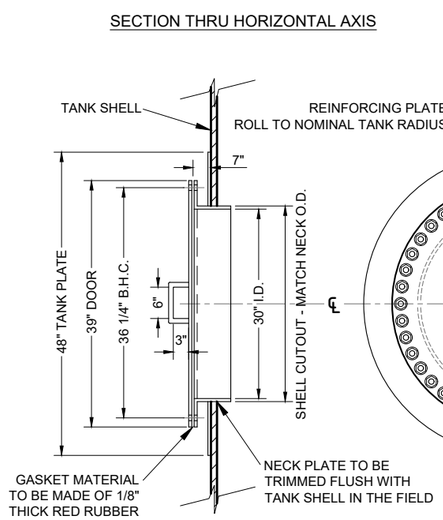
VERTICAL C/L OF TANK AND VENT

NOT TO SCALE

NOTE:
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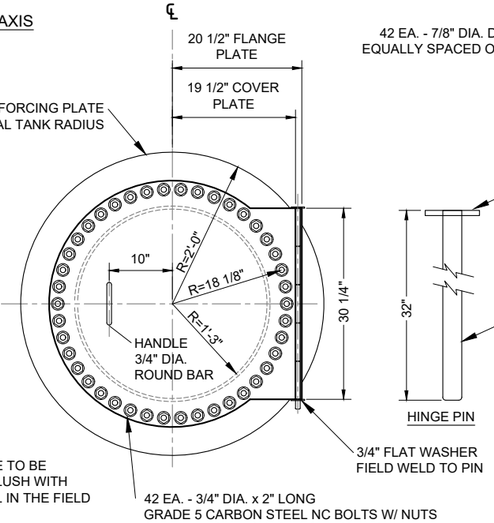


SECTION THRU HORIZONTAL AXIS



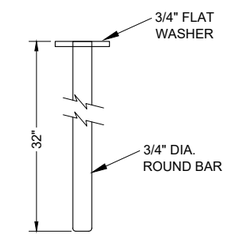
NOTE:
NECK PL TO BE TRIMMED FLUSH WITH THE TANK SHELL IN FIELD.

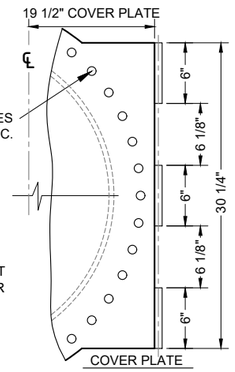
SECTION THRU VERTICAL AXIS

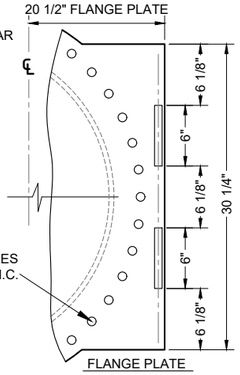


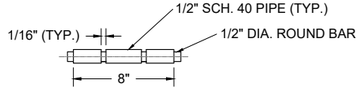
TYPICAL 30" MANWAY DETAIL

NOT TO SCALE

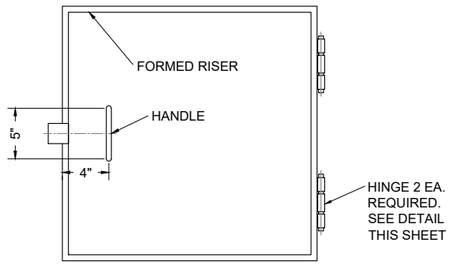








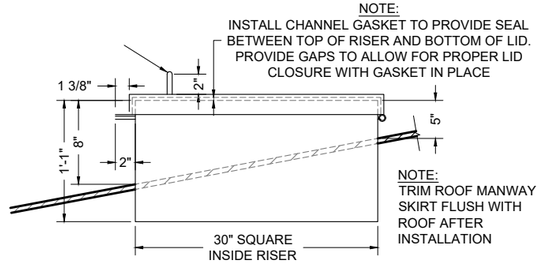
HINGE DETAIL - 2 EA. REQ'D



PLAN VIEW

30" SQUARE ROOF HATCH DETAIL

NOT TO SCALE



ELEVATION VIEW

30" SQUARE ROOF HATCH DETAIL

NOT TO SCALE

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www.soudermiller.com

Client: The Navajo Nation
Location: Tselí'ahi & Nahodishgish, NM

TYPICAL WATER STORAGE TANK DETAILS (1 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

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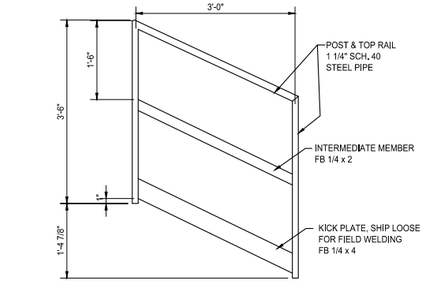
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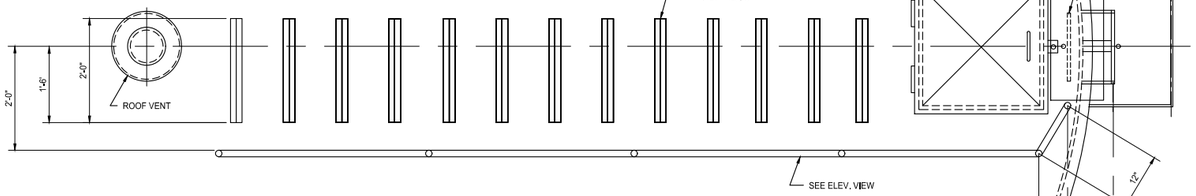
NOTE:

* 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.

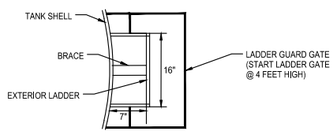
* (4) D-RINGS WELDED ON TOP ROOF FOR TIE-IN OF PERSONNEL - SAFETY REASONS FOR FALL PROTECTION



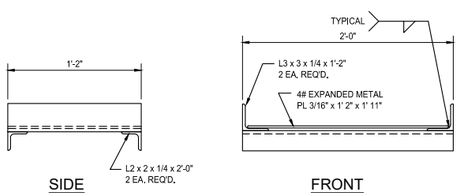
HANDRAIL B2 DETAIL - ONE REQ'D.



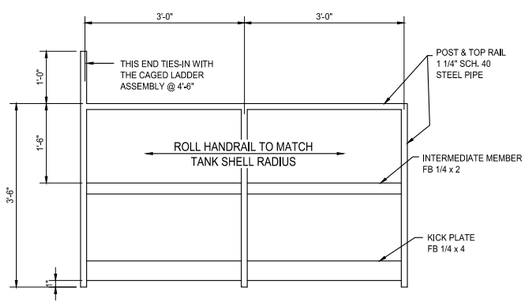
B PLAN VIEW



A VIEW - LOOKING UP



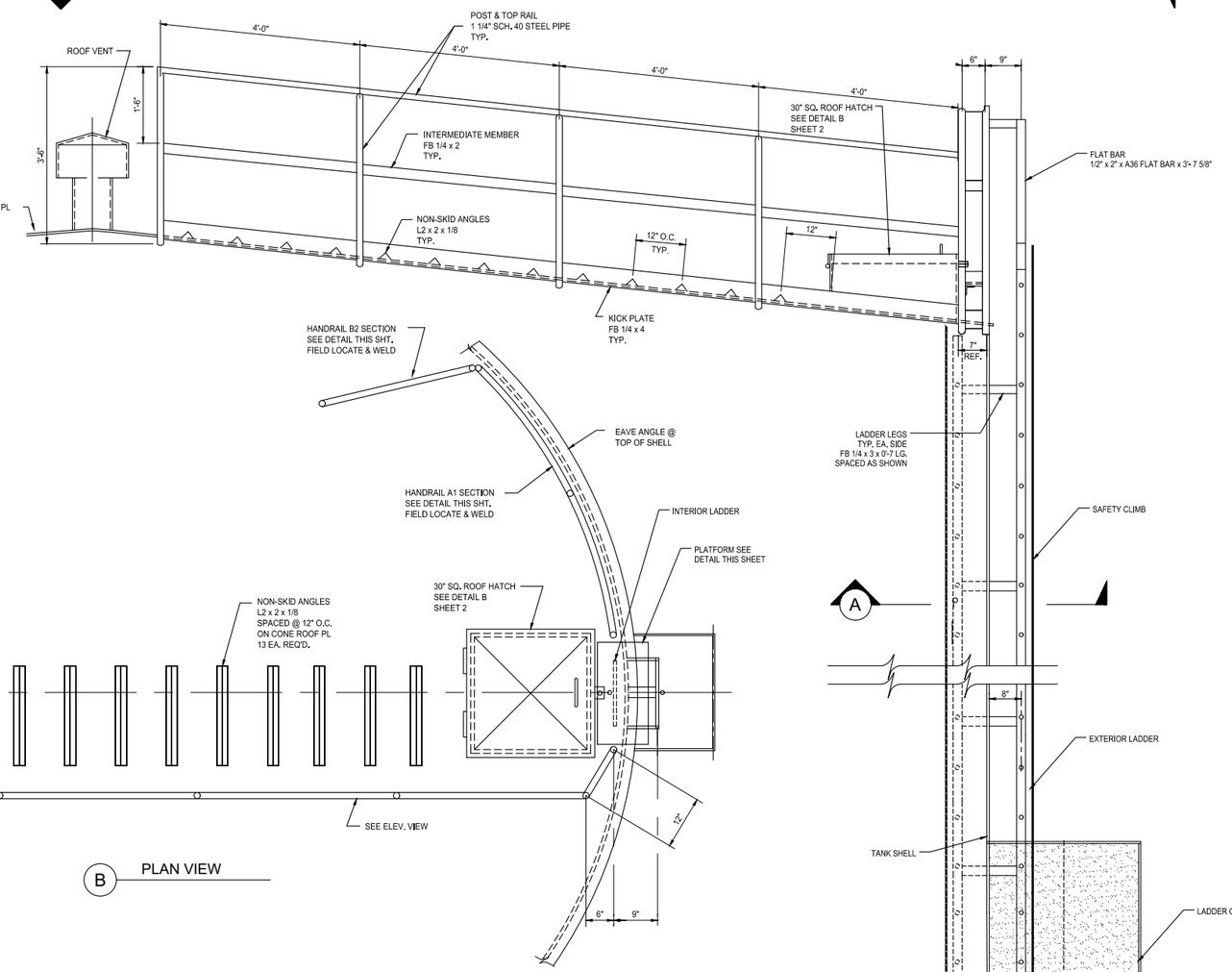
PLATFORM ASSY. DETAIL - ONE REQ'D.

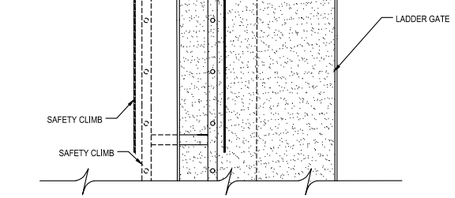


HANDRAIL A1 DETAIL - ONE REQ'D.

G EXTERIOR ROOF HANDRAILING

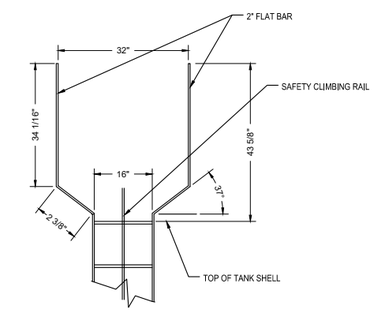
FOR ALL TANKS



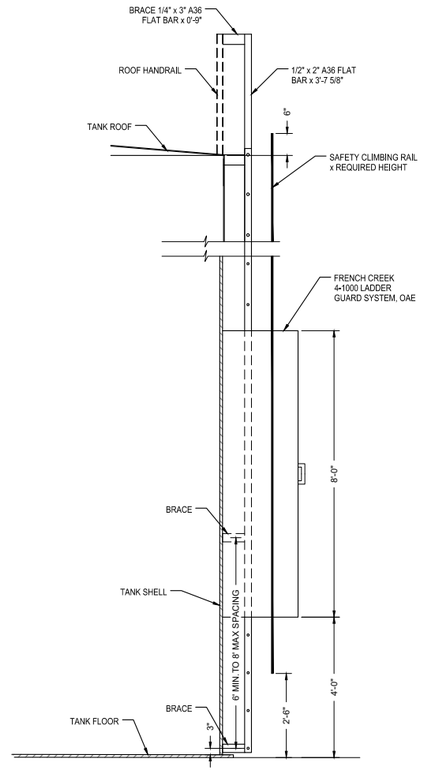


TANK CUTAWAY ELEVATION - UPPER HALF

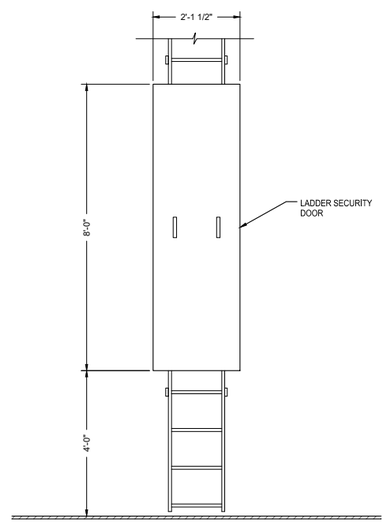
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LADDER TOP DETAIL (TYPICAL)



SIDE VIEW



FRONT VIEW

LADDER SECURITY DOOR DETAILS

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TYPICAL WATER STORAGE TANK DETAILS (2 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TERRY T. ADAMS — NEW MEXICO — 21073 — 10-29-25 — LICENSED PROFESSIONAL ENGINEER

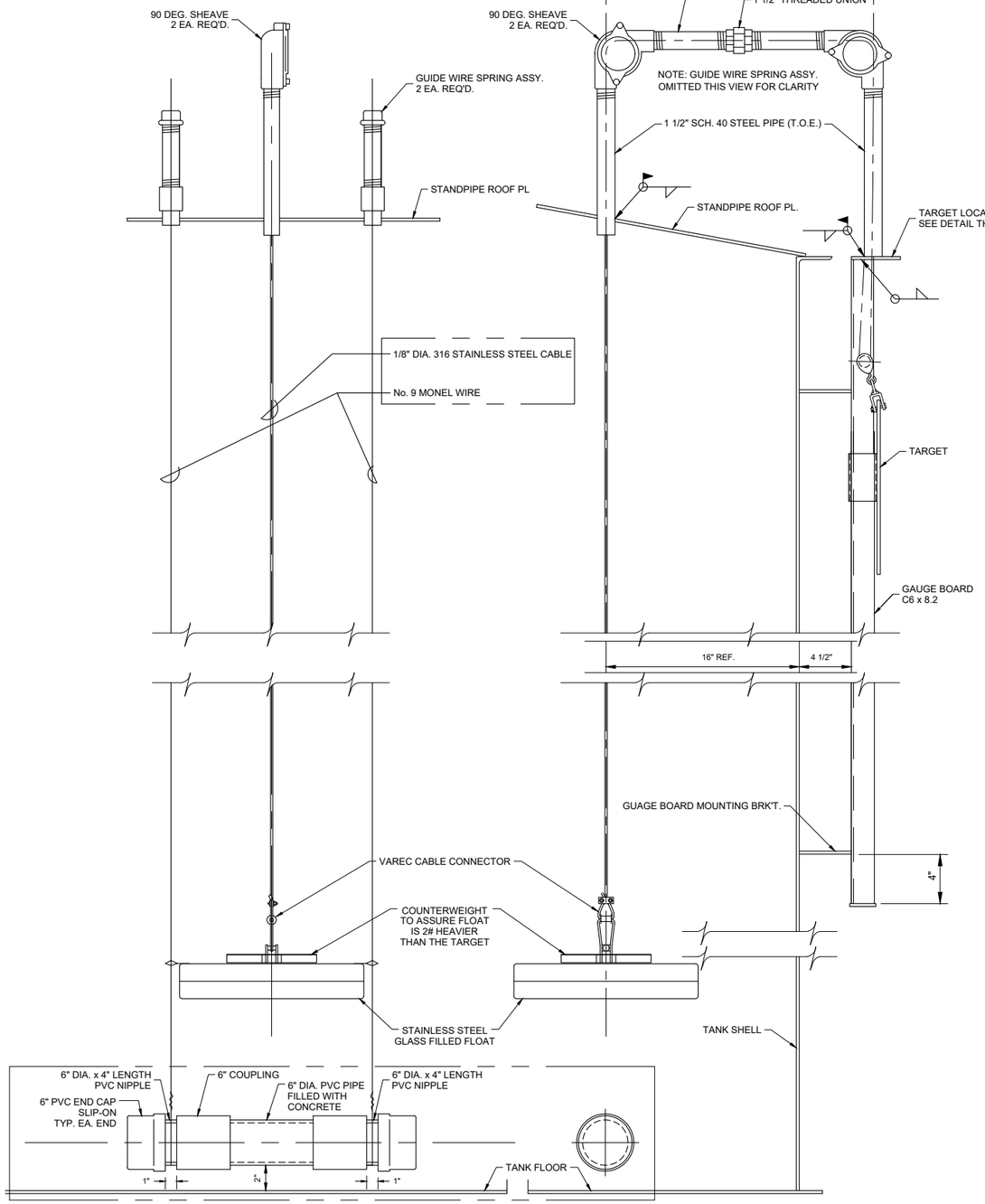
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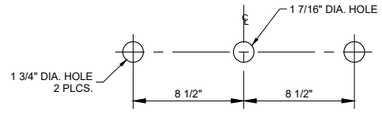
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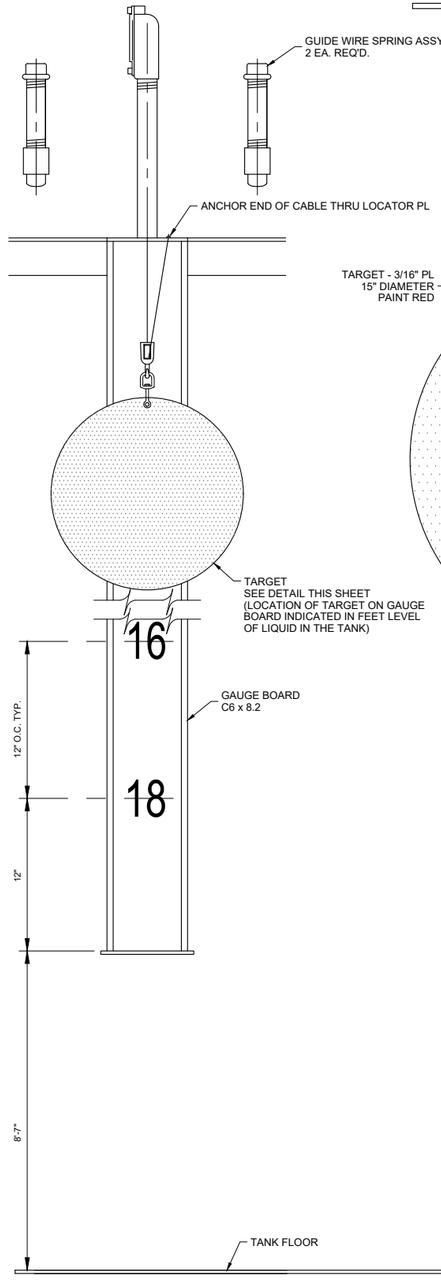


REAR VIEW (FROM INSIDE OF TANK)

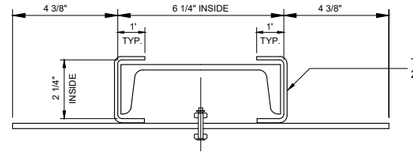
SIDE VIEW



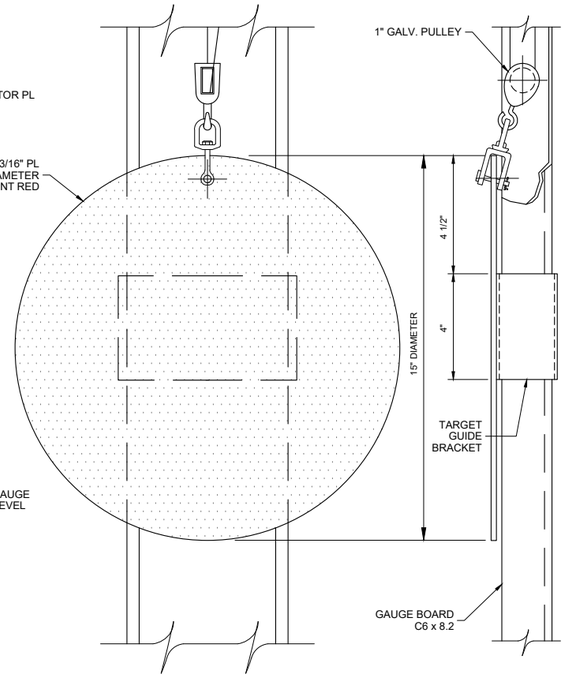
HOLE LAYOUT - PLAN VIEW



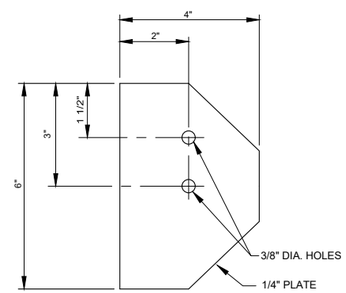
FRONT VIEW



PLAN VIEW



ENLARGED VIEW-TARGET & BRACKET DETAIL



TARGET LOCATOR PL DETAIL - ONE REQ'D.

HALF HEIGHT LIQUID LEVEL INDICATOR DETAILS

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

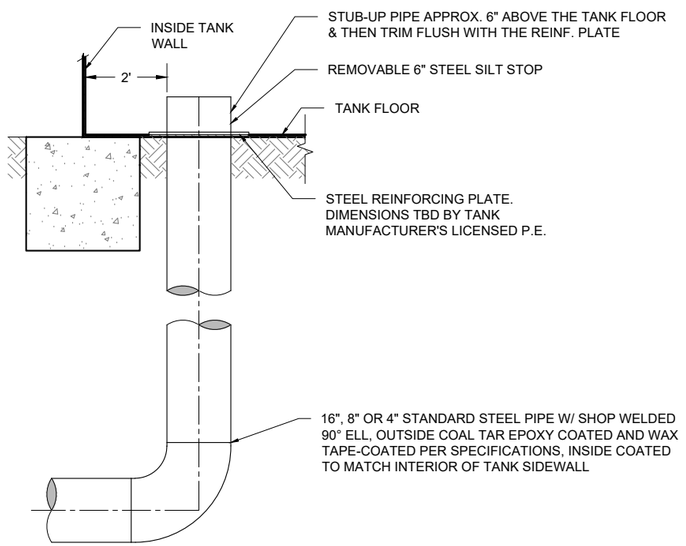
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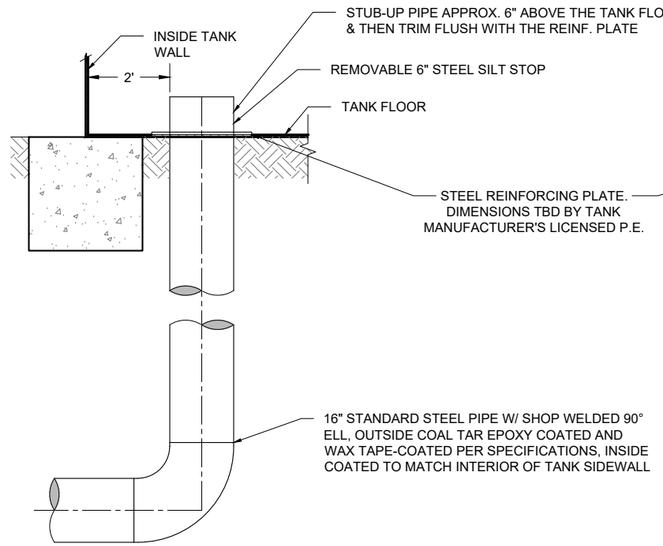
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ELEVATION VIEW

24" AND 16" INLET DETAIL

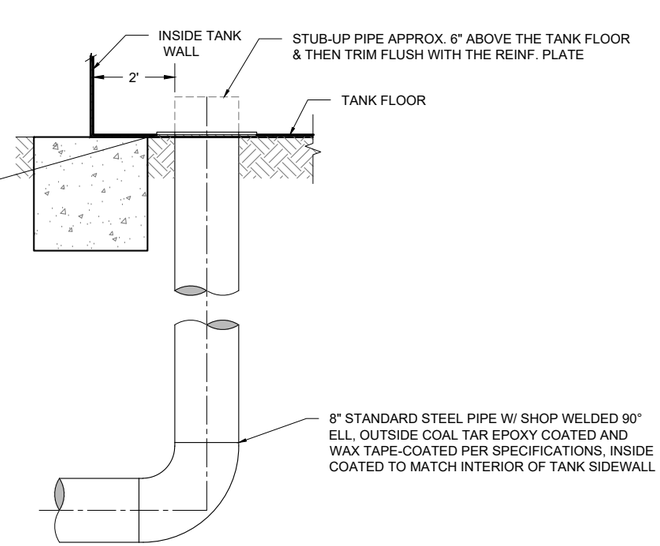
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ELEVATION VIEW

24" OUTLET DETAIL

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ELEVATION VIEW

8" TANK FLOOR DRAIN DETAIL

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McKINLEY COUNTY, NEW MEXICO

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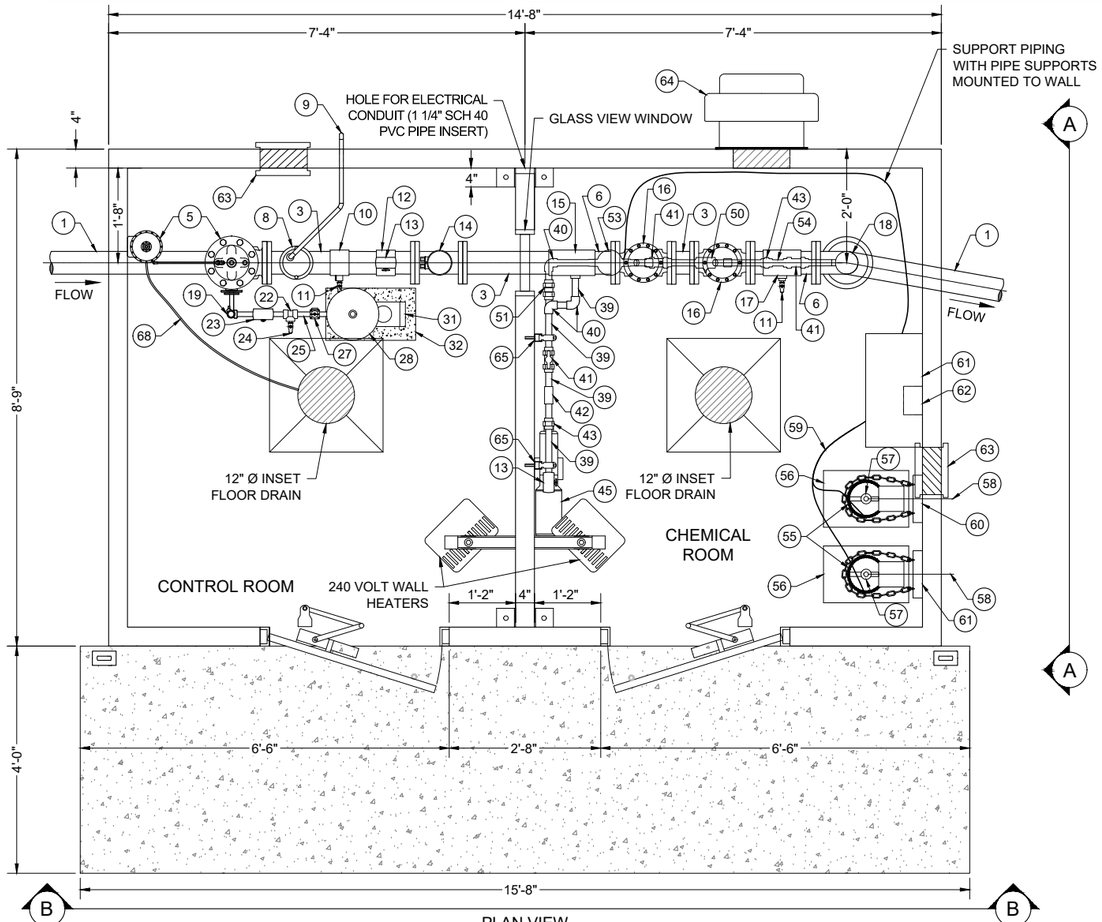
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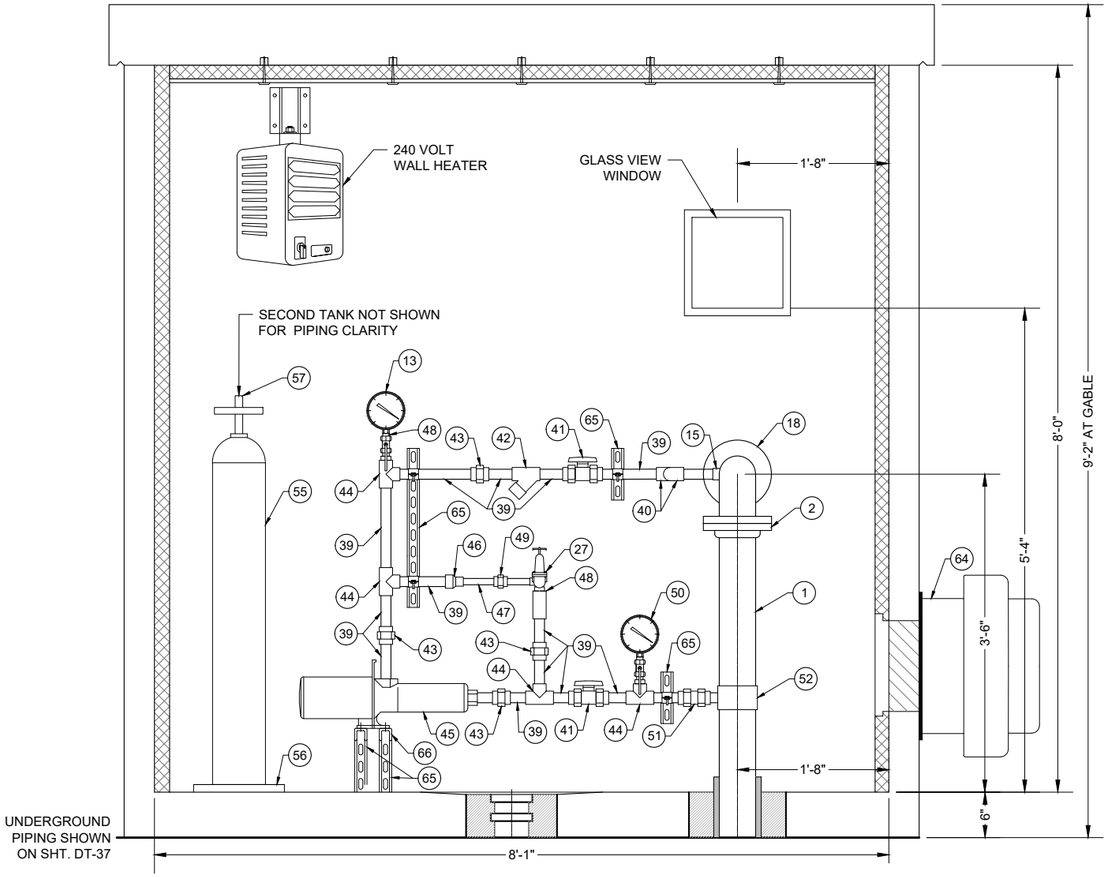
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PLAN VIEW

REACH 10.3 CHLORINATION SYSTEM DETAIL



END VIEW SECTION A-A

REACH 10.3 CHEMICAL ROOM CHLORINATION SYSTEM DETAIL

1	4" DUCTILE IRON PIPE
2	4" FLANGE ISOLATION KIT
3	4" FL DUCTILE IRON PIPE
4	4" BALL VALVE, FL x FL W/ AUMA GS100.3 (BIG GEAR) GEARED ACTUATOR W/ 8" HANDWHEEL. DI W/ FLANGE ISOLATION KIT.
5	4" FLANGED REDUCED-PORT ELECTRONIC FLOW CONTROL VALVE, CLA-VAL 100-20A/PE/631-22/610-01-R FHBYCSKCPP-X105LCW-N-X (0-60 PSI INLET/OUTLET GAUGES) W/ CLA-VAL VC-22D CONTROLLER AND INDEPENDENT HYDRAULIC PILOT MOUNTED TO WALL.
6	4" FL DUCTILE IRON SPOOL, 6" LENGTH
7	4" x 1" TAPPING SADDLE, DI
8	1" VALMATIC MODEL NO, 201C SV COMBINATION AIR VALVE (SINGLE BODY TYPE), 300psi,
9	1/2" 90° ELL & 1/2" GALVANIZED STEEL PIPE (PAINTED BLUE) WITH DOWNSPOUT
10	4" x 3/4" TAPPING SADDLE, DI
11	3/4" HOSE BIB WITH VACUUM BREAKER, NPT, SMOOTH END
12	4" x 1/4" TAPPING SADDLE, DI
13	PRESSURE GAUGE, 0-50 PSI WITH ISOLATION 1/4" SS BALL VALVE
14	4" FLANGED ELECTRONIC FLOW METER, ELSTER EVOQ4, MAINTAIN STRAIGHT PIPE >30" IN FRONT AND >12" BEHIND CENTER OF METER.
15	4" x 1" TAPPING SADDLE, SS 304
16	4" CHECK VALVE, SURGE BUSTER SERIES 7200 (O.A.E.)
17	4" x 3/4" TAPPING SADDLE, SS 304
18	4" 90° FL x FL ELBOW, DI
19	3/4" GALVANIZED x 3/8" COPPER BUSHING, WITH 3/8" COPPER TUBING TO CONTROL VALVE PILOT TUBING
20	3/4" BALL VALVE, STAINLESS STEEL
21	3/4" 90° ELBOW, GALVANIZED STEEL
22	3/4" TEE, GALVANIZED STEEL
23	PRESSURE GAUGE, 0-100 PSI, WITH ISOLATION 1/4" SS BALL VALVE
24	3/4" HOSE BIB WITH VACUUM BREAKER
25	3/4" GALVANIZED STEEL PIPE, NPT

26	3/4" x 1/2" GALVANIZED STEEL BUSHING
27	1/2" PRESSURE RELIEF VALVE, WATTS BP 30 (O.A.E.) PRESSURE SET TO 90 PSI
28	7.6 GALLON PRESSURE TANK, WELL-X-TROL WX-103 (O.A.E.), INSTALL PIPE CLAMPS / SUPPORT UNDER TANK AND ANCHOR TO WALL
29	3/4" UNION, GALVANIZED STEEL
30	1" CHECK VALVE, GALVANIZED STEEL
31	BOOSTER PUMP WITH INTEGRATED PRESSURE SWITCH (30-50 psi) DISCHARGE PRESSURE GAUGE AND DISCHARGE CHECK VALVE, 1" NPT INLET, 3/4" NPT OUTLET, 1/4" 100 PSI PE TUBING, TP PUMP MODEL #TPA-CM1-4-AUTO, 232 PSI
32	CONCRETE PEDESTAL FOR BOOSTER PUMP, 19"L x 11"W x 12"H, (OR PER PUMP DIMENSIONS) 4000 PSI CONCRETE W/ #4 REBAR / ANCHOR BOLTS
33	1" UNION, GALVANIZED STEEL
34	1" 45° ELBOW, GALVANIZED STEEL
35	1" GALVANIZED STEEL PIPE, NPT
36	1" BALL VALVE, SS 304, NPT, 2000 psi
37	1" 90° ELBOW, GALVANIZED STEEL
38	4" x 1" TAPPING SADDLE, SS 316
39	1" PVC SCHED 80 PIPE
40	1" 90° ELBOW, PVC SCHED 80
41	1" TRUE UNION BALL VALVE, PVC SCHED 80
42	1" Y-STRAINER, PVC SCHED 80
43	1" UNION, PVC SCHED 80
44	1" TEE, PVC SCHED 80
45	BOOSTER PUMP, FRANKLIN BT4 5JBT03S4 (O.A.E.)
46	1" x 1/2" REDUCER, PVC SCHED 80
47	1/2" PVC SCHED 80 PIPE
48	1" x 1/2" PVC BUSHING
49	1/2" UNION, PVC SCHED 80
50	PRESSURE GAUGE, 0-100 PSI, WITH PVC/TEFLON DIAPHRAM SEAL AND 1/2" BALL VALVE, STAINLESS STEEL

51	1" TRUE UNION CHECK VALVE, PVC SCHED 80
52	4" x 1" TAPPING SADDLE, SS 316
53	CHLORINE INJECTOR W/ THROAT/TAIL PIECE AND PVC/TEFLON DIAPHRAM VALVE ON VACUUM LINE W/ PEDESTAL. SUPPORT WITH UNISTRUTS.
54	INSERTION DIFFUSER, MTE (O.A.E.)
55	CHLORINE GAS CYLINDER, 150 LB (DO NOT INSTALL)
56	ELECTRONIC CHLORINE CYLINDER SCALE W/ DIGITAL INDICATOR, BOLTED TO FLOOR.
57	VACUUM REGULATOR, WALLACE & TIERNAN 210S (O.A.E.)
58	1/2" PE VENT TUBING (WALL PENETRATION MUST BE BELOW REGULATORS)
59	3/8" PE VACUUM TUBING
60	WALL MOUNTED CHAIN BRACKET, INSTALL 40" ABOVE FLOOR, WITH SAFETY CHAIN
61	CHLORINE GAS CONTROL PANEL
62	CHLORINE GAS DETECTOR SENSOR/TRANSMITTER W/ AUTOTEST, MOUNTED 6" ABOVE FLOOR, LOCATION TBD BY ENGINEER IN FIELD. CHLORINE GAS RECIEVER, LOCATION AS INDICATED IN ELECTRICAL PLANS OR TBD BY ENGINEER IN FIE
63	LOUVERED VENT W/ BACKDRAFT DAMPER McMASTER CARR #2039 KI, W/ EPOXY GREY PAINT
64	19 1/2" 430 CFM EXHAUST FAN WITH BACKDRAFT DAMPER
65	1 5/8" UNISTRUT, STAINLESS STEEL, WITH PIPE SUPPORTS
66	SS UNISTRUT PEDESTAL FOR CHLORINATION PUMP. DIMENSIONS TO BE DETERMINED UPON APPROVAL OF PUMP SUBMITTAL BY CONTRACTOR. 9" ABOVE FLOOR.
67	1" UNION, PVC SCHED 80 WITH INJECTOR PIPE SEAL AND BLOWOUT PREVENTION CHAIN
68	STAINLESS STEEL PILOT TUBING, SIZE TO MATCH PILOT SYSTEM, DISCHARGE TO FLOOR DRAIN

NOTES:

1. POSITION PRESSURE GAUGES SUCH THAT VIEW IS NOT OBSCURED BY OTHER EQUIPMENT IN FRONT.
2. CONTRACTOR RESPONSIBLE TO PROVIDE ALL FITTINGS NECESSARY (SUCH AS BUSHINGS, FLANGES, ADAPTERS, NIPPLES, ETC.), WHETHER EXPLICITLY SHOWN OR NOT, TO COMPLETE THE INSTALLATION AS INDICATED.
3. ALL 1" AND SMALLER PIPE TO BE SECURED WITH PIPE CLAMPS AND 1 5/8" UNISTRUTS MOUNTED TO THE WALL. ALL UNISTRUTS ATTACHED TO WALL SHALL BE IN VERTICAL POSITION. SOME PIPE SUPPORTS NOT SHOWN FOR CLARITY.
4. 6" MINIMUM SPACING BETWEEN SCHED 80 PVC GLUED FITTINGS, UNLESS UNION IS PRESENT.
5. ALL BOLTS, NUTS AND WASHERS IN CHEMICAL ROOM SHALL BE 316 SS.
6. ALL VALVES WHICH MAY DISCHARGE WATER (CONTROL VALVE AND PRESSURE RELEASE VALVE) SHALL HAVE 1/2" GI DISCHARGE PIPE FROM VALVE OUTLET TO FLOOR DRAIN. DISCHARGE PIPING SHALL BE ROUTED ALONG WALL TO AVOID BLOCKING ACCESS TO OTHER COMPONENTS AND SHALL BE ATTACHED TO WALL WITH PIPE CLAMPS AND 1 5/8" UNISTRUTS FOR SUPPORT. PAINT GI PIPE BLUE. DISCHARGE PIPING NOT SHOWN FOR CLARITY.
7. ALL MATERIALS SHALL BE RATED TO AT LEAST 125 psi, UNLESS OTHERWISE NOTED.
8. ALL FLANGES SHALL BE ANSI CLASS 150 (STEEL) OR ANSI CLASS 125 (IRON).
9. ALL BURIED PIPE WITHIN 5 FT OF BUILDING SHALL BE DUCTILE IRON, 350 psi WP, SOLID PIPE PIECES ONLY. NO DUCTILE IRON PIPE JOINTS ALLOWED.
10. BURIED DUCTILE IRON PIPE FOR DRAINS AND PIPE PENETRATIONS SHALL BE WAX TAPE-COATED PER SPECIFICATIONS ABOVE THE BURIED ELL. ALL OTHER BURIED DUCTILE IRON PIPE AND FITTINGS SHALL BE ENCASED IN TWO LAYERS OF POLYETHYLENE, PER SPECIFICATIONS. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE TWO-PART EPOXY-COATED, PER SPECIFICATIONS.
11. ALL STEEL COMPONENTS IN THE CHEMICAL ROOM SHALL BE SS 316, UNLESS OTHERWISE NOTED.
12. ALL STAINLESS STEEL PIPE AND FITTINGS SHALL HAVE A WORKING PRESSURE OF AT LEAST 350 psi, UNLESS OTHERWISE NOTED.
13. ISOLATE ALL PRESSURE GAUGES PRIOR TO HYDROSTATIC PRESSURE TESTING.
14. VALVE DISCHARGE DRAINS AND SOME PIPE SUPPORTS NOT SHOWN FOR CLARITY.

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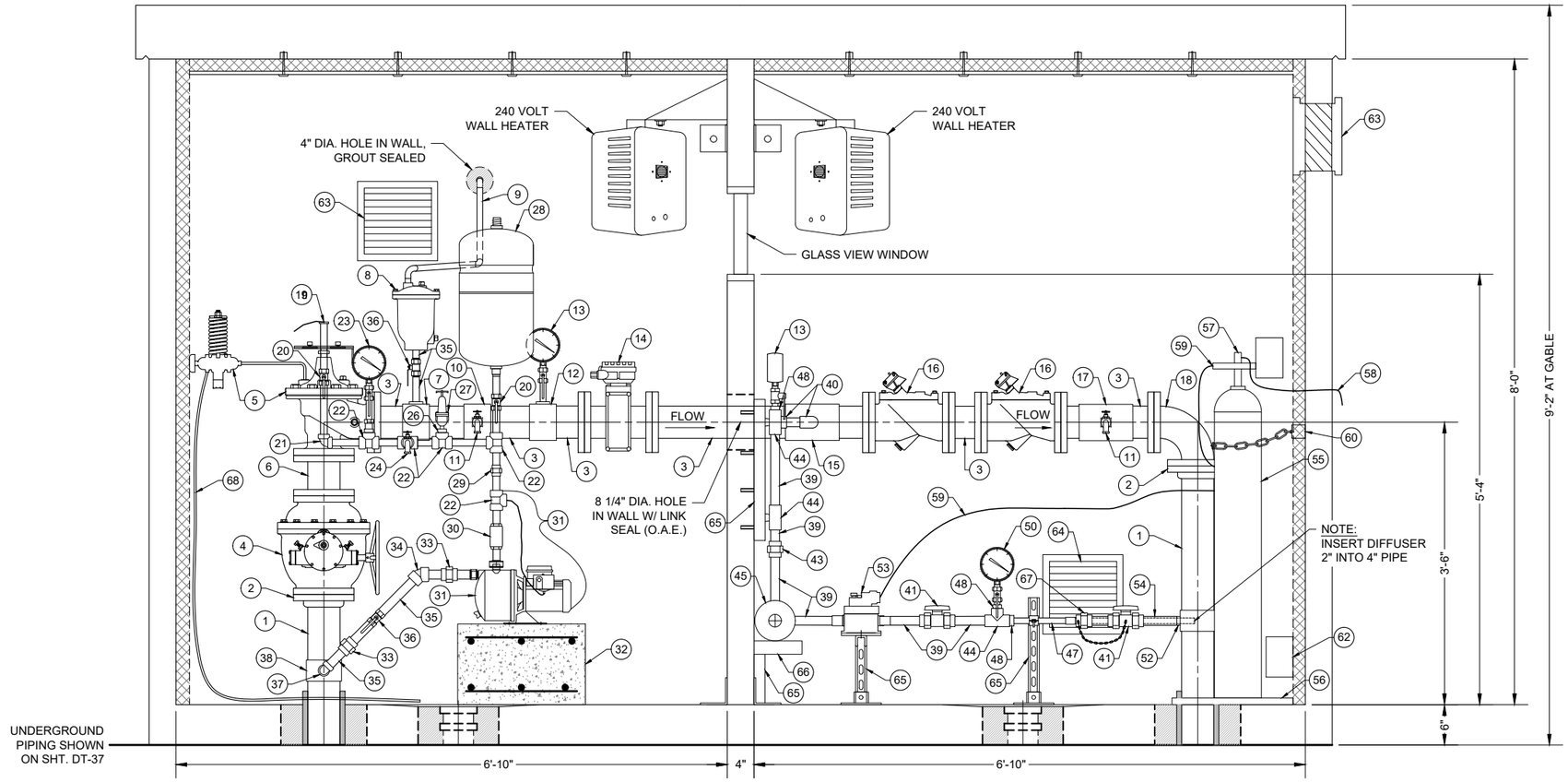
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Project No: 6922268
Sheet: DT-35

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ELEVATION VIEW SECTION B-B

REACH 10.3 CONTROL ROOM CHLORINATION SYSTEM DETAIL

ELEVATION VIEW SECTION B-B

REACH 10.3 CHEMICAL ROOM CHLORINATION SYSTEM DETAIL

0' 10" 20"

1	4" DUCTILE IRON PIPE
2	4" FLANGE ISOLATION KIT
3	4" FL DUCTILE IRON PIPE
4	4" BALL VALVE, FL x FL W/ AUMA GS100.3 (BIG GEAR) GEARED ACTUATOR W/ 8" HANDWHEEL. DI W/ FLANGE ISOLATION KIT.
5	4" FLANGED REDUCED-PORT ELECTRONIC FLOW CONTROL VALVE, CLA-VAL 100-20A/PE/631-22/610-01-R FHBYCSKCPP-X105LCW-N-X (0-60 PSI INLET/OUTLET GAUGES) W/ CLA-VAL VC-22D CONTROLLER AND INDEPENDENT HYDRAULIC PILOT MOUNTED TO WALL.
6	4" FL DUCTILE IRON SPOOL, 6" LENGTH
7	4" x 1" TAPPING SADDLE, DI
8	1" VALMATIC MODEL NO, 201C SV COMBINATION AIR VALVE (SINGLE BODY TYPE), 300psi,
9	1/2" 90° ELL & 1/2" GALVANIZED STEEL PIPE (PAINTED BLUE) WITH DOWNSPOUT
10	4" x 3/4" TAPPING SADDLE, DI
11	3/4" HOSE BIB WITH VACUUM BREAKER, NPT, SMOOTH END
12	4" x 1/4" TAPPING SADDLE, DI
13	PRESSURE GAUGE, 0-50 PSI WITH ISOLATION 1/4" SS BALL VALVE
14	4" FLANGED ELECTRONIC FLOW METER, ELSTER EVOQ4, MAINTAIN STRAIGHT PIPE >30" IN FRONT AND >12" BEHIND CENTER OF METER.
15	4" x 1" TAPPING SADDLE, SS 304
16	4" CHECK VALVE, SURGE BUSTER SERIES 7200 (O.A.E.)
17	4" x 3/4" TAPPING SADDLE, SS 304
18	4" 90° FL x FL ELBOW, DI
19	3/4" GALVANIZED x 3/8" COPPER BUSHING, WITH 3/8" COPPER TUBING TO CONTROL VALVE PILOT TUBING
20	3/4" BALL VALVE, STAINLESS STEEL
21	3/4" 90° ELBOW, GALVANIZED STEEL
22	3/4" TEE, GALVANIZED STEEL
23	PRESSURE GAUGE, 0-100 PSI, WITH ISOLATION 1/4" SS BALL VALVE
24	3/4" HOSE BIB WITH VACUUM BREAKER
25	3/4" GALVANIZED STEEL PIPE, NPT

26	3/4" x 1/2" GALVANIZED STEEL BUSHING
27	1/2" PRESSURE RELIEF VALVE, WATTS BP 30 (O.A.E.) PRESSURE SET TO 90 PSI
28	7.6 GALLON PRESSURE TANK, WELL-X-TROL WX-103 (O.A.E.), INSTALL PIPE CLAMPS / SUPPORT UNDER TANK AND ANCHOR TO WALL
29	3/4" UNION, GALVANIZED STEEL
30	1" CHECK VALVE, GALVANIZED STEEL
31	BOOSTER PUMP WITH INTEGRATED PRESSURE SWITCH (30-50 psi) DISCHARGE PRESSURE GAUGE AND DISCHARGE CHECK VALVE, 1" NPT INLET, 3/4" NPT OUTLET, 1/4" 100 PSI PE TUBING, TP PUMP MODEL #TPA-CM1-4-AUTO, 232 PSI
32	CONCRETE PEDESTAL FOR BOOSTER PUMP, 19"L x 11"W x 12"H, (OR PER PUMP DIMENSIONS) 4000 PSI CONCRETE W/ #4 REBAR / ANCHOR BOLTS
33	1" UNION, GALVANIZED STEEL
34	1" 45° ELBOW, GALVANIZED STEEL
35	1" GALVANIZED STEEL PIPE, NPT
36	1" BALL VALVE, SS 304, NPT, 2000 psi
37	1" 90° ELBOW, GALVANIZED STEEL
38	4" x 1" TAPPING SADDLE, SS 316
39	1" PVC SCHED 80 PIPE
40	1" 90° ELBOW, PVC SCHED 80
41	1" TRUE UNION BALL VALVE, PVC SCHED 80
42	1" Y-STRAINER, PVC SCHED 80
43	1" UNION, PVC SCHED 80
44	1" TEE, PVC SCHED 80
45	BOOSTER PUMP, FRANKLIN BT4 5JBT03S4 (O.A.E.)
46	1" x 1/2" REDUCER, PVC SCHED 80
47	1/2" PVC SCHED 80 PIPE
48	1" x 1/2" PVC BUSHING
49	1/2" UNION, PVC SCHED 80
50	PRESSURE GAUGE, 0-100 PSI, WITH PVC/TEFLON DIAPHRAM SEAL AND 1/2" BALL VALVE, STAINLESS STEEL

51	1" TRUE UNION CHECK VALVE, PVC SCHED 80
52	4" x 1" TAPPING SADDLE, SS 316
53	CHLORINE INJECTOR W/ THROAT/TAIL PIECE AND PVC/TEFLON DIAPHRAM VALVE ON VACUUM LINE W/ PEDESTAL. SUPPORT WITH UNISTRUTS.
54	INSERTION DIFFUSER, MTE (O.A.E.)
55	CHLORINE GAS CYLINDER, 150 LB (DO NOT INSTALL)
56	ELECTRONIC CHLORINE CYLINDER SCALE W/ DIGITAL INDICATOR, BOLTED TO FLOOR.
57	VACUUM REGULATOR, WALLACE & TIERNAN 210S (O.A.E.)
58	1/2" PE VENT TUBING (WALL PENETRATION MUST BE BELOW REGULATORS)
59	3/8" PE VACUUM TUBING
60	WALL MOUNTED CHAIN BRACKET, INSTALL 40" ABOVE FLOOR, WITH SAFETY CHAIN
61	CHLORINE GAS CONTROL PANEL
62	CHLORINE GAS DETECTOR SENSOR/TRANSMITTER W/ AUTOTEST, MOUNTED 6" ABOVE FLOOR, LOCATION TBD BY ENGINEER IN FIELD. CHLORINE GAS RECIEVER, LOCATION AS INDICATED IN ELECTRICAL PLANS OR TBD BY ENGINEER IN FIE
63	LOUVERED VENT W/ BACKDRAFT DAMPER McMASTER CARR #2039 KI, W/ EPOXY GREY PAINT
64	19 1/2" 430 CFM EXHAUST FAN WITH BACKDRAFT DAMPER
65	1 5/8" UNISTRUT, STAINLESS STEEL, WITH PIPE SUPPORTS
66	SS UNISTRUT PEDESTAL FOR CHLORINATION PUMP. DIMENSIONS TO BE DETERMINED UPON APPROVAL OF PUMP SUBMITTAL BY CONTRACTOR. 9" ABOVE FLOOR.
67	1" UNION, PVC SCHED 80 WITH INJECTOR PIPE SEAL AND BLOWOUT PREVENTION CHAIN
68	STAINLESS STEEL PILOT TUBING, SIZE TO MATCH PILOT SYSTEM, DISCHARGE TO FLOOR DRAIN

NOTES:

1. POSITION PRESSURE GAUGES SUCH THAT VIEW IS NOT OBSCURED BY OTHER EQUIPMENT IN FRONT.
2. CONTRACTOR RESPONSIBLE TO PROVIDE ALL FITTINGS NECESSARY (SUCH AS BUSHINGS, FLANGES, ADAPTERS, NIPPLES, ETC.), WHETHER EXPLICITLY SHOWN OR NOT, TO COMPLETE THE INSTALLATION AS INDICATED.
3. ALL 1" AND SMALLER PIPE TO BE SECURED WITH PIPE CLAMPS AND 1 5/8" UNISTRUTS MOUNTED TO THE WALL. ALL UNISTRUTS ATTACHED TO WALL SHALL BE IN VERTICAL POSITION. SOME PIPE SUPPORTS NOT SHOWN FOR CLARITY.
4. 6" MINIMUM SPACING BETWEEN SCHED 80 PVC GLUED FITTINGS, UNLESS UNION IS PRESENT.
5. ALL BOLTS, NUTS AND WASHERS IN CHEMICAL ROOM SHALL BE 316 SS.
6. ALL VALVES WHICH MAY DISCHARGE WATER (CONTROL VALVE AND PRESSURE RELEASE VALVE) SHALL HAVE 1/2" GI DISCHARGE PIPE FROM VALVE OUTLET TO FLOOR DRAIN. DISCHARGE PIPING SHALL BE ROUTED ALONG WALL TO AVOID BLOCKING ACCESS TO OTHER COMPONENTS AND SHALL BE ATTACHED TO WALL WITH PIPE CLAMPS AND 1 5/8" UNISTRUTS FOR SUPPORT. PAINT GI PIPE BLUE. DISCHARGE PIPING NOT SHOWN FOR CLARITY.
7. ALL MATERIALS SHALL BE RATED TO AT LEAST 125 psi, UNLESS OTHERWISE NOTED.
8. ALL FLANGES SHALL BE ANSI CLASS 150 (STEEL) OR ANSI CLASS 125 (IRON).
9. ALL BURIED PIPE WITHIN 5 FT OF BUILDING SHALL BE DUCTILE IRON, 350 psi WP, SOLID PIPE PIECES ONLY. NO DUCTILE IRON PIPE JOINTS ALLOWED.
10. BURIED DUCTILE IRON PIPE FOR DRAINS AND PIPE PENETRATIONS SHALL BE WAX TAPE-COATED PER SPECIFICATIONS ABOVE THE BURIED ELL. ALL OTHER BURIED DUCTILE IRON PIPE AND FITTINGS SHALL BE ENCASED IN TWO LAYERS OF POLYETHYLENE, PER SPECIFICATIONS. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE TWO-PART EPOXY-COATED, PER SPECIFICATIONS.
11. ALL STEEL COMPONENTS IN THE CHEMICAL ROOM SHALL BE SS 316, UNLESS OTHERWISE NOTED.
12. ALL STAINLESS STEEL PIPE AND FITTINGS SHALL HAVE A WORKING PRESSURE OF AT LEAST 350 psi, UNLESS OTHERWISE NOTED.
13. ISOLATE ALL PRESSURE GAUGES PRIOR TO HYDROSTATIC PRESSURE TESTING.
14. VALVE DISCHARGE DRAINS AND SOME PIPE SUPPORTS NOT SHOWN FOR CLARITY.

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Client: The Navajo Nation
Location: Tsé'ílahi & Nahodishgish, NM

CHLORINATION SYSTEM DETAILS (2 OF 2)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TOBY TADANO
NEW MEXICO
21073
10-29-25
LICENSED PROFESSIONAL ENGINEER

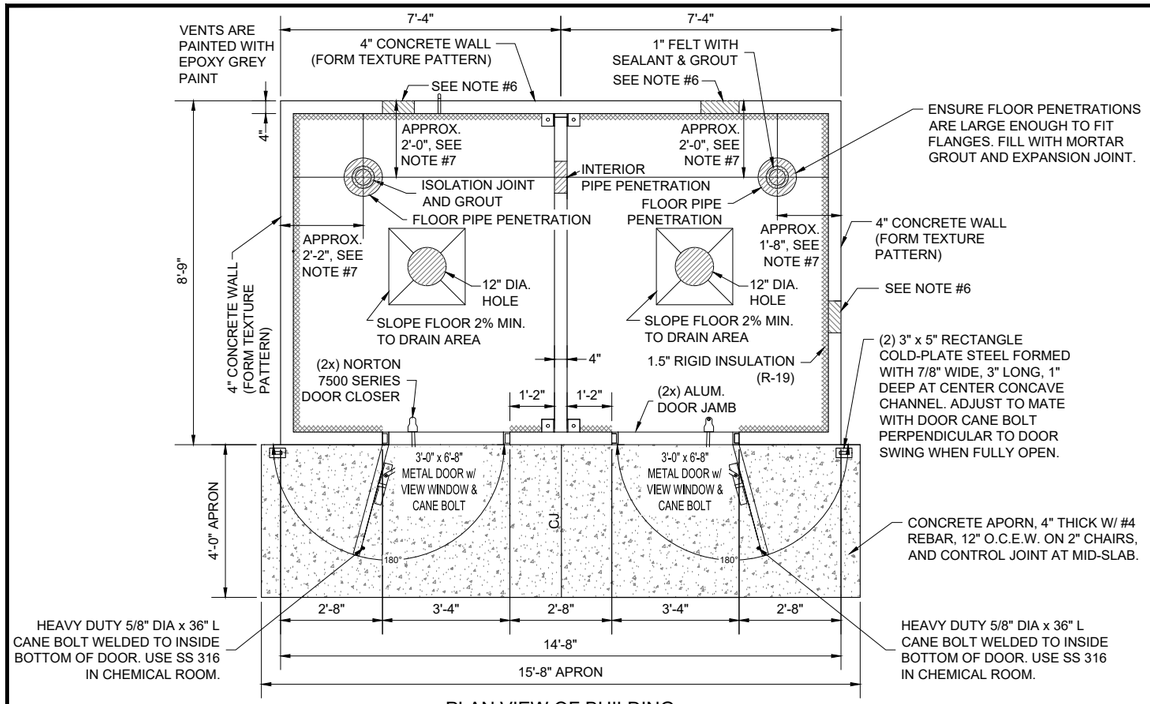
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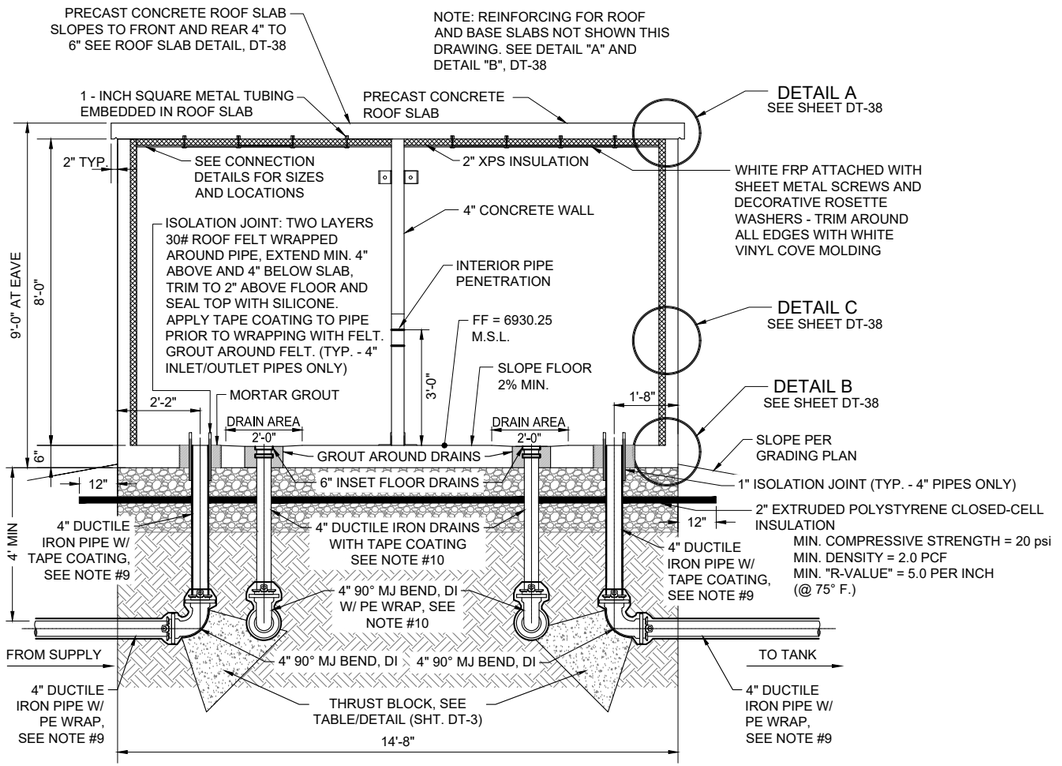
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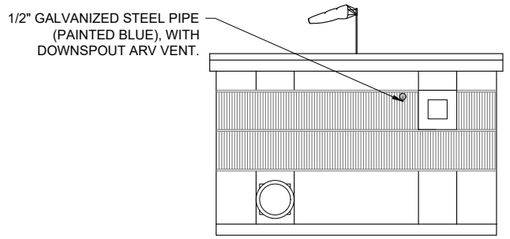
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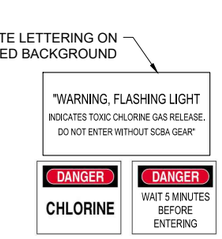
PLAN VIEW OF BUILDING
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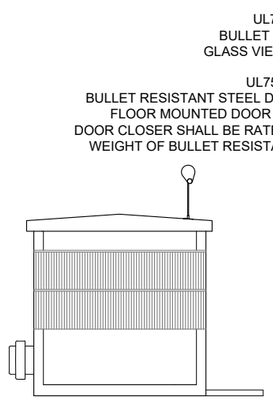
ELEVATION VIEW OF BUILDING AND UNDERGROUND PIPING
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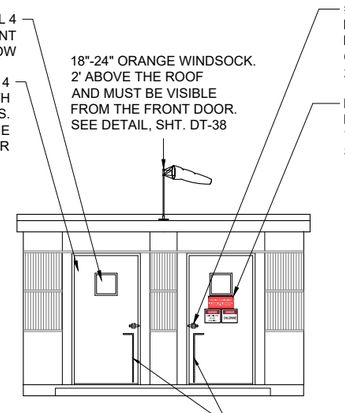
REAR ELEVATION
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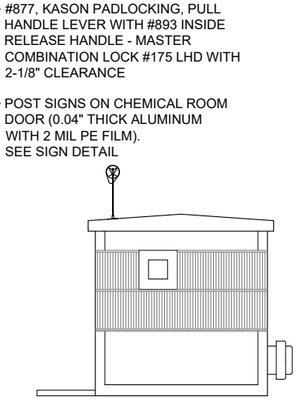
SIGN DETAIL



LEFT SIDE ELEVATION
NOT TO SCALE



FRONT ELEVATION
NOT TO SCALE



RIGHT SIDE ELEVATION
NOT TO SCALE

NOTES:

1. ALL DOOR FRAMES, FAN AND VENT ASSEMBLIES AND SLAB PENETRATION SHALL BE CAST INTO THEIR RESPECTIVE SLABS.
2. CONTRACTOR RESPONSIBLE TO DETERMINE SPACE REQUIREMENTS FOR PLUMBING TRAIN, AS WELL AS EXHAUST FAN, VENTS, AND ELECTRICAL CONDUITS, AND SUBMIT SHOP DRAWINGS OF BUILDING, INCLUDING LOCATIONS AND SIZES OF FLOOR, EXTERIOR WALL AND INTERIOR WALL PENETRATIONS, FOR ENGINEER'S APPROVAL PRIOR TO FABRICATING PRE-CAST CONCRETE BUILDING. ADEQUATE WALL CLEARANCE SHALL BE PROVIDED FOR O&M OF ALL FLANGES, VALVES AND OTHER APPURTENANCES.
3. ALL BURIED PIPE WITHIN 5 FEET OF BUILDING SHALL BE DUCTILE IRON, 350 psi, SOLID PIPE PIECES ONLY. NO DUCTILE IRON PIPE JOINTS ALLOWED.
4. 4" DUCTILE IRON PIPE, TWO-PART EPOXY-COATED AND MORTAR LINED. WAX TAPE-WRAPPED PER SPECIFICATIONS FROM TOP OF FLOOR TO BURIED ELL. DOUBLE WRAP WITH POLYETHYLENE FROM ABOVE ELL TO PVC TRANSITION BEYOND FOUNDATION (TYP.).
5. 4" DUCTILE IRON DRAIN LINE, TWO-PART EPOXY-COATED AND MORTAR LINED. WAX TAPE-WRAPPED PER SPECIFICATIONS FROM INSET DRAIN TO BURIED ELL. DOUBLE WRAP WITH POLYETHYLENE FROM ABOVE ELL TO PVC TRANSITION BEYOND FOUNDATION (TYP.).
6. CONTRACTOR RESPONSIBLE FOR LOCATING AND DETERMINING ELECTRICAL CONDUIT PENETRATIONS.

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Location: Tse'iʼahi & Nahodishgish, NM

CHLORINATION BUILDING AND PIPING
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

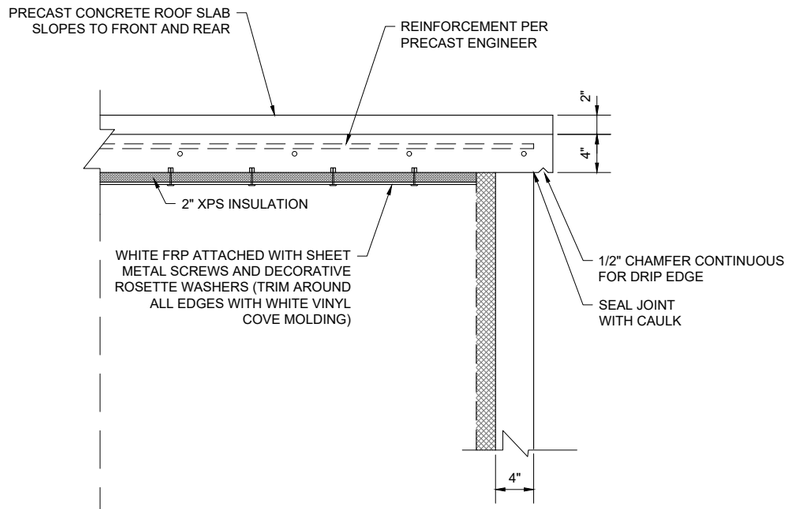
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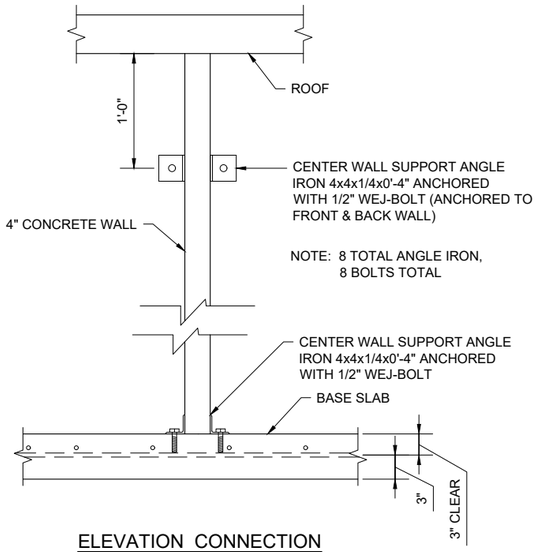
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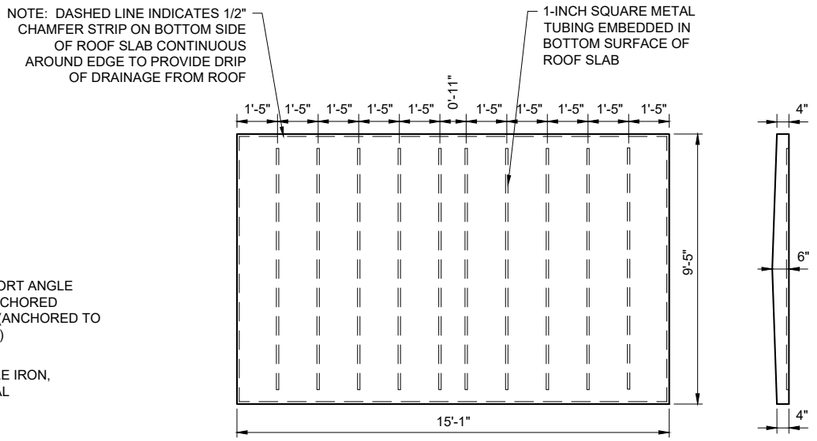
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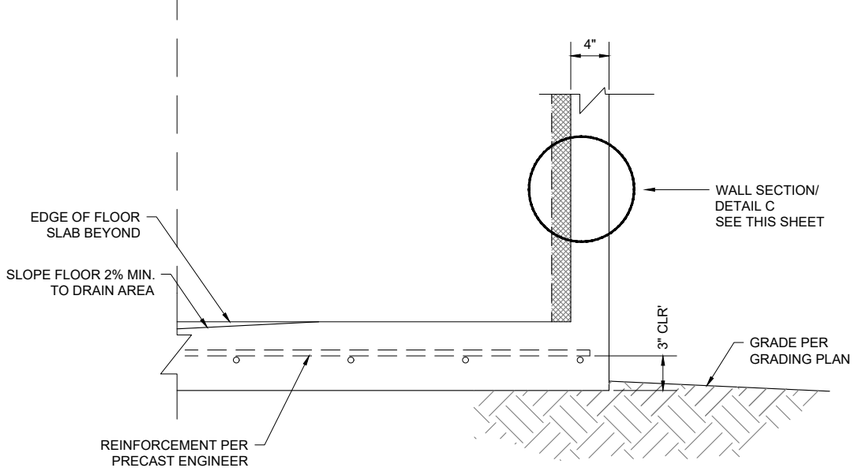
ROOF CONNECTION
DETAIL A
NOT TO SCALE



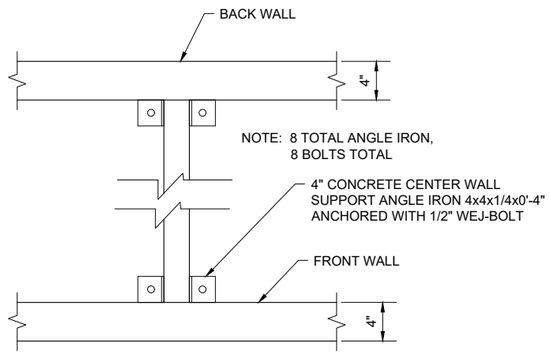
ELEVATION CONNECTION
ANGLE IRON
AT CENTER WALL
NOT TO SCALE



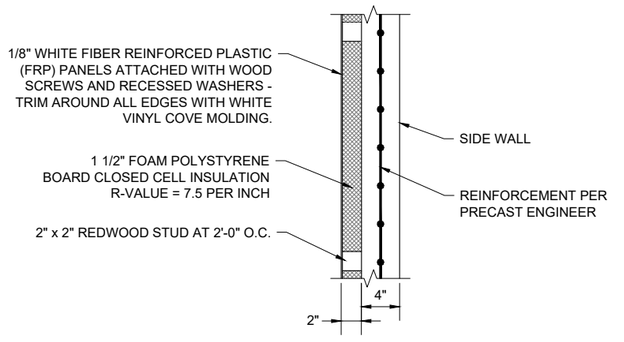
ROOF SLAB
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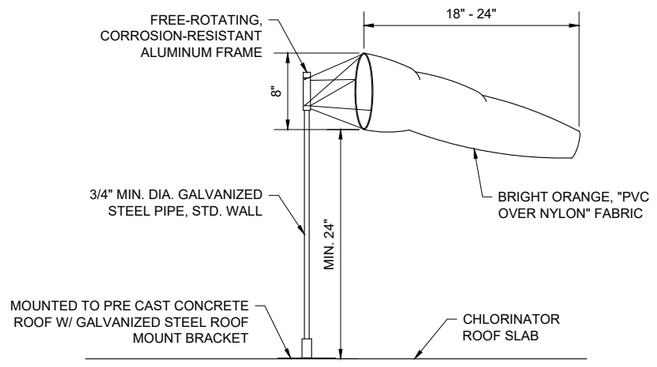
FLOOR CONNECTION
DETAIL B
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PLAN CONNECTION
ANGLE IRON
AT CENTER WALL
NOT TO SCALE



WALL SECTION
DETAIL C
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WIND SOCK DETAIL
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CHLORINATION BUILDING DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

Hunter C. Clark — New Mexico — 23567 — Professional Engineer — 09-30-25

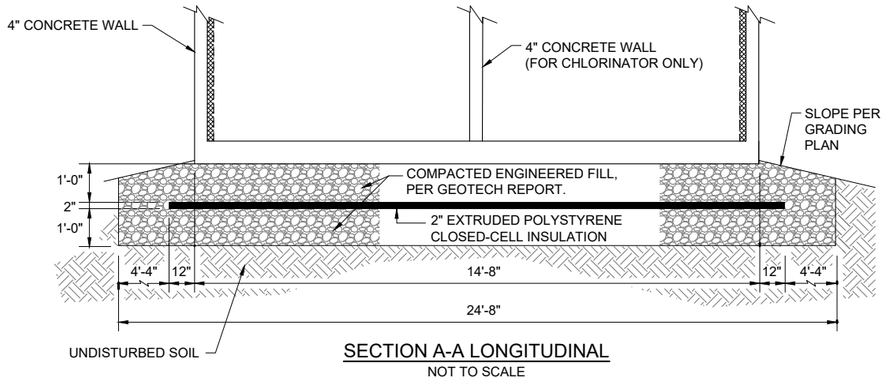
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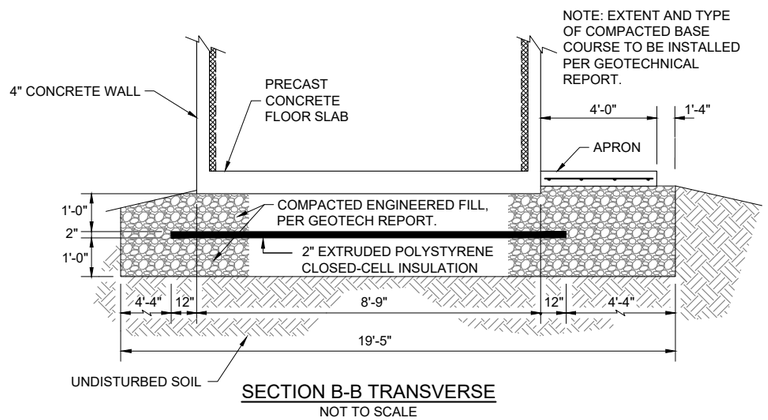
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SECTION A-A LONGITUDINAL

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SECTION B-B TRANSVERSE

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CODE INFORMATION

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

LOAD

MINIMUM DESIGN LOADS:

DEAD LOAD	150 PSF
ROOF LIVE LOAD	20 PSF
GROUND SNOW LOAD (pg)	15 PSF

WIND

BASIC WIND SPEED	120 MPH
EXPOSURE	C

SEISMIC

DESIGN CATEGORY	B
SITE SOIL CLASS	D
IMPORTANCE FACTORY (I)	1.25
S-S	0.211
S-1	0.063
S-DS	0.225
S-D1	0.100

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 5% (±1%) AIR ENTRAINMENT AND SHOULD BE PLACED AND CURED IN ACCORDANCE WITH THE ACI MANUAL OF CONCRETE RACTICE, 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.

PRECAST CONCRETE

PRECAST COMPONENTS SHALL BE A DELEGATED DESIGN. THE PRECAST ENGINEER WILL SPECIFY THE REINFORCEMENT AND LIFT DEVICES. THE PRECAST ENGINEER WILL BE RESPONSIBLE FOR DESIGN MEETING SPECIFIED CODE MINIMUMS. THE PRECAST ENGINEER SHALL DESIGN FOR SERVICABILITY AND STRENGTH FOR APPLICABLE LOADS CONSIDERING HANDLING, TRANSPORTATION, ERECTION, AND IN-PLACE LOADING.

PRECAST CONCRETE COMPONENTS SHALL BE CERTIFIED BY THE SUPPLIER TO HAVE ATTAINED A MINIMUM STRENGTH OF 3,500 psi AT TRANSPORT TIME WITH FINAL CONCRETE STRENGTH TO BE AT LEAST 4,000 psi WITHIN 28 DAYS. VERIFICATION OF CONCRETE STRENGTH SHALL BE PROVIDED BY THE SUPPLIER UPON REQUEST AND SHALL BE CONFIRMED THROUGH CYLINDER BREAKS FROM NORMAL PRODUCTION PROCEDURES AND IN-HOUSE QUALITY CONTROL. A SET OF FOUR (4) CYLINDERS SHALL BE TAKEN AT RANDOM IN THE PLANT NOT LESS THAN ONCE DURING EACH WEEK OF PRODUCTION.

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

REFER TO GEOTECH REPORT BY GEO-TEST INC. REPORT #1-11001A, DATED DECEMBER 14, 2021 FOR SUBSURFACE INFORMATION, OVER EXCAVATION REQUIREMENTS, SUBGRADE PREPARATION, AND STRUCTURAL FILL & COMPACTION.

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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

CHLORINATION BUILDING FOUNDATION PLAN
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

Hunter C. Clark
New Mexico
23567
PROFESSIONAL ENGINEER
9-26-25

Designed	Drawn	Checked
EUAM	AaV/DT	HCR

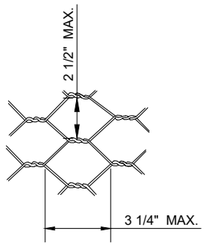
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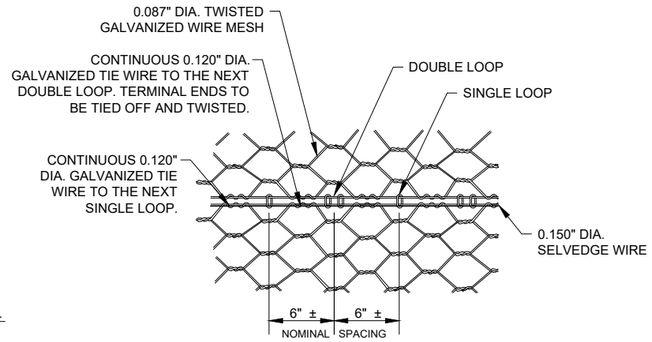
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Sheet: DT-39

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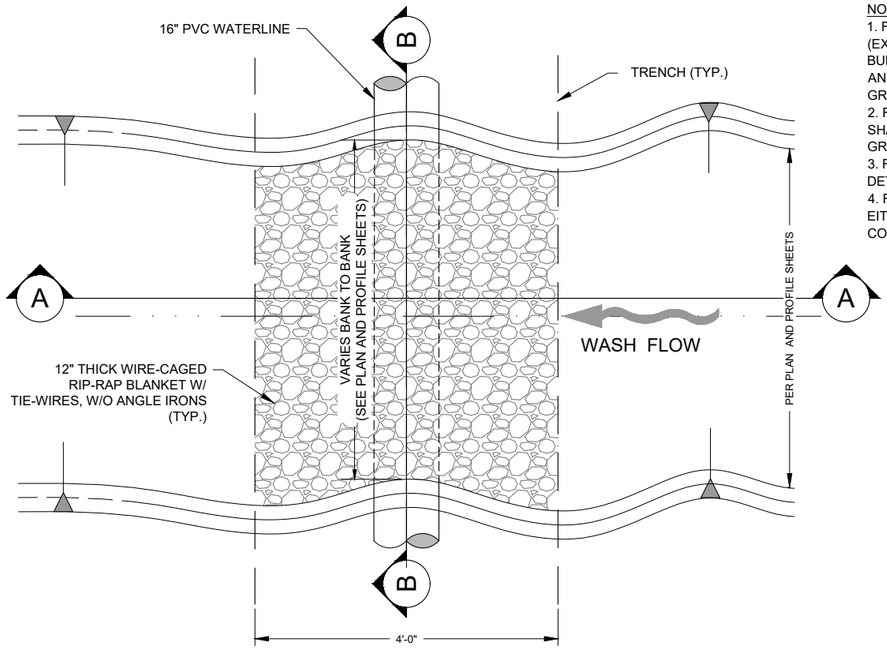
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TWISTED MESH MATTRESS
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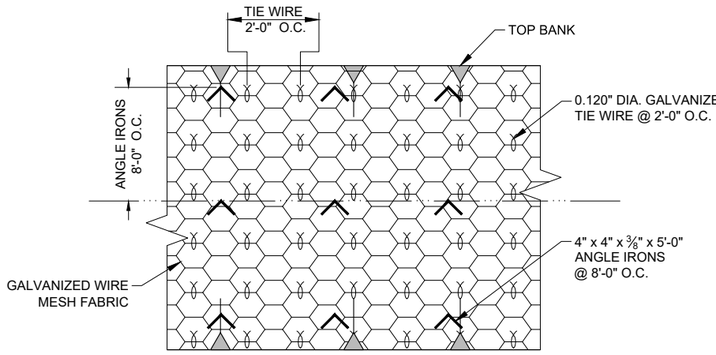


STANDARD JOINT CONNECTION DETAIL
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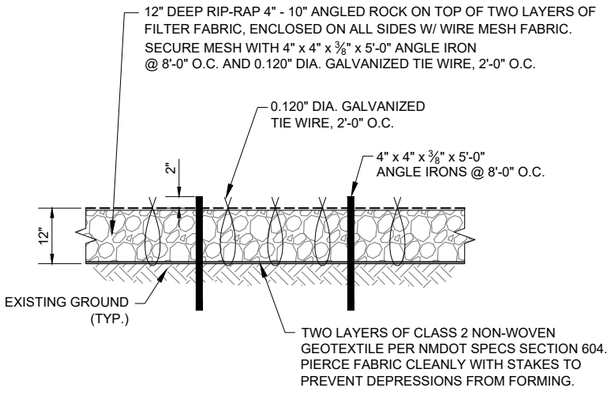


PLAN VIEW

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

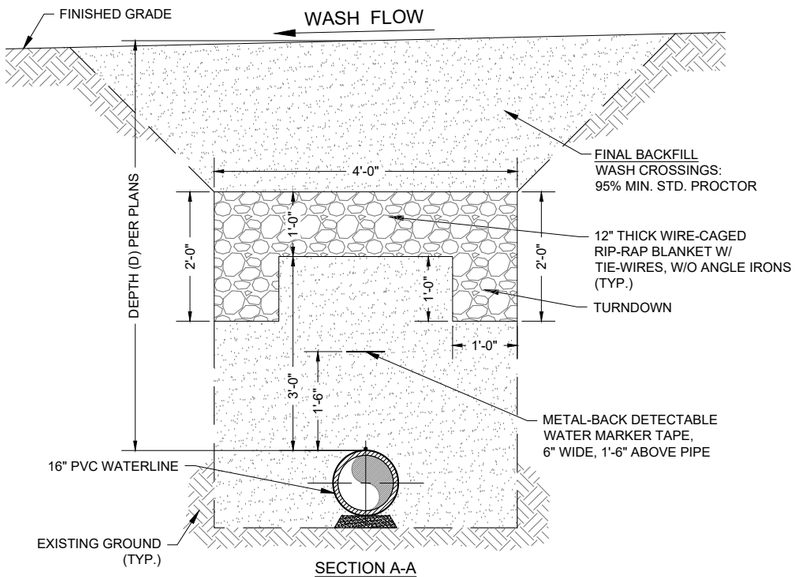


TYP. 12" RIP-RAP CAGE & ANCHORING
NOT TO SCALE

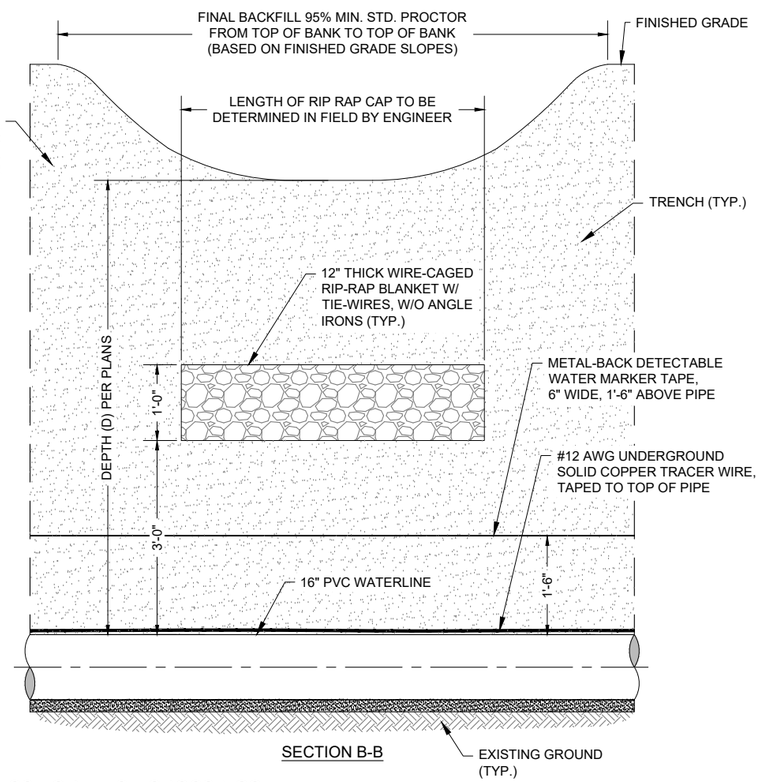


CROSS SECTION

TYPICAL 12" RIP-RAP DETAIL
NOT TO SCALE



SECTION A-A



SECTION B-B

TYPICAL BURIED 12" RIP-RAP MATTRESS FOR WASH CROSSINGS
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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

EROSION CONTROL DETAILS (1 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

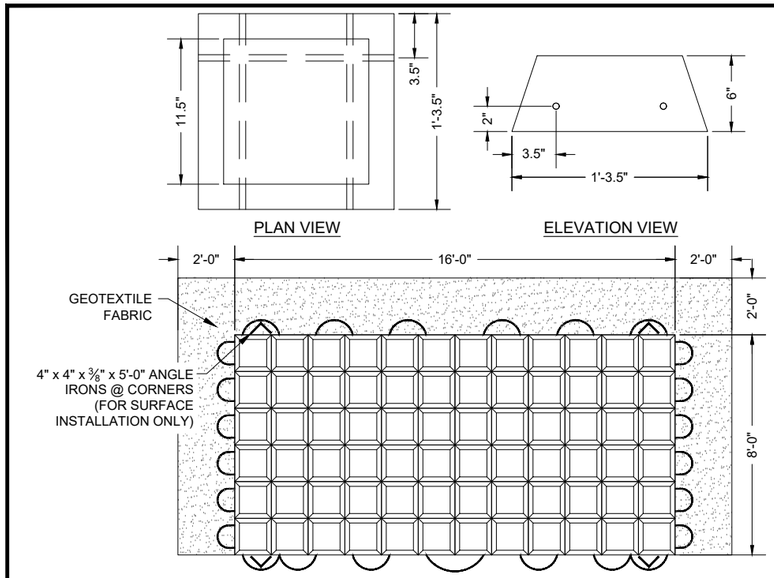
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Sheet: DT-40

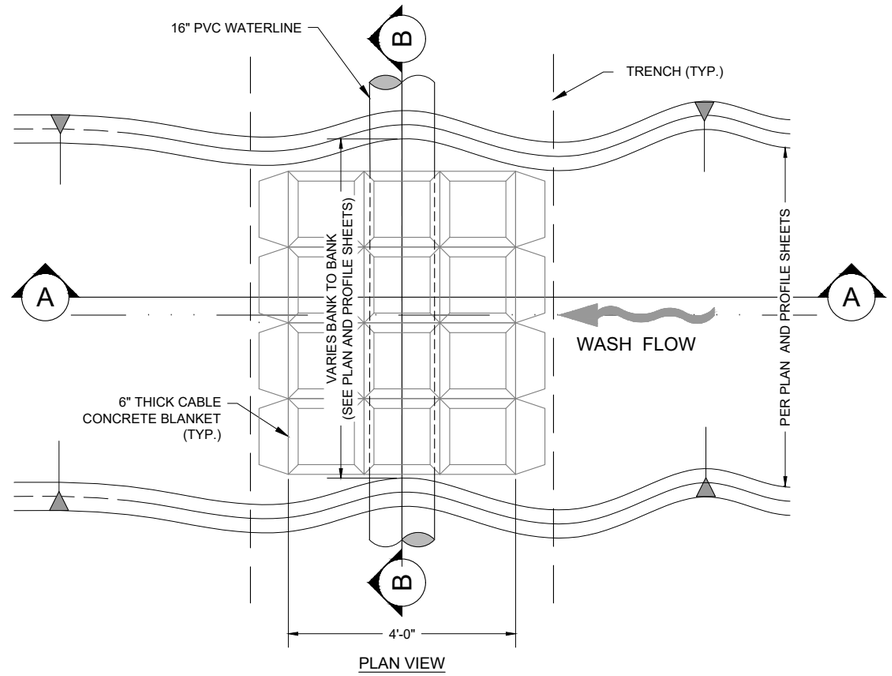
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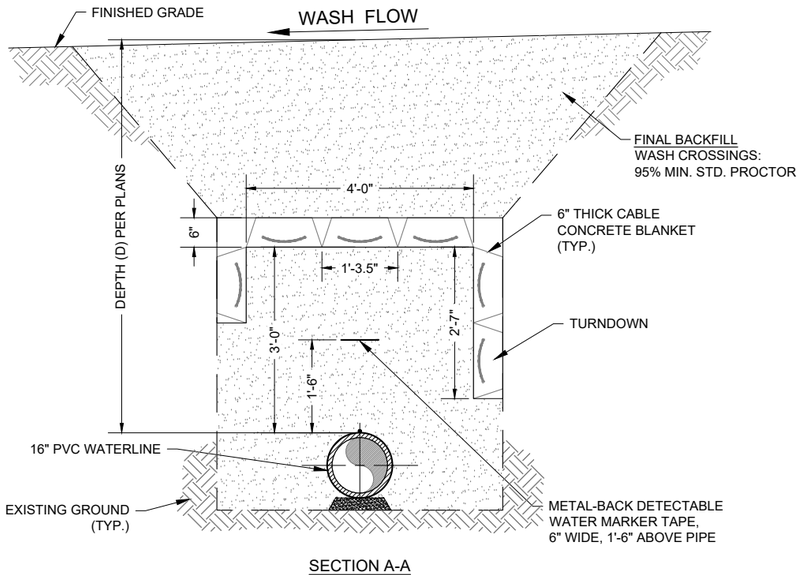
TYPICAL 6" CC-45 CLOSED CELL CABLE CONCRETE DETAIL

NOT TO SCALE

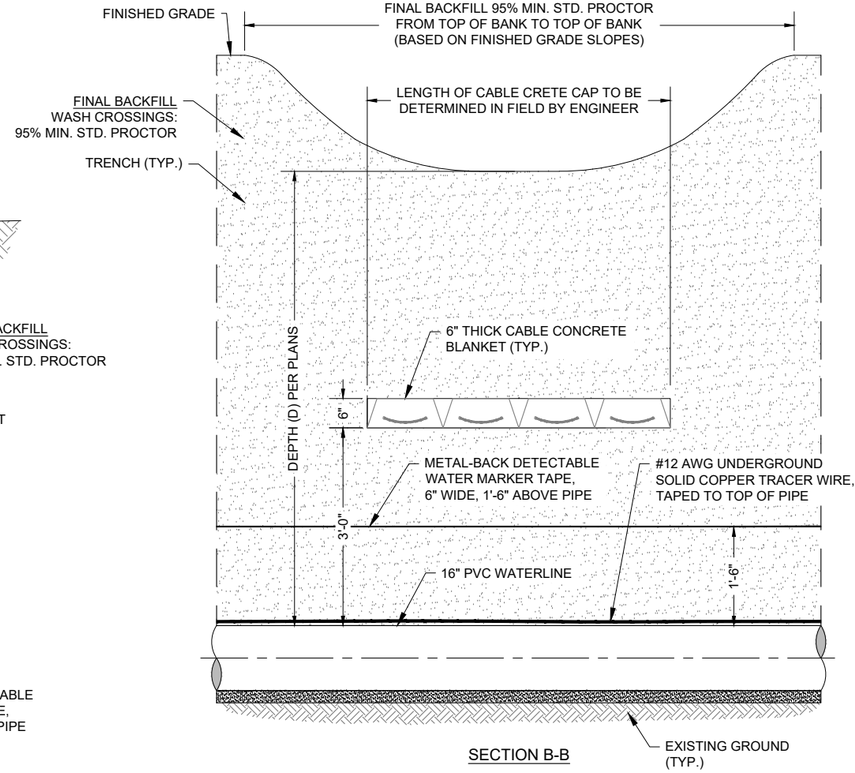


PLAN VIEW

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.
2. CABLE CONCRETE 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.



SECTION A-A



SECTION B-B

TYPICAL BURIED 6" CABLE CONCRETE MATTRESS FOR WASH CROSSINGS

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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

EROSION CONTROL DETAILS (2 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

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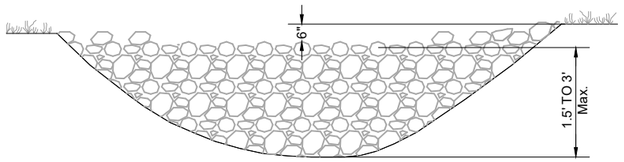
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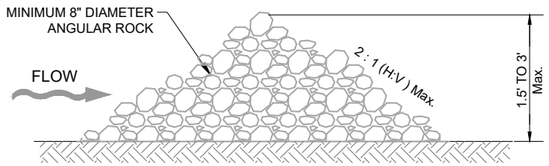
Project No: 6922268

Sheet: DT-41

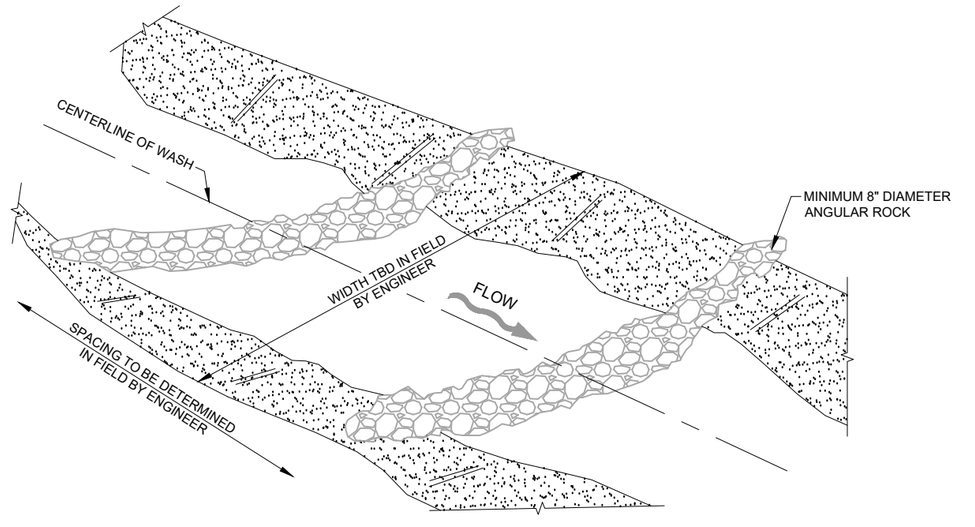
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ELEVATION VIEW



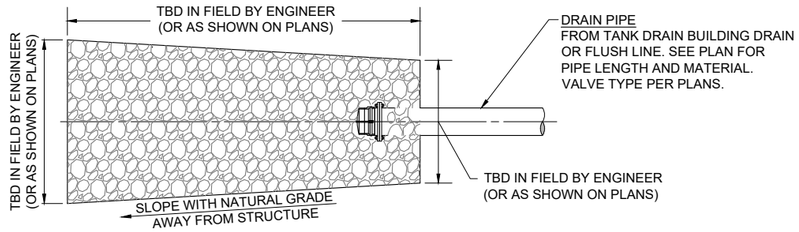
TYPICAL ROCK DAM SECTION



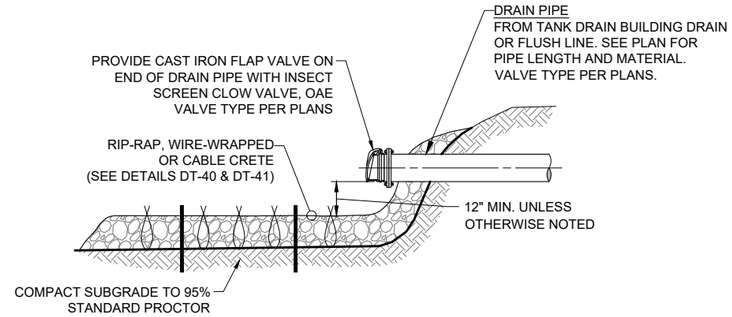
ISOMETRIC VIEW

ROCK CHECK DAM DETAIL

NOT TO SCALE



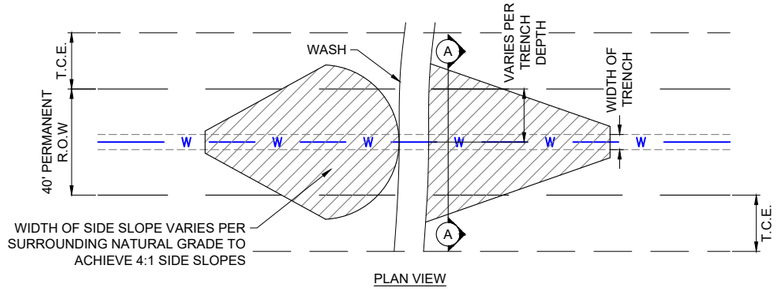
PLAN VIEW



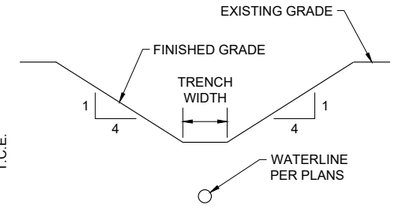
ELEVATION VIEW

TYPICAL SPLASH PAD DETAIL

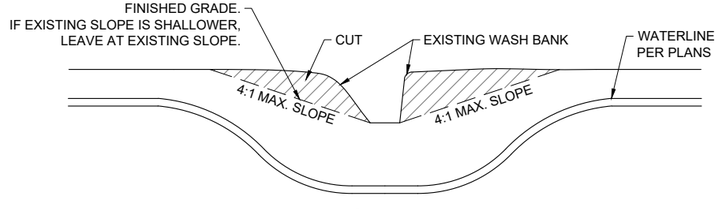
NOT TO SCALE



PLAN VIEW



SECTION A-A



PROFILE VIEW

WASH CROSSING GRADING DETAIL

NOT TO SCALE

NOTE:

1. ALL GRADING MUST REMAIN WITHIN TEMPORARY CONSTRUCTION EASEMENT.

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Location: Tse'ii'ahi & Nahodishgish, NM
Client: The Navajo Nation

EROSION CONTROL DETAILS (3 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

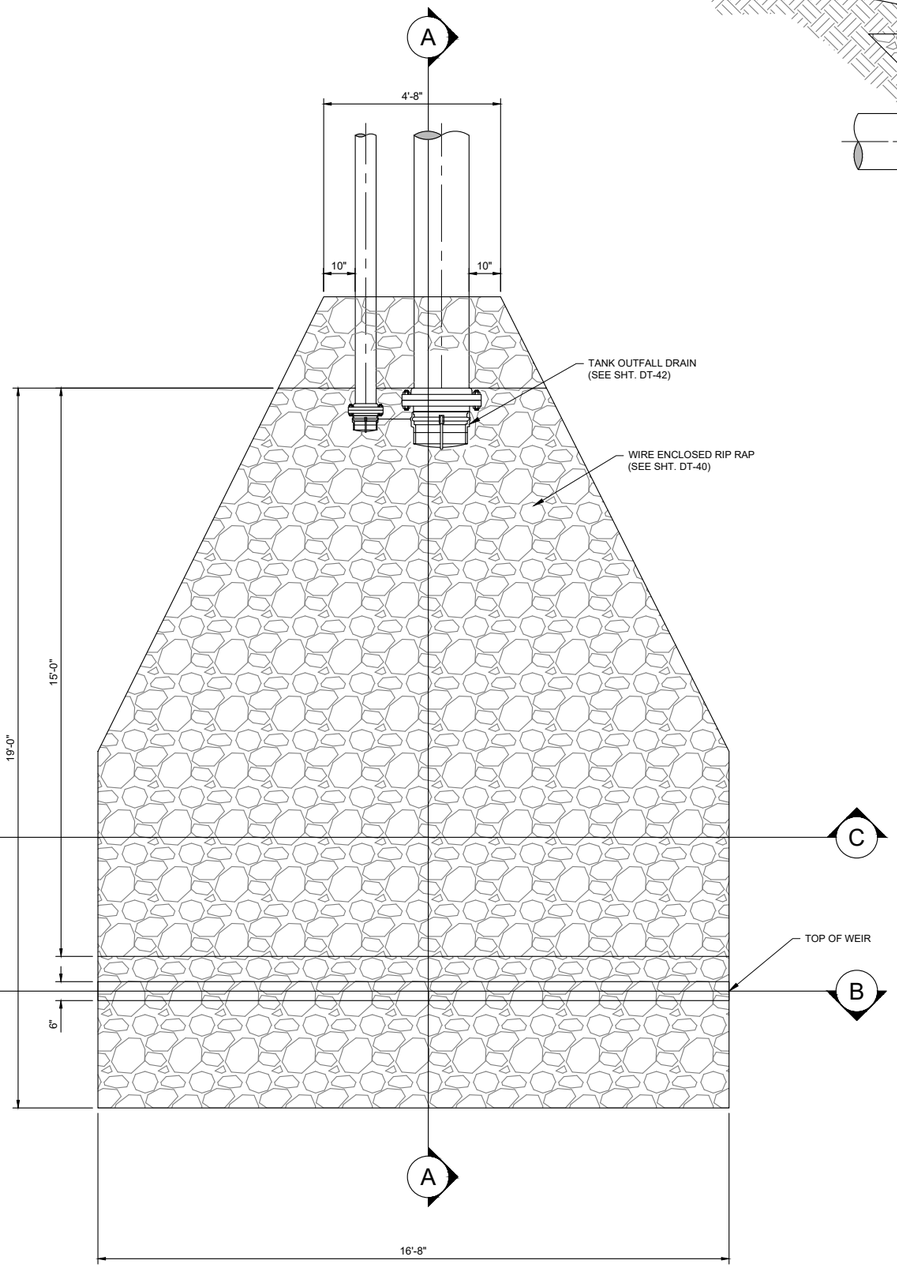
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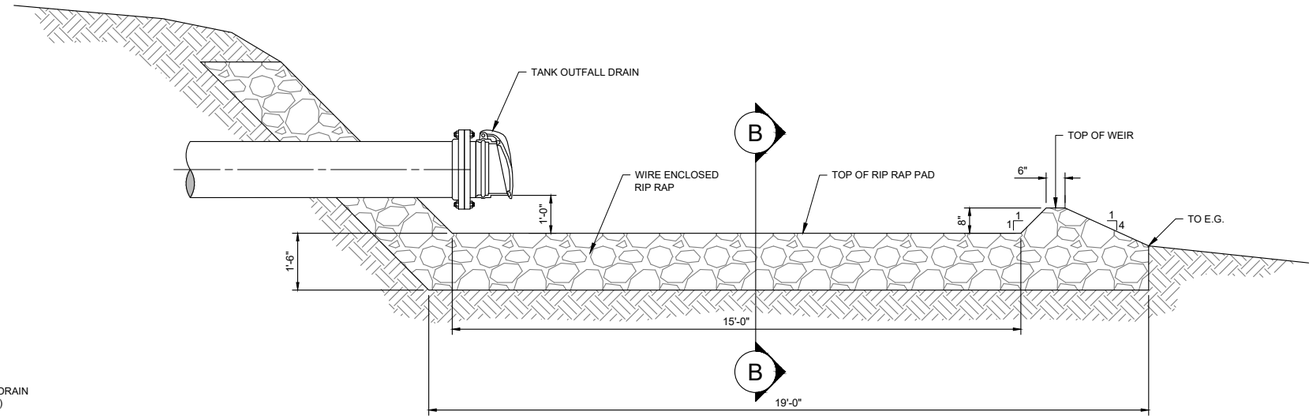
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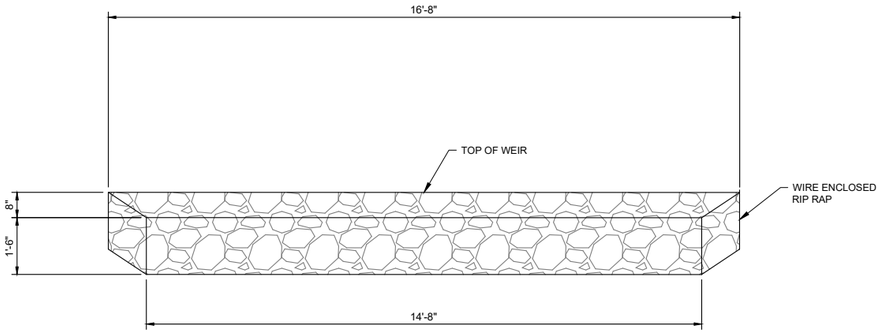
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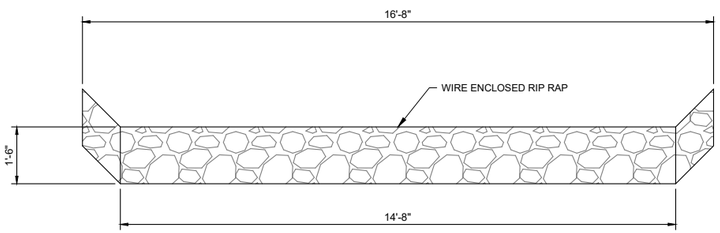
PLAN VIEW



SECTION A



SECTION B



SECTION C

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Revision	Date	Description	By	Chk'd

Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

EROSION CONTROL DETAILS (4 OF 4)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

Designed	Drawn	Checked
CDB	MvH/AaV	TTT

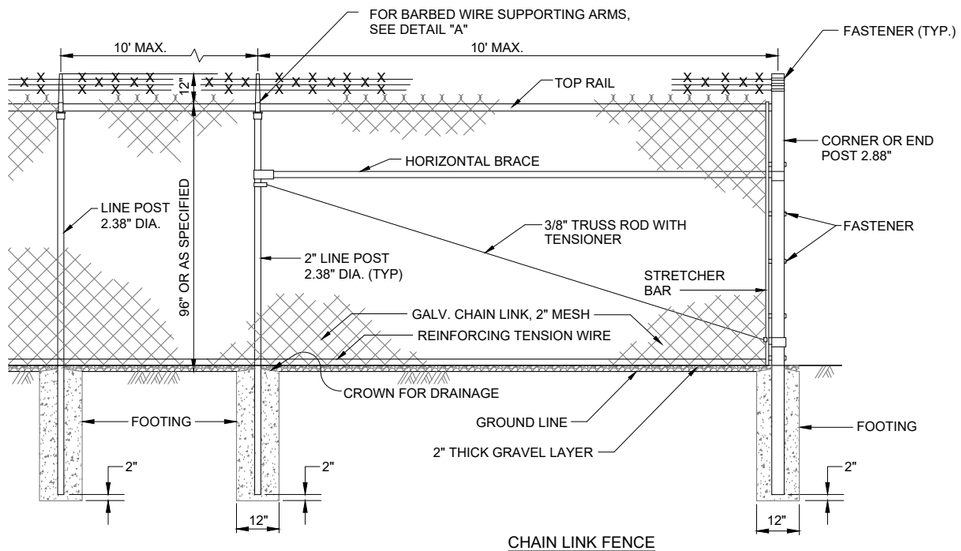
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Vert: N/A
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Sheet: DT-43

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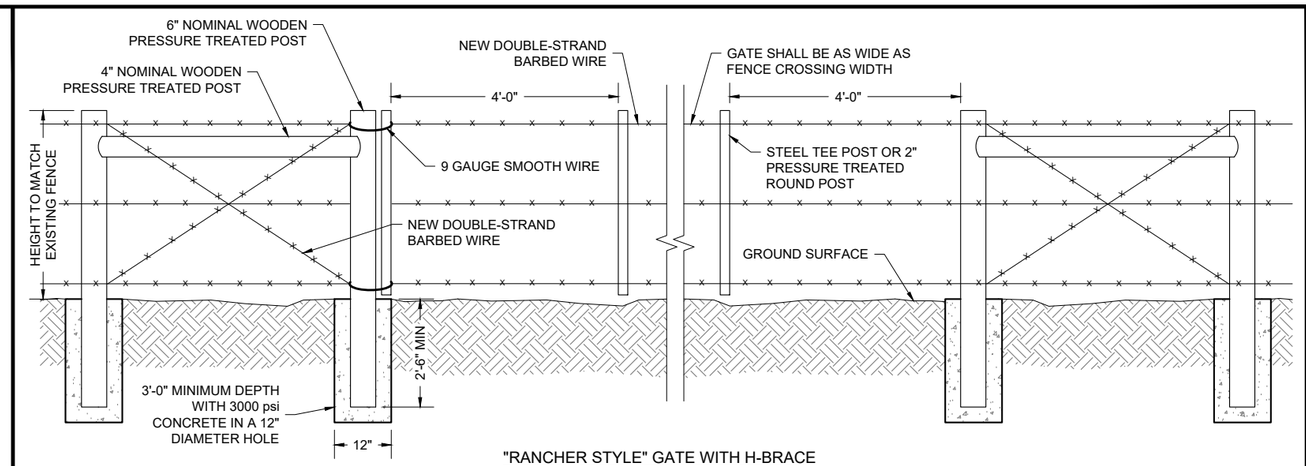
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CHAIN LINK FENCE

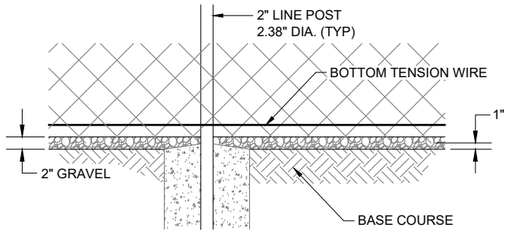
NOT TO SCALE

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.



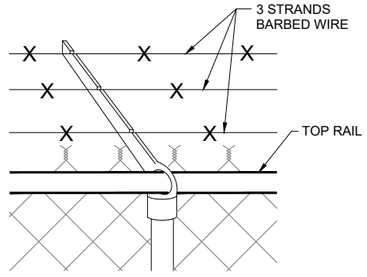
"RANCHER STYLE" GATE WITH H-BRACE
PULL ASSEMBLY AT EXISTING WIRE FENCE CROSSING

NOT TO SCALE



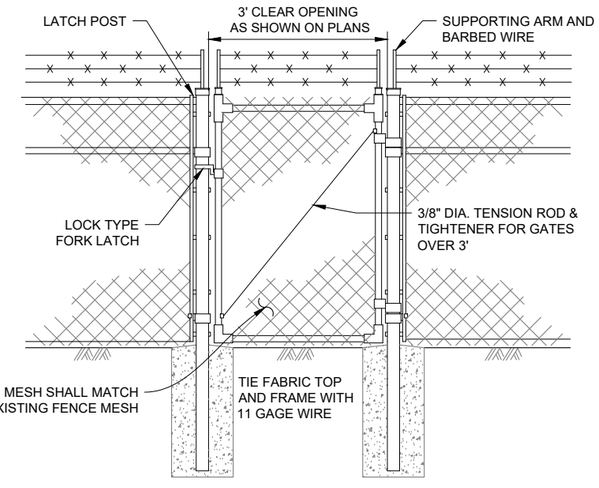
BASE COURSE AND GRAVEL DETAIL

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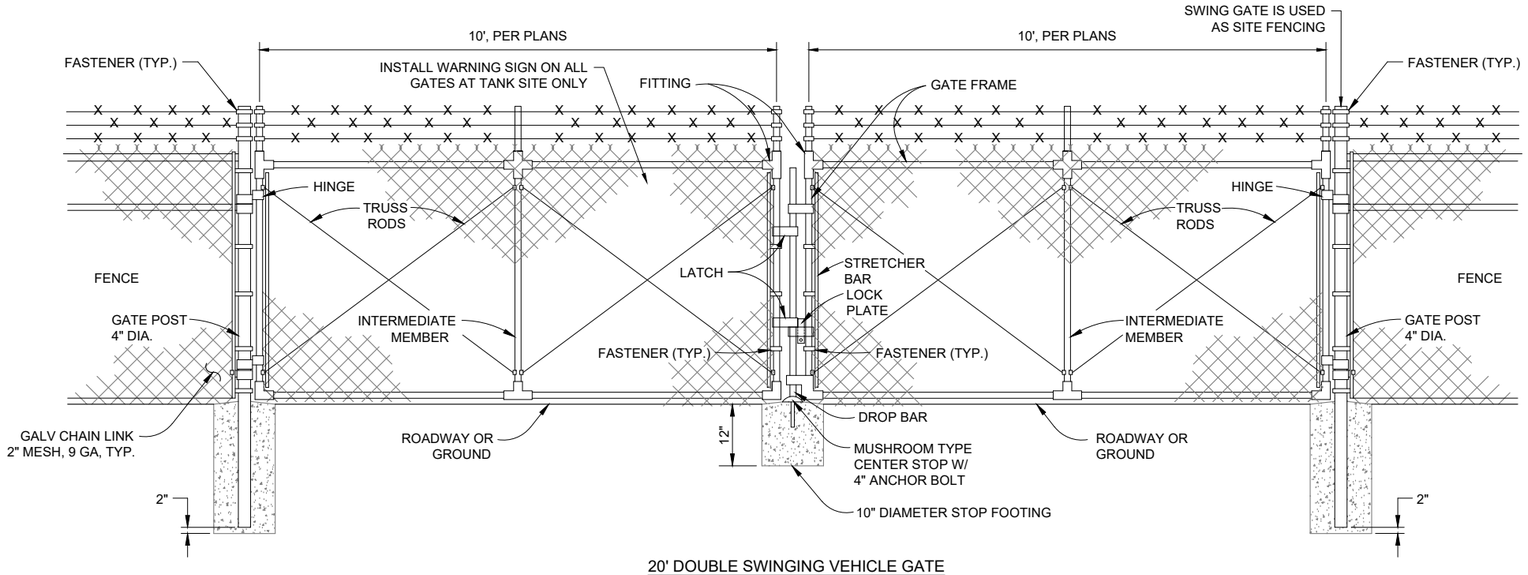
DETAIL "A" SUPPORTING ARM & BARBED WIRE

NOT TO SCALE



PEDESTRIAN GATE

NOT TO SCALE



20' DOUBLE SWINGING VEHICLE GATE

NOT TO SCALE

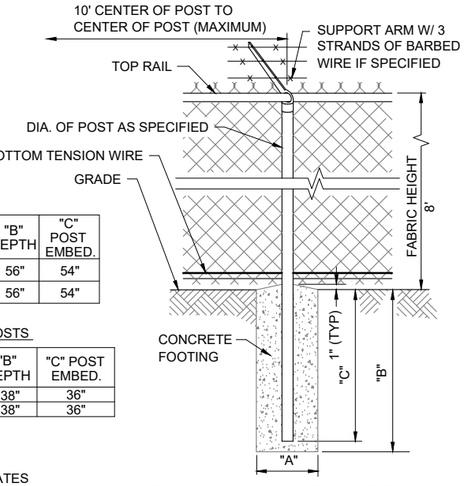
GATE POST

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

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Location: Tse'ilahi & Nahodishgish, NM
Client: The Navajo Nation

FENCE DETAILS
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

TOBY T. A. D. A. H. O. NEW MEXICO 21073 LICENSED PROFESSIONAL ENGINEER 9-29-25

Designed	Drawn	Checked
CDB	MVH/AaV	TTT

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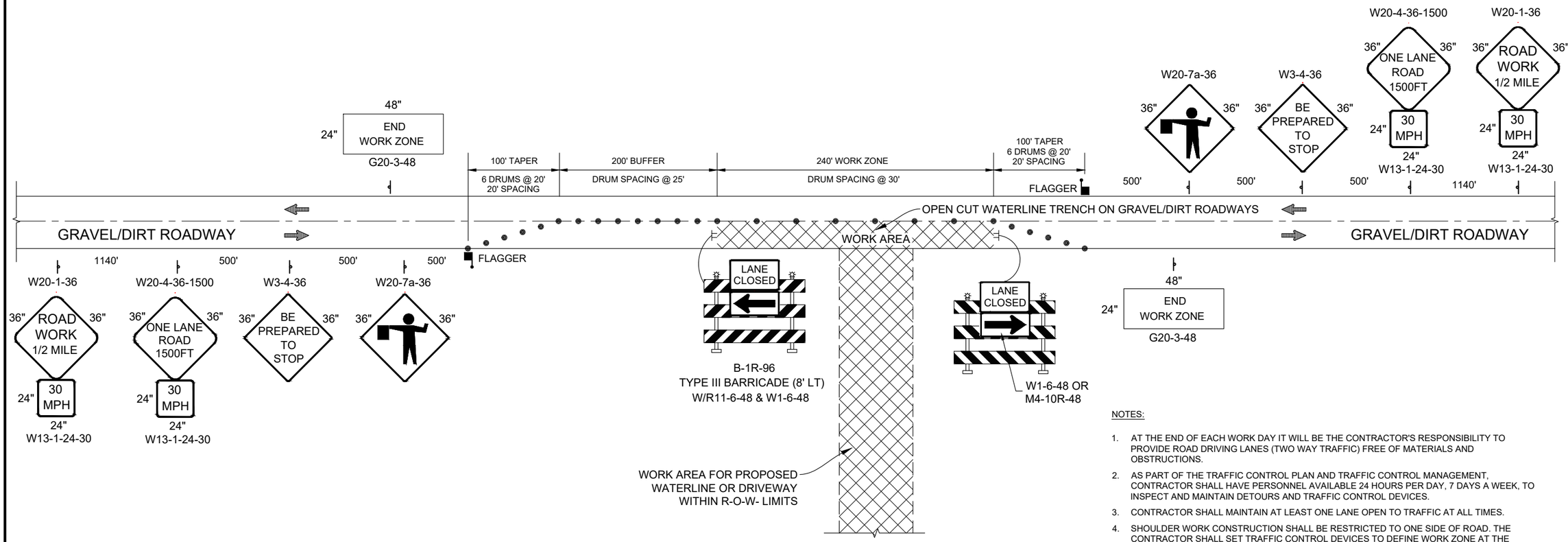
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ALL SIGNS ARE BLACK ON ORANGE
UNLESS OTHERWISE SPECIFIED

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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Revision	Date	Description	By	Chkd

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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

TRAFFIC CONTROL (GRAVEL AND DIRT ROAD)
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO

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

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CDB	MvH/AaV	TTT

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Sheet: DT-45

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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
	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.

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.

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Revision	Date	Description	By	Ck'd

Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

ELECTRICAL LEGEND AND NOTES
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

THOMAS R. HEMPHILL — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 7/31/24

22317PP13

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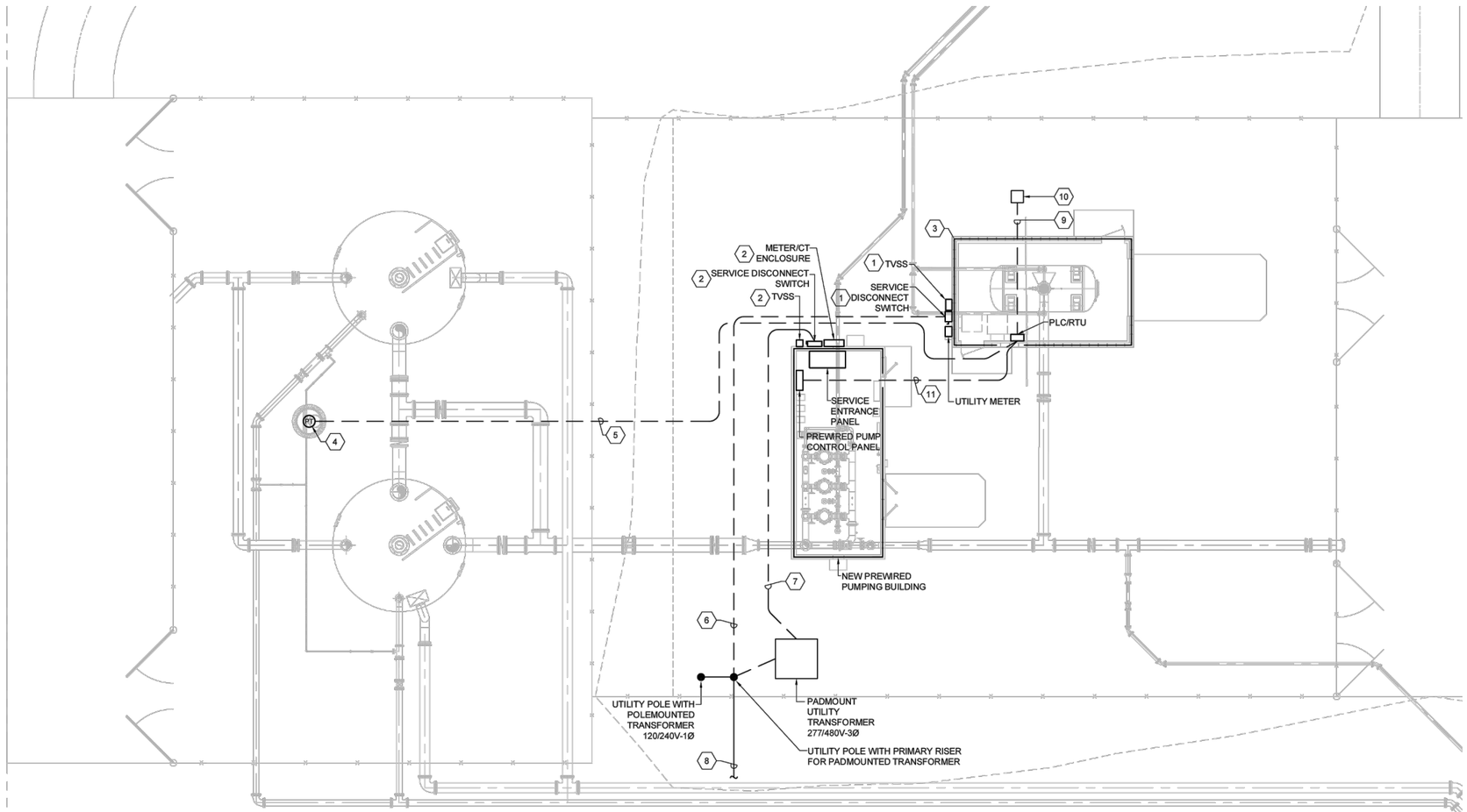
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ELECTRICAL SITE PLAN - PUMPING PLANT 13

GENERAL NOTES

A. ALL CONDUITS SHOWN DASHED SHALL BE BURIED A MINIMUM OF 36" BELOW FINISHED GRADE. ALL CONDUITS THAT COME IN CONTACT WITH THE GROUND SHALL BE PVC OR DOUBLE LAPPED WRAPPED WITH SCOTCHWRAP-51.

B. REFER TO SHEET E-01 FOR "ELECTRICAL SYMBOL LEGEND" AND "GENERAL NOTES".

C. REFER TO SHEET E-51 FOR "POWER RISER DIAGRAM - SURGE TANK" AND SHEET E-53 FOR "POWER RISER DIAGRAM - PUMPING BUILDING".

D. FIELD COORDINATE ALL EQUIPMENT WITH OWNER PRIOR TO INSTALLATION.

E. ALL UTILITY EQUIPMENT SHALL BE FULLY COORDINATED WITH NTUA PRIOR TO INSTALLATION.

KEYED NOTES

1. REFER TO "POWER RISER DIAGRAM - SURGE TANK" ON SHEET E-51 FOR SERVICE EQUIPMENT SIZES AND WIRING.
2. REFER TO "POWER RISER DIAGRAM - PUMPING BUILDING" ON SHEET E-53 FOR SERVICE EQUIPMENT SIZES AND WIRING.
3. NEW SURGE TANK BUILDING. REFER TO "LIGHTING PLAN - SURGE TANK" ON SHEET E-11, "POWER AND SPECIAL SYSTEMS PLAN - SURGE TANK" ON SHEET E-11 AND "LIGHTING PROTECTION PLAN - SURGE TANK" ON SHEET E-31 FOR ADDITIONAL INFORMATION.
4. PROVIDE AND INSTALL NEW PRESSURE TRANSDUCER IN VAULT. PRESSURE TRANSDUCER TO BE 4-20mA, 4 WIRE (ANALOG POSITIVE, ANALOG NEGATIVE, POWER POSITIVE AND POWER NEGATIVE) AND SEND SIGNAL TO SCADA SYSTEM. PRESSURE TRANSDUCER TO CONTROL UPSTREAM PUMPING BUILDING. COORDINATE EXACT LOCATION IN FIELD. PROGRAM PLC AS REQUIRED.
5. 1" CONDUIT BURIED 36" BELOW FINISHED GRADE WITH RED TAPE BURIED 12" ABOVE FINISHED GRADE. CONDUIT TO HAVE 4#14 THWN Cu (ANALOG POSITIVE, ANALOG NEGATIVE, POWER POSITIVE AND POWER NEGATIVE). MAKE ALL REQUIRED CONNECTIONS FOR A COMPLETE AND OPERATIONAL SYSTEM.
6. 3#2 THWN Cu IN 2" CONDUIT BURIED 36" BELOW FINISHED GRADE (OR AS REQUIRED BY NTUA), WITH RED WARNING TAPE BURIED 12" ABOVE CONDUIT. REFER TO "POWER RISER DIAGRAM - SURGE TANK" ON SHEET E-51 FOR ADDITIONAL INFORMATION.
7. 2 PARALLEL RUNS OF 4#350 THWN Cu IN 3" CONDUIT OR 2 PARALLEL RUNS OF 4#500 XHHW Al IN 3 1/2" CONDUIT. CONDUIT SHALL BE BURIED 36" BELOW FINISHED GRADE (OR AS REQUIRED BY NTUA), WITH RED WARNING TAPE BURIED 12" ABOVE CONDUIT. REFER TO "POWER RISER DIAGRAM - PUMPING BUILDING" ON SHEET E-53 FOR ADDITIONAL INFORMATION.
8. NEW OVERHEAD UTILITY CONDUCTORS. COORDINATE ALL REQUIREMENTS WITH NTUA.
9. 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.
10. PROVIDE AND INSTALL FLUSH IN GRADE TRAFFIC RATED QUAZITE BOX FOR FIBER OPTIC CABLE. COORDINATE EXACT LOCATION WITH ENDPOINT OF FIBER OPTIC CABLE.
11. 3" CONDUIT BURIED A MINIMUM OF 36" BELOW FINISHED GRADE WITH RED WARNING TAPE BURIED 12" ABOVE CONDUIT. PROVIDE AND INSTALL CONTROL WIRING AS REQUIRED FOR PUMP BUILDING.

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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

ELECTRICAL SITE PLAN - PP13
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

THOMAS R. PRAGALE — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 7/31/24

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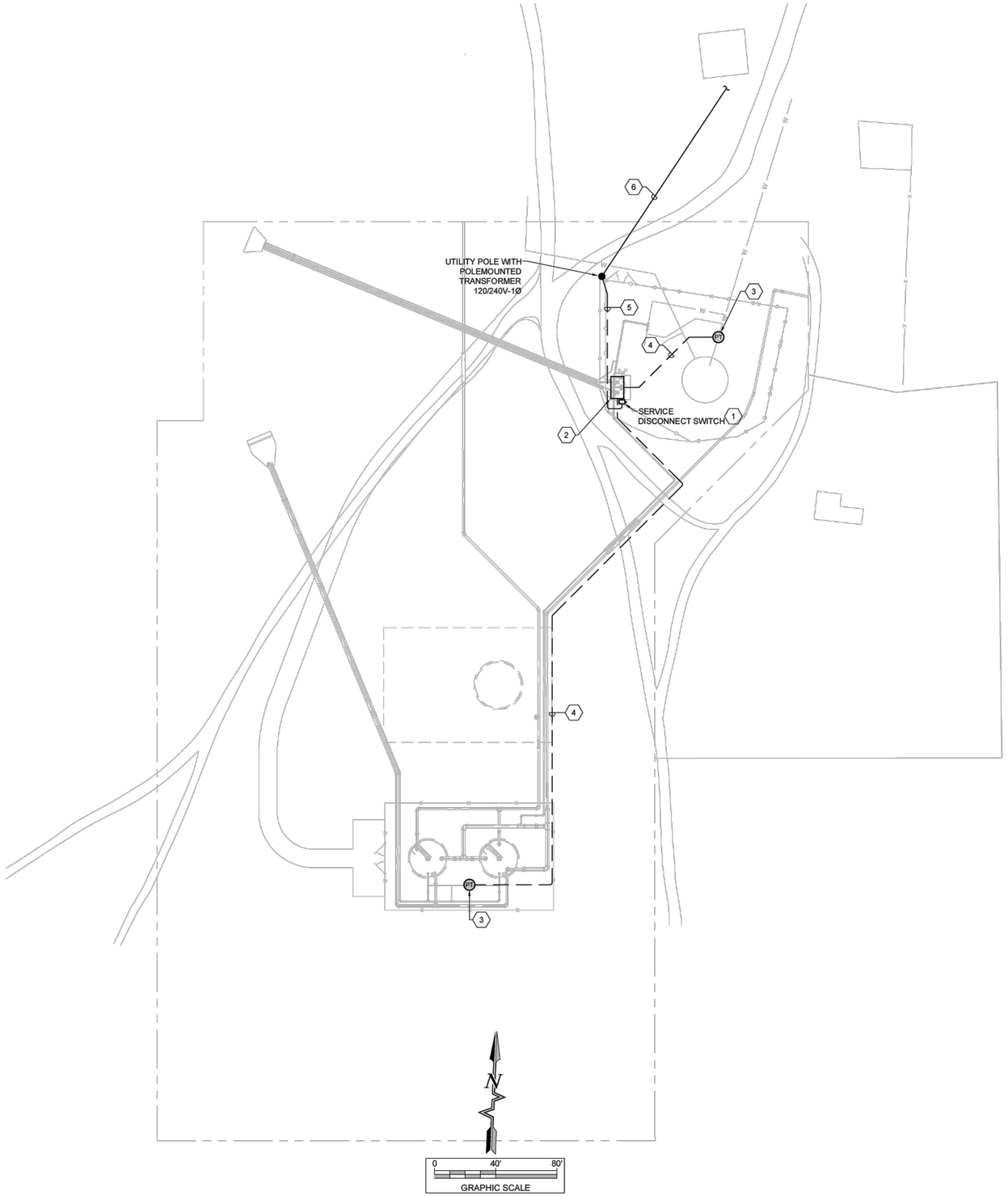
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ELECTRICAL SITE PLAN - NAHODISHGISH

GENERAL NOTES

A. ALL CONDUITS SHOWN DASHED SHALL BE BURIED A MINIMUM OF 36" BELOW FINISHED GRADE. ALL CONDUITS THAT COME IN CONTACT WITH THE GROUND SHALL BE PVC OR DOUBLE LAPPED WRAPPED WITH SCOTCHWRAP-51.

B. REFER TO SHEET E-01 FOR "ELECTRICAL SYMBOL LEGEND" AND "GENERAL NOTES".

C. REFER TO SHEET E-52 FOR "POWER RISER DIAGRAM - CHLORINATION BUILDING".

D. FIELD COORDINATE ALL EQUIPMENT WITH OWNER PRIOR TO INSTALLATION.

E. ALL UTILITY EQUIPMENT SHALL BE FULLY COORDINATED WITH NTUA PRIOR TO INSTALLATION.

F. ELECTRICAL LINES SHOWN BURIED SHALL NOT SHARE A TRENCH WITH WATER LINES. CONTRACTOR SHALL DIG A NEW TRENCH FOR ELECTRICAL LINES 10 FEET OFFSET FROM WATER LINES WHERE POSSIBLE.

KEYED NOTES ⬡

1. REFER TO "POWER RISER DIAGRAM - CHLORINATION BUILDING" ON SHEET E-52 FOR SERVICE EQUIPMENT SIZES AND WIRING.
2. NEW CHLORINATION BUILDING. REFER TO "LIGHTING PLAN - CHLORINATION BUILDING" ON SHEET E-12, "POWER AND SPECIAL SYSTEMS PLAN - CHLORINATION BUILDING" ON SHEET E-12 AND "LIGHTING PROTECTION PLAN - CHLORINATION BUILDING" ON SHEET E-32 FOR ADDITIONAL INFORMATION.
3. PROVIDE AND INSTALL NEW PRESSURE TRANSDUCER IN VAULT. PRESSURE TRANSDUCER TO BE 4-20mA, 4 WIRE (ANALOG POSITIVE, ANALOG NEGATIVE, POWER POSITIVE AND POWER NEGATIVE) AND SEND SIGNAL TO SCADA SYSTEM. PRESSURE TRANSDUCER TO CONTROL UPSTREAM PUMPING BUILDING. COORDINATE EXACT LOCATION IN FIELD. PROGRAM PLC AS REQUIRED.
4. 1" CONDUIT BURIED 36" BELOW FINISHED GRADE WITH RED WARNING TAPE BURIED 12" ABOVE FINISHED GRADE. CONDUIT TO HAVE 4#14 THWN Cu (ANALOG POSITIVE, ANALOG NEGATIVE, POWER POSITIVE AND POWER NEGATIVE). MAKE ALL REQUIRED CONNECTIONS FOR A COMPLETE AND OPERATIONAL SYSTEM.
5. 3#2 THWN Cu IN 2" CONDUIT BURIED 36" BELOW FINISHED GRADE (OR AS REQUIRED BY NTUA), WITH RED WARNING TAPE BURIED 12" ABOVE CONDUIT. REFER TO "POWER RISER DIAGRAM - CHLORINATION BUILDING" ON SHEET E-52 FOR ADDITIONAL INFORMATION.
6. NEW OVERHEAD UTILITY CONDUCTORS. COORDINATE ALL REQUIREMENTS WITH NTUA.

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McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

THOMAS R. GRIFFITH — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 7/31/24

22317PP13

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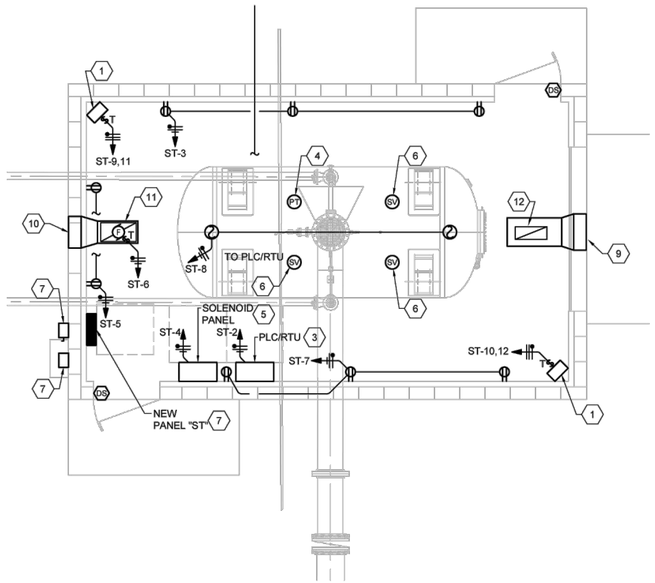
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Sheet: ES-02

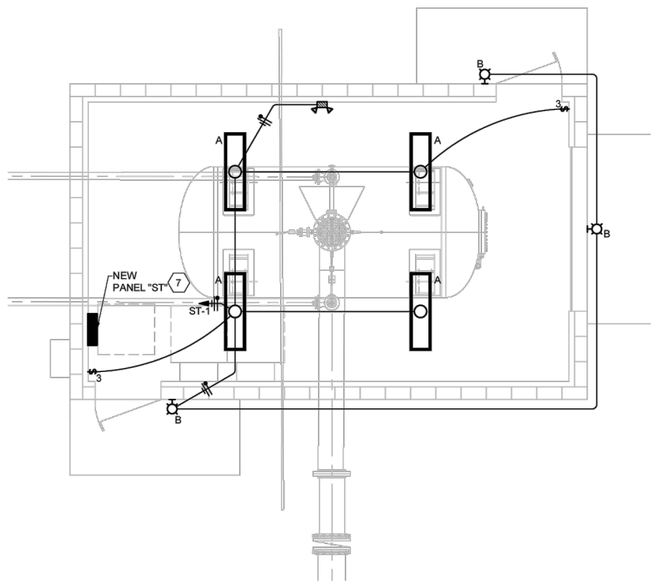
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0 2' 4' 8'

GRAPHIC SCALE

POWER AND SPECIAL SYSTEMS PLAN - SURGE TANK BUILDING



0 2' 4' 8'

GRAPHIC SCALE

LIGHTING PLAN - SURGE TANK BUILDING

GENERAL NOTES

A. ALL RECEPTACLES SHALL BE GFCI PROTECTED, IN A WEATHERPROOF JUNCTION BOX AND MOUNTED AT +48" A.F.F.

B. REFER TO SHEET E-01 FOR LIGHT FIXTURE SCHEDULE.

C. REFER TO SHEET E-51 FOR POWER RISER DIAGRAM, CONTROL WIRING SCHEDULE AND DISCRETE AND ANALOG I/O LIST.

KEYED NOTES

1. PROVIDE AND INSTALL A 2.6 KW, 240 VOLTS, SINGLE PHASE ELECTRIC WALL MOUNTED HEATER WITH INTEGRAL THERMOSTAT. HOMERUN 3#10 Cu IN 3/4" CONDUIT TO CIRCUIT INDICATED. HEATER SHALL BE AS MANUFACTURED BY CHROMALOX #HVH-2-2-1-00-TL-D-0-0-0-S-HVW-1
2. NOT USED.
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-41 THROUGH E-43 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 - SURGE TANK" ON SHEET E-51 FOR SERVICE EQUIPMENT SIZES AND WIRING.
8. NOT USED.
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.

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Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

ELECTRICAL PLANS - SURGE TANK BUILDING
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
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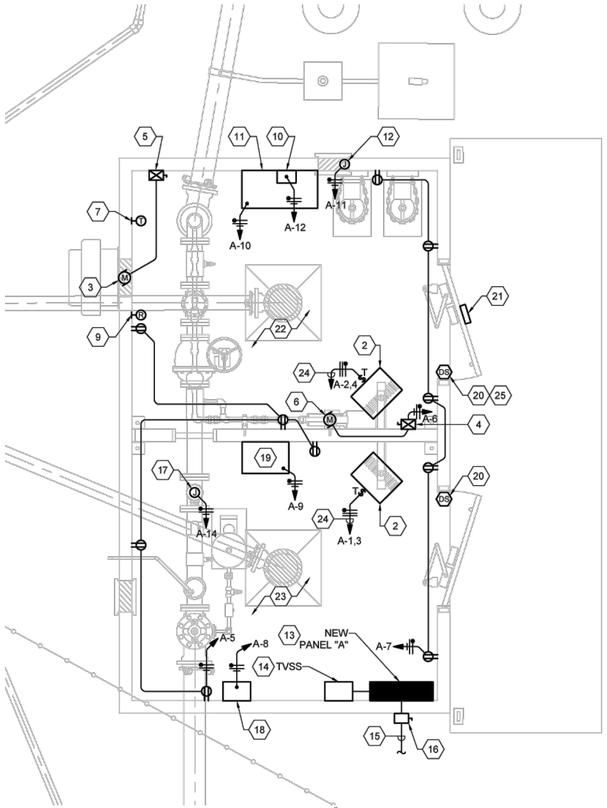
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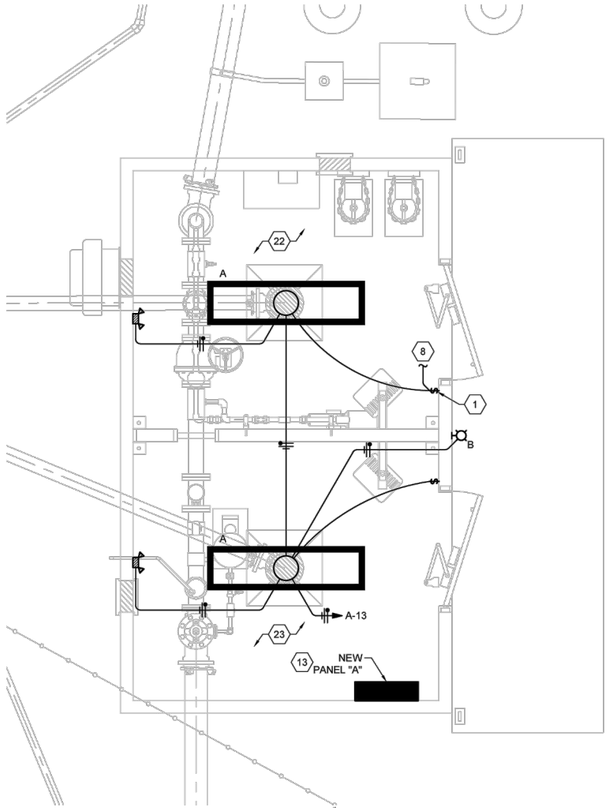
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Project No: 6922268

Sheet: E-11



POWER AND SPECIAL SYSTEMS PLAN - CHLORINATOR BUILDING



LIGHTING PLAN - CHLORINATOR BUILDING

GENERAL NOTES

A. ALL RECEPTACLES SHALL BE GFCI PROTECTED, IN A WEATHERPROOF JUNCTION BOX AND MOUNTED AT +48" A.F.F.

B. REFER TO SHEET E-01 FOR LIGHT FIXTURE SCHEDULE.

KEYED NOTES ⬡

1. PROVIDE AND INSTALL A SINGLE THROW, DOUBLE POLE LIGHTING SWITCH, 120 VOLT. SWITCH SHALL CONTROL THE LIGHTING FIXTURE AND EXHAUST FAN. REFER TO "CHLORINATOR BUILDING EXHAUST FAN CONTROL DIAGRAM" ON SHEET E-61 FOR ADDITIONAL REQUIREMENTS. INSTALL A NEMA 4X POLYESTER RATED COVER.
2. PROVIDE AND INSTALL 4 KW 240 VOLT, SINGLE PHASE ELECTRIC WALL MOUNTED HEATER WITH INTEGRAL THERMOSTAT. AS MANUFACTURED BY CHROMALOX #HVH-04-21-00-TL-D-00-0-0-S-HVW-1. FAN SHALL BE RATED FOR EXTERIOR USE. PROVIDE AND INSTALL FIELD INSTALLATION DISCONNECT KIT.
3. PROVIDE AND INSTALL A THROUGH WALL EXHAUST FAN - 430 CFM, 1/4 HP, 120 VOLTS, WITH BACKDRAFT DAMPER. EXHAUST FAN SHALL BE INTERLOCKED WITH DOOR CONTACT, LIGHT SWITCH, AND THERMOSTAT. REFER TO "CHLORINATOR BUILDING EXHAUST FAN CONTROL DIAGRAM" ON SHEET E-61 FOR ADDITIONAL REQUIREMENTS. MOTOR ENCLOSURE AND WIRING COMPONENTS SHALL BE RATED FOR EXTERIOR USE. MOUNTED AT 18"AFF. EXHAUST FAN SHALL BE CONNECTED TO LIGHTING CIRCUIT IN BUILDING.
4. PROVIDE AND INSTALL A COMBINATION STARTER/NON FUSED DISCONNECT SWITCH. 30 AMPS, 2 POLE, NEMA 4X POLYESTER ENCLOSURE, NEMA SIZE 0, H-A SELECTOR SWITCH. THE CHLORINE PUMP STARTER SHALL BE AUTO CONTROLLED FROM THE VC-22D SYSTEM.
5. PROVIDE AND INSTALL A COMBINATION STARTER/NON FUSED DISCONNECT SWITCH. 30 AMPS, 2 POLE, NEMA 4X POLYESTER ENCLOSURE, NEMA SIZE 0, H-A SELECTOR SWITCH. THE EXHAUST FAN SHALL BE AUTO CONTROLLED AS SHOWN ON "CHLORINATOR BUILDING EXHAUST FAN CONTROL DIAGRAM" ON SHEET E-61.
6. CHLORINE FEED BOOSTER PUMP, 1/3 HP, 120 VOLTS. CONTROLLED FROM THE CHLORINATION SYSTEM. EXTEND CONTROL CONDUCTORS AS REQUIRED BETWEEN THE STARTER AND CHLORINATION SYSTEM.
7. PROVIDE AND INSTALL A 120 VOLT THERMOSTAT FOR THE CONTROL OF EXHAUST FAN. REFER TO "CHLORINATOR BUILDING EXHAUST FAN CONTROL DIAGRAM" ON SHEET E-61 FOR ADDITIONAL REQUIREMENTS.
8. EXTEND CONDUIT AND CONDUCTORS FROM THE EXHAUST FAN STARTER TO THE DOOR SWITCH. REFER TO "CHLORINATOR BUILDING EXHAUST FAN CONTROL DIAGRAM" ON SHEET E-61 FOR ADDITIONAL INFORMATION.
9. CHLORINE GAS ALARM STROBE LIGHT, HEAVY-DUTY, RED IMPACT RESISTANT LENS, 120 VAC, NEMA 4 X ENCLOSURE, WALL BRACKET. ALARM STROBE SHALL BE VISIBLE FROM VIEW WINDOW IN CHLORINE ROOM DOOR. THE CHLORINE GAS DETECTOR SHALL ACTIVATE THE STROBE AT THE GAS ALARM SET POINT. PROVIDE AN INTERPOSING RELAY ON CHLORINE GAS DETECTOR ALARM OUTPUT. EXTEND POWER TO INTERPOSING RELAY AND STROBE FROM CHLORINE GAS DETECTOR AT 120 VAC. PROVIDE WITH CHLORINE SYSTEM. EXTEND CONDUIT AND CONDUCTORS FROM STROBE LIGHT LOCATION TO CONTROL PANEL. TERMINATE PER EQUIPMENT MANUFACTURER'S RECOMMENDATION. STROBE BEACON # 105STR-H5-120V-60HZ.
10. CHLORINE GAS DETECTOR, SIEMANS, WITH INTEGRAL ALARM HORN AND LED INDICATORS, SENSOR AUTO TEST FEATURE, AND BATTERY BACKUP, NEMA 4X ENLOSURE. MOUNT GAS DETECTOR/RECEIVER TO WALL AT 6' AFF TO TOP OF PANEL. MOUNT GAS SENSOR/TRANSMITTER 6' AFF ADJACENT TO CHLORINE GAS CYLINDERS, AND WIRE TO DETECTOR/RECEIVER WITH MANUFACTURER PROVIDED SENSOR CABLE. PROVIDE INTERLOCK WITH THE ALARM STROBE TO ACTIVATE ON GAS ALARM. PROVIDE WARNING ALARM AND SENSOR TROUBLE SIGNAL TO PLC. REFER TO SHEET E-22 TERMINATE PER EQUIPMENT MANUFACTURER'S RECOMMENDATION.
11. NON-PROPORTIONAL CHLORINE GAS FLOW CONTROL PANEL. PROVIDE AND IN NEMA 4X, HINGED ENCLOSURE. PROVIDE CONDUIT AND FIELD WIRING TO MOTOR CONTROLLER ACTUATOR. COORDINATE FINAL LOCATION OF EQUIPMENT GENERAL CONTRACTOR PRIOR TO EXTENDING CIRCUITING AND CONTROL CIRCUITS. CONTRACTORS TO SEAL CONDUIT PENETRATIONS.
12. CHLORINE TANK SCALE, WITH DIGITAL DISPLAY, NEMA-4X ENCLOSURE. TERMINATE POWER CIRCUIT TO EQUIPMENT PER MANUFACTURER'S RECOMMENDATION. FORCE FLOW MODEL GR150-2 WITH FORCE FLOW SOLO G2 DIGITAL INDICATOR.
13. NEW PANEL "A". REFER TO "POWER RISER DIAGRAM" ON SHEET E-52 FOR ADDITIONAL REQUIREMENTS.
14. REFER TO "POWER RISER DIAGRAM" ON SHEET E-52 FOR TVSS REQUIREMENTS.
15. EXTEND UNDERGROUND SERVICE FROM THE METER TO THE UTILITY POLE. REFER TO "POWER RISER DIAGRAM" ON SHEET E-52 AND "ELECTRICAL SITE PLAN" ON SHEET ES-01 FOR ADDITIONAL REQUIREMENTS.
16. PROVIDE AND INSTALL A BUILDING MOUNTED SERVICE DISCONNECT SWITCH. REFER TO POWER RISER ON SHEET E-52 FOR ADDITIONAL REQUIREMENTS.
17. FLOW METER. HOMERUN TO CIRCUIT INDICATED. REFER TO CONTROL FLOOR PLAN FOR ADDITIONAL REQUIREMENTS. ELSTER EVO Q4 WITH INTEGRAL TRANSMITTER INSTALL WITH FLOW IN PROPER DIRECTION AS INDICATED.
18. FLOW CONTROL VALVE CONTROLLER CLA-VAL VC-22D. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF EQUIPMENT WITH THE GENERAL CONTRACTOR PRIOR TO THE EXTENSION OF CIRCUIT AND CONTROLS. TERMINATE POWER AND CONTROL CABLING TO CONTROLLER PER EQUIPMENT MANUFACTURERS RECOMMENDATION. PROVIDE AND INSTALL MANUFACTURER'S NEMA 4X HINGED COVER ENCLOSURE
19. PLC/RTU CABINET, NEMA 4X ENCLOSURE. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF EQUIPMENT WITH THE GENERAL PRIOR TO THE EXTENSION OF CIRCUIT AND CONTROLS. TERMINATE POWER AND CONTROL CABLING TO CONTROLLER PER EQUIPMENT MANUFACTURER'S RECOMMENDATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
20. DOOR LIMIT SWITCH WITH ADJUSTABLE LEVER ARM AS MANUFACTURED BY SQUARE D #9007C62B2, ARM #HA1. REFER TO CONTROL DIAGRAM FOR ADDITIONAL REQUIREMENTS.
21. THE CONTRACTOR SHALL PROVIDE AND INSTALL A SIGN SHOWING: "WARNING: FLASHING LIGHT INDICATES TOXIC CHLORINE GAS RELEASE. DO NOT ENTER WITHOUT SCBA GEAR". SIGN SHALL BE RED IN COLOR WITH WHITE 1" LETTERING, MOUNTED BELOW WINDOW.

KEYED NOTES ⬡

22. ALL EXPOSED CONDUIT RUNS WITHIN THE CHLORINATION CHEMICAL SIDE OF THE BUILDING SHALL BE PVC CONDUIT. ALL HANGERS AND FITTINGS SHALL BE PVC COATED. CONDUITS THAT EXIT THE CHEMICAL SIDE OF THE BUILDING SHALL BE PROVIDED WITH A SEAL OFF FITTING AFTER EXITING. ALL EQUIPMENT AND MOTOR ENCLOSURE SHALL BE RATED FOR USE WITHIN A CORROSIVE AGENTS AND WET LOCATION.
23. ALL EXPOSED CONDUIT INSTALLED WITHIN THE CONTROL ROOM SIDE OF THE CHLORINATION BUILDING SHALL BE RIGID STEEL CONDUIT WITH THREADED CONDUIT BODIES. ALL EQUIPMENT ENCLOSURES AND CONDUIT INSTALLATION SHALL BE RATED FOR WET LOCATION.
24. 2#10 THWN Cu AND 1#10 THWN Cu GROUND IN 3/4" CONDUIT.
25. DOOR SWITCH INDICATED SHALL CONTROL EXHAUST FAN LOCATED IN CHLORINATION CHEMICAL SIDE OF THE BUILDING. REFER TO "CHLORINATOR BUILDING EXHAUST FAN CONTROL DIAGRAM" ON SHEET E-61 FOR ADDITIONAL INFORMATION.
26. NEW 120/240V-1Ø METER SOCKER PER NTUA REQUIREMENTS. REFER TO POWER RISER ON SHEET E-52 FOR ADDITIONAL REQUIREMENTS.

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Client: The Navajo Nation
Location: Tse'Tahi & Nahodishgish, NM

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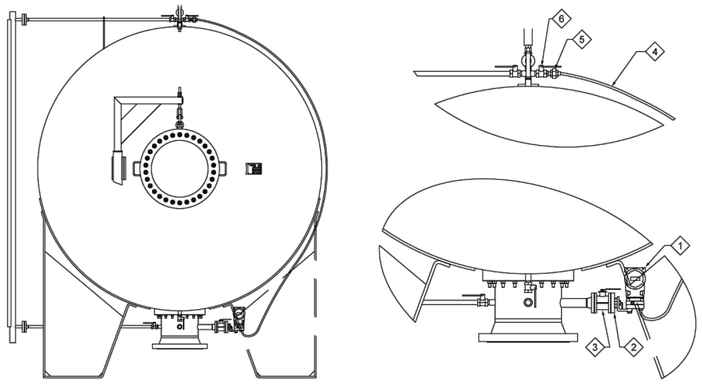
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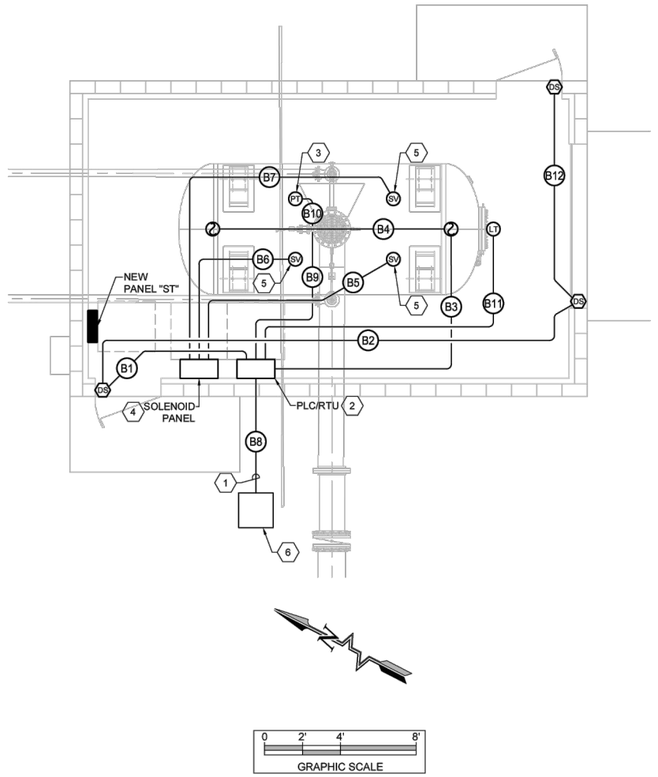
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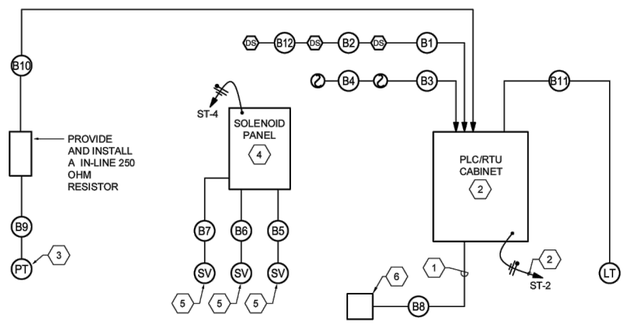
ITEM	DESCRIPTION
1	PRESSURE DIFFERENTIAL TRANSMITTER ROSEMOUNT 3051
2	2" FLANGED CONNECTION HIGH PRESSURE DIAPHRAGM SEAL
3	2" BALL VALVE
4	STAINLESS STEEL FLEXIBLE TUBING TEFLON LINED
5	1/2" NPT UNION FITTING
6	1/2" NPT BALL VALVE

ROSEMOUNT - PRESSURE DIFFERENTIAL TRANSMITTER - CONNECTION DETAIL

SCALE: NONE



CONTROL PLAN - SURGE TANK BUILDING



SURGE TANK BUILDING - CONTROL RISER DIAGRAM

SCALE: NONE

GENERAL NOTES

A. REFER TO SHEET E-51 FOR POWER RISER DIAGRAM, CONTROL WIRING SCHEDULE AND DISCRETE AND ANALOG I/O LIST.

KEYED NOTES

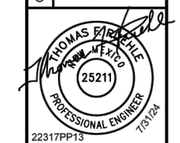
1. 2" CONDUIT WITH LONG SWEEPING BENDS FOR FIBER OPTIC CABLE. COORDINATE EXACT LOCATION WITH ENDPOINT OF FIBER OPTIC CABLE. EXTEND CONDUIT TO PLC/RTU CABINET AND FLUSH IN GRADE QUAZITE BOX. CONDUIT SHALL BE BURIED A MINIMUM OF 36" BELOW FINISHED GRADE. PROVIDE RED WARNING TAPE 12" ABOVE CONDUIT. MAKE ALL REQUIRED CONNECTIONS FOR A COMPLETE AND OPERATIONAL SYSTEM.
2. NEW PLC/FIBER OPTIC TRANSMITTER CABINET. CABINET SHALL BE A NEMA 4X ENCLOSURE. PLC CONFIGURED TO OWNER STANDARDS AND REQUIREMENTS. REFER TO SHEETS E-41 THROUGH E-43 AND SPECIFICATIONS. MOUNT ON WALL ADJACENT TO PLC CABINET. REFER TO CONTROL WIRING SCHEDULE ON SHEET E-51 FOR ADDITIONAL INFORMATION.
3. 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.
4. 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.
5. 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.
6. PROVIDE AND INSTALL FLUSH IN GRADE TRAFFIC RATED QUAZITE BOX FOR FIBER OPTIC CABLE. COORDINATE EXACT LOCATION WITH ENDPOINT OF FIBER OPTIC CABLE.

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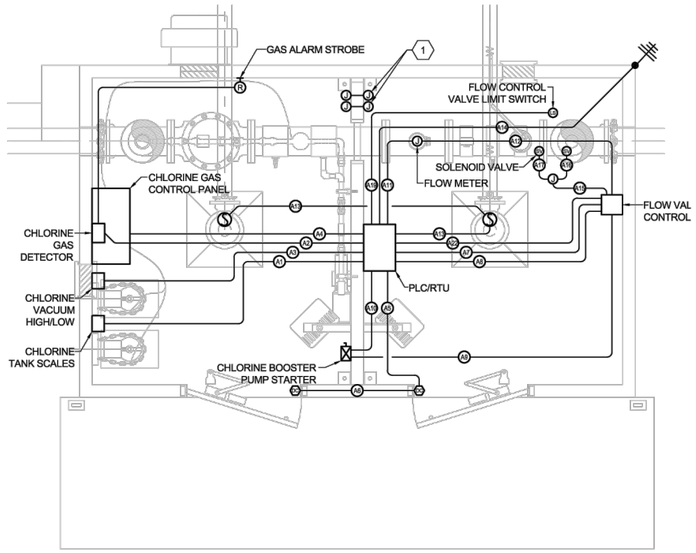
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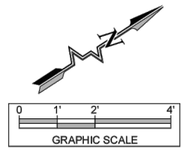
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CONTROL PLAN - CHLORINATOR BUILDING

Control Wiring Schedule

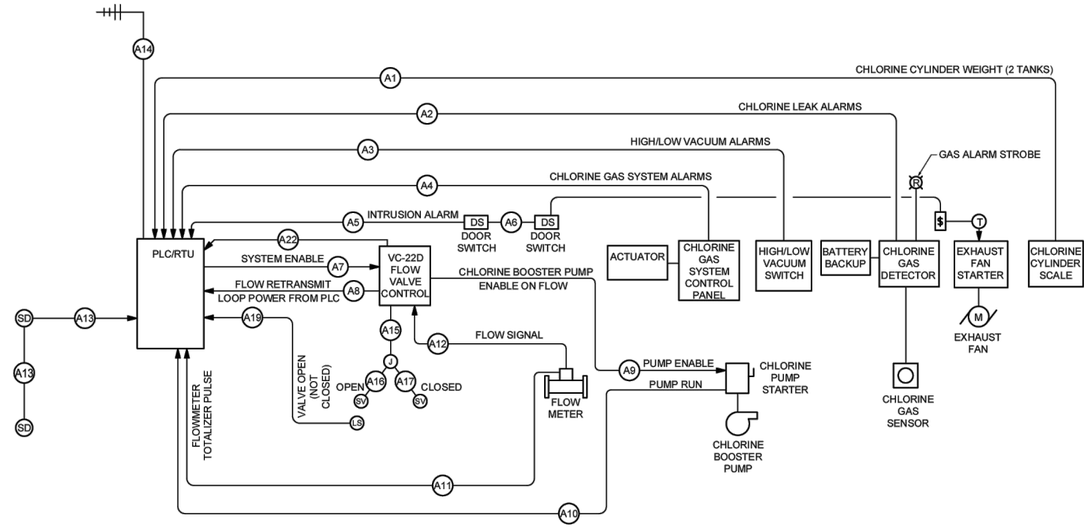
TAG #	FED FROM	TO	WIRE REQUIRMENTS
A1	Chlorine Scale	PLC Panel	2-2/C #18 Twisted Pair Shielded Cable - 1/2" Conduit
A2	Chlorine Gas Detector	PLC Panel	6 # 14, 1 # 14 Gnd - 1/2" Conduit
A3	High/Low Vacuum Switch	PLC Panel	6 # 14, 1 # 14 Gnd - 1/2" Conduit
A4	Chlorine Gas Control Panel	PLC Panel	4 # 14, 1 # 14 Gnd - 1/2" Conduit
A5	Door Switch	PLC Panel	2 # 14, 1 # 14 Gnd - 1/2" Conduit
A6	Door Switch	Door Switch	2 # 14, 1 # 14 Gnd - 1/2" Conduit
A7	PLC Panel	Flow Valve Control	2-2/C #18 Twisted Pair Shielded Cable - 1/2" Conduit
A8	Flow Valve Control	PLC Panel	2 # 14, 1 # 14 Gnd - 1/2" Conduit
A9	Flow Valve Control	Chlorine Booster Pump Starter	2 # 14, 1 # 14 Gnd - 1/2" Conduit
A10	Chlorine Booster Pump Starter	PLC Panel	2 # 14, 1 # 14 Gnd - 1/2" Conduit
A11	Flow Meter	PLC Panel	2 # 14, 1 # 14 Gnd - 1/2" Conduit
A12	Flow Meter	Flow Valve Controller	2-2/C #18 Twisted Pair Shielded Cable - 1/2" Conduit
A13	Smoke Detectors	PLC	2 #14, 1 #14 Gnd - 1/2" Conduit
A14	Radio Transmitter Unit (RTU)	YAGI Antenna	1" Conduit with Radio Cable
A15	Flow Valve Control	Solenoid Valves J-box	3 # 14, 1 # 14 Gnd - 1/2" Conduit
A16	Solenoid Valve J-box	Solenoid Valve Open	2 # 14, 1 # 14 Gnd - 1/2" Conduit
A17	Solenoid Valve J-box	Solenoid Valve Closed	2 # 14, 1 # 14 Gnd - 1/2" Conduit
A18	not used	not used	
A19	Flow Control Valve Limit Switch	PLC Panel	2 # 14, 1 # 14 Gnd - 1/2" Conduit
A20	Pressure Transducer	PLC/RTU	4#14 - 1" Conduit
A21	not used	not used	not used
A22	VC-22D	PLC/RTU	1 - 2/C #18 Twisted Pair Shielded Cable - 1/2" Conduit.

GENERAL NOTES

A. REFER TO SHEET E-52 FOR DISCRETE AND ANALOG I/O LIST.

KEYED NOTES

1. PROVIDE (2) 1" CONDUIT SLEEVES THROUGH WALL WITH J-BOXES ON EACH SIDE OF WALL AND FIRE SEAL GAS TIGHT. ALL CONTROL CABLES AND WIRING BETWEEN ROOMS SHALL BE ROUTED THROUGH SLEEVES. ONE CONDUIT FOR ANALOG CABLES THE OTHER FOR DIGITAL CABLES. SIZE J-BOXES PER NUMBER OF CONDUITS TERMINATIONS.
2. 1" CONDUIT BURIED 36" BELOW FINISHED GRADE WITH RED WARNING TAPE BURIED 12" ABOVE FINISHED GRADE. CONDUIT TO HAVE 4#14 THWN Cu (ANALOG POSITIVE, ANALOG NEGATIVE, POWER POSITIVE AND POWER NEGATIVE). MAKE ALL REQUIRED CONNECTIONS FOR A COMPLETE AND OPERATIONAL SYSTEM. REFER TO SHEET ES-02 FOR CONTINUATION OF CONDUIT.



NAHODISHGISH CHLORINATION BUILDING CONTROL RISER DIAGRAM

SCALE: NONE

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Revision | Date | Description | By | Ck'd

Client: The Navajo Nation
Location: Tse'ii'ahi & Nahodishgish, NM

ELECTRICAL PLANS - CHLORINATOR BUILDING
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

THOMAS RAY KOHLHEPP — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 7/31/24

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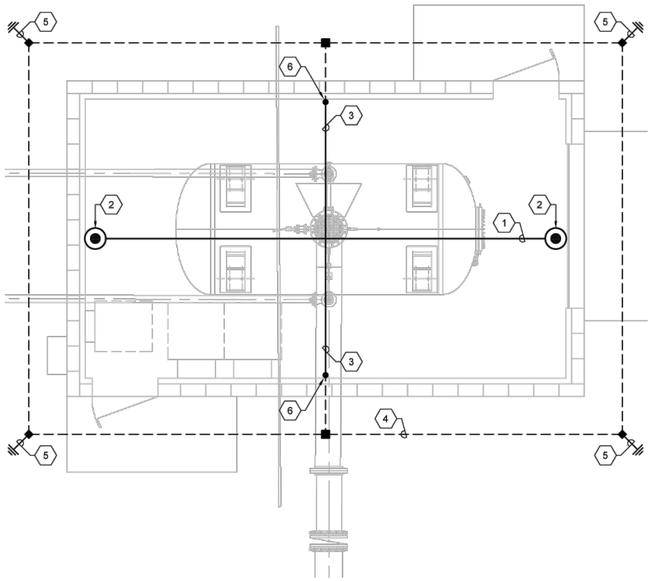
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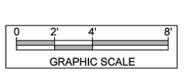
Project No: 6922268

Sheet: E-22

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LIGHTNING PROTECTION PLAN - SURGE TANK BUILDING

7

GENERAL NOTES

A. REFER TO LIGHTNING PROTECTION SPECIFICATION SECTION 26 60 10 FOR ADDITIONAL INFORMATION.

B. CONTRACTOR SHALL PROVIDE LIGHTNING PROTECTION SYSTEM DRAWING BEFORE INSTALLATION, INCLUDING GROUND RODS AND GROUNDING CABLES (BELOW GROUND AND ABOVE ROOF)

C. AFTER THE SYSTEM HAS BEEN INSTALLED, THE UL LISTED INSTALLER SHALL COMPLETE AND SUBMIT THE CERTIFICATION APPLICATION.

D. THE UL LISTED INSTALLER SHALL FORWARD THE CERTIFICATION TO THE OWNER AND PROVIDE PROOF THAT THE LIGHTNING PROTECTION SYSTEM IS IN COMPLIANCE WITH UL, NFPA, OR U.S. GOVERNMENT STANDARDS.

E. GROUND ROD AND BUILDING COUNTER POISE DEPTH SHALL BE 24" BELOW GRADE.

F. ALL GROUNDING WIRING SHALL BE PROPERLY CONNECTED PER SPECS SECTION 26 45 00.

G. THE CONTRACTOR SHALL SELECT AN ADHESIVE FOR THE AIR TERMINALS THAT MANUFACTURED RECOMMENDED AND IS COMPATIBLE FOR USE WITH THE ROOFING SYSTEM.

H. ALL WIRING CONNECTIONS, AIR TERMINAL BASES, CLAMPS, AND PLATES THAT COME IN CONTACT WITH THE ROOFING MATERIAL SHALL BE INSTALLED USING AN APPROVED ADHESIVE. THE LIGHTNING PROTECTION SYSTEM INSTALLER SHALL NOT CREATE ANY PENETRATION IN THE ROOF WHEN INSTALLING THEIR EQUIPMENT.

I. ALL WIRING CONNECTORS, AIR TERMINALS, CLAMPS, ETC SHALL BE UL APPROVED FOR A LIGHTNING PROTECTION SYSTEM.

KEYED NOTES ⬡

1. LIGHTNING PROTECTION CLASS 1 ROOF-MOUNTED LATERAL CONDUCTOR AND MOUNTING HARDWARE. LATERAL CONDUCTOR SHALL BE ALUMINUM.
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 2/0 BARE COPPER DOWN-CONDUCTOR IN 1" CONDUIT.
4. LIGHTNING PROTECTION COUNTERPOISE SYSTEM. ALL CONNECTIONS SHALL BE EXO-THERMIC WELDS.
5. GROUND ROD. 3/4" X 10'-0" GROUND ROD.
6. TRANSITION FROM ALUMINUM CONDUCTOR TO COPPER CONDUCTOR USING A LISTED COPPER TO ALUMINUM WIRE CONNECTOR.
7. LIGHTNING PROTECTION SYSTEM LAYOUT ON THIS PLAN IS FOR BIDDING PURPOSES ONLY. INSTALLATION TO BE PER NFPA-780, U.S. GOVERNMENT STANDARDS AND SPECIFICATIONS SECTION 26 60 10. 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
Location: Tse'Tahi & Nahodishgish, NM

LIGHTNING PROTECTION PLAN - SURGE TANK BUILDING
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

THOMAS R. GRIFFITH — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 7/31/24

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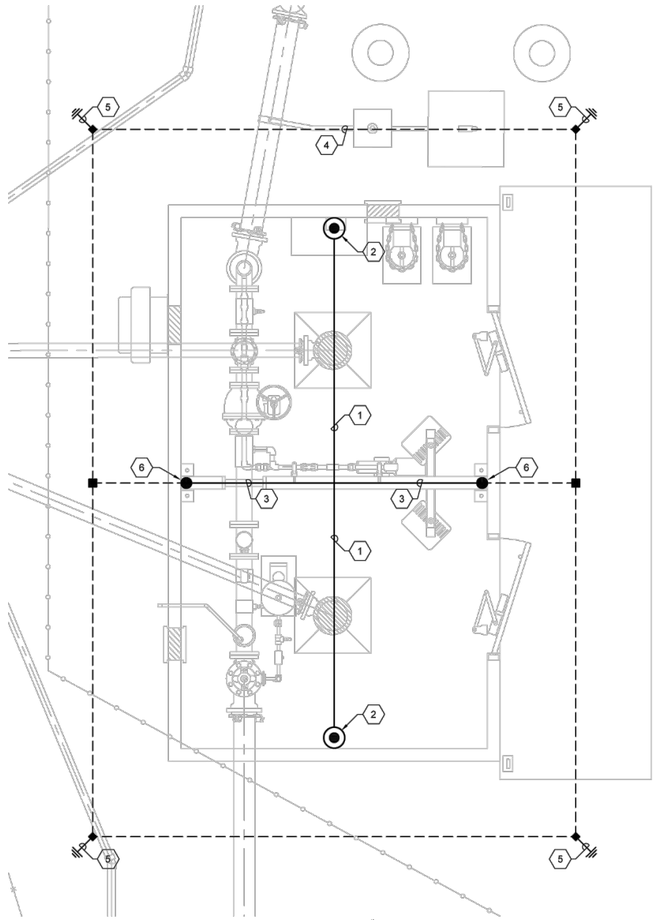
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Project No: 6922268

Sheet: E-31



LIGHTNING PROTECTION PLAN - CHLORINATOR BUILDING

7

GENERAL NOTES

A. REFER TO LIGHTNING PROTECTION SPECIFICATION SECTION 26 60 10 FOR ADDITIONAL INFORMATION.

B. CONTRACTOR SHALL PROVIDE LIGHTNING PROTECTION SYSTEM DRAWING BEFORE INSTALLATION, INCLUDING GROUND RODS AND GROUNDING CABLES (BELOW GROUND AND ABOVE ROOF)

C. AFTER THE SYSTEM HAS BEEN INSTALLED, THE UL LISTED INSTALLER SHALL COMPLETE AND SUBMIT THE CERTIFICATION APPLICATION.

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KEYED NOTES ⬡

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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
Location: Tse'ii'ahi & Nahodishgish, NM

LIGHTNING PROTECTION PLAN - CHLORINATOR BLDG
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

THOMAS R. HAILE — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 7/31/24

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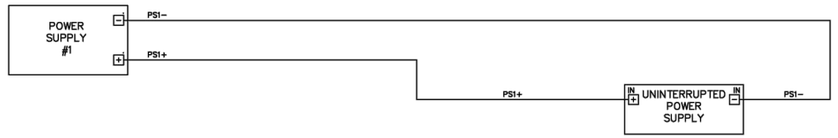
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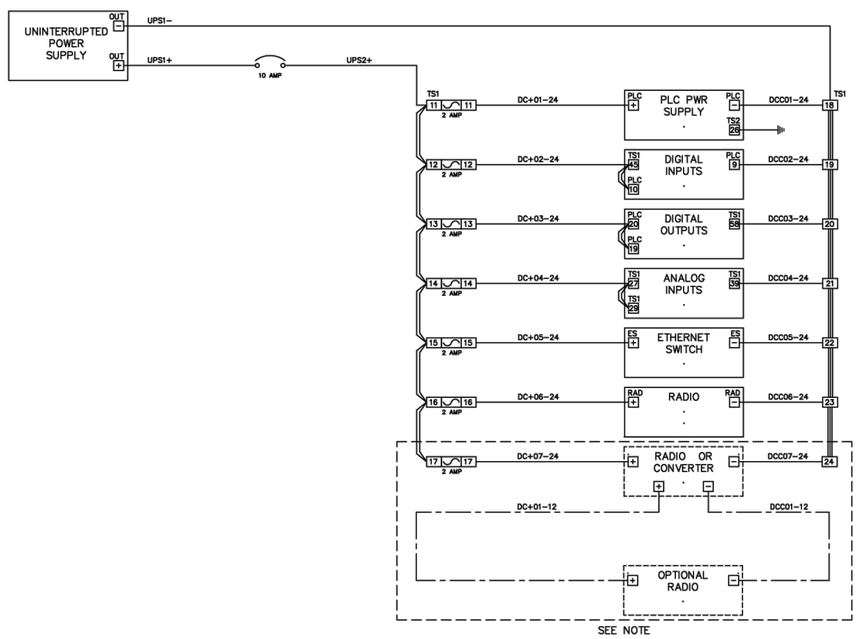
Project No: 6922268

Sheet: E-32

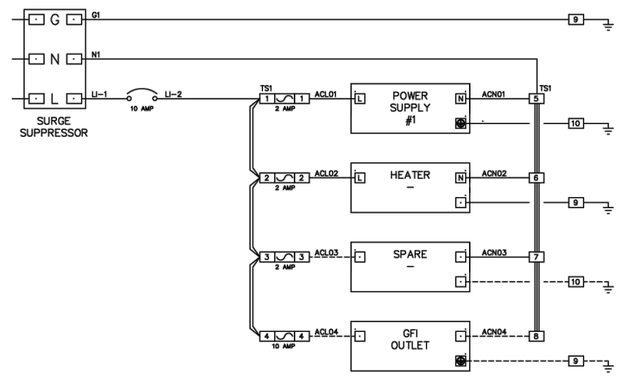
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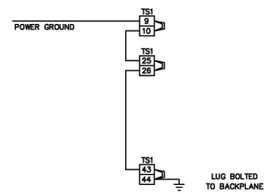
24VDC DISTRIBUTION (UPS)



120VAC DISTRIBUTION



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

W.O.#

SHEET 4 OF 6

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Client: The Navajo Nation
Location: Tse'Tahi & Nahodishgish, NM

NTUA DIAGRAM
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

THOMAS PAUL MILLER — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 7/31/24

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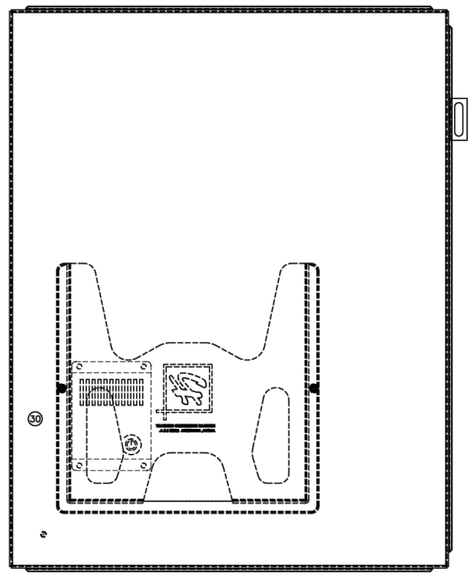
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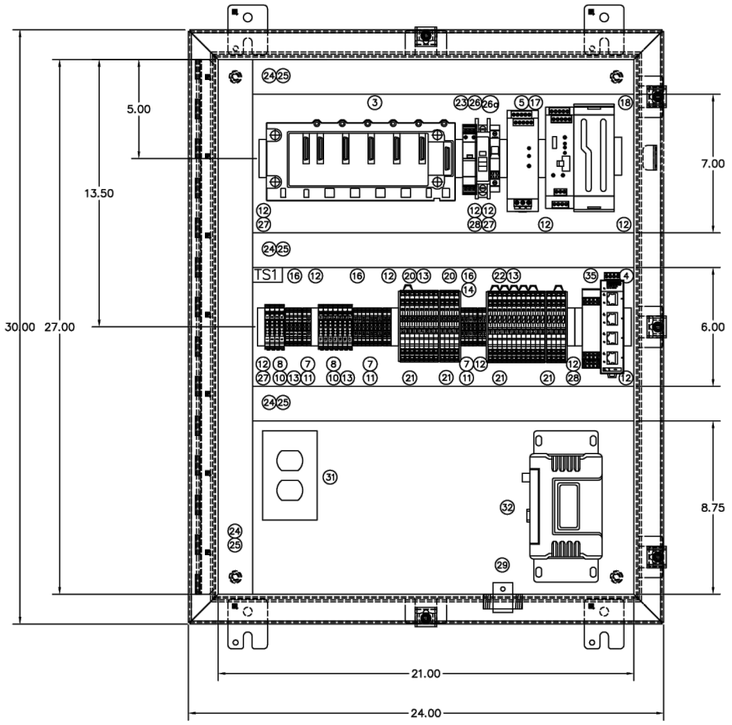
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Project No: 6922268

Sheet: E-41





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 BLOCK - SCREW CLAMP	SCHNEIDER ELECTRIC
3g*	1	BMXNOM0200	SERIAL LINK MODULE	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 #2906729	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	WIRING 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-12-24DC/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

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THOMAS R. MILLER, NEW MEXICO, 25211, PROFESSIONAL ENGINEER, 7/31/24

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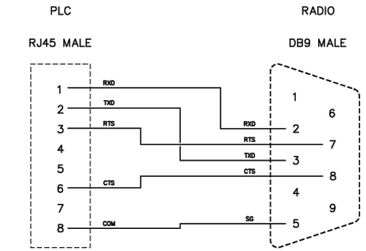
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Project No: 6922268

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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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McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

THOMAS F. MILLER — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 7/31/24

22317PP13

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

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Date: 7-3-2024

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

Project No: 6922268

Sheet: E-43

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	221	1	421		2	200	EQP	PLC/RTU CABINET	20A-1P
20A-1P	RECEPTACLES	REC	540	3		740	4	200	EQP	SOLENOID PANEL	20A-1P
20A-1P	RECEPTACLES	REC	360	5	1190		6	830	MECH	EXHAUST FAN	20A-1P
20A-1P	RECEPTACLES	REC	540	7		640	8	100	EQP	SMOKE DETECTORS	20A-1P
20A-2P	UNIT HEATER	LMECH	1370	9	2740		10	1370	MECH	UNIT HEATER	20A-2P
		LMECH	1370	11		2740	12	1370	MECH		
20A-1P	SPARE			13			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): 4,351 | 4,120
Total Phase Loads (Amps): 36.3 | 34.3
Total Connected Loads (kVA): 8.5

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"

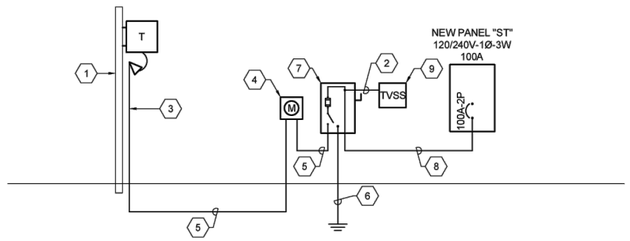
	Connected (kVA) by Type:		Estimated Demand (kVA) by Type:			
LTG	Lighting	0.2	Lighting at 125% (kVA)	0.3	Total Estimated Demand (kVA)	9.2
REC	Receptacles	1.4	Receptacles	1.4	Amps at 120/240V-1 Phase (Amps)	38.4
			10kVA at 100% (kVA)	1.4	Panel Ampacity (Rating)	100
			Rest at 50% (kVA)	0.0		
EQP	Equipment	0.5	Eqp at 100% (kVA)	0.5	Spare Capacity	61.6%
LMECH	Largest Mech	2.7	Largest at 125% (kVA)	3.4		
MECH	Mechanical	3.6	Rest at 100% (kVA)	3.6		

Control Wiring Schedule - Surge Tank Building

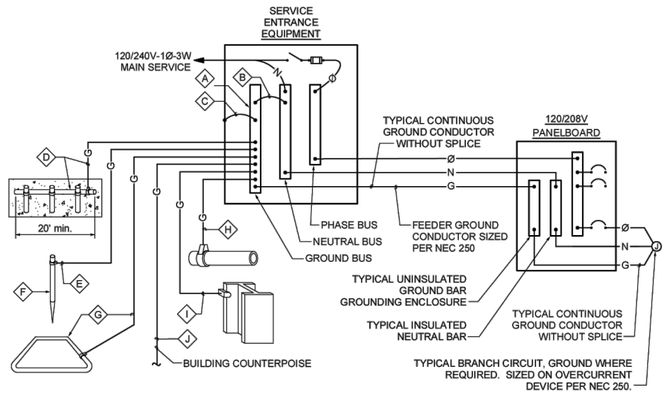
TAG #	FED FROM	TO	WIRE REQUIRMENTS
B1	Door Switch	PLC Panel	2 # 14, 1 # 14 Gnd - 1/2" Conduit
B2	Door Switch	Door Switch	2 # 14, 1 # 14 Gnd - 1/2" Conduit
B3	Smoke Detector	PLC Panel	2 # 14, 1 # 14 Gnd - 1/2" Conduit
B4	Smoke Detector	Smoke Detector	2 # 14, 1 # 14 Gnd - 1/2" Conduit
B5	Solenoid Valve	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
	Surge Bldg. Intrusion Man Doors		I1	DI		Yes	Optic Cable. Relays info to and from
	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 AND TRANSFORMER.
2. 4#8 THWN Cu IN 1" CONDUIT BETWEEN TVSS AND DISCONNECT SWITCH.
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. REFER TO "ELECTRICAL SITE PLAN" ON SHEET ES-11 FOR LOCATION OF METER.
5. 3#2 THWN Cu 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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Revision	Date	Description	By	Ck'd

Client: The Navajo Nation | Location: Tselʼahí & Nahodishgish, NM

POWER RISER DIAGRAM AND DETAILS - SURGE TANK
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

THOMAS FRANKLIN MILLER — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 7/31/24

22317PP13

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DISCRETE & ANALOG I/O LIST - REFER TO PLANS & SPECIFICATIONS FOR SEQUENCE OF OPERATIONS

Site Name	I/O Name	Tag	Point	Type	Local	SCADA	Notes
Nahodishgish Chlorination Building							
	Intrusion Alarm Control Room		I1	DI		Yes	
	Intrusion Alarm Chlorine Room		I2	DI		Yes	
	Smoke Detector		I3	DI		Yes	
	Chlorine Leak Warning		I4	DI		Yes	
	Chlorine Leak Alarm		I5	DI		Yes	
	Chlorine Detector Fault		I6	DI		Yes	
	Chlorine High Vacuum Alarm		I7	DI		Yes	
	Chlorine Low Vacuum Alarm		I8	DI		Yes	
	Chlorination System Alarm		I9	DI		Yes	
	Chlorine Booster Pump Running		I10	DI		Yes	
	Flow Valve Open		I11	DI		Yes	
	Low Temperature Alarm		I12	DI		Yes	
	Manual Flow Control Valve Override		I13	DO		Yes	SCADA override tank level function and close control valve
			I14	DI			
			I15	DI			
			I16	DI			
	Flow Meter (Totalizer Pulses)		PI1	DI		Yes	SCADA shows totalized volume of water (gallons)
			PI2	DI			
	Flow Enable		DO1	DO	Yes		Interpose Relay From Distribution Tank Level
			DO2	DO			Interpose Relay
	Flow Meter (Flow Rate)		AI1	AI		Yes	SCADA shows flow rate (gpm)
	Chlorine Bottle #1 Weight		AI2	AI		Yes	
	Chlorine Bottle #2 Weight		AI3	AI		Yes	
	Distribution Tank Pressure Transducer		AI4	AI		Yes	
	Regulator Tanks Pressure Transducer		AI5	AI		Yes	
			AI6	AI			

PANEL / LOAD SCHEDULE - NEW PANELBOARD "A"

LOCATION: **Chlorination Building** *VOLTAGE:* **120/240V-1Ph, 3W** *AMPACITY:* **100 AMPERE** *Main:* **100A/2P MCB**
FED FROM: **100A-2P Service Disconnect** *ENCLOSURE:* **NEMA 4X** *MOUNTING:* **SURFACE** *AIC:* **10,000**

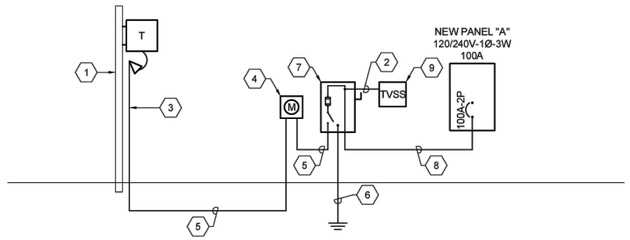
BKR SIZE	DESCRIPTION	DEMAND CODE	LOAD (VA)	Ckt #	LOAD (VA) PHASE A	LOAD (VA) PHASE B	Ckt #	LOAD (VA)	DEMAND CODE	DESCRIPTION	BKR SIZE
30A-2P	UNIT HEATER	LMECH	2000	1	4000		2	2000	MECH	UNIT HEATER	30A-2P
		LMECH	2000	3		4000	4	2000	MECH		
20A-1P	RECEPTACLES	REC	900	5	2076		6	1176	MECH	CHLORINE PUMP	20A-1P
20A-1P	RECEPTACLES	REC	900	7		1150	8	250	EQP	VALVE CONTROL VC-22D	20A-1P
20A-1P	PLC PANEL	EQP	500	9	700		10	200	EQP	CHLORINE PANEL	20A-1P
20A-1P	CHLORINE SCALE	EQP	100	11		200	12	100	EQP	CHLORINE DETECTOR	20A-1P
20A-1P	LIGHTING AND EXHAUST FAN	LTG	788	13	988		14	200	EQP	FLOW METER	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
20A-1P	SPARE			25			26			SPARE	20A-1P
20A-1P	SPARE			27			28			SPARE	20A-1P
20A-1P	SPARE			30			30			SPARE	20A-1P

Total Phase Loads (VA):	7,764	5,350
Total Phase Loads (Amps):	64.7	44.6
Total Connected Loads (kVA):	13.1	

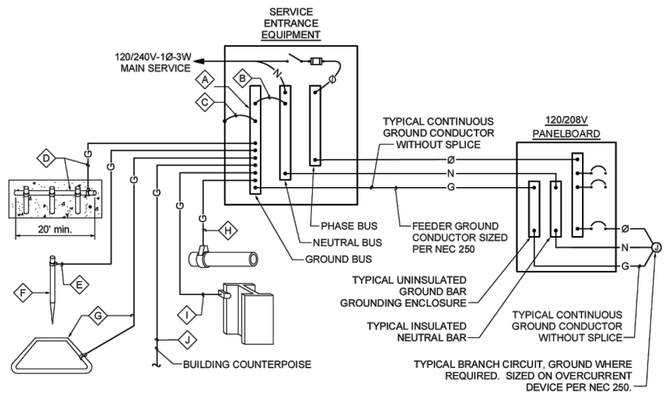
Notes:
1. New Panelboard
2. 30-Circuit, Lockable Enclosure
3. Copper Neutral and Ground Bus Bars
4. Door-in-Door Enclosure.

LOAD CALCULATIONS

Connected (kVA) by Type:			Estimated Demand (kVA) by Load Type:			
LTG	Lighting:	0.8	Lighting at 125% (kVA):	1.0	Total Estimated Demand (kVA):	14.3
REC	Receptacles:	1.8	Receptacles:	1.8	Amps at 240/120V-1 Phase (Amps):	59.6
			10kVA at 100% (kVA):	1.8	Panel Ampacity (Rating):	100
			Rest at 50% (kVA):	0.0		
EQP	Equipment:	1.4	Eqp at 100% (kVA):	1.4	Spare Capacity:	40.4%
LMECH	Largest Mech:	4.0	Largest at 125% (kVA):	5.0		
MECH	Mechanical:	5.2	Rest at 100% (kVA):	5.2		



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.

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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 AND TRANSFORMER.
2. 4#8 THWN Cu IN 1" CONDUIT BETWEEN TVSS AND DISCONNECT SWITCH.
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. REFER TO "ELECTRICAL SITE PLAN" ON SHEET ES-11 FOR LOCATION OF METER.
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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.

Revision	Date	Description	By	Ck'd

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Client: The Navajo Nation Location: Tse'Ii'ahi & Nahodishgish, NM

POWER RISER DIAGRAM AND DETAILS-CHLORINATION
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

THOMAS R. PRICHARD — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 7/31/24

22317PP13

Designed	Drawn	Checked
TRG/rhp	TRG/rhp	TRG/ltr

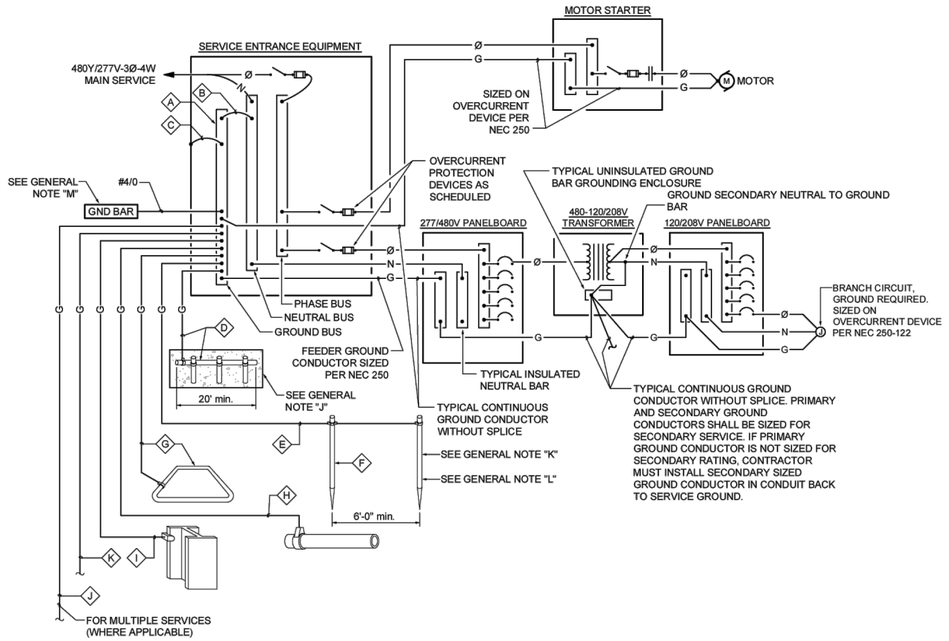
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E-mail: theresponsegroup@trginc.net

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GROUNDING SYSTEM DIAGRAM 480Y/277V

NOT TO SCALE

GROUNDING SYSTEM GENERAL NOTES 2018

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

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

C. ITEM Ⓓ, 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 AND UNDERGROUND CONNECTIONS 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.

J. IF A 20'-0" LONG (MINIMUM) CONCRETE ENCASED ELECTRODE IS NOT AVAILABLE, CONTRACTOR MAY INSTALL A 20'-0" (MINIMUM) UFER GROUND 30" BELOW GRADE WITH AT LEAST TWO GROUND RODS (ONE AT EACH END).

K. PROVIDE SECOND GROUND ROD AT LEAST 6'-0" FROM INITIAL GROUND ROD.

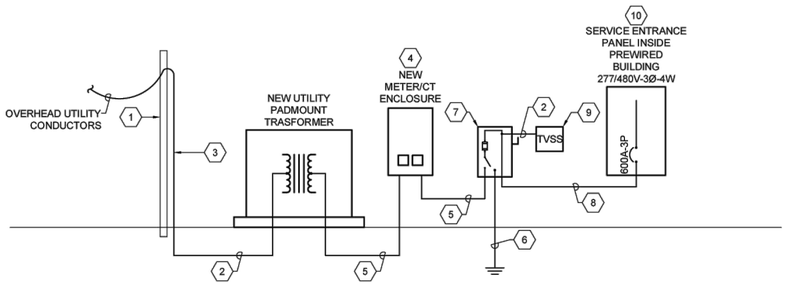
L. WHEN INDICATED ON DRAWINGS, PROVIDE AND INSTALL HORIZONTAL CHEMICAL GROUND ELECTRODE KIT. 10' COPPER ELECTRODE LENGTH, FACTORY ATTACHED 6' #4/0 COPPER PIGTAIL, AND HIGH DENSITY POLYETHYLENE INSPECTION WELL & COVER. ERICO #ECRH102GBU OR APPROVED EQUAL. CONTRACTOR SHALL USE MANUFACTURER RECOMMENDED ELECTROLYTIC SALTS, BENTONITE CLAY BACKFILL MATERIAL, AND GROUND ENHANCEMENT MATERIAL (GEM). CONTRACTOR SHALL INSTALL PER MANUFACTURERS RECOMMENDATIONS. CONTRACTOR SHALL MAINTAIN 6'-0" SEPARATION (MINIMUM) BETWEEN GROUNDING ELECTRODES. INSPECTION WELL INSTALLED FLUSH WITH FINAL GRADE.

M. PROVIDE AND INSTALL 1/4" X 4" X 18" COPPER MAIN GROUNDING BUS BAR WITH BRACKETS AND INSULATORS. CONTRACTOR SHALL COORDINATE PRE-DRILLED (12)-1/4" HOLES REQUIREMENTS WITH PNM (OWNER). ERICO OR APPROVED EQUAL. EXTEND 1#4/0 CU GROUNDING CONDUCTOR TO MAIN GROUND. COORDINATE EXACT LOCATION AND ROUTING IN THE FIELD. CONTRACTOR SHALL MAKE ALL FINAL TERMINATIONS AS REQUIRED.

GROUNDING SCHEDULE

	Ⓐ FACTORY INSTALLED GROUND BUS BAR	Ⓑ INTEGRATED BUS BAR MAIN BOND JUMPER	Ⓒ INTEGRATED BUS BAR CASE BOND JUMPER	Ⓓ CONCRETE ENCASED ELECTRODE (UFER)	Ⓔ GROUNDING ELECTRODE CONDUCTOR TO ROD, PIPE OR PLATE	Ⓕ CU or CU-CLAD STEEL GROUND ROD	Ⓖ COPPER GROUND RING CONDUCTOR	Ⓗ METALLIC PIPING BONDING CONDUCTOR	Ⓘ BUILDING STEEL BONDING CONDUCTOR	Ⓙ MULTIPLE SERVICE BONDING CONDUCTOR	Ⓚ TELEPHONE SYSTEM GROUNDING CONDUCTOR
CODE REFERENCE AMPACITY		N.E.C. 250.102(C)	N.E.C. 250.102(C)	N.E.C. 250.52(A)(3) 250.66(B)	N.E.C. 250.52(A)(5) 250.52(A)(7) 250.66(A)	N.E.C. 250.52(A)(5)	N.E.C. 250.52(A)(4) 250.66(C)	N.E.C. 250.52(A)(1) 250.66	N.E.C. 250.50(A)(2) 250.66	N.E.C. 250.66	.
200 AMP		#4	#4	#4	#6	5/8"x8'	#2	#4	#4	#4	#6
225 AMP		#2	#2	#4	#6	5/8"x8'	#2	#2	#2	#2	#6
400 AMP		#1/0	#1/0	#4	#6	5/8"x8'	#1/0	#1/0	#1/0	#1/0	#6
600 AMP		#2/0	#2/0	#4	#6	5/8"x8'	#2/0	#2/0	#2/0	#2/0	#6

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



POWER RISER DIAGRAM - PUMPING BUILDING

LOAD SUMMARY - SERVICE DISC

DESCRIPTION		
600A SERVICE FUSIBLE DISCONNECT SWITCH ESTIMATED DEMAND PER NEC 220		
PUMPS (3) AT 150 HP (ONLY 2 RUN AT A TIME)	299.2	KVA
LIGHTING AT 2W/SQFT (400 SQFT) (0.8 kVA CONN) AT 125% (CONTINUOUS LOAD)	1.0	KVA
RECEPTACLES AT 5W/SQFT (400 SQFT)	2.0	KVA
ELECTRIC HEAT	4.0	KVA
TOTAL ESTIMATED LOAD:	306.2	KVA
368 AMPERES AT 480Y/277V-3Ø-4W		
MINIMUM SERVICE CAPACITY =125% x TOTAL ESTIMATED LOAD	382.8	KVA
460 AMPERES AT 480Y/277V-3Ø-4W		
∴ MINIMUM RECOMMENDED SERVICE SIZE =	600	AMPS

KEYED NOTES

1. PROVIDE AND INSTALL A 25'-0" SOUTHERN PINE CLASS 4 WOOD POLE FOR THE INSTALLATION OF RISER.
2. 3" CONDUIT BURIED A MINIMUM OF 36" (OR PER LOCAL UTILITY REQUIREMENTS) WITH RED WARNING TAPE BURIED 12" ABOVE CONDUIT FOR PRIMARY CONDUCTORS. COORDINATE EXACT REQUIREMENTS WITH NTUA PRIOR TO WORK BEING PERFORMED. PROVIDE AND INSTALL PULLTAPE IN CONDUIT.
3. PROVIDE A 3" RIGID METAL CONDUIT ON POLE RISER WITH CONDUCTORS. COORDINATE INSTALLATION WITH UTILITY COMPANY PRIOR TO PROCEEDING WITH INSTALLATION OF CONDUITS
4. PROVIDE AND INSTALL A 480 VOLT CT/METER ENCLOSURE PER THE LOCAL UTILITY COMPANY REQUIREMENTS. REFER TO "ELECTRICAL SITE PLAN" ON SHEET ES-11 FOR LOCATION.
5. 2 PARALLEL RUNS OF 4#350 THWN Cu IN 3" CONDUIT OR 2 PARALLEL RUNS OF 4#500 XHHW Al IN 3 1/2" CONDUIT.
6. REFER TO "GROUNDING SYSTEM DIAGRAM - 277/480 VOLT SYSTEM" ON THIS SHEET FOR ADDITIONAL INFORMATION.
7. PROVIDE AND INSTALL A FUSIBLE DISCONNECT SWITCH, 600 AMPS, 600 VOLTS, 3 POLE, SOLID NEUTRAL AND GROUND LUG, NEMA 3R ENCLOSURE. FUSE AT 600 AMPS. PROVIDE A MINIMUM WORKING CLEARANCE OF 3'-0" WIDE IN FRONT OF DISCONNECT SWITCH PER NEC.
8. 2 PARALLEL RUNS OF 4#350 THWN Cu AND 1#1 THWN Cu GROUND IN 3" CONDUIT OR 2 PARALLEL RUNS OF 4#500 XHHW Al AND 1#1/0 XHHW Al GROUND IN 3 1/2" CONDUIT.
9. PROVIDE AND INSTALL A TRANSIENT VOLTAGE SURGE SUPPRESSION DEVICE. THE TVSS SHALL BE MANUFACTURED BY RAYCAP #277-3Y-M3-4-06-C-H OR APPROVED EQUAL, NEMA 3R ENCLOSURE.
10. MAKE ALL REQUIRED CONNECTIONS FOR POWER ENTRANCE TO PREWIRED BUILDING. COORDINATE EXACT LOCATION OF EQUIPMENT WITH OWNER PRIOR TO INSTALLATION.

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Client: The Navajo Nation Location: Tse'ii'ahi & Nahodishgish, NM

POWER RISER DIAGRAM AND DETAILS - PUMPING BLDG
NAVAJO GALLUP WATER SUPPLY PROJECT
BEACON BISTI N9 - REACH 10.3
McKINLEY COUNTY, NEW MEXICO
SECTION 20, T. 18 N., R. 14 W.

THOMAS F. MILLER — NEW MEXICO — 25211 — PROFESSIONAL ENGINEER — 7/31/24

22317PP13

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TRG/rhp	TRG/rhp	TRG/tfr

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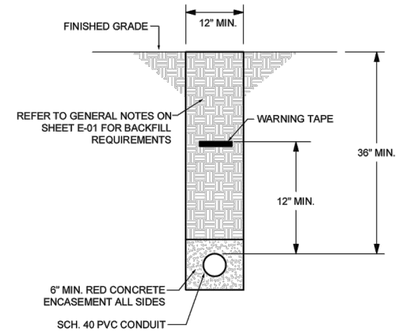
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Date: 7-3-2024

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

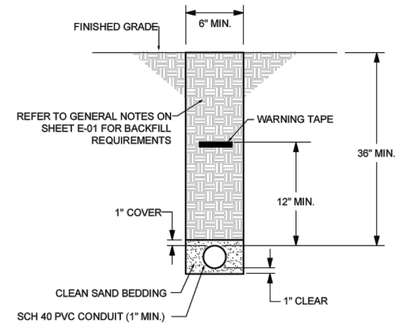
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Sheet: E-53



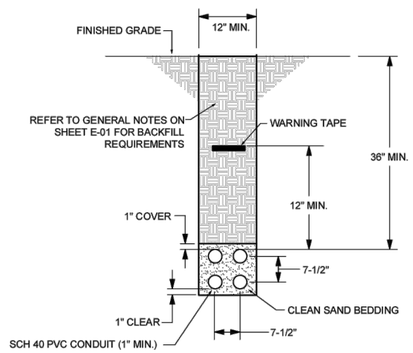
TYPICAL PRIMARY CONDUIT TRENCH DETAIL

SCALE: NONE



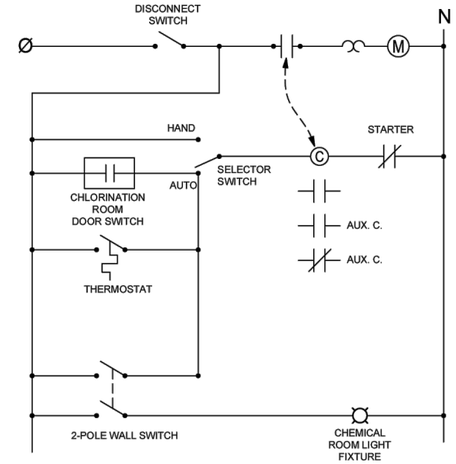
TYPICAL SINGLE CONDUIT TRENCH DETAIL

SCALE: NONE



TYPICAL MULTIPLE CONDUIT TRENCH DETAIL

SCALE: NONE



CHLORINATOR BUILDING EXHAUST FAN CONTROL DIAGRAM

NO SCALE

CHLORINATION ROOM EXHAUST FAN OPERATES AS FOLLOWS:
WITH THE STARTER SWITCH IN AUTO:

1. THE FAN WILL TURN ON WHEN THE DOOR IS OPEN VIA THE DOOR SWITCH.
2. WITH THE DOOR CLOSED THE FAN WILL TURN ON WHEN THE LIGHTING SWITCH IS SWITCHED ON.
3. WITH THE DOOR CLOSED AND LIGHTING SWITCH OFF, THE FAN WILL TURN ON BY THERMOSTAT.

Revision	Date	Description	By	Ck'd

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