

NASCHITTI CHAPTER SAN JUAN LATERAL CONNECTION

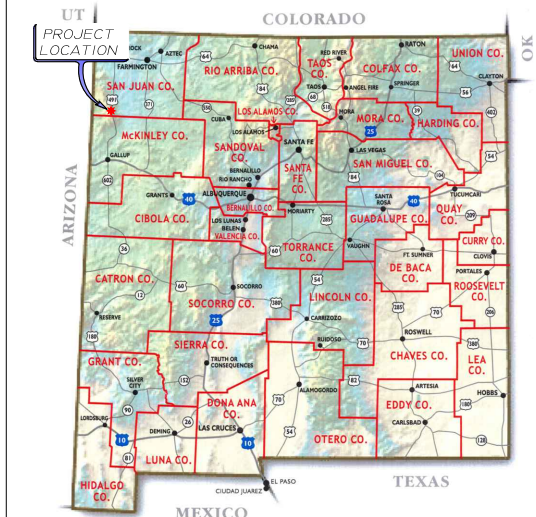


NGWSP SAN JUAN LATERAL TO NASCHITTI TANK SITE

April 2024

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF CONSTRUCTION OF 2.10 MILES OF 8" HDPE DR7 WATERLINE WITH A 200,000 GALLON WATER STORAGE TANK, A CHLORINATOR BUILDING, ASSOCIATED TANK SITE PIPING AND CONNECTION TO NASCHITTI TURNOUT FACILITIES ON NGWSP SAN JUAN LATERAL PIPELINE.



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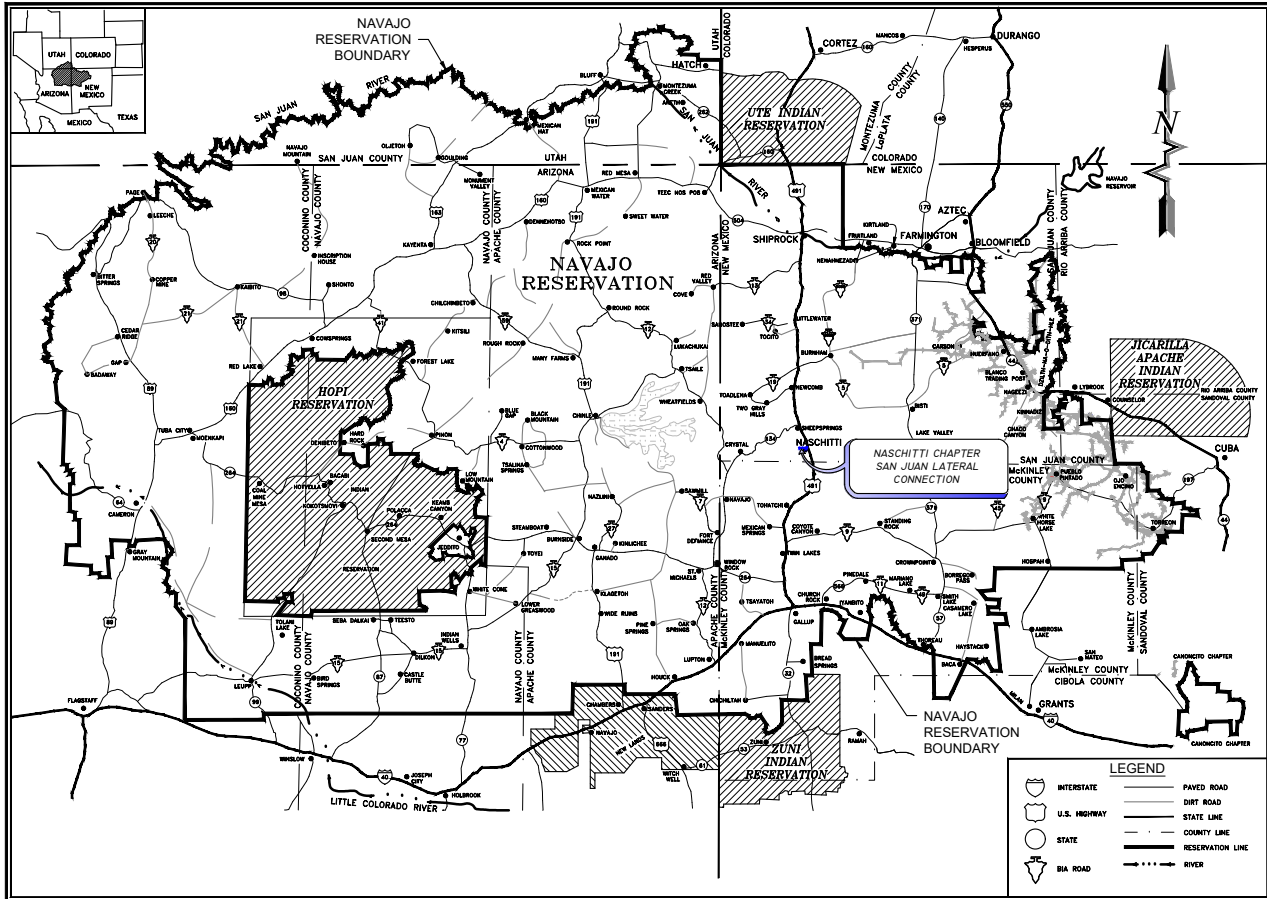
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NAVAJO RESERVATION
PROJECT SITE MAP

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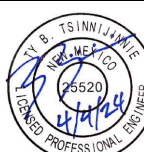
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Client: The Navajo Nation

Location: Naschitti, NM

COVER SHEET AND DRAWING INDEX
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO



Designed: TBT Drawn: MvH/AaV Checked: 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: April 2024

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

Project No: 6928997

Sheet: G-1

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GENERAL NOTES

- THE ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND IS NOT LIABLE FOR PROBLEMS THAT MAY ARISE FROM CONTRACTOR'S FAILURE TO FOLLOW THESE DRAWINGS, SPECIFICATIONS, AND THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS ARISING FROM FAILURE TO OBTAIN AND/OR FOLLOW THE ENGINEER'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES, OR CONFLICTS.
- IF THERE IS A CONFLICT BETWEEN THE PLANS, SPECIFICATIONS AND/OR MANUFACTURER'S RECOMMENDATIONS FOR ANY DEVICE, PART, OR MATERIAL USED IN THE PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER, IN WRITING, FOR CLARIFICATION AT LEAST TWO WEEKS PRIOR TO CONSTRUCTION OF SAID DEVICE, PART, OR MATERIAL.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE HIMSELF WITH THE LOCATION OF ALL UTILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION. THE GENERAL LOCATION OF KNOWN EXISTING UTILITIES HAS BEEN SHOWN ON THE CONSTRUCTION DRAWINGS TO INDICATE THAT CAUTION MUST BE EXERCISED WHEN WORKING IN THESE AREAS. IN MANY CASES THE EXACT LOCATION OF THE FACILITIES IS NOT KNOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL OVERHEAD AND UNDERGROUND UTILITIES WITHIN THE VICINITY OF THE NEW CONSTRUCTION. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR, WORKING WITH THE RESPECTIVE UTILITY COMPANIES, SHALL ACCURATELY LOCATE AND MARK ALL BURIED FACILITIES, INCLUDING SERVICE LINES. ALL EQUIPMENT, LABOR, ETC. NECESSARY TO PROPERLY LOCATE THE EXISTING UTILITIES SHALL BE FURNISHED BY THE CONTRACTOR, THE COST OF WHICH SHALL BE INCIDENTAL TO THE WORK.
- CONTRACTOR SHALL REPAIR ANY EXISTING STRUCTURE OR UTILITY PIPELINE DAMAGED DURING THE EXECUTION OF THE PROJECT, AT NO ADDITIONAL COSTS TO THE OWNER.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTING THE PROJECT ACCORDING TO CURRENT NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (NMSSPWC), AWWA SPECS AND NAVAJO NATION / NTUA STANDARDS, INCLUDING WHERE PARTICULAR WORK ITEMS ARE NOT SPECIFIED HEREIN.
- CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS AS SET FORTH IN THE TECHNICAL SPECIFICATIONS AND CONTRACT DOCUMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE ENGINEER REGARDING ANY QUESTION ARISING FROM ANY ASPECT OF THIS PROJECT NOT SPECIFICALLY COVERED IN THE PLANS AND TECHNICAL SPECIFICATIONS, OR ANY CHANGES OR CORRECTIONS TO THE PLANS AND SPECS.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY, WHICH SHALL REMAIN WHOLLY THE RESPONSIBILITY OF THE CONTRACTOR. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL (OSHA), STATE, TRIBAL AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING SAFETY AND HEALTH. ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE CARRIED OUT IN ACCORDANCE WITH OSHA 29 CFR 1926, SUBPART P - EXCAVATIONS.
- CONTRACTOR SHALL PROVIDE INGRESS AND EGRESS TO ANY LOCAL BUSINESSES AND RESIDENTS AS REQUIRED FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL ADVISE OF AND SCHEDULE ACCESS CLOSURES AT LEAST 24 HOURS IN ADVANCE WITH PROPERTY OWNERS AND THE ENGINEER.
- THE CONTRACTOR SHALL CONFINE HIS OPERATIONS TO THE CONSTRUCTION LIMITS OF THE PROJECT AND SHALL IN NO WAY 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.
- THE DRAWINGS CONTAIN SPECIFIC EROSION CONTROL FEATURES DESIGNED BY THE ENGINEER TO PROTECT PROJECT FACILITIES FROM EROSION. THESE FEATURES ARE NOT DESIGNED TO PREVENT POLLUTION OF WATERWAYS DUE TO SEDIMENT. THE CONTRACTOR IS WHOLLY RESPONSIBLE TO PROVIDE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND IMPLEMENT THE BEST MANAGEMENT PRACTICES (BMPs) REQUIRED THEREIN, IN ADDITION TO THE FEATURES SHOWN ON THE DRAWINGS. ALL BID ITEMS REFERRING TO SPECIFIC EROSION CONTROL FEATURES, SUCH AS RIPRAP OR ROCK DAMS, ARE APPLICABLE ONLY TO FEATURES DESIGNED BY THE ENGINEER. A SEPARATE BID ITEM(S) IS PROVIDED FOR PREPARATION AND IMPLEMENTATION OF THE CONTRACTOR'S SWPPP.
- ALL RIPRAP, ROCK CHECK DAMS AND OTHER EROSION CONTROL FEATURES SHOWN ON THE DRAWINGS ARE APPROXIMATE WITH REGARD TO QUANTITY, LOCATION, DIMENSIONS, SPACING, AND ORIENTATION. EXACT PLACEMENT WILL BE DETERMINED IN FIELD BY ENGINEER AFTER FINAL GRADING IS COMPLETE.
- ALL AREAS DISTURBED BY THE CONSTRUCTION ACTIVITIES OF THIS PROJECT SHALL BE RESTORED AND RE-GRADED IN A MANNER ACCEPTABLE TO THE OWNER, ENGINEER, AND LAND OWNER. ALL DISTURBED AREAS SHALL BE RE-SEEDDED PER THE CONTRACT DOCUMENTS.
- THE PLAN AND PROFILE SHEETS SHOW HORIZONTAL ANGLES WITH HDPE MITERED BENDS CALLED OUT. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE SPECIFIED BENDS AT EACH LOCATION. IN ADDITION TO THE SPECIFIED BENDS, USE PIPE DEFLECTION TO ACHIEVE THE SPECIFIED HORIZONTAL ANGLE. IF A LOCATION IS SHOWN WITHOUT SPECIFYING A BEND, USE PIPE DEFLECTION TO ACHIEVE THE HORIZONTAL ANGLE. DO NOT BEND GREATER THAN MANUFACTURERS RECOMMENDED BENDING RADIUS.
- ALL PRESSURE RATINGS GIVEN HEREIN FOR PIPES, VALVES, FITTINGS AND OTHER COMPONENTS REFER TO COLD WATER WORKING PRESSURE RATING, UNLESS OTHERWISE NOTED.
- VERTICAL CLEARANCES AT WATERLINE CROSSINGS ON PLAN AND PROFILE SHEETS CALLED OUT AS "MIN CLR" REFER TO MINIMUM CLEARANCE FROM BOTTOM OF EXISTING WATERLINE TO TOP OF PROPOSED WATERLINE. VERTICAL CLEARANCES FOR CASINGS CALLED OUT AS "MIN CLR TO CASING" REFER TO MINIMUM CLEARANCE FROM BOTTOM OF EXISTING PIPELINE OR FINISHED GRADE TO TOP OF PROPOSED CASING. VERTICAL CLEARANCES AT WASH CROSSINGS CALLED OUT AS "MIN TO CL" REFER TO MINIMUM PIPE DEPTH, MEASURED FROM BOTTOM OF WASH TO VERTICAL CENTERLINE OF PROPOSED WATERLINE.
- REFER TO PROFESSIONAL REGISTRANTS IDENTIFIED ON INDIVIDUAL PLAN SHEETS AS THE RESPONSIBLE PARTY FOR THOSE DISCIPLINES. THE SEAL AND SIGNATURE OF THE PROFESSIONAL REGISTRANT IDENTIFIED ON THIS COVER SHEET DOES NOT INDICATE RESPONSIBLE CHARGE FOR ALL SHEETS CONTAINED WITHIN THIS PACKAGE OR ANY PLAN SHEETS NOT SIGNED AND SEALED.
- ALL SCALES ARE BASED ON 11" x 17" SHEET SIZE.

CONTACT INFORMATION:

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SOUDER, MILLER & ASSOCIATES (ENGINEER):
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CONTACT INFORMATION:

NAVAJO TRIBAL UTILITY AUTHORITY (NTUA):
(800) 528-5011














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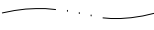
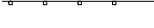


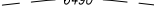

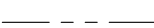
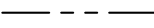


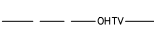
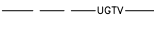





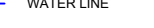
ABBREVIATIONS

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
A.C.	ASPHALTIC CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
AC.	ACRE
AC-FT.	ACRE FEET
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALIGN.	ALIGNMENT
ALUM	ALUMINUM
AMSL	ABOVE MEAN SEA LEVEL
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX.	APPROXIMATE
ARV	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWG	AMERICAN WIRE GAUGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BFV	BUTTERFLY VALVE
BIA	BUREAU OF INDIAN AFFAIRS
BLDG	BUILDING
BLM	BUREAU OF LAND MANAGEMENT
BV	BALL VALVE
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
CL	CENTERLINE
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CLR.	CLEARANCE
CMP	CORRUGATED METAL PIPE
COMM.	COMMUNICATION
CONC.	CONCRETE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CONT.	CONTINUED
COR.	CORNER
COUP.	COUPLING
CP	CONTROL POINT
CTR	CENTER
CU	CUBIC
CY	CUBIC YARD
DI	DUCTILE IRON
DIA	DIAMETER
DIMS	DIMENSIONS
DR	DIMENSION RATIO
DW	DRIVEWAY
E	EAST
E	EASTING
EA.	EACH
ED.	EDITION
EG	EXISTING GRADE
ELEC.	ELECTRICAL
EL., ELEV.	ELEVATION
EOP	EDGE OF PAVEMENT
EQ.	EQUAL
ESMT.	EASEMENT
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EX, EXIST.	EXISTING
FBE	FUSION BONDED EPOXY
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FIG.	FIGURE
FL	FLANGE
FND.	FOUND
FNPT	FEMALE NATIONAL PIPE THREAD
FRP	FIBER REINFORCED PLASTIC
FT.	FEET
FV	FLUSH VALVE
GA.	GAUGE
GALV.	GALVANIZED
GI	GALVANIZED IRON
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HDD	HORIZONTAL DIRECTIONAL DRILLING
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ.	HORIZONTAL
HP	HORSE POWER
HT	HEIGHT
HWY	HIGHWAY
I.A.	INDIAN ALLOTMENT
I.D.	INNER DIAMETER
I.E.	THAT IS, FOR EXAMPLE
IN.	INCH
INV.	INVERT
IPS	IRON PIPE SIZE
KSI	KILO POUNDS PER SQUARE INCH
LAT	LATITUDE
L, LEN	LENGTH
LF	LINEAR FEET
LT	LEFT

LONG	LONGITUDE
LVC	LENGTH VERTICAL CURVE
MANUF	MANUFACTURER
MAX.	MAXIMUM
MIL	ONE THOUSANDTHS OF AN INCH
MIN.	MINIMUM
M.J.	MECHANICAL JOINT
MNPT	MALE NATIONAL PIPE THREAD
M.S.L.	MEAN SEA LEVEL
N	NORTH
N	NORTHING
NEC	NATIONAL ELECTRICAL CODE
N.C.	NORMALLY CLOSED
NG	NATURAL GAS
NGWSP	NAVAJO GALLUP WATER SUPPLY PROJECT
NM	NEW MEXICO
NMDOT	NEW MEXICO DEPARTMENT OF TRANSPORTATION
NMED	NEW MEXICO ENVIRONMENT DEPARTMENT
NN	NAVAJO NATION
NO.	NUMBER
N.O.	NORMALLY OPEN
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OAE	OR APPROVED EQUAL
O.C.	ON CENTER
O.C.E.W.	ON CENTER EACH WAY
O.D.	OUTER DIAMETER
OHE	OVERHEAD ELECTRICAL
PE	PLAIN END
P.G.P.	PER GRADING PLAN
PI	POINT OF INFLECTION
PROP	PROPOSED
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLY VINYL CHLORIDE
PVI	POINT VERTICAL INFLECTION
PVT	PRIVATE
Q	FLOW
QTY.	QUANTITY
R	RADIUS
R-	RANGE
REF	REFERENCE
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RT	RIGHT
S	SOUTH
SCH	SCHEDULE
SCO	SANDOVAL COUNTY
SDR	STANDARD DIMENSION RATIO
SEC.	SECTION
SF	SAFETY FACTOR
SHT	SHEET
SPECS.	SPECIFICATIONS
SS	STAINLESS STEEL
STA	STATION
STD.	STANDARD
SW	SIDEWALK
T	TOWNSHIP
TBD	TO BE DETERMINED
TBR	TO BE REMOVED
TOE	TEMPORARY CONSTRUCTION EASEMENT
TDH	TOTAL DYNAMIC HEAD
TELE.	TELEPHONE
TEMP.	TEMPORARY
THK	THICK
TNT	NAVAJO TRIBAL TRUST
T.O.	TOP OF
TOE	TOE OF SLOPE
TP	TOP OF PIPE
TRANS	TRANSFORMER
TW	TOP OF WALL
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC
USGS	UNITED STATES GEOLOGICAL SURVEY
V	VOLUME
VB	VACUUM BREAKER
VERT.	VERTICAL
VLV	VALVE
VR	VACUUM RELIEF
W	WATER
W	WEST
W/	WITH
WL	WATERLINE
WP	WORKING PRESSURE
WT	WALL THICKNESS
WV	WATER VALVE
YDS	YARDS
Z	ZENITH


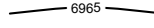
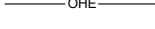
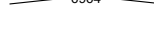



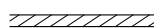



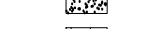


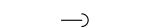
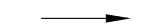
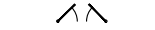
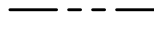




LEGEND

	EXISTING ISOLATION VALVE
	WATER METER
	WATER MANHOLE
	HYDRANT
	SEWER MANHOLE
	POWER POLE
	GUY ANCHOR
	ELECTRICAL J-BOX
	TELEPHONE PEDESTAL
	STORM DRAIN INLET / OUTLET
	BUILDING
	CATTLE GUARD
	ROAD SIGN

	EXISTING DRAINAGE WASH
	GUARD RAIL
	PAVED ROAD EDGE
	DIRT ROAD EDGE
	ROAD CENTER
	CONTOUR MAJOR
	CONTOUR MINOR
	CURRENT LAND STATUS (OWNER)
	SECTION LINE
	TOWNSHIP / RANGE LINE
	FENCE
	OVERHEAD POWER LINE
	UNDERGROUND POWER LINE
	OVERHEAD TELEPHONE LINE
	UNDERGROUND TELEPHONE LINE
	WATER LINE
	GAS LINE
	SEWER LINE

LEGEND

PROPOSED

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

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Client: The Navajo Nation

GENERAL NOTES AND LEGEND
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO



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Project No: 6928997

Sheet: G-2

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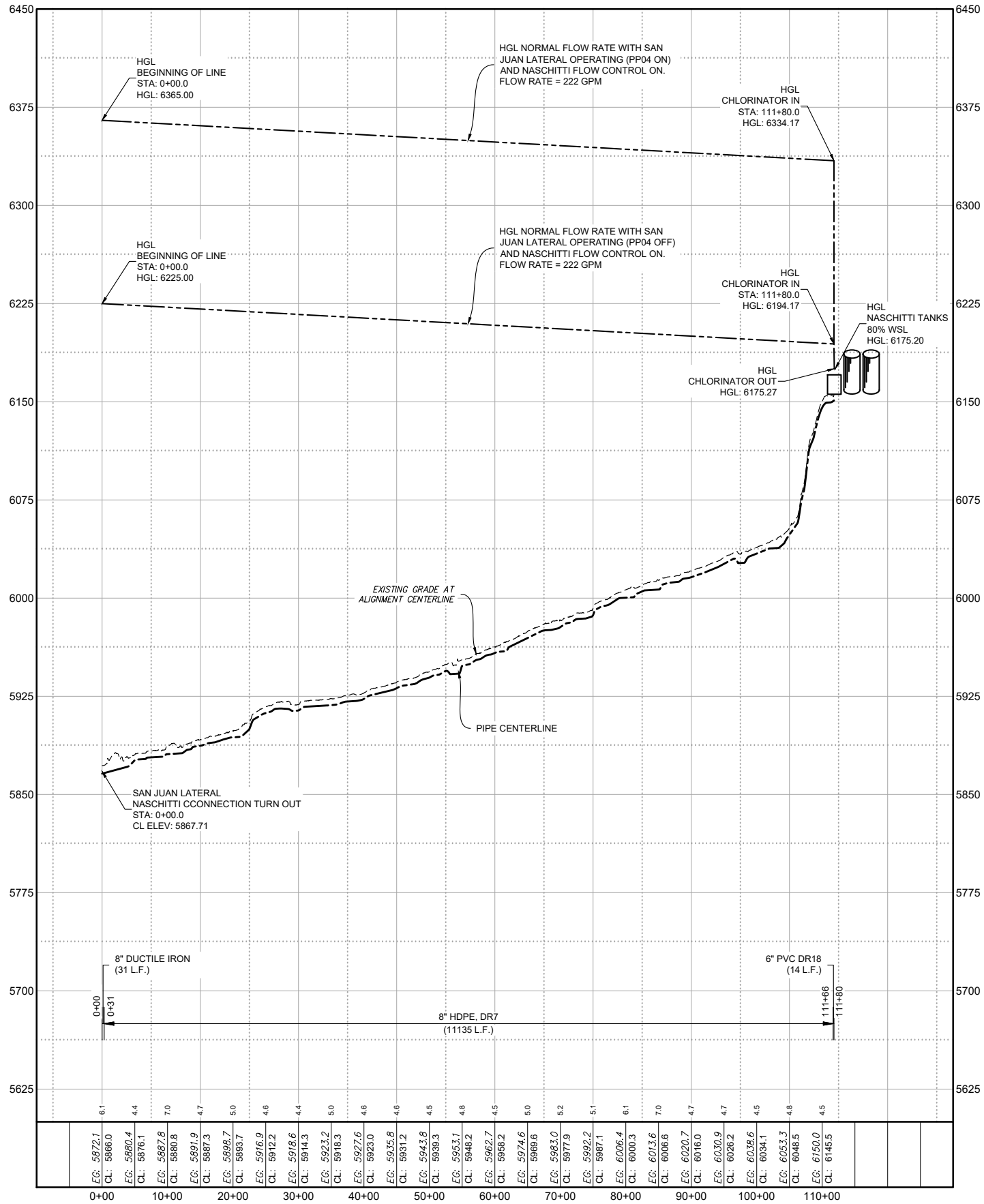
THE NASCHITTI CHAPTER SAN JUAN LATERAL CONNECTION WILL SUPPLY THE NASCHITTI CHAPTER COMMUNITY WITH SURFACE WATER FROM THE NAVAJO GALLUP WATER SUPPLY PROJECT (NGWSP) SAN JUAN LATERAL (SJL). VIA THE EXISTING THE NAVAJO TRIBAL UTILITY AUTHORITY (NTUA) WATER SYSTEM, SEE SHEET G-3.

THE NASCHITTI CHAPTER SAN JUAN LATERAL CONNECTION BRANCHES WEST OFF THE SJL, AT THE END OF NGWSP REACH 8, DOWNSTREAM (SOUTH) OF SJL PUMPING PLANT 04 AND EXTENDS TO THE NASCHITTI CHAPTER.

THE PROJECT IS COMPRISED OF APPROXIMATELY 2.12 MILES OF 8-INCH HDPE WATERLINE, BEGINNING AT THE NGWSP SJL NASCHITTI CHAPTER TURNOUT ON THE SJL REACH 8 SOUTH OF PP04 AND TERMINATES AT THE EXISTING NTUA NASCHITTI TANK SITE. A NEW CHLORINATOR BUILDING, AND NEW 200,000-GAL WATER STORAGE TANK WILL BE CONSTRUCTED AT THE EXISTING NASCHITTI TANK SITE.

THE CHLORINATION BUILDING INCLUDES AN ELECTRONIC CONTROL VALVE THAT PROVIDES ALTITUDE AND FLOW CONTROL FUNCTION. WHEN THE NTUA NASCHITTI TANKS WATER SURFACE DROPS TO 80% CAPACITY (MONITORED BY A PRESSURE TRANSDUCER), THE ELECTRONIC CONTROL VALVE WILL MODULATE TO FILL THE TANK AT THE DESIGN FLOWRATE. IF ADDITIONAL CHLORINE RESIDUAL IS DESIRED, AFTER FLOW THROUGH THE CHLORINATOR HAS COMMENCED, THE CHLORINATION EQUIPMENT WILL BEGIN TO DOSE CHLORINE. THE VALVE WILL CLOSE WHEN THE TANK REACHES 100% FULL AND THE CHLORINATOR WILL CEASE TO DOSE CHLORINE.

THE DESIGN FLOWRATE IS 222 GPM AND CAN BE DELIVERED BY GRAVITY WITH PP04 ONLINE OR BACKFLOW FROM REACH 9'S PP07 REGULATING TANK.



NASCHITTI CHAPTER SAN JUAN LATERAL CONNECTION PROFILE VIEW
8" WATERLINE

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SMA

Client: The Navajo Nation
Location: Naschitti, NM

HYDRAULIC PROFILE
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO

Professional Engineer
25520
2/14/24

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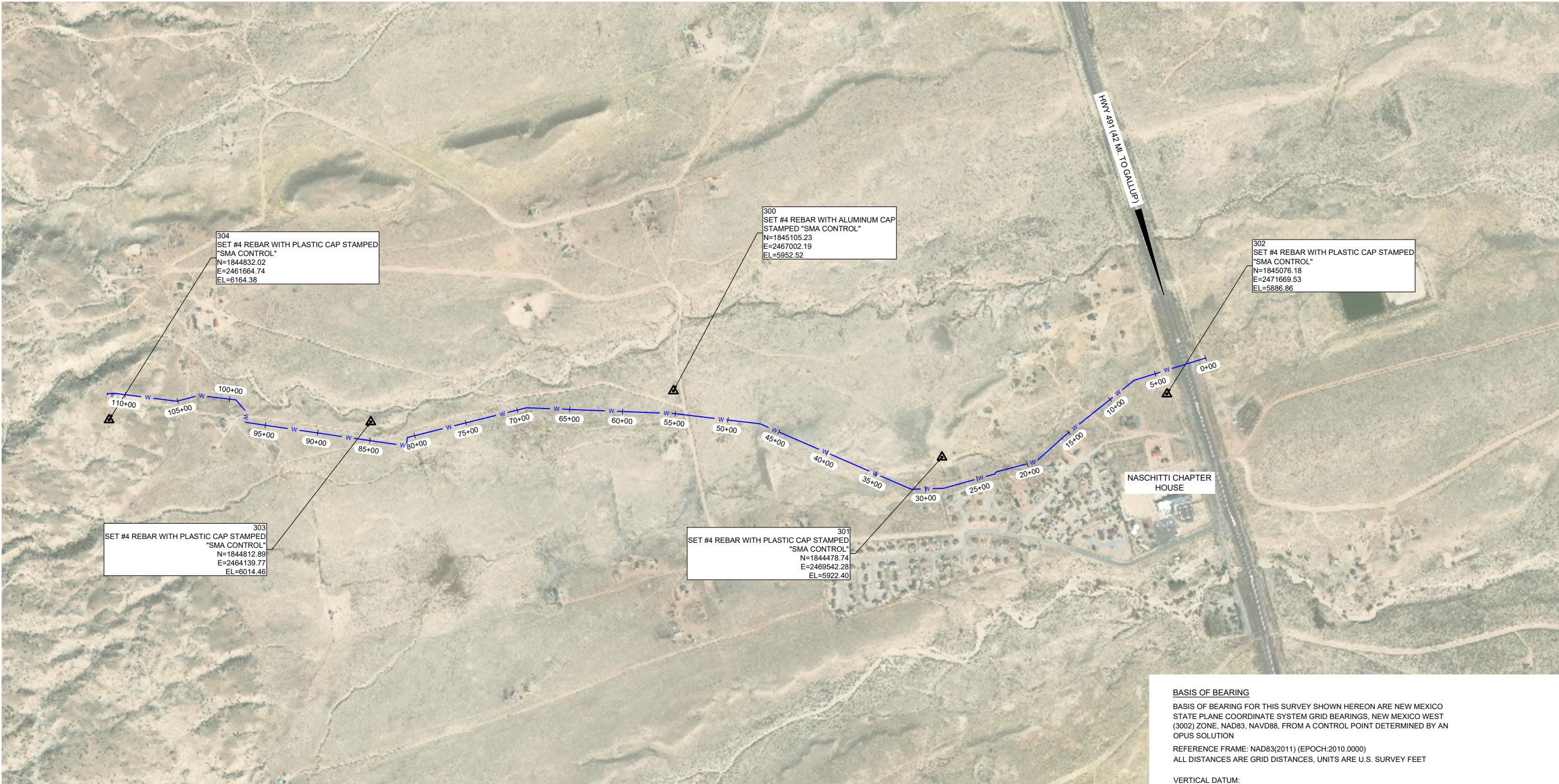
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Project No: 6928997
Sheet: **G-4**

NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
NAVAJO RESERVATION, SAN JUAN COUNTY,
NEW MEXICO



303
SET #4 REBAR WITH PLASTIC CAP STAMPED
"SMA CONTROL"
N=1844812.89
E=2464139.77
EL=6014.46

304
SET #4 REBAR WITH PLASTIC CAP STAMPED
"SMA CONTROL"
N=1844832.02
E=2461664.74
EL=6164.38

300
SET #4 REBAR WITH ALUMINUM CAP
STAMPED "SMA CONTROL"
N=1845105.23
E=2467002.19
EL=5952.52

301
SET #4 REBAR WITH PLASTIC CAP STAMPED
"SMA CONTROL"
N=1844478.74
E=2469542.28
EL=5922.40

302
SET #4 REBAR WITH PLASTIC CAP STAMPED
"SMA CONTROL"
N=1845076.18
E=2471669.53
EL=5886.86

BASIS OF BEARING

BASIS OF BEARING FOR THIS SURVEY SHOWN HEREON ARE NEW MEXICO
STATE PLANE COORDINATE SYSTEM GRID BEARINGS, NEW MEXICO WEST
(3002) ZONE, NAD83, NAVD88, FROM A CONTROL POINT DETERMINED BY AN
OPUS SOLUTION

REFERENCE FRAME: NAD83(2011) (EPOCH:2010.0000)
ALL DISTANCES ARE GRID DISTANCES, UNITS ARE U.S. SURVEY FEET

VERTICAL DATUM:
NAVD88
ORTHOMETRIC HEIGHTS COMPUTED USING GEOID18

METHODS:
CONTROL ON THIS PROJECT WAS OBSERVED AND SET BETWEEN
SEPTEMBER 14 - 16, 2022 WITH FINAL ADJUSTMENTS MADE BY SEPTEMBER
19, 2022. ALL POINTS WERE OBSERVED USING TRIMBLE R8S GPS
RECIEVERS UTILIZING RTK GPS METHODS.

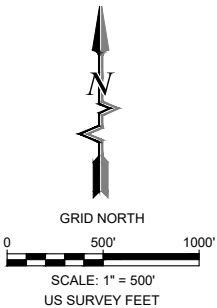
SURVEYOR'S CERTIFICATION

I, JAYSON NATERA, NEW MEXICO PROFESSIONAL SURVEYOR NO. 27749, DO HEREBY CERTIFY THAT THIS
CONTROL REPORT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE
PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY;
THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS
TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.


JAYSON NATERA N.M.P.S. 27749

12/19/2022
DATE

Point Table				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
300	1845105.23	2467002.19	5952.52	SET #4 REBAR WITH ALUMINUM CAP STAMPED "SMA CONTROL"
301	1844478.74	2469542.28	5922.40	SET #4 REBAR WITH PLASTIC CAP STAMPED "SMA CONTROL"
302	1845076.18	2471669.53	5886.86	SET #4 REBAR WITH PLASTIC CAP STAMPED "SMA CONTROL"
303	1844812.89	2464139.77	6014.46	SET #4 REBAR WITH PLASTIC CAP STAMPED "SMA CONTROL"
304	1844832.02	2461664.74	6164.38	SET #4 REBAR WITH PLASTIC CAP STAMPED "SMA CONTROL"



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Client: The Navajo Nation
Location: Naschitti, NM

**SURVEY CONTROL
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO**



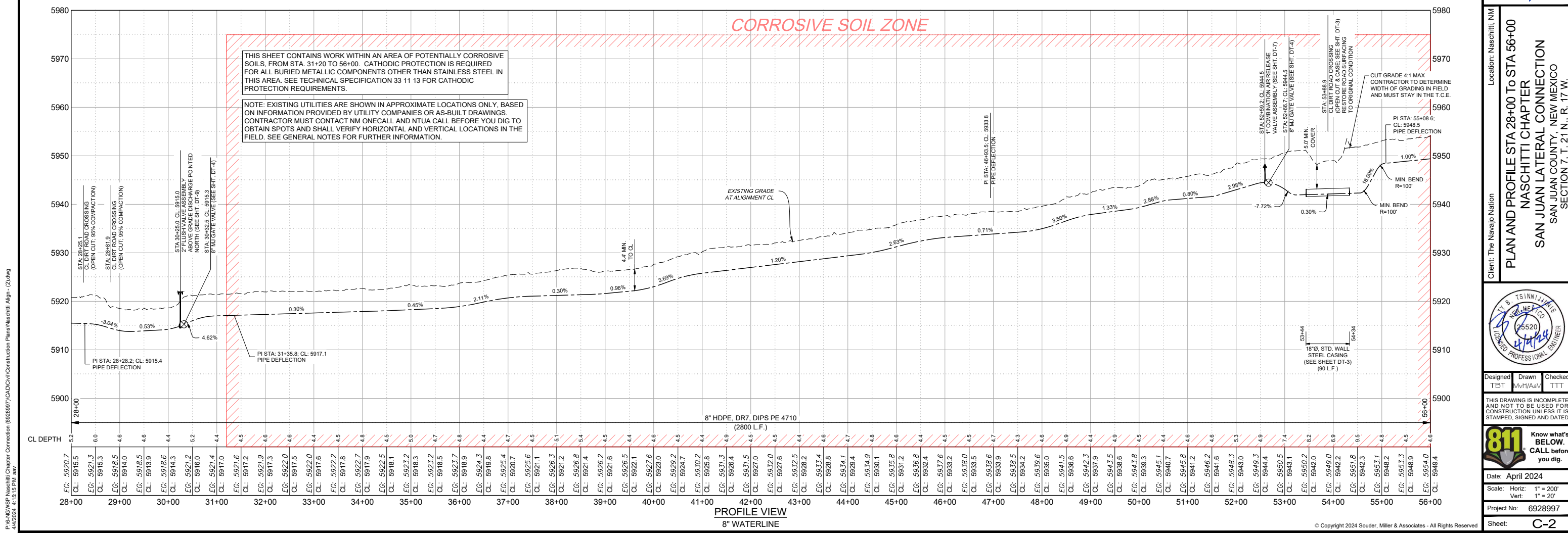
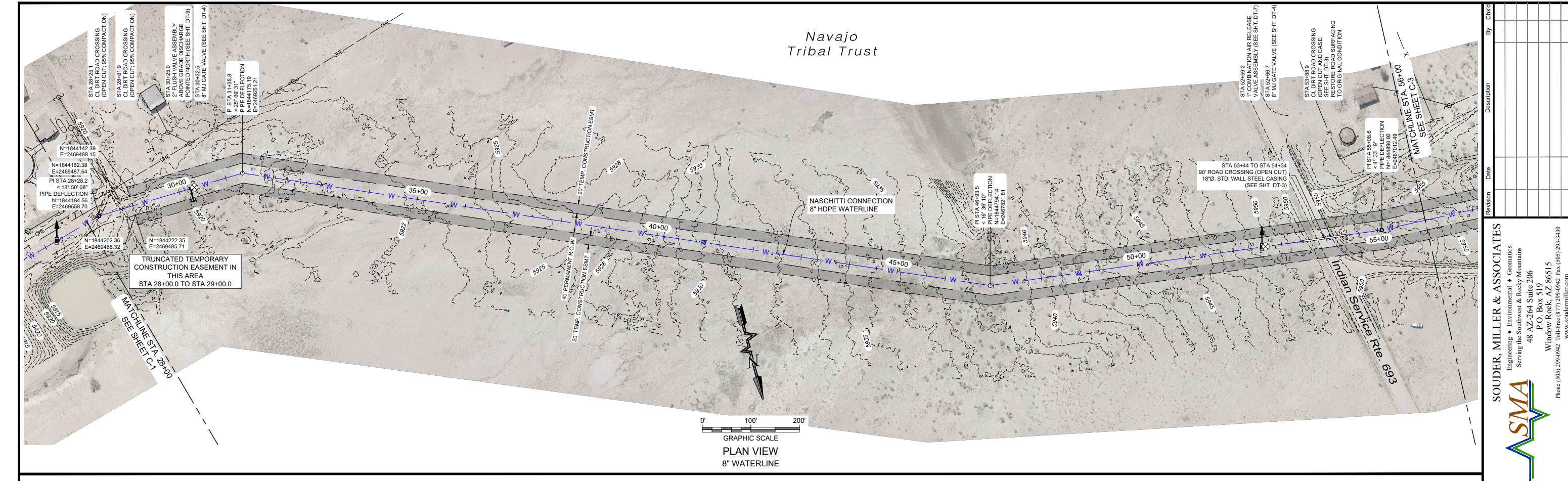
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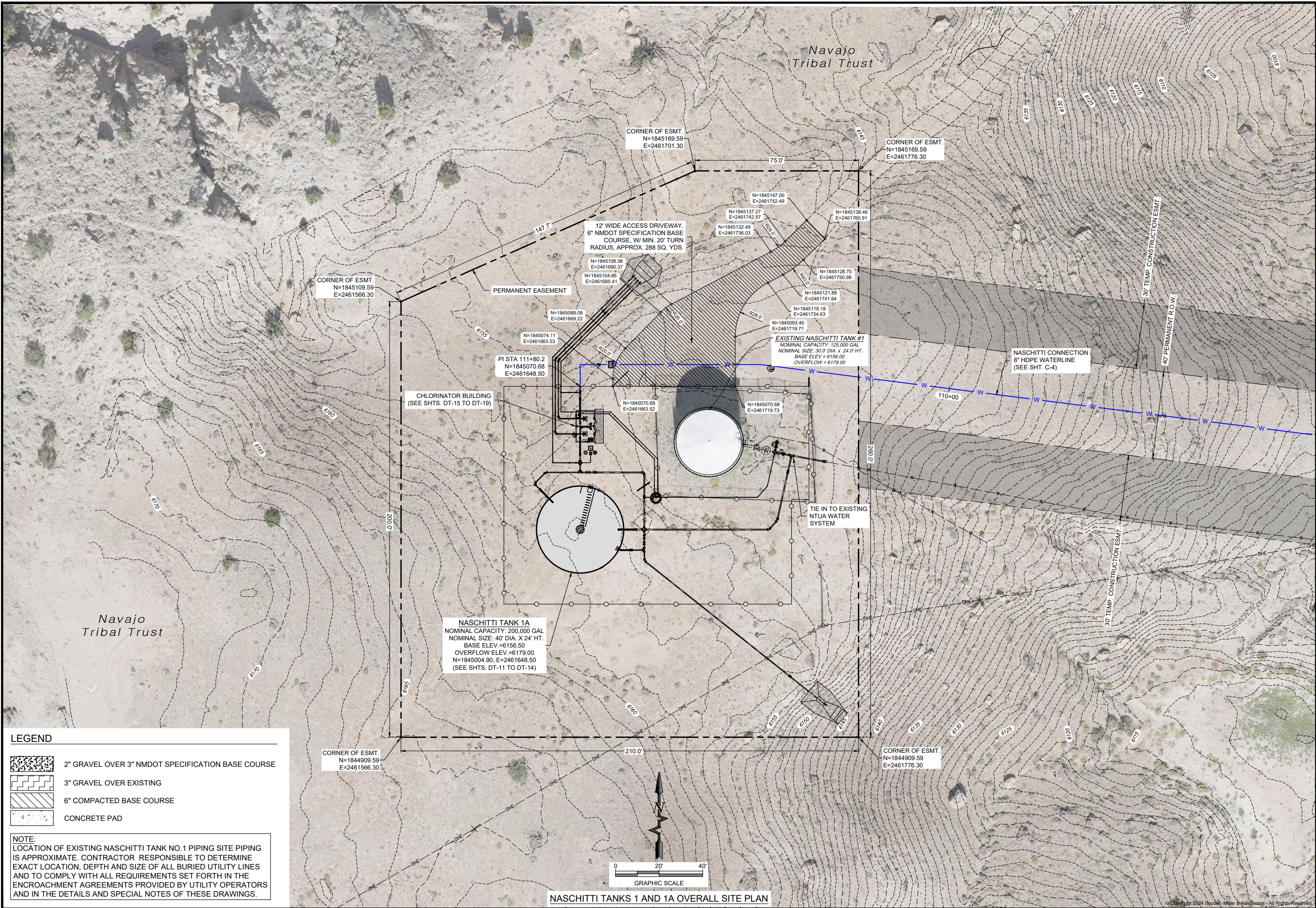
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LEGEND

2" GRAVEL OVER 3" NMDOT SPECIFICATION BASE COURSE

3" GRAVEL OVER EXISTING

6" COMPACTED BASE COURSE

CONCRETE PAD

NOTE:

LOCATION OF EXISTING NASCHITTI TANK NO.1 PIPING 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.

Client: The Navajo Nation

Location: Naschitti, NM

NASCHITTI TANKS 1 AND 1A OVERALL SITE PLAN

NASCHITTI CHAPTER

SAN JUAN LATERAL CONNECTION

SAN JUAN COUNTY, NEW MEXICO

SECTION 13, T. 17 N., R. 14 W.

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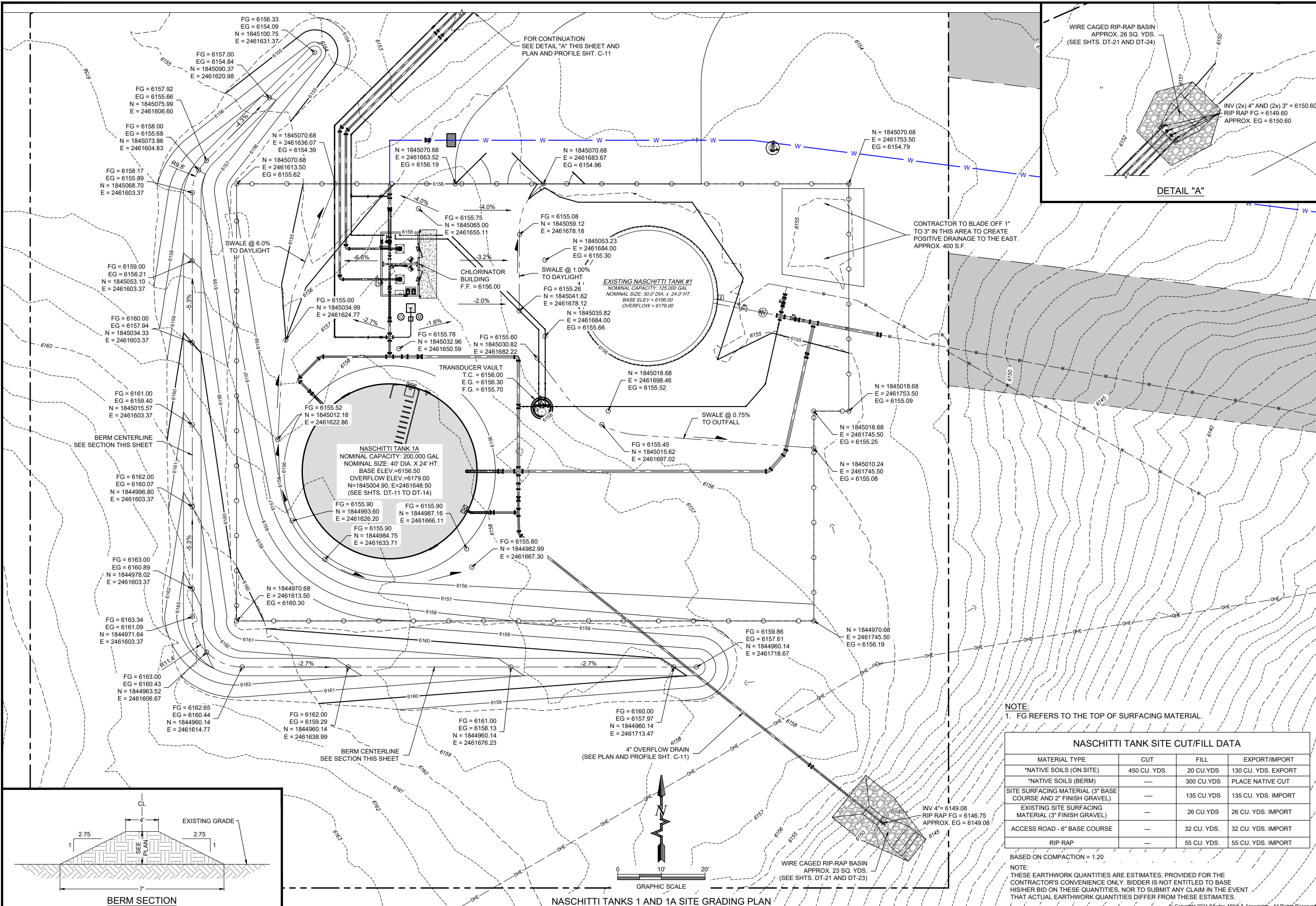
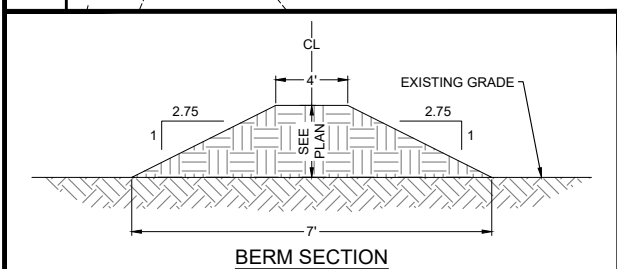
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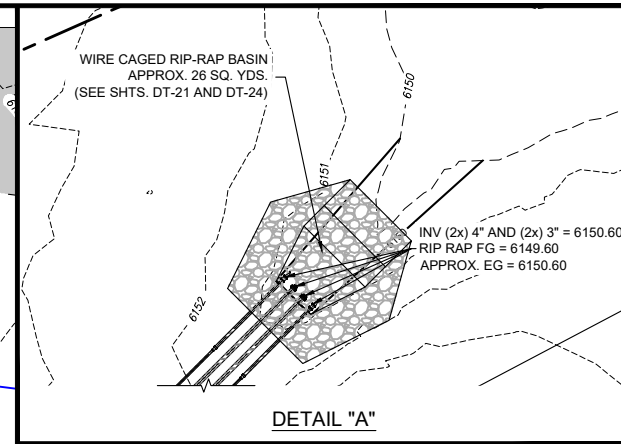
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NOTE:
1. FG REFERS TO THE TOP OF SURFACING MATERIAL.

NASCHITTI TANK SITE CUT/FILL DATA			
MATERIAL TYPE	CUT	FILL	EXPORT/IMPORT
*NATIVE SOILS (ON SITE)	450 CU. YDS.	20 CU. YDS.	130 CU. YDS. EXPORT
*NATIVE SOILS (BERM)	---	300 CU. YDS.	PLACE NATIVE CUT
SITE SURFACING MATERIAL (3" BASE COURSE AND 2" FINISH GRAVEL)	---	135 CU. YDS.	135 CU. YDS. IMPORT
EXISTING SITE SURFACING MATERIAL (3" FINISH GRAVEL)	---	26 CU. YDS.	26 CU. YDS. IMPORT
ACCESS ROAD - 6" BASE COURSE	---	32 CU. YDS.	32 CU. YDS. IMPORT
RIP RAP	---	55 CU. YDS.	55 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.



Client: The Navajo Nation

Location: Naschitti, NM

NASCHITTI TANKS 1 AND 1A GRADING PLAN
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

DESIGNED: *S. J. Miller*
CHECKED: *S. J. Miller*

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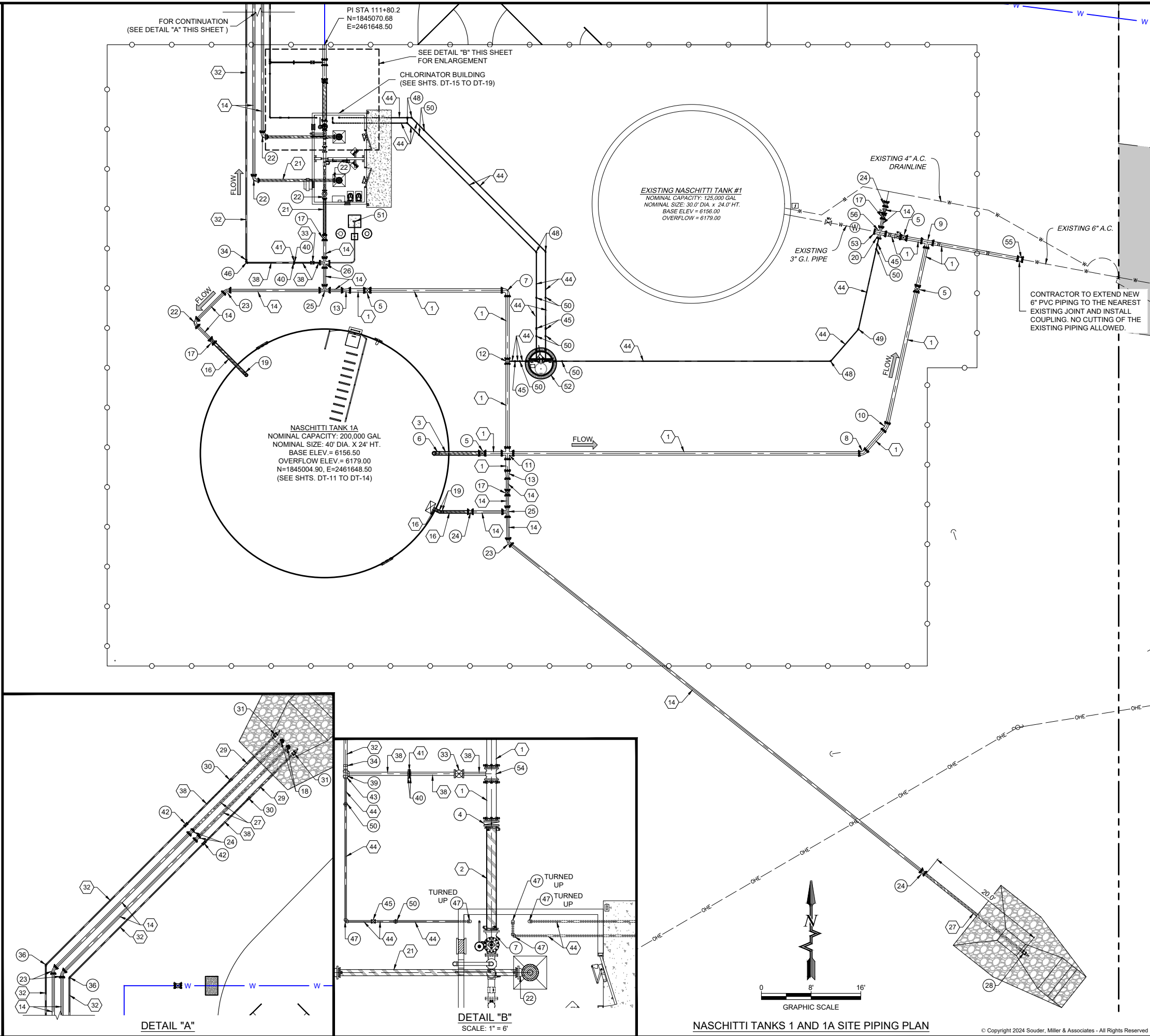
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KEYED NOTES - NASCHITTI TANK SITE	
Item No.	Description
1	6" PVC DR18 PIPE
2	6" DUCTILE IRON PIPE
3	6" STEEL PIPE, STANDARD WALL
4	6" MJ x MJ BUTTERFLY VALVE WITH SLOW CLOSE ACTUATOR (SEE DETAIL, DT-5) 350 PSI
5	6" MJ x MJ GATE VALVE (SEE DETAIL, DT-4) 350 PSI
6	6" 90° BEND, WELDED STEEL
7	6" MJ 90° BEND, DI 350 PSI
8	6" MJ 45° BEND, DI 350 PSI
9	6" MJ TEE, DI 350 PSI
10	6" MJ 22.5° BEND, DI 350 PSI
11	6" MJ CROSS, DI 350 PSI
12	6" x 1" MJ TAPPED TEE, NPT, DI
13	6" x 4" MJ REDUCER, DI
14	4" PVC DR18 PIPE
15	NOT USED
16	4" STEEL PIPE, STANDARD WALL
17	4" MJ x MJ GATE VALVE (SEE DETAIL, DT-4) 350 PSI
18	4" CAST IRON FLAP VALVE (SEE DETAIL, DT-22)
19	4" 90° BEND, WELDED STEEL
20	4" MJ x 1" THREADED PLUG, D.I. 350 psi
21	4" DUCTILE IRON PIPE
22	4" MJ 90° BEND, DI 350 PSI
23	4" MJ 45° BEND, DI 350 PSI
24	4" MJ SHORT SLEEVE, DI
25	4" MJ TEE, DI 350 PSI
26	4" MJ CROSS, DI 350 PSI WITH 6" MJ X 2" THREADED PLUG, D.I. 350 PSI (WEST) AND 6" MJ X 1" THREADED PLUG, D.I. 350 PSI (EAST)
27	4" FL x PE DUCTILE IRON PIPE, 20 L.F., 350 PSI
28	4" TIDFLEX FLANGED DUCKBILL CHECK VALVE (SEE DETAIL, DT-23)
29	3" G.I. PIPE, STANDARD WALL, NPT
30	3" x 2" G.I. REDUCER, NPT
31	3" TIDFLEX FLANGED DUCKBILL CHECK VALVE (SEE DETAIL, DT-24)
32	2" PVC, SDR-21, 200 psi
33	2" MUELLER GATE VALVE, NPT, 350 PSI, OAE
34	2" ADAPTER, PVC, SLIP-GASKET x NPT, SDR-21, 200 psi
35	2" 90° BEND, PVC
36	2" 45° BEND, PVC
37	2" 22.5° BEND, PVC
38	2" STEEL PIPE, NPT, SS 304
39	2" TEE, NPT, SS 304
40	2" HUB, FLAT FACED, COMPANION FLANGE, NPT, SS 304, ANSI CLASS 300
41	3/8" THK. STAINLESS STEEL ORIFICE PLATE (SEE DETAIL DT-9)
42	2" DRESSER COUPLING
43	2" x 1" REDUCING BUSHING, NPT, SS 304
44	1" STEEL PIPE, NPT, SS 304
45	1" MUELLER 300 BALL CURB VALVE, 300 psi OAE
46	2" 90° NPT, SS 304
47	1" 90° BEND, NPT, SS 304
48	1" 45° BEND, NPT, SS 304
49	1" 22.5° BEND, NPT, SS 304
50	1" DRESSER COUPLING
51	1" YARD HYDRANT ASSEMBLY (SEE DETAIL, DT-20)
52	TRANSDUCER VAULT (SEE DETAIL, DT-10)
53	6" MJ x 3" THREADED PLUG, D.I. 350 psi
54	6" x 2" MJ TAPPED TEE, NPT, DI
55	6" MJ SHORT SLEEVE, DI
56	6" x 4" MJ CROSS, DI 350 PSI

NOTES:

- CONTRACTOR SHALL FIELD SURVEY ELEVATION OF OVERFLOW WEIR OF EXISTING TANK 1 AND ENSURE ELEVATION OF OVERFLOW WEIR OF NEW TANK 1A MATCHES (WITHIN A TOLERANCE OF $\pm 1/2"$).
- PROVIDE TANK SUB-FOUNDATION, OVER-EXCAVATION AND SITE GRADING IN ACCORDANCE WITH GEOTECHNICAL REPORT AND DETAILS, SHEETS C-7, DT-11 TO DT-14.
- 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.
- NO HIGH SPOTS PERMITTED ON SITE PIPING. ALL SITE PIPING (INCLUDING SENSOR LINES) SHALL SLOPE UP TOWARDS TANKS OR CHLORINATOR BUILDING, (MIN. 1%).
- ALL MATERIALS, FITTINGS AND APPURTENANCES SHALL BE RATED TO AT LEAST 235 PSI, UNLESS OTHERWISE NOTED.
- 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. SEE SPECIFICATION 09 97 14 WATER STORAGE TANK PAINTING FOR REQUIRED PIPE COATINGS.
- 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.
- ALL BURIED NON-STAINLESS STEEL PIPE AND FITTINGS SHALL BE COLD-APPLIED TAPE-WRAPPED, PER SPECIFICATIONS.
- ALL PRESSURE BEARING PIPES WITHIN SITE SHALL BE FULLY RESTRAINED WITH THRUST BLOCKS. REFER TO DETAIL, SHEET DT-2.
- STEEL OVERFLOW PIPING SHALL BE SHOP COATED SAME AS TANK.
- FLANGES SHALL BE ANSI CLASS 125 (IRON) / ANSI CLASS 150 (STEEL).
- INSTALL ADDITIONAL 1" SS 304 FITTINGS AND DRESSER COUPLINGS AS NEEDED TO FACILITATE SENSOR LINE INSTALLATION.



Client: The Navajo Nation	Location: Naschitti, NM	NASCHITTI TANKS 1 AND 1A PIPING PLAN NASCHITTI CHAPTER SAN JUAN LATERAL CONNECTION SAN JUAN COUNTY, NEW MEXICO SECTION 13, T. 17 N., R. 14 W.		Designed TBT	Drawn MvH/AaV	Checked TTT
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CONTINUES TO DRAIN
PIPE OUTFALL

CHLORINATOR
(2x) 4" DRAINLINES TO DAYLIGHT
(SEE SHT. C-11 FOR PLAN AND PROFILE)

PI STA 111+80.2
N=1845070.68
E=2461648.50

CHLORINATOR BUILDING
(SEE SHTS. DT-15 TO DT-19)

NASCHITTI CONNECTION
8" HDPE WATERLINE
(SEE SHT. C-4)

NASCHITTI TANKS 1 AND 1A SITE - VALVE NUMBERING

VALVE NO.	VALVE SIZE	VALVE TYPE	TURNS TO CLOSE	PIPE TYPE	DESCRIPTION	COLLAR WARNING PLACARD SEE DETAIL, SHTS. DT-4 AND DT-5
1	6"	BFV	40	PVC / DI	MASTER SHUT OFF / CHLORINATOR INLET	YES, PLACARD 1, DT-5
2	4"	GV	14	DI / PVC	CHLORINATOR OUTLET	YES, PLACARD 1 (DETAIL E), DT-4
3	2"	GV	8	GI	PRE CHLORINATION FLUSH	YES, SEE WARNING PLACARD FOR FLUSH VALVE, DT-9
4	2"	GV	8	GI	POST CHLORINATION FLUSH	YES, SEE WARNING PLACARD FOR FLUSH VALVE, DT-9
5	6"	GV	21	PVC	TANK 1A BYPASS	NO
6	4"	GV	14	PVC / STEEL	TANK 1A INLET	NO
7	6"	GV	21	STEEL / PVC	TANK 1A OUTLET	NO
8	4"	GV	14	PVC	TANK 1A DRAIN	NO
9	6"	GV	21	PVC	TANK 1A MAINLINE SHUT OFF	NO
10	3"	GV	11	GI	TANK 1 INLET / OUTLET	NO
11	4"	GV	14	PVC	TANK 1 DRAIN	NO
12	6"	GV	21	PVC	TANK 1 MAINLINE SHUTOFF	NO
13	1"	CS	1/4	STEEL	TANK 1 SENSOR INLET	NO
14	1"	CS	1/4	STEEL	TANK 1 SENSOR OUTLET	NO
15	1"	CS	1/4	STEEL	TANK 1A SENSOR INLET	NO
16	1"	CS	1/4	STEEL	TANK 1A SENSOR OUTLET	NO
17	1"	CS	1/4	STEEL	SENSOR LINES FLUSH	NO
18	1"	CS	1/4	PE	YARD HYDRANT	NO

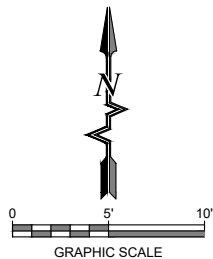
EXISTING NASCHITTI TANK #1

TRANSDUCER VAULT
(SEE SHT. DT-10)

NASCHITTI TANK 1A

NASCHITTI TANK 1A
4" OVERFLOW DRAINLINE
(SEE SHT. C-11 FOR PLAN AND PROFILE)

CONTINUES TO DRAIN
PIPE OUTFALL



NASCHITTI TANKS 1 AND 1A SITE VALVE NUMBERING PLAN

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Client: The Navajo Nation

Location: Naschitti, NM

NASCHITTI TANKS 1 AND 1A VALVE NUMBERING PLAN

NASCHITTI CHAPTER

SAN JUAN LATERAL CONNECTION

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



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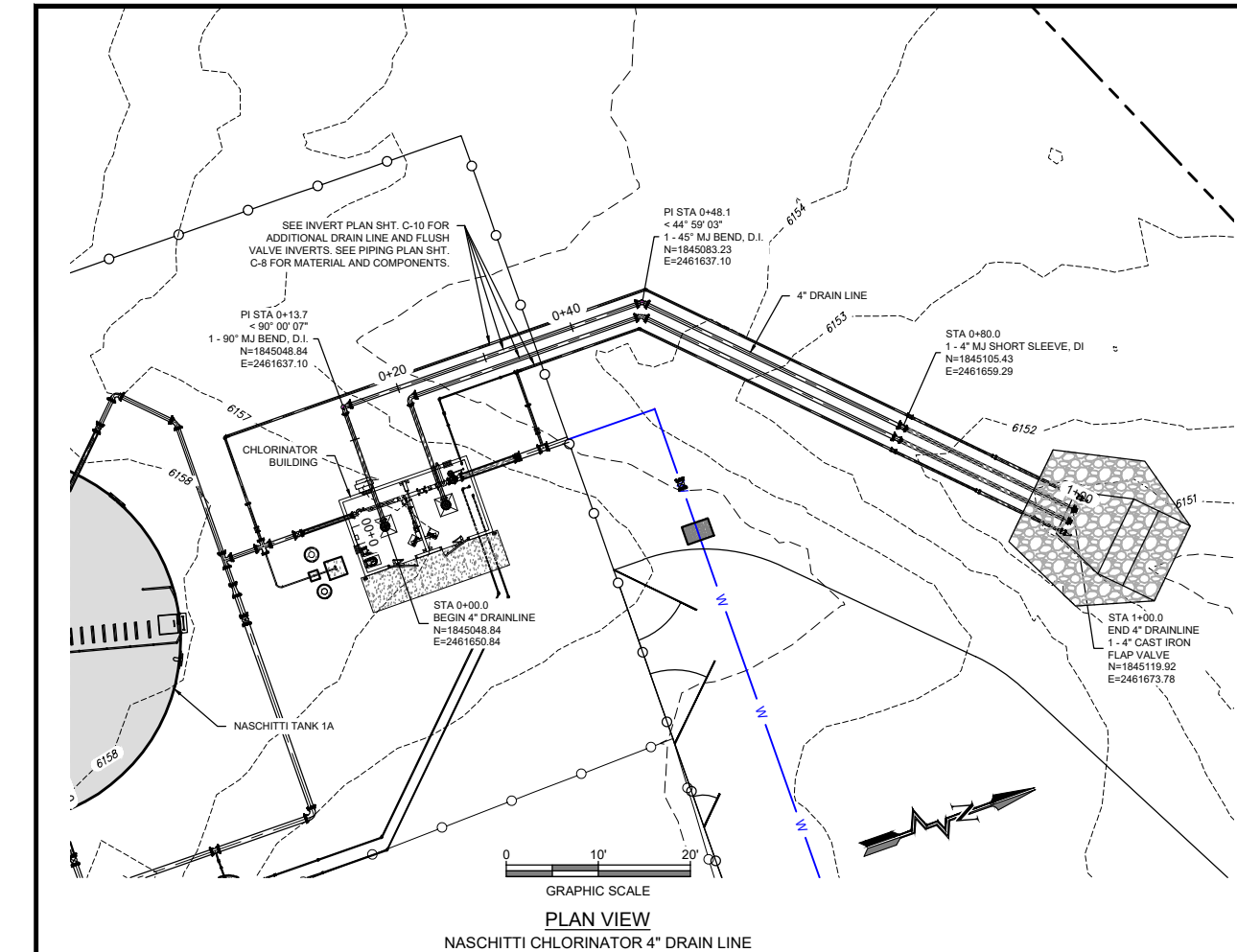
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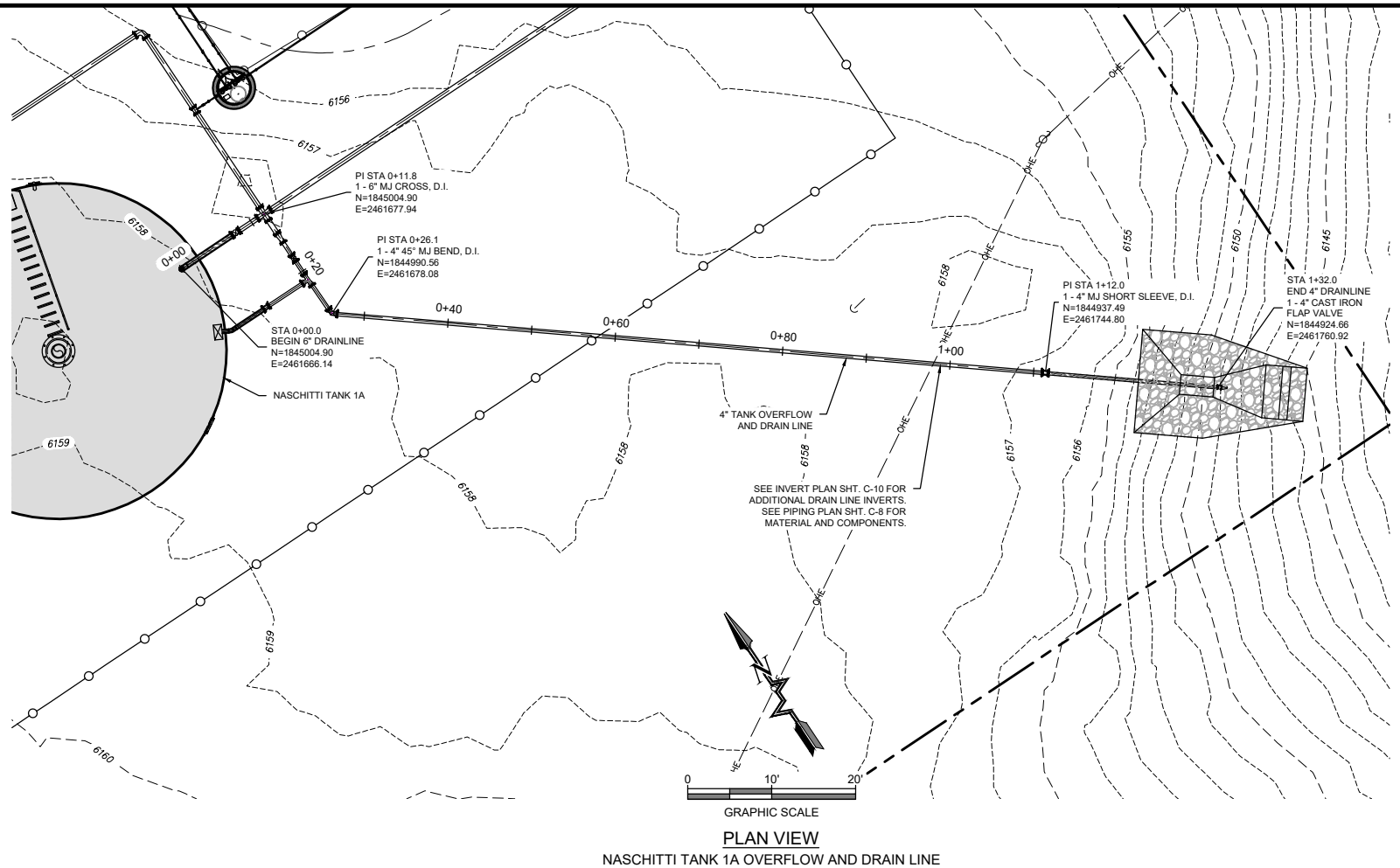
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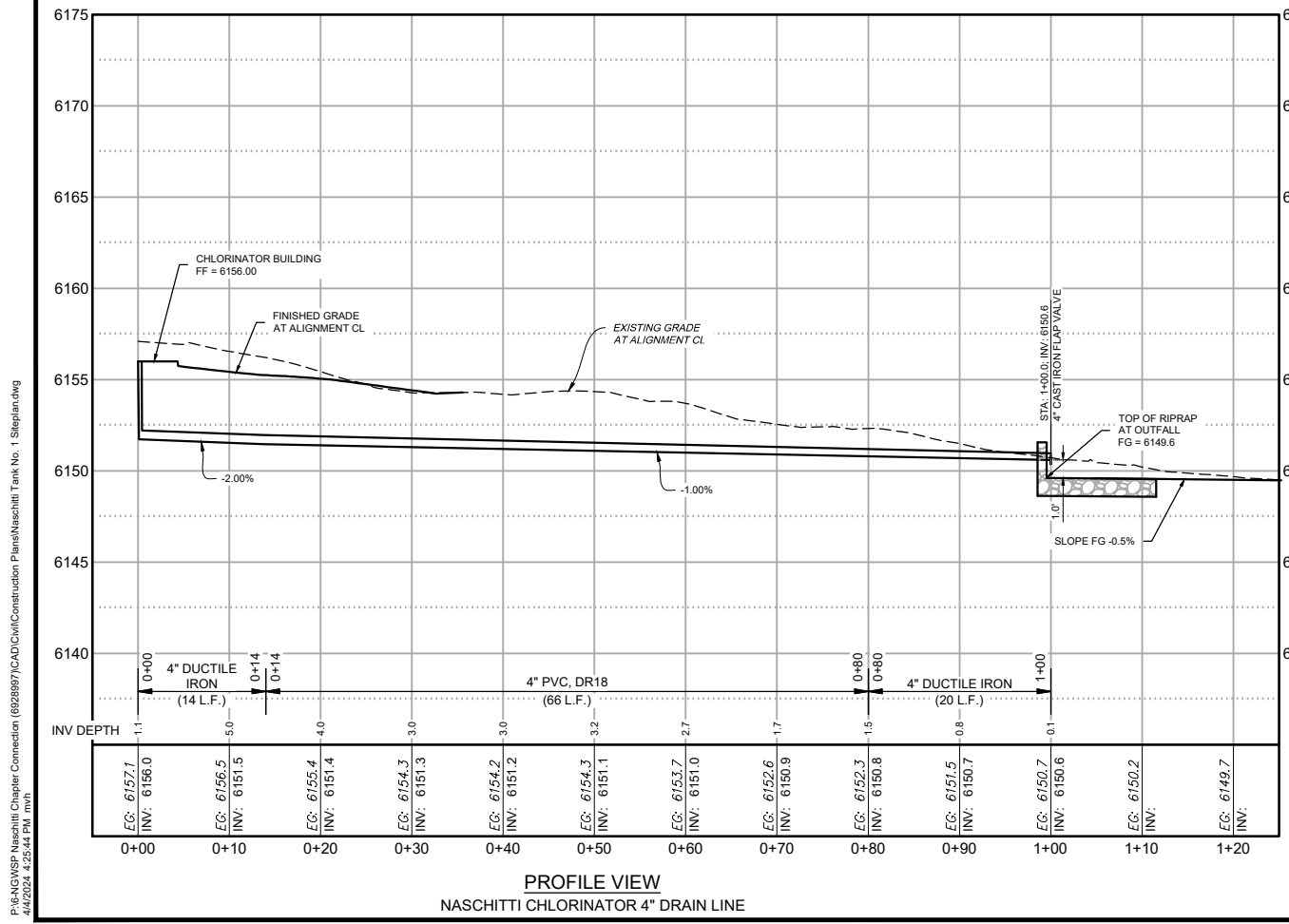
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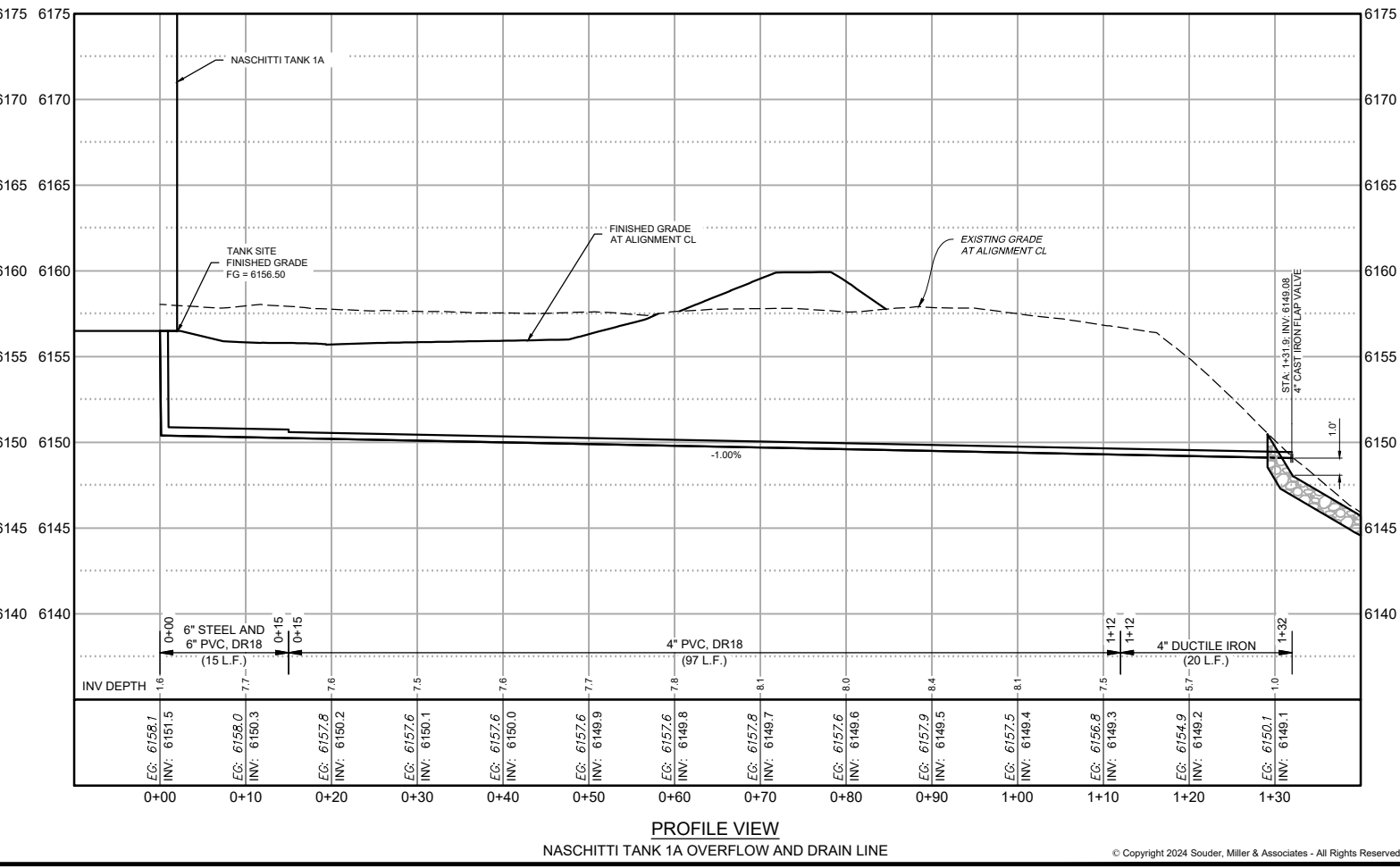
PLAN VIEW
NASCHITTI CHLORINATOR 4" DRAIN LINE



PLAN VIEW
NASCHITTI TANK 1A OVERFLOW AND DRAIN LINE



PROFILE VIEW
NASCHITTI CHLORINATOR 4" DRAIN LINE



PROFILE VIEW
NASCHITTI TANK 1A OVERFLOW AND DRAIN LINE

P:\6\NGVSP Naschitti Chapter Connection (6928997)\CAD\Civil\Construction Plans\Naschitti Tank No. 1 Slepian.dwg
4/4/2024 4:25:44 PM mwh

Revision	Date	Description

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SMA

Client: The Navajo Nation
Location: Naschitti, NM

NASCHITTI TANKS 1 AND 1A DRAINLINE P&P
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO
SECTION 13, T. 17 N., R. 14 W.

Designed: TBT
Drawn: MvH/AaV
Checked: TTT

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

Date: April 2024
Scale: Horiz: 1" = 20'
Vert: 1" = 10'

Project No: 6928997
Sheet: C-11

NOTES:

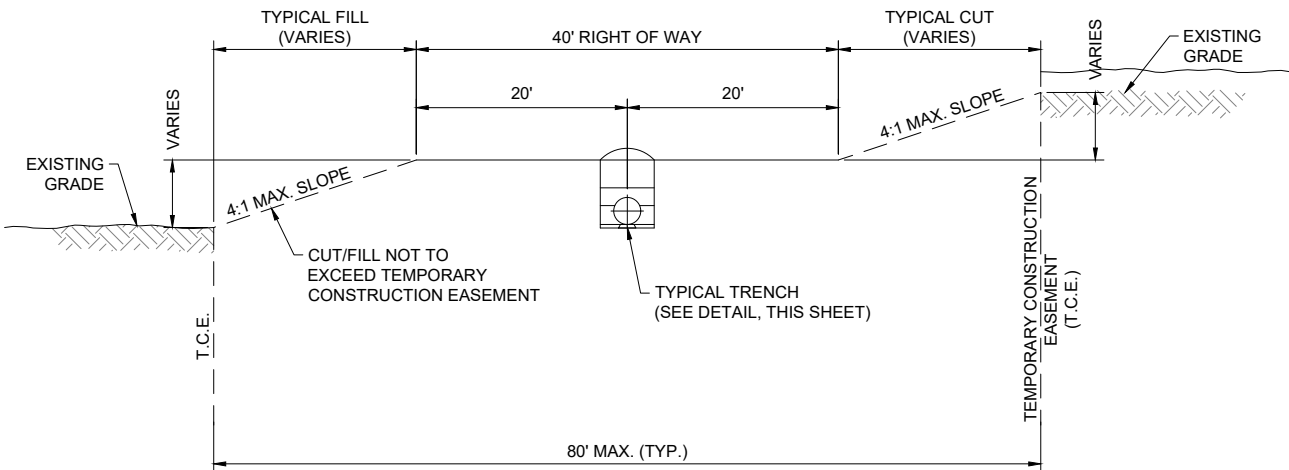
- SOIL CEMENT SLURRY MAY BE USED IN LIEU OF COMPACTED SELECT MATERIAL AT CONTRACTOR'S OPTION AND EXPENSE.
- ANY SECTION OF PIPE EMBEDDED IN COMPACTED SELECT MATERIAL THAT FAILS TO MEET SOIL CLASSIFICATION AND/OR COMPACTION REQUIREMENTS SHALL BE DUG UP, RE-BURIED, RE-COMPACTED AND RE-TESTED AT CONTRACTOR'S SOLE EXPENSE.
- 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.
- 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".

MINIMUM PERCENT COMPACTION FOR
EMBEDMENT OUTSIDE TRAFFIC AREAS,
GAS LINES ROW, WASH CROSSINGS

CLEAN COARSE-GRAINED SOILS	
	8" Pipe
Cover Depth	Minimum Compaction
4' to 20'	85%
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	
	8" Pipe
Cover Depth	Minimum Compaction
4' to 14'	85%
14' to 20'	90%
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:

- ALL COMPACTION VALUES BASED ON STD. PROCTOR, ASTM D698. SOIL CLASSIFICATIONS BASED ON ASTM D2487.
- 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.
- COMPACTION REQUIRED WHERE SHOWN ON DRAWINGS.

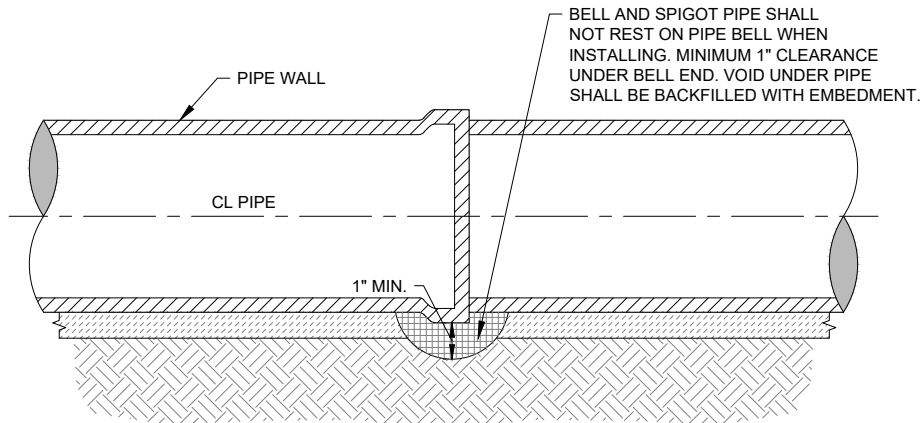


TYPICAL PIPELINE ROW FINISHED GRADING DETAIL

NOT TO SCALE

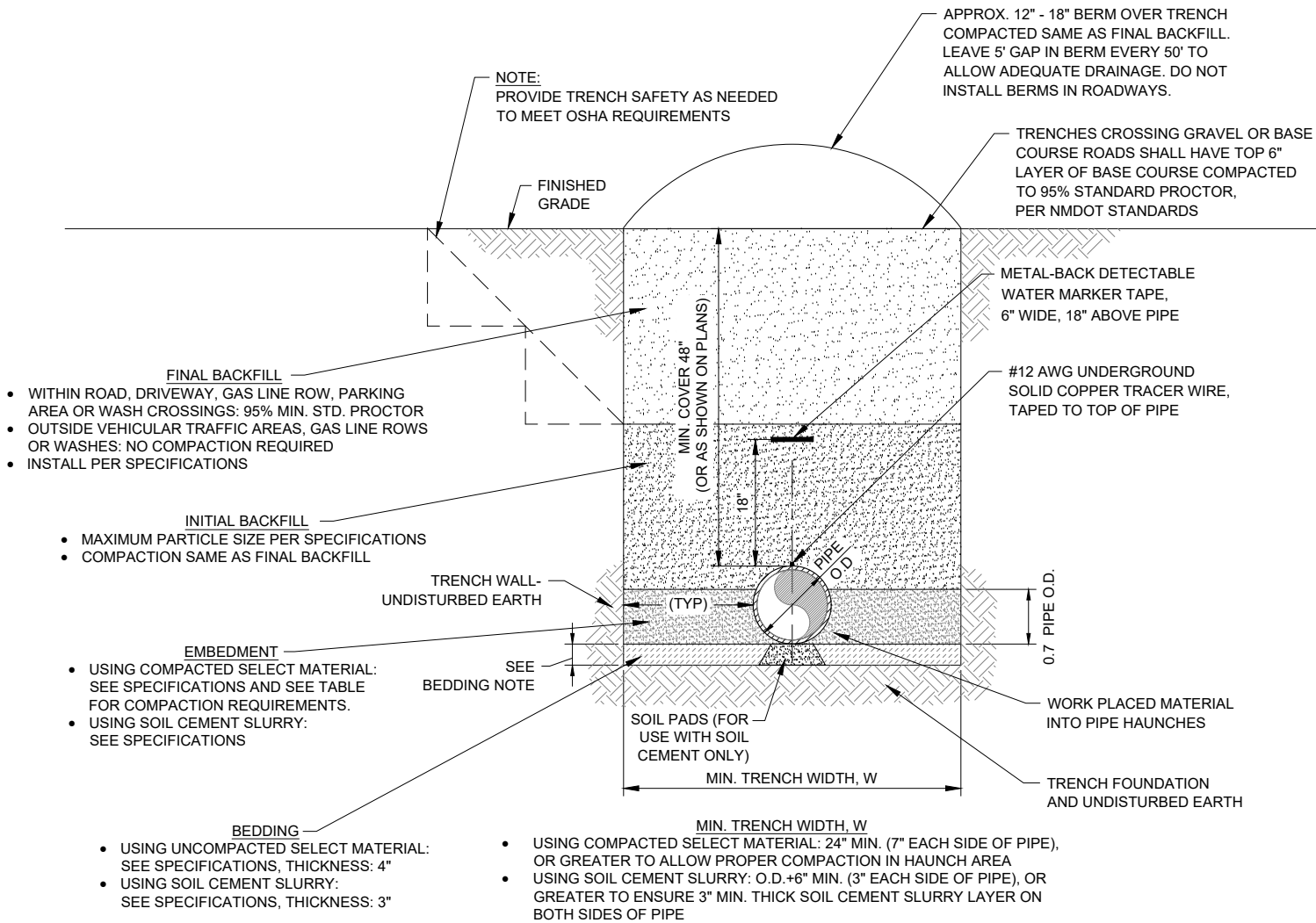
NOTES:

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



TYPICAL BELL HOLE DETAIL

NOT TO SCALE



TYPICAL TRENCH DETAIL

NOT TO SCALE

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Location: Naschitti, NM

Client: The Navajo Nation

TRENCH DETAILS
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO



Designed TBT Drawn MvH/AaV Checked TTT

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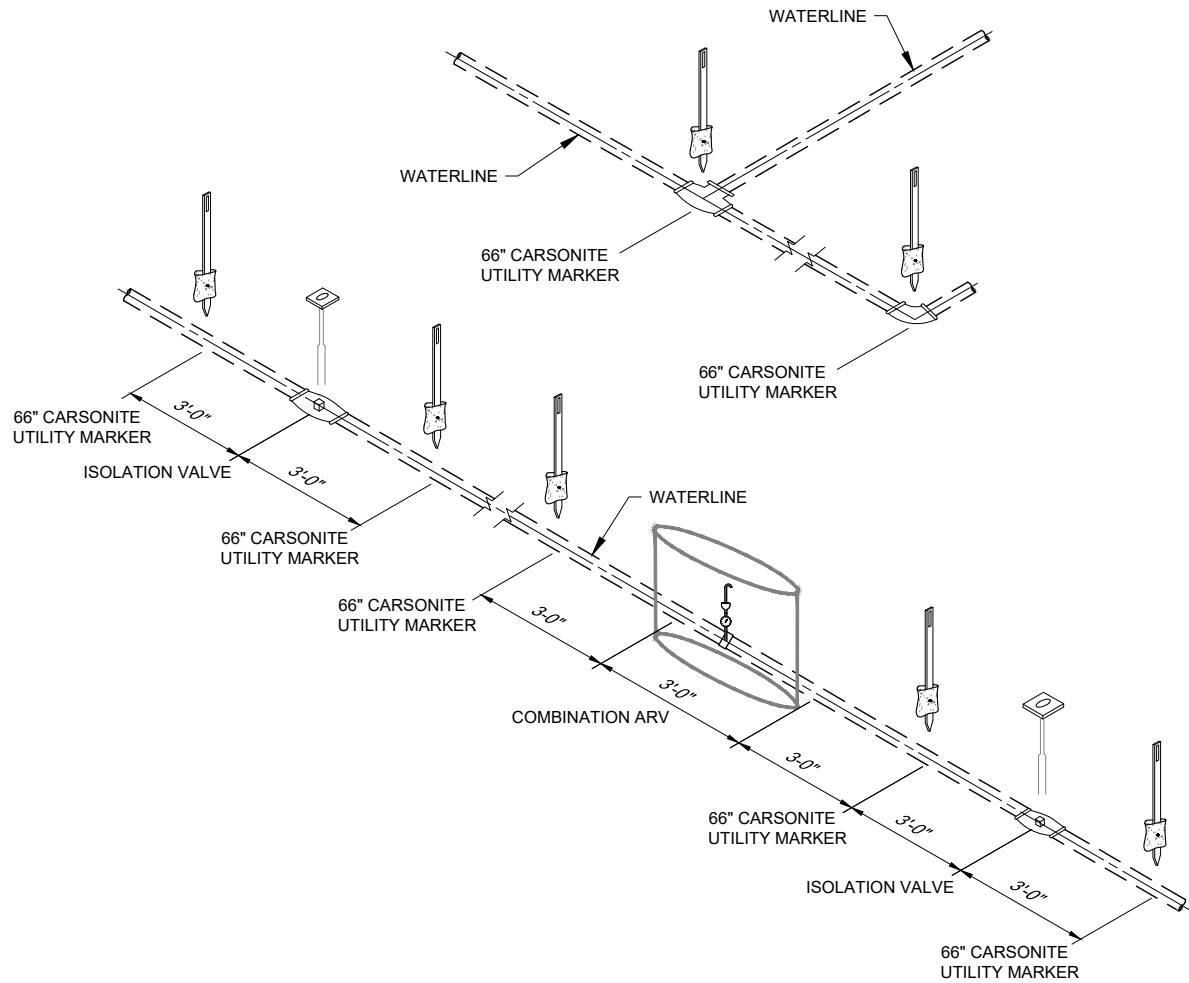
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Project No: 6928997

Sheet: DT-1

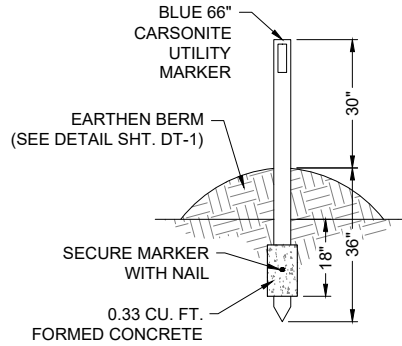
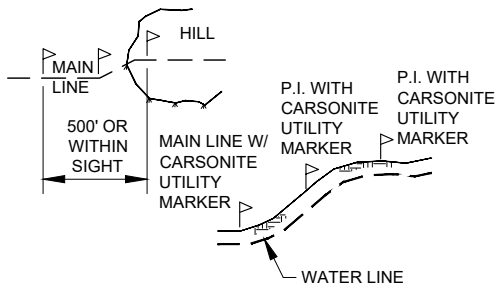
P:\6-NGVSP Naschitti Chapter Connection (6928997)\CAD\Civil\Construction Plans\Naschitti Marker and ROW Grading Details.dwg
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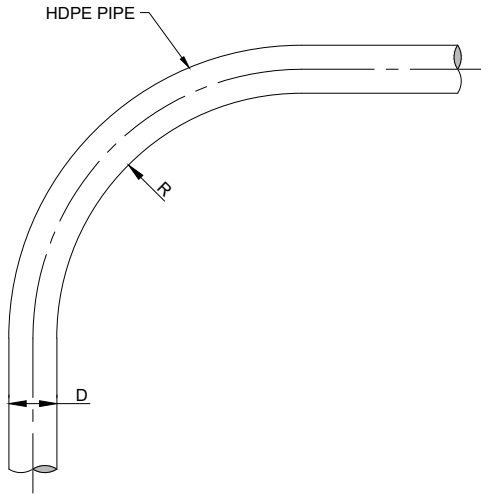
MARKER POSTS
FITTING, GATE VALVE, ARV VAULT

TYPICAL MARKER POSTS
NOT TO SCALE

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

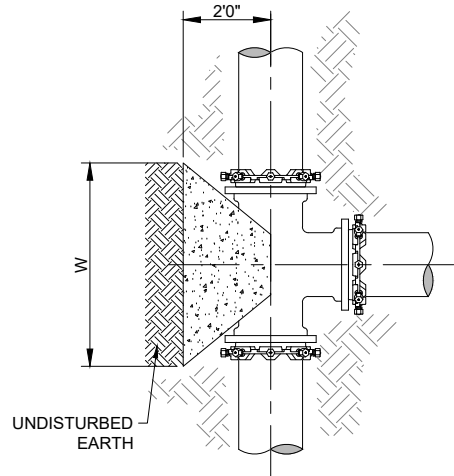


INDIVIDUAL
MARKER POST

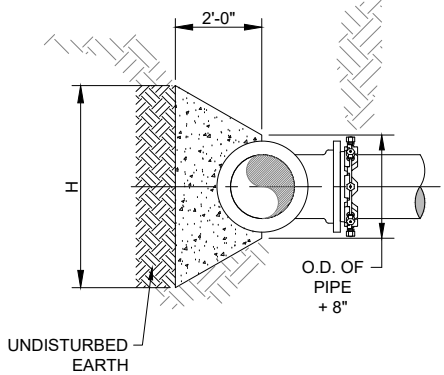


HDPE PIPE BENDING DETAIL
NOT TO SCALE

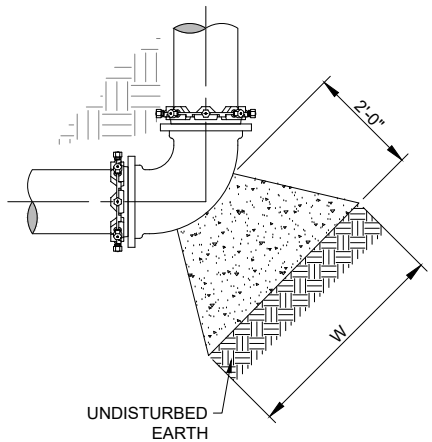
MINIMUM BEND RADIUS FOR HDPE PIPE DEFLECTION INSTALLED IN OPEN CUT TRENCH	
DIMENSION RATIO, DR	MINIMUM COLD BEND RADIUS (FEET)
7	40



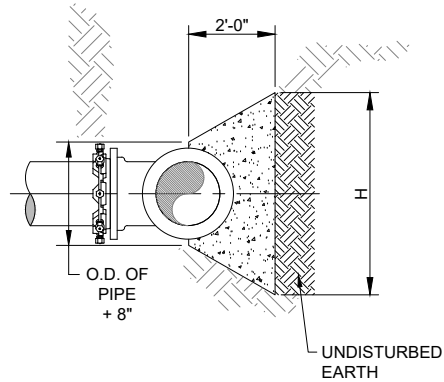
PLAN VIEW
CONCRETE BLOCKING FOR TEE



ELEVATION VIEW
CONCRETE BLOCKING FOR TEE



PLAN VIEW
CONCRETE BLOCKING FOR ELBOW



ELEVATION VIEW
CONCRETE BLOCKING FOR ELBOW

THRUST BLOCK FOR PVC AND DUCTILE IRON FITTINGS DETAIL
NOT TO SCALE

Thrust Block Dimension Schedule			
Pipe	Fitting	Required Thrust Block Area (ft ²)	Design Thrust Block Size (H x W x T) ¹ (ft)
6"	Chlorinator Inlet	6.5	3' x 3' x 2'
6"	90° ell	6.5	3' x 3' x 2'
6"	45° ell	3.5	2' x 2' x 2'
6"	22.5° ell	1.8	1.5' x 1.5' x 2'
6"	11.25° ell	0.9	1' x 1' x 1'
2"	Flush Valve (4" Branch Saddle)	2.0	1.5' x 1.5' x 2'
4"	Chlorinator Outlet	3.1	2' x 2' x 2'
4"	90° ell	3.1	2' x 2' x 2'
4"	45° ell	1.7	1.5' x 1.5' x 2'
4"	4" Tee	2.2	1.5' x 1.5' x 2'

¹ Minimum Thrust Block H x W x T size 1' x 1' x 1'

GENERAL NOTES

- ASSUMED SOIL BEARING OF 1,500 PSF
- ALL CONCRETE SHALL BE 3000 psi, MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS
- BELL RESTRAINT HARNESES ARE NOT ALLOWED
- THRUST BLOCKS REQUIRED FOR PVC AND DI PIPES ONLY, THRUST BLOCKS ARE NOT REQUIRED FOR BENDS ON HDPE PIPELINE

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Client: The Navajo Nation
Location: Naschitti, NM
MISCELLANEOUS CONSTRUCTION DETAILS
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO



Designed TBT
Drawn MvH/AaV
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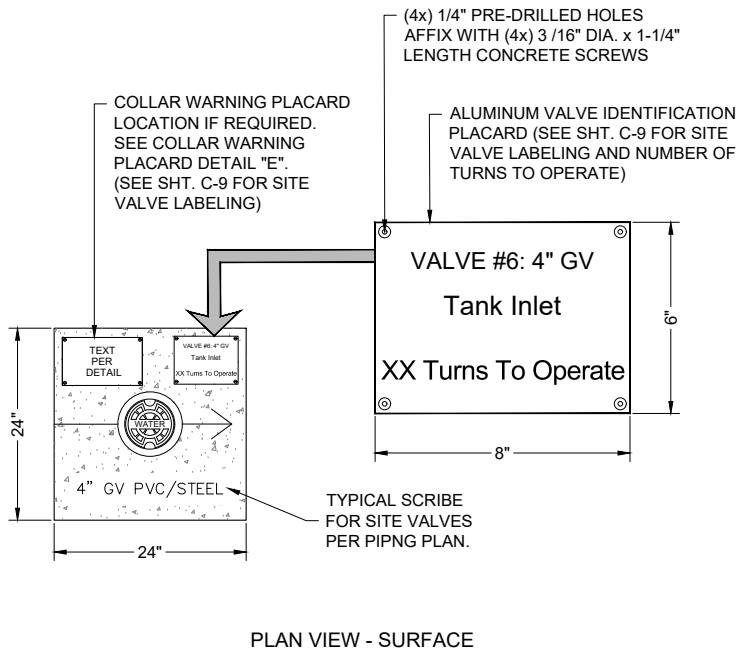
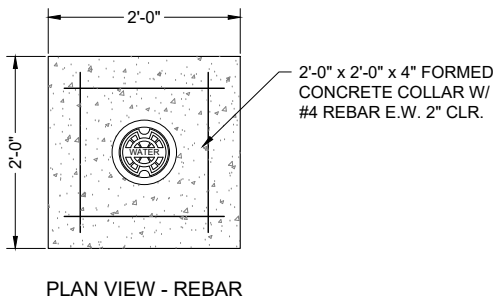
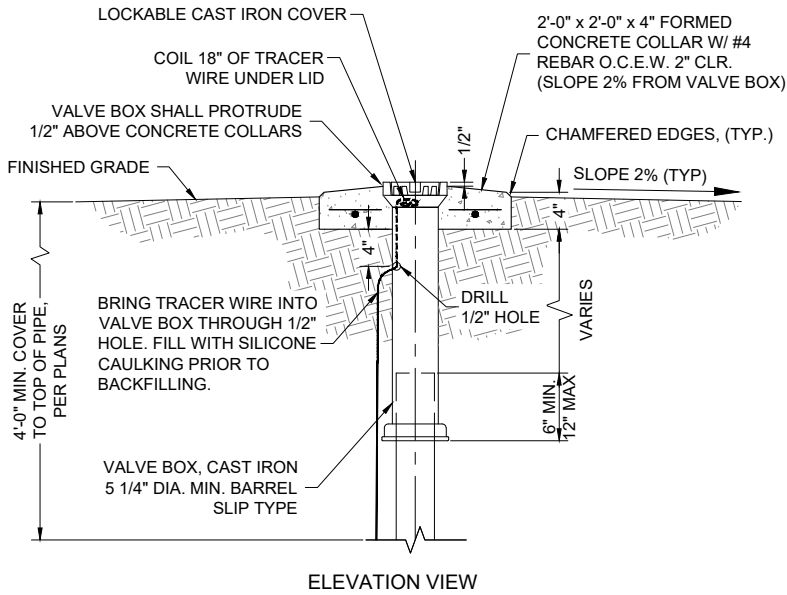
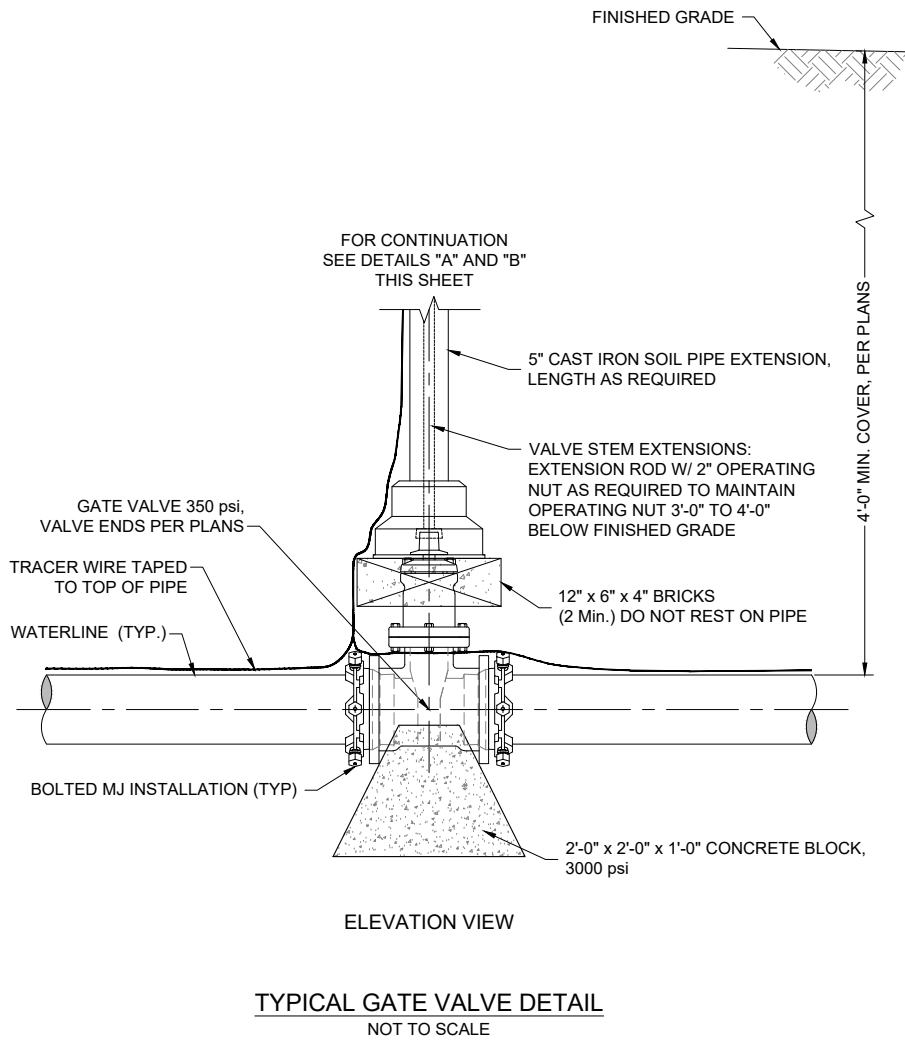


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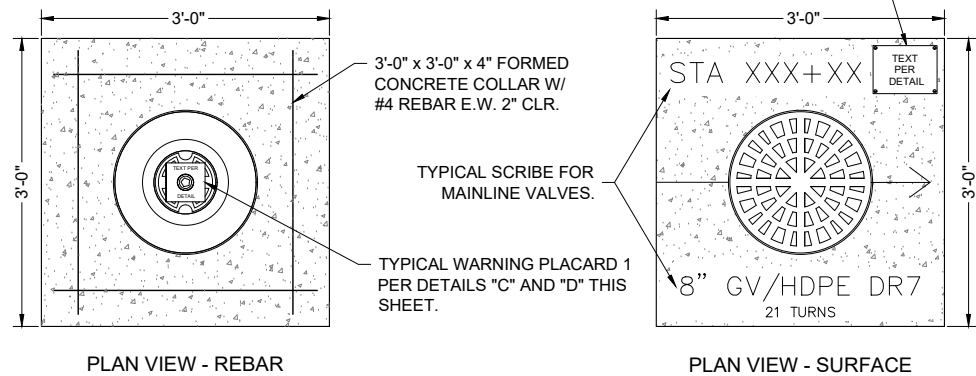
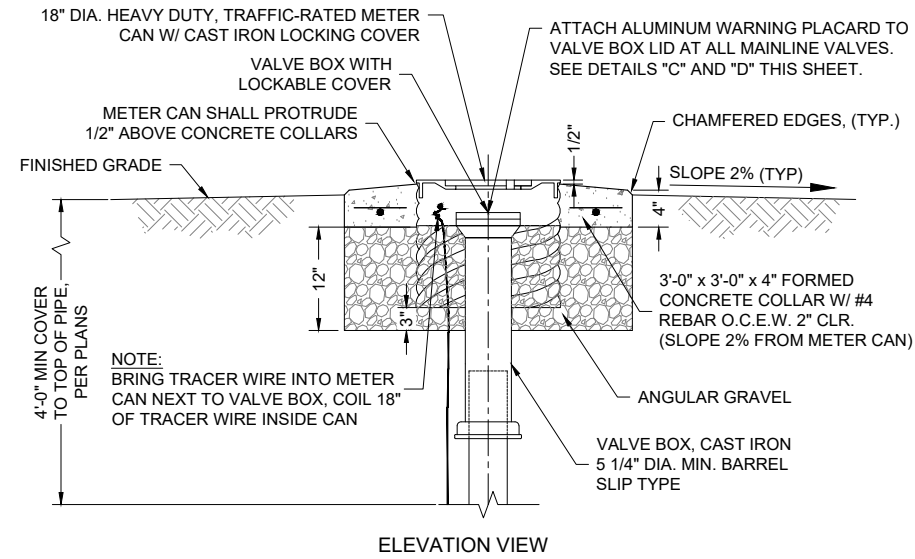
Project No: 6928997

Sheet: DT-2

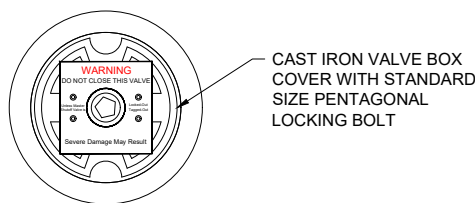
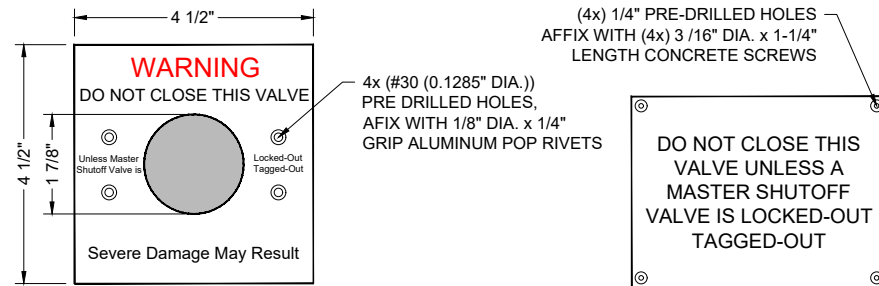
- NOTES:
1. CONTRACTOR SHALL SCRIBE ALL CONCRETE VALVE COLLARS, PER DETAILS "A" AND "B" THIS SHEET. CONCRETE SHALL BE SCRIBED PRIOR TO CURING OR ETCHED AFTER CURING WITH 4" GRINDER.
 2. AFFIX WARNING PLACARD TO VALVE BOX COVER INSIDE METER CAN FOR ALL MAINLINE VALVES UNLESS OTHERWISE NOTED PER DETAILS "B", "C" AND "D" THIS SHEET.
 3. AFFIX ALUMINUM VALVE IDENTIFICATION PLATES TO ALL SITE VALVE COLLARS, PER DETAIL "A" THIS SHEET. REFER TO SHEET C-9 FOR VALVE-SPECIFIC LABELING.
 4. AFFIX ALUMINUM COLLAR WARNING PLACARDS PER DETAILS "A", "B" AND "E" THIS SHEET. REFER TO SHEET C-9 FOR VALVE-SPECIFIC COLLAR WARNING PLACARDS FOR SITE VALVES.
 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.
 7. NOTE VALVE ENDS SHALL BE MJ x MJ UNLESS OTHERWISE NOTED.
 8. APPLY CATHODIC PROTECTION TO ALL BURIED METALLIC PRESSURE-BEARING COMPONENTS LOCATED WITHIN CORROSIVE SOIL ZONES, AS DESIGNATED IN THE PLANS AND/OR SPECIFICATIONS.



DETAIL "A" TYPICAL SITE LOCKING VALVE BOX, COLLAR AND VALVE ID PLACARD DETAIL
NOT TO SCALE



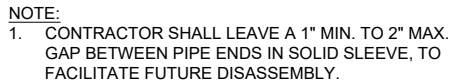
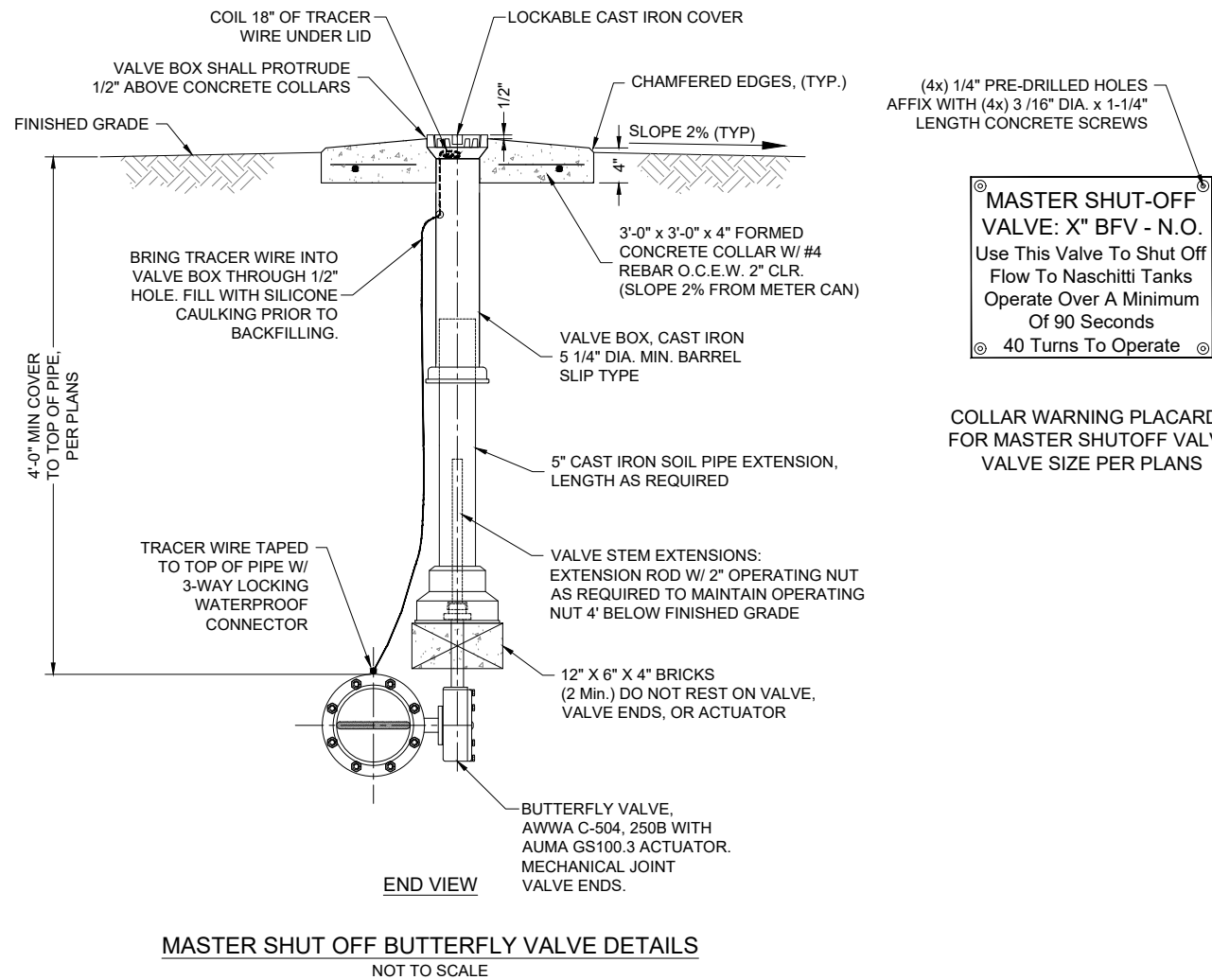
DETAIL "B" TYPICAL MAINLINE VALVE BOX, COLLAR AND VALVE ID PLACARD DETAIL - USE WITH WARNING PLACARD
NOT TO SCALE



DETAIL "D" TYPICAL WARNING PLACARD DETAIL

DETAIL "E" COLLAR WARNING PLACARD 1 FOR ALL SITE VALVES AND MAINLINE VALVES (EXCEPT MASTER SHUT OFF)

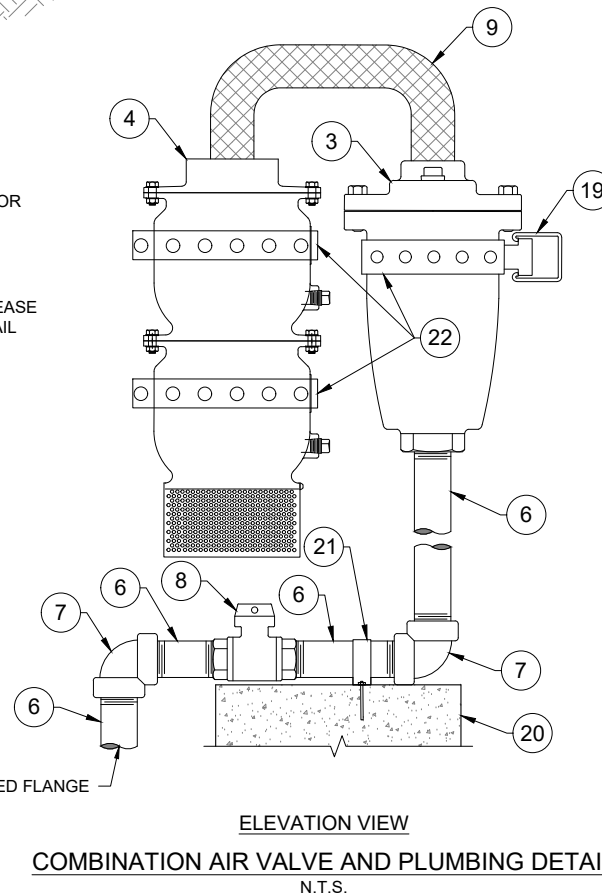
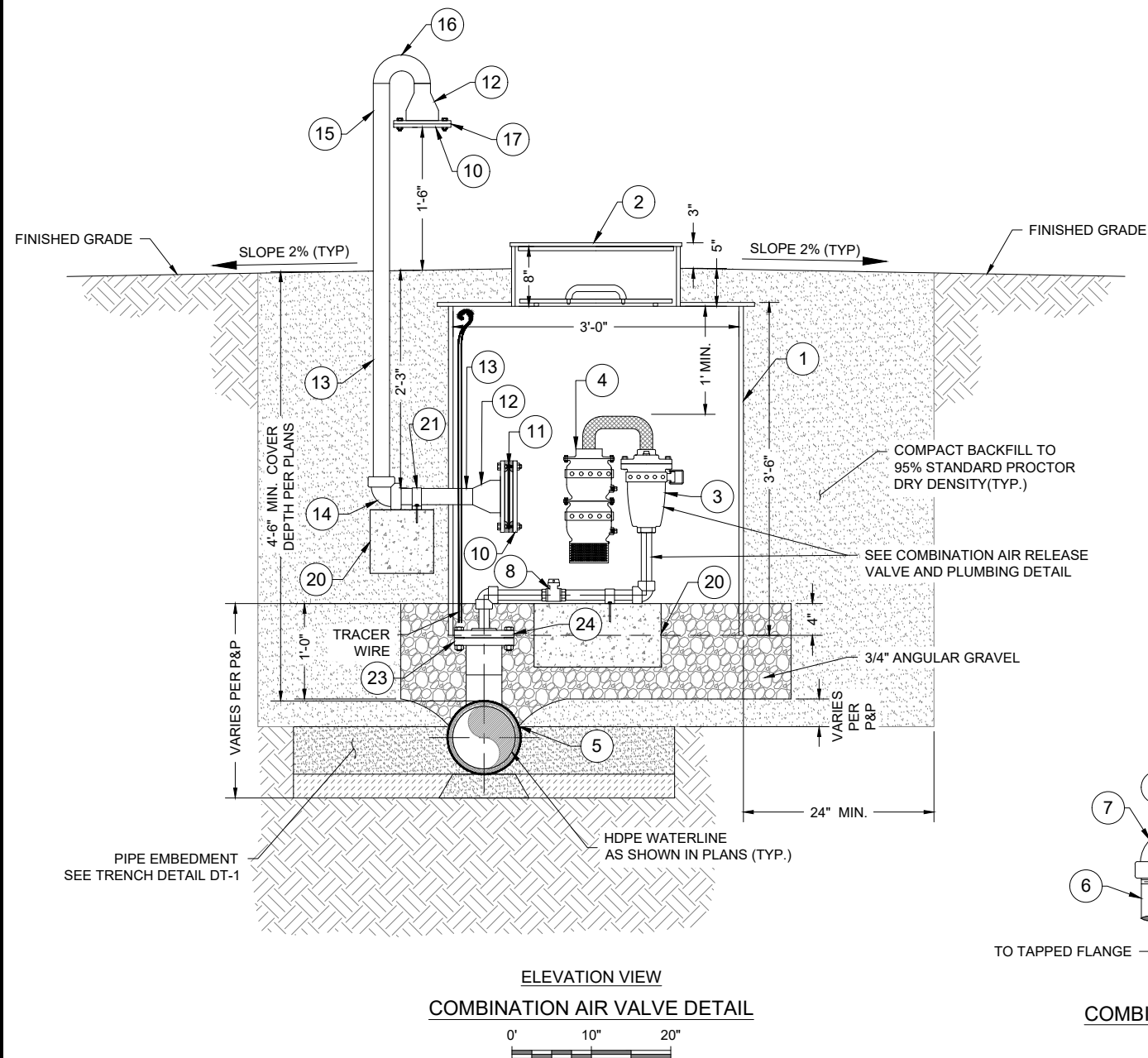
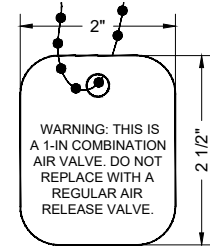
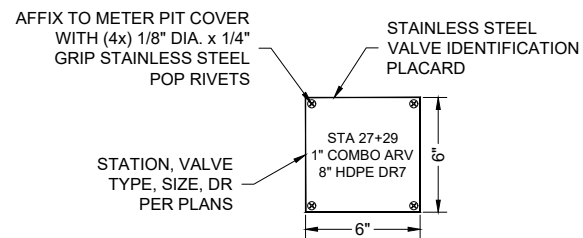
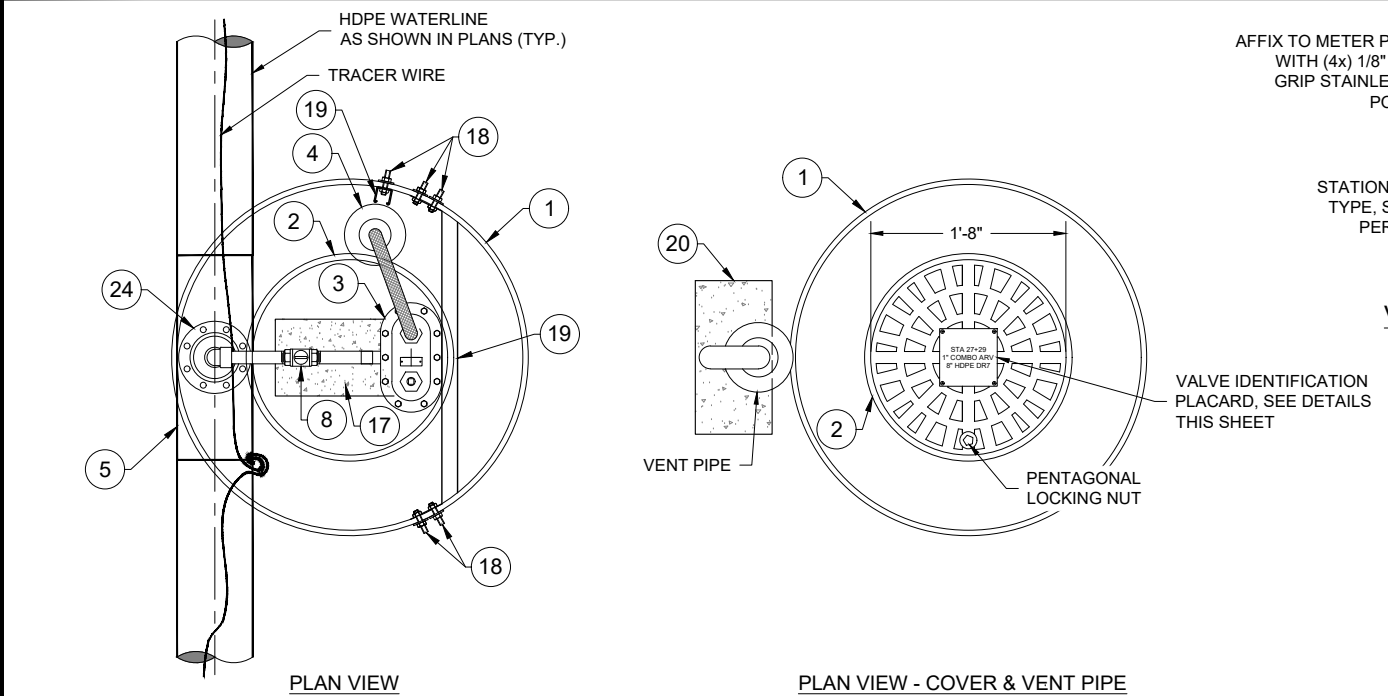
1. CONTRACTOR SHALL SCRIBE ALL CONCRETE VALVE COLLARS, PER DETAIL BELOW, THIS SHEET. CONCRETE SHALL BE SCRIBED PRIOR TO CURING OR ETCHED AFTER CURING WITH 4" GRINDER.
2. AFFIX ALUMINUM COLLAR WARNING PLACARDS TO ALL VALVE COLLARS, PER DETAIL THIS SHEET.
3. ALL MATERIALS SHALL BE WORKING PRESSURE RATED TO AT LEAST THE PRESSURE RATING OF THE PIPE, UNLESS OTHERWISE NOTED.
4. ALL BURIED VALVES SHALL BE COATED WITH FUSION BONDED EPOXY, INTERIOR AND EXTERIOR.
5. APPLY CATHODIC PROTECTION TO ALL BURIED METALLIC PRESSURE-BEARING COMPONENTS LOCATED WITHIN CORROSIVE SOIL ZONES, AS DESIGNATED IN THE PLANS AND/OR SPECIFICATIONS.



MAINLINE GATE VALVE ASSEMBLY DETAIL
FOR HDPE ONLY
NOT TO SCALE

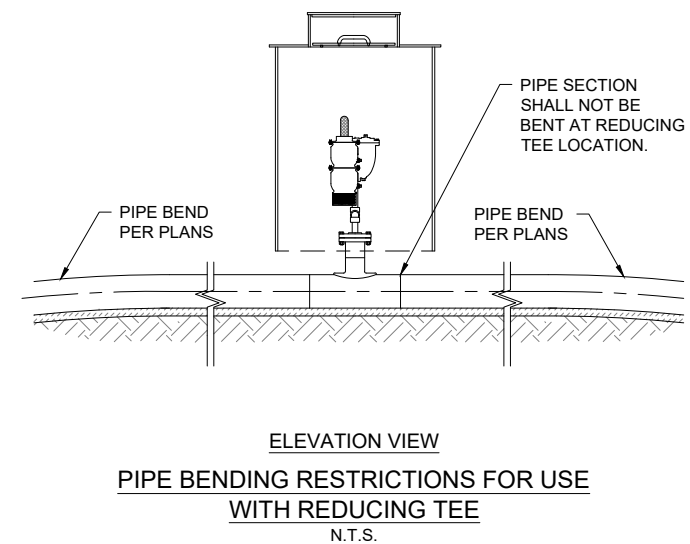
SUMMARY OF VALVE TYPE AND VALVE ACTUATOR TYPE				
Station	Actuator Type	Valve Type	Master Shutoff Valve	Warning Placard
00+31.0	Slow Close (AUMA GS100.3)	Butterfly Valve	Yes	Warning Placard #1 (DT-5)
03+65.0	Standard	Gate Valve	No	Mainline Placard (DT-4)
30+32.5	Standard	Gate Valve	No	Mainline Placard (DT-4)
53+34.3	Standard	Gate Valve	No	Mainline Placard (DT-4)
79+69.3	Standard	Gate Valve	No	Mainline Placard (DT-4)
111+61.6	Standard	Gate Valve	No	Mainline Placard (DT-4)
Tank Site - Upstream of Chlorinator Building	Slow Close (AUMA GS100.3)	Butterfly Valve	Yes	Warning Placard #1 (DT-5)

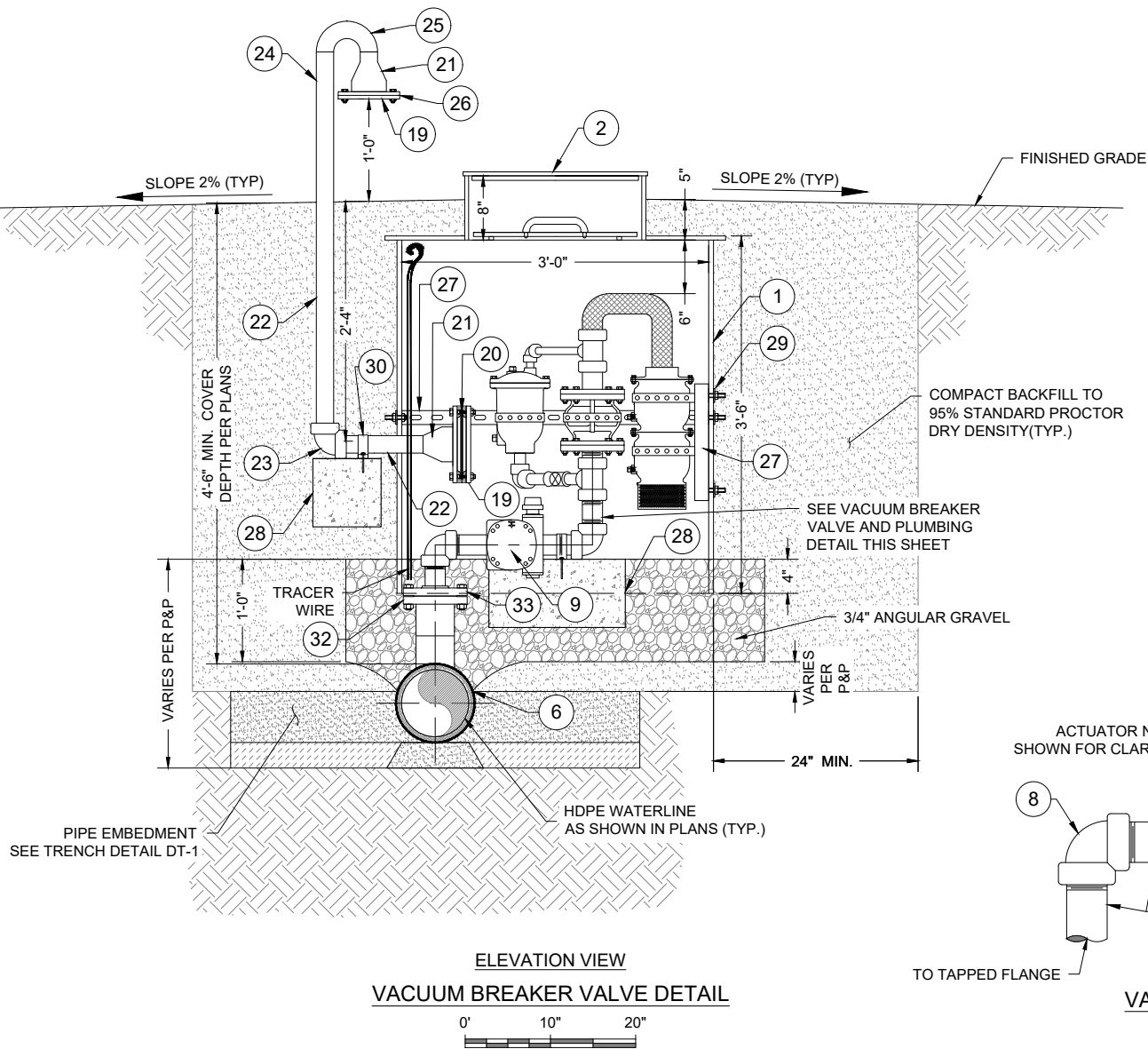
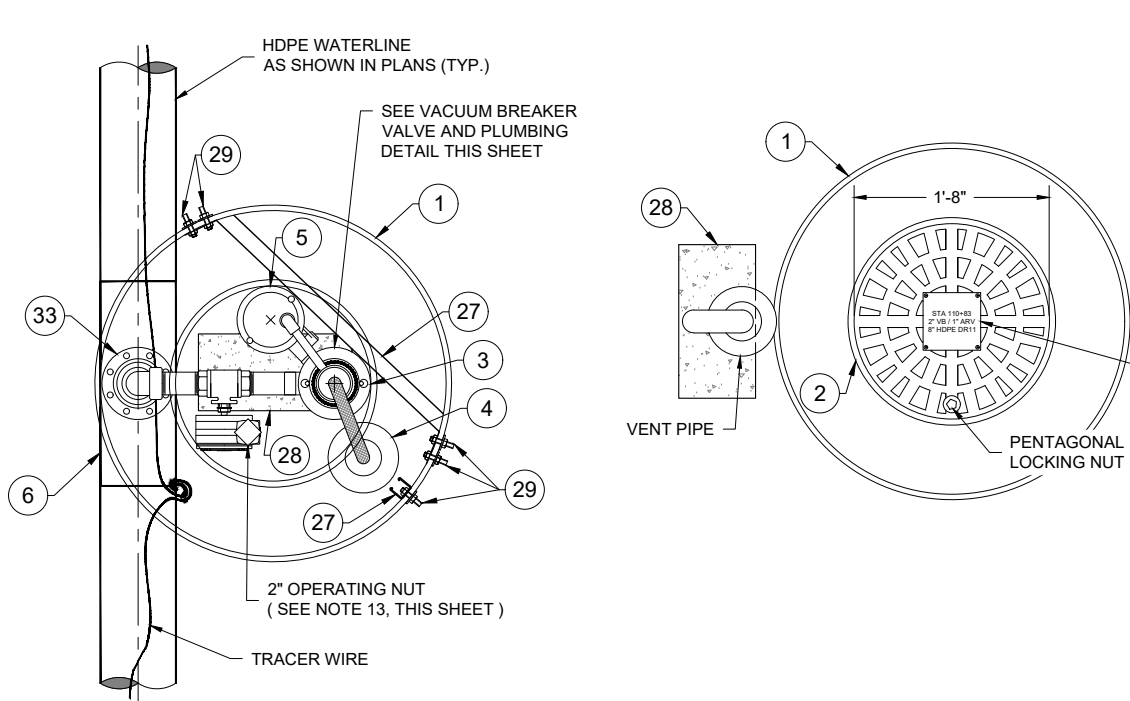
MAINLINE VALVE SUMMARY



KEYED NOTES - 1" COMBINATION AIR VALVE ASSEMBLY	
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	1" VALMATIC MODEL NO, 201C SV COMBINATION AIR VALVE (SINGLE BODY TYPE), 300 psi
4	1" VALMATIC FLOODSAFE INFLOW PREVENTER
5	8" x 4" HDPE BRANCH SADDLE REDUCING TEE, PER SPECIFICATIONS (DIA. + PRESSURE RATING TO MATCH MAIN LINE)
6	1" NIPPLE, SS 304, NPT
7	1" 90° ELBOW, SS 304, NPT, SCHEDULE 40
8	1" CURB STOP, SS 304, NPT
9	1" STAINLESS STEEL BRAIDED HOSE, NPT
10	4" GALVANIZED IRON COMPANION FLANGE, DRILLED TO FIT
11	4" FREEZE PREVENTION DRAFT DAMPENR. VALMATIC FROSTSAFE MODEL #1504, OAE
12	4" FLANGED x 2" WELDED GALVANIZED IRON REDUCER (PIPE EXTERIOR PAINTED BLUE)
13	2" STD. GALVANIZED IRON PIPE, THREADED END (PIPE EXTERIOR COLD-APPLIED TAPE COATED)
14	2" GALVANIZED IRON 90° ELBOW, THREADED (PIPE EXTERIOR COLD-APPLIED TAPE COATED)
15	2" STD. GALVANIZED IRON PIPE (PIPE EXTERIOR PAINTED BLUE)
16	2" GALVANIZED IRON LONG RADIUS WELDED RETURN (PIPE EXTERIOR PAINTED BLUE)
17	VARMINT SCREEN
18	2" SS 304 ANCHOR BOLTS, NUTS AND FENDER WASHERS (2x EACH SIDE)
19	1 5/8" GALVANIZED UNI-STRUT (ADJUST AS NEEDED TO FIT VALVES AND PIPING)
20	CONCRETE SUPPORT BLOCK, SOLID 8" x 8" x 16" (MIN. 3" FROM EDGE OF PIPE)
21	1" WIDE PIPE STRAP, BOLT TO SUPPORT BLOCK (3" BOLTS)
22	STAINLESS STEEL PERFORATED METAL HANGER STRAP
23	4" HDPE FLANGE ADAPTER W/ STAINLESS STEEL STIFFENER AND FBE COATED DI BACKUP RING (PRESSURE RATED TO MATCH MAIN LINE)
24	4" x 1" TAPPED BLIND FLANGE, SS 304

- NOTES:**
1. ALL FLANGES SHALL BE FLAT FACED, UNLESS OTHERWISE NOTED.
 2. ALL NON-STAINLESS METALLIC PIPE IN CONTACT WITH SOIL SHALL BE COLD APPLIED TAPE-COATED PER AWWA C209.
 3. FOR COMBINATION AIR VALVES LOCATED AT HIGH POINTS, COMBINATION AIR VALVE 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. CONTRACTOR SHALL ATTACH VALVE IDENTIFICATION PLACARD TO ALL COMBO AIR VALVE METER BOX LIDS, INFORMATION AS FOLLOWS: AS BUILT PIPE STATION, VALVE SIZE, "COMBO ARV", PIPE SIZE AND MATERIAL. SEE DETAIL, THIS SHEET.
 7. 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.
 8. ALL MATERIALS RATED TO AT LEAST THE PIPE PRESSURE RATING UNLESS OTHERWISE NOTED.
 9. PIPE SECTION SHALL NOT BE BENT AT COMBO AIR VALVE INSTALLATION LOCATIONS, SEE DETAIL THIS SHEET.





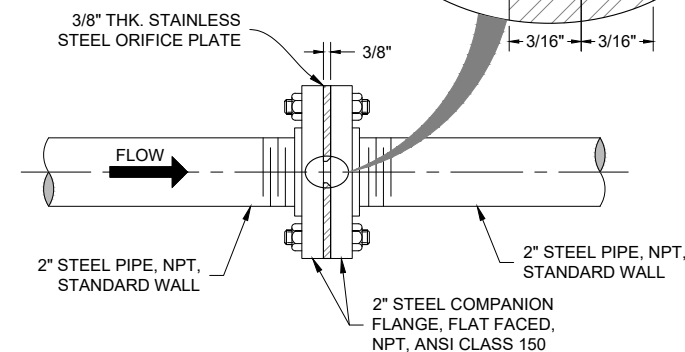
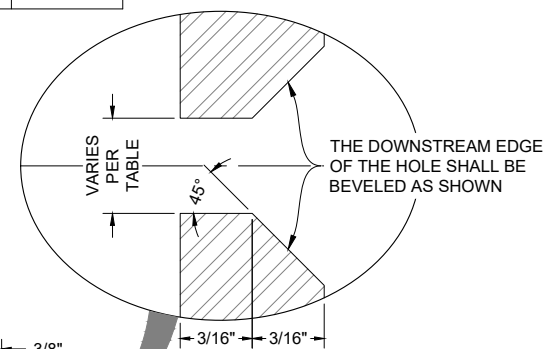


NOTES:

1. ALL FLANGES SHALL BE ANSI CLASS 125 or 150.
2. ALL NON STAINLESS METALLIC PIPE BELOW GROUND IN CONTACT WITH SOIL SHALL BE COLD APPLIED TAPE-COATED PER AWWA C-209 AND SPECIFICATIONS. PIPE ABOVE GROUND TO BE PAINTED BLUE.
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.
8. SEE TABLE THIS SHEET FOR ORIFICE PLATE DRILLING REQUIREMENTS.

SUMMARY OF FLUSH VALVE ORIFICE PLATE DRILLING			
Station	Elevation	Orifice Plate Required	Orifice Plate Hole Ø (in.)
3+50	5871	YES	1.0
30+25	5915	YES	1.0
Tank Site U/S Chlorinator	6151	YES	1.5
Tank Site D/S Chlorinator	6151	YES	1.5

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



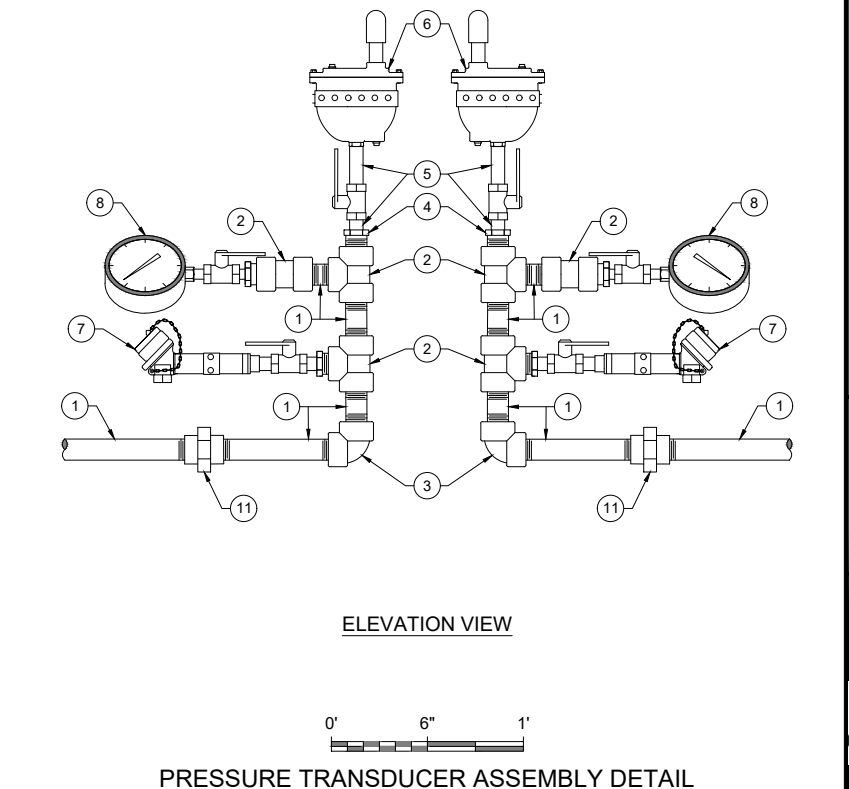
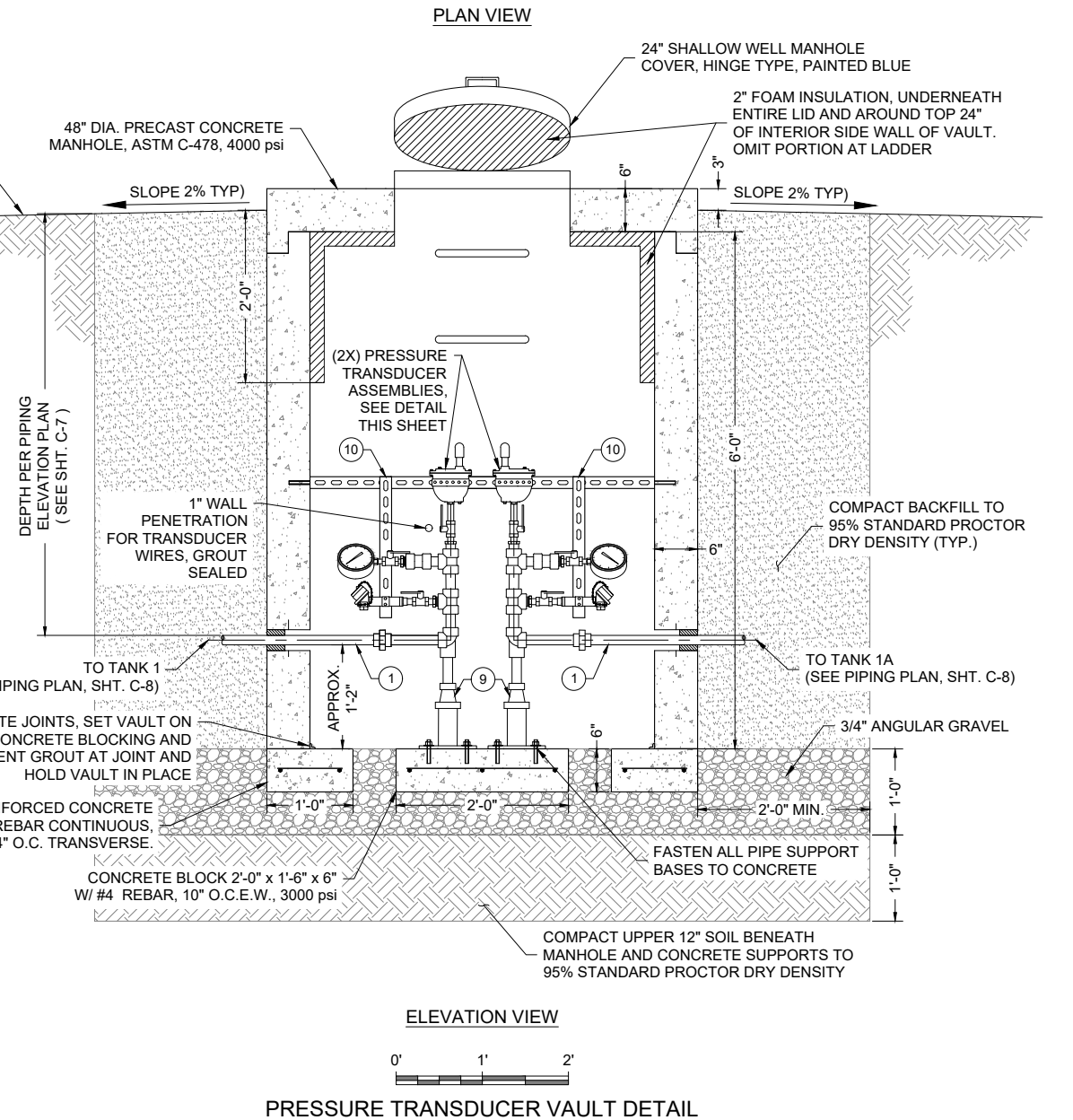
2" FLUSH VALVE

ORIFICE PLATE ASSEMBLY

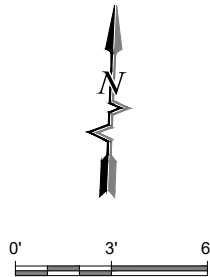
NOT TO SCALE

NOTE:

1. ALL STAINLESS STEEL PIPE AND FITTINGS SHALL HAVE A WORKING PRESSURE OF AT LEAST 350 psi, UNLESS OTHERWISE NOTED.
2. ALL 1" PIPE TO BE SECURED WITH PIPE CLAMPS MOUNTED TO UNISTRUTS OR THE WALL. NOT ALL PIPE SUPPORTS NOT SHOWN FOR CLARITY.
3. GAUGES SHALL BE ANGLED FACING TOWARD MANHOLE COVER.



- FOUNDATION AND TANK STRUCTURAL DESIGN DRAWINGS AND CALCULATIONS (SEALED BY NEW MEXICO-LICENSED PROFESSIONAL ENGINEER) TO BE PROVIDED BY TANK MANUFACTURER. FOUNDATION SHALL BE CONCRETE RING, BASED ON LICENSED P.E.'S DESIGN AND THE RECOMMENDATIONS OF THE GEOMAT GEOTECHNICAL ENGINEERING REPORT PROJECT NO. 242-4764, DATED APRIL 2, 2024.
2. TANK FOUNDATIONS MUST BE CONCRETE RING WALL TYPE FOUNDATION. STEEL RETAINING RING NOT ALLOWED. TANK SHALL BEAR ON A MINIMUM OF 4 FEET OF ENGINEERED FILL. ENGINEERED FILL SHALL EXTEND 2 FEET Laterally BEYOND THE EDGE OF THE FOOTING, MEASURED AT BOTTOM OF OVER-EXCAVATION. INCREASE DEPTH OF OVER-EXCAVATION, IF NECESSARY, TO ENSURE ENGINEERED FILL BEARS UNIFORMLY ON CUT; DO NOT ALLOW TRANSITION FROM CUT TO FILL TO PASS UNDERNEATH OR WITHIN 5 HORIZONTAL FEET OF TANK. FOOTINGS BEARING ON ENGINEERED FILL SHOULD BE EMBEDDED A MINIMUM OF 30 INCHES BELOW FINISHED GRADE. REFER TO GEOMAT GEOTECHNICAL ENGINEERING REPORT PROJECT NO. 242-4764, DATED APRIL 2, 2024, FOR SUBSURFACE INFORMATION, OVER EXCAVATION REQUIREMENTS, SUBGRADE PREPARATION, AND STRUCTURAL FILL & COMPACTION. ENGINEERED FILL SHALL BE COMPACTED TO 95% MIN. MODIFIED PROCTOR.
3. CONTRACTOR SHALL FIELD SURVEY ELEVATION OF OVERFLOW WEIR OF EXISTING TANK 1 AND ENSURE ELEVATION OF OVERFLOW WEIR OF NEW TANK 1A MATCHES (WITHIN A TOLERANCE OF $\pm 1/2"$).
4. STATED TANK VOLUMES ARE NOMINAL. ACTUAL TANK VOLUMES SHALL BE WITHIN 2% OF THE STATED NOMINAL VALUE.
5. TANK COLOR TO BE TAN.
6. TANK APPURTENANCES SHOWN IN ELEVATION VIEW HAVE BEEN ROTATED INTO VIEW FOR DEPICTION PURPOSES.
7. STEEL OVERFLOW PIPING SHALL BE SHOP COATED SAME AS TANK.
8. ALL UNDERGROUND NON STAINLESS STEEL PIPE AND FITTINGS SHALL BE COLD APPLIED TAPE COATED EXTERIOR.
9. ALL STEEL PIPE AND FITTINGS UNDERNEATH AND WITHIN 5' OF TANKS OR BUILDINGS SHALL BE SHOP WELDED AND COATED, X-RAY TESTED AND PRESSURE TESTED PRIOR TO POURING FOUNDATIONS.
10. ALL STEEL PIPE AND FITTINGS SHALL BE STANDARD WALL UNLESS OTHERWISE NOTED.
11. SANDBLASTING WASTE SHALL BE DISPOSED OF OFF-SITE AT AN APPROVED SOLID WASTE FACILITY AT THE CONTRACTOR'S EXPENSE.
12. ALL BASE AND OVERFLOW ELEVATIONS PROVIDED IN THESE DRAWINGS ARE APPROXIMATE.
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.



NASCHITTI 1A TANK

[illegible]

SMA

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Client: The Navajo Nation
Location: Naschitti, NM

TANK 1A DETAILS (1 OF 2)
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO



Designed	Drawn	Checked
TBT	MvH/AaV	TTT

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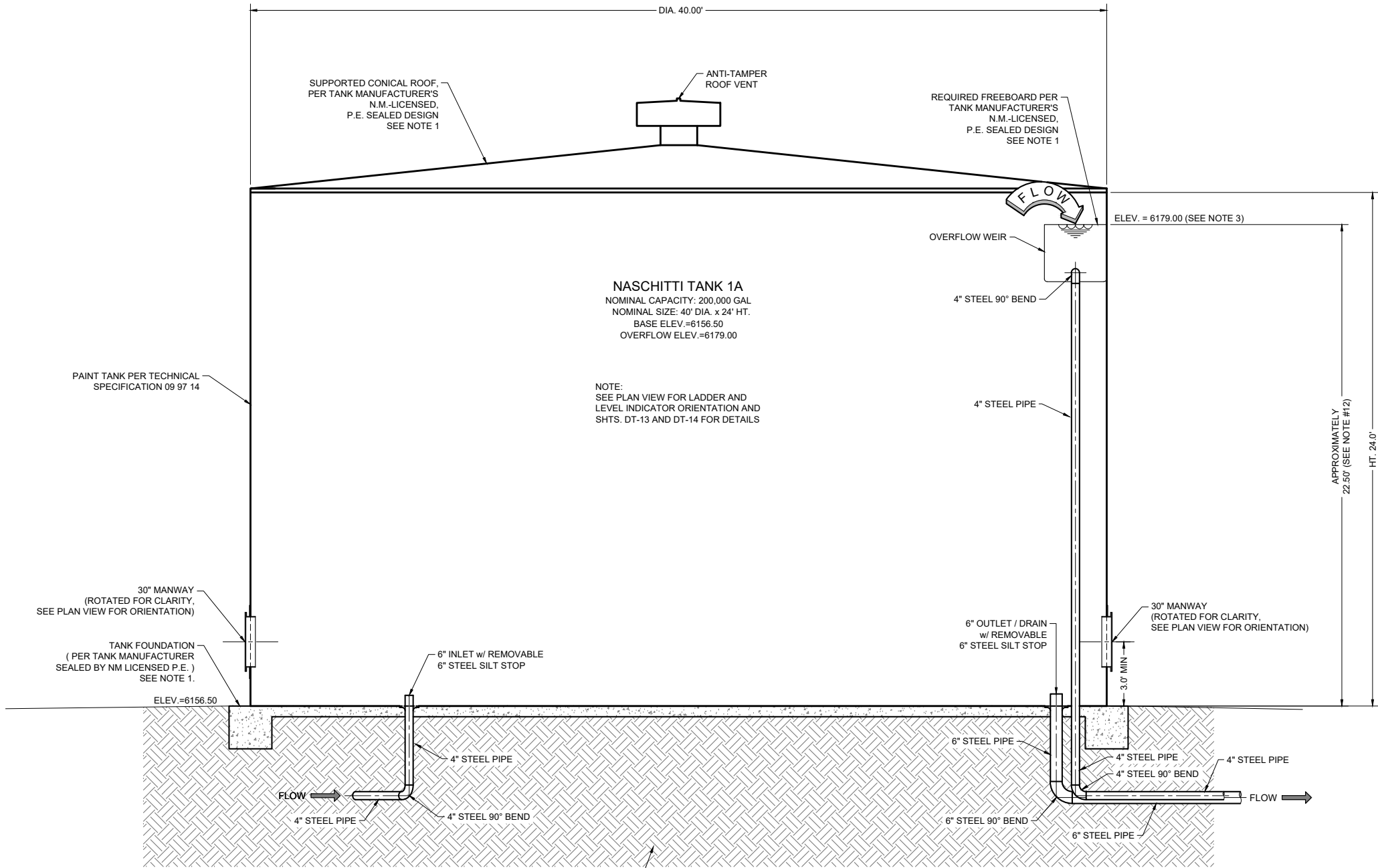
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Vert: N/A

Project No:	6928997
Sheet:	DT-11

NOTES:

- FOUNDATION AND TANK STRUCTURAL DESIGN DRAWINGS AND CALCULATIONS (SEALED BY NEW MEXICO-LICENSED PROFESSIONAL ENGINEER) TO BE PROVIDED BY TANK MANUFACTURER. FOUNDATION SHALL BE CONCRETE RING, BASED ON LICENSED P.E.'S DESIGN AND THE RECOMMENDATIONS OF THE GEOMAT GEOTECHNICAL ENGINEERING REPORT PROJECT NO. 242-4764, DATED APRIL 2, 2024.
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- ALL STEEL PIPE AND FITTINGS SHALL BE STANDARD WALL UNLESS OTHERWISE NOTED.
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- ALL STEEL PIPE FLANGES SHALL BE ANSI CLASS 150.
- 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.
- IMPRESSED CURRENT CATHODIC PROTECTION REQUIRED.



ELEVATION VIEW



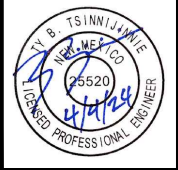
NASCHITTI 1A TANK

Revision	Date	Description	By	Chk'd

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Client: The Navajo Nation
Location: Naschitti, NM
TANK 1A DETAILS (2 OF 2)
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO



Designed TBT	Drawn MvH/AaV	Checked TTT
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Date:	April 2024
Scale:	Horiz: 1" = 6' Vert: N/A
Project No:	6928997
Sheet:	DT-12



12" MIN.

SEE SHEET DT-12 FOR ELEVATION

90° LONG RADIUS ELBOW

WEIR BOX

90° LONG RADIUS ELBOW

D.I.F.

STEEL PIPE DIAMETER PER PLANS

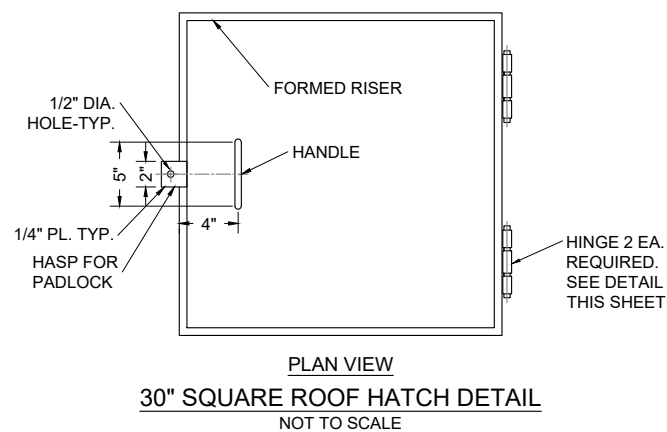
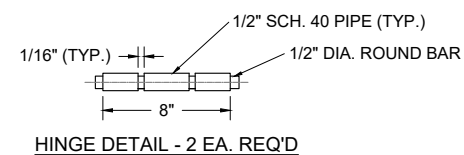
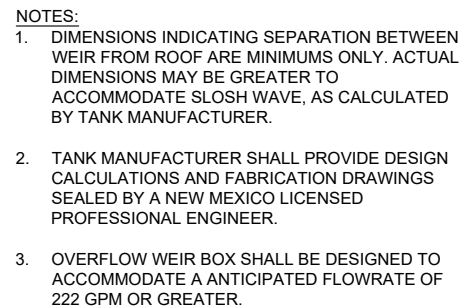
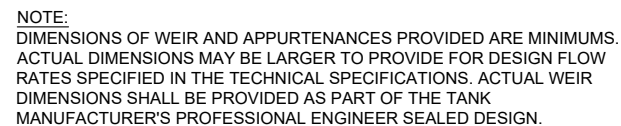
WELD BRACE
3/8" x 3" x 1'-1 3/4"
M.S. FLAT BAR

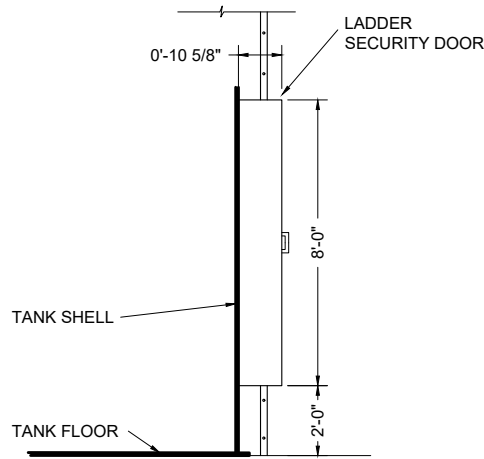
TYPICAL SPACING

VARIABLES

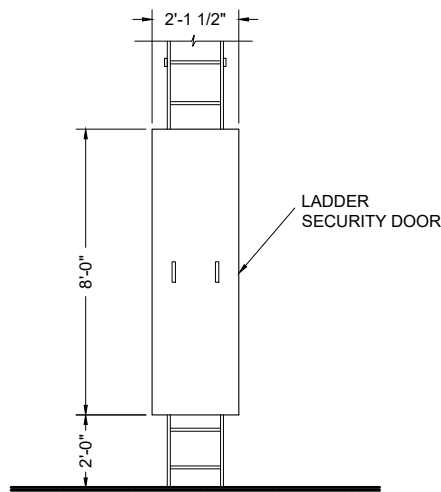
4'-0"

ELEVATION VIEW



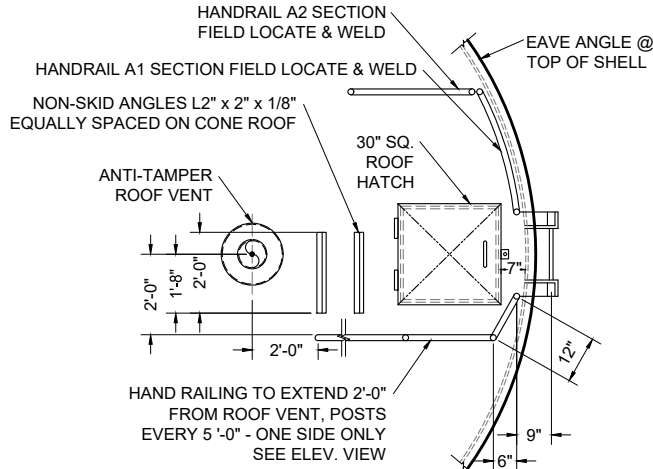


SIDE VIEW
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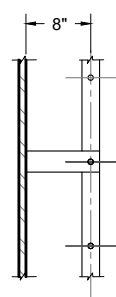


FRONT VIEW
NOT TO SCALE

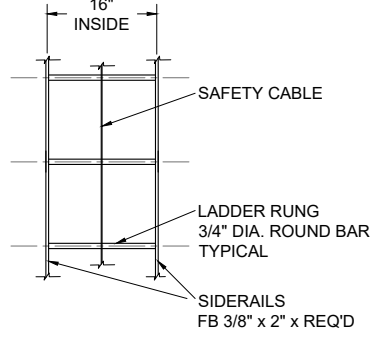
LADDER SECURITY DOOR DETAILS
NOT TO SCALE



OVERALL PLAN VIEW
NOT TO SCALE

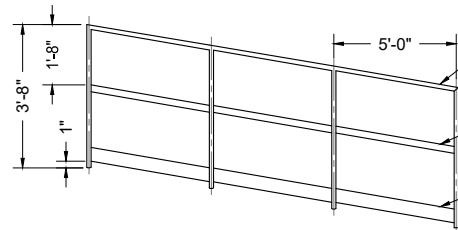


SIDE VIEW

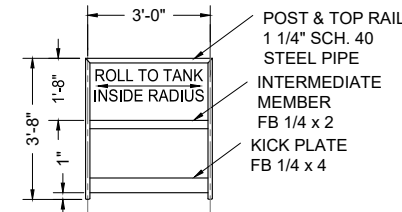


FRONT VIEW

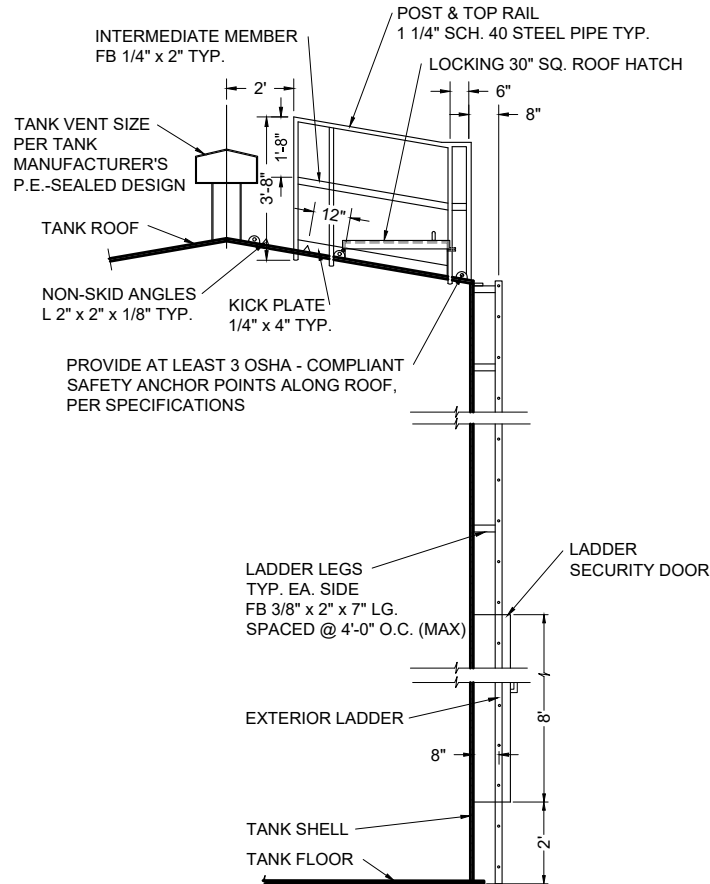
LADDER DETAILS
NOT TO SCALE



HANDRAIL A2 DETAIL
NOT TO SCALE

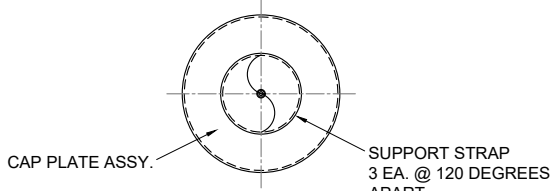


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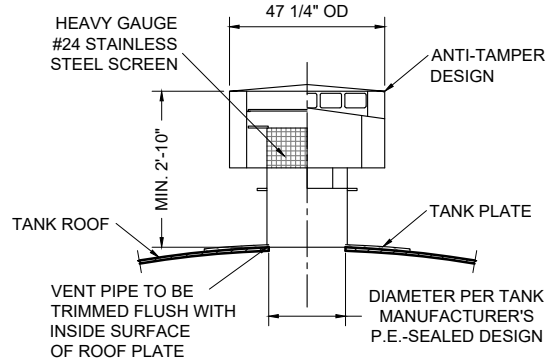


TANK CUTAWAY ELEVATION VIEW
NOT TO SCALE

NOTE:
1. VENT SHALL BE DESIGNED TO ACCOMMODATE A
ANTICIPATED FLOWRATE OF 222 GPM OR GREATER.

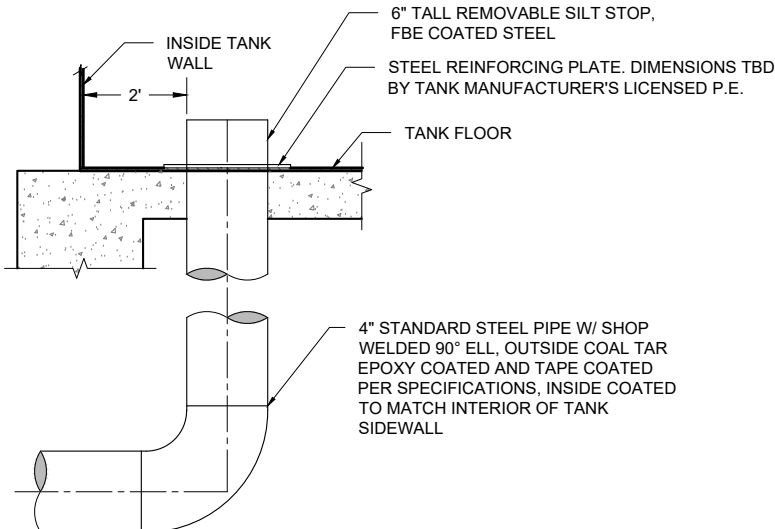


PLAN VIEW

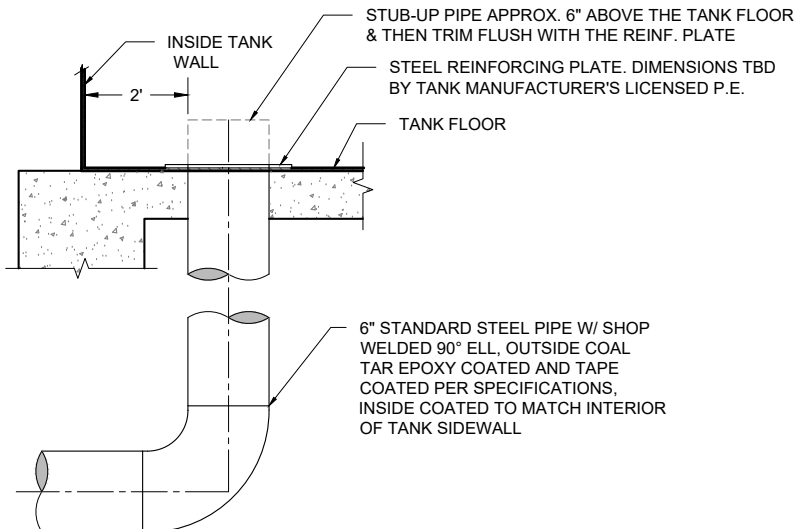


ELEVATION VIEW

VERTICAL C/L OF TANK AND VENT
NOT TO SCALE



ELEVATION VIEW
4" INLET DETAIL
NOT TO SCALE



ELEVATION VIEW
6" OUTLET / TANK FLOOR DRAIN DETAIL
NOT TO SCALE

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Client: The Navajo Nation
Location: Naschitti, NM
TYPICAL WATER STORAGE TANK DETAILS (2 OF 2)
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO

Professional Engineer
State of New Mexico
No. 25520
Date: 11/14/2024

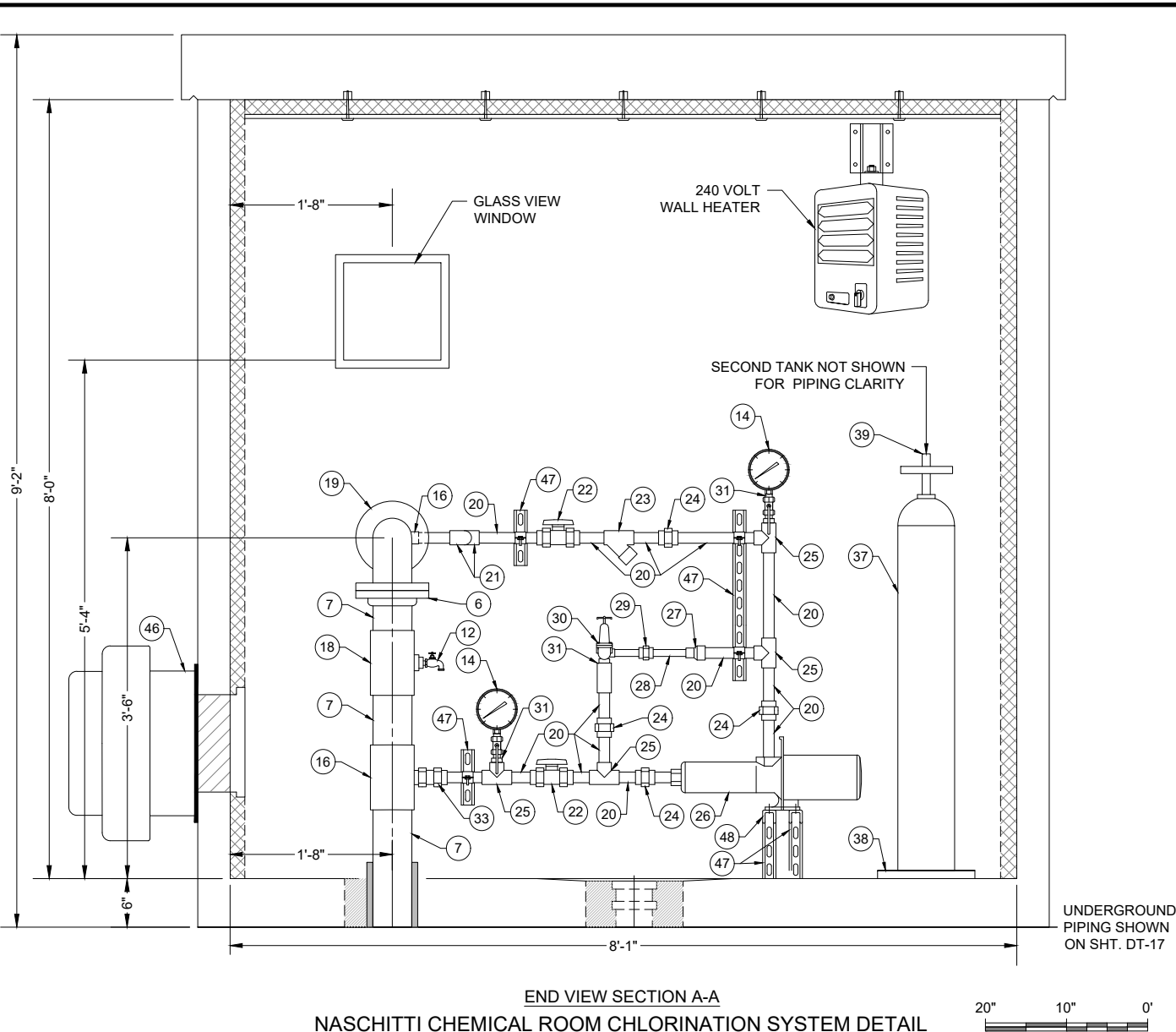
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Drawn: MvH/AaV
Checked: TTT

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

Date: April 2024
Scale: Horiz: AS SHOWN
Vert: N/A

Project No: 6928997
Sheet: DT-14

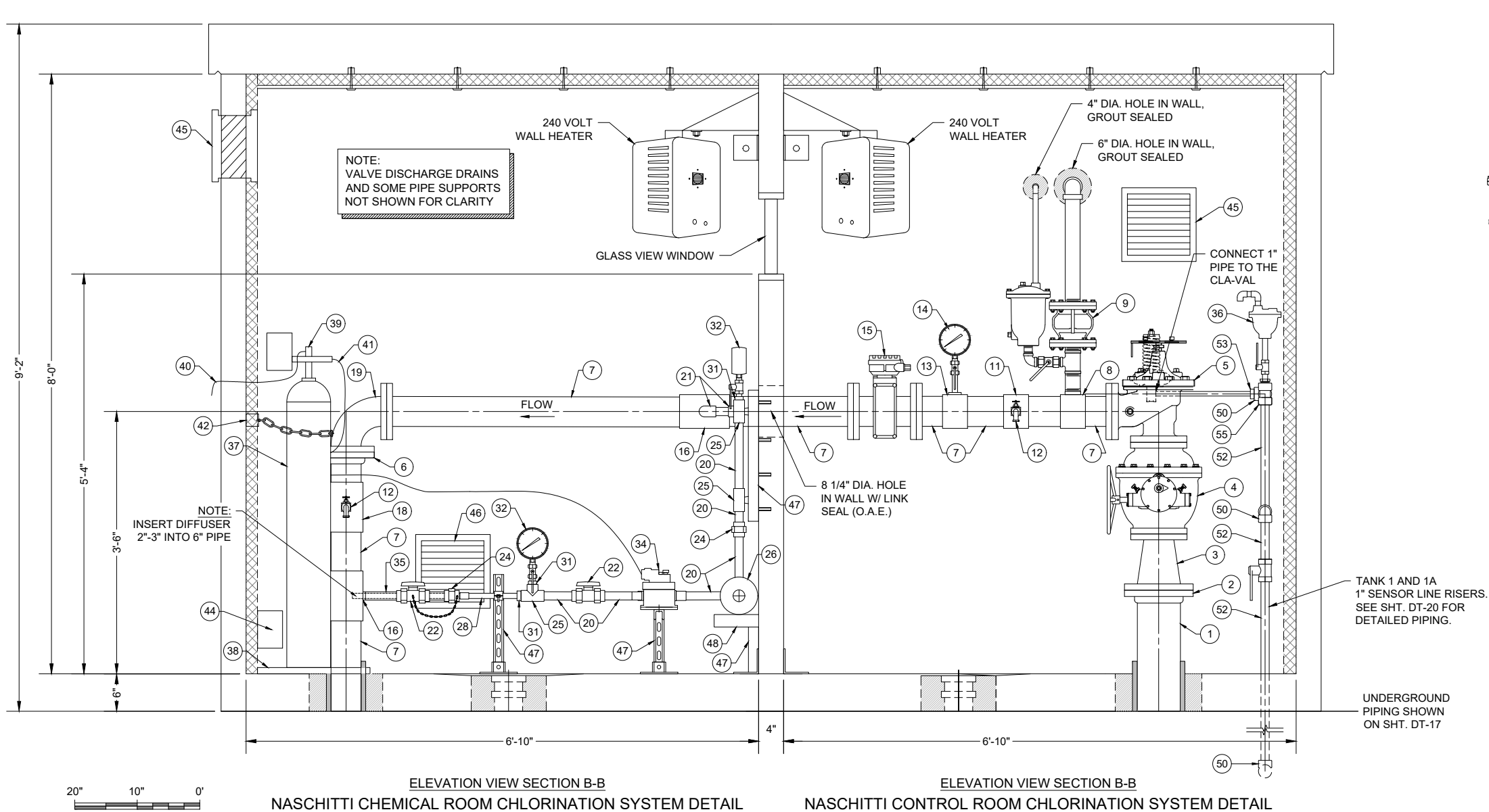


25	1" TEE, PVC SCHED 80
26	BOOSTER PUMP, FRANKLIN BT4 5JB03S4 (O.A.E.)
27	1" x 1/2" REDUCER, PVC SCHED 80
28	1/2" PVC SCHED 80 PIPE
29	1/2" UNION, PVC SCHED 80
30	1/2" PRESSURE RELIEF VALVE, WATTS BP 30 (O.A.E.) PRESSURE SET TO 90 PSI
31	1" x 1/2" PVC BUSHING
32	PRESSURE GAUGE, 0-150 PSI, WITH PVC/TEFLON DIAPHRAM SEAL AND 1/2" BALL VALVE, STAINLESS STEEL
33	1" TRUE UNION CHECK VALVE, PVC SCHED 80
34	CHLORINE INJECTOR, WALLACE & TIERNAN S10K W/ 99D THROAT/TAIL PIECE (O.A.E.) W/ PVC/TEFLON DIAPHRAM VALVE ON VACUUM LINE WITH PEDESTAL. SUPPORT WITH UNISTRUTS.
35	INSERTION DIFFUSER, MTE (O.A.E.)
36	1/2" VALMATIC MODEL NO. 15ASV AIR RELEASE VALVE, 175 PSI, W/ 1/2" DOWNSPOUT, PVC SCH 80, 1/2" SS BALL VALVE, NPT, 1/2" SS PIPE
37	CHLORINE GAS CYLINDER, 150 LB (DO NOT INSTALL)
38	ELECTRONIC CHLORINE CYLINDER SCALE, FORCE FLOW GR150-2 W/ FORCE FLOW SOLO G2 DIGITAL INDICATOR (O.A.E.), BOLTED TO FLOOR
39	VACUUM REGULATOR, WALLACE & TIERNAN 210S (O.A.E.)
40	1/2" PE VENT TUBING (WALL PENETRATION MUST BE BELOW REGULATORS)
41	3/8" PE VACUUM TUBING
42	WALL MOUNTED CHAIN BRACKET, INSTALL 40" ABOVE FLOOR, WITH SAFETY CHAIN
43	CHLORINE GAS CONTROL PANEL, WALLACE & TIERNAN S10K (O.A.E.)
44	CHLORINE GAS DETECTOR SENSOR/TRANSMITTER, WALLACE & TIERNAN ACUTEC 35 W/ AUTOTEST (O.A.E.), MOUNTED 6" ABOVE FLOOR, LOCATION TBD BY ENGINEER IN FIELD. CHLORINE GAS DETECTOR RECEIVER, WALLACE & TIERNAN ACUTEC 35 (O.A.E.) LOCATION AS INDICATED IN ELECTRICAL PLANS OR TBD BY ENGINEER IN FIELD.
45	LOUVERED VENT W/ BACKDRAFT DAMPER McMASTER CARR #2039 KI, W/ EPOXY GREY PAINT
46	19 1/2" 430 CFM EXHAUST FAN WITH BACKDRAFT DAMPER
47	1 5/8" UNISTRUT, STAINLESS STEEL, WITH PIPE SUPPORTS
48	SS UNISTRUT PEDESTAL FOR CHLORINATION BOOSTER PUMP. DIMENSIONS TO BE DETERMINED UPON APPROVAL OF PUMP SUBMITTAL BY CONTRACTOR. 9" ABOVE FLOOR.
49	1" BALL VALVE, SS 304

NOTES:

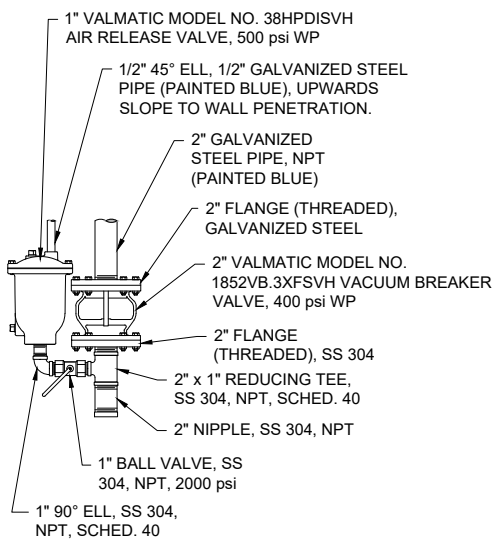
1. POSITION PRESSURE GAUGES SUCH THAT VIEW IS NOT OBSCURED BY OTHER EQUIPMENT IN FRONT.
2. CONTRACTOR RESPONSIBLE TO PROVIDE ALL FITTINGS NECESSARY (SUCH AS BUSHINGS, FLANGES, ADAPTERS, NIPPLES, ETC.), WHETHER EXPLICITLY SHOWN OR NOT, TO COMPLETE THE INSTALLATION AS INDICATED.
3. ALL 1" AND SMALLER PIPE 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 AWWA C-209 COLD-APPLIED 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.
14. CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, GRAFFITI PROOFER GPA-300, TO EXTERIOR OF BUILDING.

P:\6-NGVSP Naschitti Chapter Connection (6928997)\CAD\Civil\Construction Plans\Naschitti Chlor System Details.dwg
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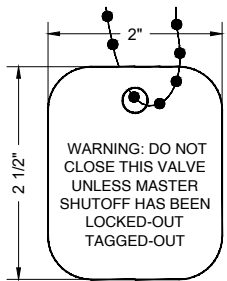


ELEVATION VIEW SECTION B-B
NASCHITTI CHEMICAL ROOM CHLORINATION SYSTEM DETAIL

ELEVATION VIEW SECTION B-B
NASCHITTI CONTROL ROOM CHLORINATION SYSTEM DETAIL



DETAIL "A"
2" VACUUM BREAKER
W/ 1" ARV ASSEMBLY



VALVE WARNING TAG DETAIL
(HANG FROM 4" BALL VALVE)

1	6" DUCTILE IRON PIPE
2	6" FLANGE ISOLATION KIT
3	6" x 4" REDUCER, FL x FL DI, WP 250 PSI
4	4" BALL VALVE AUMA GS100.3 (BIG GEAR) WITH 8" HANDWHEEL, FL x FL WITH GEARED ACTUATOR AND LOCK AND CHAIN TO PREVENT OPENING WHILE PIPELINE IS FLOWING. DI WITH FLANGE ISOLATION KIT.
5	4" FLANGED REDUCED-PORT ELECTRONIC CONTROL VALVE WITH ANTI-CAV TRIM, CLA-VAL (0-160 PSI INLET/OUTLET GAUGES) W/ CLA-VAL VC-22D CONTROLLER WITH ELECTRONIC FLOW CONTROL PILOT AND ONE-WAY ALTITUDE CONTROL PILOT. ALTITUDE PILOT TO BE PLACED ON LEFT-SIDE OF VALVE.
6	4" FLANGE ISOLATION KIT
7	4" DUCTILE IRON PIPE
8	4" x 2" TAPPING SADDLE, DI
9	2" VACUUM BREAKER WITH 1" ARV ASSEMBLY, SEE DETAIL "A" (SHT. DT-16). VENT VACUUM BREAKER AND ARV OUTSIDE BUILDING.
10	1/2" 90° ELL & 1/2" GALVANIZED STEEL PIPE (PAINTED BLUE) WITH DOWNSPOUT
11	4" x 3/4" TAPPING SADDLE, DI
12	3/4" HOSE BIB WITH VACUUM BREAKER, NPT, SMOOTH END
13	4" x 1/4" TAPPING SADDLE, DI
14	PRESSURE GAUGE, 0-150 PSI WITH ISOLATION 1/4" SS BALL VALVE
15	4" FLANGED ELECTRONIC FLOW METER, ELSTER EVOQ4, MAINTAIN STRAIGHT PIPE >30" IN FRONT AND >12" BEHIND CENTER OF METER. CONTRACTOR TO SUPPLY FLANGED STEEL SPOOL SAME DIMENSIONS AS FLOW METER AS SPARE PART.
16	4" x 1" TAPPING SADDLE, SS 304
17	2" 90° BEND & 2" GALVANIZED STEEL PIPE (PAINTED BLUE) WITH DOWNSPOUT
18	4" x 3/4" TAPPING SADDLE, SS 304
19	4" 90° FL x FL ELBOW, DI
20	1" PVC SCHED 80 PIPE
21	1" 90° ELBOW, PVC SCHED 80
22	1" TRUE UNION BALL VALVE, PVC SCHED 80
23	1" Y-STRAINER, PVC SCHED 80
24	1" UNION, PVC SCHED 80

25	1" TEE, PVC SCHED 80
26	BOOSTER PUMP, FRANKLIN BT4 5JBT03S4 (O.A.E.)
27	1" x 1/2" REDUCER, PVC SCHED 80
28	1/2" PVC SCHED 80 PIPE
29	1/2" UNION, PVC SCHED 80
30	1/2" PRESSURE RELIEF VALVE, WATTS BP 30 (O.A.E.) PRESSURE SET TO 90 PSI
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33	1" TRUE UNION CHECK VALVE, PVC SCHED 80
34	CHLORINE INJECTOR, WALLACE & TIERNAN S10K W/ 99D THROAT/TAIL PIECE (O.A.E.) W/ PVC/TEFLON DIAPHRAM VALVE ON VACUUM LINE WITH PEDESTAL. SUPPORT WITH UNISTRUTS.
35	INSERTION DIFFUSER, MTE (O.A.E.)
36	1/2" VALMATIC MODEL NO. 15ASV AIR RELEASE VALVE, 175 PSI, W/ 1/2" DOWNSPOUT, PVC SCH 80, 1/2" SS BALL VALVE, NPT, 1/2" SS PIPE
37	CHLORINE GAS CYLINDER, 150 LB (DO NOT INSTALL)
38	ELECTRONIC CHLORINE CYLINDER SCALE, FORCE FLOW GR150-2 W/ FORCE FLOW SOLO G2 DIGITAL INDICATOR (O.A.E.), BOLTED TO FLOOR
39	VACUUM REGULATOR, WALLACE & TIERNAN 210S (O.A.E.)
40	1/2" PE VENT TUBING (WALL PENETRATION MUST BE BELOW REGULATORS)
41	3/8" PE VACUUM TUBING
42	WALL MOUNTED CHAIN BRACKET, INSTALL 40" ABOVE FLOOR, WITH SAFETY CHAIN
43	CHLORINE GAS CONTROL PANEL, WALLACE & TIERNAN S10K (O.A.E.)
44	CHLORINE GAS DETECTOR SENSOR/TRANSMITTER, WALLACE & TIERNAN ACUTEC 35 W/ AUTOTEST (O.A.E.), MOUNTED 6" ABOVE FLOOR, LOCATION TBD BY ENGINEER IN FIELD. CHLORINE GAS DETECTOR RECEIVER, WALLACE & TIERNAN ACUTEC 35 (O.A.E.) LOCATION AS INDICATED IN ELECTRICAL PLANS OR TBD BY ENGINEER IN FIELD.
45	LOUVERED VENT W/ BACKDRAFT DAMPER McMASTER CARR #2039 KI, W/ EPOXY GREY PAINT
46	19 1/2" 430 CFM EXHAUST FAN WITH BACKDRAFT DAMPER
47	1 5/8" UNISTRUT, STAINLESS STEEL, WITH PIPE SUPPORTS
48	SS UNISTRUT PEDESTAL FOR CHLORINATION BOOSTER PUMP. DIMENSIONS TO BE DETERMINED UPON APPROVAL OF PUMP SUBMITTAL BY CONTRACTOR. 9" ABOVE FLOOR.
49	1" BALL VALVE, SS 304

50	1" 90° BEND, NPT, SS 304
51	1" CROSS, NPT, SS 304
52	1" STEEL PIPE, NPT, SS 304
53	2" MALE X 3/4" FEMALE REDUCING BUSHING, NPT, SS 304
54	1" COUPLING, NPT, SS 304
55	1" TEE, NPT, SS 304

- NOTES:
- POSITION PRESSURE GAUGES SUCH THAT VIEW IS NOT OBSCURED BY OTHER EQUIPMENT IN FRONT.
 - 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.
 - 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.
 - 6" MINIMUM SPACING BETWEEN SCHED 80 PVC GLUED FITTINGS, UNLESS UNION IS PRESENT.
 - ALL BOLTS, NUTS AND WASHERS IN CHEMICAL ROOM SHALL BE 316 SS.
 - 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.
 - ALL MATERIALS SHALL BE RATED TO AT LEAST 125 psi, UNLESS OTHERWISE NOTED.
 - ALL FLANGES SHALL BE ANSI CLASS 150 (STEEL) OR ANSI CLASS 125 (IRON).
 - 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.
 - BURIED DUCTILE IRON PIPE FOR DRAINS AND PIPE PENETRATIONS SHALL BE AWWA C-209 COLD-APPLIED 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.
 - ALL STEEL COMPONENTS IN THE CHEMICAL ROOM SHALL BE SS 316, UNLESS OTHERWISE NOTED.
 - ALL STAINLESS STEEL PIPE AND FITTINGS SHALL HAVE A WORKING PRESSURE OF AT LEAST 350 psi, UNLESS OTHERWISE NOTED.
 - CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, GRAFFITI PROOFER GPA-300, TO EXTERIOR OF BUILDING.

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Client: The Navajo Nation

Location: Naschitti, NM

CHLORINATION SYSTEM DETAILS (2 OF 2)

NASCHITTI CHAPTER

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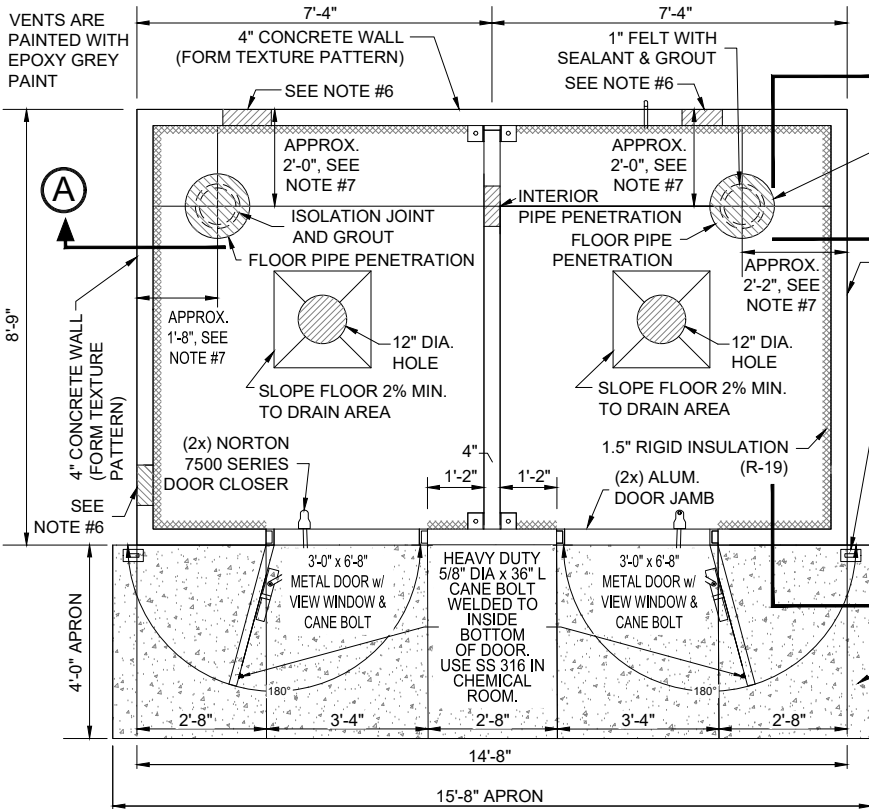
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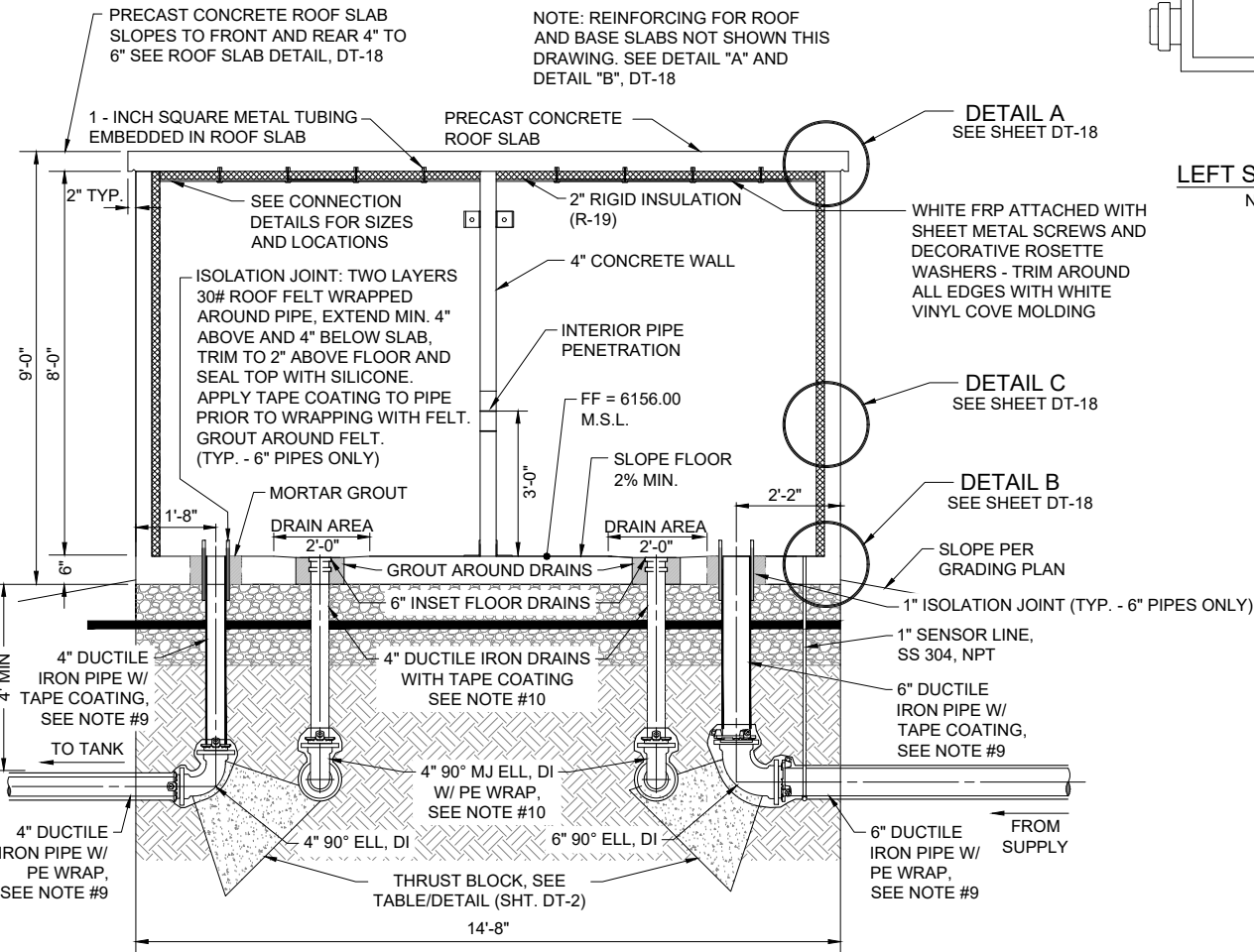
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Sheet: DT-16

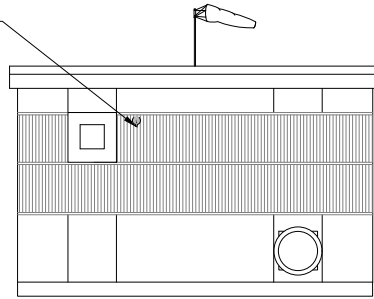


PLAN VIEW OF BUILDING
NOT TO SCALE



ELEVATION VIEW OF BUILDING AND UNDERGROUND PIPING
NOT TO SCALE

1/2" GALVANIZED STEEL PIPE
(PAINTED BLUE), WITH
DOWNSPOUT ARV VENT.



REAR ELEVATION
NOT TO SCALE

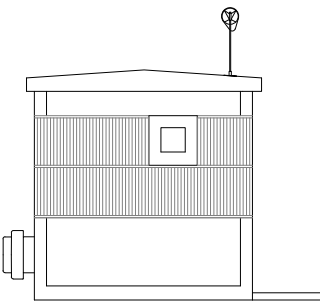
WHITE LETTERING ON
RED BACKGROUND



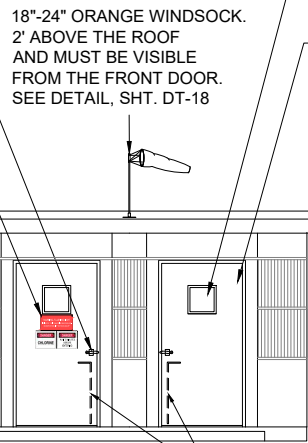
SIGN DETAIL

#877, KASON PADLOCKING, PULL
HANDLE LEVER WITH #893 INSIDE
RELEASE HANDLE - MASTER
COMBINATION LOCK #175 LHD WITH
2-1/8" CLEARANCE

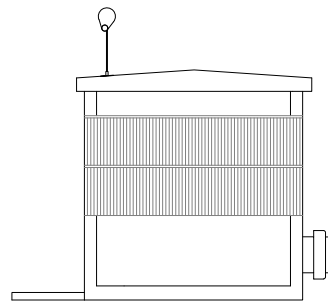
POST SIGNS ON CHEMICAL ROOM
DOOR (0.04" THICK ALUMINUM
WITH 2 MIL PE FILM).
SEE SIGN DETAIL THIS SHEET



LEFT SIDE ELEVATION
NOT TO SCALE



FRONT ELEVATION
NOT TO SCALE



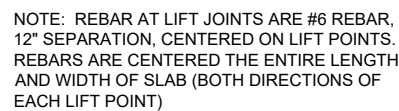
RIGHT SIDE ELEVATION
NOT TO SCALE

NOTES

- 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 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.
- 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.
- CONCRETE REINFORCING STEEL SHALL BE ASTM A-615 BILLET BARS, GRADE 40. BARS SHALL BE LAPPED AT LEAST THIRTY (30) BAR DIAMETERS AT SPLICES AND CORNER BARS SHALL BE PROVIDED TO MATCH HORIZONTAL REINFORCING.
- STRUCTURAL STEEL, EMBEDMENT STEEL, AND CONNECTIONS SHALL CONFORM TO ASTM A-36. ALL EXPOSED STEEL PLATES AND CONNECTIONS SHALL BE PAINTED WITH ONE FIELD COAT OF COMPATIBLE PRIMER AND ONE COAT OF EPOXY PAINT.
- FIELD WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND SHALL CONFORM TO STANDARDS OF THE AMERICAN WELDING SOCIETY FOR WELDING IN BUILDING CONSTRUCTION.
- ALL DOOR FRAMES, FAN AND VENT ASSEMBLIES AND SLAB PENETRATION SHALL BE CAST INTO THEIR RESPECTIVE SLABS.
- 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.
- ALL BURIED PIPE WITHIN 5 FEET OF BUILDING SHALL BE DUCTILE IRON, 350 psi, SOLID PIPE PIECES ONLY. NO DUCTILE IRON PIPE JOINTS ALLOWED.
- 6" AND 4" DUCTILE IRON PIPE, TWO-PART EPOXY-COATED AND MORTAR LINED. COLD APPLIED TAPE-COATED PER SPECIFICATIONS FROM TOP OF FLOOR TO BURIED ELL. DOUBLE WRAP WITH POLYETHYLENE FROM ABOVE ELL TO PVC TRANSITION BEYOND FOUNDATION (TYP.).
- 4" DUCTILE IRON DRAIN LINE, COLD APPLIED TAPE-COATED PER SPECIFICATIONS FROM INSET DRAIN TO BURIED ELL. DOUBLE WRAP WITH POLYETHYLENE FROM ABOVE ELL TO PVC TRANSITION BEYOND FOUNDATION (TYP.).
- CONTRACTOR RESPONSIBLE FOR LOCATING AND DETERMINING ELECTRICAL CONDUIT PENETRATIONS.
- CONTRACTOR TO APPLY ANTI-GRAFFITI COATING, GRAFFITI PROOFER GPA-300, TO EXTERIOR OF BUILDING.



A diagram showing a circular hole in a plate. A vertical section of the plate, 4 inches wide, is shaded gray and has a diagonal line through it, indicating it is to be removed. The remaining part of the plate is shown as a white area with a circular hole. The width of the remaining plate is labeled as 4 inches.



A cross-sectional diagram showing a concrete base (hatched area) below an existing ground surface (solid line). A vertical dimension line indicates a 3" depth from the ground surface to the top of the concrete base. A label "GRADE PER GRADING PLAN" points to the ground surface line.



BACK WALL

4"

NOTE: 8 TOTAL ANGLE
8 BOLTS TOTAL

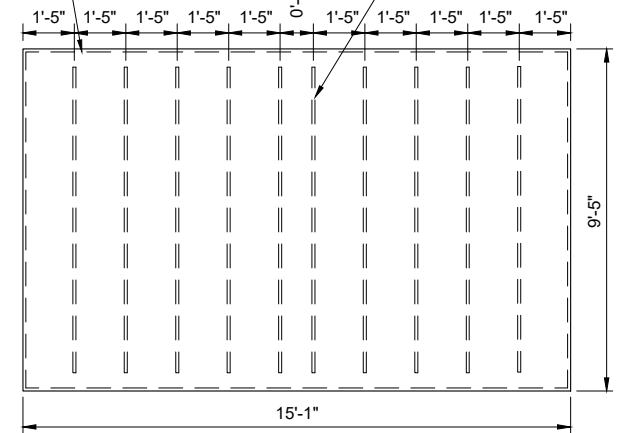
CENTER WALL
ANGLE IRON
ANCHORED W/
1/2" WEJ-BOLTS

FRONT WALL

4"

NOTE: 8 TOTAL ANGLE IRON,
8 BOLTS TOTAL

CENTER WALL SUPPORT
ANGLE IRON L4x4x1/4x0'-4"
ANCHORED WITH
1/2" WEJ-BOLT



1/8" WHITE FIBER REINFORCED PLASTIC (FRP) PANELS ATTACHED WITH WOOD SCREWS AND RECESSED WASHERS - TRIM AROUND ALL EDGES WITH WHITE VINYL COVE MOLDING.

1 1/2" FOAM POLYSTYRENE BOARD CLOSED CELL INSULATION R-VALUE = 7.5 PER INCH

2" x 2" REDWOOD STUD AT 2'-0" O.C.

SIDE WALL

WALL REINFORCEMENT, WWF4X4, W2.9XW2.9

FREE-ROTATING,
CORROSION-RESISTANT
ALUMINUM FRAME

8"

18" - 24"

3/4" MIN. DIA. GALVANIZED
STEEL PIPE, STD. WALL

BRIGHT ORANGE, "PVC
OVER NYLON" FABRIC

MOUNTED TO PRE CAST CONCRETE
ROOF W/ GALVANIZED STEEL ROOF
MOUNT BRACKET

CHLORINATOR
ROOF SLAB

SMA

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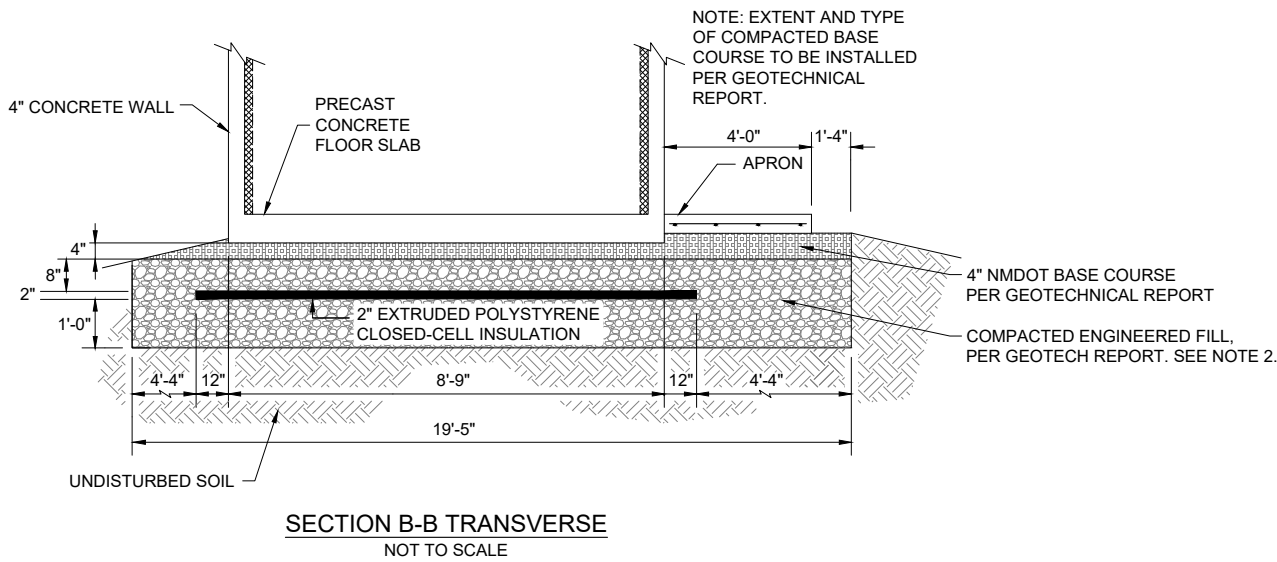
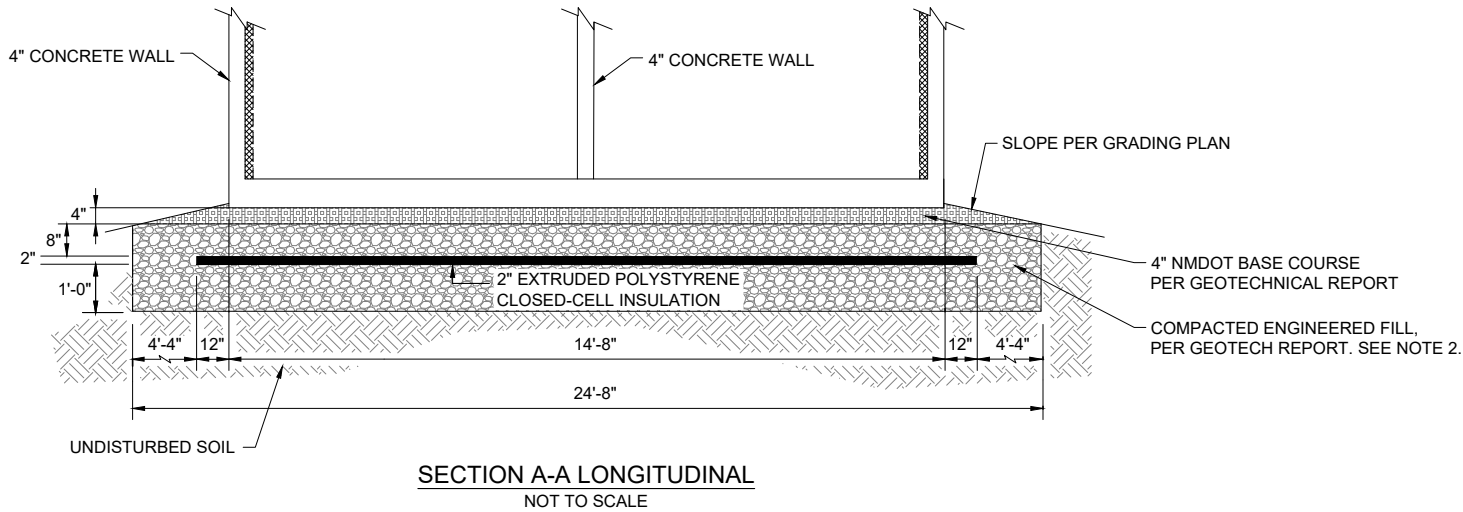
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- GENERAL NOTES**
- 2021 NEW MEXICO COMMERCIAL BUILDING CODE
2021 INTERNATIONAL BUILDING CODE
ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- RISK CATEGORY III (WATER SUPPLY)
- MINIMUM DESIGN LOADS :
ROOF LIVE LOAD 20 PSF
GROUND SNOW LOAD (pg) 20 PSF
- WIND
BASIC WIND SPEED 110 MPH
EXPOSURE C
- SEISMIC
DESIGN CATEGORY B
SITE SOIL CLASS D
IMPORTANCE FACTOR 1.25
 S_s 0.146
 S_1 0.050
 S_{DS} 0.156
 S_{D1} 0.080
- BUILDING FOUNDATION, SUBFOUNDATION, AND SITE GRADING SHALL BE OVEREXCAVATED STRUCTURAL FILL ONLY. REFERENCE GEOTECHNICAL REPORT PROVIDED AS APPENDIX TO CONTRACT DOCUMENTS. REFER TO GEOTECHNICAL REPORT FOR FURTHER INFORMATION.

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Client: The Navajo Nation
Location: Naschitti, NM
CHLORINATION BUILDING FOUNDATION DETAILS
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO



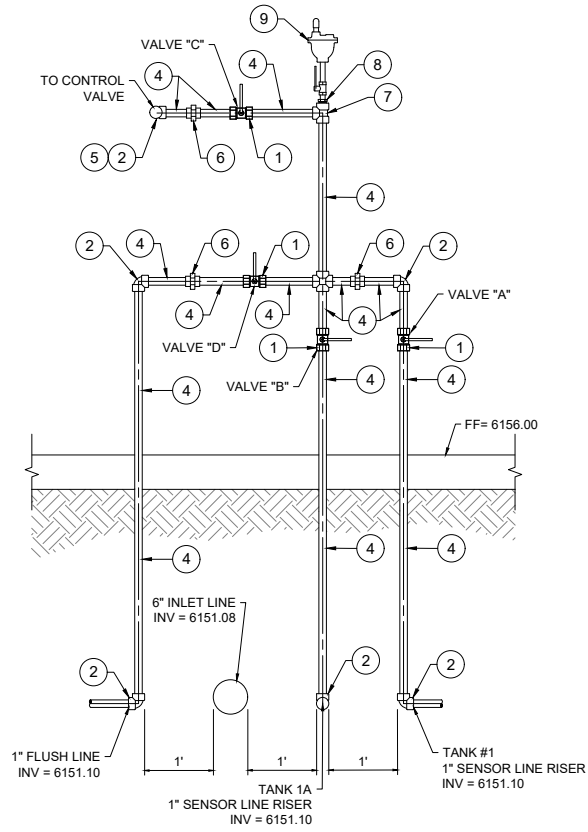
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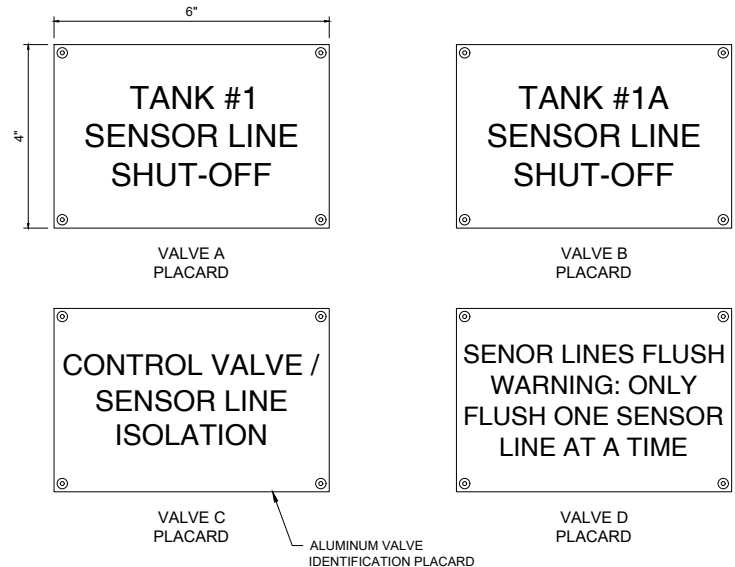


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Sheet:	DT-19

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1	1" BALL VALVE, SS 304
2	1" 90° BEND, NPT, SS 304
3	1" CROSS, NPT, SS 304
4	1" STEEL PIPE, NPT, SS 304
5	1" MALE X 3/4" FEMALE REDUCING BUSHING, NPT, SS 304
6	1" UNION, NPT, SS 304
7	1" TEE, NPT, SS 304
8	1" X 1/2" REDUCING BUSHING, NPT, SS 304
9	1/2" VALMATIC MODEL NO. 15ASV AIR RELEASE VALVE, 175 PSI, W/ 1/2" DOWNSPOUT, PVC SCH 80, 1/2" SS BALL VALVE, NPT, 1/2" SS PIPE



NOTE:
ATTACH PLACARD TO WALL AT VALVE LOCATION.

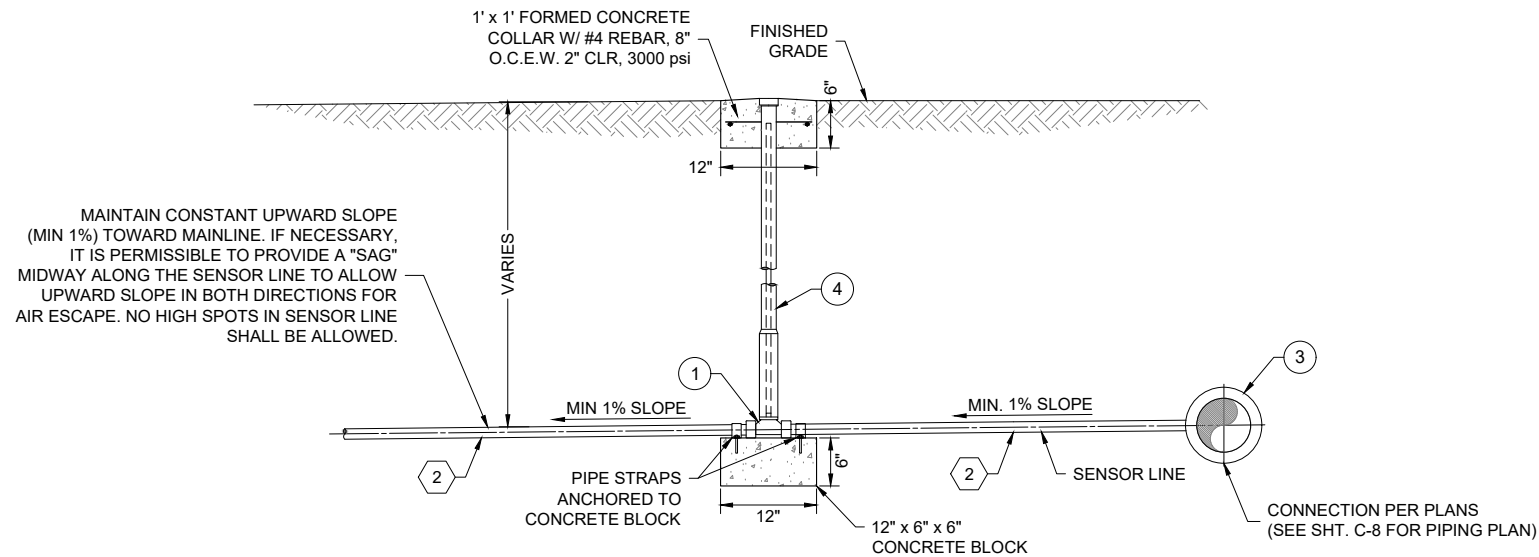
CHLORINATOR BUILDING INTERIOR NORTH WALL SENSOR LINE PLUMBING

NOT TO SCALE

KEYED NOTES - 1" SENSOR LINE CONNECTION

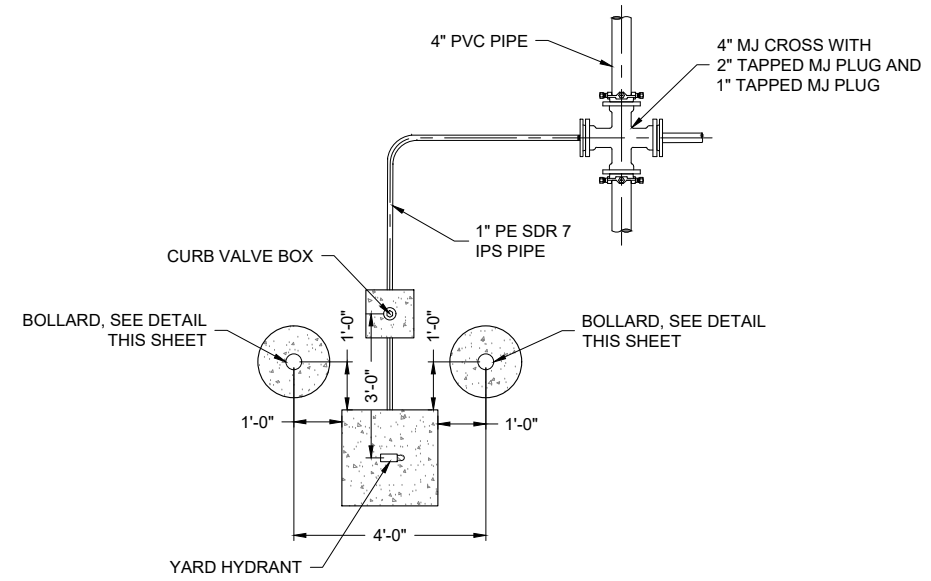
Item No.	Description
1	1" CURB STOP, NPT (COVER PAINTED BLUE)
2	1" STAINLESS STEEL PIPE, NPT, SCHEDULE 40 (SEE NOTE #2, THIS SHEET)
3	6" x 1" THREADED TEE, NPT, DI PER PLANS (SHOWN) OR 6" x 6" x 4" x 4" MJ CROSS, DI WITH 4" MJ x 1" THREADED PLUG, D.I. 350 psi, PER PLANS (SEE SHT. C-8 FOR PIPING PLAN)
4	CURB STOP BOX, EXTENSION TYPE MUELLER H-10302, OAE W/ MUELLER STATIONARY ROD WHICH EXTENDS 2"-4" BELOW CURB BOX LID, TOP PAINTED BLUE

- NOTES:
- ALL MATERIALS, FITTINGS, AND APPURTENANCES SHALL BE RATED TO AT LEAST 150 psi, UNLESS OTHERWISE NOTED.
 - ALL STEEL PIPE AND FITTINGS SHALL BE STANDARD WALL, UNLESS OTHERWISE NOTED.



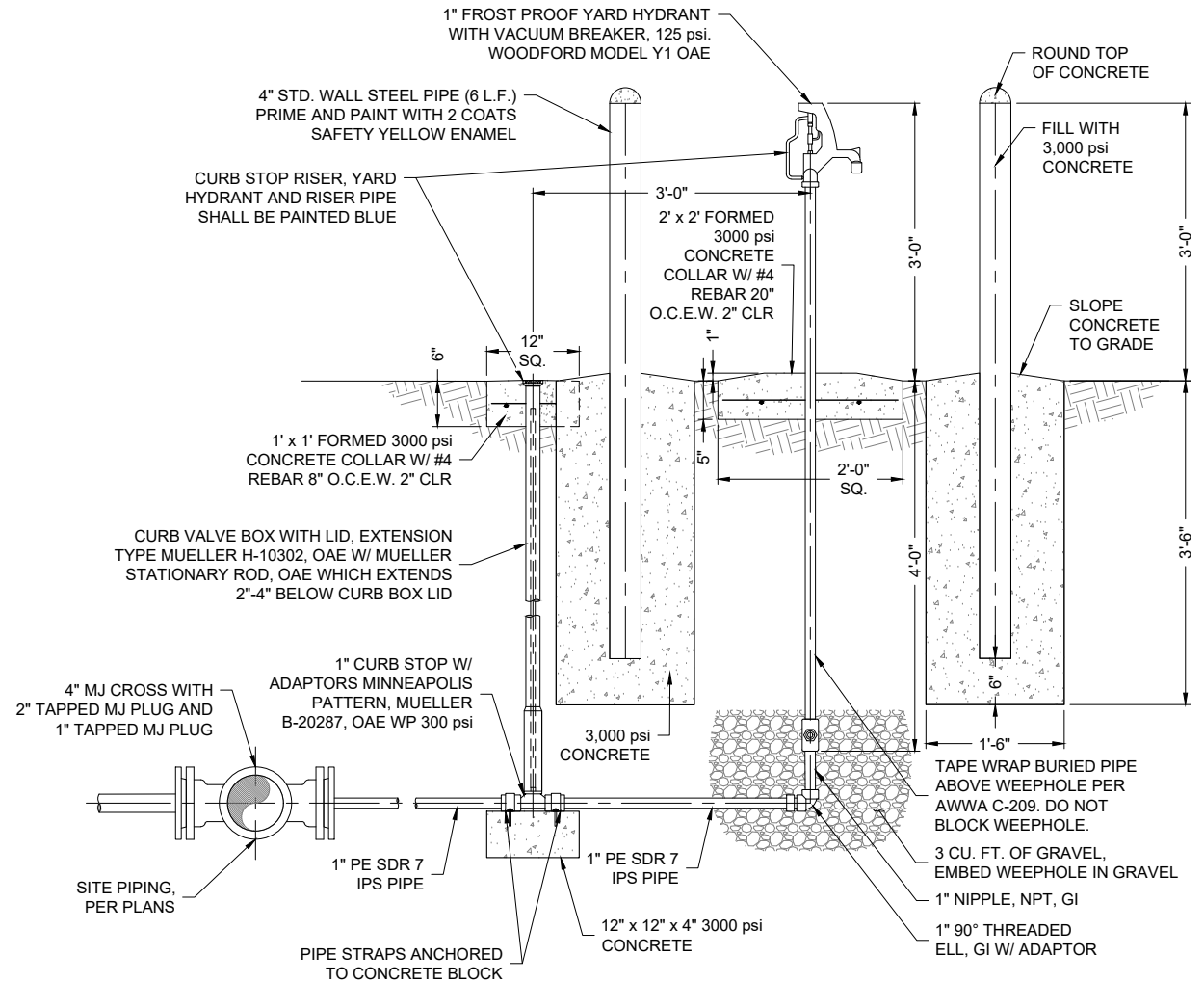
1" TYPICAL SENSOR LINE CONNECTION TO MAINLINE

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YARD HYDRANT AND ASSEMBLY PLAN VIEW DETAIL

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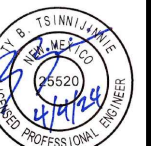


YARD HYDRANT AND ASSEMBLY DETAIL

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Client: The Navajo Nation
Location: Naschitti, NM
SENSOR LINE AND YARD HYDRANT DETAILS
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO



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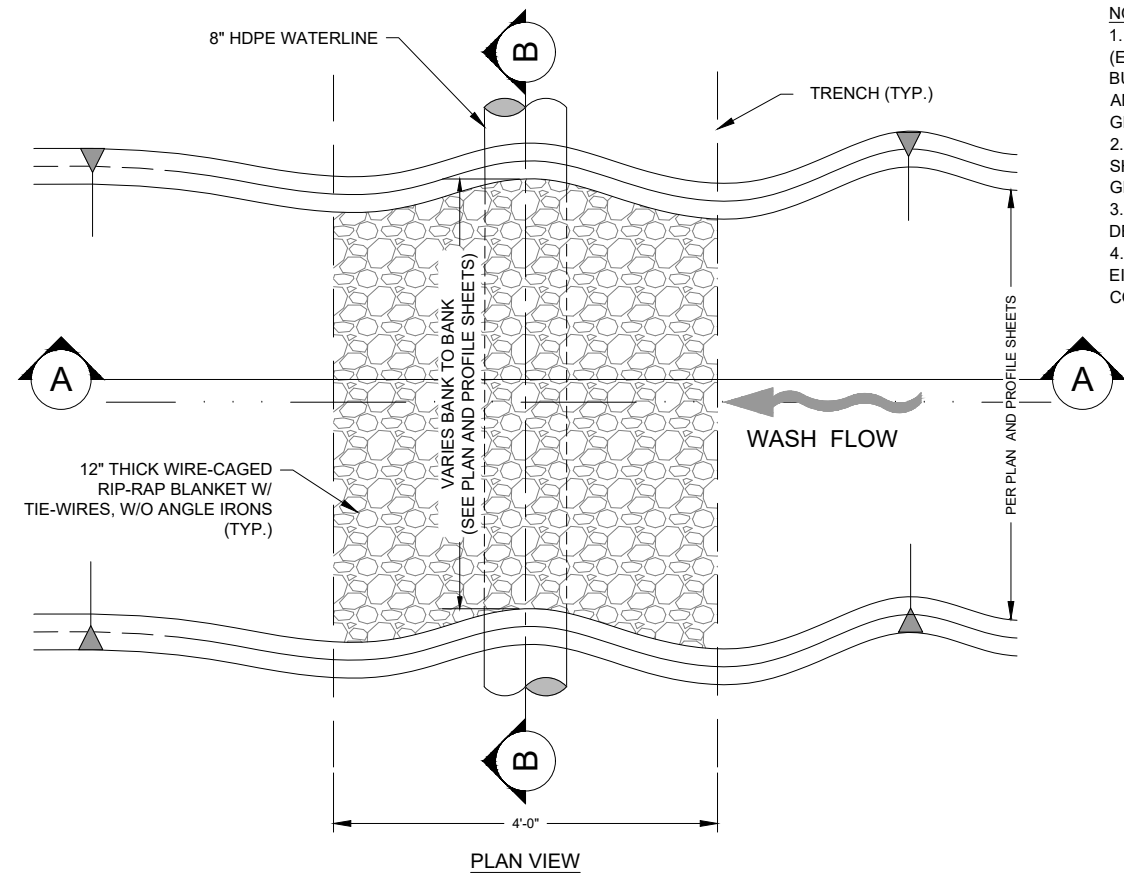
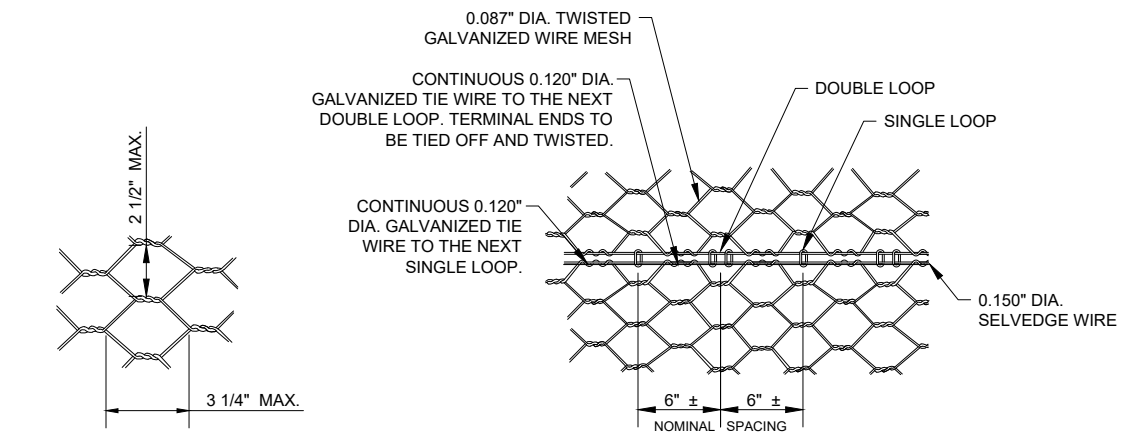
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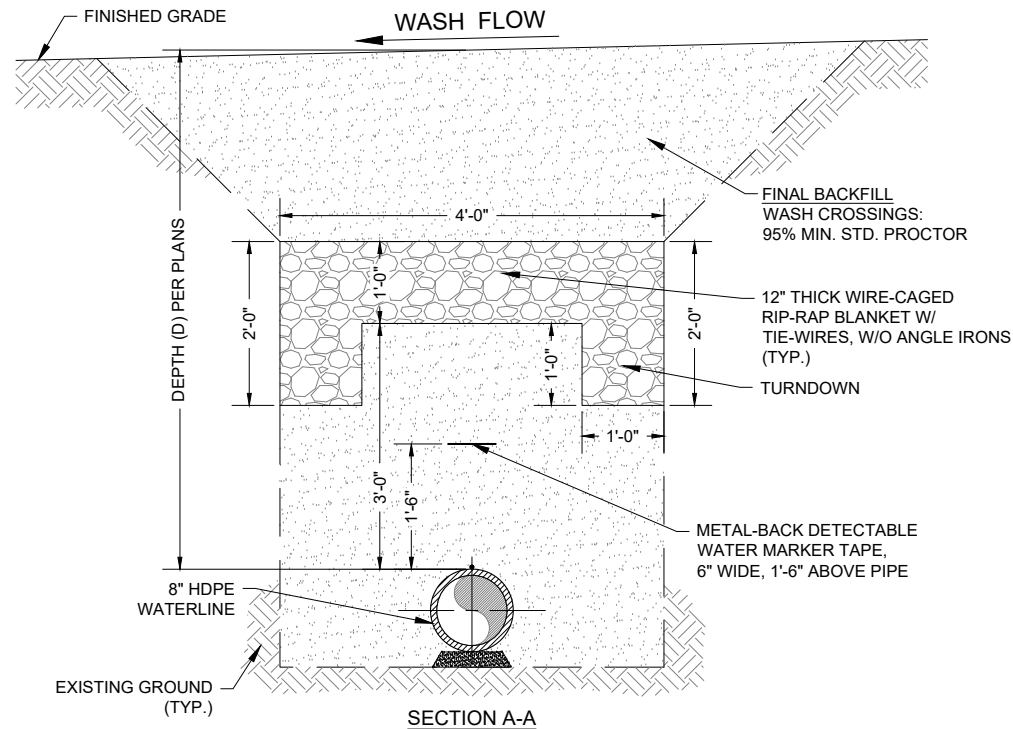
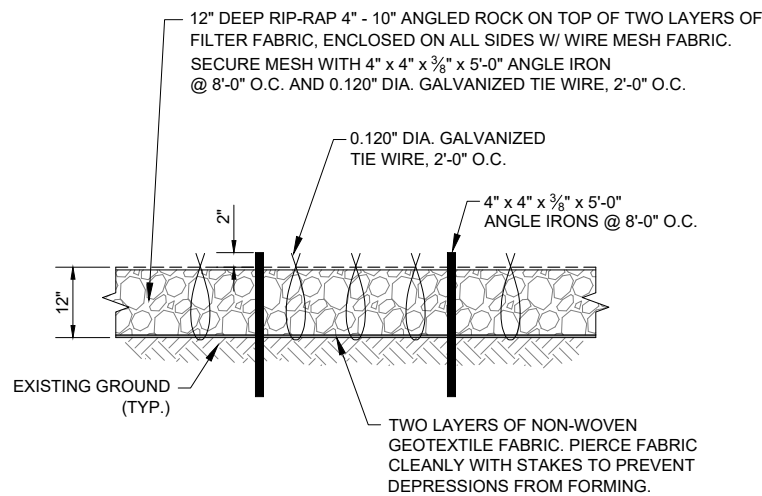
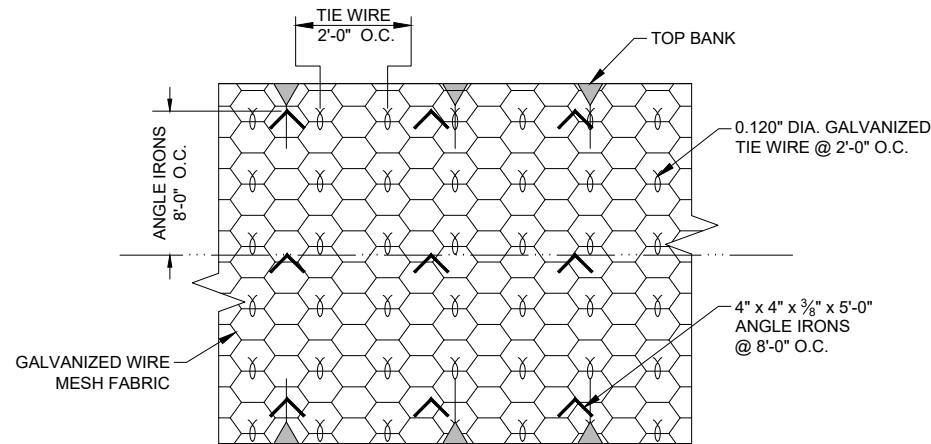
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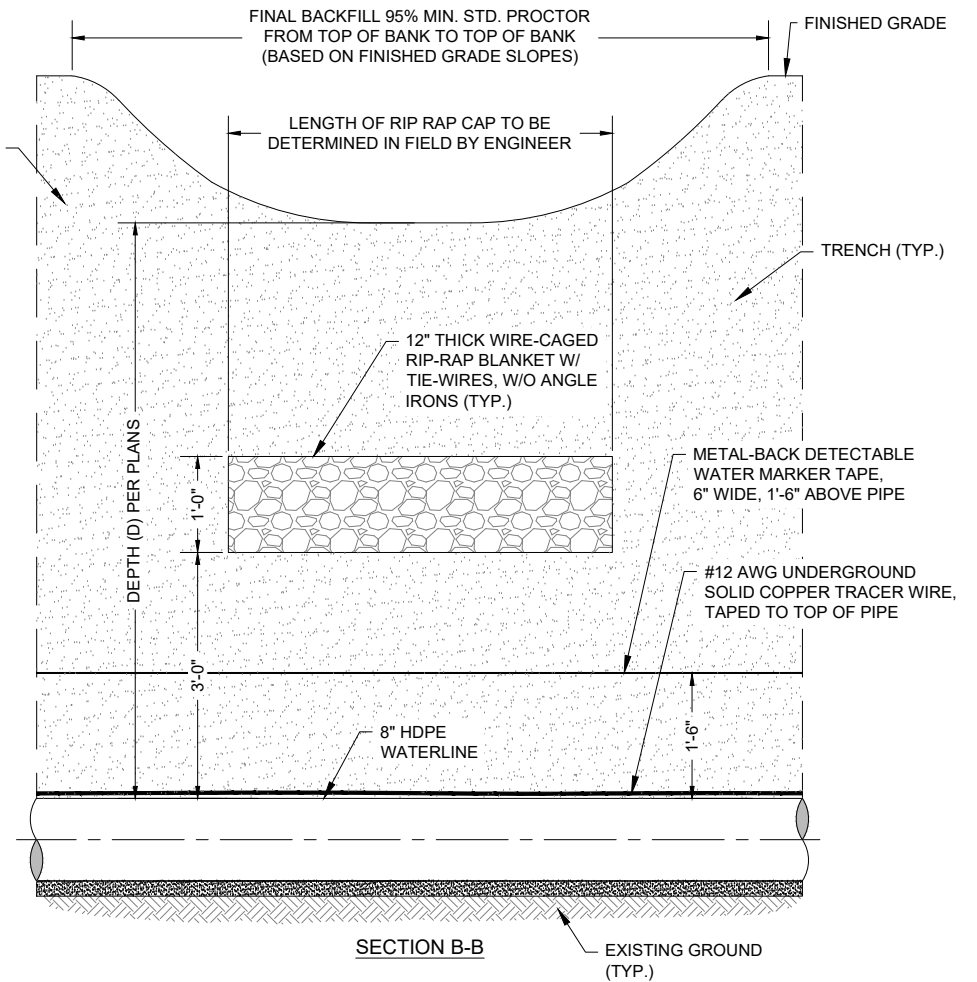
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- NOTE:**
1. FOR RIP-RAP BLANKETS IN NATURAL WATERWAYS (EXCEPT FLUSH VALVE OUTLETS), BLANKET SHALL BE BURIED AS SHOWN. COVER BLANKET WITH NATURAL SOIL AND REGRADE TO RESTORE WASH FLOWLINE TO NATURAL GRADE.
 2. RIP-RAP BLANKETS AT SITES AND FLUSH VALVE 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



TYPICAL BURIED 12" RIP-RAP MATTRESS FOR WASH CROSSINGS
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Location: Naschitti, NM
EROSION CONTROL DETAILS (1 OF 2)
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO

Professional Engineer Seal for T. B. TSINILIMUWE, No. 25520, State of New Mexico.

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ROCK CHECK DAM DETAIL

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FLOOR DRAIN OUTFALL DETAIL
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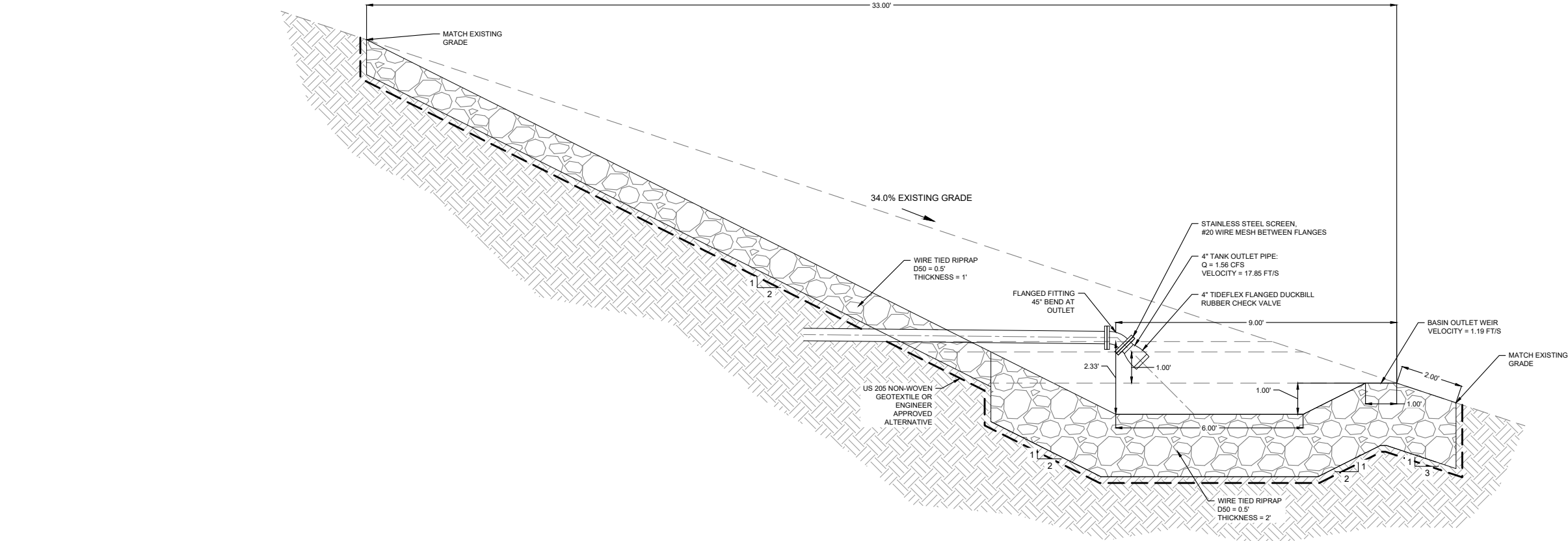
WASH CROSSING GRADING DETAIL
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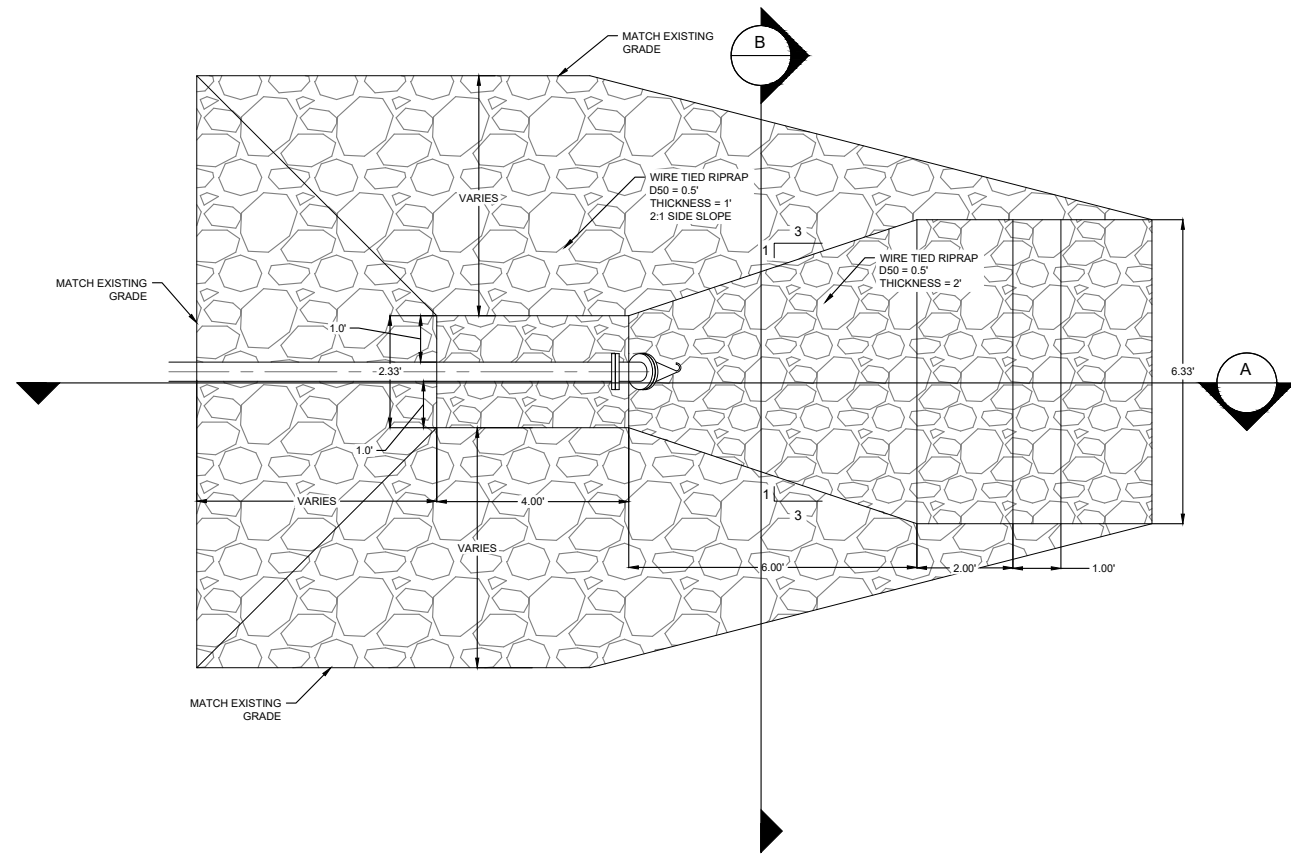
NOTE:

1. ALL GRADING MUST REMAIN WITHIN
TEMPORARY CONSTRUCTION EASEMENT.

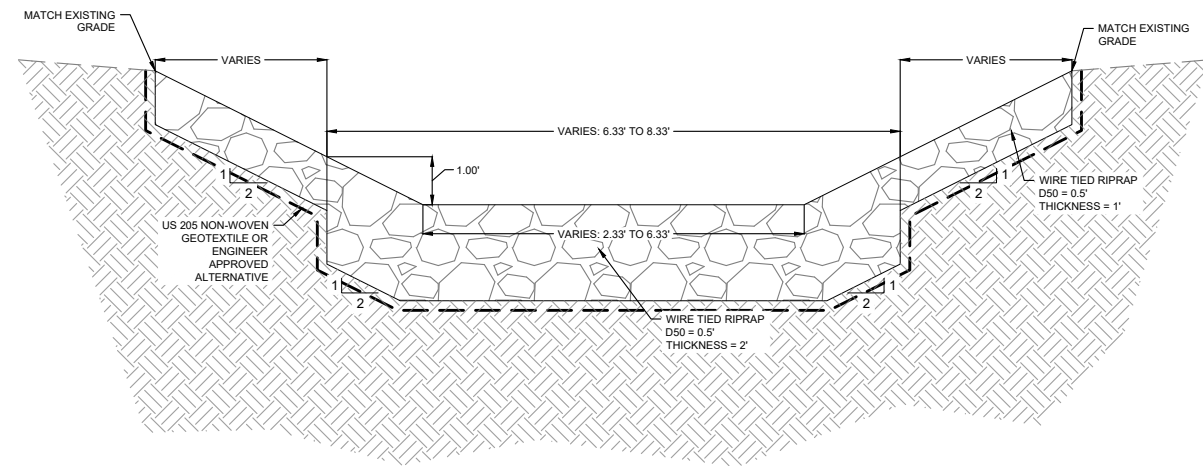
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A SECTION VIEW
SCALE: 1" = 4"



PROPOSED TANK OUTLET RIPRAP BASIN
1" = 4'



B SECTION VIEW
SCALE: 1" = 4"

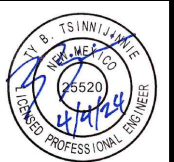
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Client: The Navajo Nation
Location: Naschitti, NM

TANK OUTLET RIPRAP BASIN DETAILS
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO



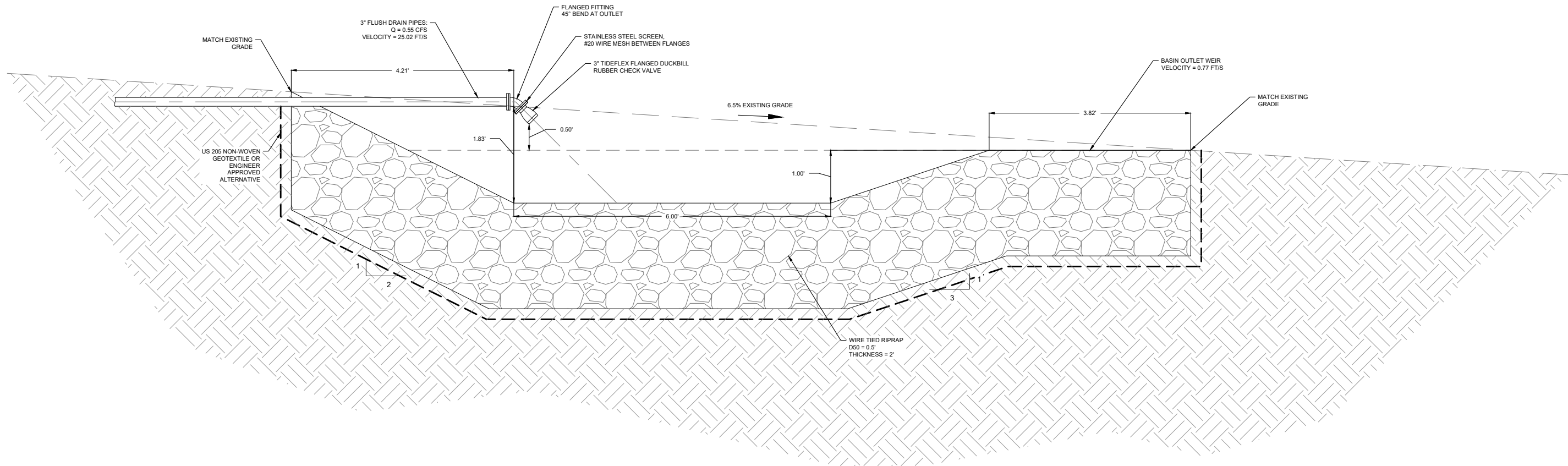
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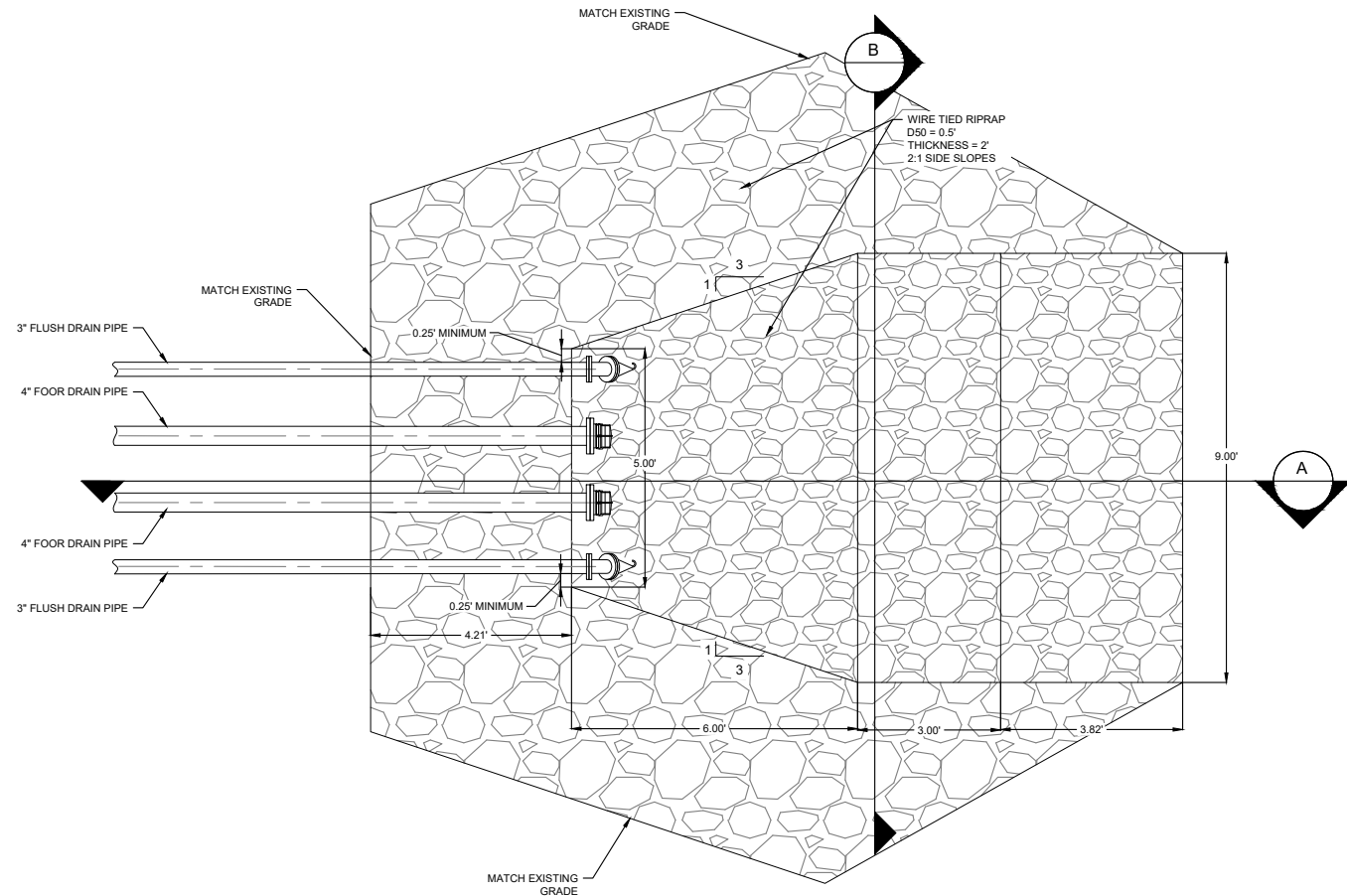


Date:	April 2024
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Project No:	6928997
Sheet:	DT-23

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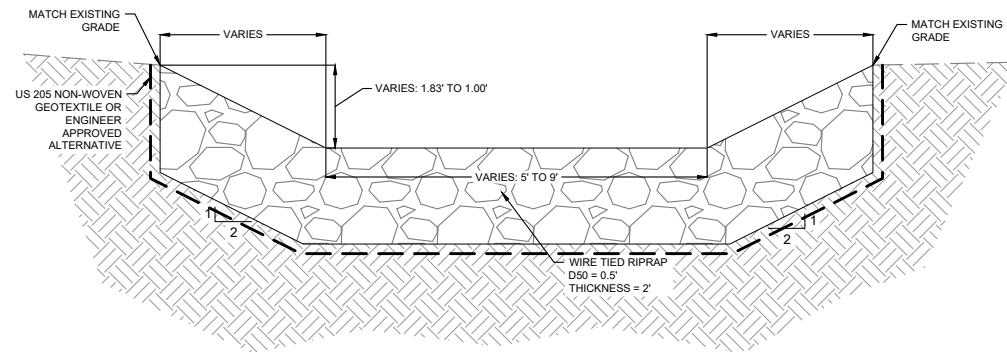


A SECTION VIEW
SCALE: 1"=2'



PROPOSED FLUSH DRAIN OUTLET RIPRAP BASIN

1" = 4'



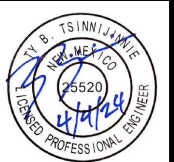
B SECTION VIEW
SCALE: 1"=4'

Revision	Date	Description	By	Chkd

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SMA

Client: The Navajo Nation
Location: Naschitti, NM
FLUSH DRAIN OUTLET RIPRAP BASIN DETAILS
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO

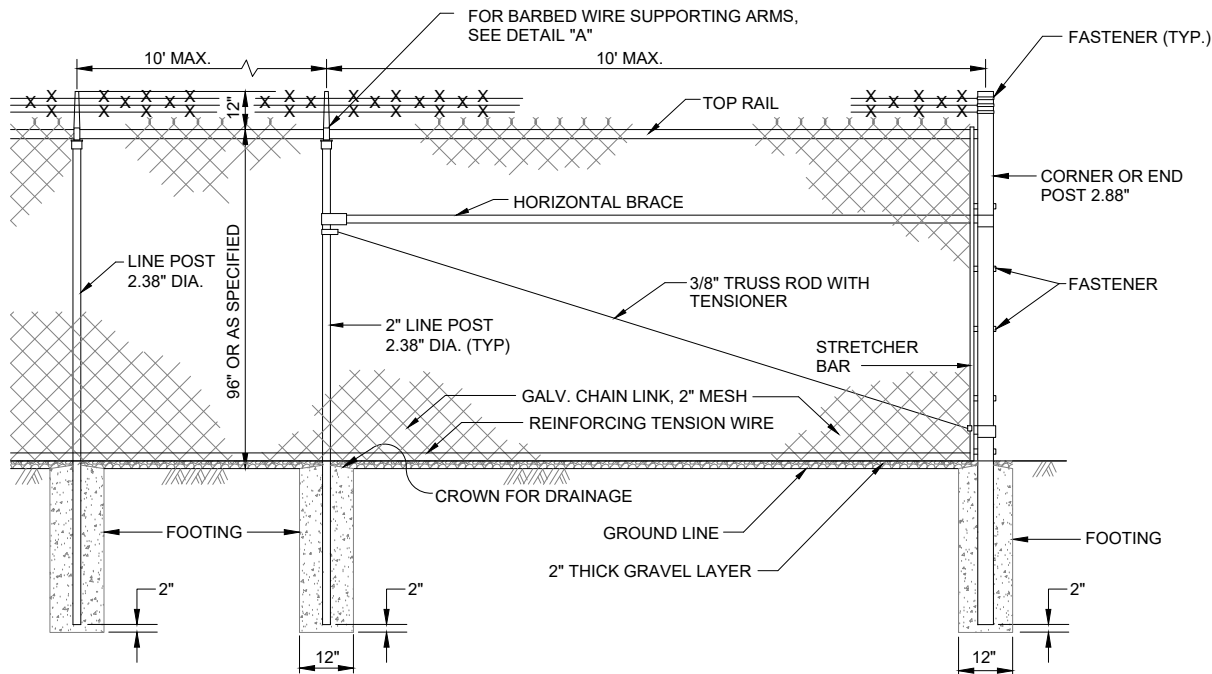


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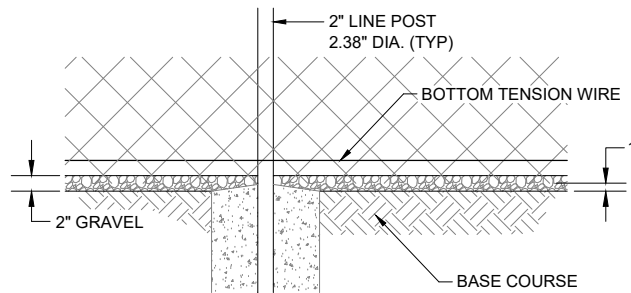


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Project No:	6928997
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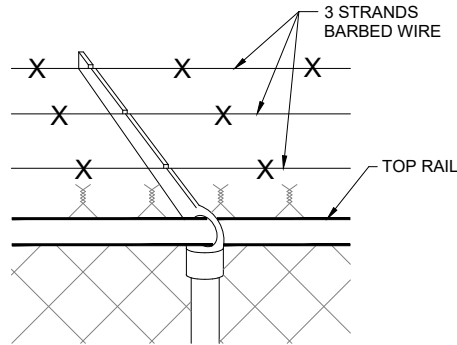


- NOTES:
1. AT BROW CROSSING, EMBED ON 6" CENTERS, 4-11/2" x 24" GALVANIZED RODS WITH 2" HOOKED END INTO BROW DITCH CONCRETE. EXPOSED END OF ROD SHALL BE WOVEN INTO FENCE FABRIC.
 2. IMBED BOTTOM OF FABRIC MIN. 1" INTO THE 2" THICK GRAVEL LAYER.

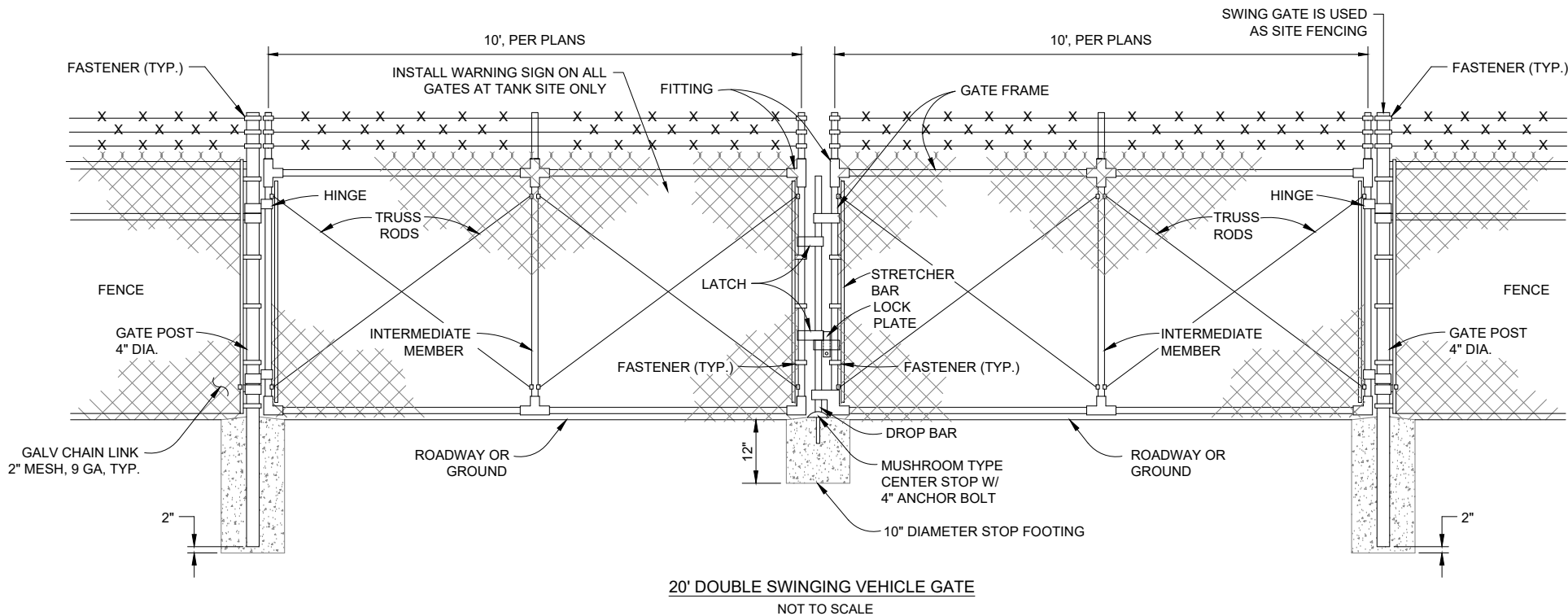
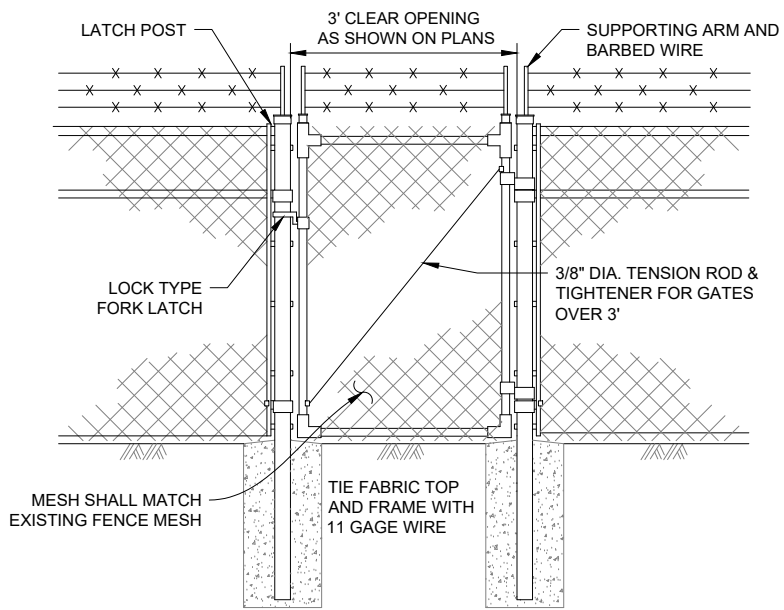
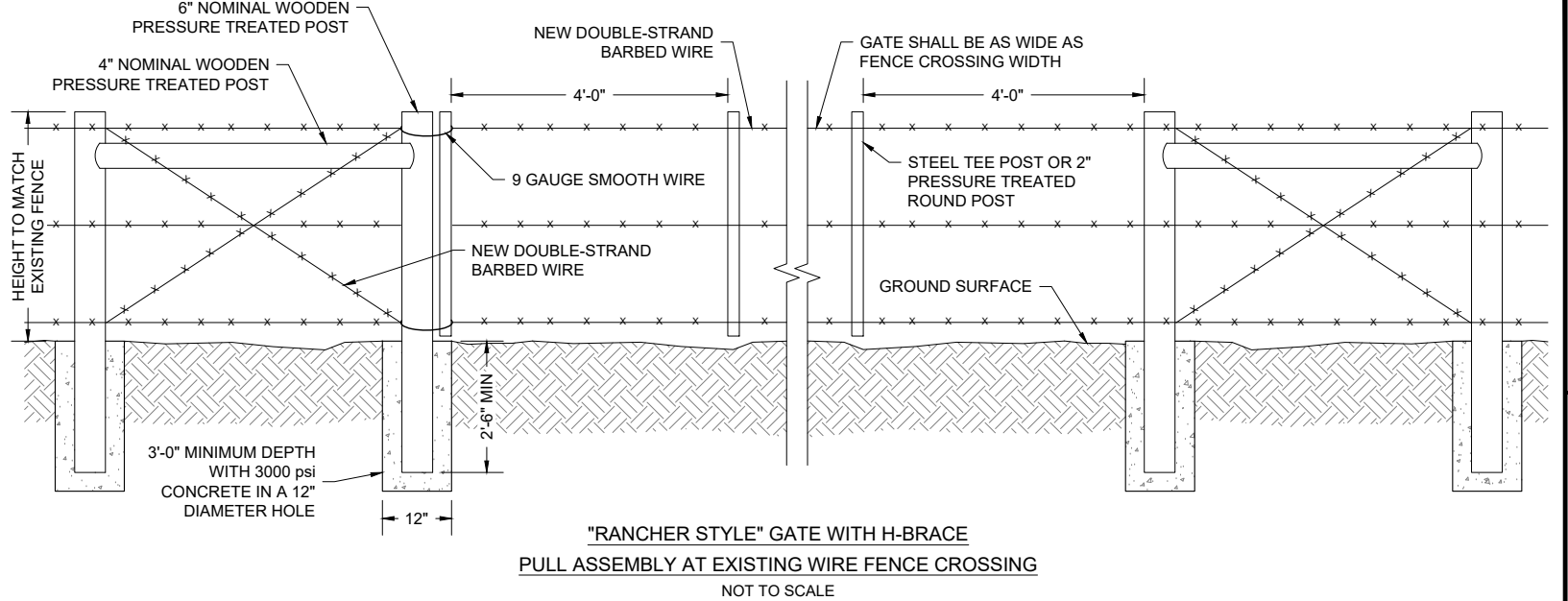
CHAIN LINK FENCE
NOT TO SCALE



BASE COURSE AND GRAVEL DETAIL
NOT TO SCALE



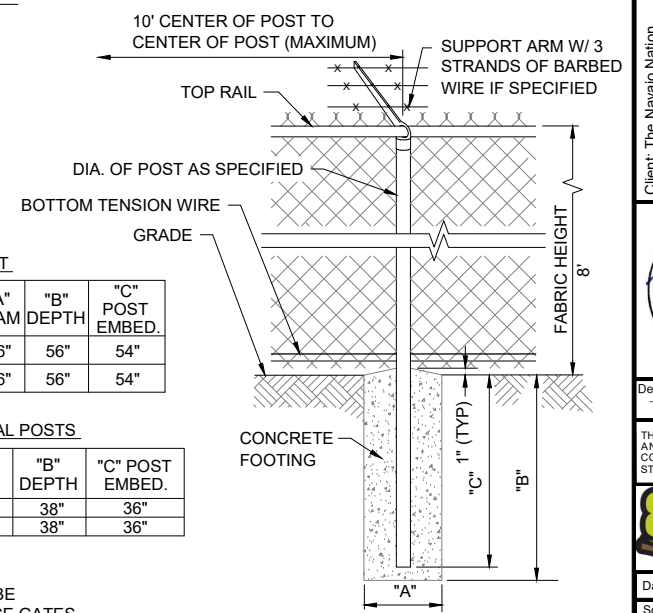
DETAIL "A" SUPPORTING ARM & BARBED WIRE
NOT TO SCALE



GATE POST					
GATE LEAF WIDTH	GATE POST (OD)	FABRIC HEIGHT	"A" POST DIAM	"B" POST 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



Revision

Date

Description

By

CHKD

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Client: The Navajo Nation

Location: Naschitti, NM

FENCE DETAILS
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO

TS/IN/ML/ME

25520

Professional Engineer

Designed TBT

Drawn MvH/AaV

Checked TTT

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Know what's BELOW. CALL before you dig.

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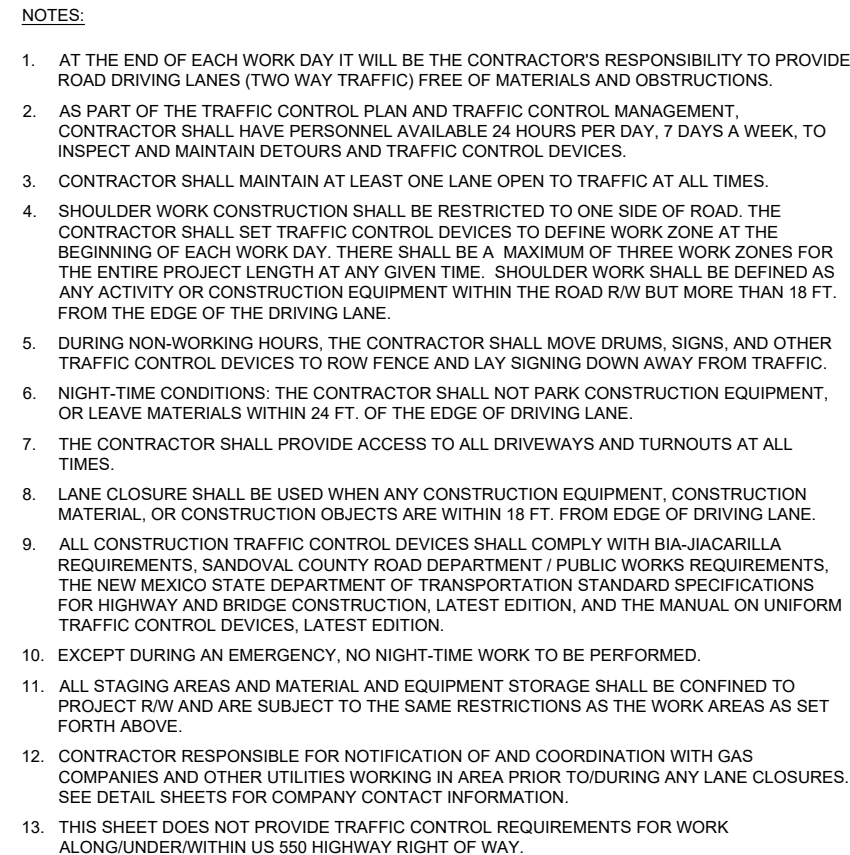
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Project No: 6928997

Sheet: DT-25

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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.



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

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Client: The Navajo Nation
Location: Naschitti, NM

TRAFFIC CONTROL (GRAVEL AND DIRT ROAD)
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO



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Project No:	6928997
Sheet:	DT-26

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.
	WEATHERPROOF DUPLEX CONVENIENCE OUTLET, 18" A.F.F.
	DUPLEX CONVENIENCE OUTLET, GROUND FAULT CIRCUIT INTERRUPTER, 18" A.F.F.
	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
	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
	HOMERUN TO PANELBOARD WITH BRANCH CIRCUIT NUMBERS INDICATED
	SOLENOID VALVE
	LIMIT SWITCH
	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
	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
	TRANSFORMER, DRY TYPE, SIZE AS INDICATED
	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
	INTRUSION ALARM DOOR CONTACT MAGNETIC
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	CONTACTOR
	MOTOR OVERLOADS
	RED PILOT LIGHT
	GREEN PILOT LIGHT
	TRANSFORMER
	RELAY
	SWITCH
	FUSE(S)
	CIRCUIT BREAKER
	PROGRAMMABLE LOGIC CONTROLLER
	REMOTE TERMINAL UNIT
	THERMOSTAT
	WEATHERPROOF (NEMA 3R)
	NOT IN CONTRACT
	NOT TO SCALE
	ABOVE FINISHED FLOOR
	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. (905) 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 MONEY'S 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.

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

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.



Client: The Navajo Nation	Location: Naschitti, NM	ELECTRICAL LEGEND AND NOTES NASCHITTI CHAPTER SAN JUAN LATERAL CONNECTION SAN JUAN COUNTY, NEW MEXICO SECTION 12, T. 21 N., R. 18 W.		24092	Designed	Drawn	Checked				
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					Project No:	6928997					
					Sheet:	E-1					

Revision	Date	Description	By	Chkd

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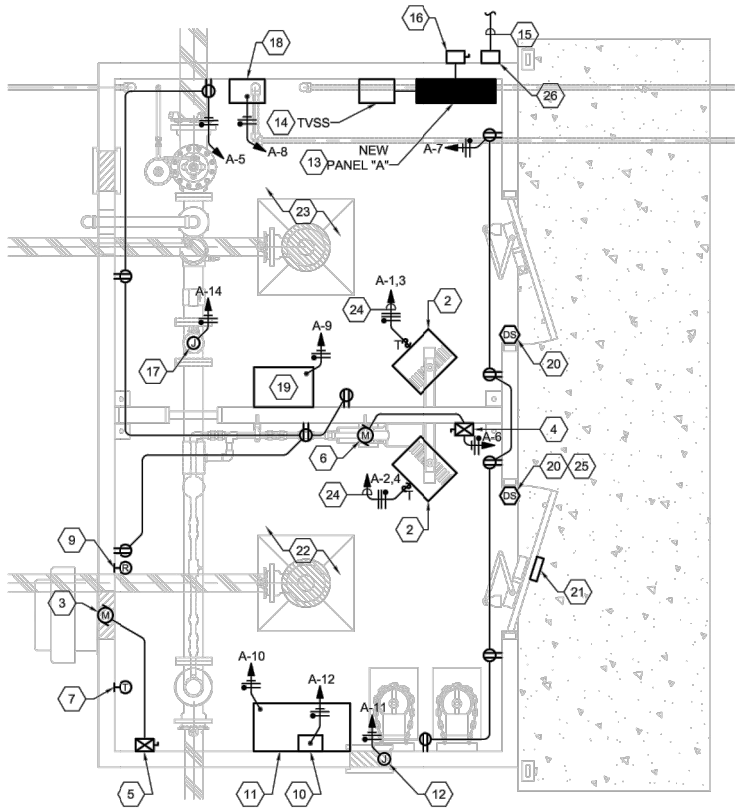


- A. ALL CONDUITS SHOWN DASHED SHALL BE BURIED A MINIMUM OF 36" BELOW FINISHED GRADE. ALL CONDUITS THAT COME IN CONTACT WITH THE GROUND SHALL BE PVC OR DOUBLE LAPPED WRAPPED WITH SCOTCHWRAP-51.
- B. REFER TO SHEET E-1 FOR "ELECTRICAL SYMBOL LEGEND" AND "GENERAL NOTES".
- C. REFER TO SHEET E-9 FOR "POWER 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.

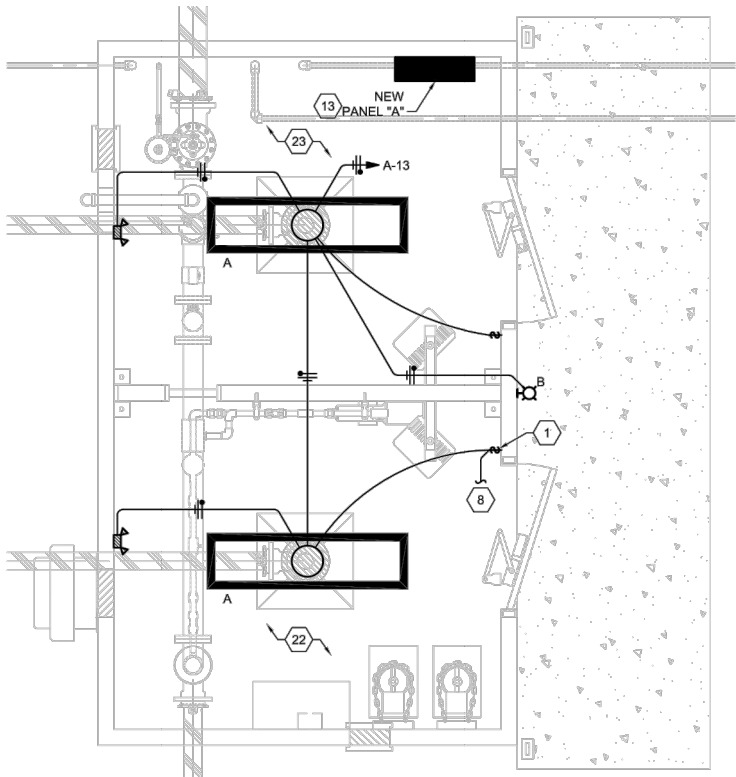
1. REFER TO "POWER RISER DIAGRAM - CHLORINATION BUILDING" ON SHEET E-9 FOR SERVICE EQUIPMENT SIZES AND WIRING.
2. NEW CHLORINATION BUILDING. REFER TO "LIGHTING PLAN - CHLORINATION BUILDING" ON SHEET E-3, "POWER AND SPECIAL SYSTEMS PLAN - CHLORINATION BUILDING" ON SHEET E-3 AND "LIGHTING PROTECTION PLAN - CHLORINATION BUILDING" ON SHEET E-5 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 READ WATER STORAGE TANK WATER LEVEL. 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 #414 THWN CU (ANALOG POSITIVE, ANALOG NEGATIVE, POWER POSITIVE AND POWER NEGATIVE). MAKE ALL REQUIRED CONNECTIONS FOR A COMPLETE AND OPERATIONAL SYSTEM.
5. 3/4" THWN CU IN 2" CONDUIT BURIED 36" BELOW FINISHED GRADE (OR AS REQUIRED BY UTILITY) WITH RED WARNING TAPE BURIED 12" ABOVE CONDUIT. REFER TO "POWER RISER DIAGRAM - CHLORINATION BUILDING" ON SHEET E-9 FOR ADDITIONAL INFORMATION.
6. NEW OVERHEAD UTILITY CONDUCTORS. COORDINATE ALL REQUIREMENTS WITH NTUA.
7. PROVIDE AND INSTALL NEW YAGI ANTENNA PER RADIO ANTENNA AND MAST DETAIL ON SHEET E-10. ORIENT ANTENNA IN ORDER TO MAXIMIZE SIGNAL STRENGTH. ANTENNA SHALL BE ORIENTATED FOR BEST SIGNAL TO WATER SUPPLY SITE APPROXIMATELY 2 MILES TO THE EAST.
8. PROVIDE AND INSTALL NEW YAGI ANTENNA PER RADIO ANTENNA AND MAST DETAIL ON SHEET E-10. ORIENT ANTENNA IN ORDER TO MAXIMIZE SIGNAL STRENGTH. ANTENNA SHALL BE ORIENTATED FOR BEST SIGNAL TO DEEZA BLUFF APPROXIMATELY 12 MILES TO THE SOUTH WEST.
9. NEW IMPRESSED CURRENT CATHODIC PROTECTION PANEL INSTALLED ON NEW TANK FOR CATHODIC PROTECTION OF NEW STEEL TANK PER SPECIFICATIONS. CONTRACTOR SHALL FULLY COORDINATE EXACT LOCATION WITH CATHODIC PROTECTION CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.
10. NEW 120 VOLT UNDERGROUND BRANCH CIRCUIT TO NEW CATHODIC PROTECTION PANEL. 1" CONDUIT SHALL BE BURIED A MINIMUM OF 36" BELOW FINISHED GRADE WITH RED METALLIC WARNING TAPE BURIED 12" ABOVE CONDUIT. COORDINATE EXACT ROUTING OF CONDUIT IN FIELD. WIRE WITH #212 THWN CU AND #112 THWN CU GROUND.

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POWER AND SPECIAL SYSTEMS PLAN -
CHLORINATOR BUILDING



LIGHTING PLAN - CHLORINATOR BUILDING

KEYED NOTES

- 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.
- 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.
- 2#10 THWN Cu AND 1#10 THWN Cu GROUND IN 3/4" CONDUIT.
- 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-10 FOR ADDITIONAL INFORMATION.
- NEW 120/240V-1Ø METER SOCKER PER NTUA REQUIREMENTS. REFER TO POWER RISER ON SHEET E-9 FOR ADDITIONAL REQUIREMENTS.

GENERAL NOTES

- ALL RECEPTACLES SHALL BE GFCI PROTECTED, IN A WEATHERPROOF JUNCTION BOX AND MOUNTED AT 48" A.F.F.
- REFER TO SHEET E-1 FOR LIGHT FIXTURE SCHEDULE.

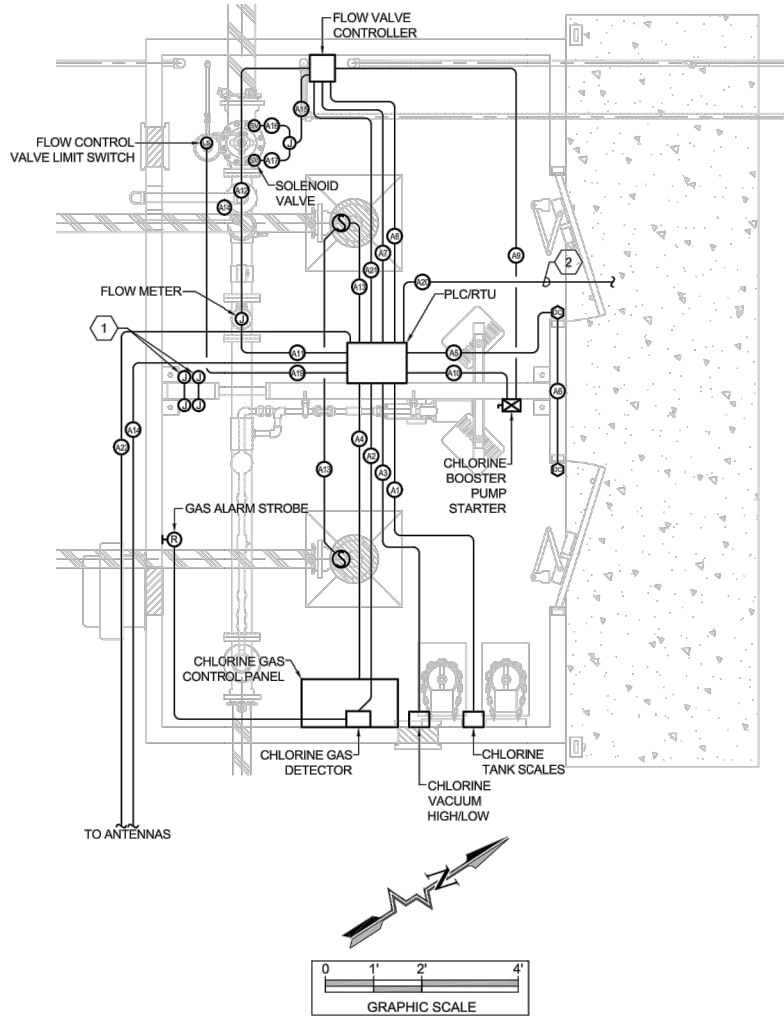
KEYED NOTES

- 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-10 FOR ADDITIONAL REQUIREMENTS. INSTALL A NEMA 4X POLYESTER RATED COVER.
- 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.
- 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-10 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.
- 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.
- 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-10.
- 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.
- PROVIDE AND INSTALL A 120 VOLT THERMOSTAT FOR THE CONTROL OF EXHAUST FAN. REFER TO "CHLORINATOR BUILDING EXHAUST FAN CONTROL DIAGRAM" ON SHEET E-10 FOR ADDITIONAL REQUIREMENTS.
- EXTEND CONDUIT AND CONDUCTORS FROM THE EXHAUST FAN STARTER TO THE DOOR SWITCH. REFER TO "CHLORINATOR BUILDING EXHAUST FAN CONTROL DIAGRAM" ON SHEET E-10 FOR ADDITIONAL INFORMATION.
- 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.
- CHLORINE GAS DETECTOR, SIEMANS, WITH INTEGRAL ALARM HORN AND LED INDICATORS. SENSOR AUTO TEST FEATURE, AND BATTERY BACKUP, NEMA 4X ENCLOSURE. 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-4 TERMINATE PER EQUIPMENT MANUFACTURER'S RECOMMENDATION.
- 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.
- 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.
- NEW PANEL "A". REFER TO "POWER RISER DIAGRAM" ON SHEET E-9 FOR ADDITIONAL REQUIREMENTS.
- REFER TO "POWER RISER DIAGRAM" ON SHEET E-9 FOR TVSS REQUIREMENTS.
- EXTEND UNDERGROUND SERVICE FROM THE METER TO THE UTILITY POLE. REFER TO "POWER RISER DIAGRAM" ON SHEET E-9 AND "ELECTRICAL SITE PLAN" ON SHEET ES-01 FOR ADDITIONAL REQUIREMENTS.
- PROVIDE AND INSTALL A BUILDING MOUNTED SERVICE DISCONNECT SWITCH. REFER TO POWER RISER ON SHEET E-9 FOR ADDITIONAL REQUIREMENTS.
- 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.
- 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
- 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 MANUFACTURERS RECOMMENDATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- DOOR LIMIT SWITCH WITH ADJUSTABLE LEVER ARM AS MANUFACTURED BY SQUARE D #9007C62B2, ARM #HA1. REFER TO CONTROL DIAGRAM FOR ADDITIONAL REQUIREMENTS.
- 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.

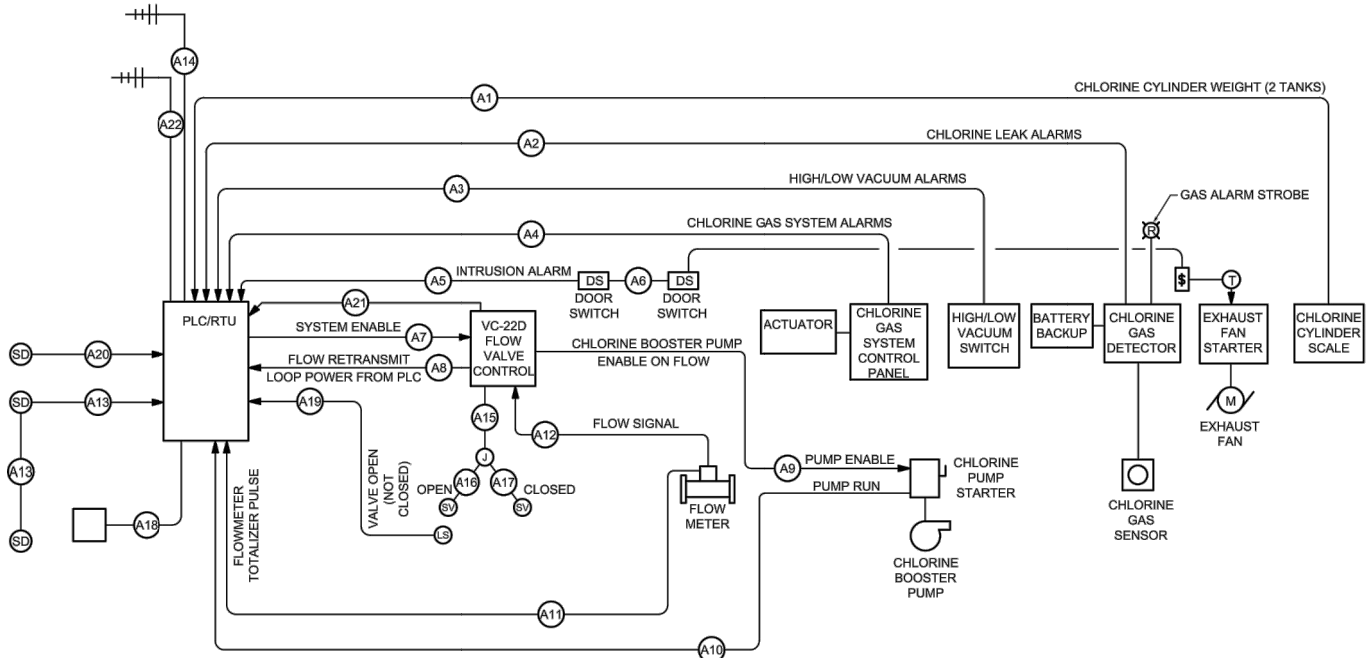


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Client: The Navajo Nation	Location: Naschitti, NM	By: Chkd
ELECTRICAL PLANS - CHLORINATOR BUILDING NASCHITTI CHAPTER SAN JUAN LATERAL CONNECTION SAN JUAN COUNTY, NEW MEXICO SECTION 12, T. 21 N., R. 18 W.		Description
SOUDEY, MILLER & ASSOCIATES Engineering • Environmental • Geomatics Serving the Southwest & Rocky Mountains 48 AZ-264 Suite 206 P.O. Box 519 Window Rock, AZ 86515 Phone (505) 299-0942 Toll-Free (877) 299-0942 Fax (505) 293-3430 www.soudermiller.com		Revision
24092		Date
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Project No: 6928997		
Sheet: E-3		



CONTROL PLAN - CHLORINATOR BUILDING



NASCHITTI CHLORINATION BUILDING CONTROL RISER DIAGRAM

SCALE: NONE

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	Fiber Optic Transmitter unit	Quazite Box	2" Conduit
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	VC-22D	PLC/RTU	1 - 2/C #18 Twisted Pair Shielded Cable - 1/2" Conduit.
A22	Radio Transmitter Unit (RTU)	YAGI Antenna	1" conduit with Radio Cable

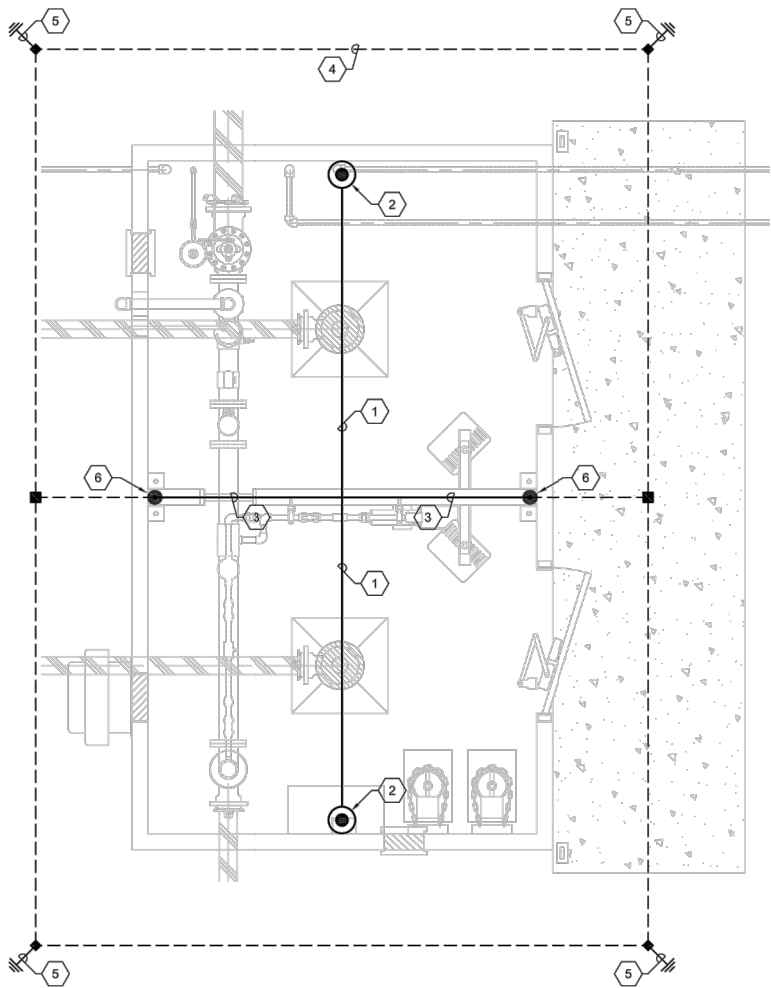
GENERAL NOTES

- A. REFER TO SHEET E-8 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. CONTRACTOR SHALL EXTEND CONDUIT AND CONDUCTORS TO PRESSURE TRANSDUCER VAULT AND MAKE ALL REQUIRED CONNECTIONS FOR A COMPLETE AND OPERATIONAL SYSTEM. REFER TO ELECTRICAL SITE PLAN ON SHEET E-2 FOR LOCATION OF VAULT AND ADDITIONAL INFORMATION.

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LIGHTNING PROTECTION PLAN - CHLORINATOR BUILDING

GENERAL NOTES

- REFER TO LIGHTNING PROTECTION SPECIFICATION SECTION 26 60 10 FOR ADDITIONAL INFORMATION.
- CONTRACTOR SHALL PROVIDE LIGHTNING PROTECTION SYSTEM DRAWING BEFORE INSTALLATION, INCLUDING GROUND RODS AND GROUNDING CABLES (BELOW GROUND AND ABOVE ROOF).
- AFTER THE SYSTEM HAS BEEN INSTALLED, THE UL LISTED INSTALLER SHALL COMPLETE AND SUBMIT THE CERTIFICATION APPLICATION.
- 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.
- GROUND ROD AND BUILDING COUNTER POISE DEPTH SHALL BE 24" BELOW GRADE.
- ALL GROUNDING WIRING SHALL BE PROPERLY CONNECTED PER SPECS SECTION 26 45 00.
- THE CONTRACTOR SHALL SELECT AN ADHESIVE FOR THE AIR TERMINALS THAT MANUFACTURED RECOMMENDED AND IS COMPATIBLE FOR USE WITH THE ROOFING SYSTEM.
- 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.
- ALL WIRING CONNECTORS, AIR TERMINALS, CLAMPS, ETC SHALL BE UL APPROVED FOR A LIGHTNING PROTECTION SYSTEM.

KEYED NOTES

- LIGHTNING PROTECTION CLASS 1 ROOF-MOUNTED LATERAL CONDUCTOR AND MOUNTING HARDWARE. LATERAL CONDUCTOR SHALL BE ALUMINUM.
- 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.
- LIGHTNING PROTECTION 2/0 BARE COPPER DOWN-CONDUCTOR IN 1" CONDUIT.
- LIGHTNING PROTECTION COUNTERPOISE SYSTEM. ALL CONNECTIONS SHALL BE EXO-THERMIC WELDS.
- GROUND ROD. 3/4" X 10'-0" GROUND ROD.
- TRANSITION FROM ALUMINUM CONDUCTOR TO COPPER CONDUCTOR USING A LISTED COPPER TO ALUMINUM WIRE CONNECTOR.
- 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

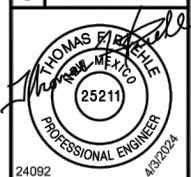
- LIGHTNING AIR TERMINAL
- LIGHTNING CABLE CADWELD
- GROUND ROD
- EXPOSED #4/0 BARE ALUMINUM GROUND CABLE
- CONCEALED BELOW GRADE #2/0 BARE COPPER GROUND CABLE COUNTER POISE



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Client: The Navajo Nation
Location: Naschitti, NM
LIGHTNING PROTECTION PLAN - CHLORINATOR BLDG
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO
SECTION 12, T. 21 N., R. 18 W.



24092

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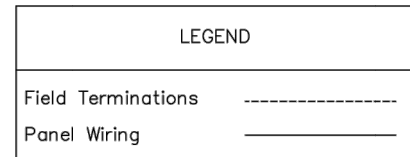
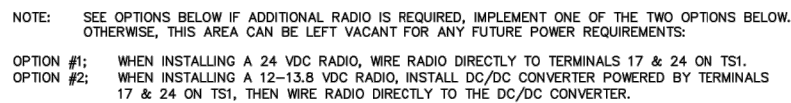



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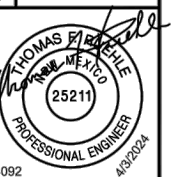
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Project No: 6928997

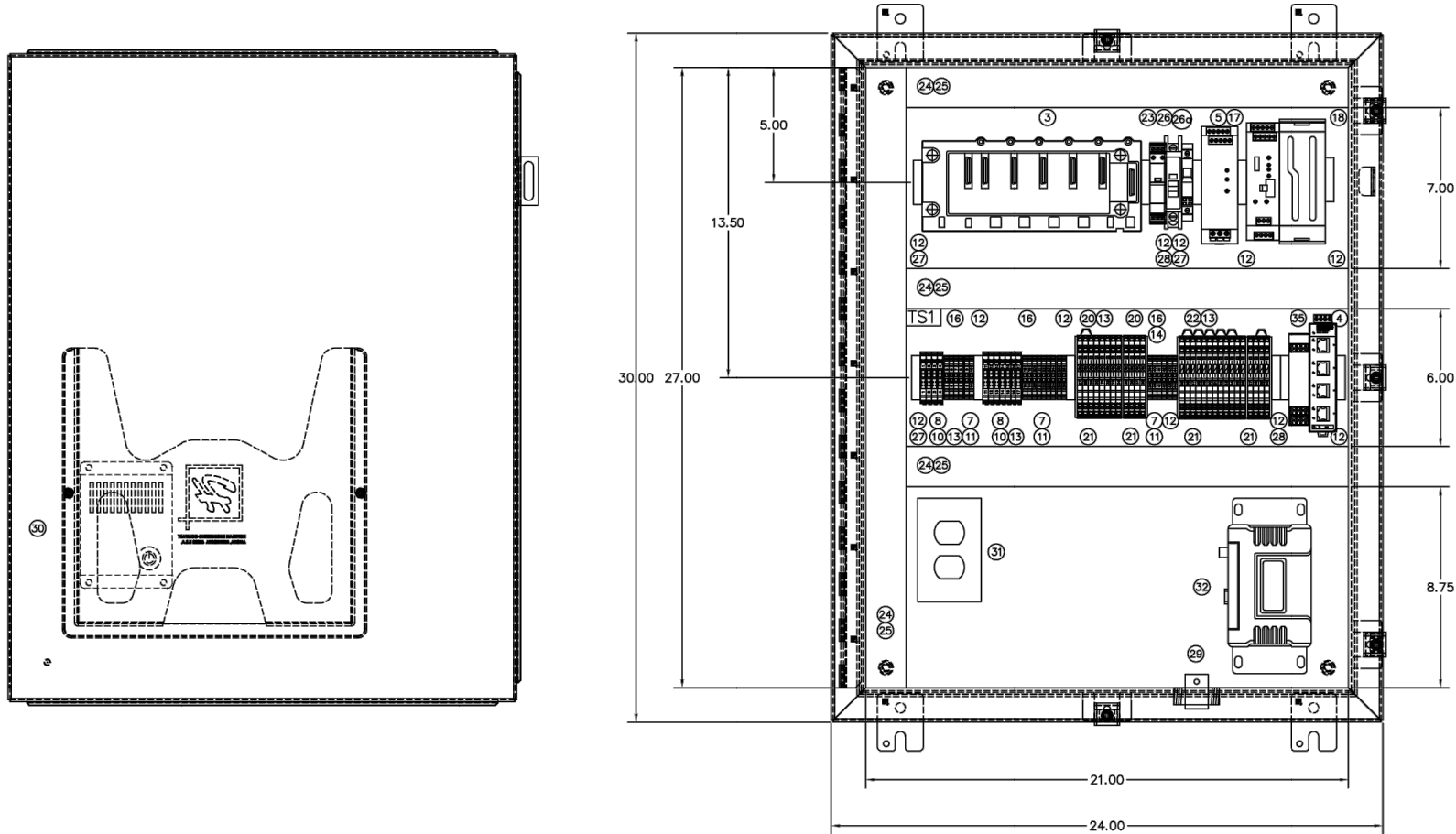
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01	3/19	DWG UPDATES			NTUA
NO.	DATE	DESCRIPTION			BY
 NAVAJO TRIBAL UTILITY AUTHORITY					
SCH#:		REVISION		BY	DATE
DATE	-	-	-	-	-
DRW#	ISS.	-	-	-	-
APPR.	-	-	-	-	-
TITLE	AC TANK CONTROL PANEL POWER DISTRIBUTION				R/S#
					SHEET 4 OF 6



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BILL OF MATERIALS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	A30H24DLP	SINGLE-DOOR TYPE 4 ENCLOSURE
2	1	A30P24	BACKPLANE
3*	1	M340	MODICON M340 BOM
3a	1	BMXXBM0400	4-SLOT RACK MODULE
3b	1	BMXCP3020	POWER SUPPLY MODULE
3c	1	BMXP342020	CPU PROCESSOR MODULE
3d	1	BMXDDM16025	DIGITAL INPUT/OUTPUT MODULE
3e	1	BMXAMM0600	ANALOG INPUT/OUTPUT MODULE
3f	2	BMXFTB2010	REMOVABLE CONNECTION BLOCK - SCREW CLAMP
3g*	1	BMXNOM0200	SERIAL LINK MODULE
4	1	FL SWITCH	INDUSTRIAL ETHERNET SWITCH
5	1	QUINT4-PS/1AC/24DC/5	POWER SUPPLY 22.5-28.5V ADJUSTABLE
6	1	UT2,5	UT2,5 TERMINALS
7	14	UT2,5	UT2,5 TERMINALS
8	10	UT4TG	FUSE TERMINAL BASE
9	7	P-FU5X20LED24	FUSE PLUG
10	4	P-FU5X20LA250	FUSE PLUG
11	6	UT2,5PE	GROUNDING TERMINAL
12	15	E/NS35N	END CLAMP
13	3	FBS 20-6 BU #3032208	FIXED BRIDGE
14	3	FBS 20-5 BU #3036929	INSERTION BRIDGE
15	8	D-UT2,5/10	END COVER
16	4	ATP-UT	PARTITION PLATES
17	2	QUINT4-UPS/24DC/24DC/10	UNINTERRUPTIBLE POWER SUPPLY
18	2	UPS-BAT/VRLA/24DC/1.3AH	ENERGY STORAGE
19	1	TTC-6-TVSD-C-24DC-UT-I	SURGE PROTECTION #2906831
20	12	TTC-6-LCP #2906829	END COVER
21	6	TTC-6-MOV-C-24DC-UT-I	SURGE PROTECTION #2906837
22	16	PLT-SEC-T3-120-FM #2905228	TYPE 3 SURGE PROTECTION DEVICE
23	1	AN F2X4LG6	TYPE F NARROW SLOT WIRING DUCT
24	AN	C2LG6	WIRING DUCT COVER
25	1	TMC 61C 10A #0902072	CIRCUIT BREAKER
26a	1	UT6-TMCM 10A #0916610	CIRCUIT BREAKER
27	AN	1492DR6	EXTENDED DIN RAIL
28	AN	1492-DR5	DIN RAIL
29	1	IS-50NX-C2	LIGHTNING ARRESTER
30	1	D-AH1001A	HEATER 100W 115V .9A
31	1	DRUBGF115	DIN RAIL UTILITY BOX
32	1	ORBIT OR TRANSNET CAT6	902 - 928 MHz RADIO SPREAD SPECTRUM CABLE - PLC TO HMI
33	1	MINI-PS-12-24 DC/DC	CABLE - PLC TO MODEM (TO LENGTH) DC/DC CONVERTER
34*	1	MINI-PS-12-24 DC/DC	CABLE - PLC TO MODEM (TO LENGTH) DC/DC CONVERTER
35*	1	MINI-PS-12-24 DC/DC	CABLE - PLC TO MODEM (TO LENGTH) DC/DC CONVERTER

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.

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NO.	DATE	DESCRIPTION	BY
NAVAJO TRIBAL UTILITY AUTHORITY			
SCALE:	NONE	REVISIONS	BY DATE
DATE:			
DRAWN:			
APPROVED:			
TITLE	AC TANK CONTROL PANEL		SHEET 5 OF 6



Client: The Navajo Nation
Location: Naschitti, NM
NTUA DIAGRAM
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO
SECTION 12, T. 21 N., R. 18 W.



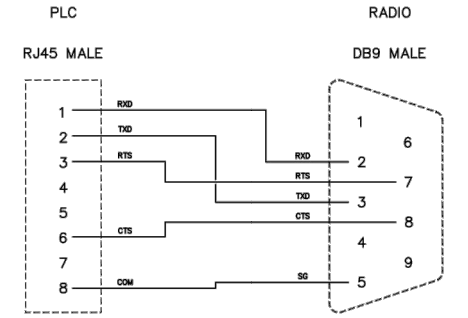
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Project No: 6928997
Sheet: E-7

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A CABLE DIAGRAM: PLC TO RADIO

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NAVAJO TRIBAL UTILITY AUTHORITY			
SCALE:	NONE	REVISIONS	BY DATE
DATE:	-	-	-
DWG:	-	-	-
APP:	-	-	-
TITLE: AC TANK CONTROL PANEL		SHEET 6 OF 6	



Revision	Date	Description	By	Chkd

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NTUA DIAGRAM
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO
SECTION 12, T. 21 N., R. 18 W.

Client: The Navajo Nation

Location: Naschitti, NM

24092

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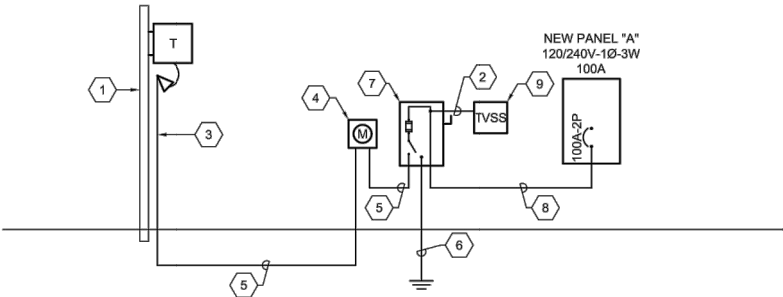
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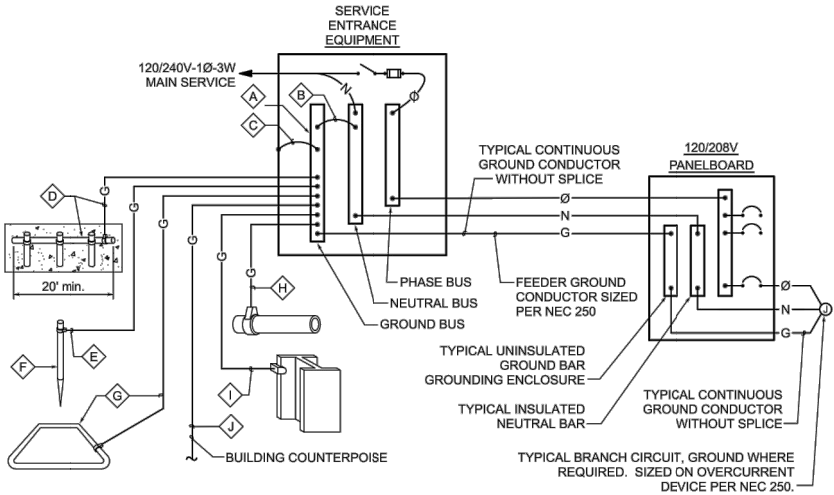
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DISCRETE & ANALOG I/O LIST - REFER TO PLANS & SPECIFICATIONS FOR SEQUENCE OF OPERATIONS							
Site Name	I/O Name	Tag	Point	Type	Local	SCADA	Notes
Naschitti Chlorination Building	Intrusion Alarm Control Room		I1	DI		Yes	
	Intrusion Alarm Chlorine Room		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)	CT#	LOAD (VA) PHASE A	CT#	LOAD (VA) PHASE B	CT#	LOAD (VA)	DEMAND CODE	DESCRIPTION	BKR SIZE
30A-2P	UNIT HEATER	LMECH	2000	1	4000		4000	2	2000	MECH	UNIT HEATER	30A-2P
		LMECH	2000	3				4	2000	MECH		
20A-1P	RECEPTACLES	REC	900	5	1764			6	864	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	CATHODIC PROTECTION	EQP	1000	15		1000		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			29				30			SPARE	20A-1P
20A-1P	SPARE			20								
Total Phase Loads (VA):					7,452		6,350	Notes: 1. New Panelboard				
Total Phase Loads (Amps):					62.1		52.9	2. 30-Circuit, Lockable Enclosure				
Total Connected Loads (kVA):					13.8			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):	15.0			
	REC	Receptacles:	1.8		Receptacles:	1.8		Amps at 240/120V:1 Phase (Amps):	62.5			
					10kVA at 100% (kVA):	1.8		Panel Ampacity (Rating):	100			
					Rest at 50% (kVA):	0.0						
	EQP	Equipment:	2.4		Eqp at 100% (kVA):	2.4		Spare Capacity:	37.5%			
	LMECH	Largest Mech:	4.0		Largest at 125% (kVA):	5.0						
	MECH	Mechanical:	4.9		Rest at 100% (kVA):	4.9						



POWER RISER DIAGRAM















GROUNDING SYSTEM DIAGRAM - 120/240 VOLT SYSTEM

NOT TO SCALE

GROUNDING SYSTEM GENERAL NOTES

- THE GROUNDING ELECTRODE SYSTEM SHALL CONSIST OF ITEMS **A**, **B**, **C**, **D**, **E**, **F**, AND **G**, WHERE APPLICABLE.
- ITEMS **H**, **I**, AND **J** MUST BE BONDED TOGETHER AND TO THE GROUNDING ELECTRODE SYSTEM WHEN THEY ARE PRESENT.
- 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.
- THIS DETAIL IS PROVIDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, ARTICLE 250, PERTAINING TO THE "GROUNDING ELECTRODE SYSTEM".
- ALL SPLICING SHALL BE ACCOMPLISHED VIA EXOTHERMIC WELD (CAD-WELD) ONLY.
- ALL CONDUCTOR SIZING INDICATED ON THE GROUNDING SCHEDULE ARE FOR COPPER CONDUCTORS. ALUMINUM IS NOT PERMITTED.
- ANY VARIANCES FROM THIS DIAGRAM AND ASSOCIATED SCHEDULE AND NOTES MUST BE REQUESTED AND APPROVED IN WRITING PRIOR TO INSTALLATION.
- ALL INSTALLATIONS SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF N.E.C. ARTICLE 250 (ALL SUBPARAGRAPHS) AND ALL STATE AND LOCAL REQUIREMENTS.
- 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										
	 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	 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

- PROVIDE AND INSTALL A 25'-0" SOUTHERN PINE CLASS 4 WOOD POLE FOR THE INSTALLATION OF RISER AND TRANSFORMER.
- 4#8 THWN Cu IN 1" CONDUIT BETWEEN TVSS AND DISCONNECT SWITCH.
- PROVIDE A 2" RGS CONDUIT ON POLE RISER WITH CONDUCTORS. COORDINATE INSTALLATION WITH UTILITY COMPANY PRIOR TO PROCEEDING WITH INSTALLATION OF CONDUITS
- PROVIDE AND INSTALL A 100 AMP 120/240 VOLT METER SOCKET PER THE LOCAL UTILITY COMPANY REQUIREMENT. REFER TO "ELECTRICAL SITE PLAN" ON SHEET E-2 FOR LOCATION OF METER.
- 3#2 THWN Cu IN 2" CONDUIT.
- REFER TO "GROUNDING SYSTEM DIAGRAM - 120/240 VOLT SYSTEM" ON THIS SHEET FOR ADDITIONAL INFORMATION.
- 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.
- 3#2 THWN Cu AND 1#8 THWN Cu GROUND IN 1 1/4" CONDUIT.
- 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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Client: The Navajo Nation
Location: Naschitti, NM
POWER RISER DIAGRAM AND DETAILS-CHLORINATION
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO
SECTION 12, T. 21 N., R. 18 W.



Designed: TRG/rhp Drawn: TRG/rhp Checked: TRG/tlr

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

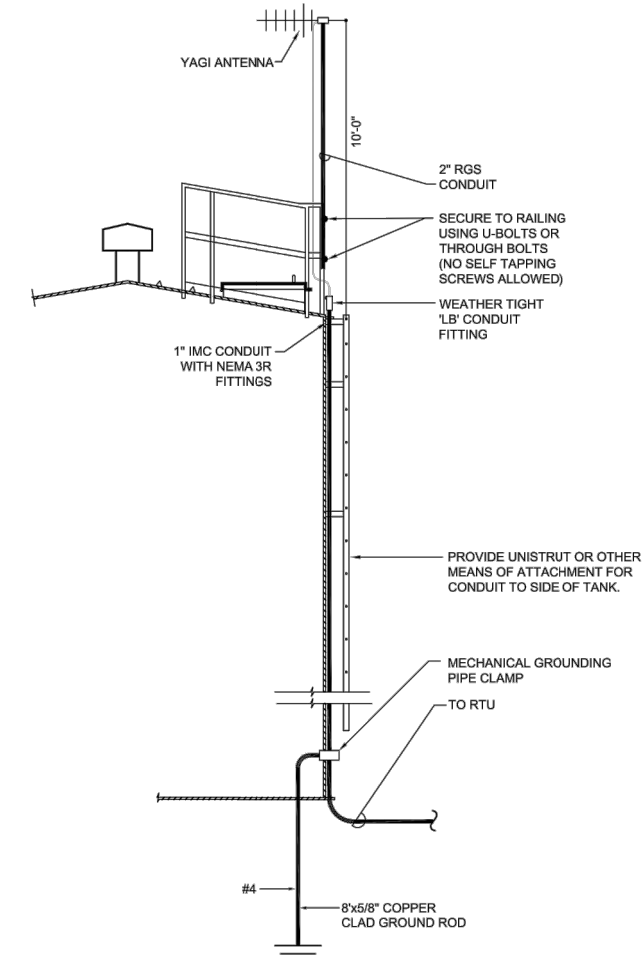
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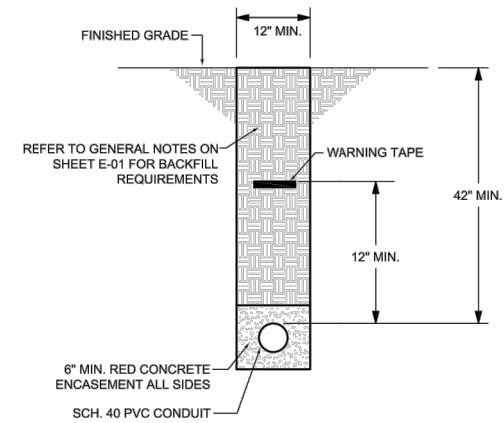
Sheet: E-9

F:\24092 - Naschitti Connection\24092 CADD\Constructs\Electrical\24092 E-10 Electrical Details.dwg
4/3/2024 4:21:24 PM Ryan



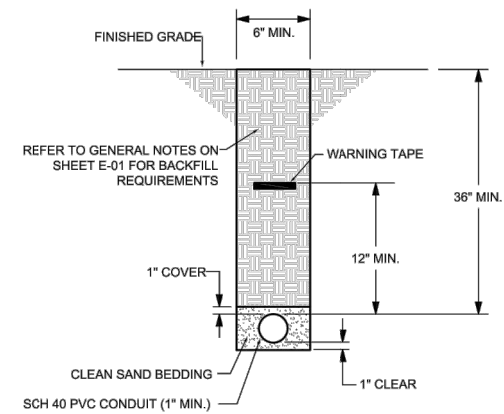
RADIO ANTENNA AND MAST DETAIL - TANK

SCALE: NONE



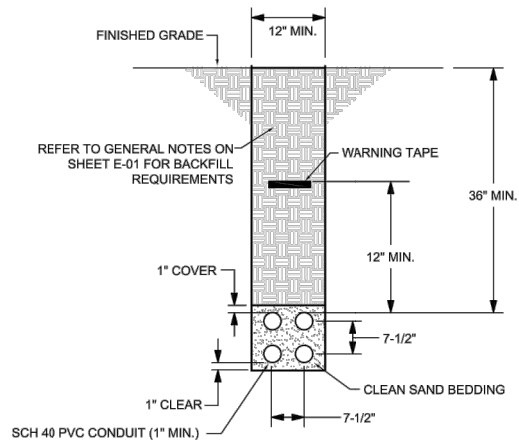
TYPICAL PRIMARY CONDUIT TRENCH DETAIL

SCALE: NONE



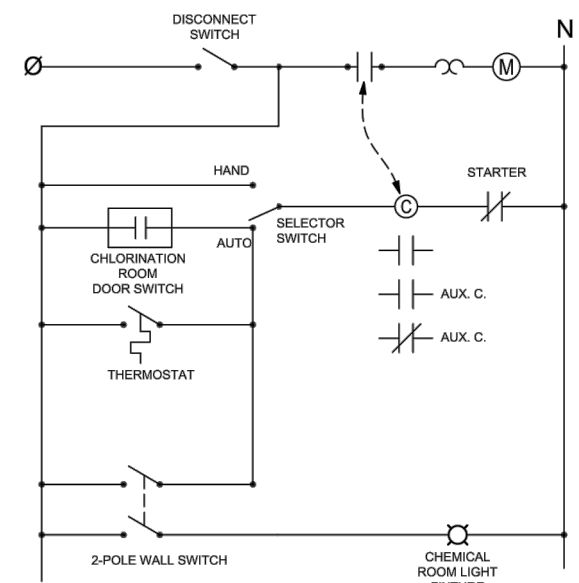
TYPICAL SINGLE CONDUIT TRENCH DETAIL

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.



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Location: Naschitti, NM

ELECTRICAL DETAILS
NASCHITTI CHAPTER
SAN JUAN LATERAL CONNECTION
SAN JUAN COUNTY, NEW MEXICO
SECTION 12, T. 21 N., R. 18 W.

Client: The Navajo Nation



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Sheet: E-10