

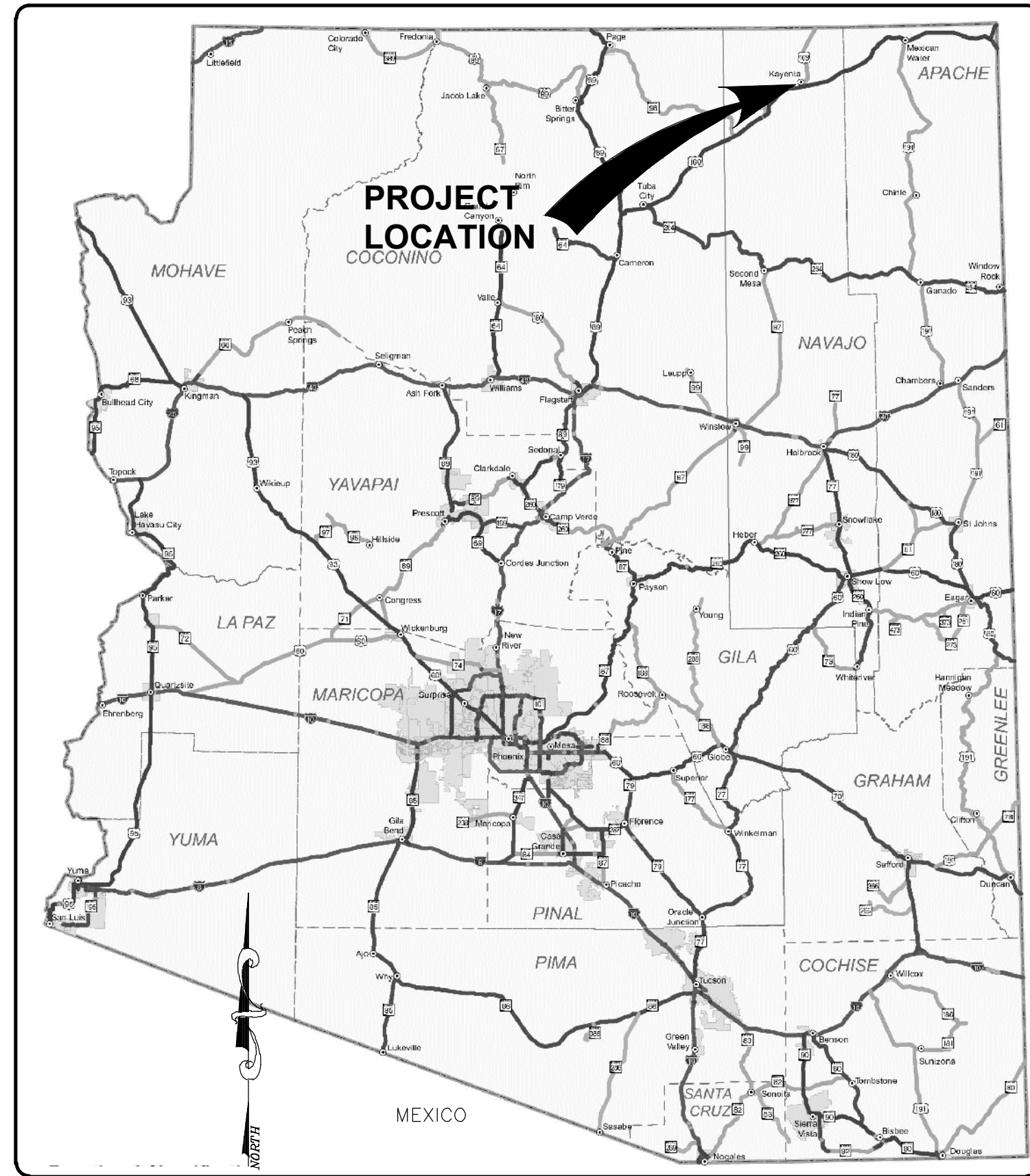
CONSTRUCTION PLANS
FOR

NAVAJO TRIBAL UTILITY AUTHORITY



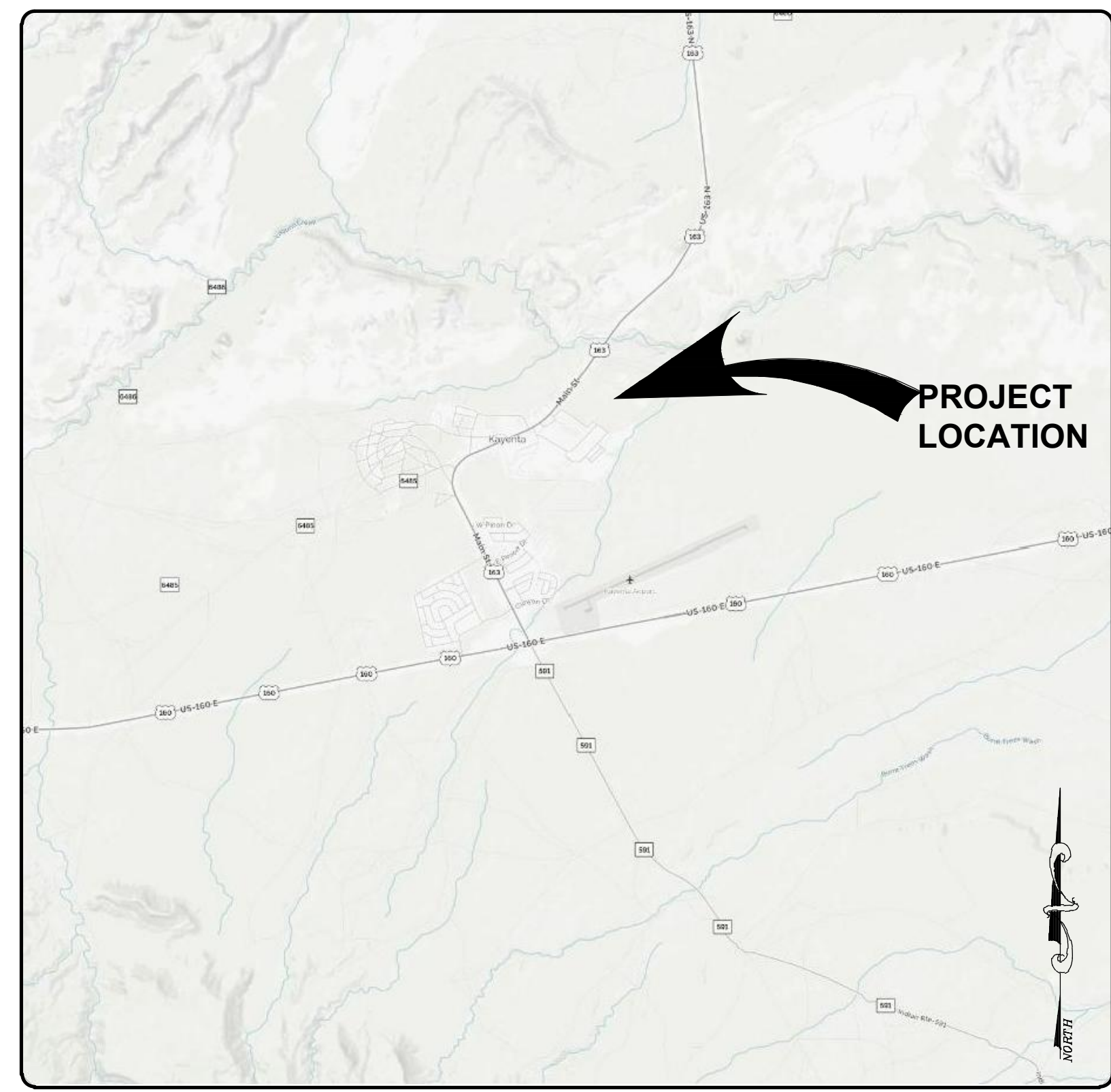
KAYENTA, ARIZONA WASTEWATER TREATMENT PLANT UPGRADE

FUNDED BY: NTUA



ARIZONA

Sheet List Table	
Sheet Number	Sheet Title
GENERAL	
1	COVER SHEET
2	GENERAL NOTES
CIVIL	
3	CIVIL LEGEND AND ABBREVIATIONS
4	FLOW SCHEMATIC
5	SITE LAYOUT, SURVEY, AND CONTROL
6	CIVIL DETAILS
7	SITE UPGRADES
7A	AERATION AREA GENERATOR SITE
7B	AERATION AREA GENERATOR PROFILES
8	EXIT WORKS UPGRADES
8A	EXIT WORKS GRADING PLAN
8B	EXIT WORKS POINT AND CURVE DATA
9	AERATOR LAYOUT
STRUCTURAL	
10	GENERAL STRUCTURAL NOTES
11	STRUCTURAL PLANS
12	STRUCTURAL DETAILS
ELECTRICAL	
E300	LEGENDS NOTES & ABBREVIATIONS
E301	OVERALL SITE PLAN
E302	AERATION SYSTEM SINGLE LINE DIAGRAM
E303	ENLARGED PLAN VIEWS "A" & "B"
E304	DISINFECTION SYSTEM SINGLE LINE DIAGRAM
E305	ENLARGED PLAN VIEW "C"
E306	ELEVATIONS
E307	DETAILS



VICINITY MAP



NAVAJO TRIBAL UTILITY AUTHORITY KAYENTA, ARIZONA	
NO.	REVISION DESCRIPTION
5	
4	
3	
2	
1	

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE
GENERAL COVER SHEET

SOLUTIONS FOR TODAY...
VISION FOR TOMORROW
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-9700
Fax: (505) 884-2376
TEXAS



JOB NO.: 115111
DATE: APRIL 2016
SHEET NO.: 1

C:\SEC-PROJECTS\15111 NTUA InNEPA Compliance Plan Assistance\Kayenta\PLANS\SET1 COVER SHEET.dwg, Apr 19, 2016 - 11:09am Saved By: alliam

GENERAL NOTES

- ALL WORK DETAILED ON THESE PLANS IS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREIN, IN ACCORDANCE WITH THE MARICOPA ASSOCIATION OF GOVERNMENT (MAG) UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION - 2011 EDITION (REFERRED TO HEREIN BY STD. SPEC NUMBER OR STD. DWG NUMBER). A FREE COPY OF THE MAG SPECS IS AVAILABLE AT [HTTP://WWW.AZMAG.GOV/DOCUMENTS/2011_SPECIFICATIONS_BOOK.PDF](http://www.AZMAG.GOV/DOCUMENTS/2011_SPECIFICATIONS_BOOK.PDF)
- BIDDER SHALL PROMPTLY GIVE ENGINEER WRITTEN NOTICE OF ALL CONFLICTS, ERRORS, AMBIGUITIES, OR DISCREPANCIES THAT BIDDER DISCOVERS IN THE BIDDING DOCUMENTS AND CONFIRM THAT THE WRITTEN RESOLUTION THEREOF BY ENGINEER IS ACCEPTABLE TO BIDDER. CONTRACTOR SHALL CORRELATE INFORMATION KNOWN TO CONTRACTOR, INFORMATION AND OBSERVATIONS OBTAINED FROM VISITS TO THE SITE, REPORTS AND DRAWINGS IDENTIFIED IN THE BIDDING DOCUMENTS, AND ALL ADDITIONAL EXAMINATIONS, INVESTIGATIONS, EXPLORATIONS, TESTS, STUDIES, AND DATA WITH THE CONTRACT DOCUMENTS.
- SUBMISSION OF A BID WILL CONSTITUTE AN INCONVERTIBLE REPRESENTATION BY BIDDER THAT BIDDER HAS COMPLIED WITH ALL BIDDING REQUIREMENTS AND THAT WITHOUT EXCEPTION THE BID IS PREMISED UPON PERFORMING AND FURNISHING THE WORK REQUIRED BY THE BIDDING DOCUMENTS AND APPLYING ANY SPECIFIC MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION THAT MAY BE SHOWN OR INDICATED OR EXPRESSLY REQUIRED BY THE BIDDING DOCUMENTS, THAT BIDDER HAS GIVEN ENGINEER WRITTEN NOTICE OF ALL CONFLICTS, ERRORS, AMBIGUITIES, AND DISCREPANCIES THAT BIDDER HAS DISCOVERED IN THE BIDDING DOCUMENTS AND THE WRITTEN RESOLUTIONS THEREOF BY ENGINEER ARE ACCEPTABLE TO BIDDER, AND THAT THE BIDDING DOCUMENTS ARE GENERALLY SUFFICIENT TO INDICATE AND CONVEY UNDERSTANDING OF ALL TERMS AND CONDITIONS FOR PERFORMING AND FURNISHING THE WORK.
- BEFORE UNDERTAKING EACH PART OF THE WORK, CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE THE CONTRACT DOCUMENTS AND CHECK AND VERIFY PERTINENT FIGURES THEREIN AND ALL APPLICABLE FIELD MEASUREMENTS. CONTRACTOR SHALL PROMPTLY REPORT IN WRITING TO ENGINEER ANY CONFLICT, ERROR, AMBIGUITY, OR DISCREPANCY WHICH CONTRACTOR DISCOVERS, OR HAS ACTUAL KNOWLEDGE OF, AND SHALL OBTAIN A WRITTEN INTERPRETATION OR CLARIFICATION FROM ENGINEER BEFORE PROCEEDING WITH ANY WORK AFFECTED THEREBY. IF, DURING THE PERFORMANCE OF THE WORK, CONTRACTOR DISCOVERS ANY CONFLICT, ERROR, AMBIGUITY, OR DISCREPANCY WITHIN THE CONTRACT DOCUMENTS, OR BETWEEN THE CONTRACT DOCUMENTS AND (A) ANY APPLICABLE LAW OR REGULATION, (B) ANY STANDARD, SPECIFICATION, MANUAL, OR CODE, OR (C) ANY INSTRUCTION OF ANY SUPPLIER, THEN CONTRACTOR SHALL PROMPTLY REPORT IT TO ENGINEER IN WRITING. CONTRACTOR SHALL NOT PROCEED WITH THE WORK AFFECTED THEREBY (EXCEPT IN AN EMERGENCY) UNTIL AN AMENDMENT OR SUPPLEMENT TO THE CONTRACT DOCUMENTS HAS BEEN ISSUED.
- THE CONTRACT, IF AWARDED, WILL BE BASED ON 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 THE CONTRACTOR IF ACCEPTABLE TO THE ENGINEER. APPLICATION FOR SUCH ACCEPTANCE WILL NOT BE CONSIDERED BY THE ENGINEER UNTIL AFTER THE EFFECTIVE DATE OF AGREEMENT. THE PROCEDURE FOR SUBMISSION OF ANY SUCH APPLICATION BY THE CONTRACTOR AND CONSIDERATION BY THE ENGINEER IS SET FORTH IN THE GENERAL CONDITIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE OF APPLICABLE PORTIONS OF THE EPA STORM WATER DISCHARGE REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND PERMIT COMPLIANCE REQUIRED FOR CONSTRUCTION OF THE PROJECT.
- THE WORK DESCRIBED IN THESE PLANS WILL BE DONE IN EXISTING WASTEWATER TREATMENT FACILITIES THAT CONTAIN NUMEROUS EXISTING PIPES, ELECTRIC LINES, AND OTHER STRUCTURES. THE EXISTING WASTEWATER TREATMENT PLANT SHALL REMAIN IN OPERATION AT ALL TIMES AND SHALL NOT BE TAKEN OFF LINE UNTIL THE NEW WASTEWATER PLANT IS IN FULL OPERATION AND CERTIFIED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ALL ITEMS DESCRIBED IN THESE PLANS IN A MANNER THAT PROTECTS THE EXISTING FACILITY. THE CONTRACTOR MUST CONTACT THE ENGINEER IMMEDIATELY IF THE CONTRACTOR CANNOT PERFORM THE WORK WITHOUT DAMAGE TO THE EXISTING FACILITY. THE CONTRACTOR MUST VERIFY ALL EXISTING INFORMATION SHOWN ON THESE PLANS. CHANGES IN ALIGNMENT CAUSED BY UNKNOWN OR UNANTICIPATED SITE CONDITIONS SHALL BE MEASURED AND PAID FOR BASED ON THE APPROVED SCHEDULE OF VALUES SUBMITTED BY THE CONTRACTOR.
- THE LOCATION, SIZE, AND CONDITION OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN IN THESE PLANS ARE BASED ON AVAILABLE RECORDS. 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 LOCATING, PROTECTION OF, OR ANY DAMAGE TO THESE LINES OR STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES AND OBTAINING LINE SPOTS.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THE CONFLICT CAN BE RESOLVED WITH MINIMUM AMOUNT OF DELAY. THE CONTRACTOR SHALL IDENTIFY UTILITY LINES FAR ENOUGH IN ADVANCE OF CONSTRUCTION WORK, SO THAT THE OWNER OF SUCH LINES CAN RAISE, LOWER, REALIGN OR REMOVE LINES AND STRUCTURES (IF NECESSARY), AND THE ENGINEER CAN MAKE NECESSARY LINE AND GRADE CHANGES (SHOULD THE EXISTING UTILITY LINES CONFLICT WITH THE WORK UNDER CONSTRUCTION), PROVIDING SUCH ADJUSTMENTS DO NOT MATERIALLY AFFECT THE WORK.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR COSTS OF REPAIR OF ANY AND ALL DAMAGE TO ANY UTILITY (WHICH IS PREVIOUSLY KNOWN, DISCLOSED, OR SHOWN ON THESE PLANS) CAUSED BY THE CONTRACTORS OPERATIONS.
- FIVE (5) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NTUA (THOMAS BAYLESS @ 928-729-4779) FOR LOCATION OF EXISTING UTILITIES.
- THE 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, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
- UTILITY CONTACTS: GAS, SEWER, WATER, ELECTRIC: NTUA SAFETY DEPARTMENT 928-729-5721, TELEPHONE: FRONTIER COMMUNICATION 928-871-3748.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL FACILITIES ADJACENT TO THE CONSTRUCTION AREA.
- THE CONTRACTOR IS RESPONSIBLE FOR RECORDING EXISTING CONDITIONS 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.
- THE CONTRACTOR SHALL IMMEDIATELY REPORT ANY DAMAGES TO PUBLIC OR PRIVATE PROPERTY TO THE OWNER OF THE PROPERTY INVOLVED AND TO THE ENGINEER. THE CONTRACTOR SHALL REPAIR OR RESTORE AT THE CONTRACTOR'S EXPENSE ANY DAMAGE TO PUBLIC OR PRIVATE PROPERTY, FOR WHICH THE CONTRACTOR IS DIRECTLY OR INDIRECTLY RESPONSIBLE, TO A CONDITION EQUAL TO THAT EXISTING BEFORE DAMAGE. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE CONTRACTORS INSURANCE CARRIER OF SUCH DAMAGE. IF THE CONTRACTOR FAILS TO GIVE SUCH NOTICE TO THE INSURANCE CARRIER OR REFUSES TO MAKE SUCH REPAIRS OR RESTORATION UPON RECEIPT OF NOTICE, THE OWNER MAY DEDUCT THE COST OF SUCH REPAIRS OR RESTORATION FROM MONEYS DUE, OR WHICH MAY BECOME DUE, TO THE CONTRACTOR.
- THE LANDS WITHIN THE FENCE LINE OF THE WASTEWATER TREATMENT PLANT BELONG TO THE NAVAJO TRIBAL UTILITY AUTHORITY (NTUA). THE CONTRACTOR MAY USE THESE LANDS TO FACILITATE CONSTRUCTION WITH APPROVAL OF THE NTUA. A PREAPPROVED STAGING/STORAGE AREA IS SHOWN IN THE PLANS. THE CONTRACTOR SHALL AVOID ANY ACTIVITY IN THESE LANDS THAT WOULD BE A POTENTIALLY SIGNIFICANT DISTURBANCE TO OPERATION AND MAINTENANCE OF THE WASTEWATER PLANT.
- DEBRIS GENERATED BY CONSTRUCTION ACTIVITIES MAY BE STORED AT THE CONSTRUCTION SITE AT AN AREA IDENTIFIED BY THE WASTEWATER TREATMENT PLANT PERSONNEL. DEBRIS MAY BE STORED DURING CONSTRUCTION UPON STAGING AND STORAGE AREAS SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING SAFETY ISSUES ASSOCIATED WITH STORED DEBRIS AND SHALL PROVIDE FENCING AND/OR BARRICADING AROUND DEBRIS IF NECESSARY. PRIOR TO COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL DISPOSE OF DEBRIS AT A PERMITTED LANDFILL OR OTHER DULY CERTIFIED REFUSE FACILITY (INCIDENTAL TO THE PROJECT).
- THE CONTRACTOR SHALL STOCK PILE ANY EXCESS EARTH ON-SITE AT A LOCATION DETERMINED.
- THE CONTRACTOR SHALL PHASE AND SCHEDULE WORK IN SUCH A WAY AS TO PROVIDE FOR CONTINUOUS WASTEWATER TREATMENT DURING CONSTRUCTION. THE CONTRACTOR'S SCHEDULE SHALL INCLUDE FLOW SCHEMATICS AND PROCESS DIAGRAMS TO ILLUSTRATE FLOW ROUTING AND TREATMENT.
- UNLESS OTHERWISE NOTED, THE CONTRACTOR IS GRANTED SALVAGE RIGHTS TO ALL CONSTRUCTION DEBRIS, PROVIDED THE CONTRACTOR USES SAID DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR SHALL PROVIDE A LIST OF ITEMS SALVAGED TO THE ENGINEER AND OWNER BEFORE THE CONTRACTOR TAKES ITEMS OFF THE SITE.
- CONTRACTOR SHALL NOT LOAD NOR PERMIT ANY PART OF ANY STRUCTURE TO BE LOADED IN ANY MANNER THAT WILL ENDANGER THE STRUCTURE, NOR SHALL THE CONTRACTOR SUBJECT ANY PART OF THE WORK OR ADJACENT PROPERTY TO STRESSES OR PRESSURES THAT

- WILL ENDANGER IT.
- IF THIS DRAWING IS OTHER THAN FULL SIZE (22"X34"), UTILIZE BAR SCALE IN LIEU OF NUMERIC SCALE.
 - ALL UTILITY MANHOLES, METERS CLEANOUTS, AND VALVES IMPACTED BY CONSTRUCTION TO BE FIELD LOCATED AND ADJUSTED TO GRADE, THIS SHALL BE INCIDENTAL TO THE PROJECT.
 - THE DESIGN FLOW RATE FOR THIS FACILITY IS 0.9 MGD.



NAVAJO TRIBAL UTILITY AUTHORITY KAYENTA, ARIZONA		DATE	BY
5			
4			
3			
2			
1			
NO.	REVISION DESCRIPTION	DATE	BY

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE

GENERAL NOTES

**SOLUTIONS FOR TODAY...
VISION FOR TOMORROW**

2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376

SMITH ENGINEERING
CONSULTANTS

NEW MEXICO

JOB NO.: 115111
DATE: **APRIL 2016**
SHEET NO.: **2**

ABBREVIATIONS

AC ASPHALT CONCRETE	PC POINT OF CURVE OR PORTLAND CEMENT
ADJT ADJUSTABLE	PCC POINT OF COMPOUND CURVE
ADMIN ADMINISTRATION	PCV PUMP CONTROL VALVE
APPD APPROVED	PE PLAIN END
APPROX APPROXIMATE	PER PURSUANT
ARV AIR RELEASE VALVE	PG PRESSURE GAUGE OR PROPANE GAS
ASTM AMERICAN SOCIETY FOR TESTING AND MATERIAL	PI POINT OF INTERSECTION
ASBY ASSEMBLY	P&ID PROCESS AND INSTRUMENTATION DIAGRAM
ASP AER ASPIRATING AERATOR	PLT PLANT
AWWA AMERICAN WATER WORKS ASSOCIATION	PMP PUMP
BC BEGIN CURVE	POB POINT OF BEGINNING
BCV BALL CHECK VALVE	POTA POTABLE
BFV BUTTERFLY VALVE	PP POWER POLE
BFP BACK FLOWPREVENTER	PPD POUNDS PER DAY
BLDG BUILDING	PPH POUNDS PER HOUR
BLKG BLOCKING	PPM PARTS PER MILLION
BNR BIOLOGICAL NUTRIENT REMOVAL	PRC POINT OF REVERSE CURVE
BOD BIOCHEMICAL OXYGEN DEMAND	PRF PREFABRICATED
BOP BOTTOM OF PIPE	PRESS PREFABRICATED
BOT BOTTOM	PROP PROPERTY
BPV BACK PRESSURE VALVE	PRV PRESSURE REGULATING VALVE
B&S BELL AND SPIGOT	PS PUMP STATION OR PRESSURE SWITCH
BTU BRITISH THERMAL UNIT	PSF POUNDS PER SQUARE FOOT
BV BALL VALVE	PSI POUNDS PER SQUARE INCH
BW BACKWASH	PSIG POUNDS PER SQUARE INCH GAUGE
BYP BYPASS	PT POINT OF TANGENT
CARV/CAV COMBINATION AIR/VACUUM RELEASE VALVE	PV PLUG VALVE
CCP CONCRETE CYLINDER PIPE	PVC POLYVINYL CHLORIDE
CFM CUBIC FEET PER MINUTE	PVCC POINT OF VERTICAL COMPOUND CURVE
CFS CUBIC FEET PER SECOND	PVI POINT OF VERTICAL INTERSECTION
CG CANAL GATE	PVMT PAVEMENT
CI CAST IRON	PVRC POINT OF VERTICAL RETURN CURVE
CIP CAST IRON PIPE	PVT POINT OF VERTICAL TANGENT
CJ CONSTRUCTION JOINT	PW PLANT WATER
CL CLARIFIER OR CENTERLINE	RAS RETURN ACTIVATED SLUDGE
CMP CORRUGATED METAL PIPE	RCP REINFORCED CONCRETE PIPE
CMU CONCRETE MASONRY UNIT	RD ROAD ROOF DRAIN OR ROUND
CO CLEAN-OUT	RDCR REDUCER
CONC CONCRETE	RE RECYCLE
COP CROSS OVER PIPE	RE-CIRC. RE-CIRCULATION
C&P CLEAN AND PATCH	RET RETURN
CPLG COUPLING	R.C&P REMOVE, CLEAN AND PATCH
CU FT CUBIC FOOT	R&D REMOVE & DISPOSE
CU YD CUBIC YARD	RIB RAW INFLUENT BUILDING
CV CHECK VALVE	R&R REMOVE & RELOCATE
DIG DIGESTER	R&S REMOVE & SALVAGE
DIMJ DUCTILE IRON MECHANICAL JOINT	RS REUSE
DIP DUCTILE IRON PIPE	RESTRAINTS RESTRAINTS
DIS DISCHARGE	S SOUTH
DPCO DOUBLE PRESSURE CLEAN OUT	SAS SANITARY SERVICE
DRN DRAIN	SAS FM SANITARY SEWER FORCE MAIN
E EAST	SEQUOX SEQUENTIAL OXIDATION
EA EACH	SLG SLUDGE
ED EFFLUENT DISCHARGE	SPEC SPECIFICATION
EFF EFFLUENT	SQ FT SQUARE FOOT
ELL ELBOW	SQ IN SQUARE INCH
EL ELEVATION	SS SEWER
ENGR ENGINEER	STD STANDARD
EQ EQUAL	STL STEEL OR STEEL PIPE
EXIST EXISTING	STN STL STAINLESS STEEL
FF FINISHED FLOOR	STRUCT STRUCTURE OR STRUCTURAL
FG FINISH GRADE	STS SUPPLEMENTAL TECHNICAL SPECIFICATION
FIN FINISH OR FINISHED	SUC SUCTION
FL FLANGED	SUP SUPPLY
FLR FLOOR	SWD SIDE WATER DEPTH
FRG FIBER GLASS	SYS SYSTEM
FRP FIBER GLASS PIPE	T&B TOP AND BOTTOM
FT FEET OR FOOT	TBC TOP BACK OF CURB
FW FINISHED WATER	TEL TELEPHONE
GAL GALLON	T.O.C. TOP OF CONCRETE
GALV GALVANIZED	TOG TOP OF GRATING
GALV STL GALVANIZED STEEL	TOW TOP OF WALL
GPD GALLONS PER DAY	TP TELEPHONE POLE
GPH GALLONS PER HOUR	UBC UNIFORM BUILDING CODE
GPM GALLONS PER MINUTE	UGE UNDERGROUND ELECTRIC
GRD GRADE OR GROUND	UL UNDERWRITERS LABORATORIES
GV GATE VALVE	UNKN UNKNOWN
H HEIGHT	UP UTILITY POLE
HB HOSE BIB	UV ULTRAVIOLET
HDPE HIGH DENSITY POLYETHYLENE	VIC VITALIC
HGL HYDRAULIC GRADE LINE	WAS WASTE ACTIVATED SLUDGE
HORIZ HORIZONTAL	W WATER
HP HORSEPOWER	WL WATER LINE
I.D. INSIDE DIAMETER	WSTP WATER STOP
INFL INFLUENT	WV WATER VALVE
INS INSULATED	FT FT
INV INVERT	INCH INCH
IRR IRRIGATION	
ISV ISOLATION VALVE	
JB JUNCTION BOX	
JT JOINT	
KM KILOMETER	
KV KILOVOLT	
KW KILOWATT	
KWH KILOWATT HOUR	
L LITER, LENGTH OR ANGLE	
LF LINEAR FEET	
LR LONG RADIUS	
LS LIFT STATION	
MAG MAGNETIC	
MAINT. MAINTENANCE	
MANF MANUFACTURER	
MAX MAXIMUM	
MGD MILLION GALLONS PER DAY	
MH MANHOLE	
MISC MISCELLANEOUS	
MJ MECHANICAL JOINT	
MNTD MOUNTED	
N NORTH	
NC NORMALLY CLOSED	
NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOC.	
NEPA NATIONAL FIRE PROTECTION ASSOCIATION	
NIS NOT IN SERVICE	
NO NORMALLY OPEN OR NUMBER	
NPS NOMINAL PIPE SIZE	
NTS NOT TO SCALE	
OC ON CENTER	
O.E.A.E. OUTSIDE DIAMETER OR OVERFLOW DRAIN	
OG OR ENGINEERED APPROVED EQUAL	
OHE ORIGINAL GROUND	
OPER. OVERHEAD ELECTRIC UTILITY OPERATION	

LEGENDS

	EXISTING	THIS CONTRACT		EXISTING	THIS CONTRACT

CIVIL LEGEND	YARD PIPING LEGEND	EQUIPMENT LEGEND	MATERIAL LEGEND

ANNOTATION LEGEND

	BUILD NOTE
	BENCH MARK
	SURVEY CONTROL POINT OR POINT OF INTERSECTION
	SHEET NOTE (NEW EQUIP.)
	SHEET NOTE (EXIST. EQUIP.)
	FREE WATER SURFACE
	POINT COORDINATES
	NODE POINT

	SECTION CUT DETAIL (SEPERATE SHEET)
	SECTION CUT DETAIL (SAME SHEET)



NAVAJO TRIBAL UTILITY AUTHORITY KAYENTA, ARIZONA		DATE	BY
5			
4			
3			
2			
1			
NO.	REVISION DESCRIPTION		

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE

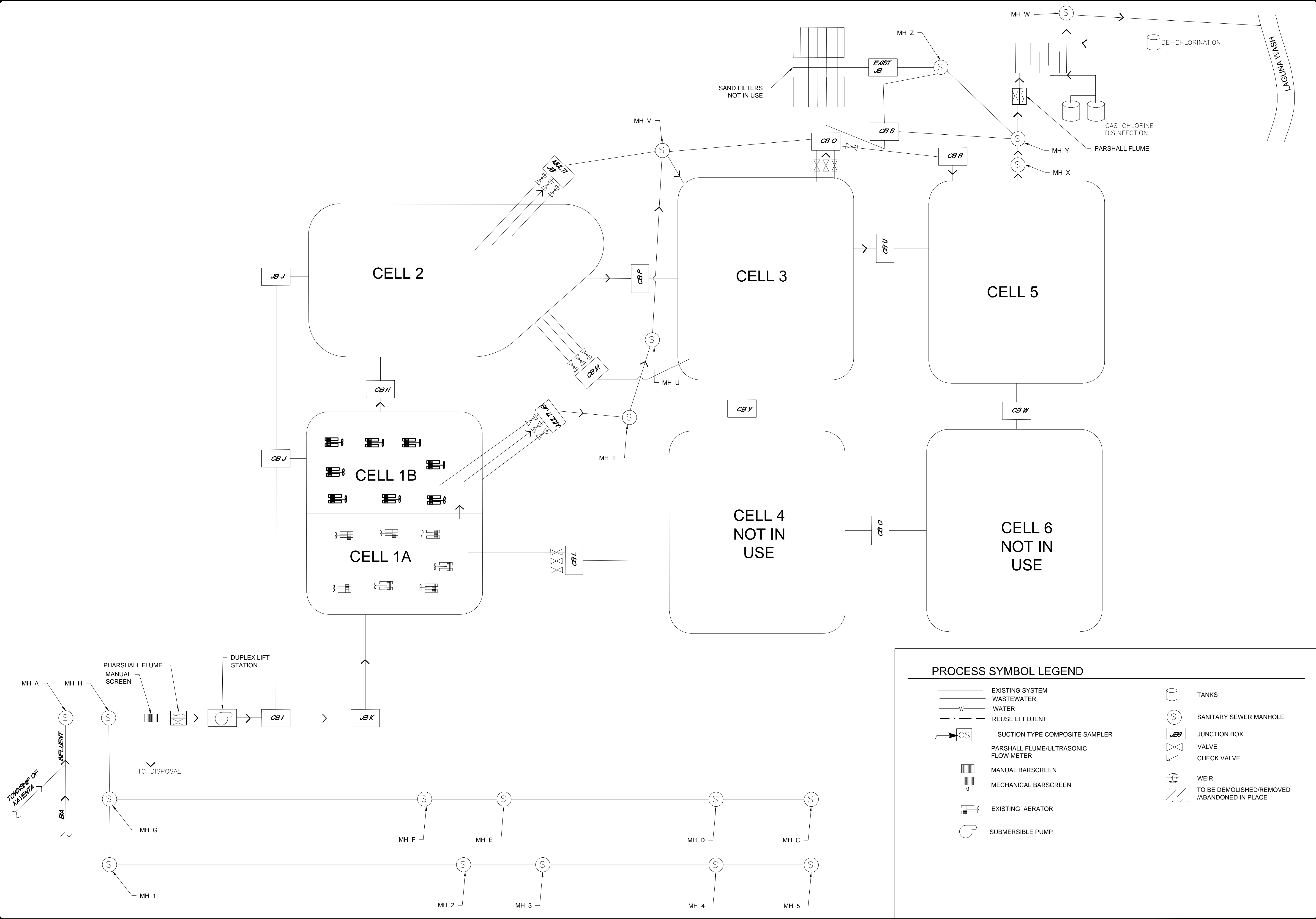
CIVIL LEGEND AND ABBREVIATIONS

SOLUTIONS FOR TODAY... VISION FOR TOMORROW

2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-9700
Fax: (505) 884-2376

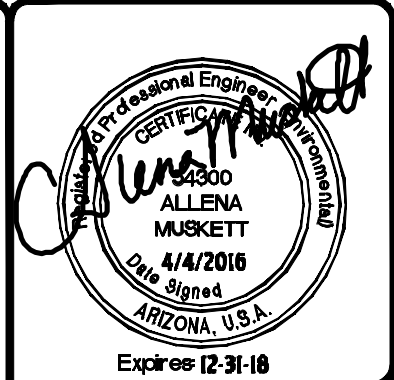
TEXAS





PROCESS SYMBOL LEGEND

EXISTING SYSTEM	TANKS
WASTEWATER	SANITARY SEWER MANHOLE
WATER	JUNCTION BOX
REUSE EFFLUENT	VALVE
SUCTION TYPE COMPOSITE SAMPLER	CHECK VALVE
PARSHALL FLUME/ULTRASONIC FLOW METER	WEIR
MANUAL BARSCREEN	TO BE DEMOLISHED/REMOVED /ABANDONED IN PLACE
MECHANICAL BARSCREEN	
EXISTING AERATOR	
SUBMERSIBLE PUMP	



NAVAJO TRIBAL UTILITY AUTHORITY
KAYENTA, ARIZONA

NO.	REVISION DESCRIPTION	DATE	BY
5			
4			
3			
2			
1			

KAYENTA WASTEWATER TREATMENT PLANT
UPGRADE

CIVIL
FLOW SCHEMATIC

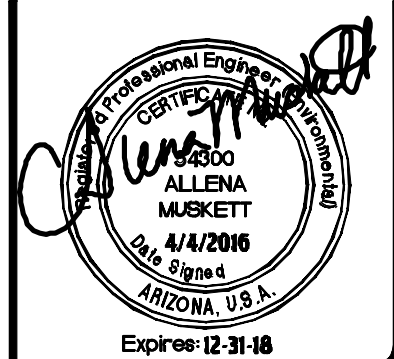
SOLUTIONS FOR TODAY...
VISION FOR TOMORROW

2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS

NEW MEXICO

JOB NO: 115111
DATE: FEB 2016
SHEET NO: 4

C:\SEC-PROJECTS\115111 NTUA INEPA Compliance Plan Assistance\Region Systems\ENGINEERING\CAD\KAYENTA\PLANS\SET3 FLOW SCHEMATIC.dwg, Apr 15, 2016 - 1:18pm Saved By: dawktf



NAVAJO TRIBAL UTILITY AUTHORITY
KAYENTA, ARIZONA

NO.	REVISION DESCRIPTION	DATE	BY
5	###	###	###
4	###	###	###
3	###	###	###
2	###	###	###
1	###	###	###

KAYENTA WASTEWATER TREATMENT PLANT
UPGRADE

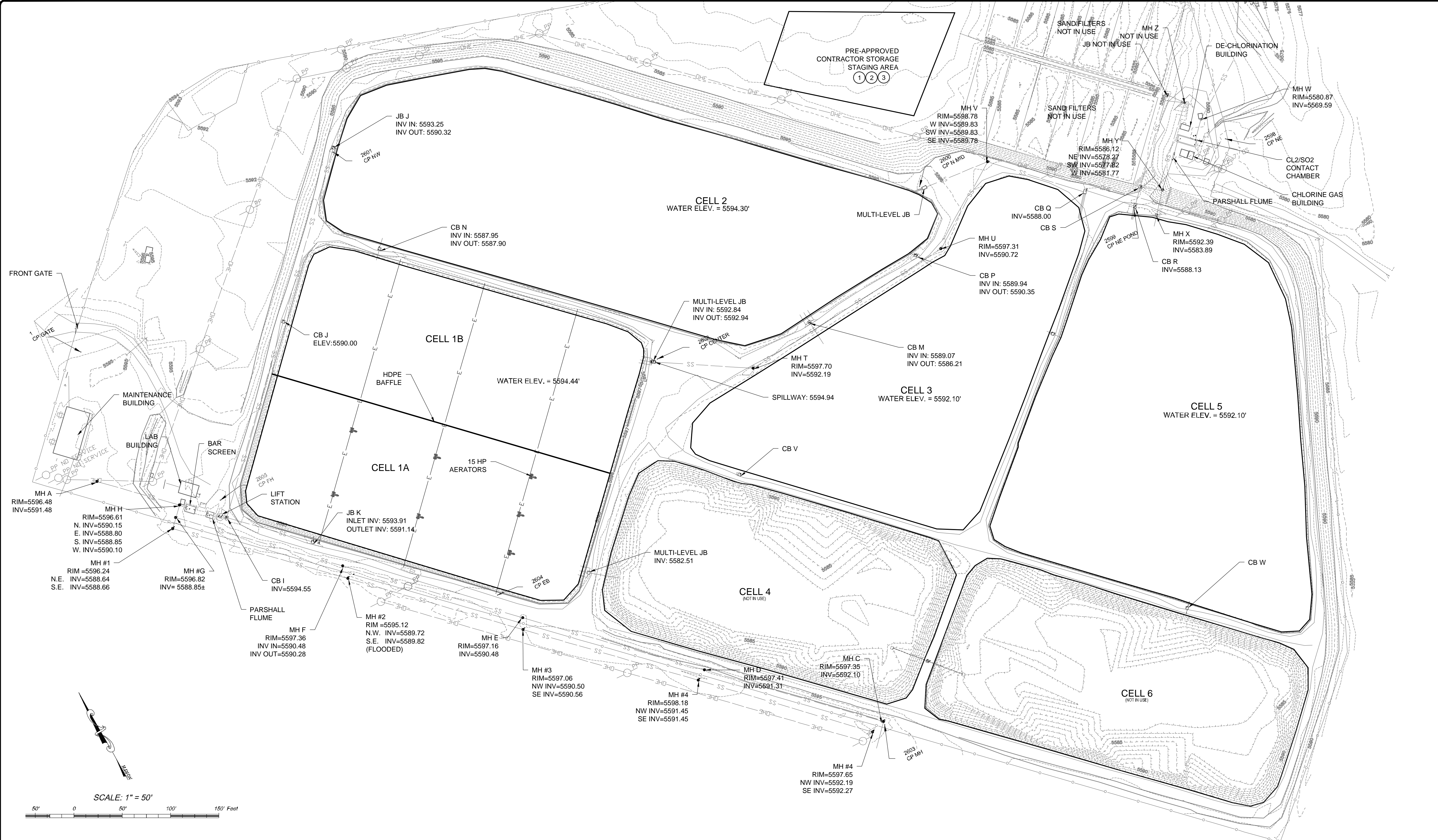
CIVIL
SITE LAYOUT, SURVEY, AND CONTROL

SOLUTIONS FOR TODAY...
VISION FOR TOMORROW

2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS



JOB NO: 115111
DATE: APRIL 2016
SHEET 5 NO.



DISTANCES & BEARINGS TO CP 1

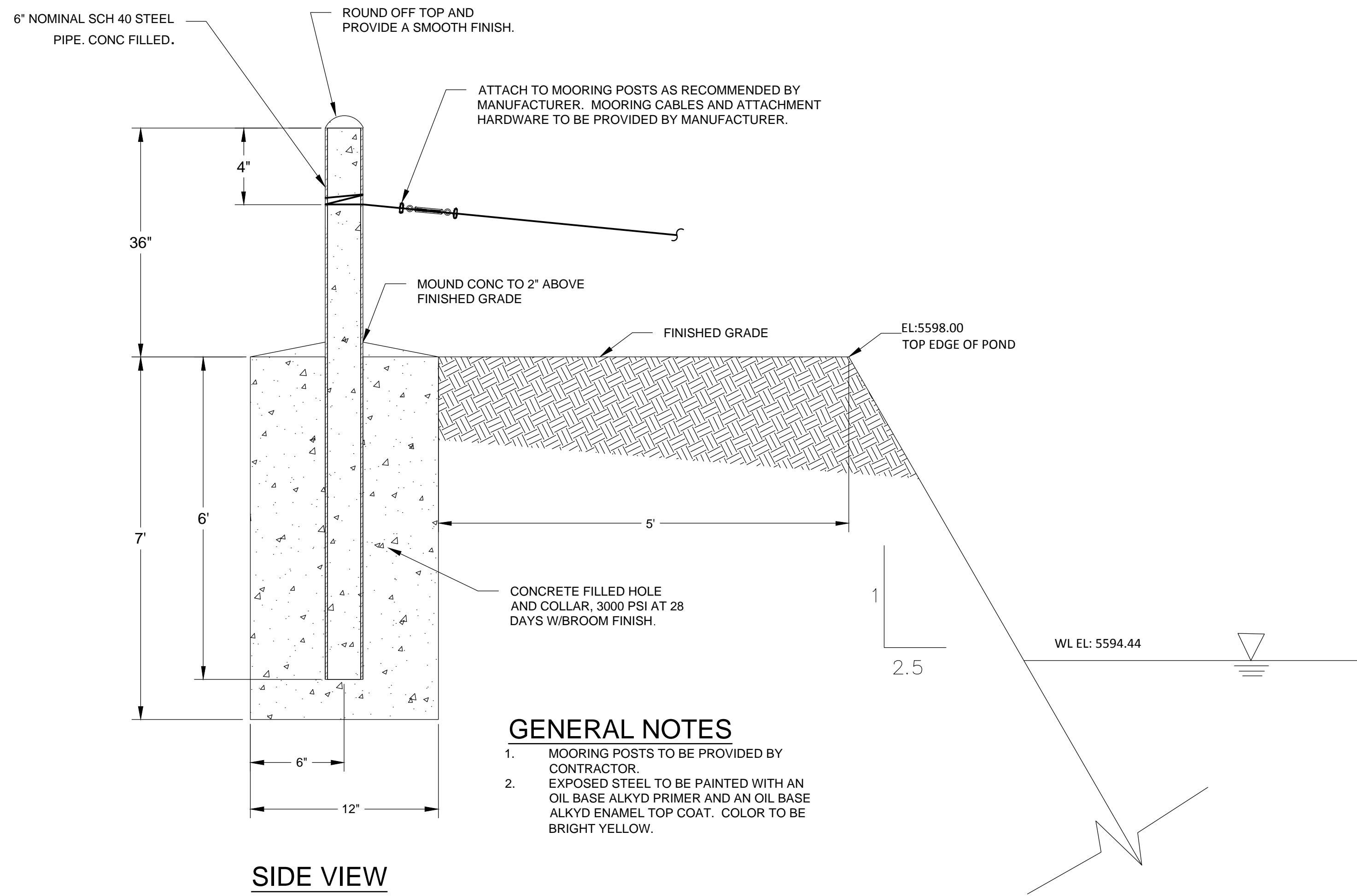
NUMBER	LENGTH	BEARING	NORTHING	EASTING	ELEVATION
1	---	---	2,086,698.003	679,115.42	5,595.412
2598	1,928.02'	S 73° 33' 15"E	2,086,152.168	680,964.55	5,580.383
2599	1,759.82'	S 70° 40' 53"E	2,086,115.818	680,776.15	5,592.901
2600	1,415.32'	S 74° 09' 50"E	2,086,311.783	680,477.02	5,596.142
2601	533.06'	S 78° 33' 17"E	2,086,803.787	679,637.87	5,596.715
2602	954.42'	S 62° 17' 45"E	2,086,254.284	679,960.42	5,597.072
2603	1,467.02'	S 38° 07' 24"E	2,085,543.920	680,021.10	5,596.698
2604	798.68'	S 32° 44' 53"W	2,086,026.264	679,547.46	5,597.011
2605	337.00'	S 16° 17' 09"W	2,086,374.527	679,209.92	5,597.600
2625	.5 MILES	---	2,085,740.794	677,369.49	5,617.040

- BUILD NOTES**
- CONSTRUCTION STAKING: CONTRACTOR TO PERFORM ALL NECESSARY SURVEYING AND CONSTRUCTION STAKING INCLUDING FINAL AS-BUILT PREPARATION, COMPLETE. SEE SPECIFICATION 01 78 39.
 - NPDES PERMITTING: CONTRACTOR SHALL PREPARE AND IMPLEMENT A SWPPP TO INCLUDE SILT FENCING (3-FEET HIGH WITH 5-FEET STEEL POSTS AT 10-FEET O.C.) AND ALL BEST MANAGEMENT PRACTICES AS REQUIRED. SEE GENERAL NOTES AND SPECIFICATION SECTION 01 57 23, COMPLETE AND IN PLACE.
 - CLEAR & GRUB SITE AS NECESSARY FOR WORK INCLUDING REMOVAL OF NATURAL AND MANMADE OBJECTIONABLE MATERIALS FROM THE PROJECT SITE. PURSUANT TO STD. SPEC. 201, COMPLETE.

- GENERAL NOTES**
- PIPE LABELED PER AS-BUILTS NA-97-686.
 - WATER LEVEL & DEBRIS PREVENTED SURVEYOR FROM LOCATING INTERPOND PIPING.

SURVEY NOTE

HORIZONTAL COORDINATES ARE ARBITRARILY DERIVED FROM G.P.S. SINGLE POINT POSITIONING. VERTICAL CONTROL BASED UPON NGS MONUMENT C 31 ELEVATION = 5617.04 FEET. COMBINED SCALE FACTOR (CSF) = 1.000364913 GRID TO GROUND. MEASUREMENTS ARE U.S. SURVEY FEET. ALL CONTROL POINTS SET FOR THIS PROJECT ARE 1/2" REBAR WITH PLASTIC CAP STAMPED "CONTROL POINT".



GENERAL NOTES

1. MOORING POSTS TO BE PROVIDED BY CONTRACTOR.
2. EXPOSED STEEL TO BE PAINTED WITH AN OIL BASE ALKYD PRIMER AND AN OIL BASE ALKYD ENAMEL TOP COAT. COLOR TO BE BRIGHT YELLOW.

1 AERATOR ANCHOR POST
NOT TO SCALE

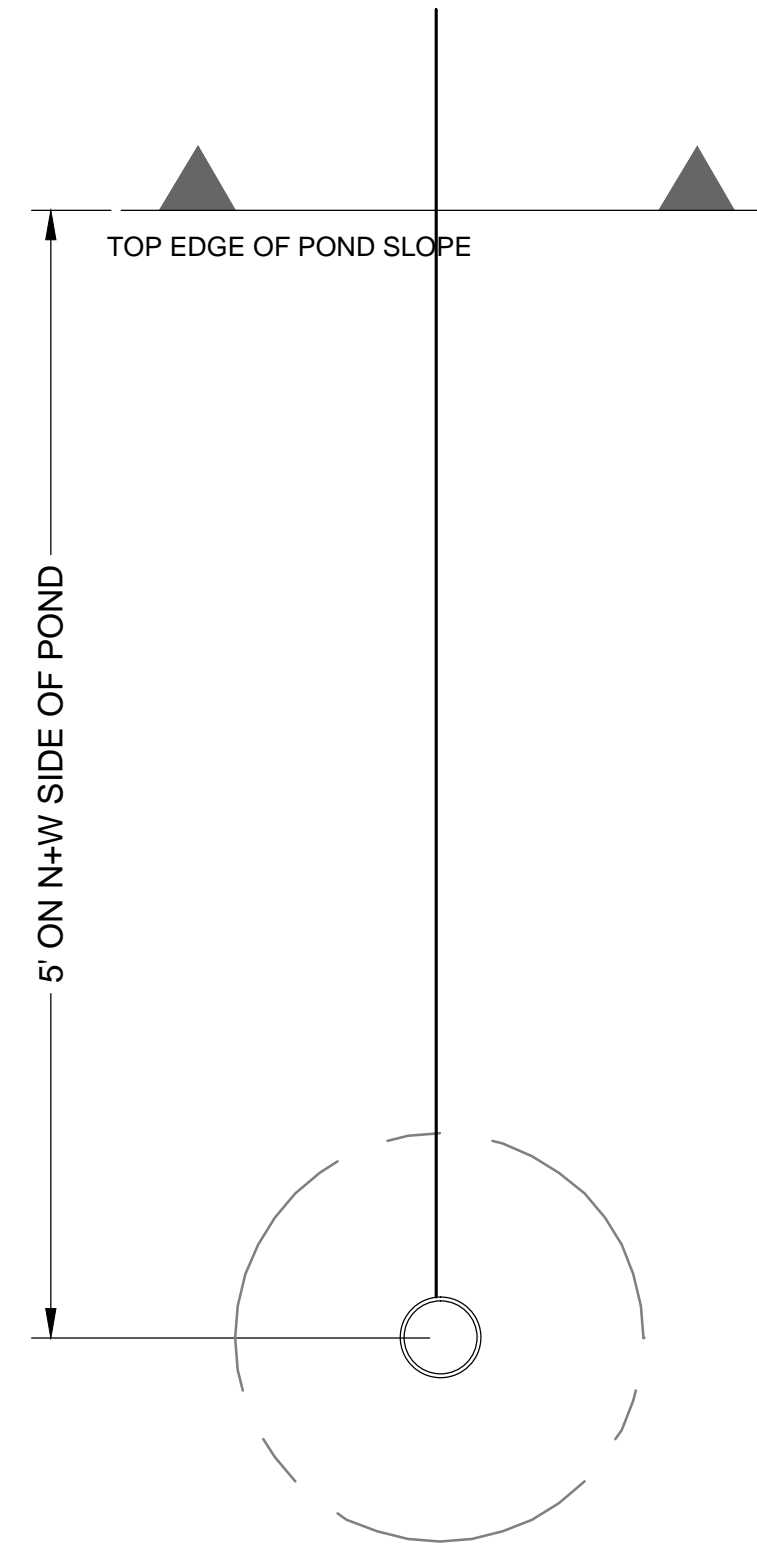
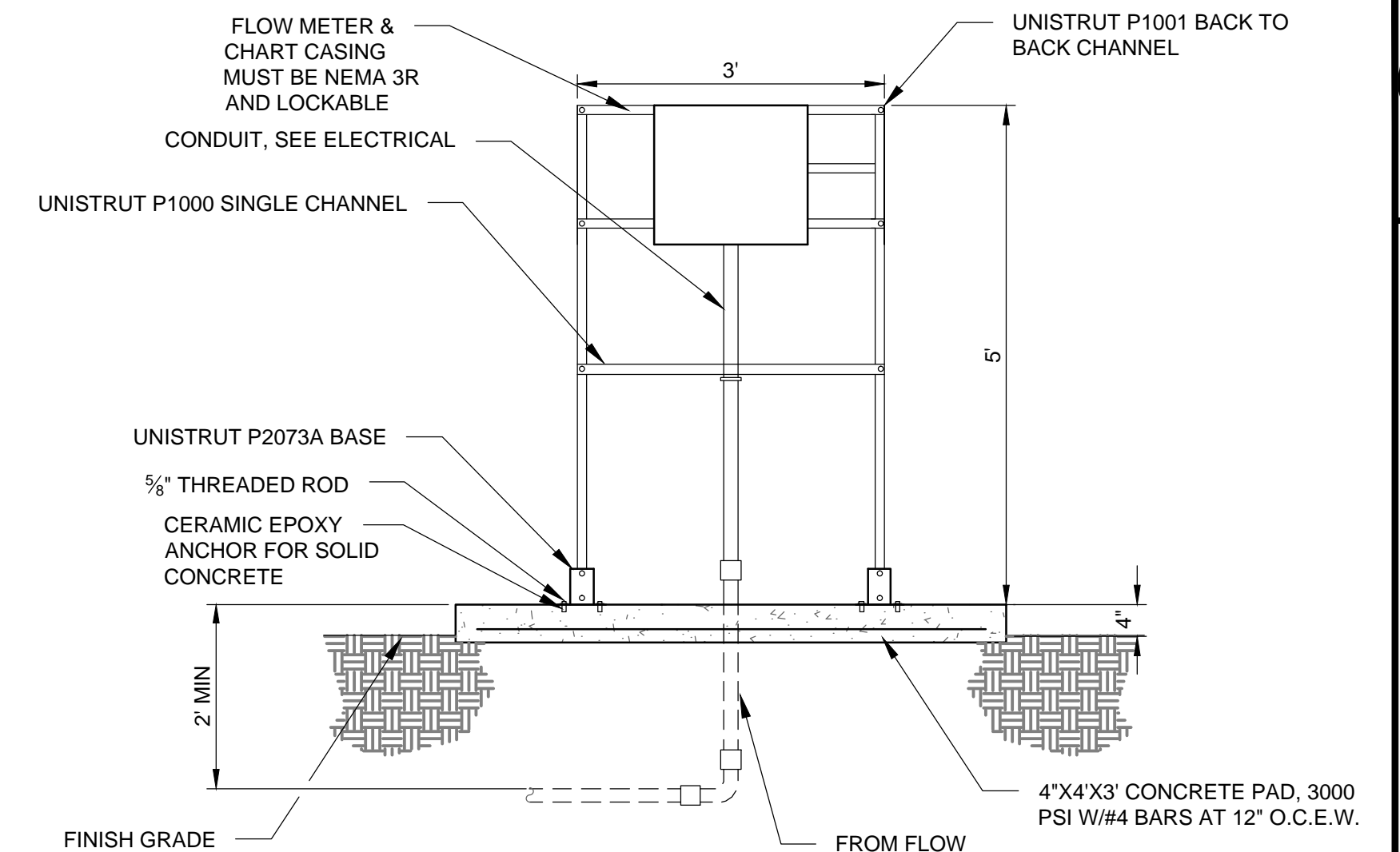


TABLE 1
DISTANCE BETWEEN MOORS (ANCHOR POSTS)

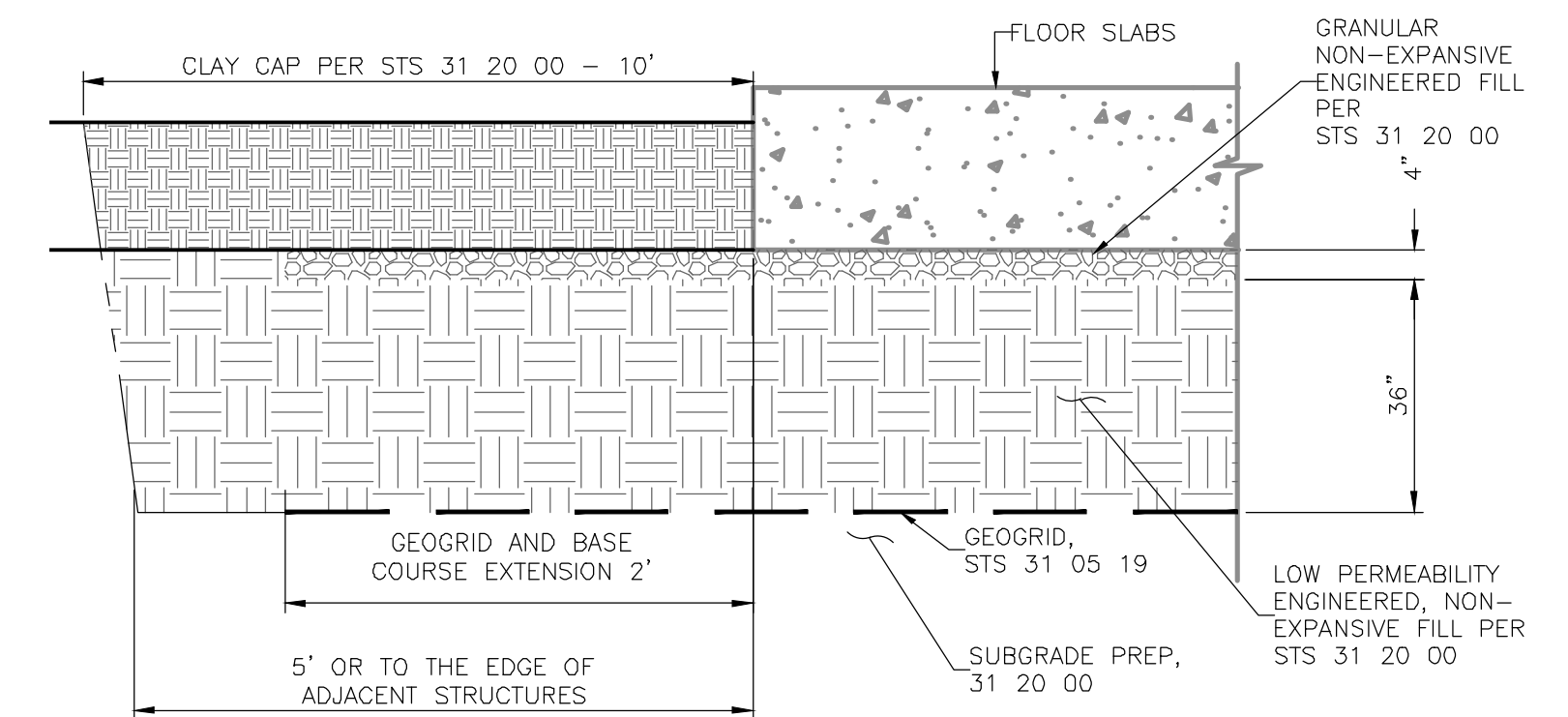
ROW	DISTANCE (FT)
1	487
2	489
3	488
4	489
5	490

NOTE: DOES NOT INCLUDE ADDITIONAL LENGTHS FOR SLACKING OF CABLING OR FOR ATTACHING TO MOORING POSTS.

2 TOP VIEW OF AERATOR ANCHOR POST
NOT TO SCALE

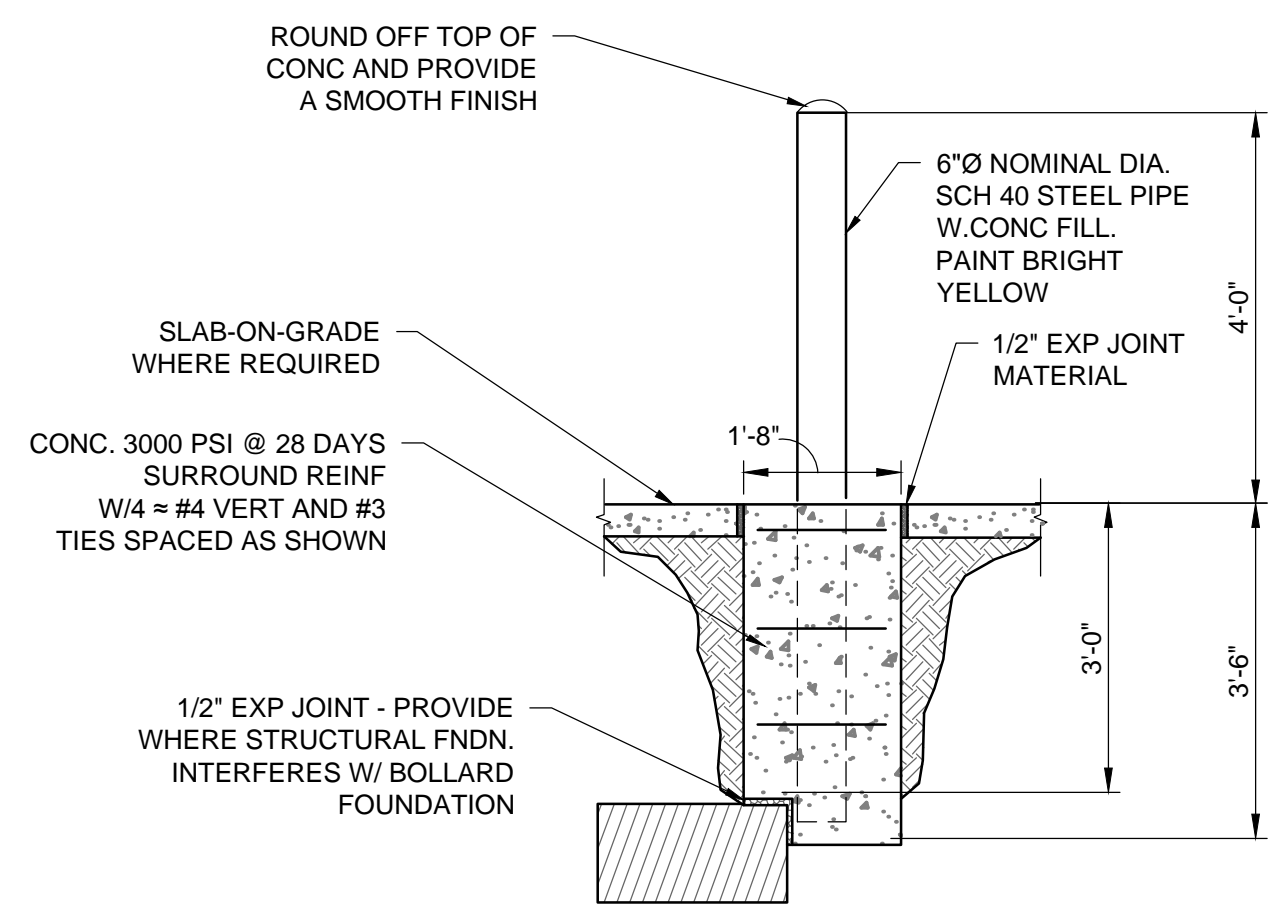


2 TOP VIEW OF AERATOR ANCHOR POST
NOT TO SCALE



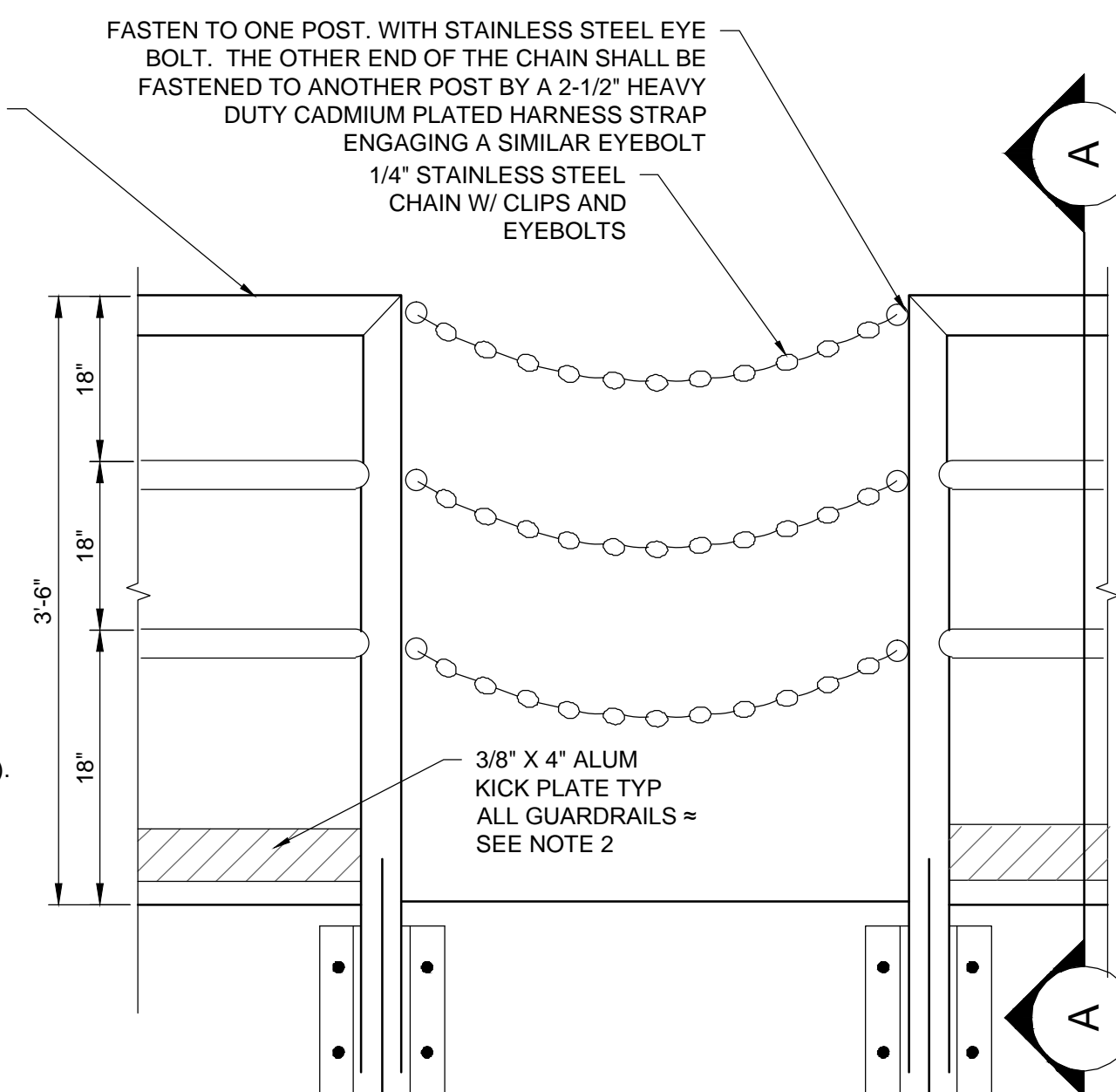
NOTES:
1. EXCAVATION SHALL NOT UNDERMINE THE STRUCTURAL INTEGRITY OF ANY ADJACENT STRUCTURES.

4 FLOOR SLAB EARTHWORK DETAIL
NOT TO SCALE

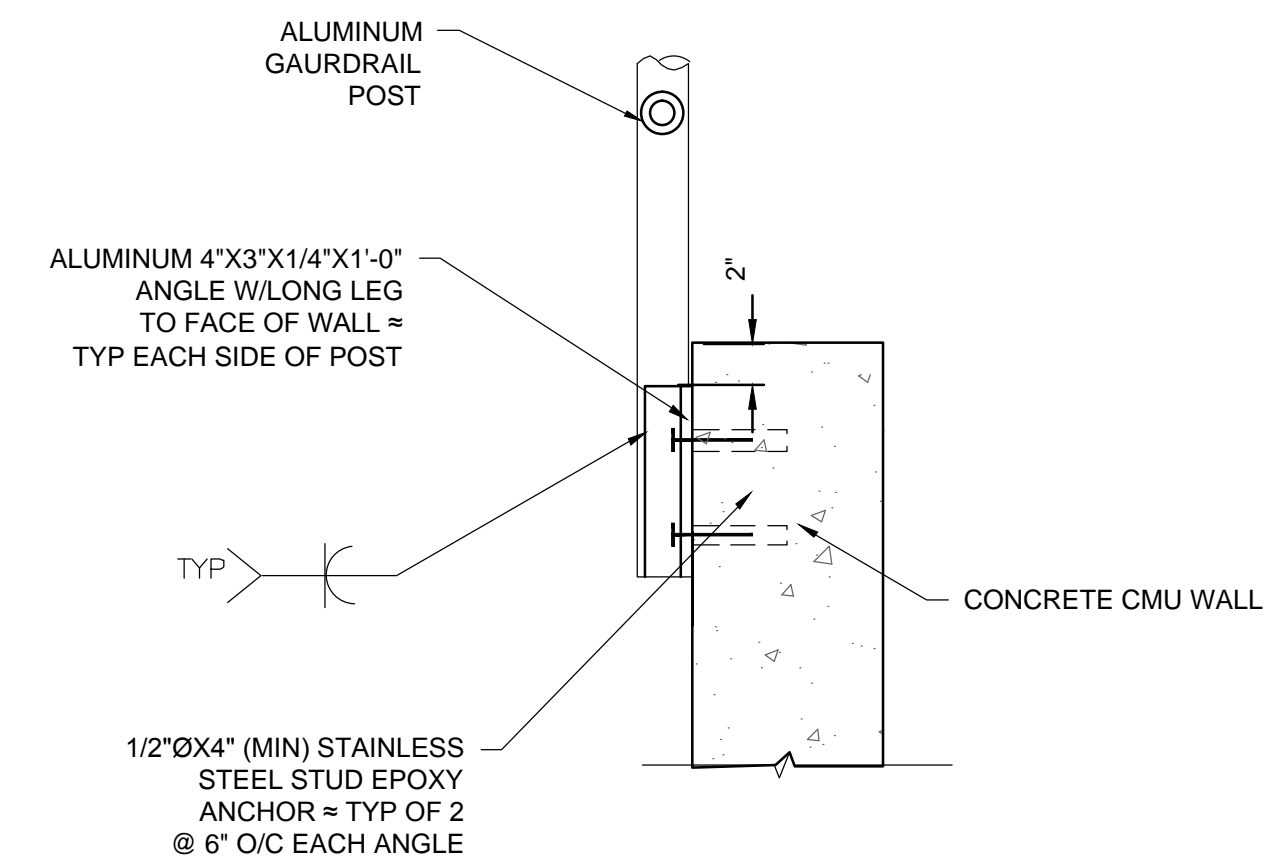


5 TYPICAL STATIONARY BOLLARD DETAIL
NOT TO SCALE

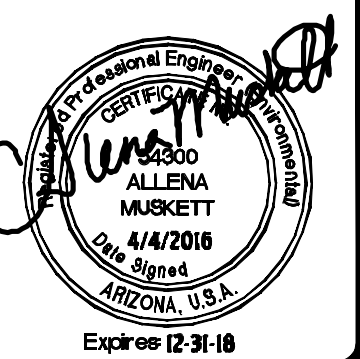
- NOTE:
1 EXCEPT AS SPECIFICALLY SHOWN OTHERWISE, GUARDRAILS SHALL BE ATTACHED TO THE SIDE OF CONCRETE MEMBERS AS SHOWN IN DETAIL A THIS SHEET. GUARDRAILS EMBEDDED IN CONCRETE MEMBERS ARE NOT ALLOWED EXCEPT WHERE SHOWN ON THE STRUCTURAL DRAWINGS.
2 KICK PLATE IS NOT REQUIRED WHERE TOP OF FRAMING FOR GRATING IS 4 INCHES ABOVE TOP OF GRATING.
3 MATERIAL - ALUMINUM ALLOY 6063-T6, CLEAR SATIN ANODIZED FINISH ALL EXPOSED SURFACES (0.4 MIL THICKNESS FOR ALL CAST COMPONENTS, 0.7 MIL THICKNESS FOR EXTRUDED COMPONENTS).
4 CONNECTIONS - COPE MEMBERS AND CONTINUOUSLY WELD OR CONNECT MECHANICALLY AT ALL JUNCTIONS TO PROVIDE FINISHED APPEARANCE SIMILAR TO WELDED SYSTEM. GRIND ALL WELDS SMOOTH TO MATCH FINISH OF ADJACENT MEMBERS.



6 TYPICAL GUARDRAIL ELEVATION
NOT TO SCALE



A GUARDRAIL CONNECTION SECTION
NOT TO SCALE



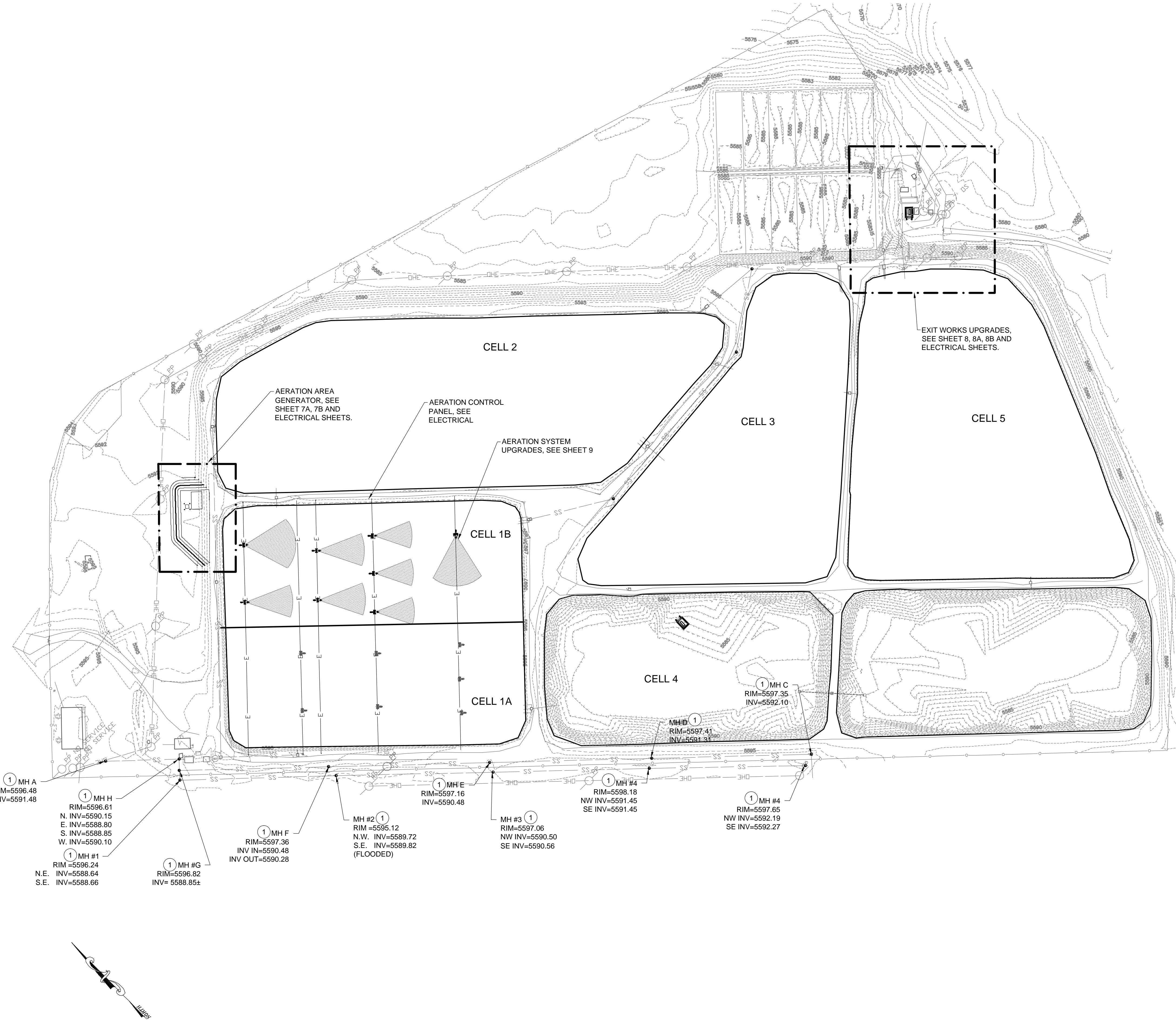
NAVAJO TRIBAL UTILITY AUTHORITY
KAYENTA, ARIZONA

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE

SOLUTIONS FOR TODAY...
VISION FOR TOMORROW
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS

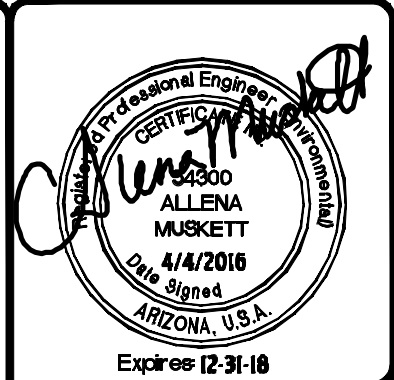


JOB NO.: 115111
DATE: APRIL 2016
SHEET NO.: 6



BUILD NOTES

- 1 FURNISH AND INSTALL 2 FT HIGH, 4 FT DIA CONCRETE MANHOLE BARRELS TO RAISE EACH MH LID 2 FT, COMPLETE.



NAVAJO TRIBAL UTILITY AUTHORITY KAYENTA, ARIZONA		NO.	REVISION DESCRIPTION	DATE	BY
5					
4					
3					
2					
1					

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE

CIVIL
SITE UPGRADES

**SOLUTIONS FOR TODAY...
VISION FOR TOMORROW**

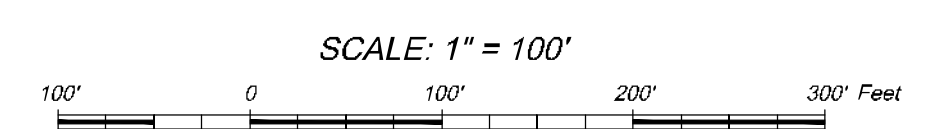
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-9700
Fax: (505) 884-2376
TEXAS

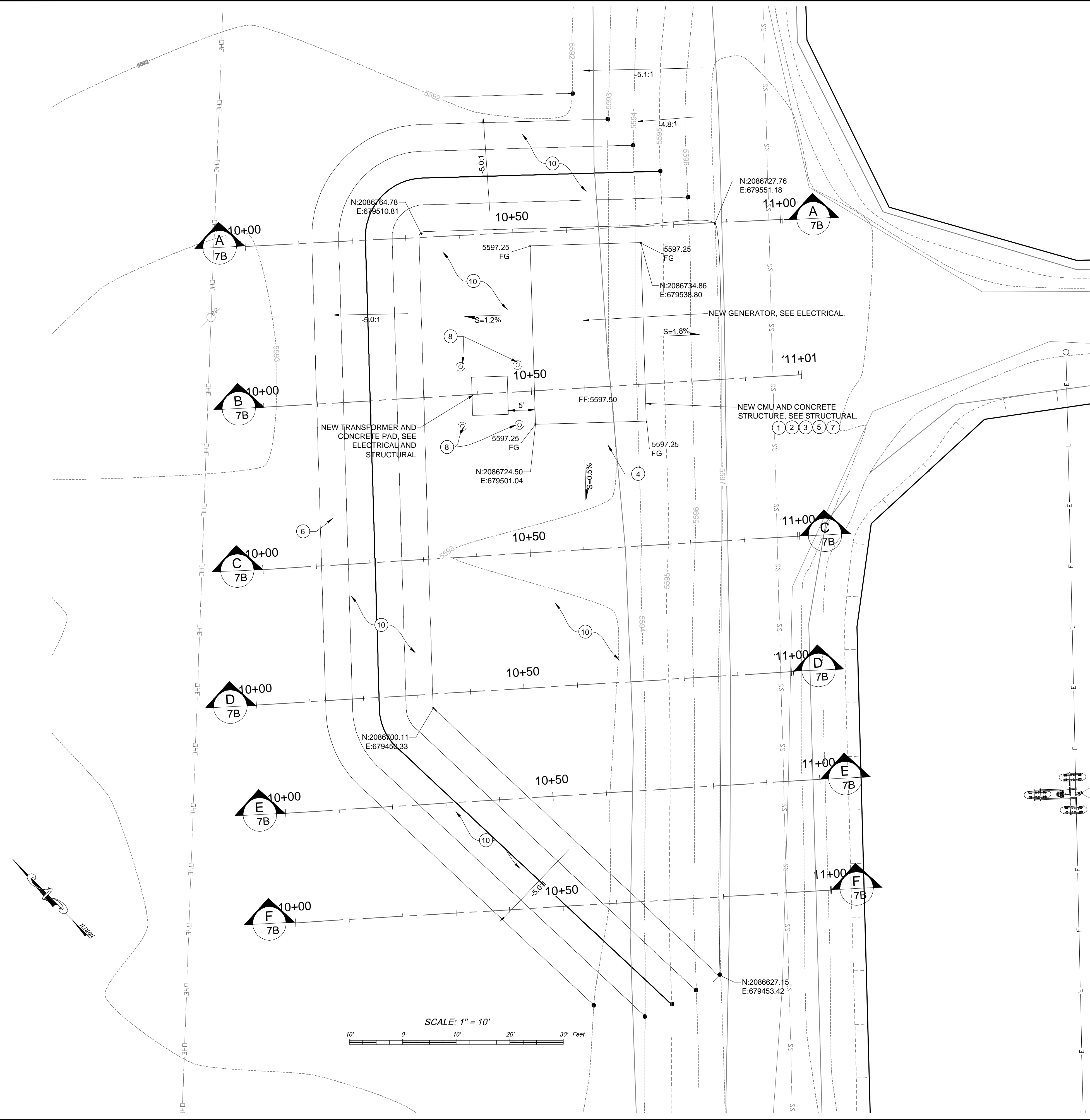


JOB NO:
115111

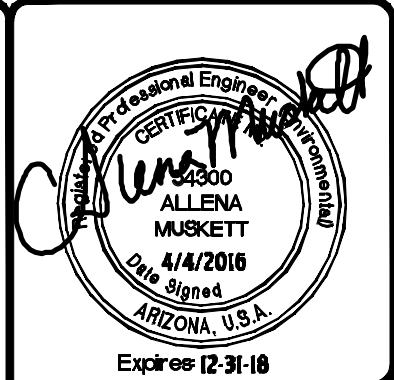
DATE:
APRIL 2016

SHEET NO:
7





- BUILD NOTES**
- STRUCTURAL CONCRETE: FURNISH AND INSTALL REINFORCED PORTLAND CEMENT CONCRETE PER STRUCTURAL SHEETS, COMPLETE AND IN PLACE.
 - SUBGRADE PREP: PREPARE SUBGRADE FOR STRUCTURES INCLUDES EXCAVATION (3FT BELOW BOTTOM FOUNDATION ELEV.) AND COMPACT PER STS 31 20 00, COMPLETE.
 - STRUCTURAL FILL: FILL CONSTRUCTION FOR STRUCTURES INCLUDING PLACEMENT AND COMPACTION OF SUITABLE ENGINEERED FILL MATERIAL (STS 31 20 00) AND REINFORCING GEOGRID (STS 31 05 19) , COMPLETE.
 - DRIVE GATE: FURNISH AND INSTALL DRIVE GATE WITH PER STRUCTURAL SHEETS, COMPLETE AND IN PLACE.
 - EXCAVATE AND SPOIL UNSUITABLE MATERIAL PER STD SPEC 206, COMPLETE.
 - ROUGH AND FINAL GRADING: GRADE SITE AS SHOWN, FINAL GRADE TO BE WITHIN 0.1 FT.±, COMPLETE AND IN PLACE. BACKFILL TO BE LOW PERMEABILITY NON-EXPANSIVE FILL PER STS 31 20 00.
 - CLEAR & GRUB SITE AS NECESSARY FOR WORK INCLUDING REMOVAL OF NATURAL AND MANMADE OBJECTIONABLE MATERIALS FROM THE PROJECT SITE, PURSUANT TO STD. SPEC. 201, COMPLETE.
 - BOLLARDS: FURNISH AND INSTALL STATIONARY BOLLARDS PER DETAILS ON SHEET 6.
 - FURNISH AND INSTALL 2 FT HIGH, 4 FT DIA CONCRETE MANHOLE BARRELS TO RAISE EACH MH LID 2 FT, COMPLETE.
 - FURNISH AND INSTALL 4" THICK OF 1" CRUSHED GRAVEL COMPACTED TO 85%. SCARIFY AND COMPACT 12" OF SUBGRADE TO 95% PER ASTM D-1557 BENEATH GRAVEL.



NO.	REVISION DESCRIPTION	DATE	BY
5			
4			
3			
2			
1			

NAVAJO TRIBAL UTILITY AUTHORITY
KAYENTA, ARIZONA

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE

CIVIL
AERATION AREA GENERATOR SITE

SOLUTIONS FOR TODAY...
VISION FOR TOMORROW

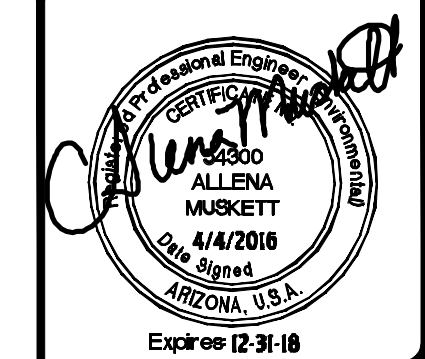
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS



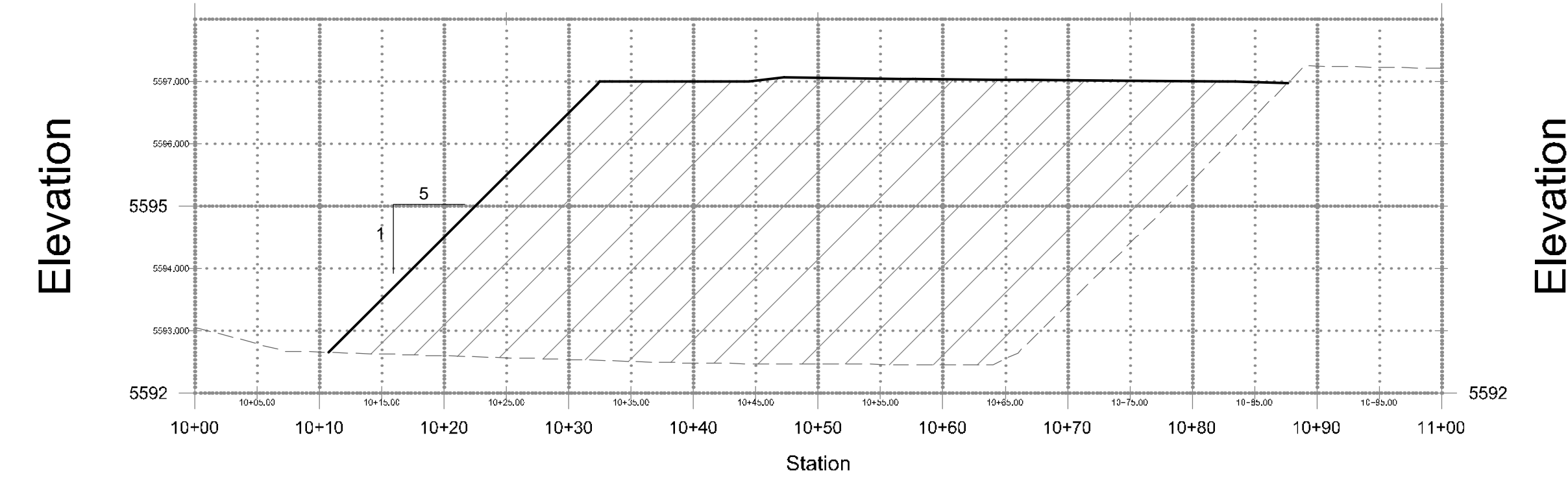
JOB NO:
115111

DATE:
APRIL 2016

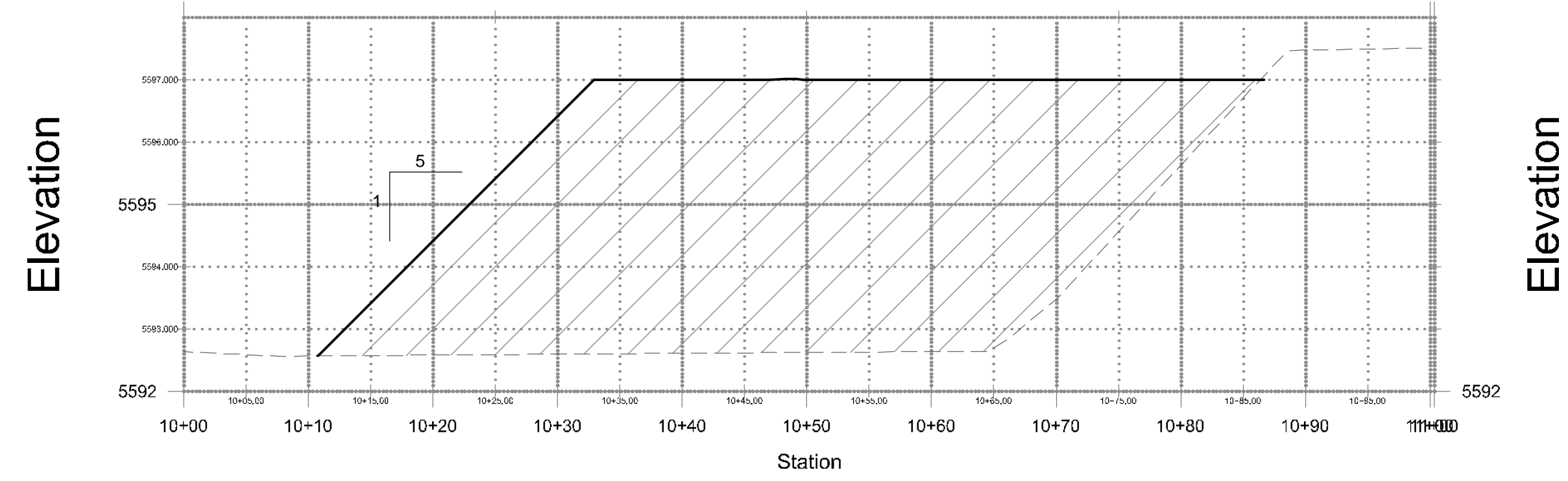
SHEET NO:
7A



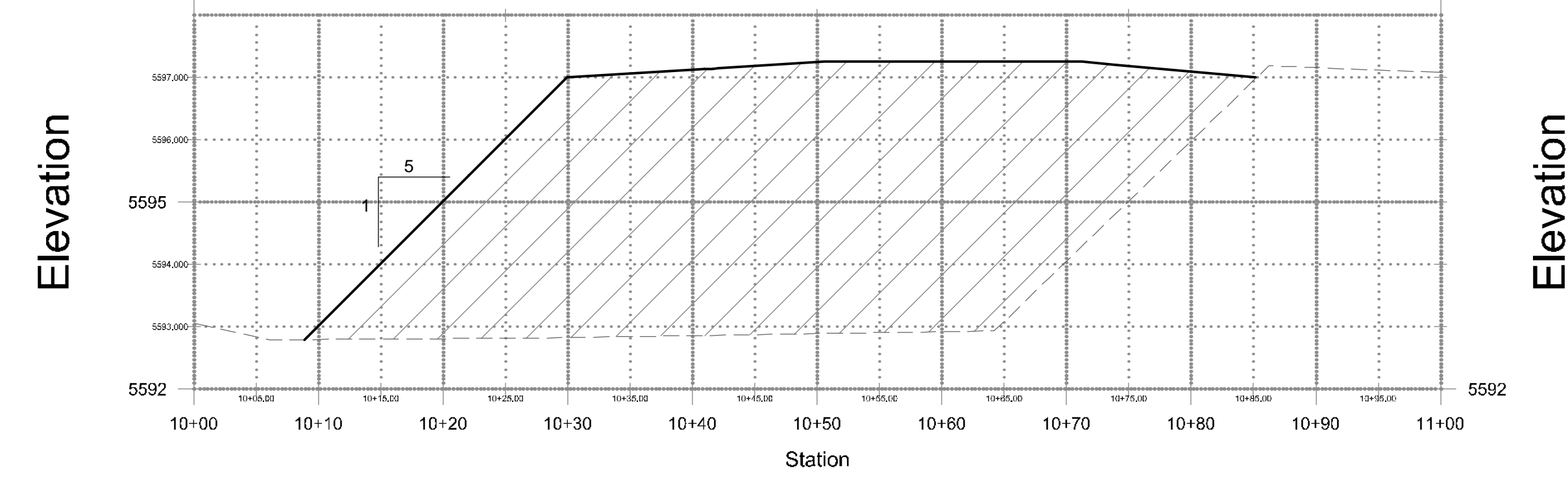
Profile View of A-A AERATION AREA



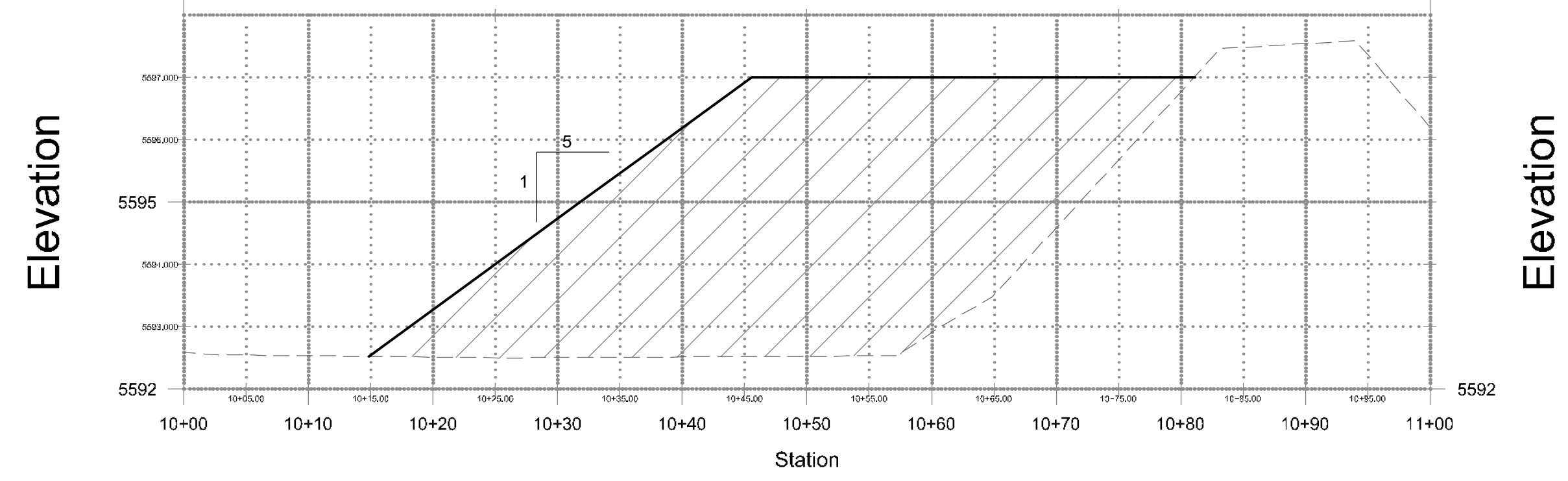
Profile View of D-D AERATION AREA



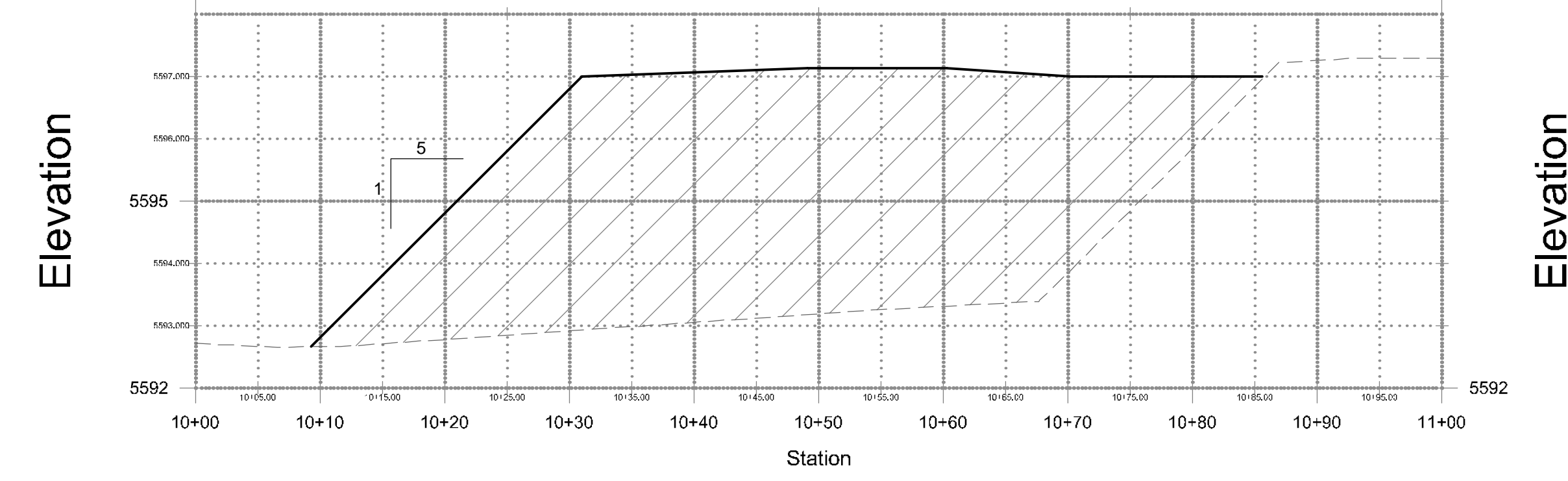
Profile View of B-B AERATION AREA



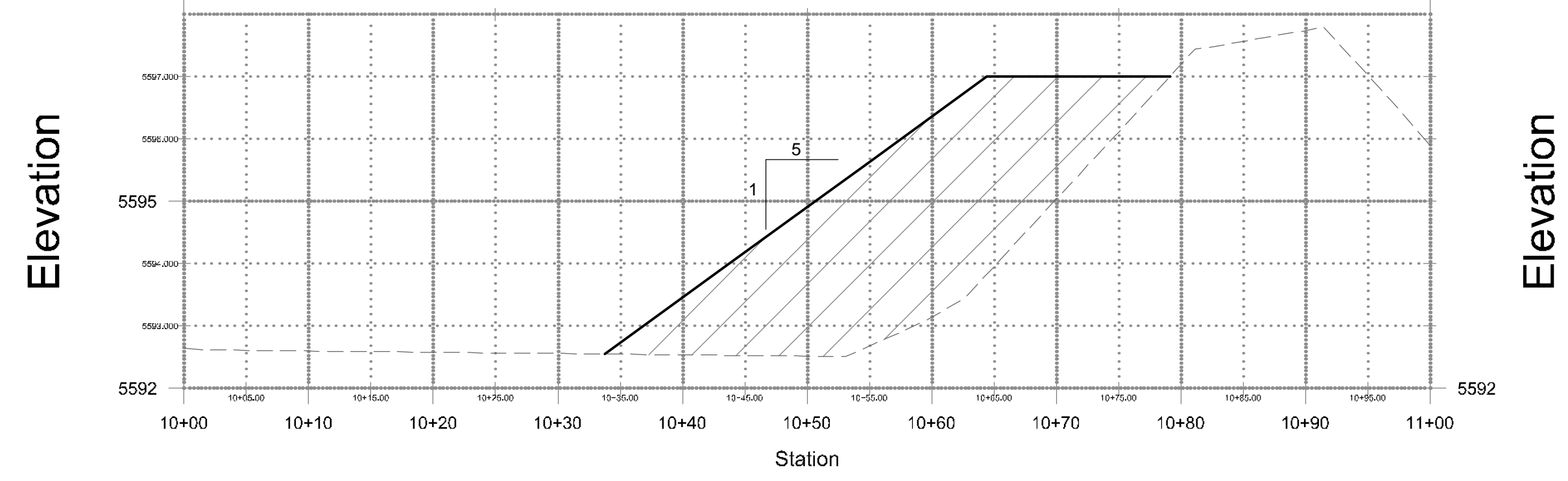
Profile View of E-E AERATION AREA

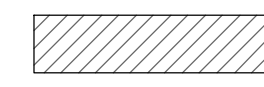


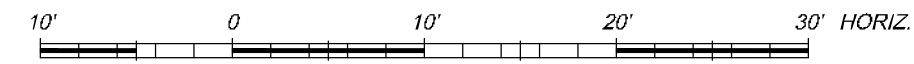

Profile View of C-C AERATION AREA



Profile View of F-F AERATION AREA



LEGEND
 LOW PERMEABILITY, NON-EXPANSIVE ENGINEERED FILL

HORIZONTAL SCALE: 1" = 10'
 VERTICAL SCALE: 1" = 2'



NAVAJO TRIBAL UTILITY AUTHORITY KAYENTA, ARIZONA		BY
5		DATE
4		
3		
2		
1		
NO.	REVISION DESCRIPTION	DATE

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE
 CIVIL
 AERATION AREA GENERATOR PROFILES

SOLUTIONS FOR TODAY...
 VISION FOR TOMORROW
 2201 San Pedro Dr. NE
 Building 4, Suite 200
 Albuquerque, NM 87110
 Phone: (505) 884-9700
 Fax: (505) 884-2376
 TEXAS



JOB NO.: 115111
 DATE: APRIL 2016
 SHEET NO.: 7B

C:\SEC-PROJECTS\115111 NTUA INEPA Compliance Plan Assistance\Aeration Systems\Aeration CAD\KAYENTA\PLANS\115111 AERATION AREA GENERATOR PROFILES.dwg, Apr 19, 2016 - 11:09am Saved By: alliam



- SEE SHEET 8B FOR POINT AND CURVE DATA.
- INSTALL 3/4" TOOLED CONTROL JOINT WITH SEALANT (NP-1 BY BASF OR APPROVED EQUAL) WHERE INDICATED.

BUILD NOTES

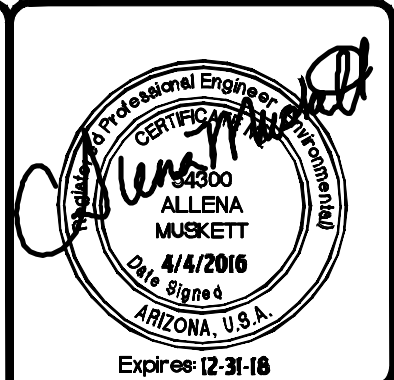
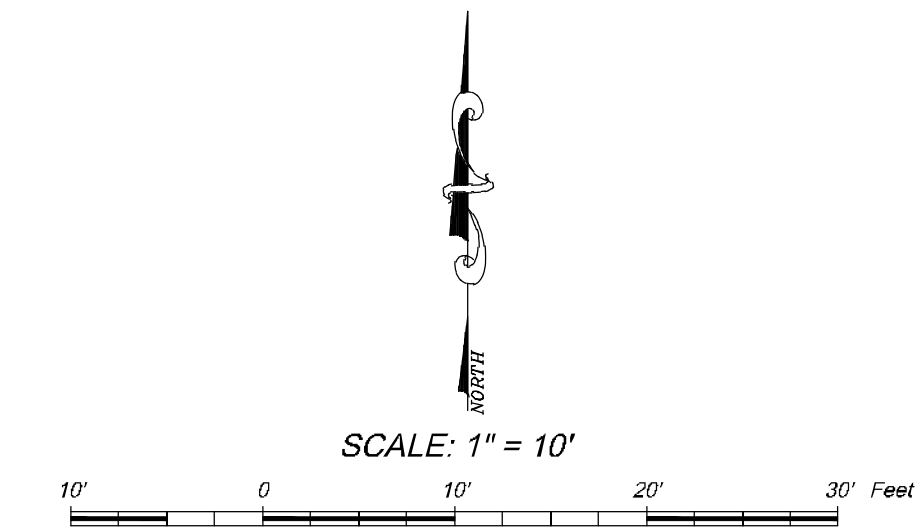
- FURNISH AND INSTALL 4" THICK OF 1" CRUSHED GRAVEL COMPACTED TO 85%. SCARIFY AND COMPACT 12" OF SUBGRADE TO 95% PER ASTM D-1557 BENEATH GRAVEL.
- BUILD 6" THICK PORTLAND CEMENT CONCRETE PAVEMENT ($f_c=4000$ PSI) WITH #4 REBAR AT 12" O.C., EACH WAY. SCARIFY AND COMPACT 12" OF SUBGRADE TO 95% PER ASTM D-1557 BENEATH CONCRETE PAVEMENT.
- REMOVE AND DISPOSE OF EXISTING PIPE CULVERT.
- REMOVE AND REPLACE EXISTING CHAIN LINK FENCE AS REQUIRED TO COMPLETE THE GRADING AS SHOWN. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
- BUILD 8" THICK X 24" DEEP CONCRETE CUT-OFF WALL. PROVIDE 1/4" EXPANSION JOINT WITH SEALANT BETWEEN CUT-OFF WALL AND CONCRETE SLAB. SCARIFY AND COMPACT 12" SUBGRADE TO 95% COMPACTION PER ASTM D-1557 BENEATH CUT-OFF WALL.

LEGEND

- C1 CURVE NUMBER
- CJ CONTROL JOINT
- P15 POINT NUMBER
- >--- FLOW LINE
- MINOR CONTOUR
- 5580--- MAJOR CONTOUR
- 5580--- EXISTING MINOR CONTOUR
- 5580--- EXISTING MAJOR CONTOUR
- o- EXISTING CHAIN LINK FENCE
- SD- EXISTING STORM DRAIN
- SS- EXISTING SANITARY SEWER LINE
- OHE- EXISTING OVERHEAD ELECTRIC LINE
- [Symbol] NEW CONCRETE PAVEMENT
- [Symbol] NEW GRAVEL

SURVEY NOTE

HORIZONTAL COORDINATES ARE ARBITRARILY DERIVED FROM G.P.S. SINGLE POINT POSITIONING. VERTICAL CONTROL BASED UPON NGS MONUMENT C 31 ELEVATION = 5617.04 FEET. COMBINED SCALE FACTOR (CSF) = 1.000364913 GRID TO GROUND. MEASUREMENTS ARE U.S. SURVEY FEET. ALL CONTROL POINTS SET FOR THIS PROJECT ARE 1/2" REBAR WITH PLASTIC CAP STAMPED "CONTROL POINT".



NAVAJO TRIBAL UTILITY AUTHORITY
KAYENTA, ARIZONA

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE
CIVIL
EXIT WORKS GRADING PLAN

SOLUTIONS FOR TODAY...
VISION FOR TOMORROW
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS



JOB NO: 115111
DATE: APRIL 2016
SHEET NO: 8A

© 1988-2016 PROJECT 115111 NTUA INEPA Compliance Plan Assistance, Legion Systems/ENGINEERING/CADD/Kayenta/PLANS/IBA GRADING PLAN.dwg, Apr 19, 2016, 1:20pm, Saved By: mchallinor



POINT TABLE				
Point #	Description	Northing	Easting	Elevation
1	FG, MATCH EXIST.	2086166.54	680832.25	5585.00
2	FG, MATCH EXIST.	2086167.13	680836.83	5584.00
3	FG, MATCH EXIST.	2086158.90	680842.02	5583.00
4	FG	2086188.26	680832.92	5585.00
5	FG	2086185.10	680838.18	5584.00
6	FG	2086181.82	680843.34	5583.00
7	FG	2086255.69	680904.37	5584.00
8	FG	2086251.37	680908.97	5584.00
9	FG, MATCH EXIST.	2086262.33	680919.25	5584.00
10	FG, MATCH EXIST.	2086268.49	680907.74	5585.00
11	FG, MATCH EXIST.	2086268.45	680927.73	5583.00
12	FG	2086247.81	680908.38	5583.00
13	FG	2086249.39	680906.69	5583.00
14	FL	2086234.59	680899.16	5582.00
15	FL	2086181.65	680846.03	5382.75
16	FL	2086258.06	680922.71	5581.67
17	FL	2086268.67	680941.02	5581.45
18	EOR	2086255.83	680924.93	5582.42
19	EOR, MIDPT	2086260.35	680960.85	5581.56
20	EOR	2086245.10	680935.40	5581.82
21	EOR	2086230.68	680960.42	5581.00
22	EOR	2086227.00	680974.96	5580.70
23	FG, MATCH EXIST.	2086272.76	680949.97	5582.00
24	FG, MATCH EXIST.	2086277.47	680976.14	5581.00
25	FG, MATCH EXIST.	2086188.94	681000.34	5579.00
26	FG, MATCH EXIST.	2086089.41	681010.42	5579.00

POINT TABLE				
Point #	Description	Northing	Easting	Elevation
27	FG, MATCH EXIST.	2086076.27	680975.36	5580.00
28	FG, MATCH EXIST.	2086131.50	680855.63	5581.00
29	FG, MATCH EXIST.	2086140.75	680849.24	5582.00
30	FL	2086117.17	680875.10	5580.57
31	FL	2086111.87	680953.05	5579.11
32	FL, MATCH EXIST.	2086140.58	681008.22	5578.00
33	EOR	2086132.63	680868.44	5581.44
34	EOR	2086124.58	680876.98	5581.13
35	EOR, MIDPT	2086113.66	680922.37	5579.84
36	TOC	2086147.26	680954.78	5578.55
37	TOC	2086161.80	680958.46	5578.20
38	TOC	2086165.48	680943.92	5578.50
39	TOC	2086150.94	680940.24	5578.85
40	FG	2086136.07	680889.31	5580.00
41	FL	2086141.70	680889.10	5579.47
42	FL	2086175.11	680924.98	5579.17
43	FL	2086197.62	680901.54	5580.25
44	FL	2086190.31	680937.75	5579.24
45	EOR	2086180.36	680869.04	5582.29
46	FL	2086181.08	680888.37	5579.91
47	FL	2086188.19	680888.20	5580.06
48	FL	2086196.13	680895.87	5580.25
49	FG	2086199.99	680899.07	5580.50
50	FL	2086203.35	680902.89	5580.25
51	FL	2086227.40	680927.22	5580.25
52	FL	2086213.45	680913.11	5580.00

POINT TABLE				
Point #	Description	Northing	Easting	Elevation
53	FG	2086226.53	680930.11	5580.50
54	FG	2086216.94	680940.73	5580.30
55	FG	2086204.93	680936.55	5580.15
56	EOR	2086143.55	680878.73	5580.72
57	FG	2086179.78	680869.61	5582.00
58	FG	2086177.63	680871.71	5581.00
59	TOC	2086172.68	680890.48	5580.05
60	TOC	2086164.45	680899.22	5580.05
61	TOC	2086160.07	680878.59	5579.95
62	TOC	2086151.35	680886.87	5579.95
63	TOC	2086155.24	680882.75	5579.85
64	EOR, MATCH EXIST.	2086132.44	680827.09	5587.60
65	EOR, MATCH EXIST.	2086143.76	680810.06	5582.92
66	EOR, MATCH EXIST.	2086143.00	680775.96	5593.17
67	EOR, MATCH EXIST.	2086096.55	680827.18	5593.13
68	EOR	2086191.09	680858.57	5582.89
69	EOR	2086151.45	680870.34	5581.00
70	EOR, MIDPT	2086247.36	680953.37	5581.33
71	EOR	2086135.50	680887.27	5580.44
72	FG	2086192.62	680936.76	5580.00
73	FG	2086193.99	680947.36	5580.00
74	FG, MATCH EXIST.	2086239.81	680987.69	5580.00
76	FL	2086153.45	680933.28	5578.90
77	FL	2086152.51	680918.69	5579.18
80	FG	2086158.17	680867.31	5581.00
81	FG	2086225.00	680919.52	5581.00

POINT TABLE				
Point #	Description	Northing	Easting	Elevation
82	FG	2086258.72	680922.14	5582.00
83	FG	2086257.48	680923.37	5582.00
84	FG	2086191.16	680935.39	5580.00
87	FL	2086178.59	680891.01	5579.85
89	FG	2086173.48	680945.95	5578.81
91	FL, MIDPT	2086103.57	680913.33	5579.84
92	FL	2086161.00	680874.44	5579.85
93	EOR	2086232.59	680901.11	5582.59
94	EOR	2086212.04	680880.04	5582.00
95	FL	2086213.80	680878.29	5582.30
98	TOC	2086180.02	680947.60	5579.06
99	TOC	2086176.34	680962.14	5578.77
100	FL	2086144.05	680925.58	5578.89
101	EOR	2086219.96	680909.63	5582.00
102	FG	2086118.98	680878.97	5581.00
103	FG	2086267.04	680941.25	5582.00
104	FL	2086168.89	680881.87	5580.00
106	FL	2086155.35	680874.61	5579.76
107	FG	2086150.35	680886.87	5579.85
108	FG	2086159.77	680877.00	5579.85
109	FG	2086164.60	680900.61	5580.00
110	FG	2086173.88	680890.51	5580.00
111	FG	2086157.44	680990.62	5578.00
112	FG, MATCH EXIST.	2086177.67	680993.34	5578.00

CURVE DATA TABLE							
NUMBER	DELTA ANGLE	CHORD BEARING	CHORD LENGTH	RADIUS (FL.)	ARC LENGTH (FL.)	START POINT	END POINT
C1	88°49'58"	S88° 35' 20"W	2.80'	2.00	3.10	N:2086160.96 E:680915.87	N:2086160.89 E:680913.07
C2	86°49'29"	S0° 45' 37"W	2.75'	2.00	3.03	N:2086172.96 E:680924.89	N:2086170.21 E:680924.86
C3	62°46'47"	S86° 06' 17"E	78.13'	75.00	82.18	N:2086117.17 E:680875.10	N:2086111.87 E:680953.05
C4	93°58'54"	N86° 18' 37"E	36.56'	25.00	41.01	N:2086141.70 E:680889.10	N:2086144.05 E:680925.58
C5	93°58'59"	N86° 18' 39"E	14.63'	10.00	16.40	N:2086152.51 E:680918.69	N:2086153.45 E:680933.28
C6	90°00'00"	S1° 41' 57"E	5.66'	4.00	6.28	N:2086161.00 E:680874.44	N:2086155.35 E:680874.61
C7	89°58'28"	S1° 41' 41"W	7.07'	5.00	7.85	N:2086160.59 E:680873.07	N:2086153.53 E:680872.86
C8	65°52'39"	N12° 43' 46"E	19.95'	18.35	21.10	N:2086158.17 E:680867.31	N:2086177.63 E:680871.71
C9	90°40'26"	N1° 21' 44"W	7.11'	5.00	7.91	N:2086181.08 E:680888.37	N:2086188.19 E:680888.20
C10	88°45'19"	N83° 05' 02"E	6.99'	5.00	7.75	N:2086180.87 E:680920.05	N:2086181.71 E:680927.00
C11	55°29'45"	N82° 11' 33"E	30.59'	32.85	31.82	N:2086226.53 E:680930.11	N:2086230.68 E:680960.42
C12	64°39'28"	S82° 05' 10"W	41.29'	38.60	43.56	N:2086230.68 E:680960.42	N:2086225.00 E:680919.52

CURVE DATA TABLE							
NUMBER	DELTA ANGLE	CHORD BEARING	CHORD LENGTH	RADIUS (FL.)	ARC LENGTH (FL.)	START POINT	END POINT
C13	31°21'50"	N61° 52' 59"E	20.27'	37.50	20.53	N:2086257.48 E:680923.37	N:2086267.04 E:680941.25
C14	31°44'21"	N59° 54' 34"E	21.16'	38.70	21.44	N:2086258.06 E:680922.71	N:2086268.67 E:680941.02
C15	43°19'13"	S63° 13' 32"W	31.17'	42.23	31.93	N:2086272.76 E:680949.97	N:2086258.72 E:680922.14
C16	85°00'28"	S89° 12' 11"E	40.54'	30.00	44.51	N:2086133.20 E:680827.90	N:2086132.63 E:680868.44
C17	92°24'19"	N0° 29' 47"W	28.87'	20.00	32.26	N:2086151.97 E:680869.79	N:2086180.84 E:680869.54
C18	148°29'36"	N60° 02' 49"W	28.87'	15.00	38.88	N:2086230.68 E:680960.42	N:2086245.10 E:680935.40
C19	148°29'36"	N60° 02' 49"W	57.75'	30.00	77.75	N:2086227.00 E:680974.96	N:2086255.83 E:680924.93
C20	119°06'05"	N73° 45' 01"E	55.17'	32.00	66.52	N:2086135.50 E:680887.27	N:2086150.94 E:680940.24
C21	119°06'05"	N73° 45' 01"E	81.04'	47.00	97.70	N:2086124.58 E:680876.98	N:2086147.26 E:680954.78
C22	85°00'28"	S89° 12' 11"E	40.54'	30.00	44.51	N:2086133.20 E:680827.90	N:2086132.63 E:680868.44
C23	86°01'27"	S88° 43' 06"W	34.11'	25.00	37.54	N:2086143.76 E:680810.06	N:2086143.00 E:680775.96

LEGEND

- FG FINISH GROUND
- FL FLOWLINE
- EOR EDGE OF ROAD
- TOC TOP OF CONCRETE
- MIDPT MIDPOINT OF CURVE

SURVEY NOTE

HORIZONTAL COORDINATES ARE ARBITRARILY DERIVED FROM G.P.S. SINGLE POINT POSITIONING. VERTICAL CONTROL BASED UPON NGS MONUMENT C 31 ELEVATION = 5617.04 FEET. COMBINED SCALE FACTOR (CSF) = 1.000364913 GRID TO GROUND. MEASUREMENTS ARE U.S. SURVEY FEET. ALL CONTROL POINTS SET FOR THIS PROJECT ARE 1/2" REBAR WITH PLASTIC CAP STAMPED "CONTROL POINT".

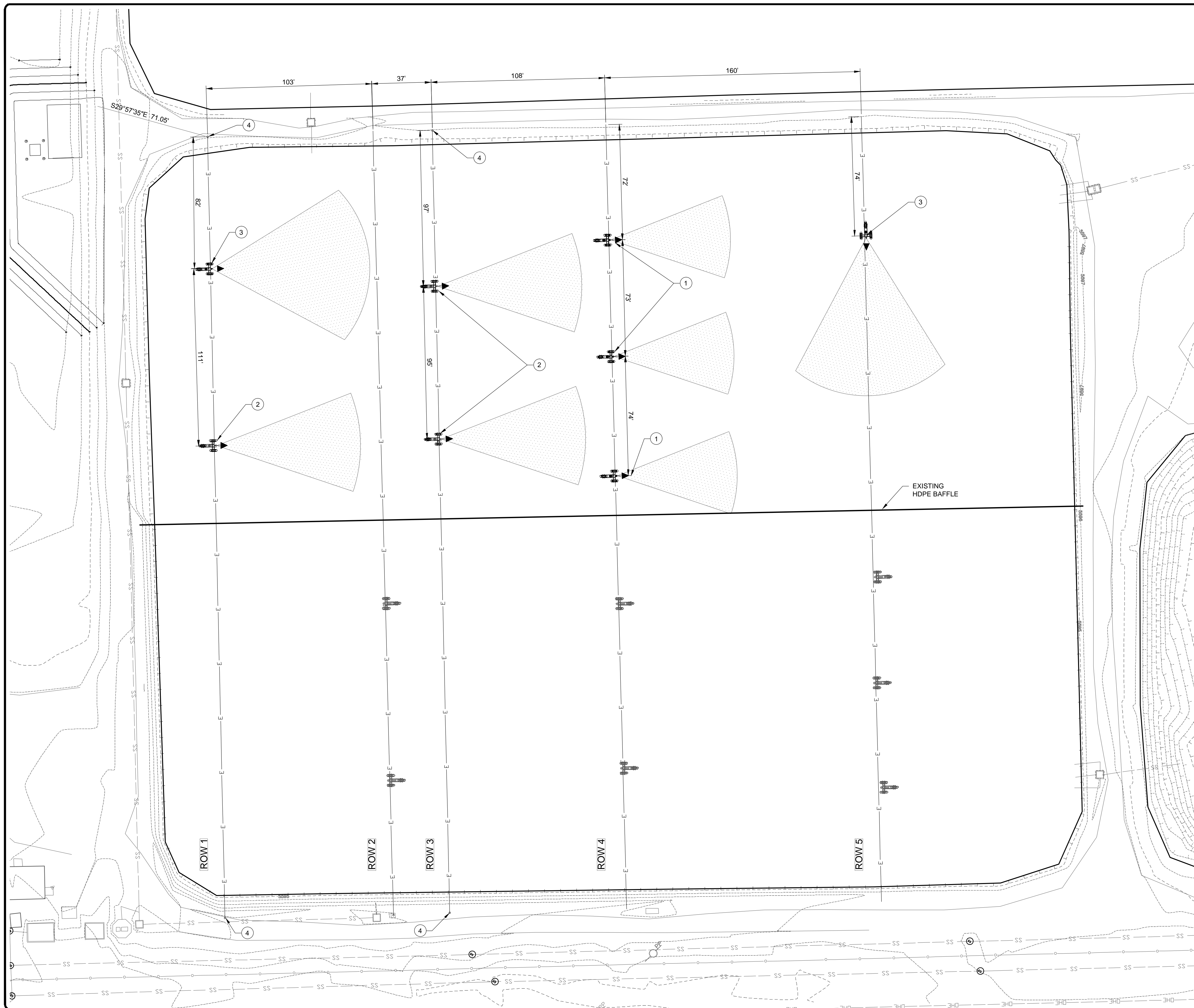
NAVAJO TRIBAL UTILITY AUTHORITY KAYENTA, ARIZONA		DATE	BY
5			
4			
3			
2			
1			
NO.	REVISION DESCRIPTION		

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE
 CIVIL
 EXIT WORKS POINT AND CURVE DATA

SOLUTIONS FOR TODAY...
 VISION FOR TOMORROW
 2201 San Pedro Dr. NE
 Building 4, Suite 200
 Albuquerque, NM 87110
 Phone: (505) 884-0700
 Fax: (505) 884-2376
 TEXAS

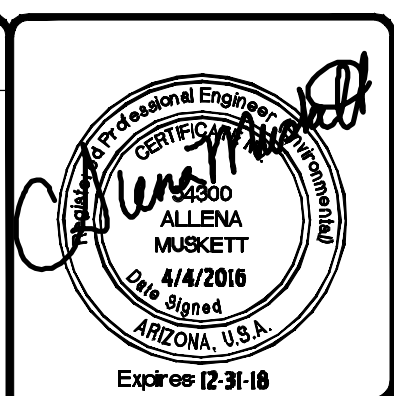


Q:\SEC-PROJECTS\115111 NTUA NNEPA Compliance Plan Assistance\Layouts\CADD\KAYENTA\PLANS\GRA\GRA PLAN.dwg - Apr 18, 2016 - 1:20pm Saved By: mchallen



- BUILD NOTES**
- 1 INSTALL 10 HP AIRO-02 ASPIRATING AERATOR BY AERATION INDUSTRIES INTERNATIONAL, LLC. INCLUDES AERATORS, ELECTRICAL CABLES, CONTROL PANEL, ETC, COMPLETE IN PLACE AND OPERATING.
 - 2 INSTALL 15 HP AIRO-02 ASPIRATING AERATOR BY AERATION INDUSTRIES INTERNATIONAL, LLC. INCLUDES AERATORS, ELECTRICAL CABLES, CONTROL PANEL, ETC, COMPLETE IN PLACE AND OPERATING.
 - 3 INSTALL 25 HP AIRO-02 ASPIRATING AERATOR BY AERATION INDUSTRIES INTERNATIONAL, LLC. INCLUDES AERATORS, ELECTRICAL CABLES, CONTROL PANEL, ETC, COMPLETE IN PLACE AND OPERATING.
 - 4 FURNISH AND INSTALL MOORING POSTS, CABLES, AND CONNECTIONS AS SHOWN.

- CONSTRUCTION NOTES**
- 1 ROW 1 AND 3 ADD NEW CABLE AND MOORING.
 - 2 ROW 4 AND 5, USE EXISTING CABLE AND MOORING.



NAVAJO TRIBAL UTILITY AUTHORITY
KAYENTA, ARIZONA

NO.	REVISION DESCRIPTION	DATE	BY
5			
4			
3			
2			
1			

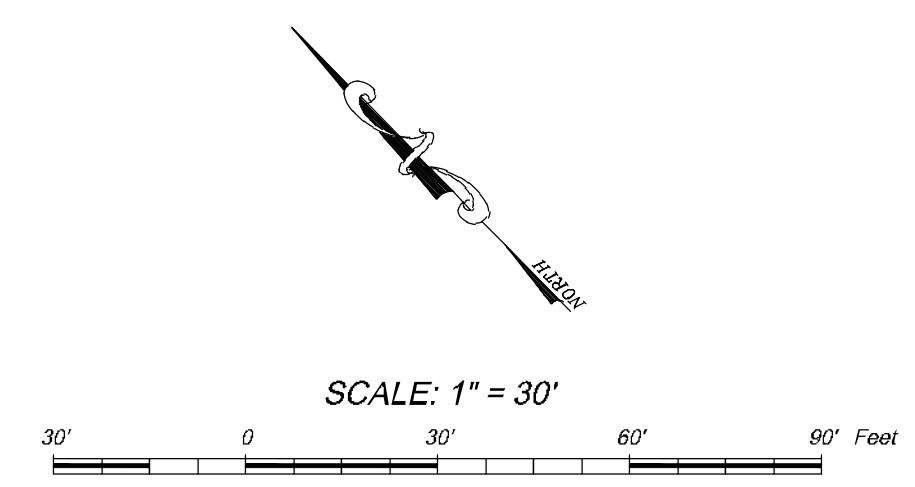
KAYENTA WASTEWATER TREATMENT PLANT UPGRADE

CIVIL
AERATOR LAYOUT

SAVED BY: allanmarkett

**SOLUTIONS FOR TODAY...
VISION FOR TOMORROW**

2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS



JOB NO:
115111

DATE:
APRIL 2016

SHEET NO:
9

GENERAL STRUCTURAL NOTES

APPLY UNLESS NOTED ON STRUCTURAL DRAWINGS. IN CASE OF CONFLICT BETWEEN GSN, DETAILS AND PLANS, THE GREATER REQUIREMENTS GOVERN.

CODE:

COMPLY WITH 2012 INTERNATIONAL BUILDING CODE.
 OCCUPANCY CATEGORY: III
 SEISMIC IMPORTANCE FACTOR: IE=1.0
 MAPPED SPECTRAL RESPONSE ACCELERATION: S_M=0.381, S_{M1}=0.125
 SITE COEFFICIENT: F_a=1.6, F_v=2.4
 SITE CLASS: D
 SPECTRAL RESPONSE COEFFICIENT: S_{ds}=0.254, S_{d1}=0.083
 SEISMIC DESIGN CATEGORY: B
 SEISMIC-FORCE-RESISTING SYSTEM: MASONRY WALLS
 RESPONSE MODIFICATION FACTOR: R=3.5
 SEISMIC RESPONSE COEFFICIENT: C_s=0.091
 ANALYSIS PROCEDURE USED: SIMPLIFIED METHOD
 BASIC WIND SPEED: 90 MPH
 WIND IMPORTANCE FACTOR: I_w=1.0
 BUILDING CATEGORY: OPEN
 EXPOSURE: C
 DESIGN WIND PRESSURE FOR MWFRS:
 ZONE A = 24.8 PSF
 ZONE C = 16.6 PSF
 THERMAL FACTOR: C_t=1.0
 DEAD LOADS: 20 PSF
 LIVE LOADS: 20 PSF
 ELECTRICAL LOADS: SEE ELECTRICAL DRAWINGS. VERIFY ANY LOADS SHOWN ON STRUCTURAL DRAWINGS WITH ELECTRICAL DRAWINGS.

FOUNDATIONS:

BELOW GRADE FOUNDATIONS SHALL BEAR ON A MINIMUM OF THREE (3) FEET OF GRANULAR NON-EXPANSIVE ENGINEERED FILL UNDERLAIN BY A REINFORCING GEOGRID.
 SLABS SHOULD BEAR ON THREE (3) FEET OF NON-EXPANSIVE LOW PERMEABILITY ENGINEERED FILL.
 FILL MATERIALS ARE TO CONFORM TO GRADATION AS SPECIFIED IN STS 31 20 00, EARTHWORK.
 ENGINEERED FILL OR OTHER APPROVED GRANULAR SOILS SHOULD BE PLACED IN A MAXIMUM LIFT NOT TO EXCEED 8". MATERIAL IS TO BE COMPACTED TO 95% ASTM D698 PER STS 31 20 00, EARTHWORK.
 THE GEOGRID SHOULD BE PER STS 31 0519, GEOGRID FOR EARTHWORK.
 ALL EARTHWORK, FOOTING DEPTHS, AND EXCAVATIONS FOR FOUNDATIONS SHALL BE INSPECTED BY THE ENGINEER TO VERIFY ASSUMED ALLOWABLE SOIL BEARING AND LOW SETTLEMENT AND SWELL POTENTIAL, AND TO MAKE ANY ADDITIONAL RECOMMENDATIONS.

CONCRETE:

SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT ISSUE OF THE ACI MANUAL OF CONCRETE PRACTICE, WITH TYPE I-II CEMENT. MINIMUM 28 DAY STRENGTH, 3000 PSI, EXCEPT AS FOLLOWS:
 FOUNDATIONS, GRADE BEAMS, OR ANY OTHER CONCRETE IN CONTACT WITH EARTH.....3000 PSI (MAX W/C = 0.45)
 CAST IN PLACE SLABS NOT ON GRADE.....4000 PSI
 MAXIMUM SLUMP:
 FOR ALL CONCRETE.....5"
 CONTRACTOR SHALL SUBMIT FOR APPROVAL CONCRETE MIX DESIGNS FOR EACH CLASS OF CONCRETE. THE MIX SUBMITTAL SHALL INDICATE WHICH OF THE FOLLOWING ACI 318 METHODS THE CONCRETE SUPPLIER ALONG WITH HIS TESTING LAB INTENDS TO USE FOR CONCRETE PROPORTIONING - THE FIELD EXPERIENCE METHOD, THE LABORATORY TRIAL MIXTURE METHOD OR A COMBINATION OR BOTH. IF CONSECUTIVE TESTS (15 TO 30) ARE BEING RELIED UPON PER ACI 318, SECTION 5.3 THOSE TESTS SHALL BE SUBMITTED ALONG WITH THE MIX DESIGNS. MIX DESIGNS SHALL BEAR THE STAMP OF AN ENGINEER LICENSED IN THE STATE OF ARIZONA.
 NO ADMIXTURES SHALL BE USED WITHOUT APPROVAL. NO AIR ENTRAINMENT SHALL BE ALLOWED IN FLAT SLABS. ADMIXTURES CONTAINING CHLORIDES SHALL NOT BE USED. CONCRETE SHALL NOT BE IN CONTACT WITH ALUMINUM. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED. EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND EMBEDDED ITEMS. DO NOT TAMP SLABS. USE ROLLER BUG, VIBRATING SCREED OR BULL FLOAT TO FINISH. SEE SPECIFICATIONS FOR CURING.
 MINIMUM STRENGTH FOR REMOVAL OF FORMS AND SHORING SHALL BE 75% OF SPECIFIED STRENGTH AT 28 DAYS.
 FLY ASH (POZZOLAN) IF PERMITTED PER SPECIFICATIONS SHALL NOT EXCEED 25% REPLACEMENT OF TOTAL CEMENT CONTENT USING A 1:1 REPLACEMENT FACTOR.

MASONRY:

BLOCK UNITS: GRADE N-1, RUNNING BOND. PRISM STRENGTH = 1500 PSI. MORTAR TYPE S, 1800 PSI. GROUT 2000 PSI. ALL CONSTRUCTION BELOW GRADE OR IN CONTACT WITH SOIL SHALL USE TYPE I-II CEMENT FOR MASONRY UNITS, GROUT AND MORTAR, OTHER CONDITIONS MAY BE TYPE II CEMENT. NO POZZOLAN WILL BE PERMITTED IN MORTAR.
 MECHANICALLY VIBRATE GROUT IN VERTICAL CELLS IMMEDIATELY AFTER POURING AND AGAIN ABOUT 5 MINUTES LATER. MAXIMUM GROUT LIFT WITHOUT CLEANOUTS 5'-0". STAY EACH END OF EACH VERTICAL REBAR USING SINGLE WIRE AND LOOP TYPE TIES. MAXIMUM VERTICAL SPACING OF TIES 8'-0".
 MASONRY WALLS TO BE PARTIALLY GROUTED. GROUT REQUIRED: IN CELLS WITH REINFORCING, BOND BEAMS, LINTELS, AROUND EMBEDS AND OTHER LOCATIONS SPECIFICALLY CALLED FOR ON PLANS.
 8" WALL VERTICAL REINFORCING: LOCATE REINFORCING IN CENTER OF GROUT, AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL AS FOLLOWS:
 (1) #5 AT ALL CORNERS, INTERSECTIONS, WALL ENDS, JAMBS, AND EACH SIDE OF EXPANSION OR CONTROL JOINTS.
 (1) #5 AT 24" O.C. ELSEWHERE, U.N.O.
 HORIZONTAL REINFORCING: (1) #5 IN MINIMUM 8" DEEP GROUTED CONTINUOUS BOND BEAM AT FLOOR LINES AND TOP OF WALL. HORIZONTAL REINFORCING SHALL BE CONTINUOUS UNLESS NOTED OTHERWISE ON PLANS. GROUT BARRIER BELOW BOND BEAMS SHALL BE CONTINUOUS WIRE LATH. PROVIDE LADDER TYPE #9 JOINT REINFORCING AT 16" O.C.
 WALLS NOTED ON PLANS AS "SOLID GROUTED" SHALL HAVE (1) #5 HORIZONTAL REINFORCING IN BOND BEAM AT 40" MAXIMUM, AND PROVIDE (1) #5 IN BOND BEAM AT FLOOR, AND TOP OF WALLS.
 WEDGE AND SLEEVE TYPE ANCHORS SHALL NOT BE PERMITTED IN MASONRY CONSTRUCTION WITHOUT PRODUCT ICC REPORT AND PREAPPROVAL.
 MASONRY REINFORCING SHOP DRAWINGS SHALL BE PROVIDED TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.

REINFORCING:

LATEST ACI CODE AND DETAILING MANUAL APPLY. ALL REINFORCING BARS DEFORMED EXCEPT #2 BARS AND WIRE MESH.
 ALL REINFORCING SHALL BE ASTM A-615 GRADE 60 EXCEPT AS FOLLOWS:
 SPIRALS.....GRADE 60 OR COLD DRAWN A-82
 #2 AND #3 BARS.....GRADE 40
 WIRE MESH.....A-185
 WELDED ANCHORS.....GRADE 40 CHEMICAL ANALYSIS LIMITED PER AWS SPECIFICATIONS FOR WELD WITHOUT PREHEAT.
 WELDED ANCHORS #5 AND LARGER.....ASTM A-706
 CLEAR CONCRETE COVER TO REINFORCING ARE AS FOLLOWS:
 CAST-IN-PLACE CONCRETE (NONPRESTRESSED):
 CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....3"
 EXPOSED TO EARTH OR WEATHER:
 #6 THROUGH #18.....2"
 #5 AND SMALLER.....1 1/2"
 NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
 SLABS, WALLS: #11 AND SMALLER.....1 1/2"
 FOR TYPICAL BAR BENDS, SEE DETAIL 2/12.
 LAP SPLICES IN MASONRY SHALL BE PER DETAIL 1/12.
 LAP SPLICES IN CONCRETE SHALL BE CLASS B TENSION LAPS, 70 BAR Ø MIN.
 WHERE BARS ARE SHOWN SPLICED, THEY MAY RUN CONTINUOUS AT CONTRACTOR'S OPTION.
 PROVIDE SHOP DRAWINGS AND FABRICATE AFTER THE CONTRACTORS REVIEW. ALL SPLICE LOCATIONS ARE SUBJECT TO APPROVAL. PLACE REBAR PER CRSI STANDARDS.
 REBAR SPACING GIVEN IS MAXIMUM ON CENTER AND ALL REBAR IS CONTINUOUS UNLESS OTHERWISE NOTED. PROVIDE BENT CORNER REBAR TO MATCH AND LAP WITH HORIZONTAL REBARS AT CORNERS AND INTERSECTIONS OF WALLS. DOWEL ALL VERTICAL WALL REBAR TO FOUNDATIONS. SECURELY TIE ALL REBAR, INCLUDING DOWELS, IN LOCATION BEFORE PLACING CONCRETE OR GROUT.

STRUCTURAL CONSTRUCTION OBSERVATION:

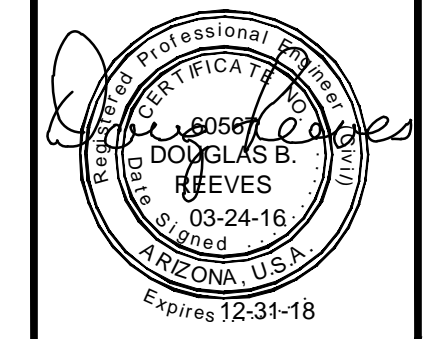
IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT ALL STRUCTURAL WORK FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY STRUCTURAL CONSTRUCTION OBSERVATION PROVIDED BY OTHERS DOES NOT RELIEVE HIM OF THIS RESPONSIBILITY. ANY STRUCTURAL DEVIATIONS FROM THE CONTRACT DOCUMENTS THAT ARE FOUND AT A LATER DATE AND ARE DECLARED TO BE SIGNIFICANT BY THE STRUCTURAL ENGINEER SHALL BE CORRECTED BY THE CONTRACTOR WITH ALL DISPATCH.
 THE STRUCTURAL CONSTRUCTION OBSERVER IS NOT AUTHORIZED TO DIRECT OR APPROVE ANY CHANGES FROM THE CONTRACT DOCUMENTS. IF THE CONTRACTOR WISHES TO QUESTION THE STRUCTURAL CONSTRUCTION OBSERVER'S INTERPRETATION OF THE CONTRACT DOCUMENTS, HE MAY DO SO DIRECTLY WITH THE ARCHITECT OR THE STRUCTURAL ENGINEER.
 THE STRUCTURAL CONSTRUCTION OBSERVER IS NOT AUTHORIZED TO STOP OR DELAY WORK IF THE CONTRACTOR ELECTS TO CONTINUE WITH A CERTAIN WORK AFTER BEING NOTIFIED BY THE STRUCTURAL CONSTRUCTION OBSERVER THAT SUCH WORK IS UNACCEPTABLE, HE DOES SO AT HIS OWN RESPONSIBILITY AND RISKS CORRECTING THE WORK AT A LESS OPPORTUNE TIME.
 THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE FACILITIES FOR THE STRUCTURAL CONSTRUCTION OBSERVER, TO ALLOW HIM TO PERFORM HIS WORK SAFELY AND EFFICIENTLY.

SUPPLEMENTARY NOTES:

PROVIDE ALL TEMPORARY BRACING, SHORING, GUYING OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.
 THE STRUCTURAL ENGINEER SHALL NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 FOR CONNECTIONS, SEE DETAILS.
 THE FOLLOWING IS A LIST OF THE APPROVED RETROFIT EPOXIES/ADHESIVES AND ANCHORS. THESE ARE 2012 IBC COMPLIANT WITH CURRENT ICC REPORTS. AT THE CONTRACTORS OPTION ALTERNATIVE ANCHOR AND EPOXY ICC REPORTS MAY BE SUBMITTED FOR REVIEW PROVIDED THE REPORT IS 2012 IBC COMPLIANT AND IN A CASE IN WHICH IT IS BEING USED IN CONCRETE THE REPORT COVERS CRACKED CONCRETE. THIS LIST IS FOR REFERENCE ONLY AND IS NOT INTENDED TO BE USED PRIOR TO THE EOR APPROVAL. EACH CONDITION WILL NEED TO BE REVIEWED AND DIRECTION GIVEN BASED ON CONCRETE STRENGTH, EDGE DISTANCE, ETC.
 EXPANSION BOLTS FOR USE IN MASONRY SHALL BE HILTI KWIK BOLT 3 ANCHOR PER CURRENT ICC ESR-1385. MASONRY CELLS SHALL BE SOLID GROUTED WITHIN 12" OF ANCHOR.
 EXPANSION BOLTS FOR USE IN CONCRETE SHALL BE HILTI KWIK BOLT-TZ EXPANSION ANCHOR PER CURRENT ICC ESR-1917 OR HILTI HSL-3 HEAVY DUTY SLEEVE ANCHOR PER CURRENT ICC ESR-1545.
 ADHESIVE ANCHORS FOR USE IN MASONRY SHALL BE HILTI HIT HY-150 MAX ADHESIVE PER CURRENT ICC ESR-1967. MASONRY CELLS SHALL BE SOLID GROUTED WITHIN 12" OF ANCHOR.
 ADHESIVE ANCHORS FOR USE IN CONCRETE SHALL BE HILTI HIT-RE 500-SD EPOXY PER CURRENT ICC ESR-2322.
 COST OF ADDITIONAL FIELD AND OFFICE WORK NECESSITATED BY REQUEST BY THE CONTRACTOR FOR AN OPTION OR DUE TO ERRORS OR OMISSIONS IN CONSTRUCTION SHALL BE BORNE BY THE CONTRACTOR. OPTIONS ARE FOR CONTRACTORS CONVENIENCE. HE SHALL BE RESPONSIBLE FOR ALL CHANGES NECESSARY IF HE CHOOSES AN OPTION AND HE SHALL COORDINATE ALL DETAILS.
 ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF ARIZONA.
 UNLESS OTHERWISE NOTED, DETAILS ON STRUCTURAL DRAWINGS ARE TYPICAL AS INDICATED BY CUTS, REFERENCES OR TITLES.
 VERIFY ALL DIMENSIONS WITH DRAWINGS FROM OTHER DISCIPLINES.
 CONTRACTOR SHALL VERIFY IN FIELD ALL EXISTING CONDITIONS SHOWN ON DRAWINGS.
 ALL CONSTRUCTION MEETING OR CROSSING EXPANSION OR SHRINKAGE CONTROL JOINTS IN FLOORS OR ROOFS MUST HAVE PROVISIONS TO ACCOMMODATE MOVEMENT OR MUST BE DELAYED UNTIL THE JOINT IS CLOSED.
 DRYPACK SHALL BE ONE PART CEMENT AND 2 1/2 PARTS SAND WITH JUST ENOUGH WATER TO HYDRATE CEMENT AND FORM A BALL SHOWING MOISTURE ON THE SURFACE WHEN SQUEEZED. IT SHALL BE RAMMED IN TIGHT TO MAXIMUM DENSITY ATTAINABLE. MINIMUM 28 DAY STRENGTH TO BE 5000 PSI.
 IN LIEU OF DRYPACK, GROUT SHALL BE NON-SHRINK, NON-METALLIC; U.S. GROUT CORP. FIVE STAR GROUT; ASTM C-827, C-191, AND C-109 OR PRIOR APPROVED EQUAL, MIXED AND INSTALLED PER MANUFACTURER'S RECOMMENDATION, MINIMUM COMPRESSIVE STRENGTH 5000 PSI IN 7 DAYS.

SPECIAL INSPECTIONS:

PER SECTION 1704 OF THE INTERNATIONAL BUILDING CODE, SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING ITEMS:
 1. CONCRETE AND REINFORCEMENT.
 2. ANCHOR BOLTS.
 3. EXPANSION ANCHORS AND ADHESIVE ANCHORS.
 4. EARTHWORK.
 5. MASONRY.



NAVAJO TRIBAL UTILITY AUTHORITY KAYENTA, ARIZONA		BY
5		DATE
4		
3		
2		
1		
		NO.
		REVISION DESCRIPTION

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE
 STRUCTURAL
 GENERAL STRUCTURAL NOTES

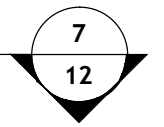
SOLUTIONS FOR TODAY...
 VISION FOR TOMORROW
 2201 San Pedro Dr. NE
 Building 4, Suite 200
 Albuquerque, NM 87110
 Phone: (505) 884-0700
 Fax: (505) 884-2376
 TEXAS



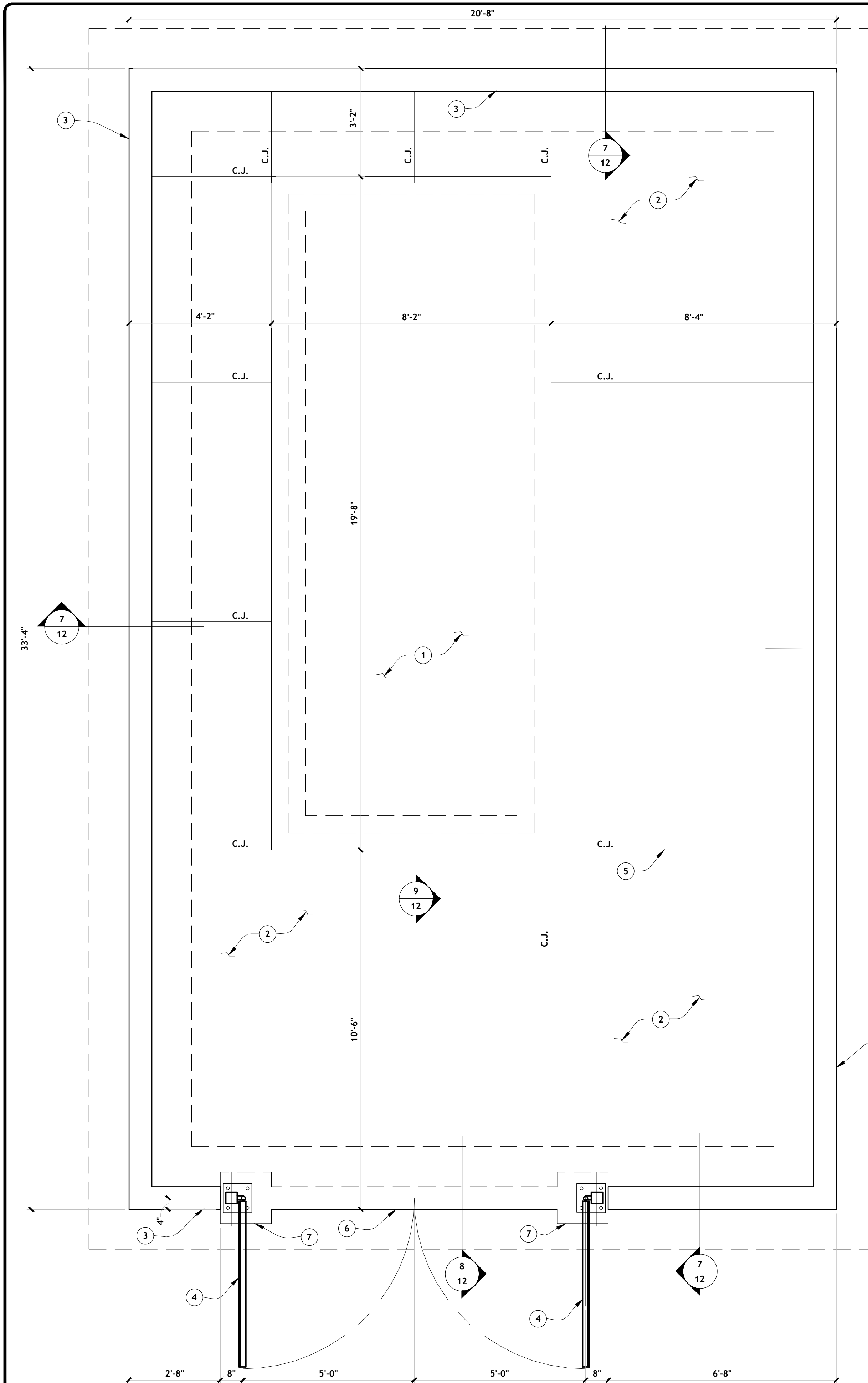
JOB NO:
115111
 DATE:
MARCH 2016
 SHEET NO:
10

1. CONCRETE GENERATOR PAD, SEE DETAIL 9/12.
2. 4" CONCRETE SLAB WITH #4 BARS AT 18" O.C., E.W.
3. 8" CMU WALL, 8'-0" HIGH, SEE DETAIL 7/12.
4. GATE, SEE DETAIL 10/12 FOR ADDITIONAL INFORMATION.
5. C.J. INDICATES LOCATION OF CONSTRUCTION JOINT IN SLAB, SEE DETAIL 3/12.
6. 8" WIDE TURN DOWN SLAB EDGE ALONG GATE OPENING, SEE 8/12.
7. WIDEN TURN DOWN SLAB EDGE AT GATE POSTS TO 18" SQUARE, SEE DETAIL 10/12.

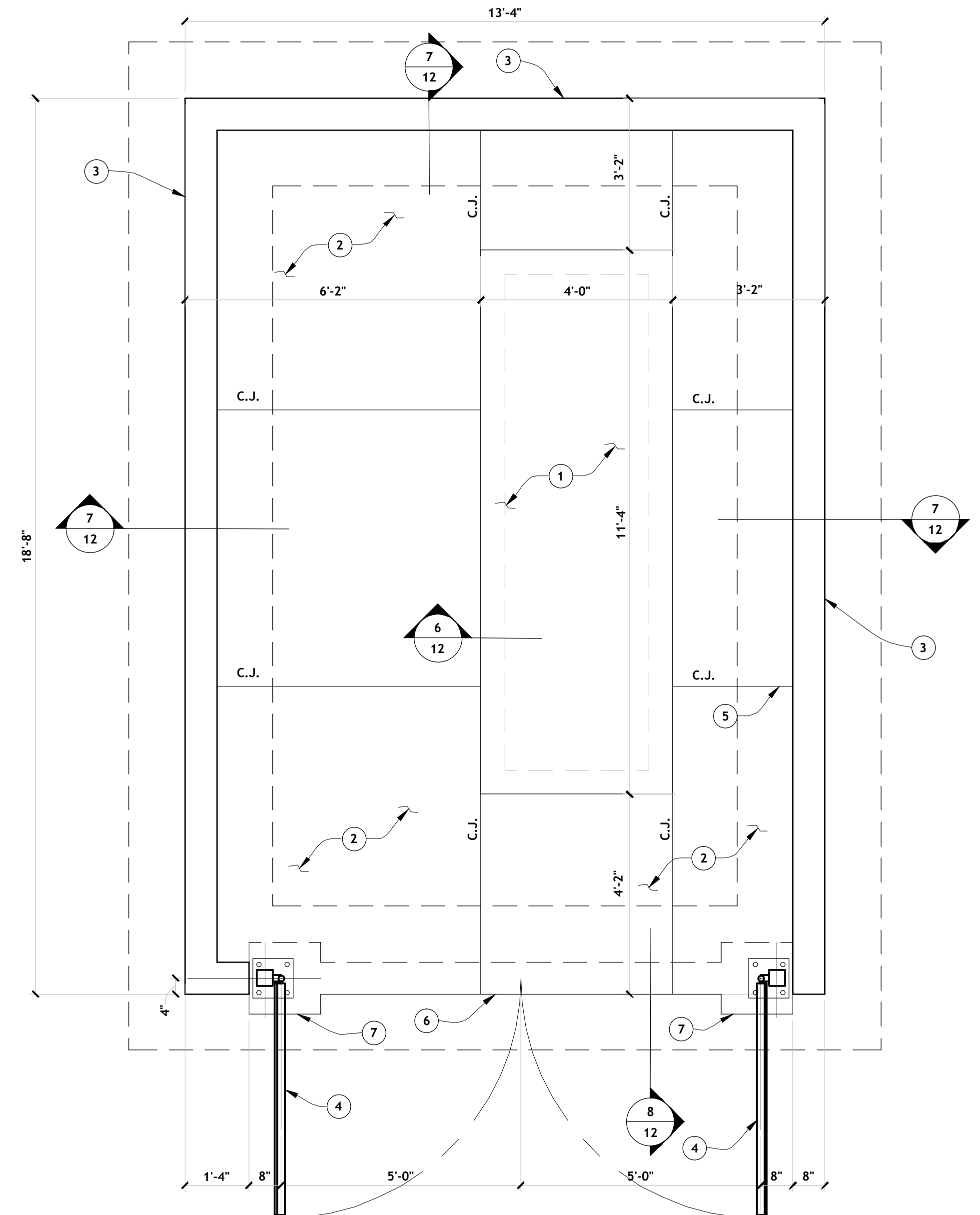
NOTES:
1. SEE DETAILS 4/12 AND 5/12 FOR LOCATIONS WHERE PIPES OR CONDUITS PASS UNDER THE FOOTINGS.



STRUCT-KAYENTA-PLAN-A

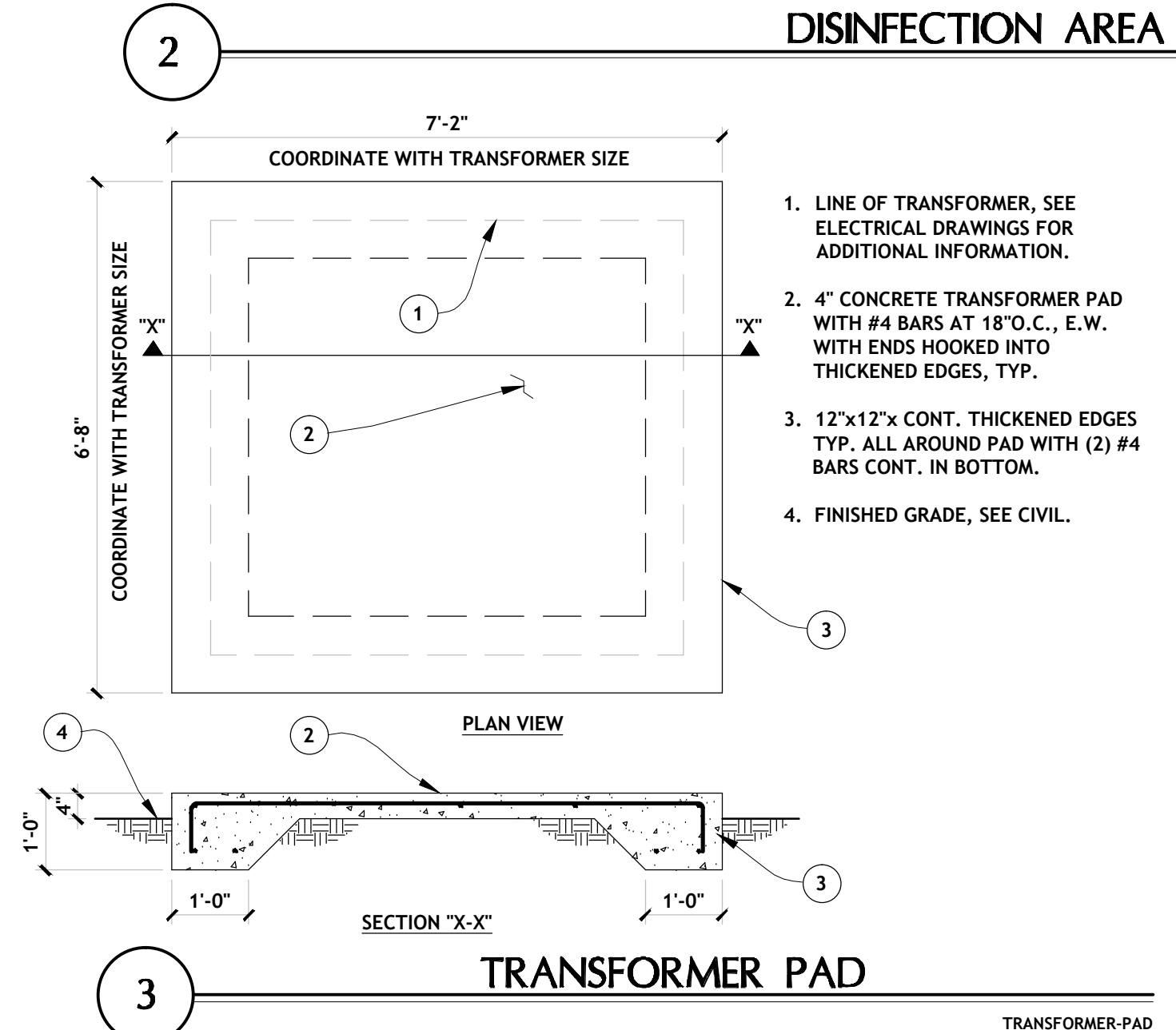


1 AERATION AREA GENERATOR YARD PLAN



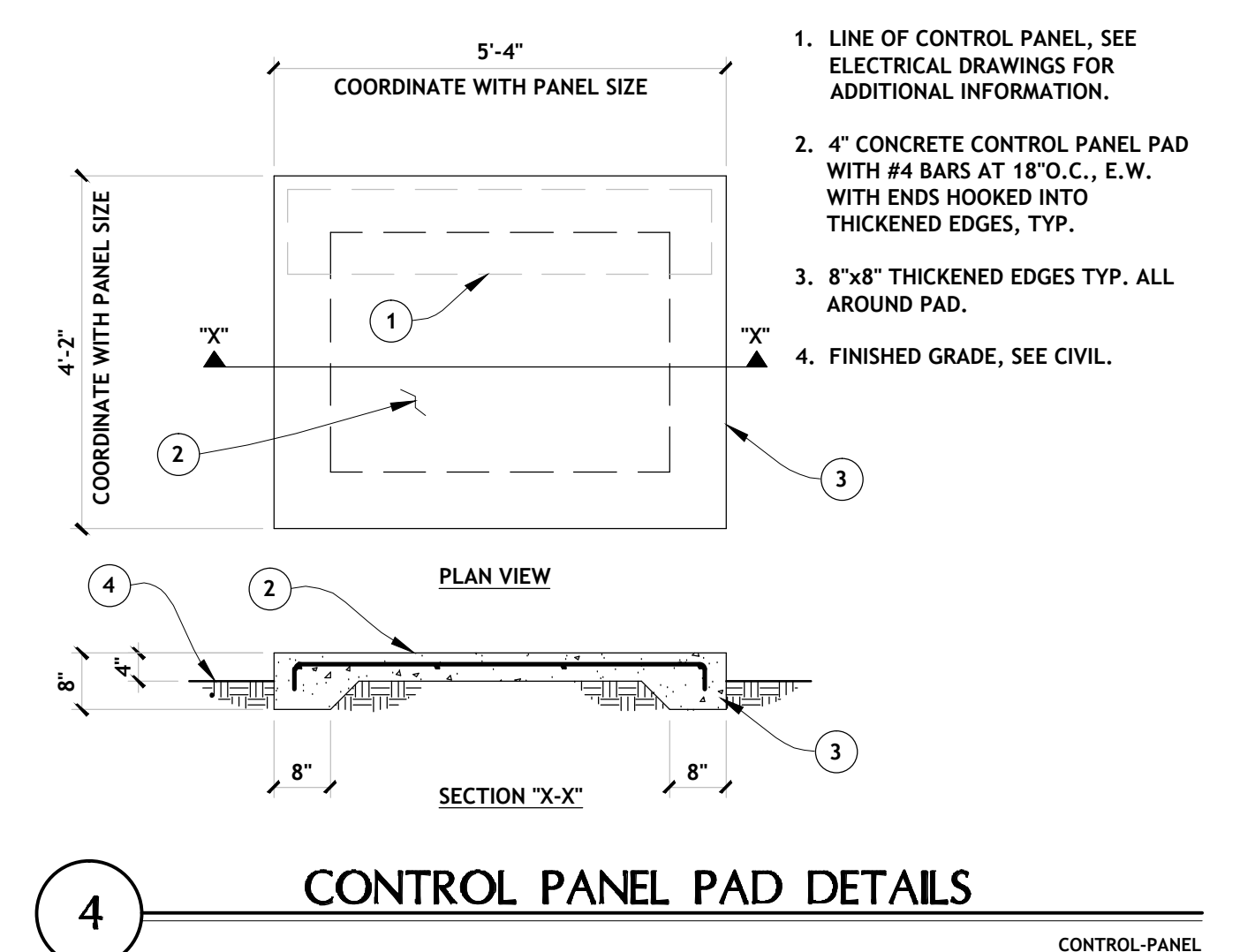
2 DISINFECTION AREA GENERATOR YARD PLAN

STRUCT-KAYENTA-PLAN-B



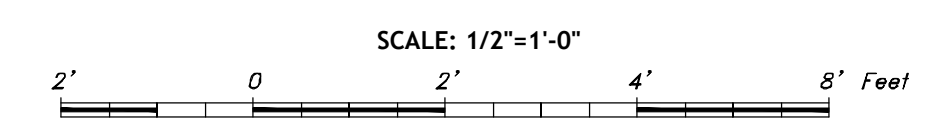
3 TRANSFORMER PAD

TRANSFORMER-PAD

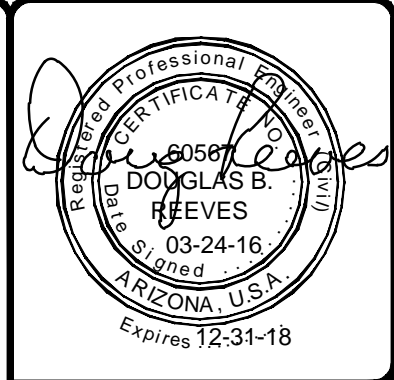
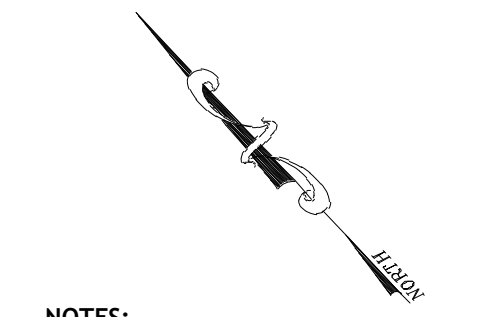


4 CONTROL PANEL PAD DETAILS

CONTROL-PANEL



NOTES:
1. SEE DETAILS 4/12 AND 5/12 FOR LOCATIONS WHERE PIPES OR CONDUITS PASS UNDER THE FOOTINGS.



NAVAJO TRIBAL UTILITY AUTHORITY
KAYENTA, ARIZONA

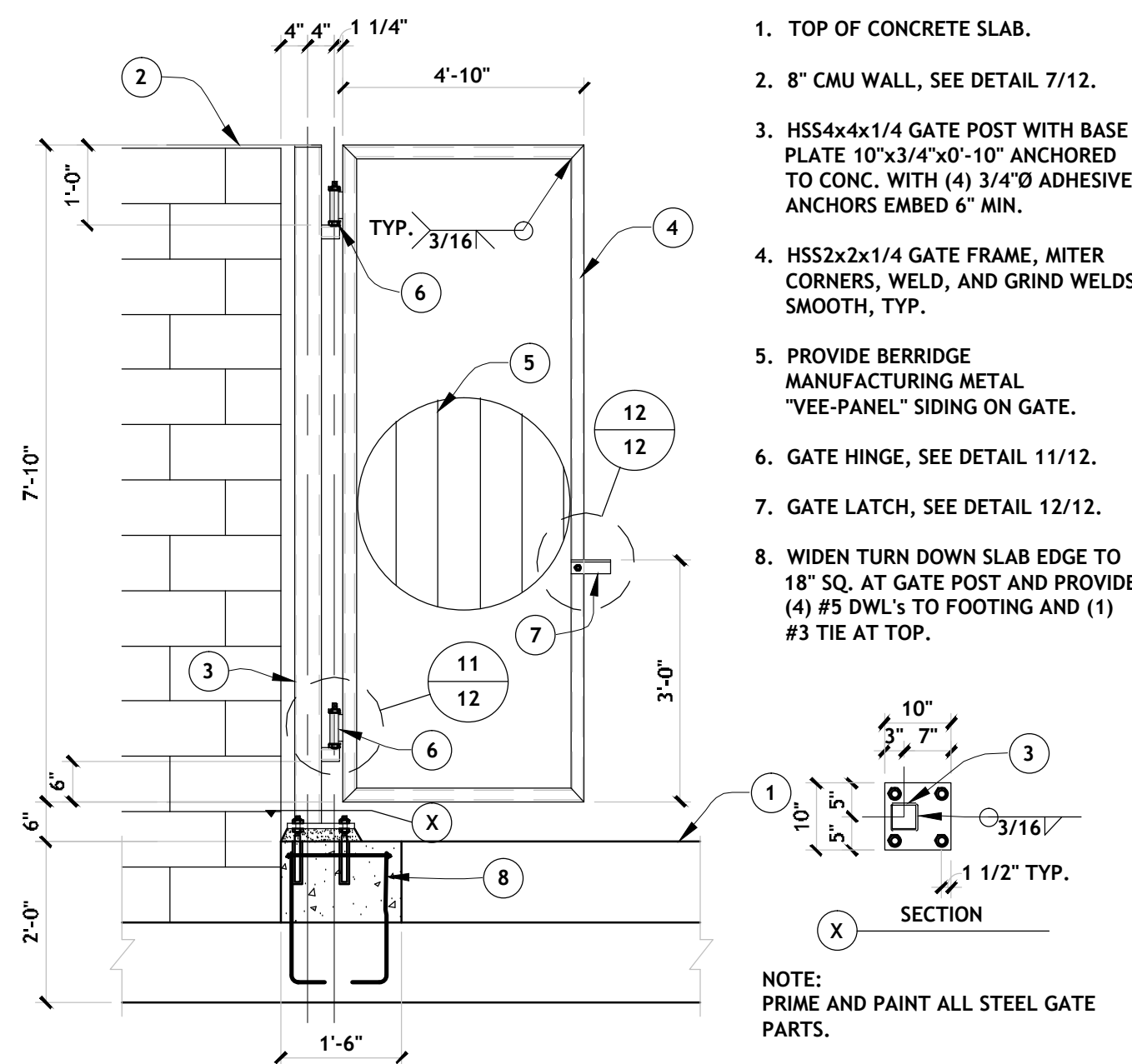
KAYENTA WASTEWATER TREATMENT PLANT UPGRADE
STRUCTURAL PLANS

SOLUTIONS FOR TOMORROW...
VISION FOR TOMORROW
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-9700
Fax: (505) 884-2376
TEXAS

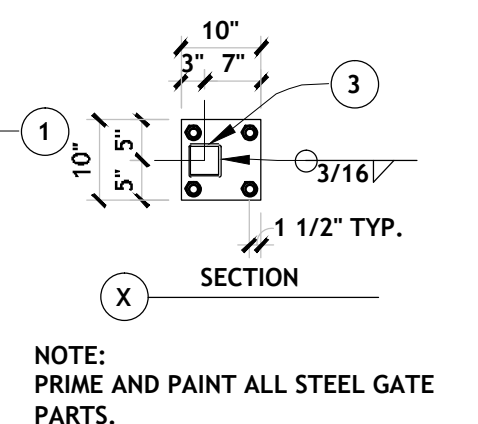


JOB NO: 115111
DATE: MARCH 2016
SHEET 11 NO.

© 150611-PROJECTS\151111 NTUA INNEPA Compliance Plan Assistance\Systems\Engineering\CADD\Kayenta\PLANS\SET111 STRUCTURAL PLANS.dwg Apr 18, 2016 1:12 PM Saved By: dabbh

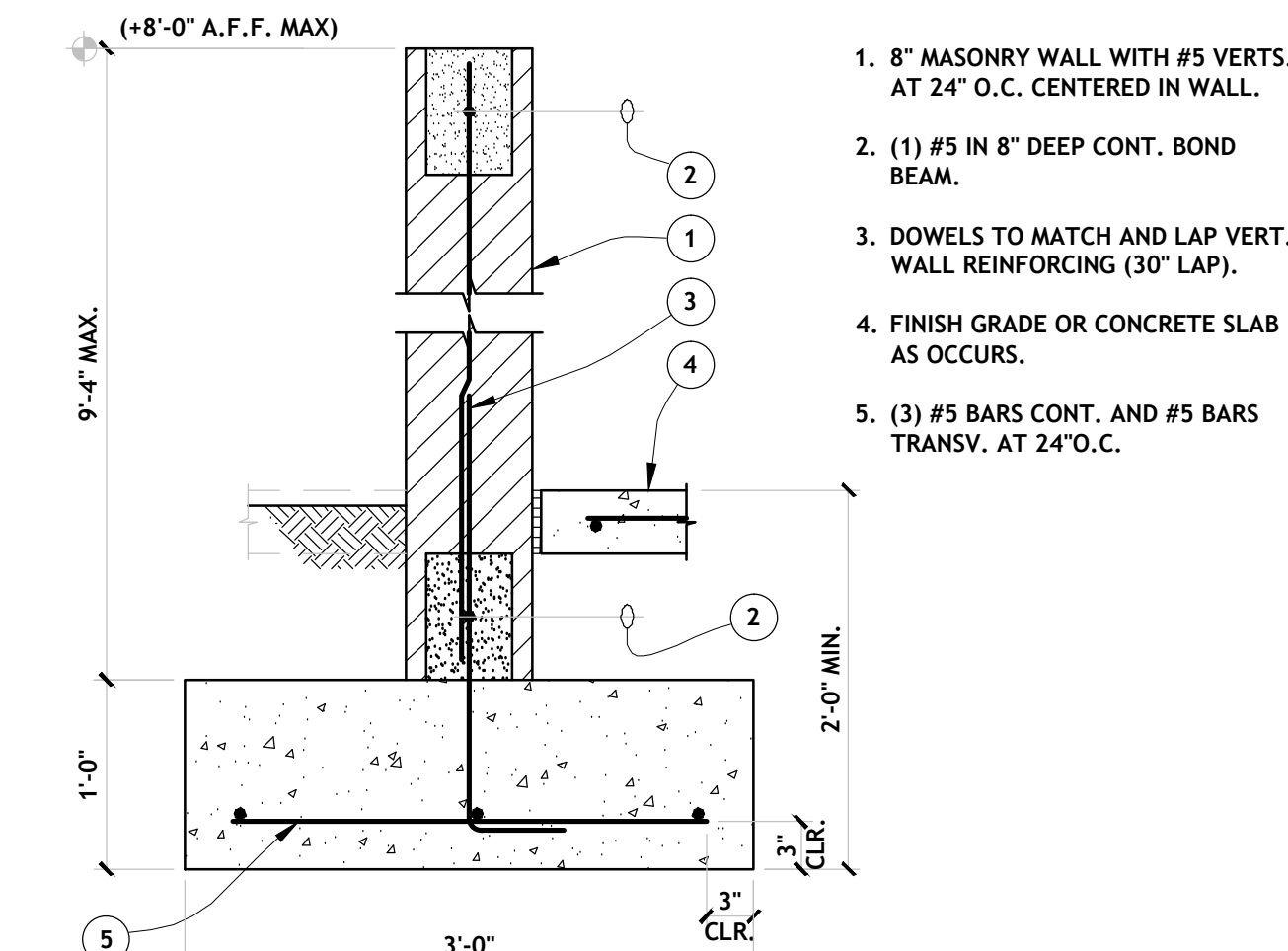


1. TOP OF CONCRETE SLAB.
2. 8" CMU WALL, SEE DETAIL 7/12.
3. HSS4x4x1/4 GATE POST WITH BASE PLATE 10"x3/4"x0'-10" ANCHORED TO CONC. WITH (4) 3/4" ADHESIVE ANCHORS EMBED 6" MIN.
4. HSS2x2x1/4 GATE FRAME, MITER CORNERS, WELD, AND GRIND WELDS SMOOTH, TYP.
5. PROVIDE BERRIDGE MANUFACTURING METAL "VEE-PANEL" SIDING ON GATE.
6. GATE HINGE, SEE DETAIL 11/12.
7. GATE LATCH, SEE DETAIL 12/12.
8. WIDEN TURN DOWN SLAB EDGE TO 18" SQ. AT GATE POST AND PROVIDE (4) #5 DWL'S TO FOOTING AND (1) #3 TIE AT TOP.



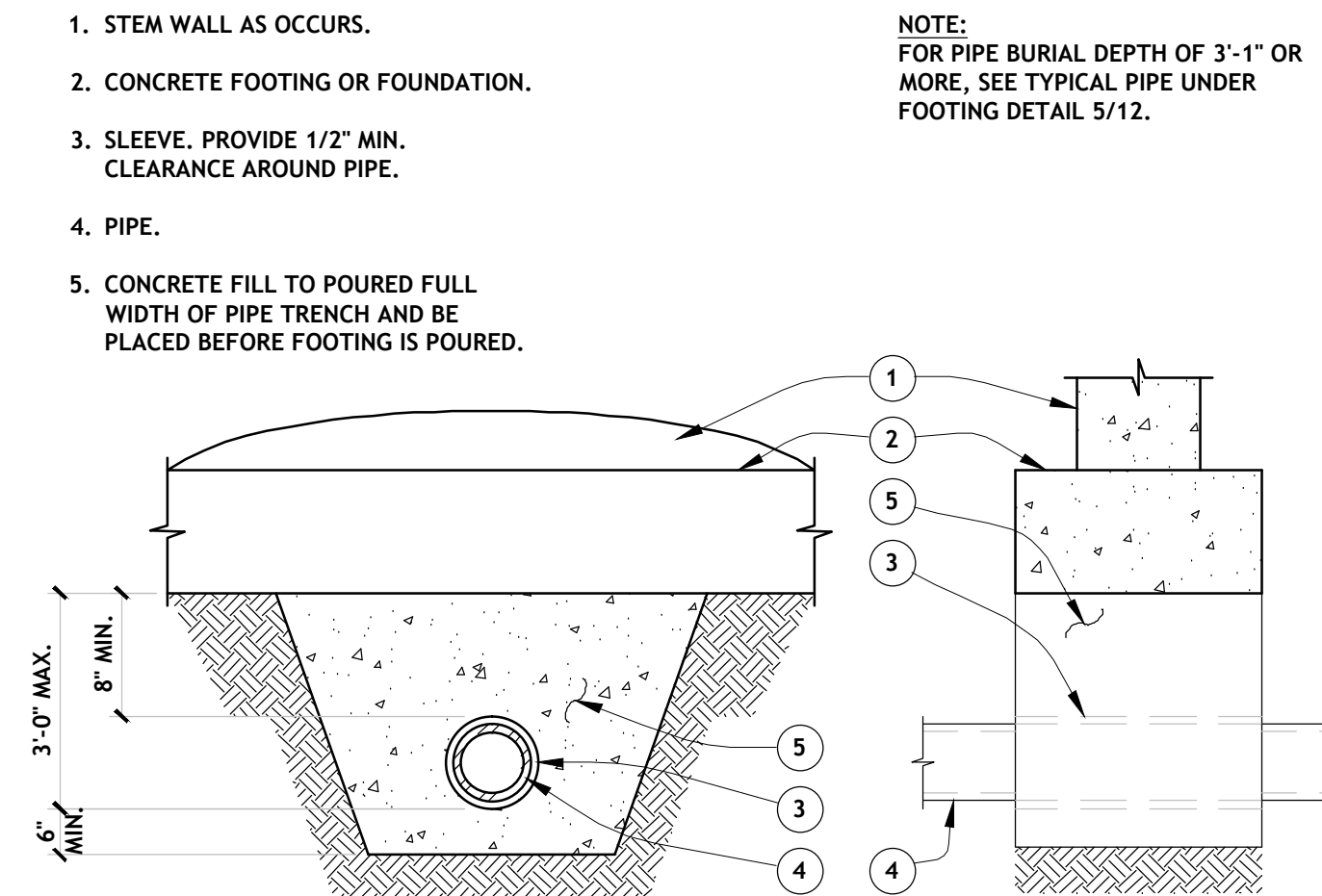
NOTE: PRIME AND PAINT ALL STEEL GATE PARTS.

10 GATE DETAILS



1. 8" MASONRY WALL WITH #5 VERTS. AT 24" O.C. CENTERED IN WALL.
2. (1) #5 IN 8" DEEP CONT. BOND BEAM.
3. DOWELS TO MATCH AND LAP VERT. WALL REINFORCING (30" LAP).
4. FINISH GRADE OR CONCRETE SLAB AS OCCURS.
5. (3) #5 BARS CONT. AND #5 BARS TRANSV. AT 24" O.C.

7 FREE STANDING MASONRY WALL



1. STEM WALL AS OCCURS.
2. CONCRETE FOOTING OR FOUNDATION.
3. SLEEVE, PROVIDE 1/2" MIN. CLEARANCE AROUND PIPE.
4. PIPE.
5. CONCRETE FILL TO POURED FULL WIDTH OF PIPE TRENCH AND BE PLACED BEFORE FOOTING IS POURED.

NOTE: FOR PIPE BURIAL DEPTH OF 3'-1" OR MORE, SEE TYPICAL PIPE UNDER FOOTING DETAIL 5/12.

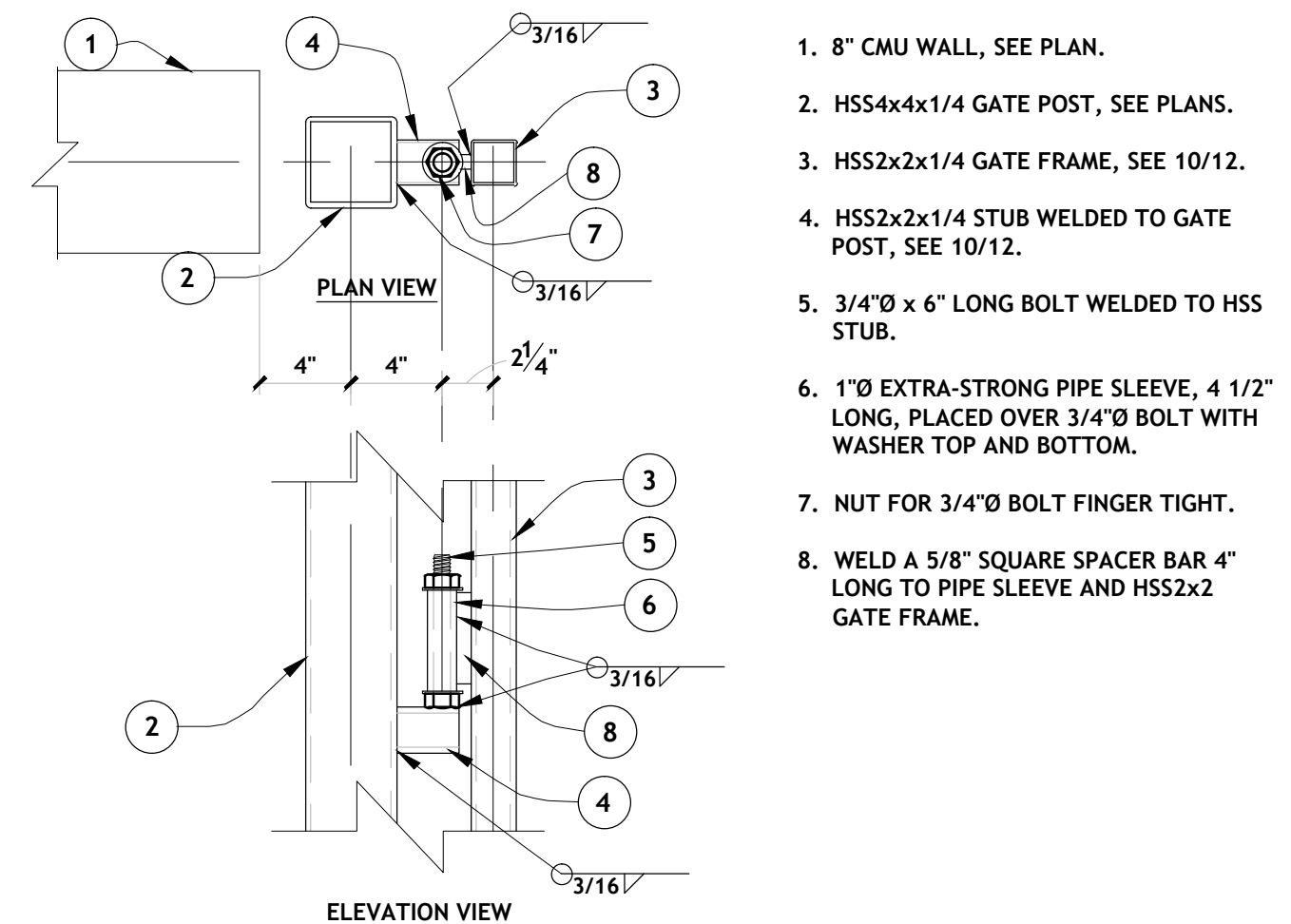
4 PIPE PASSING BELOW CONT. FOOTING

LAP SPLICE LENGTHS (IN.)

BAR SIZE	LENGTHS (IN.)					
	SINGLE MAT		8" CMU		DOUBLE MAT	
	1500 PSI	2000 PSI	1500 PSI	2000 PSI	1500 PSI	2000 PSI
#3	16	14	18	18	18	18
#4	24	18	24	24	24	24
#5	32	28	30	30	30	30
#6	54	54	43	37	39	36
#7	N/A	N/A	59	51	49	43
#8	N/A	N/A	72	72	72	72
#9	N/A	N/A	81	81	81	81

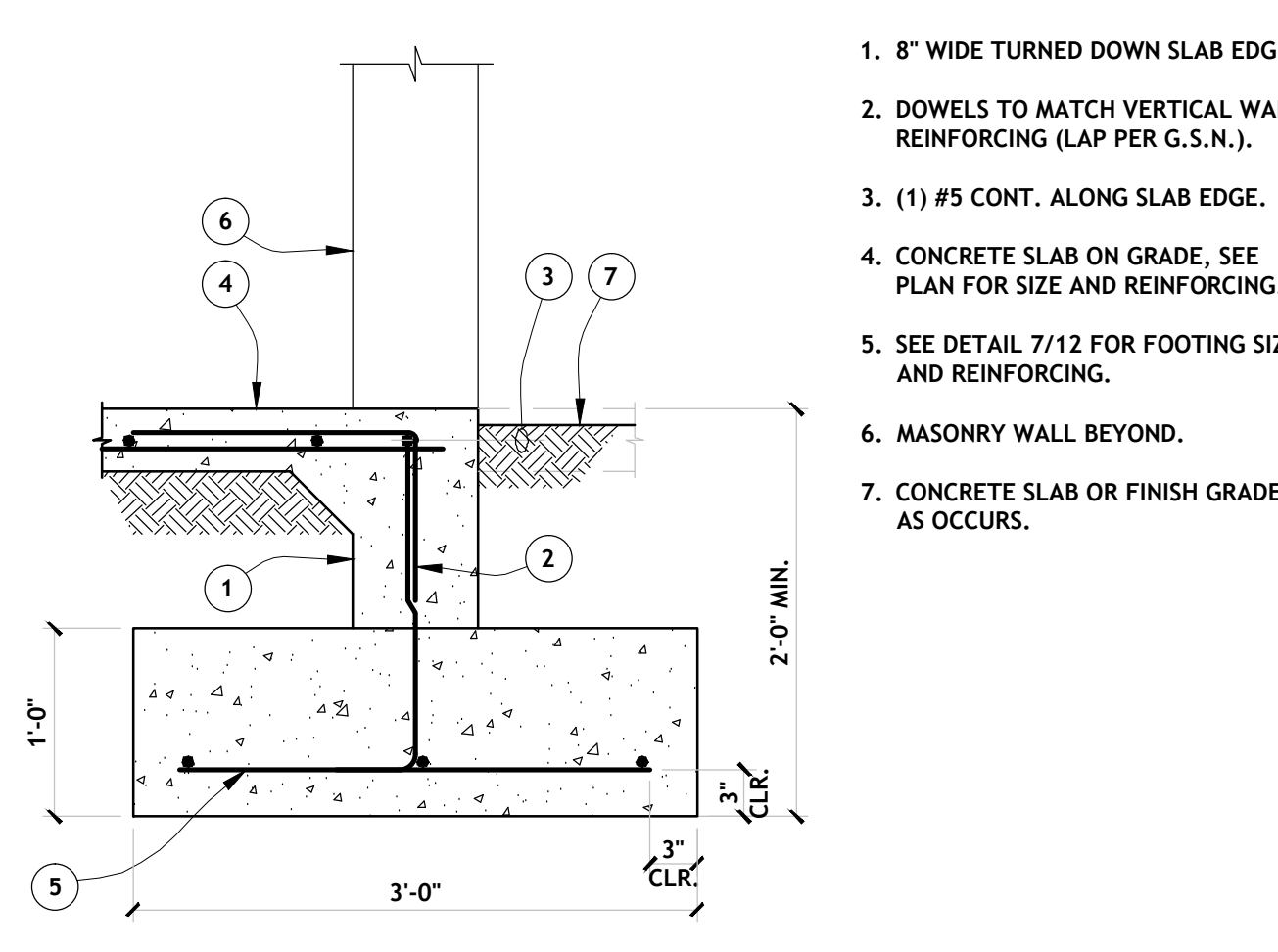
1. LAP-SPLICE LENGTHS ARE CALCULATED PER IBC 2009 SECTION 2108.2 AND ACI 530-08 SECTION 3.3.3.3.
2. TABULATED VALUES ARE BASED ON GRADE 60 UNCOATED REINFORCING BARS.
3. FOR GRADE 40 REINFORCING BARS MULTIPLY THE TABULATED VALUES BY 0.67 (12" MIN. LAP).
4. MECHANICAL SPLICE REQUIRED FOR BARS GREATER THAN #9.

1 LAP-SPLICE SCHEDULE FOR MASONRY REINF'G



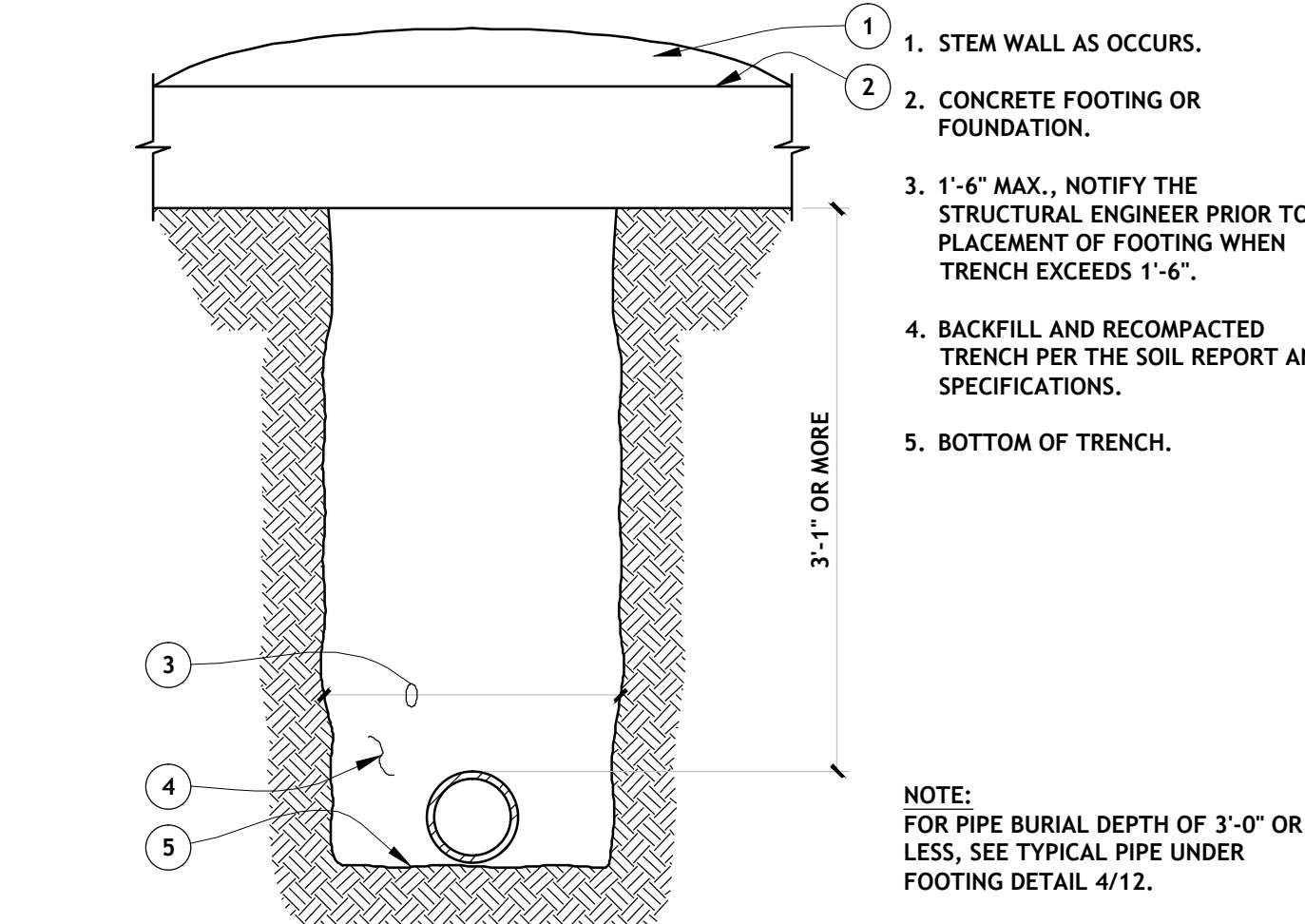
1. 8" CMU WALL, SEE PLAN.
2. HSS4x4x1/4 GATE POST, SEE PLANS.
3. HSS2x2x1/4 GATE FRAME, SEE 10/12.
4. HSS2x2x1/4 STUB WELDED TO GATE POST, SEE 10/12.
5. 3/4" x 6" LONG BOLT WELDED TO HSS STUB.
6. 1" EXTRA-STRONG PIPE SLEEVE, 4 1/2" LONG, PLACED OVER 3/4" BOLT WITH WASHER TOP AND BOTTOM.
7. NUT FOR 3/4" BOLT FINGER TIGHT.
8. WELD A 5/8" SQUARE SPACER BAR 4" LONG TO PIPE SLEEVE AND HSS2x2 GATE FRAME.

11 GATE HINGE DETAIL



1. 8" WIDE TURNED DOWN SLAB EDGE.
2. DOWELS TO MATCH VERTICAL WALL REINFORCING (LAP PER G.S.N.).
3. (1) #5 CONT. ALONG SLAB EDGE.
4. CONCRETE SLAB ON GRADE, SEE PLAN FOR SIZE AND REINFORCING.
5. SEE DETAIL 7/12 FOR FOOTING SIZE AND REINFORCING.
6. MASONRY WALL BEYOND.
7. CONCRETE SLAB OR FINISH GRADE AS OCCURS.

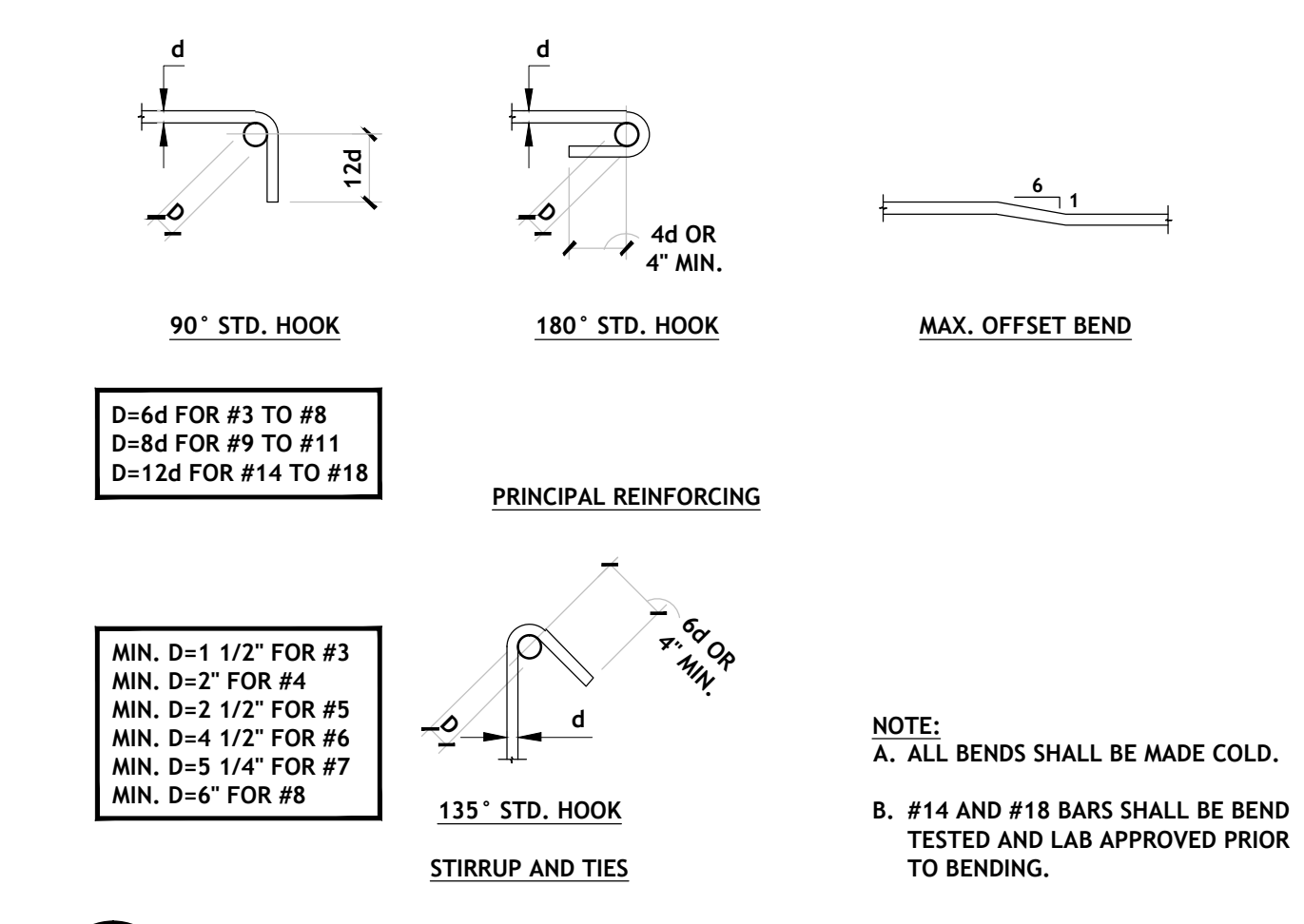
8 FOOTING AT MASONRY WALL OPENING



1. STEM WALL AS OCCURS.
2. CONCRETE FOOTING OR FOUNDATION.
3. 1'-6" MAX., NOTIFY THE STRUCTURAL ENGINEER PRIOR TO PLACEMENT OF FOOTING WHEN TRENCH EXCEEDS 1'-6".
4. BACKFILL AND RECOMPACTED TRENCH PER THE SOIL REPORT AND SPECIFICATIONS.
5. BOTTOM OF TRENCH.

NOTE: FOR PIPE BURIAL DEPTH OF 3'-0" OR LESS, SEE TYPICAL PIPE UNDER FOOTING DETAIL 4/12.

5 PIPE PASSING BELOW CONT. FOOTING

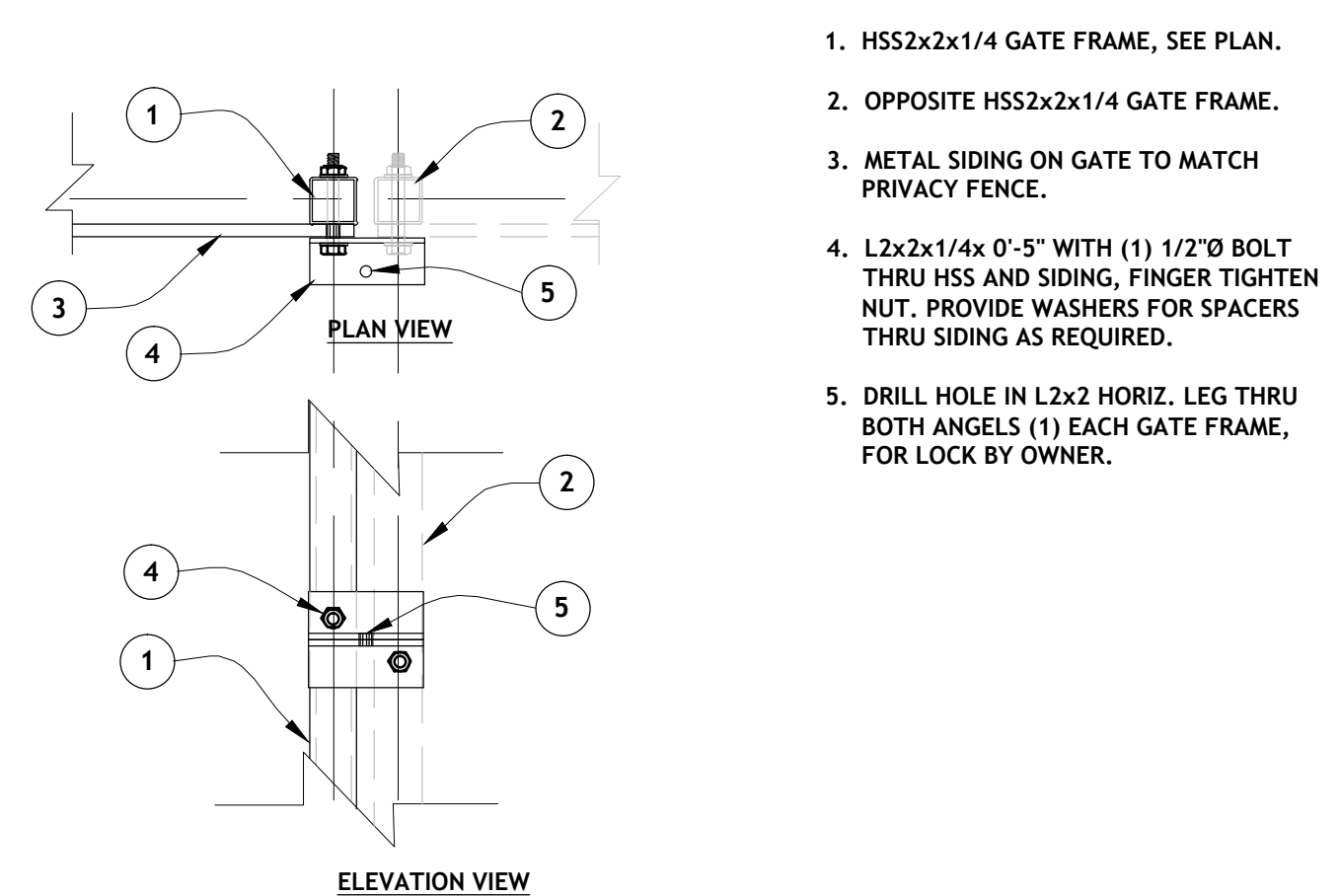


D=6d FOR #3 TO #8
D=8d FOR #9 TO #11
D=12d FOR #14 TO #18

MIN. D=1 1/2" FOR #3
MIN. D=2" FOR #4
MIN. D=2 1/2" FOR #5
MIN. D=4 1/2" FOR #6
MIN. D=5 1/4" FOR #7
MIN. D=6" FOR #8

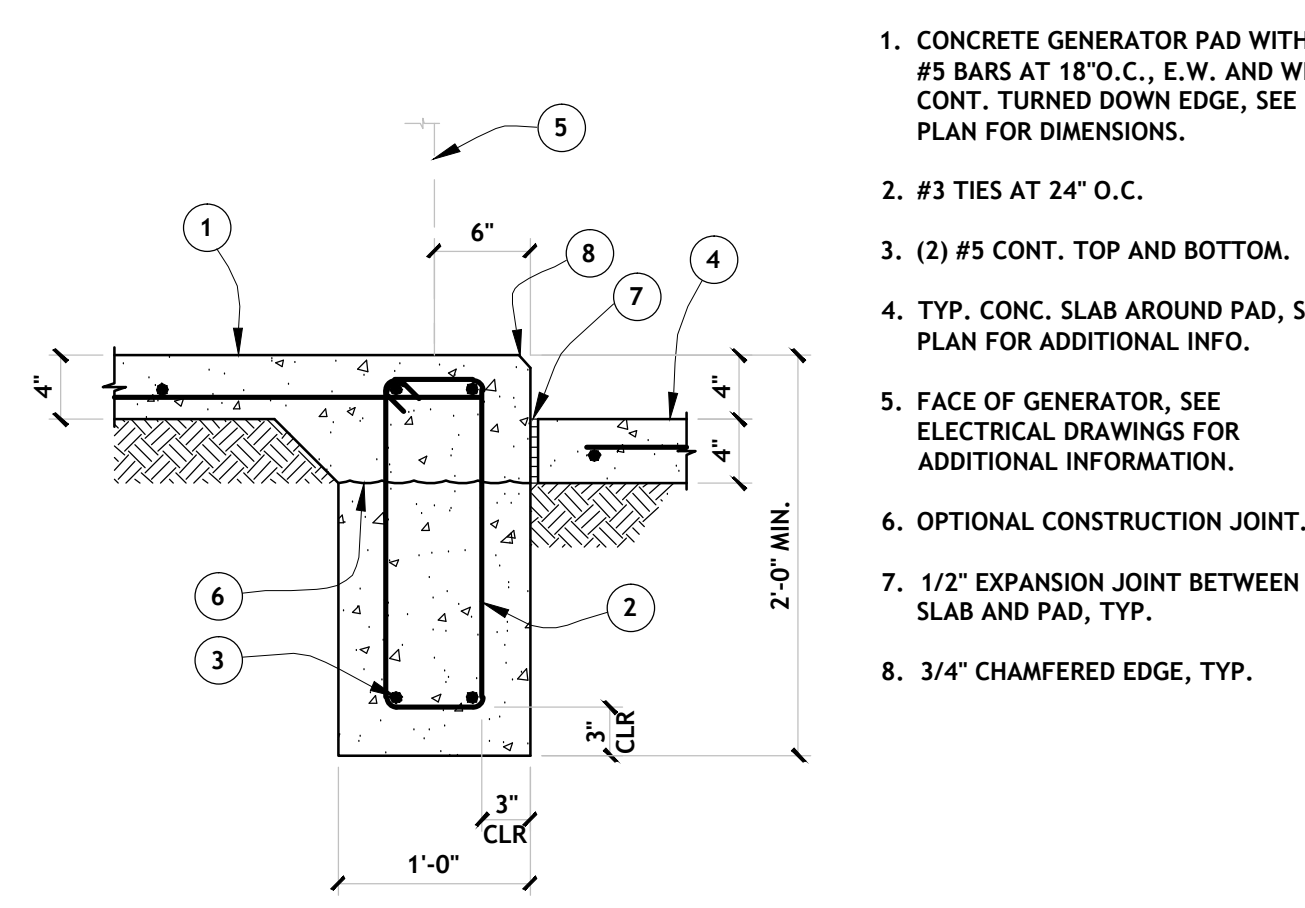
NOTE:
A. ALL BENDS SHALL BE MADE COLD.
B. #14 AND #18 BARS SHALL BE BEND TESTED AND LAB APPROVED PRIOR TO BENDING.

2 TYPICAL BAR BENDS



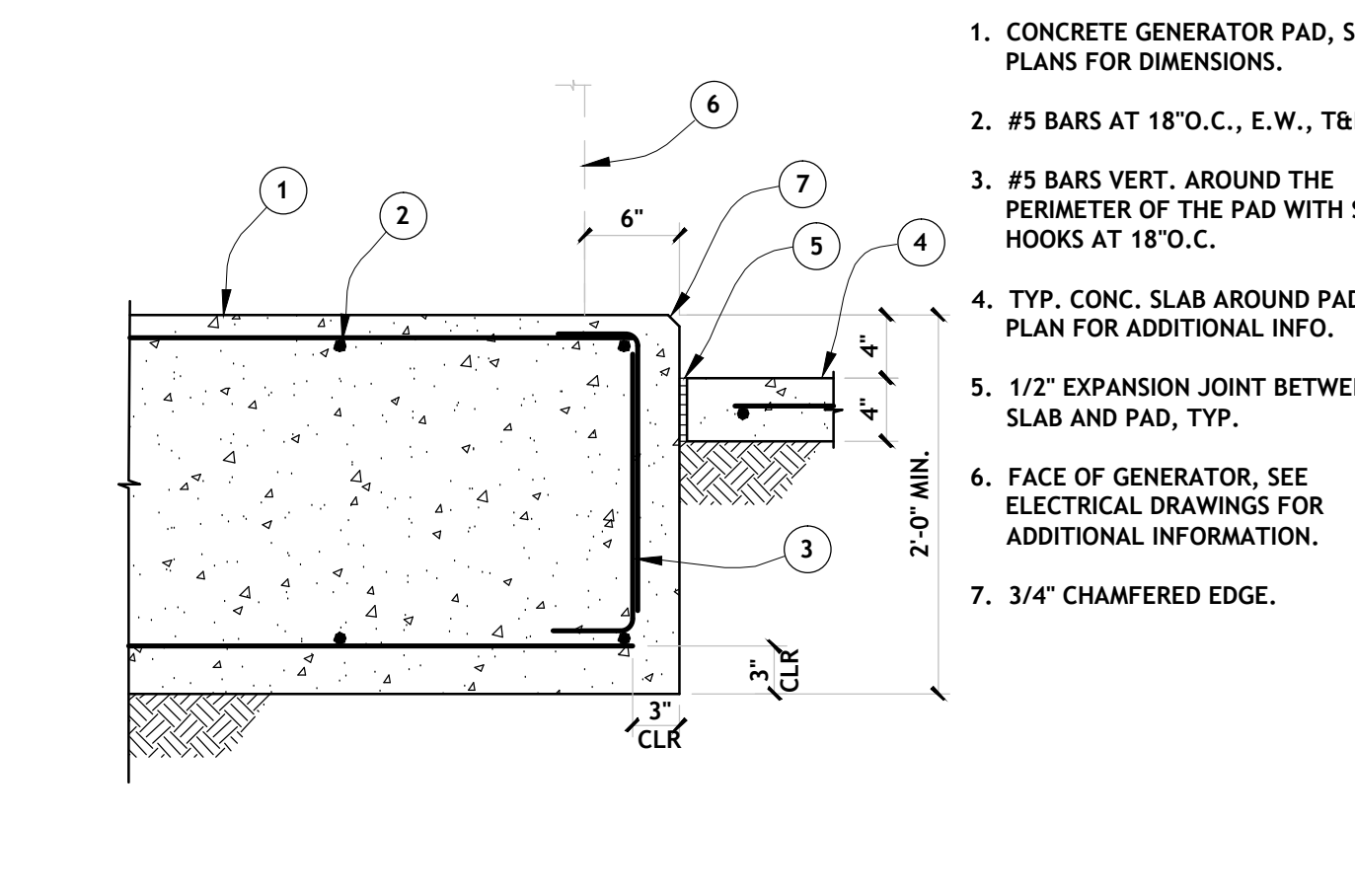
1. HSS2x2x1/4 GATE FRAME, SEE PLAN.
2. OPPOSITE HSS2x2x1/4 GATE FRAME.
3. METAL SIDING ON GATE TO MATCH PRIVACY FENCE.
4. L2x2x1/4x 0'-5" WITH (1) 1/2" BOLT THRU HSS AND SIDING, FINGER TIGHTEN NUT. PROVIDE WASHERS FOR SPACERS THRU SIDING AS REQUIRED.
5. DRILL HOLE IN L2x2 HORIZ. LEG THRU BOTH ANGLES (1) EACH GATE FRAME, FOR LOCK BY OWNER.

12 GATE LATCH DETAIL



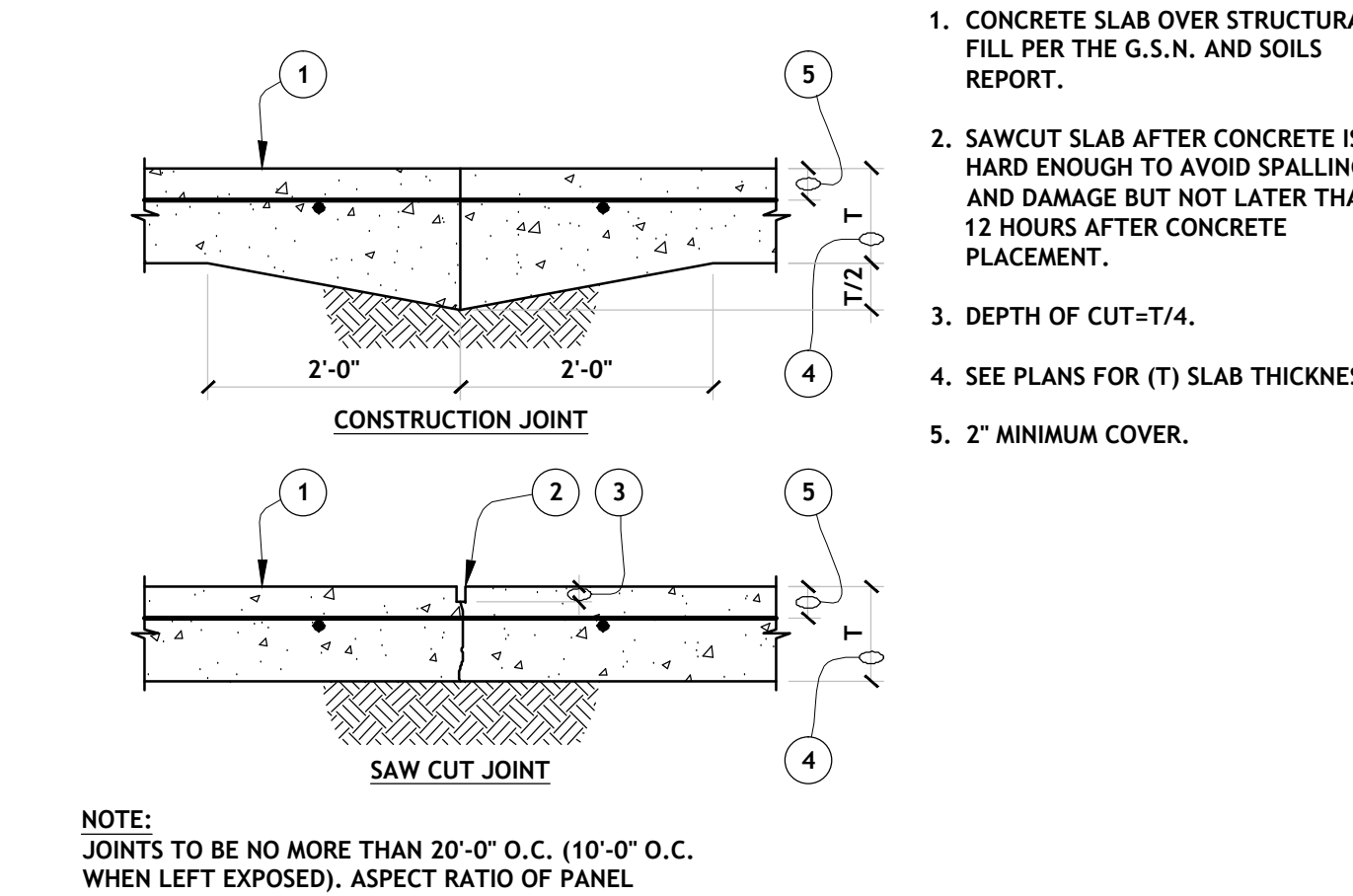
1. CONCRETE GENERATOR PAD WITH #5 BARS AT 18" O.C., E.W. AND WITH CONT. TURNED DOWN EDGE, SEE PLAN FOR DIMENSIONS.
2. #3 TIES AT 24" O.C.
3. (2) #5 CONT. TOP AND BOTTOM.
4. TYP. CONC. SLAB AROUND PAD, SEE PLAN FOR ADDITIONAL INFO.
5. FACE OF GENERATOR, SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
6. OPTIONAL CONSTRUCTION JOINT.
7. 1/2" EXPANSION JOINT BETWEEN SLAB AND PAD, TYP.
8. 3/4" CHAMFERED EDGE, TYP.

9 GENERATOR PAD DETAIL



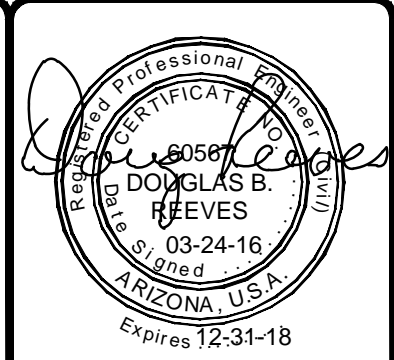
1. CONCRETE GENERATOR PAD, SEE PLANS FOR DIMENSIONS.
2. #5 BARS AT 18" O.C., E.W., T&B.
3. #5 BARS VERT. AROUND THE PERIMETER OF THE PAD WITH STD. HOOKS AT 18" O.C.
4. TYP. CONC. SLAB AROUND PAD, SEE PLAN FOR ADDITIONAL INFO.
5. 1/2" EXPANSION JOINT BETWEEN SLAB AND PAD, TYP.
6. FACE OF GENERATOR, SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
7. 3/4" CHAMFERED EDGE.

6 GENERATOR PAD DETAIL



NOTE:
JOINTS TO BE NO MORE THAN 20'-0" O.C. (10'-0" O.C. WHEN LEFT EXPOSED). ASPECT RATIO OF PANEL LENGTH TO PANEL WIDTH NOT TO EXCEED 1.5.

3 TYPICAL CONTRACTION JOINT IN SLAB



NO.	REVISION DESCRIPTION	DATE	BY
5			
4			
3			
2			
1			

NAVAJO TRIBAL UTILITY AUTHORITY
KAYENTA, ARIZONA

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE

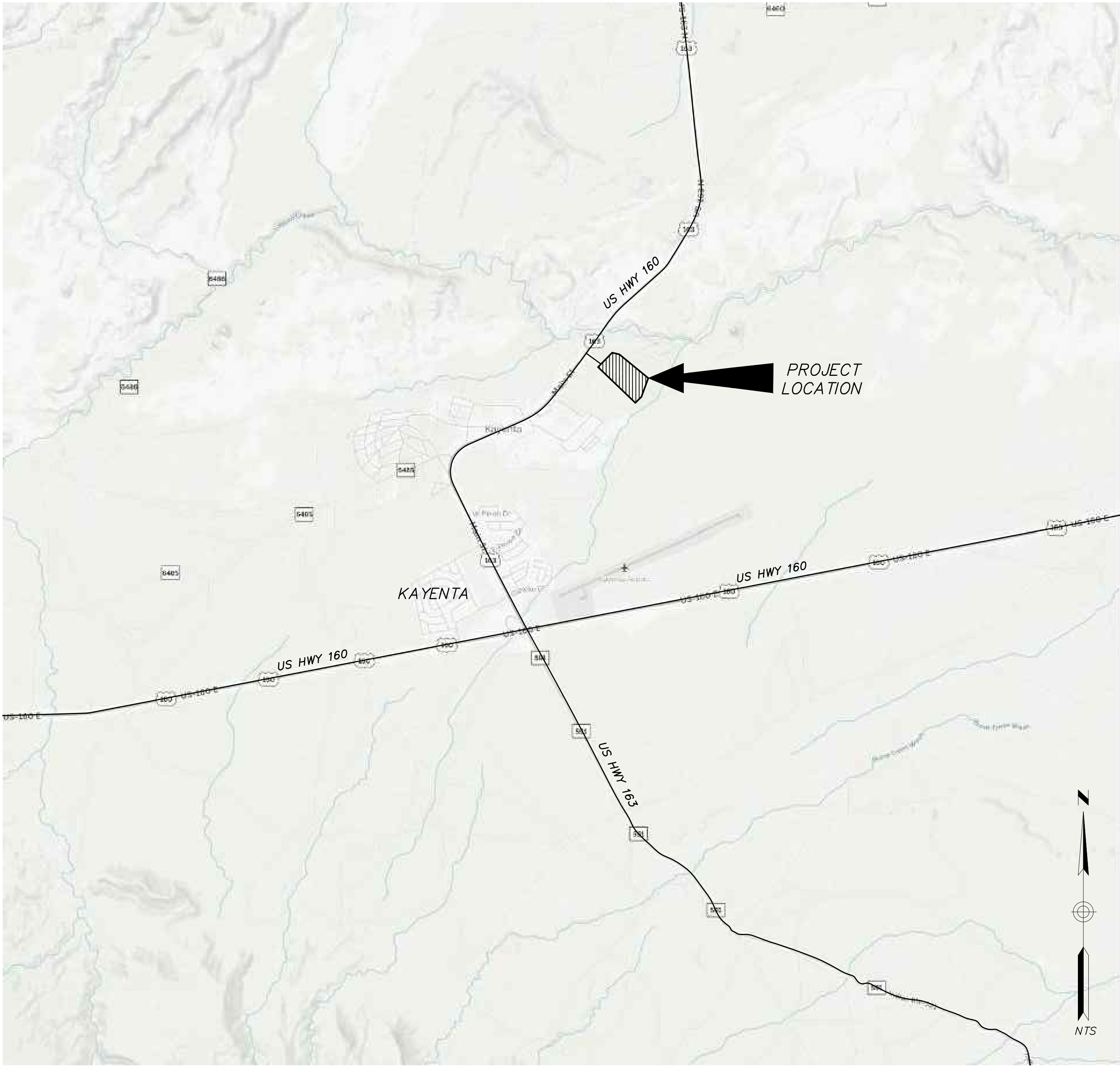
STRUCTURAL DETAILS

SOLUTIONS FOR TOMORROW...
VISION FOR TOMORROW
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-9700
Fax: (505) 884-2376
TEXAS



JOB NO.: 115111
DATE: MARCH 2016
SHEET NO.: 12

VICINITY MAP



PLAN LEGEND

- EXPOSED CONDUIT
- — UNDERGROUND CONDUIT DUCTBANK
- - - - UNDERGROUND UTILITY CONDUIT
- · - · - · GROUNDING ELECTRODE CONDUCTOR
- □HE — EXISTING OVERHEAD ELECTRIC
- E — EXISTING UNDERGROUND ELECTRIC
- W — EXISTING WATER
- X — CHAIN-LINK FENCE
- S — EXISTING SEWER
- G — EXISTING GAS LINE
- ⊕ GROUND ROD AND WELL
- UNDERGROUND JUNCTION BOX
- ⊕ 120V, 20A DUPLEX RECEPTACLE
- ⊕ 120V, 20A SPST SWITCH
- ▭ PANELBOARD
- WALL MOUNTED LUMINAIRE
- ⊘ POWER POLE

SINGLE LINE DIAGRAM LEGEND

- FUSE
- ⊂ CURRENT TRANSFORMER
- ⊂ TRANSFORMER
- ⊂ MOTOR STARTER
- 20 MOTOR (20 DENOTES MOTOR HORSEPOWER)
- OR ⊕ JUNCTION BOX
- ⊕ 120V, 20A DUPLEX RECEPTACLE
- LIGHT
- M METER
- ⊂ LIGHT SWITCH
- ⊂ DISCONNECT SWITCH
- ⊕ MLO MAIN LUG ONLY
- ○ CIRCUIT BREAKER
- ⊕ EARTH GROUND CONNECTION
- ◇ OVERLOAD (ELECTRONIC TYPE)
- NEUTRAL BUS
- GROUND BUS
- ⊕ GROUND ROD AND WELL
- ⊕ AUTOMATIC TRANSFER SWITCH

GENERAL ELECTRICAL REQUIREMENTS

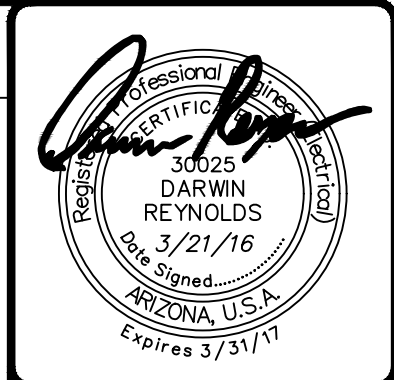
- A. THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODE ORDINANCES AND REGULATIONS. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES. ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE, FINISHED AND SAFE MANNER, ACCORDING TO THE LATEST PUBLISHED N.E.C.A. STANDARDS OF INSTALLATION, UNDER COMPETENT SUPERVISION. INSTALL GROUNDING AS REQUIRED BY THE NATIONAL ELECTRIC CODE (2011).
- B. VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND ALL OTHER FACTORS WHICH MAY AFFECT THE EXECUTION OF THIS WORK. INCLUDE ALL RELATED COSTS IN THE INITIAL BID PROPOSAL.
- C. ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, U.L. OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURER'S NAMES, MODELS AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS AND BID PRICE. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED IN WRITING AND REVIEWED BY THE ENGINEER BEFORE ORDERING.
- D. PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED UNDER THIS CONTRACT AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS OR ANY OTHER CAUSES. EQUIPMENT FOUND DAMAGED OR IN OTHER THAN NEW CONDITION WILL BE REJECTED AS DEFECTIVE.
- E. LEAVE THE SITE CLEAN, REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK.
- F. REFER TO OTHER PLANS FOR EXACT LOCATION OF EQUIPMENT AND ARCHITECTURAL FEATURES.
- G. REFER TO SPECIFICATIONS FOR ADDITIONAL PROJECT REQUIREMENTS.
- H. TYPICAL DETAILS APPLY IN ALL CASES WHETHER SPECIFICALLY REFERRED TO OR NOT.
- I. THESE CONTRACT DOCUMENTS ARE SUBJECT TO THE INTERPRETATION BY THE ENGINEER. ALL QUESTIONS REGARDING THESE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ENGINEER. ANYONE WHO TAKES UPON THEMSELVES THE INTERPRETATION OF THESE CONTRACT DOCUMENTS OR MAKES REVISIONS TO THE SAME WITHOUT CONFERRING WITH THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR THE CONSEQUENCES THEREOF.
- J. ALL UNDERGROUND CONDUIT TO BE SCHEDULE 40 PVC, MINIMUM DEPTH 24", MINIMUM SIZE 3/4". ALL CONDUIT EXPOSED AND/OR LOCATED WITHIN THE VAULT TO BE TYPE GRS, MINIMUM SIZE 3/4". PROVIDE EACH PVC CONDUIT WITH A BELL END WHERE ENTERING FREE STANDING EQUIPMENT. INSTALL LFMC AT EQUIPMENT WHICH IS SUBJECT TO VIBRATION OR REQUIRE MOVEMENT FOR MAINTENANCE PURPOSES. PROVIDE NECESSARY REDUCER WHERE EQUIPMENT FURNISHED CANNOT ACCEPT 3/4" SIZE FLEXIBLE CONDUIT. LIMIT FLEXIBLE CONDUIT LENGTH TO 3' MAXIMUM.
- K. ALL CIRCUIT CONDUCTORS TO BE "XHHW-2" STRANDED COPPER. MINIMUM CONDUCTOR SIZE FOR POWER TO BE #12 AWG WITH #12 GND. MINIMUM CONDUCTOR SIZE FOR CONTROL TO BE #14 AWG WITH #14 GND. SERVICE ENTRANCE CONDUCTORS SHALL BE MARKED "SUNLIGHT RESISTANT" AS REQUIRED BY UTILITY COMPANY.
- L. LOCATION OF ELECTRICAL EQUIPMENT SHALL BE SCALED FROM THE SITE PLAN. UPON COMPLETION OF WORK, FURNISH A SET OF RED-LINED "AS-BUILT" DRAWINGS, THAT ACCURATELY REFLECTS FINAL LOCATION OF UNDERGROUND CONDUIT AND OTHER ELECTRICAL EQUIPMENT.
- M. THIS WASTEWATER TREATMENT FACILITY IS OPERATING AND MUST REMAIN IN OPERATION AT ALL TIMES WITH MINIMAL DOWNTIME. THE CONTRACTOR IS REQUIRED TO WORK CLOSELY WITH NTUA FOR SCHEDULING ANY POWER OUTAGES TO MINIMIZE DOWNTIME AND DISRUPTION TO FACILITY OPERATION.

GENERAL DEMOLITION NOTES

- A. DEMOLITION OF CONDUITS INCLUDES REMOVAL AND DISPOSAL OF EXISTING EXPOSED CONDUITS TO A MINIMUM OF 6-INCHES BELOW GRADE.
- B. ALL REMOVED MATERIAL NOT BEING SALVAGED BY OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR TO BE HAULED OFF SITE AND DISPOSED OF AT AN APPROVED LANDFILL, OR OTHER APPROVED LOCATION.
- C. THE CONTRACTOR SHALL PERFORM DEMOLITION WORK WHILE THE FACILITY IS IN OPERATION AS MUCH AS POSSIBLE. ALL WORK SHALL BE PERFORMED IN A MANNER TO MINIMIZE DOWNTIMES AND OPERATIONAL UPSETS.
- D. COORDINATE ALL DEMOLITION WORK AND SHUTDOWN REQUIREMENTS WITH THE OWNER PRIOR TO PERFORMING THE WORK.

ABBREVIATIONS

AFB ABOVE FINISHED FLOOR	MCC MOTOR CONTROL CENTER
AFG ABOVE FINISHED GRADE	MFR MANUFACTURER
C CONDUIT	MH MANHOLE
CKT CIRCUIT	MBJ MAIN BOUND JUMPER
CMU CONCRETE MASONRY UNIT	MLO MAIN LUG ONLY
Cu COPPER	NEC NATIONAL ELECTRIC CODE
DWG DRAWING	NOTC NORMALLY OPEN TIMED TO CLOSE
(E) EXISTING	NTS NOT TO SCALE
E.C. EMPTY CONDUIT	NTUA NAVAJO TRIBAL UTILITY AUTHORITY
ENCL ENCLOSURE	PACP PKG'D AERATION CONTROL PANEL
FM FLOWMETER	PKG'D PACKAGED
GEC GROUNDING ELECTRODE CONDUCTOR	REQ'TS REQUIREMENTS
GND GROUND	RMC RIGID METAL CONDUIT
HP HORSEPOWER	SCA SHORT CIRCUIT AMPS AVAILABLE
LF LINEAR FEET	SES SERVICE ENTRANCE SECTION
KVA THOUSAND VOLT AMPS	SPD SURGE PROTECTIVE DEVICE
KW KILO-WATT	TYP TYPICAL
MCB MAIN CIRCUIT BREAKER	WP WEATHERPROOF
	XFMR TRANSFORMER



NAVAJO TRIBAL UTILITY AUTHORITY KAYENTA, ARIZONA			
NO.	REVISION	DESCRIPTION	BY
4			BY: DRG
3			DATE
2			NO.
1			CHKD BY: DAR
			DESIGN BY: JLG

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE
ELECTRICAL
LEGEND, NOTES & ABBREVIATIONS

SOLUTIONS FOR TODAY...
VISION FOR TOMORROW
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS



LUMINAIRE SCHEDULE

SYMBOL	VOLTS	LAMP(S)	FIXTURE	DESCRIPTION	MANUFACTURER
⊕	120V	29W LED 3000K		FULL CUTOFF WALL MOUNTED LUMINAIRE WITH A FULLY GASKETED TWO-PIECE DIE-CAST ALUMINUM HOUSING FINISHED WITH A BRONZE POLYESTER POWDER COAT. EPDM GASKETED SEALED IMPACT-RESISTANT GLASS LENS UL APPROVED FOR WET LOCATIONS.	HUBBELL (LNC2-12LU-3K-3-1) OR APPROVED EQUAL

DARCOR
ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST.
SUITE 212
PHOENIX, AZ 85020
Ph: (602) 795-2899
WWW.DARCORINC.COM

JOB NO: 115111
DATE: MAR 2016
SHEET NO: E300

Saved: March 11, 2016 File: 15053-KAYENTA-E300.dwg Drafter: Drafter

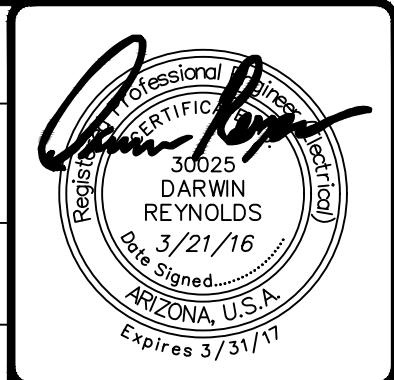
Saved: March 14, 2016 File: 15053-KAYENTA-E301.dwg Drafter: Drafter

GENERAL NOTE

A. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND CONDUCTOR REQUIREMENTS.

CONSTRUCTION KEY NOTES

- 1 EXISTING POWER POLE. COORDINATE WITH NTUA FOR CONSTRUCTION REQUIREMENTS TO INSTALL 6" RMC RISER, STAND-OFF BRACKETS AND WEATHERHEAD ON POLE.
- 2 INSTALL 6" CONDUIT WITH PULL ROPE, TRENCH AND BACKFILL PER NTUA REQUIREMENTS.
- 3 CUT AND TERMINATE CABLE FURNISHED WITH AERATORS IN EACH AERATOR MOTOR AND BOND PER MFR REQUIREMENTS.
- 4 PACKAGED CELL 1B AERATION CONTROL PANEL FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
- 5 INSTALL JUNCTION BOX PER TYPICAL DETAIL "JB1" ADJACENT TO AERATOR ANCHOR MOORING POST.
- 6 STUB OUT AND CAP EMPTY CONDUITS X304 AND X305 NEAR AERATOR No.8 JUNCTION BOX FOR FUTURE EXTENSION TO CELL 2/3 AERATION CONTROL PANEL.



NAVAJO TRIBAL UTILITY AUTHORITY KAYENTA, ARIZONA			
NO.	REVISION DESCRIPTION	CHKD BY:	DATE
4		JLG	
3			
2			
1			
DESIGNED BY: JLG		CHKD BY: DAR	DRAWN BY: DRG

**KAYENTA WASTEWATER TREATMENT
PLANT UPGRADE**

**ELECTRICAL
OVERALL SITE PLAN**

**SOLUTIONS FOR TODAY...
VISION FOR TOMORROW**

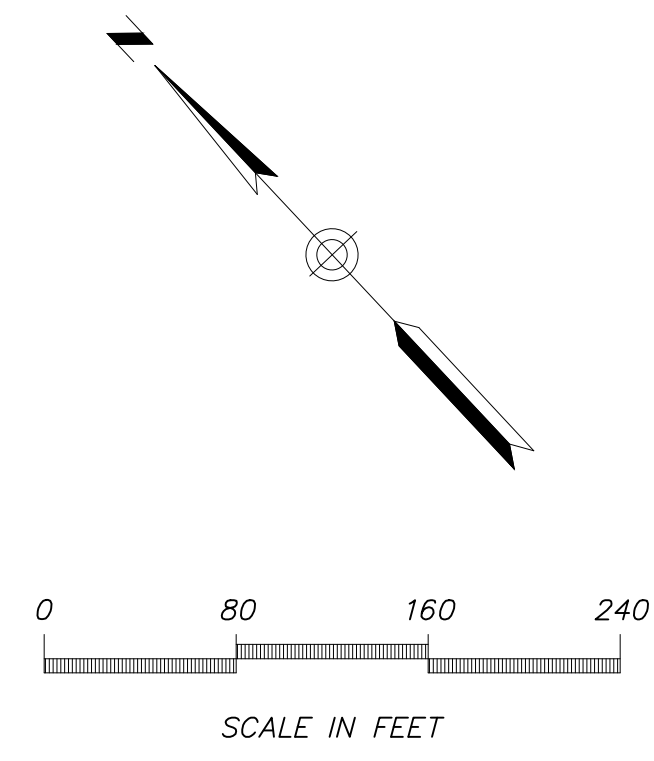
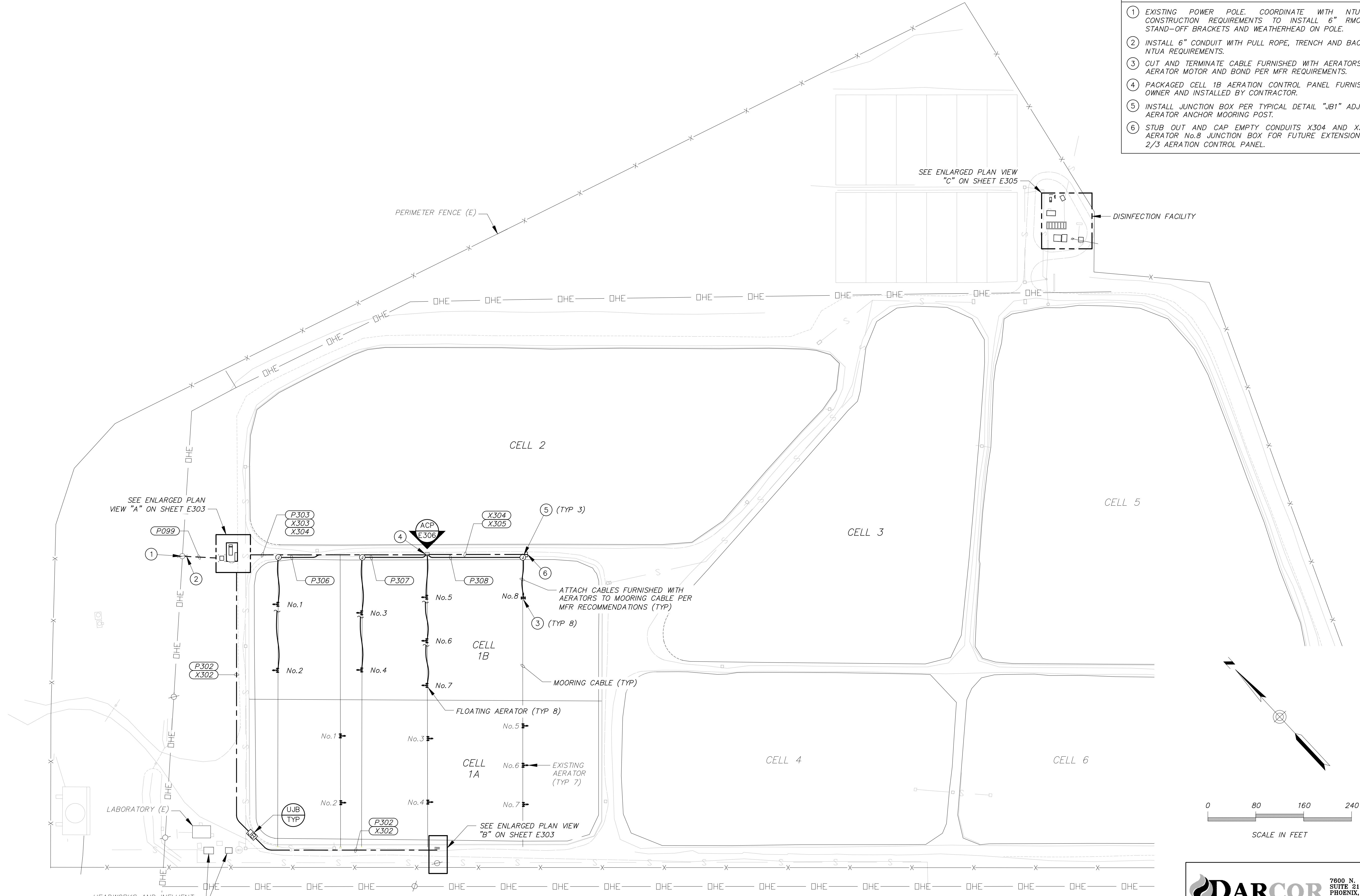
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS



DARCOR
ELECTRICAL CONSULTING ENGINEERS

7600 N. 16TH ST.
SUITE 212
PHOENIX, AZ 85020
Ph: (602) 795-2899
WWW.DARCORINC.COM

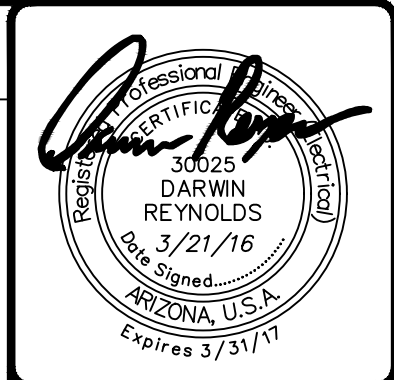
JOB NO: **115111**
DATE: **MAR 2016**
SHEET NO: **E301**



Saved: March 14, 2016 File: 15053-KAYENTA-E302.dwg Drafter: Drafter

DEMOLITION KEY NOTES

- ① UTILITY POLE MOUNTED TRANSFORMERS TO BE DISCONNECTED AND REMOVED BY NTUA.
- ② DISCONNECT AND REMOVE UTILITY METER, SERVICE DISCONNECT, RISER AND WOOD POLE.
- ③ DISCONNECT AND REMOVE EXISTING FEEDER CONDUCTORS AND ANY EXPOSED CONDUIT. ABANDON UNDERGROUND CONDUIT IN PLACE.



CONSTRUCTION KEY NOTE

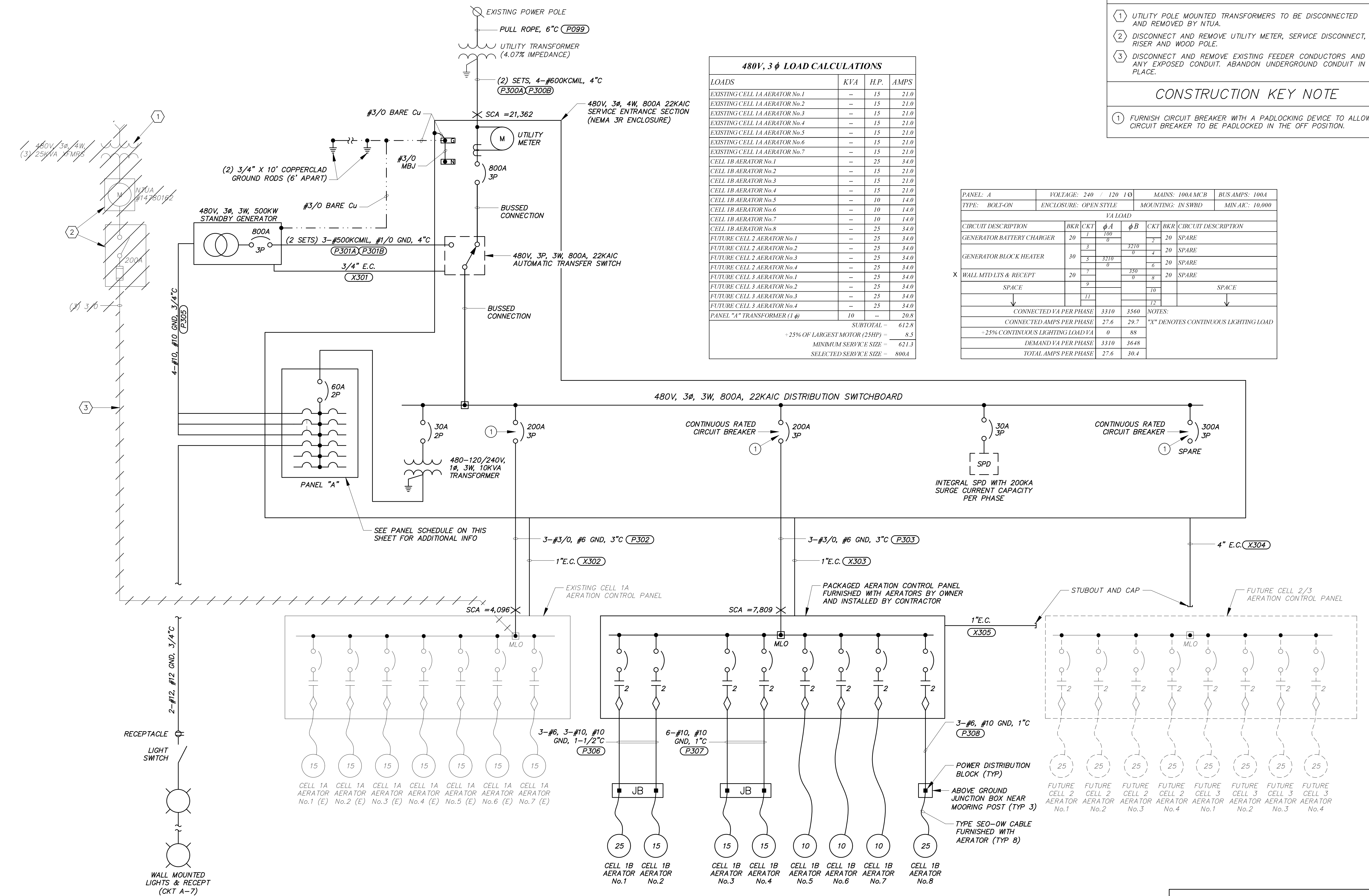
- ① FURNISH CIRCUIT BREAKER WITH A PADLOCKING DEVICE TO ALLOW CIRCUIT BREAKER TO BE PADLOCKED IN THE OFF POSITION.

480V, 3 φ LOAD CALCULATIONS

LOADS	KVA	H.P.	AMPS
EXISTING CELL 1A AERATOR No.1	--	15	21.0
EXISTING CELL 1A AERATOR No.2	--	15	21.0
EXISTING CELL 1A AERATOR No.3	--	15	21.0
EXISTING CELL 1A AERATOR No.4	--	15	21.0
EXISTING CELL 1A AERATOR No.5	--	15	21.0
EXISTING CELL 1A AERATOR No.6	--	15	21.0
EXISTING CELL 1A AERATOR No.7	--	15	21.0
CELL 1B AERATOR No.1	--	25	34.0
CELL 1B AERATOR No.2	--	15	21.0
CELL 1B AERATOR No.3	--	15	21.0
CELL 1B AERATOR No.4	--	15	21.0
CELL 1B AERATOR No.5	--	10	14.0
CELL 1B AERATOR No.6	--	10	14.0
CELL 1B AERATOR No.7	--	10	14.0
CELL 1B AERATOR No.8	--	25	34.0
FUTURE CELL 2 AERATOR No.1	--	25	34.0
FUTURE CELL 2 AERATOR No.2	--	25	34.0
FUTURE CELL 2 AERATOR No.3	--	25	34.0
FUTURE CELL 2 AERATOR No.4	--	25	34.0
FUTURE CELL 3 AERATOR No.1	--	25	34.0
FUTURE CELL 3 AERATOR No.2	--	25	34.0
FUTURE CELL 3 AERATOR No.3	--	25	34.0
FUTURE CELL 3 AERATOR No.4	--	25	34.0
PANEL "A" TRANSFORMER (1 φ)	--	--	20.8
SUBTOTAL	612.8		
+25% OF LARGEST MOTOR (25HP)	8.5		
MINIMUM SERVICE SIZE	621.3		
SELECTED SERVICE SIZE	800A		

PANEL: A	VOLTAGE: 240 / 120 1Ø	MAINS: 100A MCB	BUS AMPS: 100A
TYPE: BOLT-ON	ENCLOSURE: OPEN STYLE	MOUNTING: IN SWBD	MIN ARC: 10,000
VA LOAD			
CIRCUIT DESCRIPTION	BKR	CKT	φ A
GENERATOR BATTERY CHARGER	20	1	100
		3	0
		3	3270
GENERATOR BLOCK HEATER	30	5	3270
		0	0
		6	20
X WALL MTD LIS & RECEPT	20	7	350
		0	8
		9	
		10	
		11	
		12	
CONNECTED VA PER PHASE		3310	3560
CONNECTED AMPS PER PHASE		27.6	29.7
+25% CONTINUOUS LIGHTING LOAD VA		0	88
DEMAND VA PER PHASE		3310	3648
TOTAL AMPS PER PHASE		27.6	30.4

NOTES:
"X" DENOTES CONTINUOUS LIGHTING LOAD



NAVAJO TRIBAL UTILITY AUTHORITY
KAYENTA, ARIZONA

NO.	REVISION	DESCRIPTION	CHKD	BY	DATE	BY
4						
3						
2						
1						

DESIGN BY: JLG DRAWN BY: DRG

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE
ELECTRICAL
AERATION SYSTEM SINGLE LINE DIAGRAM

SOLUTIONS FOR TODAY...
VISION FOR TOMORROW

2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS

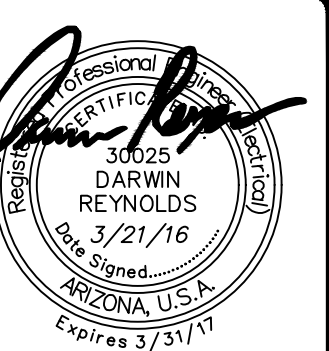


AERATION SYSTEM SINGLE LINE DIAGRAM

Saved: March 14, 2016 File: 15053-KAYENTA-E303.dwg Drafter: Drafter

GENERAL NOTE

- A. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND CONDUCTOR REQUIREMENTS.
- B. ALL GENERATOR ENCLOSURE DIMENSIONS SHOWN ARE THE MINIMUM SPACE REQUIREMENTS.



DEMOLITION KEY NOTES

- 1. COORDINATE WITH NTUA TO DISCONTINUE POWER. THEN, DISCONNECT AND REMOVE EXISTING SERVICE ENTRANCE SECTION, SERVICE DISCONNECT AND OVERHEAD SERVICE DROP.
- 2. REMOVE AND DISPOSE OF EXISTING WOOD POLE.
- 3. DISCONNECT AND REMOVE EXISTING CONTROL BUILDING FEEDER. REMOVE EXPOSED CONDUIT ON POLE. CONDUIT SWEEP OUT OF CONTROL PANEL SHALL BE USED FOR NEW FEEDER CONDUCTORS.

CONSTRUCTION KEY NOTES

- 1. INSTALL 4" X 6" CONCRETE FILLED BOLLARD PER NTUA REQUIREMENTS.
- 2. INSTALL CONDUIT, TRENCH AND BACKFILL PER NTUA REQUIREMENTS. REFER TO THE SINGLE LINE DIAGRAM FOR CONDUCTOR REQUIREMENTS.
- 3. INSTALL TRANSFORMER PAD AND GROUND RODS PER NTUA REQUIREMENTS.
- 4. INSTALL WALL MOUNTED LUMINAIRE ON FLUSH MOUNTED BOX IN TOP ROW OF CMU BLOCK WALL. CONDUIT SHALL BE CONCEALED IN CMU BLOCK WALL. REFER TO SHEET E300 FOR LUMINAIRE SCHEDULE.
- 5. INSTALL 120V, 20A GFCI RECEPTACLE WITH WP WHILE-IN-USE COVER IN FLUSH MOUNTED BOX IN CMU BLOCK WALL AT +24" AFF (CKT A-7). INSTALL 120V, 20A LIGHT SWITCH WITH WP COVER IN FLUSH MOUNTED BOX IN CMU WALL ABOVE RECEPTACLE AT +42" AFF (CKT A-7) TO CONTROL WALL MOUNTED LUMINAIRES. CONDUIT SHALL BE CONCEALED IN CMU BLOCK WALL.
- 6. DISCONNECT AND REMOVE EXISTING CELL 1A AERATION CONTROL PANEL FEEDER. DIG DOWN AND LOCATE EXISTING 2" CONDUIT. CUT AND INSTALL SWEEP INTO AN UNDERGROUND JUNCTION BOX. INSTALL CONDUCTORS FROM CONDUIT P302 IN EXISTING CONDUIT (WITHOUT SPLICING) AND TERMINATE TO EXISTING POWER DISTRIBUTION LUGS IN CONTROL PANEL.
- 7. STUB UP EMPTY CONDUIT X302 AT EDGE OF CONCRETE PAD AND STUB CONDUIT INTO SIDE OF EXISTING AERATION CONTROL PANEL USING AN "LB" CONDULET.
- 8. INSTALL (7) 0-10 MINUTE ADJUSTABLE PLUG-IN STYLE NOTCH TIMING RELAYS TO STAGGER BLOWER STARTS AFTER A POWER FAILURE WHETHER IN HAND OR AUTOMATIC MODE. LABEL TIME DELAY RELAYS "TR1" THRU "TR7".

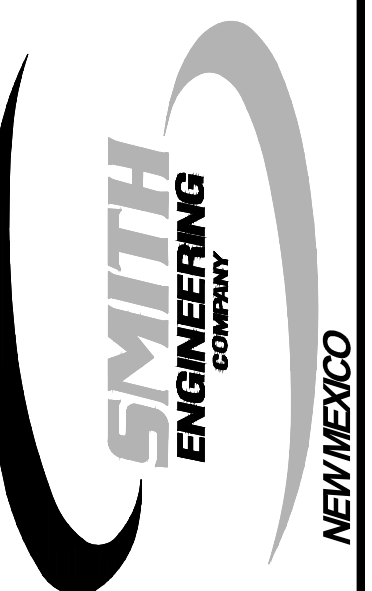
NAVAJO TRIBAL UTILITY AUTHORITY KAYENTA, ARIZONA	NO.	DATE	BY
	1		
	2		
	3		
DESIGN BY: JLG CHECK BY: DAR	NO.	DESCRIPTION	BY
	1		
	2		
	3		

KAYENTA WASTEWATER TREATMENT
PLANT UPGRADE

ELECTRICAL
ENLARGED PLAN VIEWS "A" & "B"

SOLUTIONS FOR TODAY...
VISION FOR TOMORROW

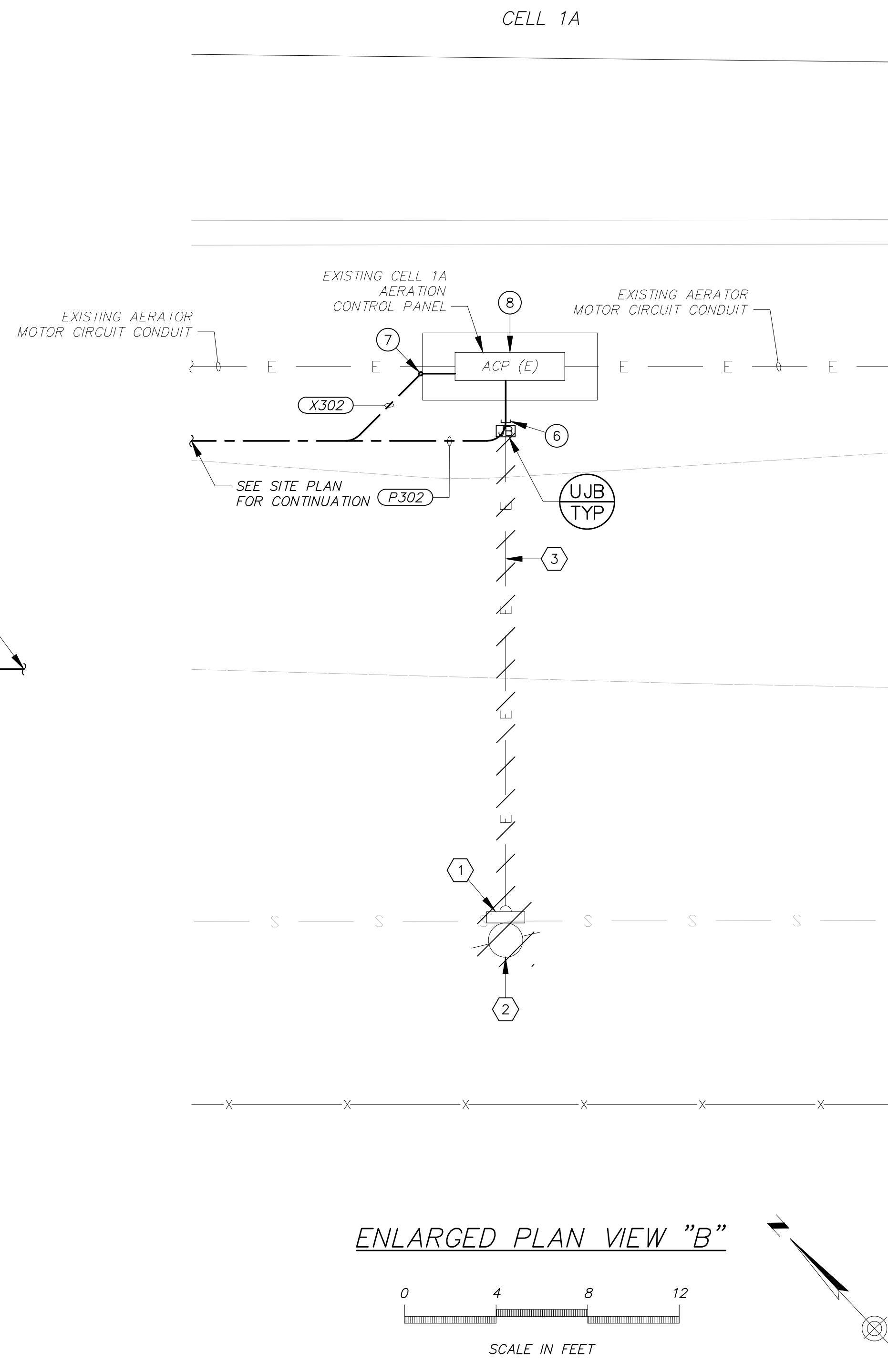
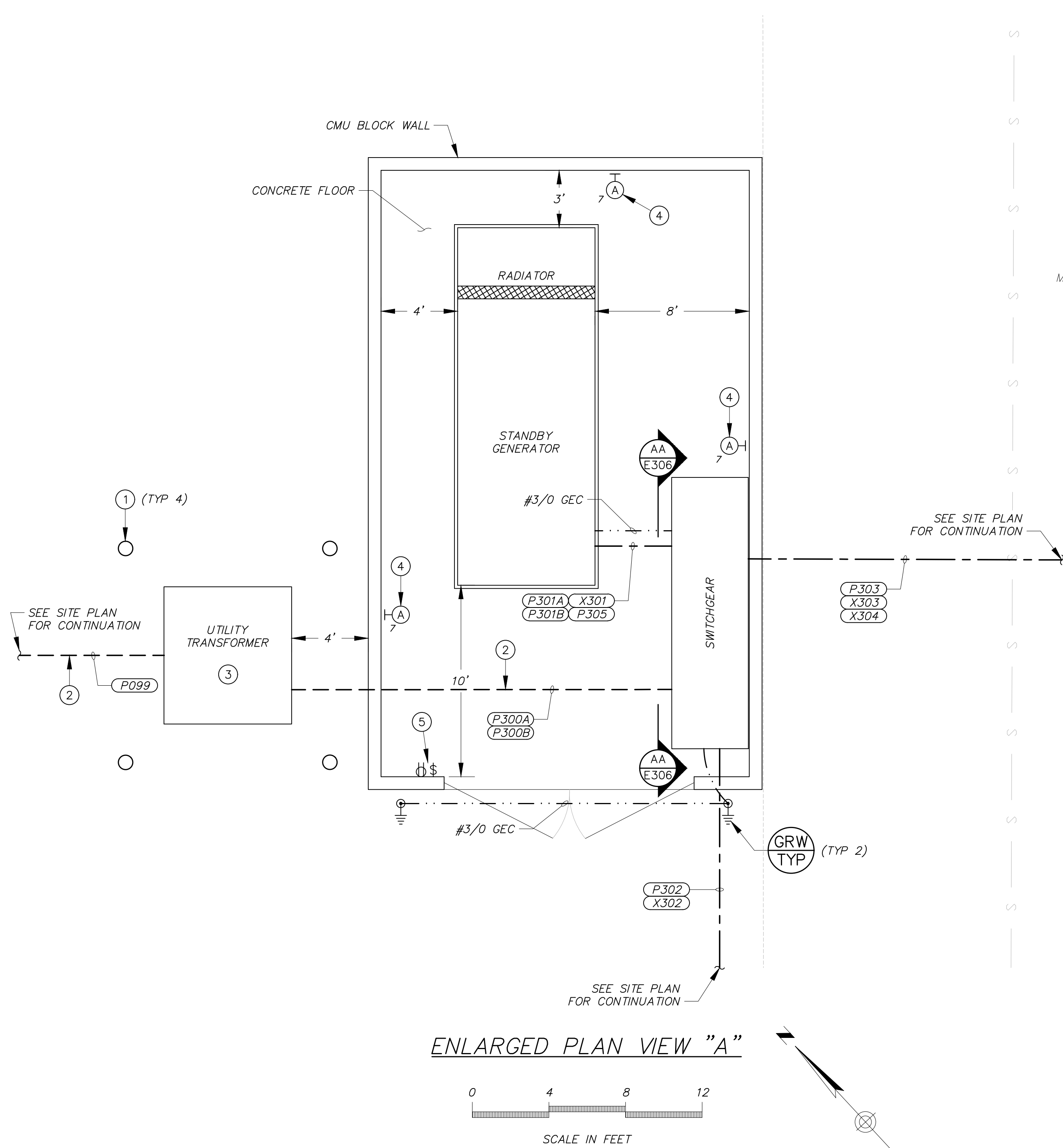
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS



DARCOR
ELECTRICAL CONSULTING ENGINEERS

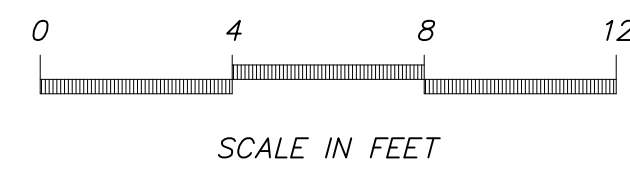
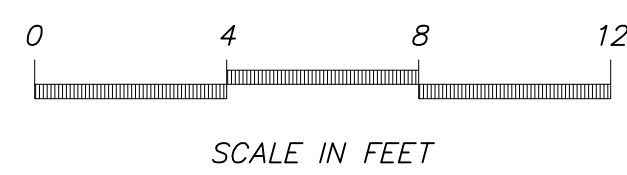
7600 N. 16TH ST.
SUITE 212
PHOENIX, AZ 85020
Ph: (602) 795-2899
WWW.DARCORINC.COM

JOB NO.: 115111
DATE: MAR 2016
SHEET NO.: E303



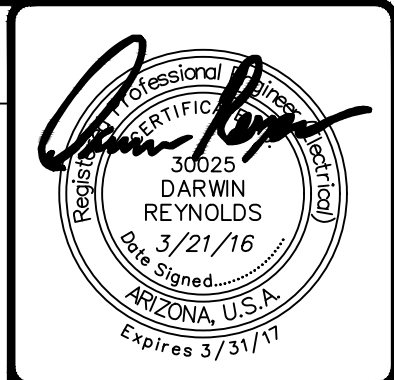
ENLARGED PLAN VIEW "A"

ENLARGED PLAN VIEW "B"



DEMOLITION KEY NOTES

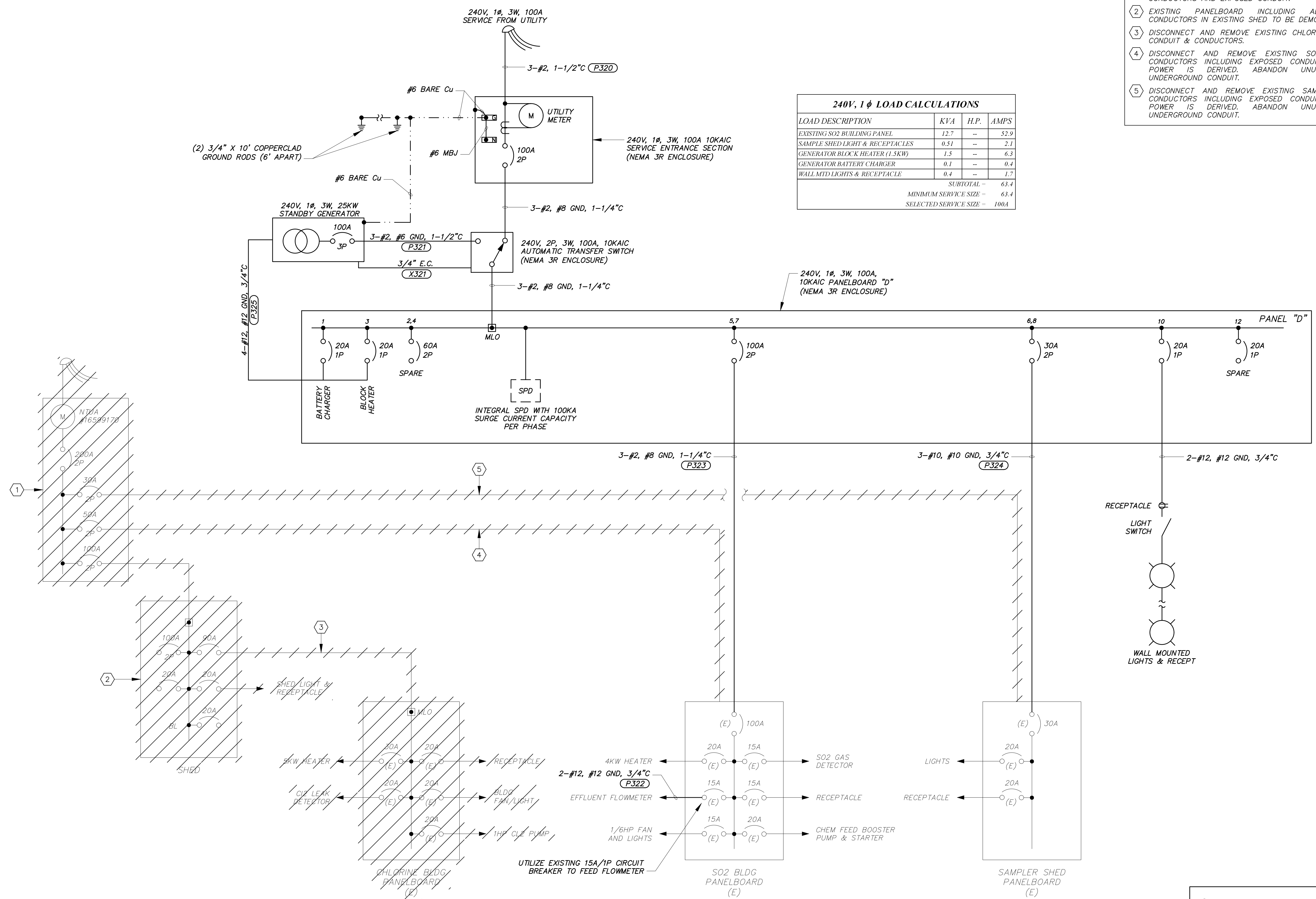
- COORDINATE WITH NTUA TO DISCONTINUE POWER, THEN DISCONNECT AND REMOVE EXISTING ELECTRICAL SERVICE EQUIPMENT INCLUDING SERVICE RISER, BRANCH CIRCUIT CONDUCTORS AND EXPOSED CONDUIT.
- EXISTING PANELBOARD INCLUDING ALL CONDUIT AND CONDUCTORS IN EXISTING SHED TO BE DEMOLISHED BY OWNER.
- DISCONNECT AND REMOVE EXISTING CHLORINE BUILDING FEEDER CONDUIT & CONDUCTORS.
- DISCONNECT AND REMOVE EXISTING SO2 BUILDING FEEDER CONDUCTORS INCLUDING EXPOSED CONDUIT ON SHED WHERE POWER IS DERIVED. ABANDON UNUSED PORTION OF UNDERGROUND CONDUIT.
- DISCONNECT AND REMOVE EXISTING SAMPLER SHED FEEDER CONDUCTORS INCLUDING EXPOSED CONDUIT ON SHED WHERE POWER IS DERIVED. ABANDON UNUSED PORTION OF UNDERGROUND CONDUIT.



NAVAJO TRIBAL UTILITY AUTHORITY		DATE	BY
KAYENTA, ARIZONA		NO.	CHKD BY: DAR
4	3	1	1
3	2	1	1
2	1	1	1
1	1	1	1

240V, 1 φ LOAD CALCULATIONS

LOAD DESCRIPTION	KVA	H.P.	AMPS
EXISTING SO2 BUILDING PANEL	12.7	--	52.9
SAMPLE SHED LIGHT & RECEPTACLES	0.51	--	2.1
GENERATOR BLOCK HEATER (1.5KW)	1.5	--	6.3
GENERATOR BATTERY CHARGER	0.1	--	0.4
WALL MTD LIGHTS & RECEPTACLE	0.4	--	1.7
SUBTOTAL =			63.4
MINIMUM SERVICE SIZE =			63.4
SELECTED SERVICE SIZE =			100A



KAYENTA WASTEWATER TREATMENT PLANT UPGRADE
ELECTRICAL
DISINFECTION SYSTEM SINGLE LINE DIAGRAM

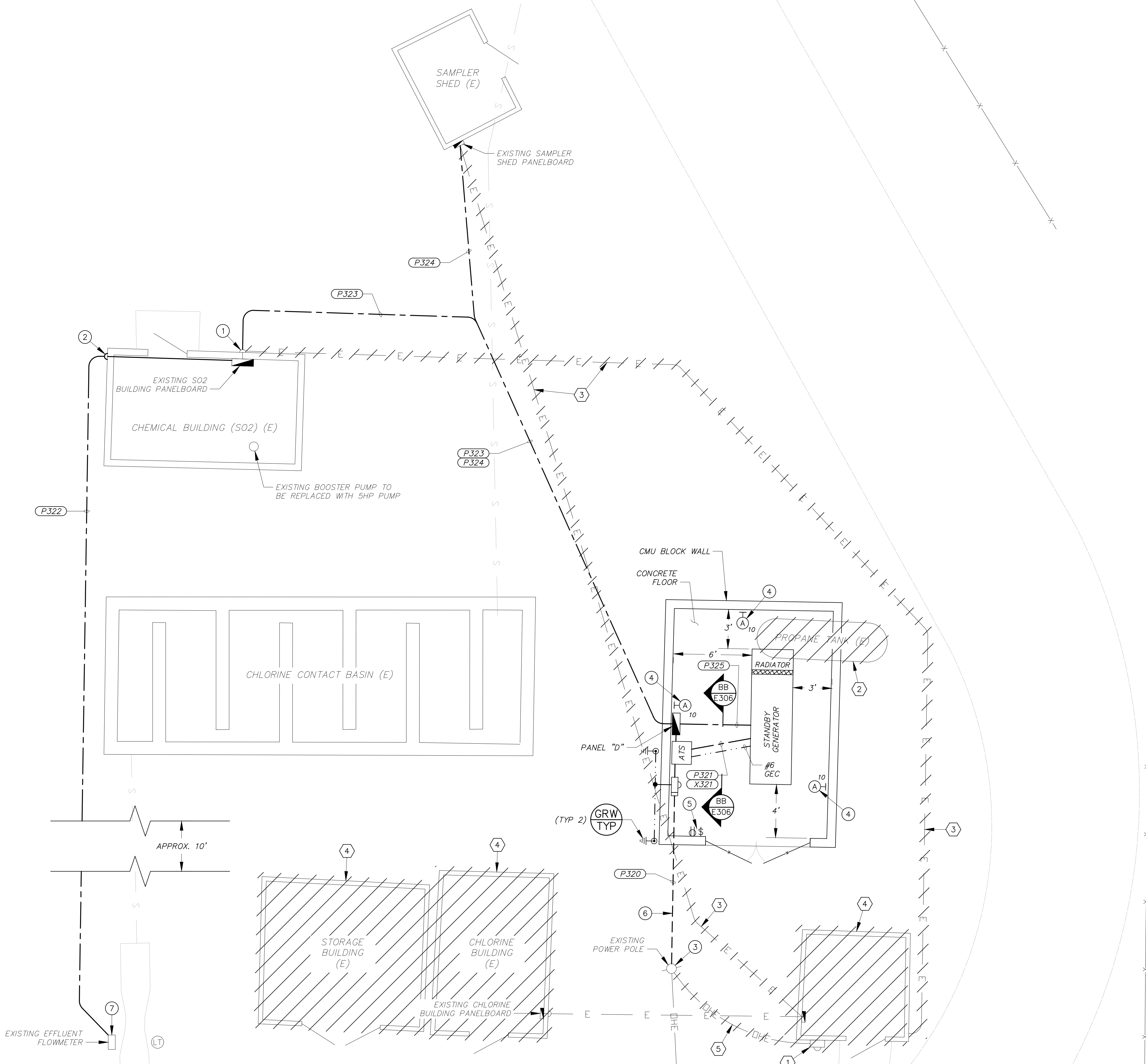
SOLUTIONS FOR TODAY... VISION FOR TOMORROW
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS



DARCOR
ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST.
SUITE 212
PHOENIX, AZ 85020
Ph: (602) 795-2899
WWW.DARCORINC.COM

JOB NO: 115111
DATE: MAR 2016
SHEET NO: E304

Saved: March 17, 2016 File: 15053-KAYENTA-E305.dwg Drafter: Drafter



GENERAL NOTES

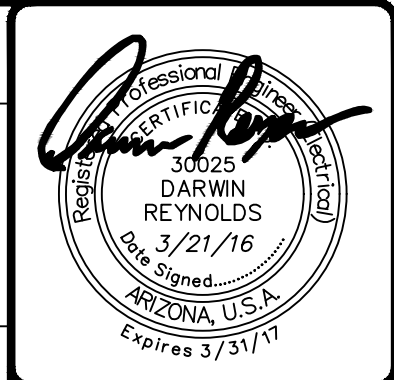
- A. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND CONDUCTOR REQUIREMENTS.
- B. ALL GENERATOR ENCLOSURE DIMENSIONS SHOWN ARE THE MINIMUM SPACE REQUIREMENTS.

DEMOLITION KEY NOTES

- 1. COORDINATE WITH NTUA TO DISCONTINUE POWER. THEN, DISCONNECT AND REMOVE EXISTING ELECTRICAL SERVICE EQUIPMENT INCLUDING SERVICE RISER, BRANCH CIRCUIT CONDUCTORS AND EXPOSED CONDUIT.
- 2. EXISTING PROPANE TANK TO BE RELOCATED.
- 3. REMOVE EXISTING SO2 BUILDING AND SAMPLER SHED FEEDER CONDUCTORS AND ABANDON UNDERGROUND CONDUIT IN PLACE.
- 4. EXISTING BUILDING TO BE REMOVED. DISCONNECT AND REMOVE ALL EXISTING ELECTRICAL CONDUIT AND CONDUCTORS..
- 5. EXISTING OVERHEAD SERVICE CONDUCTORS TO BE REMOVED BY NTUA.

CONSTRUCTION KEY NOTES

- 1. REMOVE EXISTING 1" "LB" CONDULET ON EXTERIOR OF BUILDING AND REPLACE WITH A 1-1/4" "LB" CONDULET FOR NEW FEEDER CONDUIT P323.
- 2. STUBUP CONDUIT ON EXTERIOR OF BUILDING AT +8' AFF AND PENETRATE CONCRETE WALL BY CORE DRILLING WALL AND UTILIZING AN "LB" CONDULET. EXTEND CONDUIT TO EXISTING PANELBOARD BY ATTACHING CONDUIT TO INTERIOR WALL OF BUILDING.
- 3. INSTALL 1-1/2" RMC RISER ON EXISTING WOOD POLE WITH WEATHERHEAD AND STAND-OFF BRACKETS AS REQUIRED BY NTUA.
- 4. INSTALL WALL MOUNTED LUMINAIRE ON FLUSH-MOUNTED BOX IN TOP ROW OF CMU BLOCK WALL. CONDUIT SHALL BE CONCEALED IN CMU BLOCK WALL.
- 5. INSTALL 120V, 20A GFCI RECEPTACLE WITH WP WHILE-IN-USE COVER IN FLUSH MOUNTED BOX IN CMU BLOCK WALL AT +24" AFF (CKT D-10). INSTALL 120V, 20A LIGHT SWITCH WITH WP COVER IN FLUSH MOUNTED BOX IN CMU WALL ABOVE RECEPTACLE AT +42" AFF (CKT D-10) TO CONTROL WALL MOUNTED LUMINAIRES. CONDUIT SHALL BE CONCEALED IN CMU BLOCK WALL.
- 6. INSTALL CONDUIT, TRENCH AND BACKFILL PER NTUA REQUIREMENTS. REFER TO THE SINGLE LINE DIAGRAM FOR CONDUCTOR REQUIREMENTS.
- 7. DISCONNECT EXISTING TEMPORARY 120V BRANCH CIRCUIT TO FLOWMETER. STUB UP CONDUIT P322 INTO FLOWMETER CABINET AND TERMINATE 120V CIRCUIT IN EXISTING FLOWMETER.



NAVAJO TRIBAL UTILITY AUTHORITY KAYENTA, ARIZONA		DATE	BY
NO.	REVISION DESCRIPTION	DATE	BY
4			
3			
2			
1			
DESIGN BY: JLG		CHKD BY: DAR	DRWN BY: DRG

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE

ELECTRICAL ENLARGED PLAN VIEW "C"

SOLUTIONS FOR TODAY... VISION FOR TOMORROW

2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS



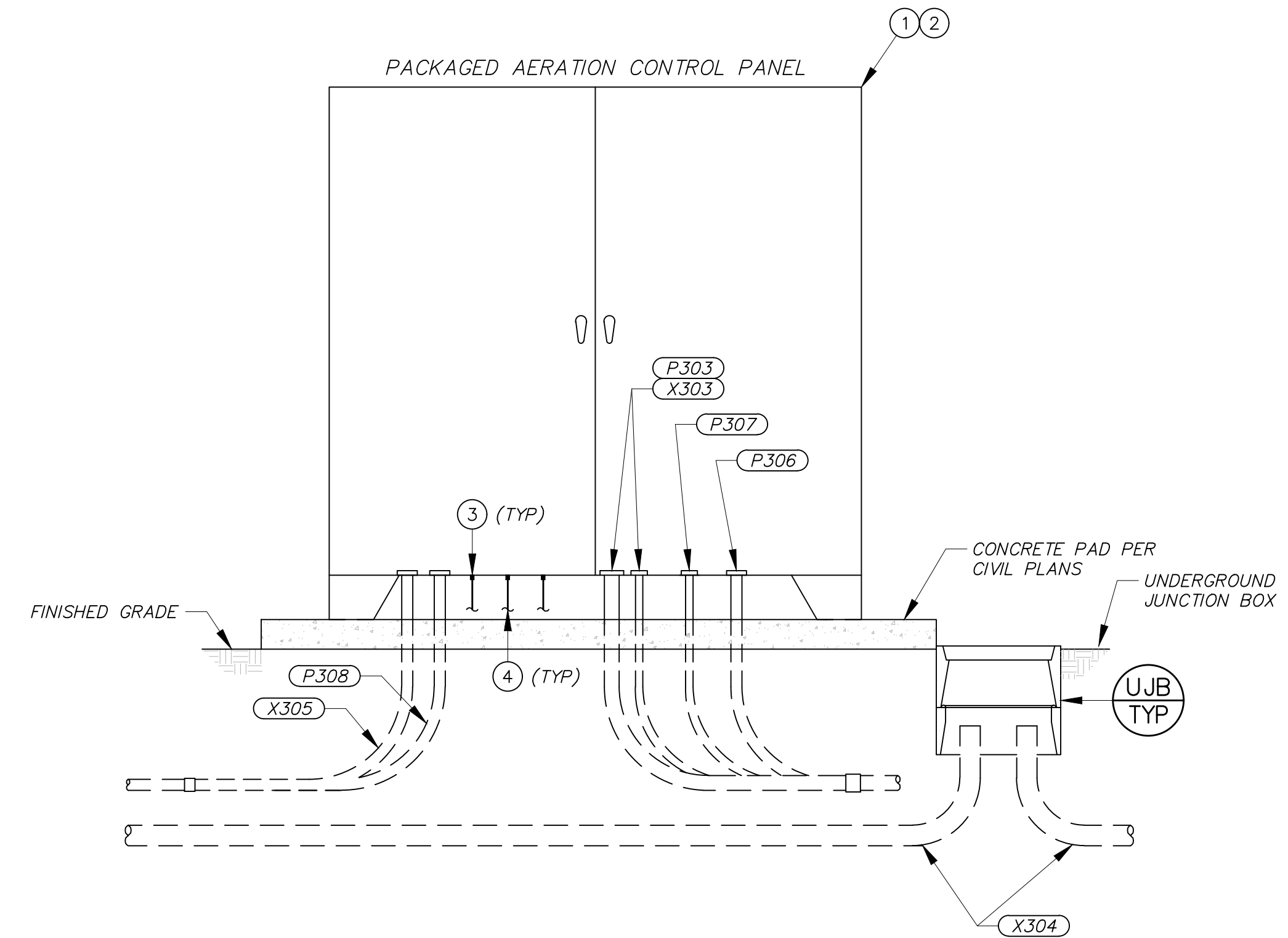
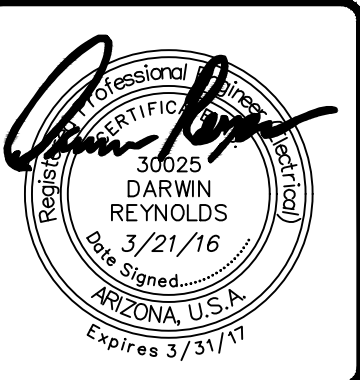
DARCOR
ELECTRICAL CONSULTING ENGINEERS

7600 N. 16TH ST.
SUITE 212
PHOENIX, AZ 85020
Ph: (602) 795-2899
WWW.DARCORINC.COM

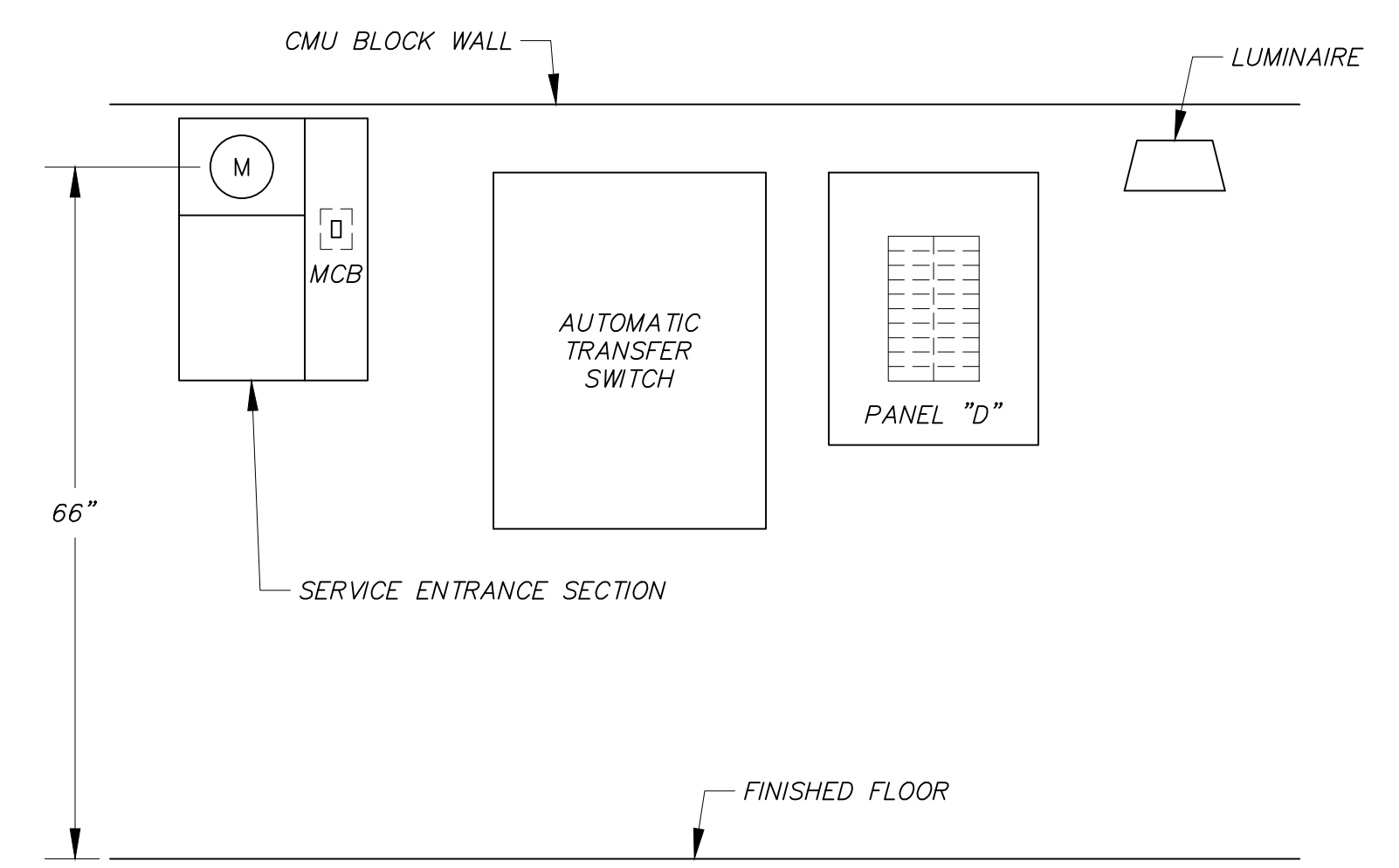
JOB NO: 115111
DATE: MAR 2016
SHEET NO: E305

CONSTRUCTION KEY NOTES

- ① PACKAGED AERATION CONTROL PANEL FURNISHED WITH FLOATING AERATORS BY OWNER.
- ② ANCHOR ENCLOSURE TO CONCRETE PAD WITH (4) 3/8" CONCRETE ANCHORS.
- ③ FLEXIBLE CORD CONNECTOR (AERATORS No.5, 6 & 7).
- ④ FLOATING AERATOR CABLE FURNISHED WITH AERATOR (DO NOT SPLICE).

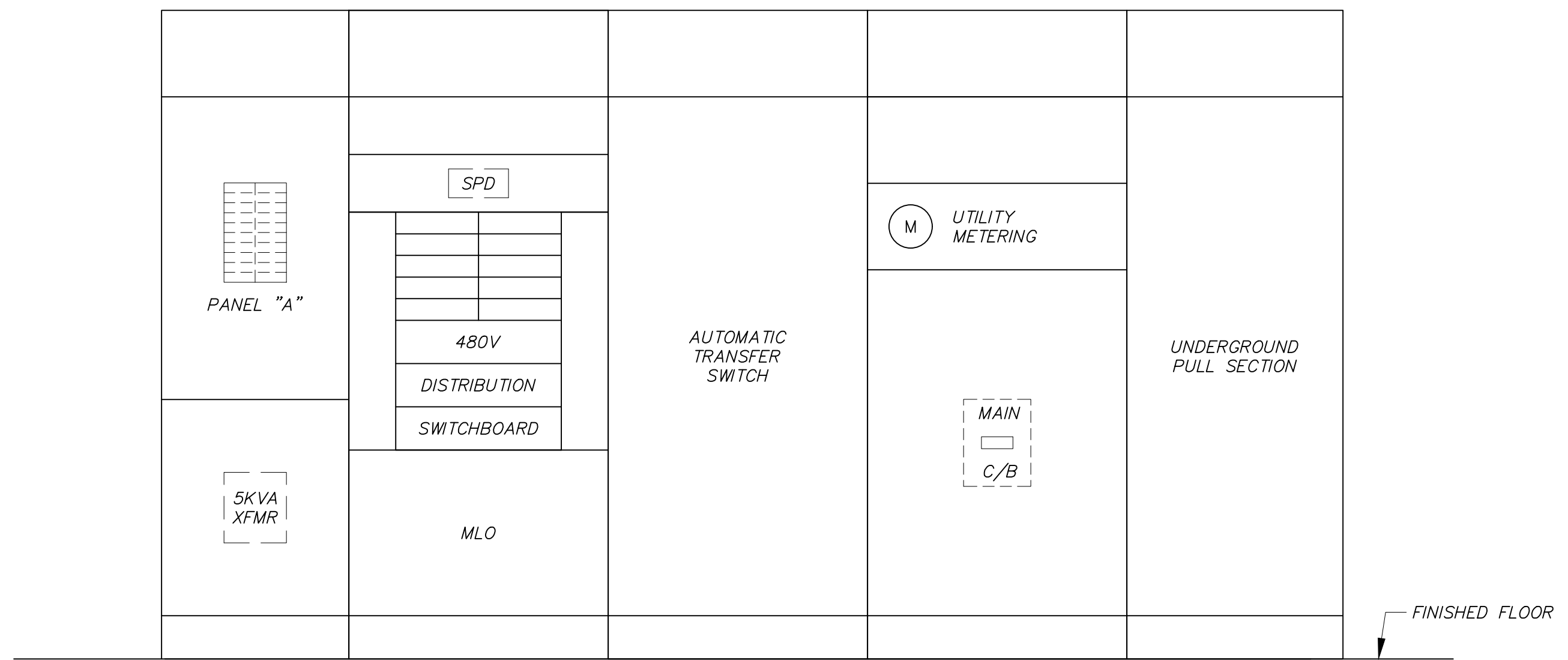


ACP E301 PACKAGED AERATION CONTROL PANEL ELEVATION
NTS



BB E305 ELECTRICAL EQUIPMENT ELEVATION
NTS

NOTE: CONDUITS NOT INDICATED FOR CLARITY.



AA E303 ELECTRICAL EQUIPMENT ELEVATION
NTS

NOTE: FASTEN ELECTRICAL EQUIPMENT TO CONCRETE PAD USING 3/8" GALVANIZED STEEL CONCRETE ANCHORS

NAVAJO TRIBAL UTILITY AUTHORITY
KAYENTA, ARIZONA

NO.	REVISION DESCRIPTION	CHKD BY:	DATE	BY:
4		JLG		DAR
3				
2				
1				

DESIGN BY: JLG DRAWN BY: DRG

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE

ELECTRICAL ELEVATIONS

SOLUTIONS FOR TODAY... VISION FOR TOMORROW

2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS

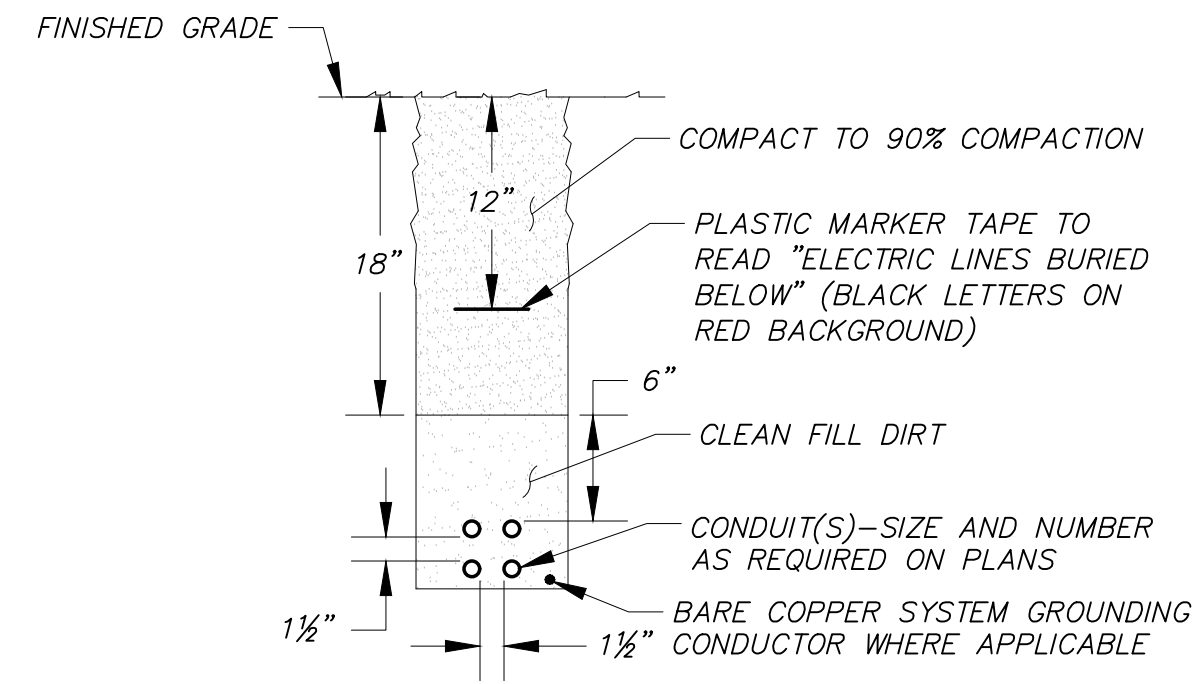


DARCOR
ELECTRICAL CONSULTING ENGINEERS

7600 N. 16TH ST.
SUITE 212
PHOENIX, AZ 85020
Ph: (602) 795-2899
WWW.DARCORINC.COM

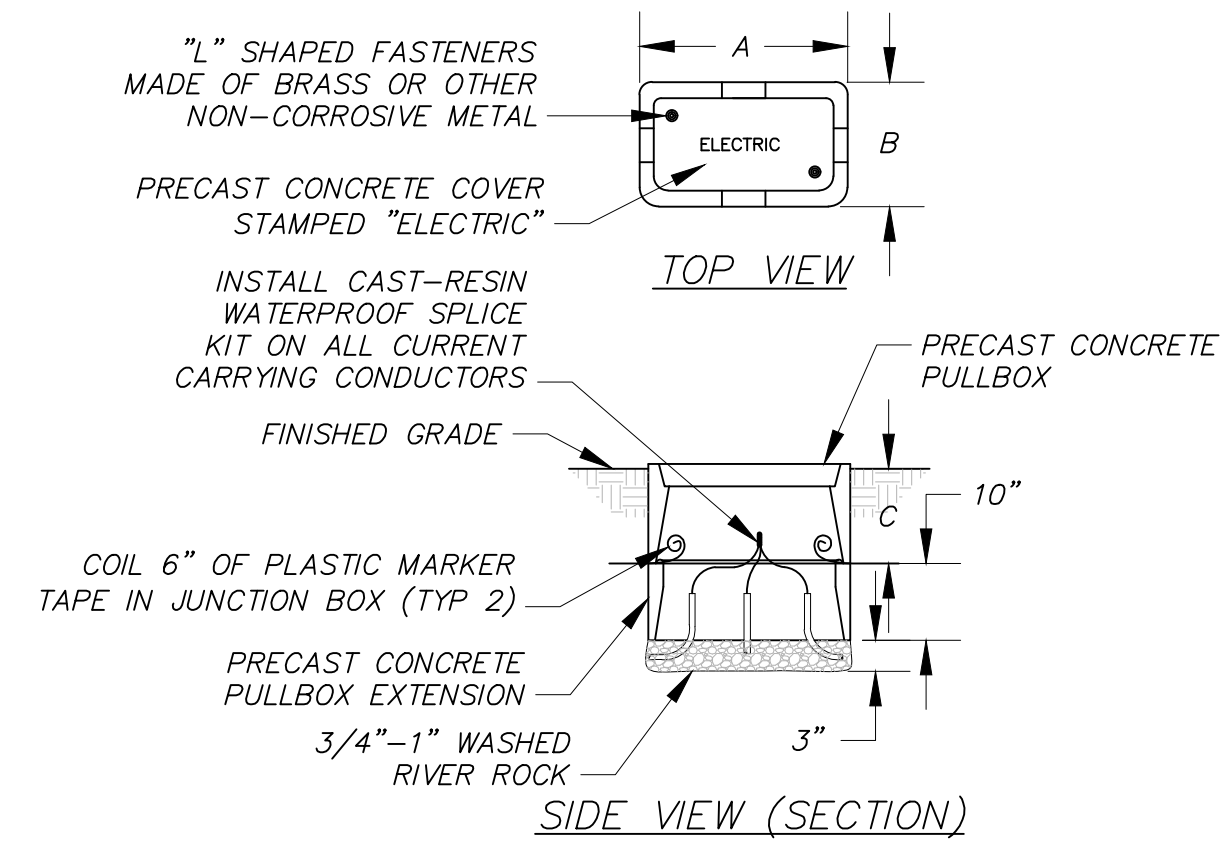
JOB NO: 115111
DATE: MAR 2016
SHEET NO: E306

Saved: March 17, 2016 File: 15053-KAYENTA-KAYENTA-E306.dwg Drafter: Drafter



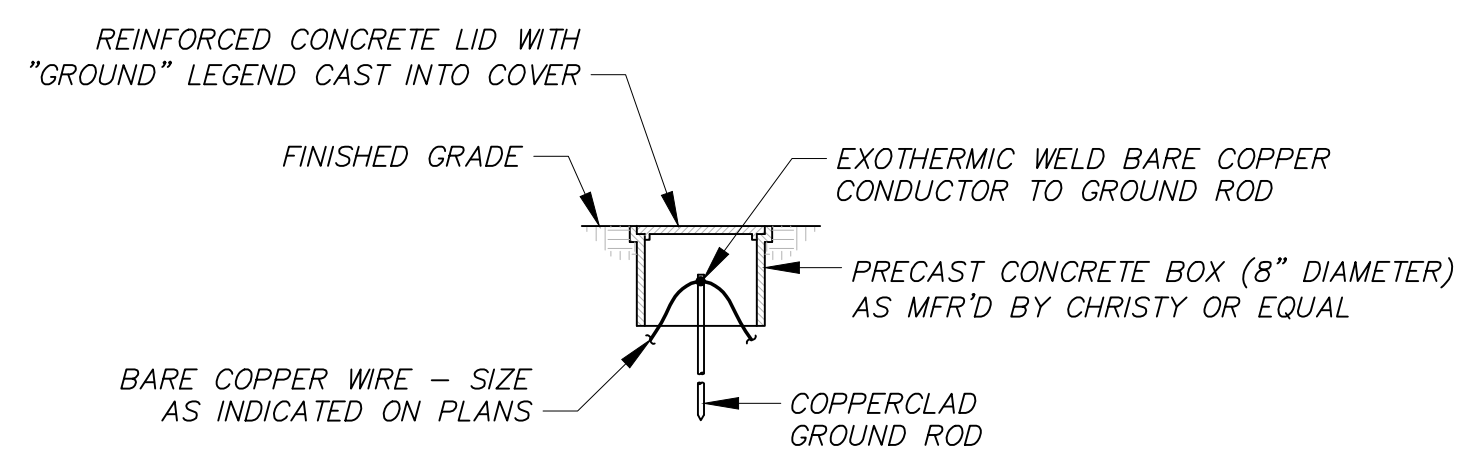
- NOTES:**
1. ALL DIMENSIONS INDICATED ABOVE ARE MINIMUM.
 2. SPARE CONDUITS MUST BE LOCATED ON TOP OF DUCTBANKS.
 3. THIS DETAIL APPLIES IN ALL CASES WHETHER SPECIFICALLY REFERRED TO OR NOT.
 4. THIS DETAIL DOES NOT APPLY TO UTILITY DUCTBANKS.

UDG
TYP TYPICAL UNDERGROUND CONDUIT DUCTBANK DETAIL
NTS

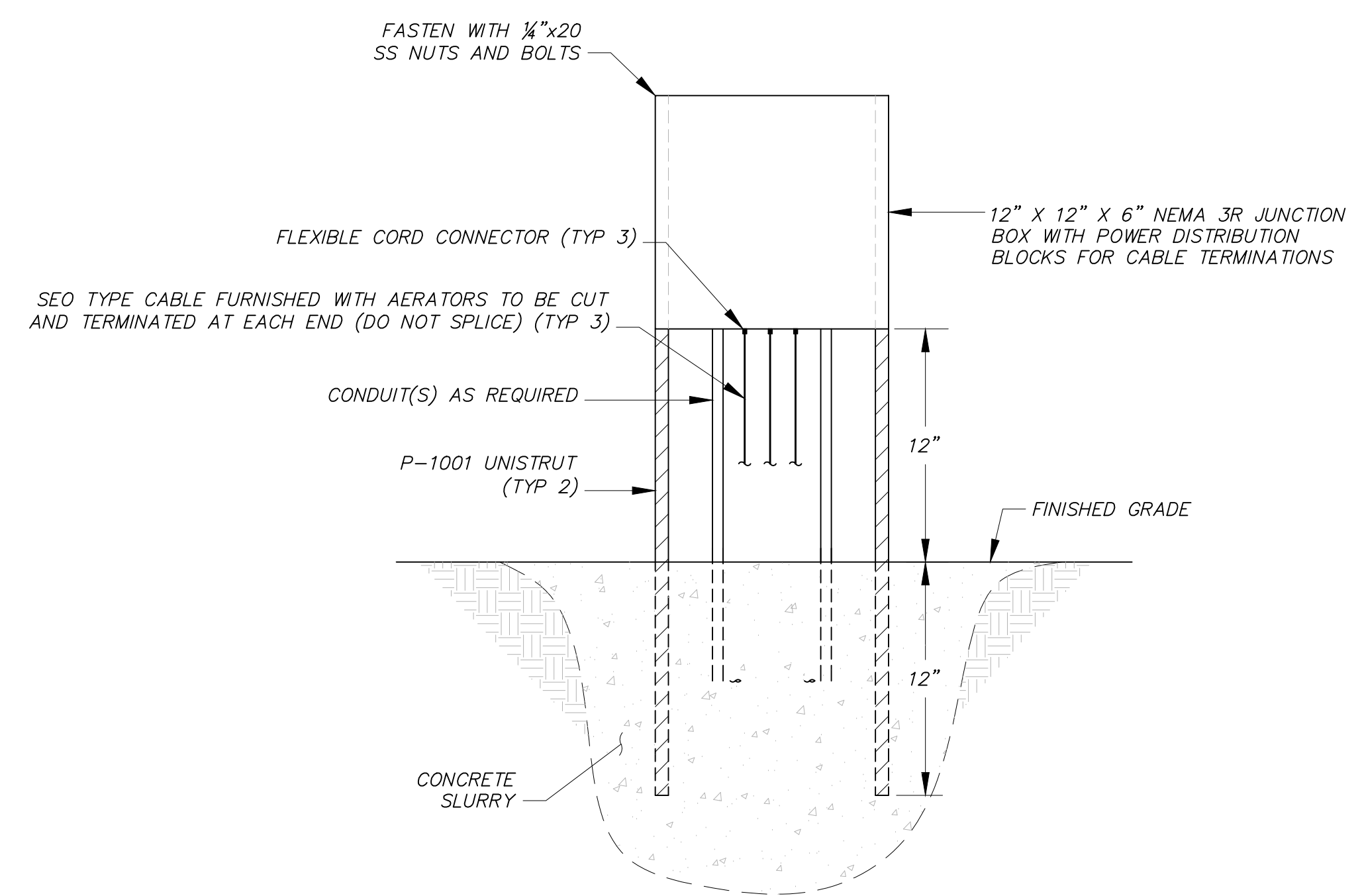


TYPE	DIM. A	DIM. B	DIM. C
#5	25"	15-1/2"	12"

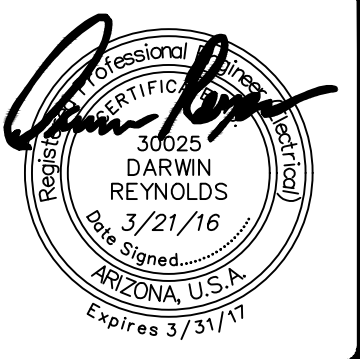
UJB
TYP TYPICAL UNDERGROUND JUNCTION BOX DETAIL
NTS



GRW
TYP TYPICAL GROUND ROD AND WELL DETAIL
NTS



JB1
TYP ABOVE GROUND JUNCTION BOX WITH FOUNDATION MOUNTING DETAIL
NTS



NAVAJO TRIBAL UTILITY AUTHORITY
KAYENTA, ARIZONA

NO.	1	REVISION DESCRIPTION	CHKD BY: DAR	DATE	BY: DRG
NO.	2				
NO.	3				
NO.	4				

KAYENTA WASTEWATER TREATMENT PLANT UPGRADE
ELECTRICAL DETAILS

SOLUTIONS FOR TODAY... VISION FOR TOMORROW
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS



DARCOR
ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST.
SUITE 212
PHOENIX, AZ 85020
Ph: (602) 795-2899
WWW.DARCORINC.COM

JOB NO: 115111
DATE: MAR 2016
SHEET NO: E307