CONSTRUCTION PLANS
FOR

NAVAJO TRIBAL UTILITY AUTHORITY

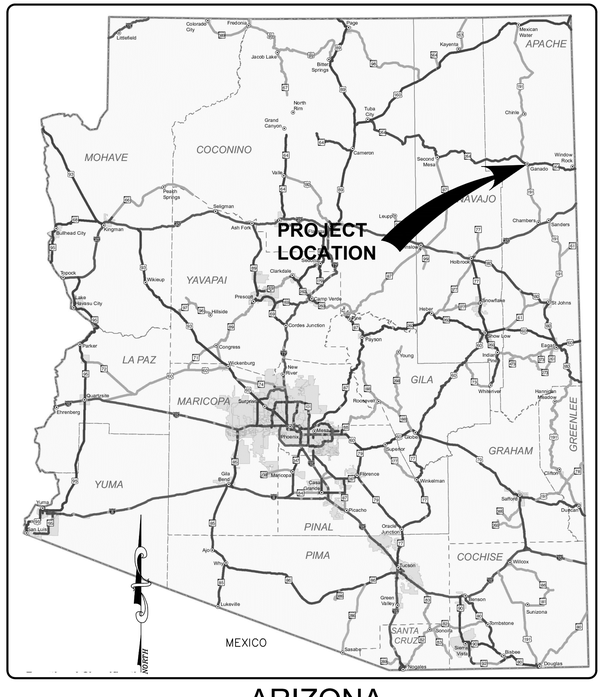
RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE IT'S ACCURACY, & IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF IT'S ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

Record Drawings

GANADO, ARIZONA
WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

FUNDED BY: NTUA



ARIZONA

Sheet List Table	
Sheet Number	Sheet Title
GENERAL	
1	COVER SHEET
2	GENERAL NOTES
CIVIL	
3	CIVIL LEGEND AND ABBREVATIONS
4	FLOW SCHEMATIC
5	SURVEY CONTROL & EXISTING CONDITIONS
6	CIVIL DETAILS
7	SITE UPGRADES
8	AERATION SYSTEM UPGRADES
STRUCTURAL	
9	GENERAL STRUCTURAL NOTES
10	STRUCTURAL PLAN
11	STRUCTURAL DETAILS
ELECTRICAL	
E500	LEGEND NOTES & ABBREVIATIONS
E501	OVERALL SITE PLAN
E502	SINGLE LINE DIAGRAM DEMOLITIONS
E503	SINGLE LINE DIAGRAM
E504	ENLARGED PLANVIEW A
E505	ENLARGED PLANVIEW B
E506	ELEVATIONS
E507	DETAILS

VICINITY MAP

Registered Professional Engineer - General
CERTIFICATE NO.
54300
ALLEN
MUSK
Registered
ARIZONA, U.S.A.
Expires 12-31-18

NO.	REVISION DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

GENERAL
COVER SHEET

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

JOB NO:
115111

DATE:
APR 2016

SHEET NO:
1

GENERAL NOTES

1. 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
2. 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.
3. SUBMISSION OF A BID WILL CONSTITUTE AN INCONTROVERTIBLE 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.
4. 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.
5. 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.
6. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE OF APPLICABLE PORTIONS OF THE EPA STORM WATER DISCHARGE REGULATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND PERMIT COMPLIANCE REQUIRED FOR CONSTRUCTION OF THE PROJECT.
8. 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 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.
9. 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.
10. 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.
11. 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.
12. FIVE (5) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NTUA (THOMAS BAYLESS @ 928-729-4779) FOR LOCATION OF EXISTING UTILITIES.
13. 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.
14. UTILITY CONTACTS: GAS, SEWER, WATER, ELECTRIC: NTUA SAFETY DEPARTMENT 928-729-5721, TELEPHONE: FRONTIER COMMUNICATION 928-871-3748.
15. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL FACILITIES ADJACENT TO THE CONSTRUCTION AREA.
16. 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.
17. 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.
18. 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.
19. 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).
20. THE CONTRACTOR SHALL STOCK PILE ANY EXCESS EARTH ON-SITE AT A LOCATION DETERMINED BY THE WASTEWATER PERSONNEL
21. 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.
22. 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.
23. SHALL NOT LOAD NOR PERMIT ANY PART OF ANY STRUCTURE TO BE LOADED IN ANY MANNER THAT WILL ENDANGER THE STRUCTURE NOR SHALL CONTRACTOR SUBJECT ANY PART OF THE WORK OR ADJACENT PROPERTY TO STRESSES OR PRESSURES THAT WILL ENDANGER IT.
24. IF THIS DRAWING IS OTHER THAN FULL SIZE (22" X 34"), UTILIZE BAR SCALE IN LIEU OF NUMERIC SCALE.
25. ALL UTILITY MANHOLES, METERS CLEANOUTS, AND VALVES IMPACTED BY CONSTRUCTION TO BE FILED LOCATED AND ADJUSTED TO GRADE, THIS SHALL BE INCIDENTAL TO THE PROJECT.
26. THE DESIGN FLOW RATE FOR THIS FACILITY IS 0.4 MGD.

RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE IT'S ACCURACY, & IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF IT'S ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

Registered Professional Engineer - General
CERTIFICATE NO.
54300
ALLEN A. MUSKETT
Signed
ARIZONA, U.S.A.
Expires 12-31-18

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO.	REVISION DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

GENERAL
GENERAL NOTES

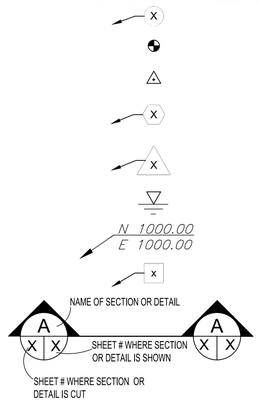
SOLUTIONS FOR TODAY...
VISION FOR TOMORROW
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS
SMITH ENGINEERING COMPANY
NEW MEXICO

JOB NO: 115111
DATE: APR 2016
SHEET NO: 2

ABBREVATIONS

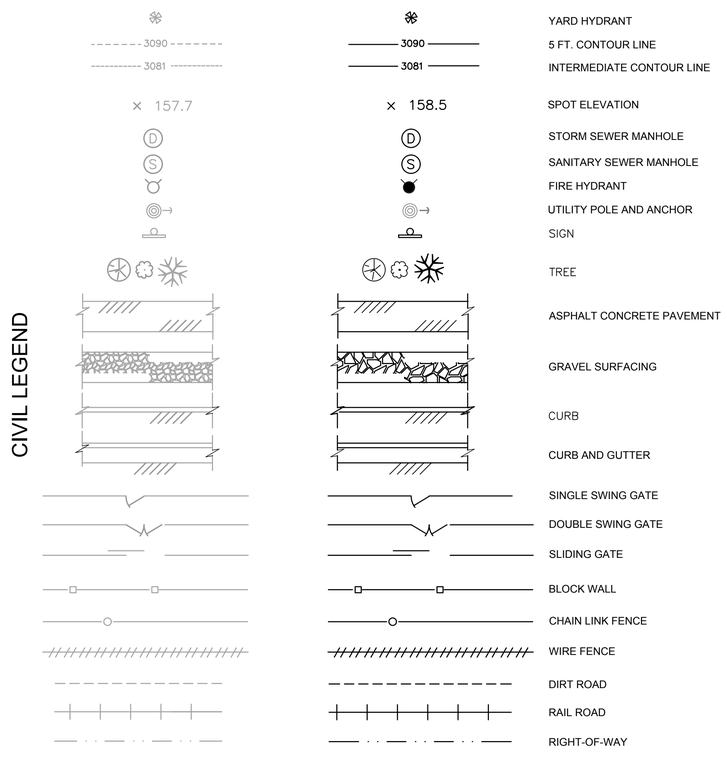
AC	ASPHALT CONCRETE
ADJT	ADJUSTABLE
ADMIN	ADMINISTRATION
APPD	APPROVED
APPROX	APPROXIMATE
ARV	AIR RELEASE VALVE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
ASBY	ASSEMBLY
ASP AER	ASPIRATING AERATOR
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BEGIN CURVE
BCV	BALL CHECK VALVE
BFV	BUTTERFLY VALVE
BFP	BACK FLOWPREVENTER
BLDG	BUILDING
BLKG	BLOCKING
BNR	BIOLOGICAL NUTRIENT REMOVAL
BOD	BIOCHEMICAL OXYGEN DEMAND
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BPV	BACK PRESSURE VALVE
B&S	BELL AND SPIGOT
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BW	BACKWASH
BYP	BYPASS
CARV/CAV	COMBINATION AIR/VACUUM RELEASE VALVE
CCP	CONCRETE CYLINDER PIPE
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CG	CANAL GATE
CI	CAST IRON
CIP	CAST IRON PIPE
CJ	CONSTRUCTION JOINT
CL	CLARIFIER OR CENTERLINE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN-OUT
CONC	CONCRETE
COP	CROSS OVER PIPE
C&P	CLEAN AND PATCH
CPLG	COUPLING
CU FT	CUBIC FOOT
CU YD	CUBIC YARD
CV	CHECK VALVE
DIG.	DIGESTER
DIMJ	DUCTILE IRON MECHANICAL JOINT
DIP	DUCTILE IRON PIPE
DIS	DISCHARGE
DPCO	DOUBLE PRESSURE CLEAN OUT
DRN	DRAIN
E	EAST
EA	EACH
ED	EFFLUENT DISCHARGE
EFF	EFFLUENT
ELL	ELBOW
EL	ELEVATION
ENGR	ENGINEER
EQ	EQUAL
EXIST	EXISTING
FF	FINISHED FLOOR
FG	FINISH GRADE
FIN	FINISH OR FINISHED
FL	FLANGED
FLR	FLOOR
FRG	FIBER GLASS
FRP	FIBER GLASS PIPE
FT	FEET OR FOOT
FW	FINISHED WATER
GAL	GALLON
GALV	GALVANIZED
GALV STL	GALVANIZED STEEL
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRD	GRADE OR GROUND
GV	GATE VALVE
H	HEIGHT
HB	HOSE BIB
HDPE	HIGH DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HORIZ	HORIZONTAL
HP	HORSEPOWER
I.D.	INSIDE DIAMETER
INFL	INFLUENT
INS	INSULATED
INV	INVERT
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
OD	OUTSIDE DIAMETER OR OVERFLOW DRAIN
O.E.A.E.	OR ENGINEERED APPROVED EQUAL
OG	ORIGINAL GROUND
OHE	OVERHEAD ELECTRIC UTILITY
OPER.	OPERATION
PC	POINT OF CURVE OR PORTLAND CEMENT
PCC	POINT OF COMPOUND CURVE
PCV	PUMP CONTROL VALVE
PE	PLAIN END
PER	PURSUANT
PG	PRESSURE GAUGE OR PROPANE GAS
PI	POINT OF INTERSECTION
P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
PLT	PLANT
PMP	PUMP
POB	POINT OF BEGINNING
POTA	POTABLE
PP	POWER POLE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	PARTS PER MILLION
PRC	POINT OF REVERSE CURVE
PREFAB	PREFABRICATED
PRESS	PRESSURE
PROP	PROPERTY
PRV	PRESSURE REGULATING VALVE
PS	PUMP STATION OR PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENT
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PVCC	POINT OF VERTICAL COMPOUND CURVE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVRC	POINT OF VERTICAL RETURN CURVE
PVT	POINT OF VERTICAL TANGENT
PW	PLANT WATER
RAS	RETURN ACTIVATED SLUDGE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD ROOF DRAIN OR ROUND
RDCR	REDUCER
RE	RECYCLE
RE-CIRC.	RE-CIRCULATION
RET	RETURN
R.C&P	REMOVE, CLEAN AND PATCH
R&D	REMOVE & DISPOSE
RIB	RAW INFLUENT BUILDING
R&R	REMOVE & RELOCATE
R&S	REMOVE & SALVAGE
RS	REUSE
RSNTS	RESTRAINTS
S	SOUTH
SAS	SANITARY SERVICE
SAS FM	SANITARY SEWER FORCE MAIN
SEQUOX	SEQUENTIAL OXIDATION
SLG	SLUDGE
SPEC	SPECIFICATION
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SS	SEWER
STD	STANDARD
STL	STEEL OR STEEL PIPE
STN STL	STAINLESS STEEL
STRUCT	STRUCTURE OR STRUCTURAL
STS	SUPPLEMENTAL TECHNICAL SPECIFICATION
SUC	SUCTION
SUP	SUPPLY
SWD	SIDE WATER DEPTH
SYS	SYSTEM
T&B	TOP AND BOTTOM
TBC	TOP BACK OF CURB
TEL	TELEPHONE
T.O.C.	TOP OF CONCRETE
TOG	TOP OF GRATING
TOW	TOP OF WALL
TP	TELEPHONE POLE
UBC	UNIFORM BUILDING CODE
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITERS LABORATORIES
UNKN	UNKNOWN
UP	UTILITY POLE
UV	ULTRAVIOLET
VIC	VITALIC
WAS	WASTE ACTIVATED SLUDGE
W	WATER
WL	WATER LINE
WSTP	WATER STOP
WV	WATER VALVE
'	FT
"	INCH

ANNOTATION LEGEND

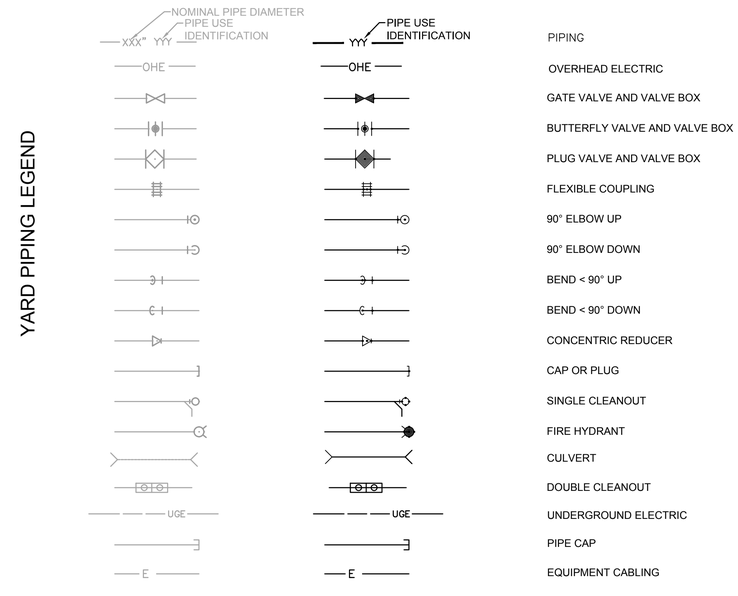


LEGENDS

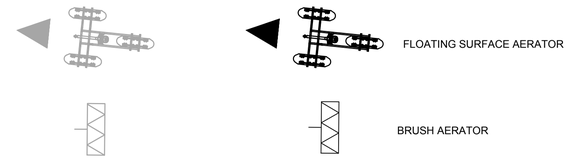
CIVIL LEGEND



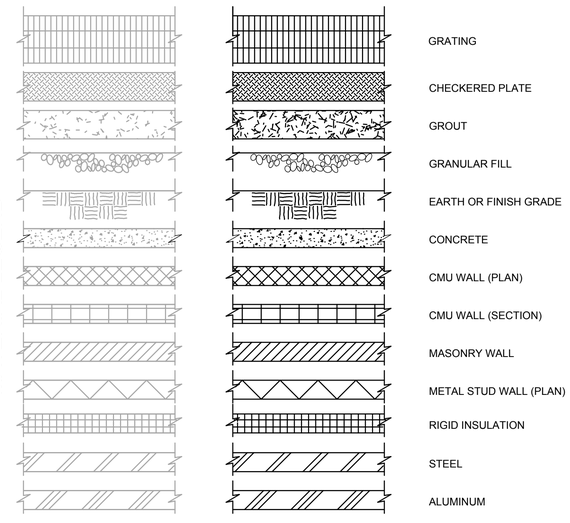
YARD PIPING LEGEND



EQUIPMENT LEGEND



MATERIAL LEGEND



RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE IT'S ACCURACY, & IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF IT'S ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

Registered Professional Engineer - Civil
CERTIFICATE NO.
54300
ALLEN
MUSKAT
Signed
ARIZONA, U.S.A.
Expires 12-31-18

NO.	REVISION DESCRIPTION	DATE	BY
5			
4			
3			
2			
1			

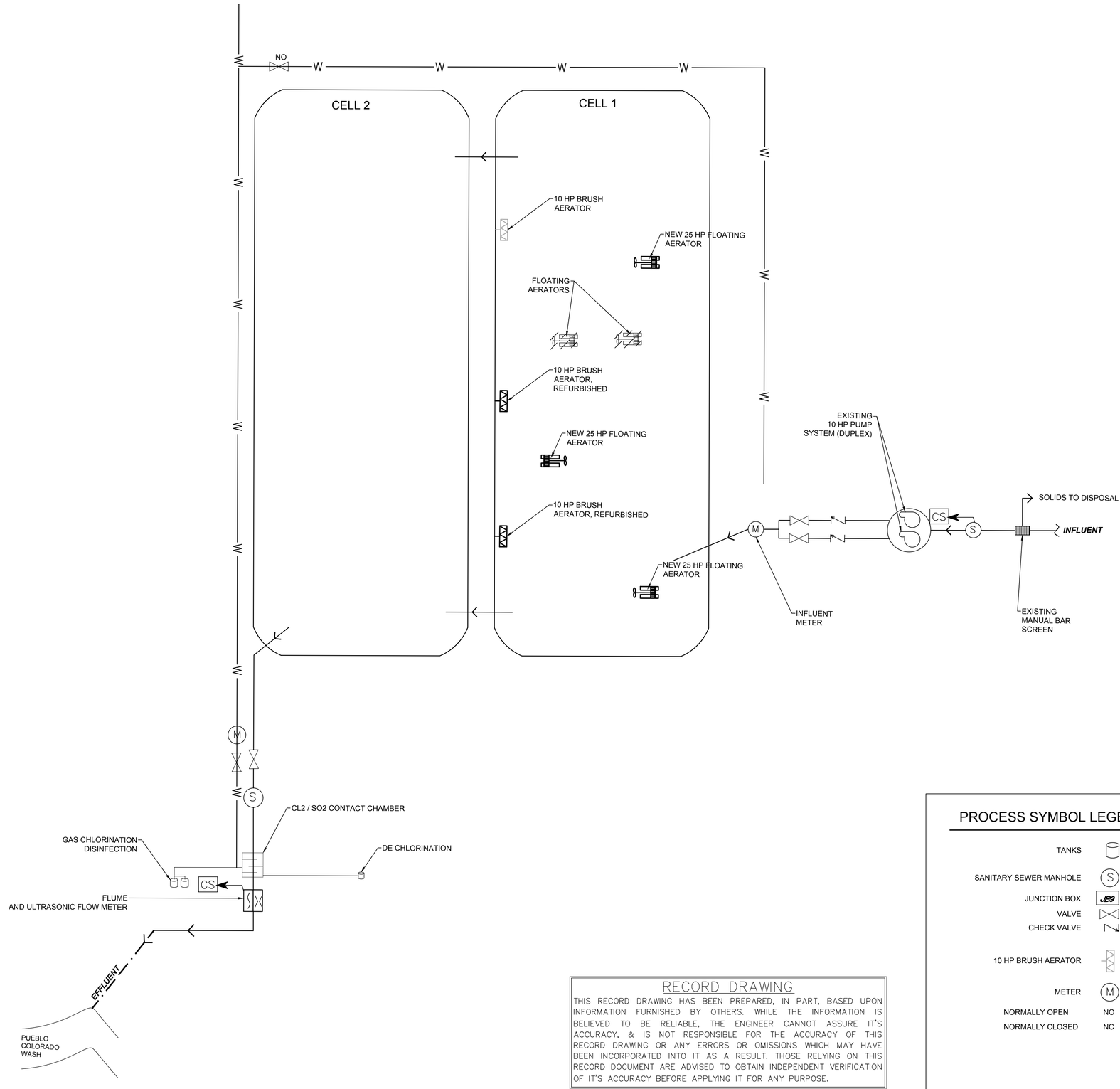
NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

CIVIL
CIVIL LEGEND AND ABBREVATIONS

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
SMITH ENGINEERING COMPANY
NEW MEXICO

JOB NO: 115111
DATE: APR 2016
SHEET NO: 3



RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE IT'S ACCURACY, & IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF IT'S ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

PROCESS SYMBOL LEGEND

TANKS		EXISTING SYSTEM	
SANITARY SEWER MANHOLE	S	WASTEWATER	
JUNCTION BOX	JB9	WATER	W
VALVE		REUSE EFFLUENT	
CHECK VALVE		SUCTION TYPE COMPOSITE SAMPLER	CS
10 HP BRUSH AERATOR		PARSHALL FLUME/ULTRASONIC FLOW METER	
METER	M	MANUAL BARSCREEN	
NORMALLY OPEN	NO	MECHANICAL BARSCREEN	M
NORMALLY CLOSED	NC	ASPIRATING AERATOR	
		WEIR	
		TO BE DEMOLISHED/REMOVED /ABANDONED IN PLACE	
		SLUICE GATE	
		SLIDE GATE/STOP GATE	
		SUBMERSIBLE PUMP	

Registered Professional Engineer - General
CERTIFICATE NO.
54300
ALLEN J. MUSKETT
Signed
ARIZONA, U.S.A.
Expires 12-31-18

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO.	REVISION DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

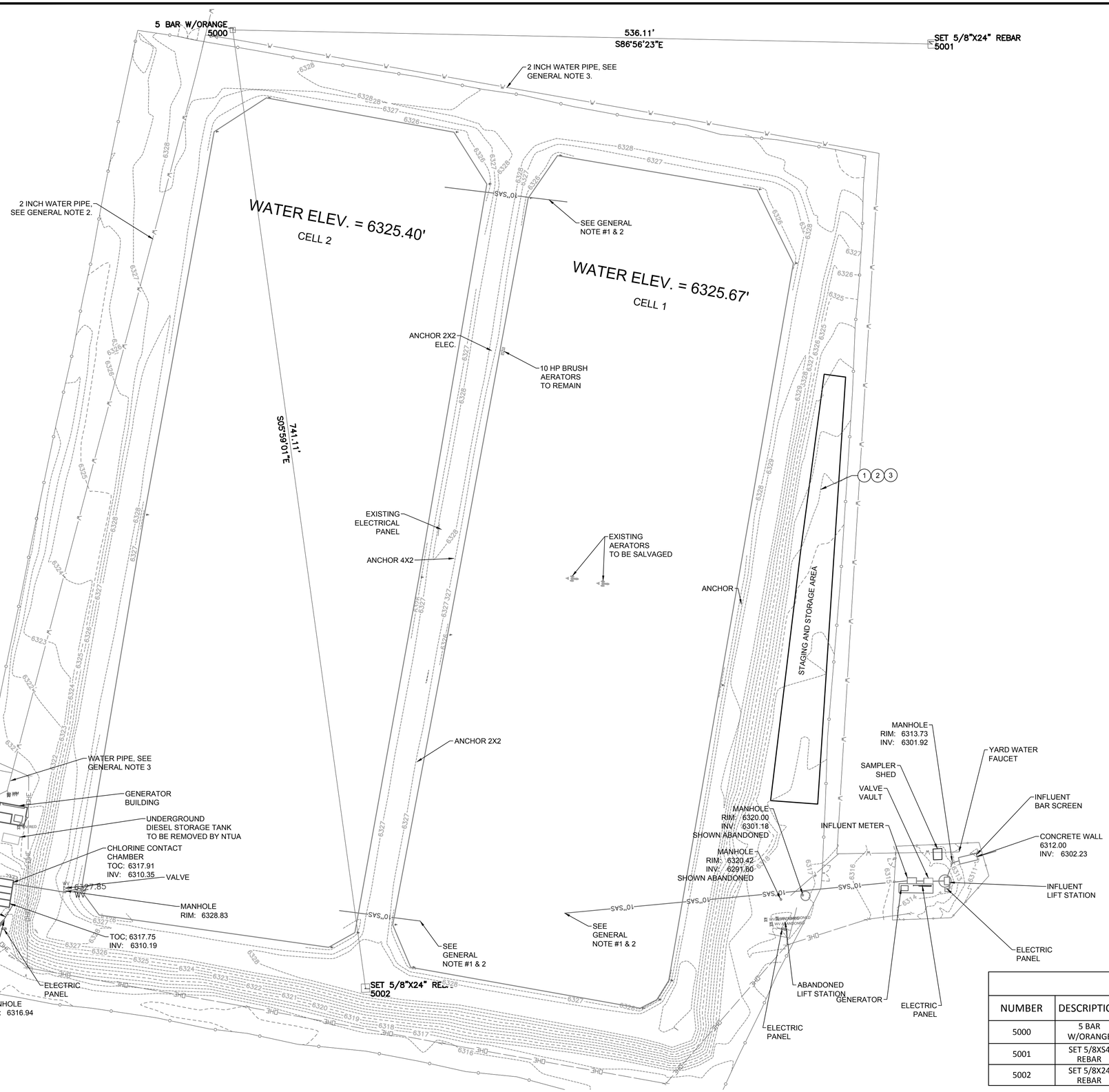
CIVIL
FLOW SCHEMATIC

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
SMITH ENGINEERING COMPANY
NEW MEXICO

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

O:\SEC---PROJECTS\115111 NTUA NNEPA Compliance Plan Assistance Lagoon Systems\CONSTRUCT\115111-2 Ganado WWTP\Record_DWGS\Ganado\PLANSET\4 FLOW SCHEMATIC.dwg Feb 16, 2017 - 2:51pm Saved By: IsaiG



BUILD NOTES

1 CONSTRUCTION STAKING: CONTRACTOR TO PERFORM ALL NECESSARY SURVEYING AND CONSTRUCTION STAKING INCLUDING FINAL AS-BUILT PREPARATION, COMPLETE. SEE SPECIFICATION 01 78 39.

2 NPDES PERMITTING: IF NECESSARY, 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.

3 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

1 PIPE DRAWN PER AND LABELED ASBUILTS NA-2-2841 (1973) CONTRACTOR TO FIELD LOCATE.

2 WATER LEVEL & DEBRIS PREVENTED SURVEYOR FROM LOCATING INTERPOND PIPING.

3 ONSITE WATER PIPING BASED ON NTUA GIS DATA DATED 2007. CONTRACTOR TO CONFIRM SIZE, MATERIAL, AND BURY DEPTH IF NECESSARY FOR CONTRUCTION.

4 WTR PIPE SIZE AND LOCATION AFTER TEE UNKNOWN. CONTRACTOR TO FIELD LOCATE AS NECESSARY.

SURVEY NOTES

BASIS OF LOCAL PROJECTION: TRANSVERSE MERCATOR PROJECTION

ALL DISTANCE DIMENSIONS US SURVEY FEET.
LATITUDE : 35° 42' 36.00000" N
LONGITUDE: 109° 33' 36.00000" W NAD_83(2011)
FALSE NORTHING : 20000.00000sft
FALSE EASTING : 20000.00000sft
SCALE FACTOR : 1.00029962

BASIS OF ELEVATION : NAVD88 AS PREDICTED BY GEOID12A (CONUS)

RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE IT'S ACCURACY, & IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF IT'S ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

SCALE: 1" = 40'

40' 0 40' 80' 120' Feet

CONTROL POINT TABLE TO CP 5000

NUMBER	DESCRIPTION	ELEVATION	NORTHING	EASTING	BEARING	LENGTH
5000	5 BAR W/ORANGE	6328.7600	20539.4300	18540.9000	––	––
5001	SET 5/8XS4 REBAR	6337.8400	20510.8000	19076.2500	S86°56'23"E	536.11'
5002	SET 5/8X24 REBAR	6328.3500	19802.3500	18618.1600	S05°59'01"E	741.11'

Registered Professional Engineer - General
CERTIFICATE NO.
54300
ALLEN
MUSKETT
Registered
ARIZONA, U.S.A.
Expires 12–31–18

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO.	REVISION DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

CIVIL
SURVEY CONTROL & EXISTING CONDITIONS

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
SMITH ENGINEERING COMPANY
NEW MEXICO

JOB NO: 115111
DATE: APR 2016
SHEET NO: 5

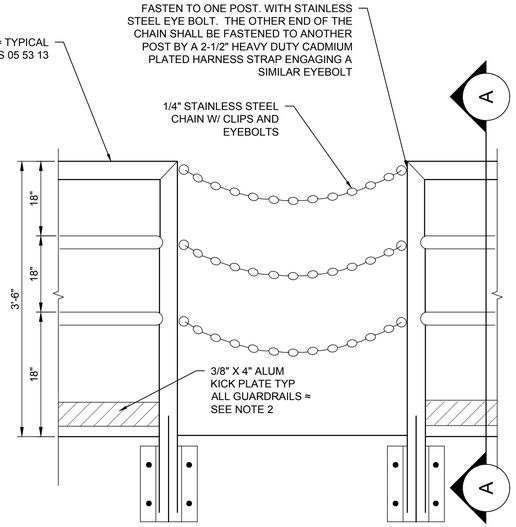
O:\SEC—PROJECTS\115111 NTUA ENEPA Compliance Plan Assistance Lagoon Systems\CONSTRUCT\115111-2 Ganado WWTP\Record_DWGS\Ganado\PLANSETS\ SURVEY CONTROL & EXISTING CONDITIONS.dwg Feb 16, 2017 - 2:51pm Saved By: lsalG

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.

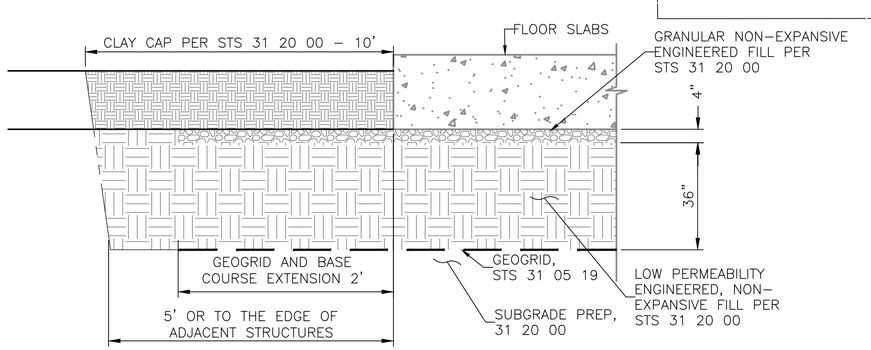
2 KICK PLATE IS NOT REQUIRED WHERE TOP OF FRAMING FOR GRATING IS 4 INCHES ABOVE TOP OF GRATING.

3 MATERIAL - ALUMINUM ALLOY 6063-T6, CLEAR SATIN ANODIZED FINISH ALL EXPOSED SURFACES (O.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.

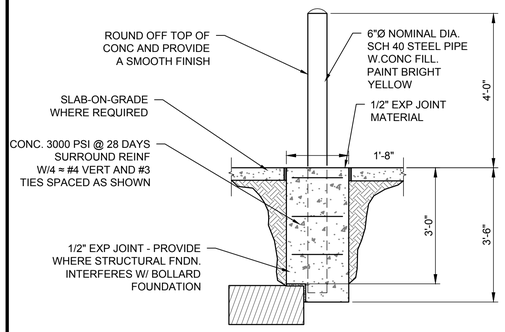


1 TYPICAL GUARDRAIL ELEVATION
NOT TO SCALE

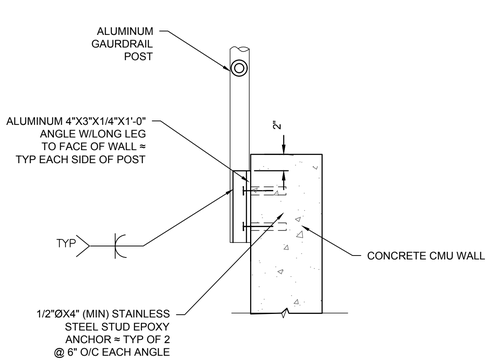


NOTES:
1. EXCAVATION SHALL NOT UNDERMINE THE STRUCTURAL INTEGRITY OF ANY ADJACENT STRUCTURES.

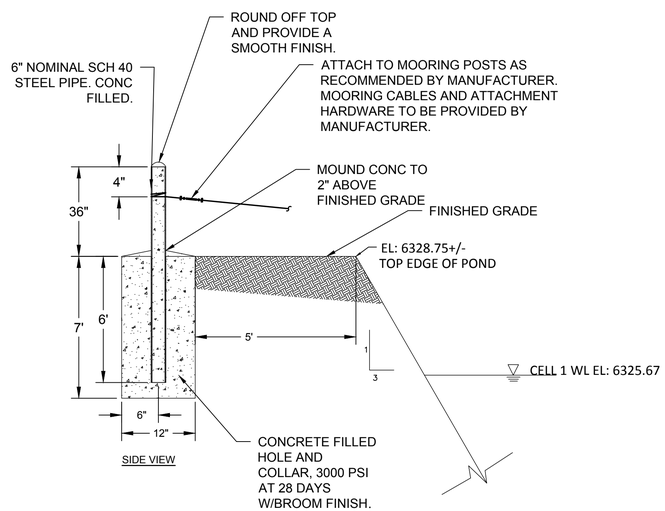
2 FLOOR SLAB EARTHWORK DETAIL
NOT TO SCALE



5 TYPICAL STATIONARY BOLLARD DETAIL
NOT TO SCALE



A GUARDRAIL CONNECTION SECTION
NOT TO SCALE



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.

3 AERATOR ANCHOR POST
NOT TO SCALE

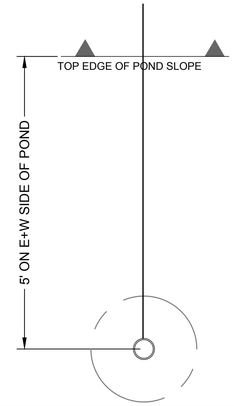


TABLE 2
DISTANCE BETWEEN MOORS (ANCHOR POSTS)

ROW	DISTANCE (FT)
1	230
2	228
3	232

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

4 TOP VIEW OF AERATOR ANCHOR POST
NOT TO SCALE

NOTES:
1 IF THIS DRAWING IS OTHER THAN FULL SIZE, (22" X 34"), UTILIZE BAR SCALE IN LIEU OF NUMERIC SCALE.

2 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.

Registered Professional Engineer - General
CERTIFICATE NO.
54300
ALLEN
MUSKETT
Signed
ARIZONA, U.S.A.
Expires 12–31–18

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

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

GANADO WASTEWATER TREATMENT PLANT

CIVIL
CIVIL DETAILS

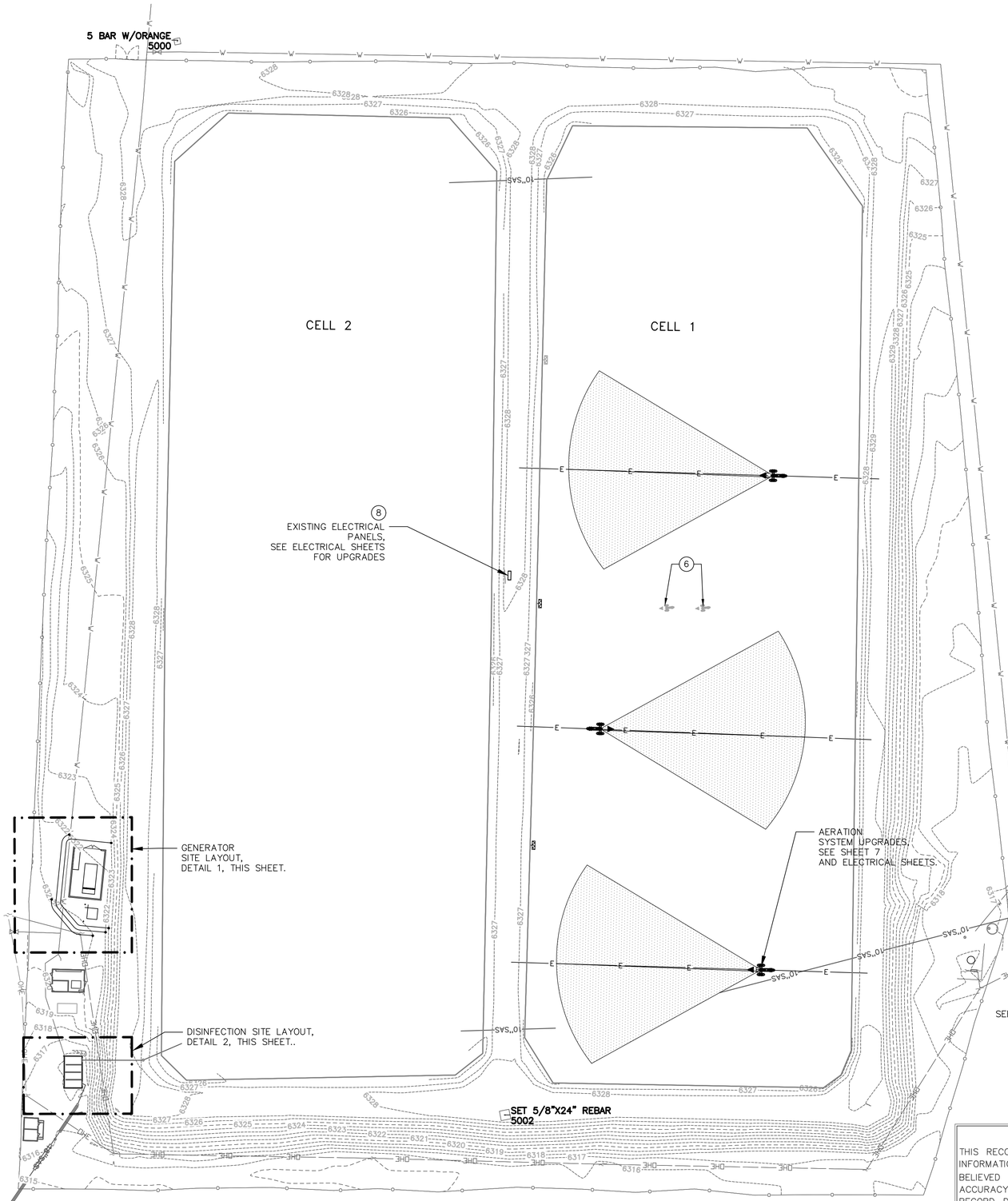
SOLUTIONS FOR TODAY...
VISION FOR TOMORROW
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
TEXAS
SMITH ENGINEERING COMPANY
NEW MEXICO

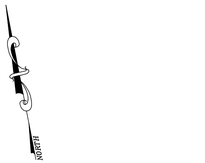
JOB NO:
115111

DATE:
APR 2016

SHEET NO:
6

RECORD DRAWING
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE IT'S ACCURACY, & IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF IT'S ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.





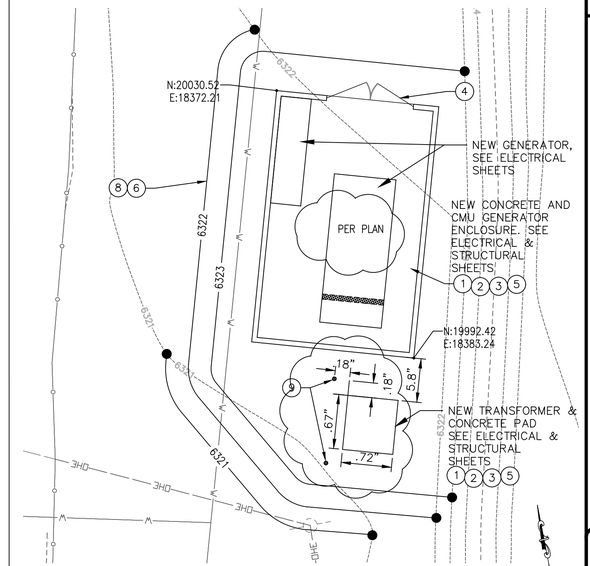
SCALE: 1" = 40'

40' 0 40' 80' 120' Feet

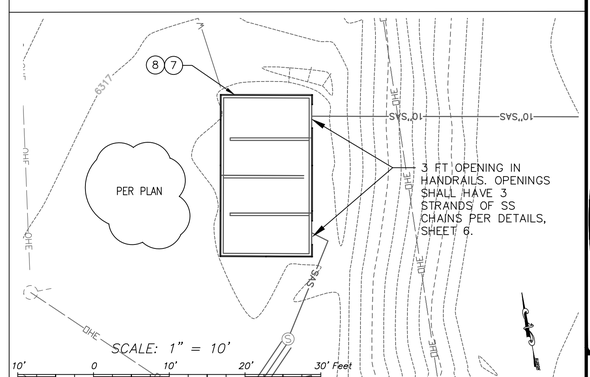
AERATORS INSTALLED PER PLAN

BUILD NOTES

1. STRUCTURAL CONCRETE: FURNISH AND INSTALL REINFORCED PORTLAND CEMENT CONCRETE PER STRUCTURAL SHEETS, COMPLETE AND IN PLACE.
2. SUBGRADE PREP: PREPARE SUBGRADE FOR STRUCTURES INCLUDES EXCAVATION (3FT BELOW BOTTOM FOUNDATION ELEV.) AND COMPACT PER STS 31 20 00, COMPLETE.
3. 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.
4. DRIVE GATE: FURNISH AND INSTALL DRIVE GATE WITH PER STRUCTURAL SHEETS, COMPLETE AND IN PLACE.
5. EXCAVATE AND SPOIL UNSUITABLE MATERIAL PER STD SPEC 206, COMPLETE.
6. ROUGH AND FINAL GRADING: GRADE SITE PER GEOTECHNICAL REPORT AND THIS SHEET. FINAL GRADE TO BE WITHIN 0.1 FT.±, COMPLETE AND IN PLACE.
7. ALUMINUM HANDRAIL: FURNISH AND INSTALL ALUMINUM HAND RAILING ON EXTERIOR WALLS OF CHLORINE CONTACT TANK, SEE SHEET 6 COMPLETE AND IN PLACE.
8. 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.
9. BOLLARDS: FURNISH AND INSTALL STATIONARY BOLLARDS PER DETAILS ON SHEET 6.
10. REMOVE AND SALVAGE EXISTING AERATION EQUIPMENT.



1 GENERATOR SITE LAYOUT
1' = 10' SCALE



2 DISINFECTION SITE LAYOUT
1' = 10' SCALE

RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE IT'S ACCURACY, & IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF IT'S ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

Registered Professional Engineer - General
CERTIFICATE NO.
54300
ALLEN J. MUSKETT
Signed
ARIZONA, U.S.A.
Expires 12-31-18

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO.	REVISION DESCRIPTION	DATE	BY
5			
4			
3			
2			
1			

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

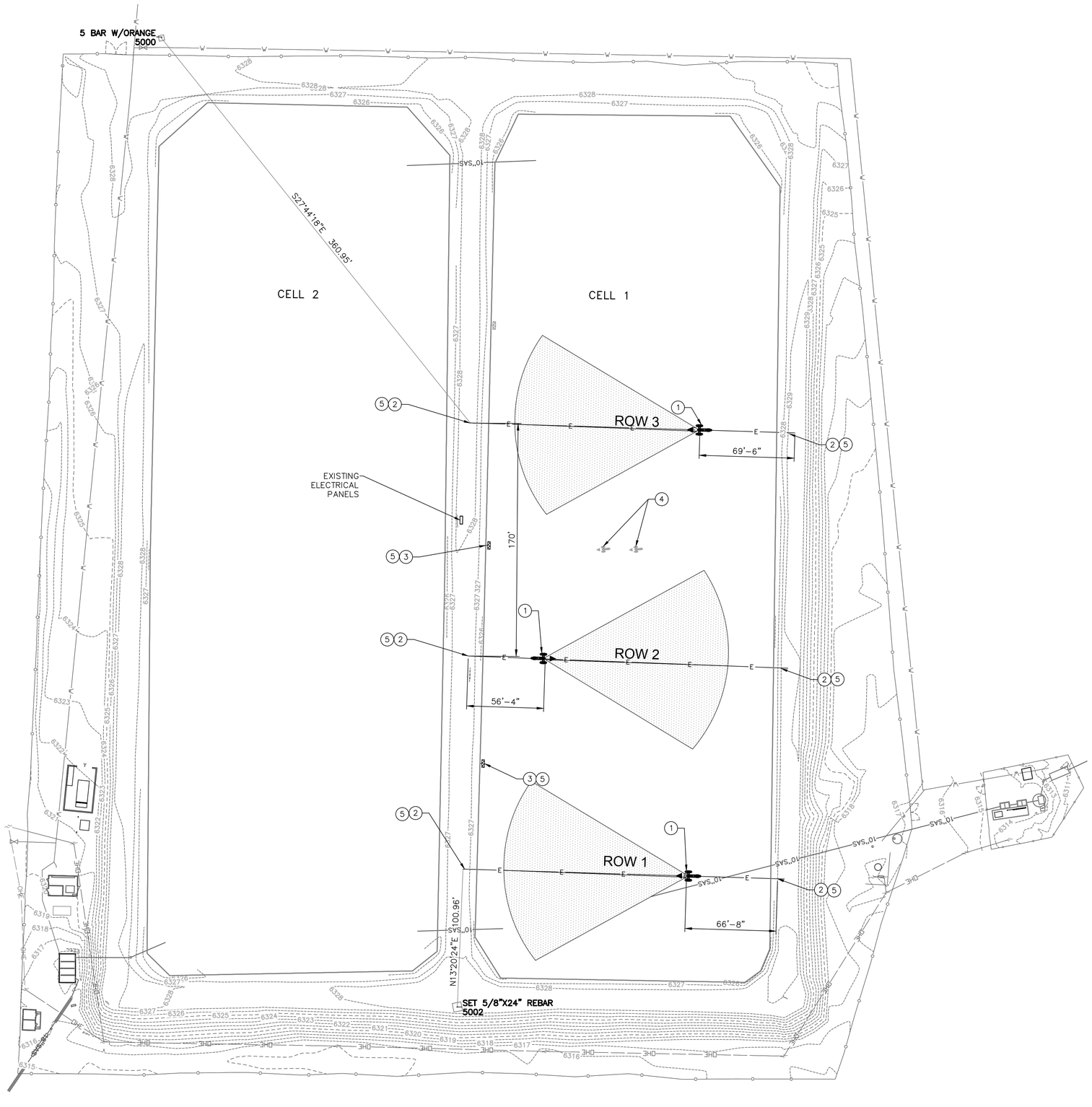
CIVIL
SITE UPGRADES

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

JOB NO: 115111

DATE: APR 2016

SHEET NO: 7



BUILD NOTES

1. INSTALL 25-HP AIRO-02 ASPIRATING AERATOR BY AERATION INDUSTRIES INTERNATIONAL, LLC, COMPLETE IN PLACE AND OPERATING. INCLUDES ELECTRICAL CABLES, MOORING CABLES, ETC, COMPLETE IN PLACE AND OPERATING. AERATORS AND AERATION CONTROL PANELS PROVIDED BY OWNER.
2. FURNISH AND INSTALL MOORING POSTS, CABLES, AND CONNECTIONS AS SHOWN IN DETAILS.
3. INSTALL BRUSH AERATORS. BRUSH AERATORS TO BE FURNISHED BY OWNER.
4. REMOVE AND SALVAGE EXISTING FLOATING AERATORS.
5. 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.

RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE IT'S ACCURACY, & IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF IT'S ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

NORTH

SCALE: 1" = 40'

40' 0 40' 80' 120' Feet

Registered Professional Engineer - Civil
CERTIFICATE NO.
54300
ALLEN
MUSKETT
Registered
ARIZONA, U.S.A.
Expires 12-31-18

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO.	DESCRIPTION	DATE	BY
5			
4			
3			
2			
1	REVISION		

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

CIVIL
AERATION SYSTEM UPGRADES

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
SMITH ENGINEERING COMPANY
NEW MEXICO

JOB NO: 115111
DATE: APR 2016
SHEET NO: 8

Q:\SEC—PROJECTS\115111 NTUA NNEPA Compliance Plan Assistance - Lagoon Systems\CONSTRUCT\115111-2 Ganado WWTP\Record_DWGS\Ganado\PLANSET\8 AERATION SYSTEM UPGRADES.dwg Feb 16, 2017 - 2:50pm Saved By: IsaiG

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: SMs=0.381, SM1=0.125

SITE COEFFICIENT: Fa=1.6, Fv=2.4

SITE CLASS: D

SPECTRAL RESPONSE COEFFICIENT: Sds=0.254, Sd1=0.083

SEISMIC DESIGN CATEGORY: B

SEISMIC-FORCE-RESISITING SYSTEM: MASONRY WALLS

RESPONSE MODIFICATION FACTOR: R=3.5

SEISMIC RESPONSE COEFFICIENT: Cs=0.091

ANALYSIS PROCEDURE USED: SIMPLIFIED METHOD

BASIC WIND SPEED: 90 MPH

WIND IMPORTANCE FACTOR: Iw=1.0

BUILDING CATEGORY: OPEN

EXPOSURE: C

DESIGN WIND PRESSURE FOR MWFRS:
ZONE A = 24.8 PSF
ZONE C = 16.6 PSF

THERMAL FACTOR: Ct=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 2/11.

LAP SPLICES IN MASONRY SHALL BE PER DETAIL 1/11.

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.

RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE IT'S ACCURACY, & IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF IT'S ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

Professional Engineer
CERTIFICATE NO.
60567
DOUGLAS B.
REEVE
ARIZONA, U.S.A.
Expires 12-31-18

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO	REVISION DESCRIPTION	DATE	BY
5			
4			
3			
2			
1			

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

STRUCTURAL
GENERAL STRUCTURAL NOTES

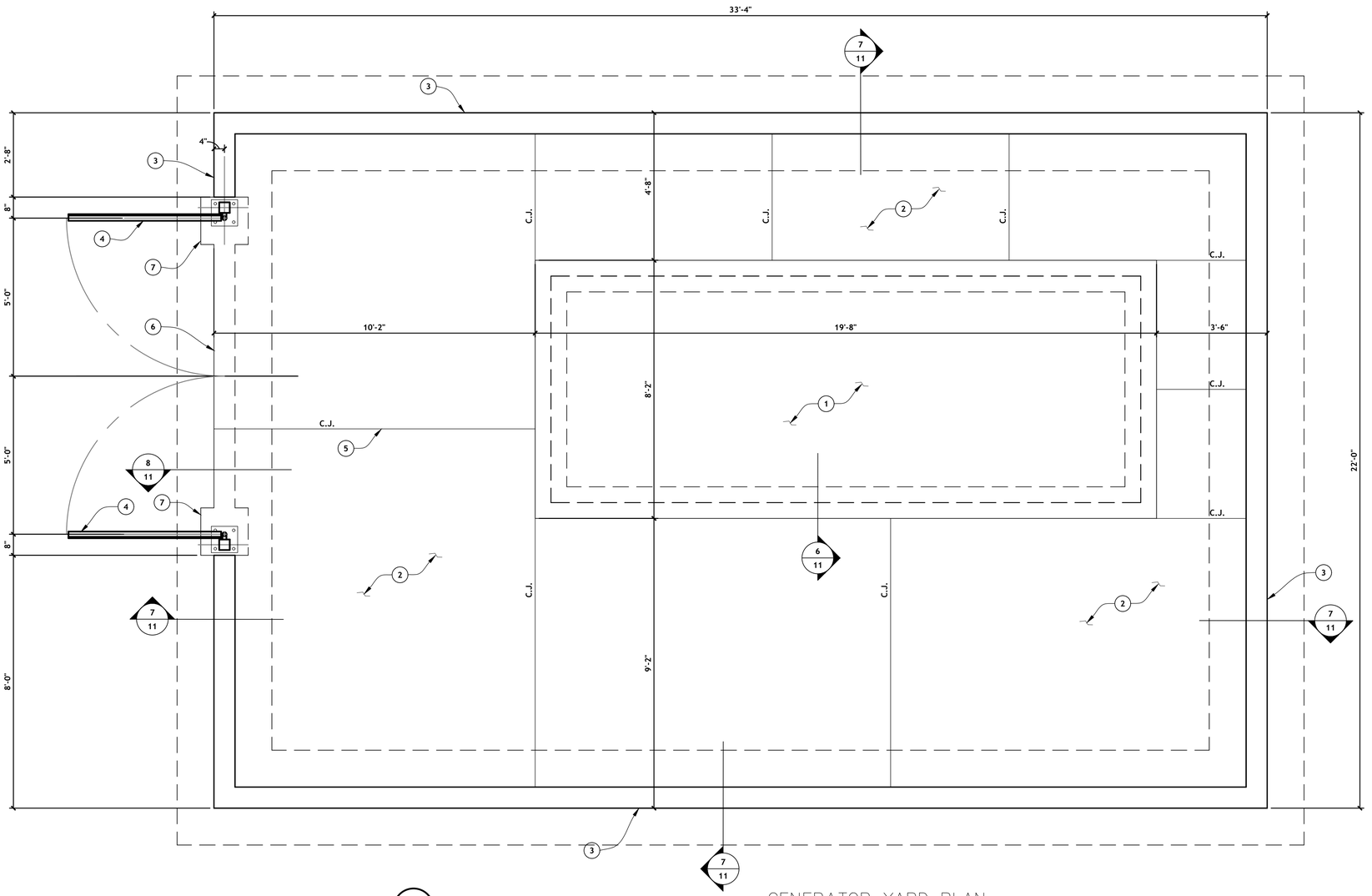
SOLUTIONS FOR TODAY...
VISION FOR TOMORROW

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

SMITH ENGINEERING COMPANY
NEW MEXICO TEXAS

JOB NO: 115111
DATE: APR 2016
SHEET NO: 9

Q:\SEC---PROJECTS\115111 NTUA NNEPA Compliance Plan Assistance Lagoon Systems\CONSTRUCT\115111-2 Ganado WWTP\Record_DWGS\Ganado\PLANSET\9 GENERAL STRUCTURAL NOTES.dwg Feb 16, 2017 - 2:52pm Saved By: lsalG

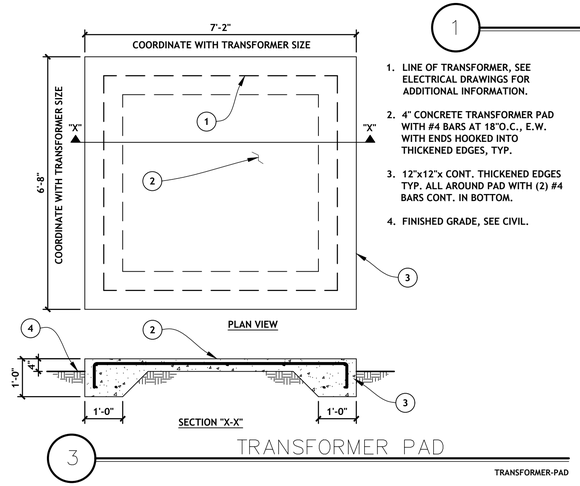


1. CONCRETE GENERATOR PAD, SEE DETAIL 6/11.
2. 4" CONCRETE SLAB WITH #4 BARS AT 18"O.C., E.W.
3. 8" CMU WALL, 8'-0" HIGH, SEE DETAIL 7/11.
4. GATE, SEE DETAIL 9/11 FOR ADDITIONAL INFORMATION.
5. C.J. INDICATES LOCATION OF CONSTRUCTION JOINT IN SLAB, SEE DETAIL 3/11.
6. 8" WIDE TURN DOWN SLAB EDGE ALONG GATE OPENING, SEE 8/11.
7. WIDEN TURN DOWN SLAB EDGE AT GATE POSTS TO 18" SQUARE, SEE DETAIL 9/11.

NOTES:
1. SEE DETAILS 4/11 AND 5/11 FOR LOCATIONS WHERE PIPES OR CONDUITS PASS UNDER THE FOOTINGS.

1 GENERATOR YARD PLAN

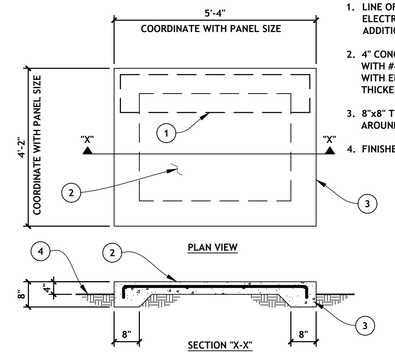
STRUCT-GANADO-PLAN-A



1. LINE OF TRANSFORMER, SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. 4" CONCRETE TRANSFORMER PAD WITH #4 BARS AT 18"O.C., E.W. WITH ENDS HOOKED INTO THICKENED EDGES, TYP.
3. 12"x12"x CONT. THICKENED EDGES TYP. ALL AROUND PAD WITH (2) #4 BARS CONT. IN BOTTOM.
4. FINISHED GRADE, SEE CIVIL.

3 TRANSFORMER PAD

TRANSFORMER-PAD



1. LINE OF CONTROL PANEL, SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. 4" CONCRETE CONTROL PANEL PAD WITH #4 BARS AT 18"O.C., E.W. WITH ENDS HOOKED INTO THICKENED EDGES, TYP.
3. 8"x8" THICKENED EDGES TYP. ALL AROUND PAD.
4. FINISHED GRADE, SEE CIVIL.

2 CONTROL PANEL PAD DETAILS

CONTROL-PANEL

RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, THE ENGINEER CANNOT ASSURE IT'S ACCURACY, & IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF IT'S ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

SCALE: 1/2"=1'-0"

2' 0 2' 4' 8' Feet

Registered Professional Engineer
CERTIFICATE NO.
60567
DOUGLAS R.
REEVES
ARIZONA U.S.A.
Expires 12-31-18

NO.	REVISION DESCRIPTION	DATE	BY
5			
4			
3			
2			
1			

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

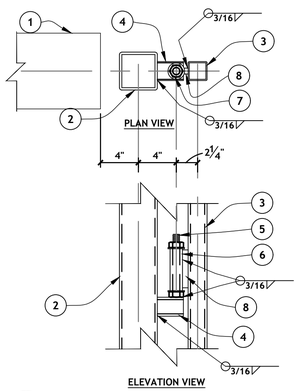
GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

STRUCTURAL
STRUCTURAL 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
SMITH ENGINEERING COMPANY
NEW MEXICO

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

O:\SEC---PROJECTS\115111 NTUA NNEPA Compliance Plan Assistance Lagoon Systems\CONSTRUCT\115111-2 Ganado WWTP\Record_DWGS\Ganado\PLANSET\10 STRUCTURAL PLAN.dwg Feb 16, 2017 - 2:53pm Saved By: lisaG



1. 8" CMU WALL, SEE PLAN.
2. HSS4x4x1/4 GATE POST, SEE PLANS.
3. HSS2x2x1/4 GATE FRAME, SEE 9/11.
4. HSS2x2x1/4 STUB WELDED TO GATE POST, SEE 9/11.
5. 3/4"Ø x 6" LONG BOLT WELDED TO HSS STUB.
6. 1"Ø EXTRA-STRONG PIPE SLEEVE, 4 1/2" LONG, PLACED OVER 3/4"Ø BOLT WITH WASHER TOP AND BOTTOM.
7. NUT FOR 3/4"Ø BOLT FINGER TIGHT.
8. WELD A 5/8" SQUARE SPACER BAR 4" LONG TO PIPE SLEEVE AND HSS2x2 GATE FRAME.

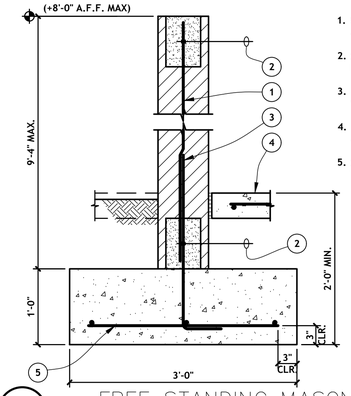
10 GATE HINGE DETAIL

10-11511_GANADO

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"Ø 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 ANGELS (1) EACH GATE FRAME, FOR LOCK BY OWNER.

11 GATE LATCH DETAIL

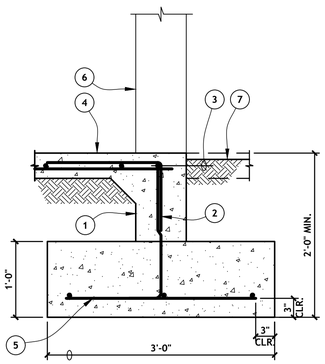
11-11511_GANADO



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

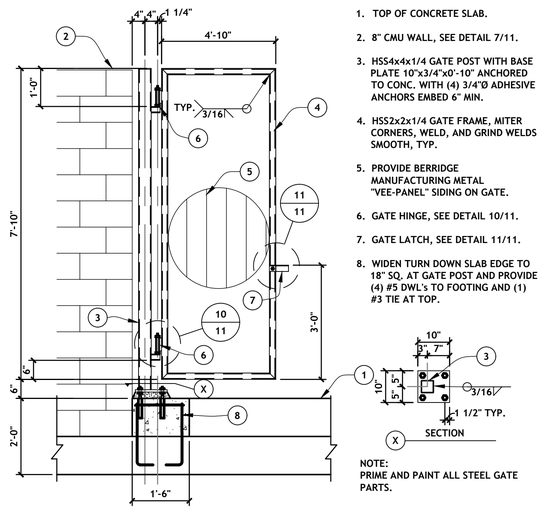
M118



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 7/10 FOR FOOTING SIZE AND REINFORCING.
6. MASONRY WALL BEYOND.
7. CONCRETE SLAB OR FINISH GRADE AS OCCURS.

8 FOOTING AT MASONRY WALL OPENING

M104



1. TOP OF CONCRETE SLAB.
2. 8" CMU WALL, SEE DETAIL 7/11.
3. HSS4x4x1/4 GATE POST WITH BASE PLATE 10"x3/4"x0'-10" ANCHORED TO CONC. WITH (4) 3/4"Ø 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 10/11.
7. GATE LATCH, SEE DETAIL 11/11.
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.

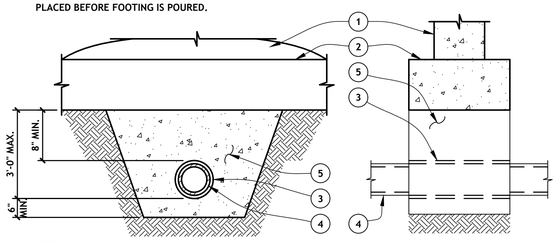
NOTE:
PRIME AND PAINT ALL STEEL GATE PARTS.

9 GATE DETAILS

9-115111_GANADO

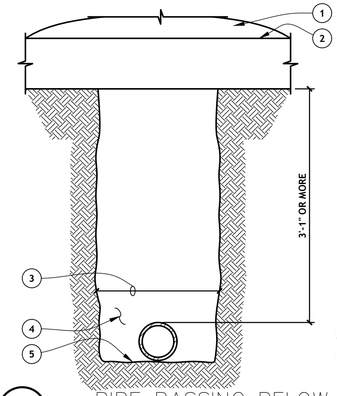
1. STEM WALL AS OCCURS.
2. CONCRETE FOOTING OR FOUNDATION.
3. SLEEVE. PROVIDE 1/2" MIN. CLEARANCE AROUND PIPE.
4. PIPE.
5. CONCRETE FILL TO POURED FULL WIDTH OF PIPE TRENCH AND BE PLACED BEFORE FOOTING IS POURED.

NOTE:
FOR PIPE BURIAL DEPTH OF 3'-1" OR MORE, SEE TYPICAL PIPE UNDER FOOTING DETAIL 5/10.



4 PIPE PASSING BELOW CONT. FOOTING

TYP4

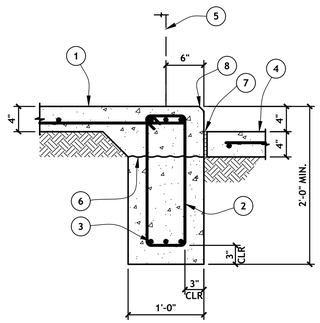


1. STEM WALL AS OCCURS.
2. CONCRETE FOOTING OR FOUNDATION.
3. 1'-6" MAX., NOTIFY THE STRUCTURAL ENGINEER PRIOR TO PLACEMENT OF FOOTING WHEN TRENCH EXCEEDS 1'-6".
4. BACKFILL AND RECOMPACTED TRENCH PER THE SOIL REPORT AND SPECIFICATIONS.
5. BOTTOM OF TRENCH.

NOTE:
FOR PIPE BURIAL DEPTH OF 3'-0" OR LESS, SEE TYPICAL PIPE UNDER FOOTING DETAIL 4/10.

5 PIPE PASSING BELOW CONT. FOOTING

TYP3



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. (3) #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.

6 GENERATOR PAD DETAIL

S2-115111

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.

LAP SPLICE LENGTHS (IN.)

BAR SIZE	LENGTHS (IN.)					
	SINGLE MAT				DOUBLE MAT	
	6" CMU		8" CMU		12" CMU	
	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 SCHEDULE FOR MASONRY REI

M9A

90° STD. HOOK

180° STD. HOOK

MAX. OFFSET BEND

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

PRINCIPAL REINFORCING

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

135° STD. HOOK

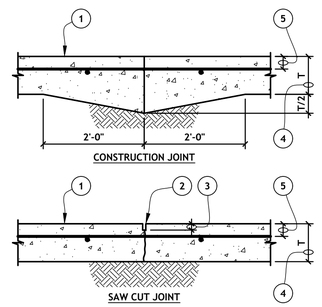
STIRRUP AND TIES

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

S1



1. CONCRETE SLAB OVER STRUCTURA FILL PER THE G.S.N. AND SOILS REPORT.
2. SAWCUT SLAB AFTER CONCRETE IS HARD ENOUGH TO AVOID SPALLINC AND DAMAGE BUT NOT LATER THA 12 HOURS AFTER CONCRETE PLACEMENT.
3. DEPTH OF CUT=T/4.
4. SEE PLANS FOR (T) SLAB THICKNES
5. 2" MINIMUM COVER.

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

FN1

6056
DOUGLAS B. REEVES
ARIZONA, U.S.A.
Expires 12-31-18

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO	REVISION DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

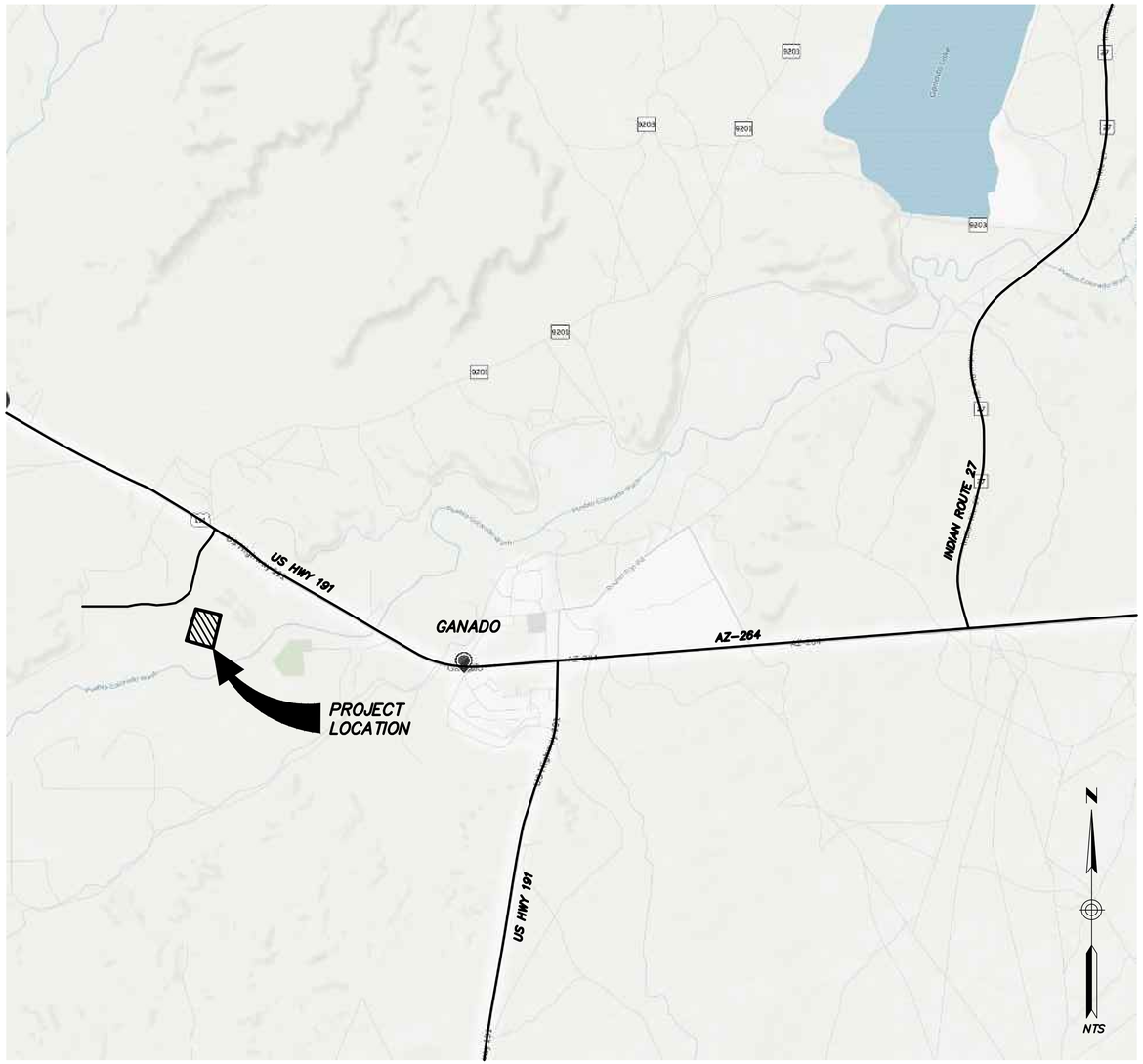
STRUCTURAL
STRUCTURAL DETAILS

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
NEW MEXICO
SMITH ENGINEERING COMPANY

JOB NO: 115111
DATE: APR 2016
SHEET NO: 11

Q:\SEC---PROJECTS\115111 NTUA NNEPA Compliance Plan Assistance Lagoon Systems\CONSTRUCT\115111-2 Ganado WWTP\Record_DWGS\Ganado\PLANSET\11 STRUCTURAL DETAILS.dwg Feb 16, 2017 - 2:53pm Saved By: IsaiG

VICINITY MAP



PLAN LEGEND

- EXPOSED CONDUIT
- UNDERGROUND CONDUIT DUCTBANK
- UNDERGROUND UTILITY CONDUIT
- GROUNDING ELECTRODE CONDUCTOR
- OHE — 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
- JB — UNDERGROUND JUNCTION BOX
- 120V, 20A DUPLEX RECEPTACLE
- $ — 120V, 20A SPST SWITCH
- PANELBOARD
- POWER POLE

SINGLE LINE DIAGRAM LEGEND

- FUSE
- CURRENT TRANSFORMER
- TRANSFORMER
- MOTOR STARTER
- 20 — MOTOR (20 DENOTES MOTOR HORSEPOWER)
- JB OR (J) — 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)
- N — NEUTRAL BUS
- G — 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 THEMSELF 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

AFF	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	W-I-U	WHILE-IN-USE
		WP	WEATHERPROOF
		XFMR	TRANSFORMER

LUMINAIRE SCHEDULE

SYMBOL	VOLTS	LAMP(S)	FIXTURE	DESCRIPTION	MANUFACTURER
HA	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~~ AB

RECORD DRAWING
THIS RECORD DOCUMENT HAS BEEN PREPARED BASED UPON INFORMATION PROVIDED BY THE CONTRACTOR (AS DENOTED BY "AB"). THIS INFORMATION MAY OR MAY NOT BE ACCURATE OR COMPLETE. FURTHERMORE, THE **CONSULTANT** HAS NOT VERIFIED ALL INFORMATION INDICATED ON THIS DOCUMENT. THE **CONSULTANT** SHALL NOT BE HELD RESPONSIBLE FOR ANY ERRORS OR OMISSIONS ON THIS DOCUMENT. THIS DOCUMENT IS FOR GENERAL INFORMATION PURPOSES ONLY. ANY OTHER USE OF THIS DOCUMENT IS AT YOUR SOLE RISK!

DARCOR ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST. SUITE 212 PHOENIX, AZ 85020
Ph: (602) 795-2699 WWW.DARCORINC.COM

Registered Professional Engineer CERTIFICATE 30025 DARWIN REYNOLDS Date Signed 3/21/16 ARIZONA, U.S.A. Expires 3/31/17

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO.	REVISION DESCRIPTION	DATE	BY
1	AB AS BUILT PER CONTRACTOR REDLINES	3/13/2017	DAR
2			
3			
4			

DSGND BY: JLG | CHKD BY: DAR | DRWN BY: DRG

GANADO WASTEWATER TREATMENT PLANT
LAGOON 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
SMITH ENGINEERING COMPANY
NEW MEXICO

JOB NO: 115111
DATE: MAR 2016
SHEET NO: E500

GENERAL NOTE

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

DEMOLITION KEY NOTE

(1) DISCONNECT AND REMOVE EXISTING AERATOR MOTOR STARTERS, EQUIPMENT RACK AND AERATOR BRANCH CIRCUIT CONDUCTORS. ROTATE EXISTING 200A DISCONNECT SWITCH 90 DEGREES AND MOUNT TO SIDE OF NEW AERATION CONTROL PANEL.

CONSTRUCTION KEY NOTES

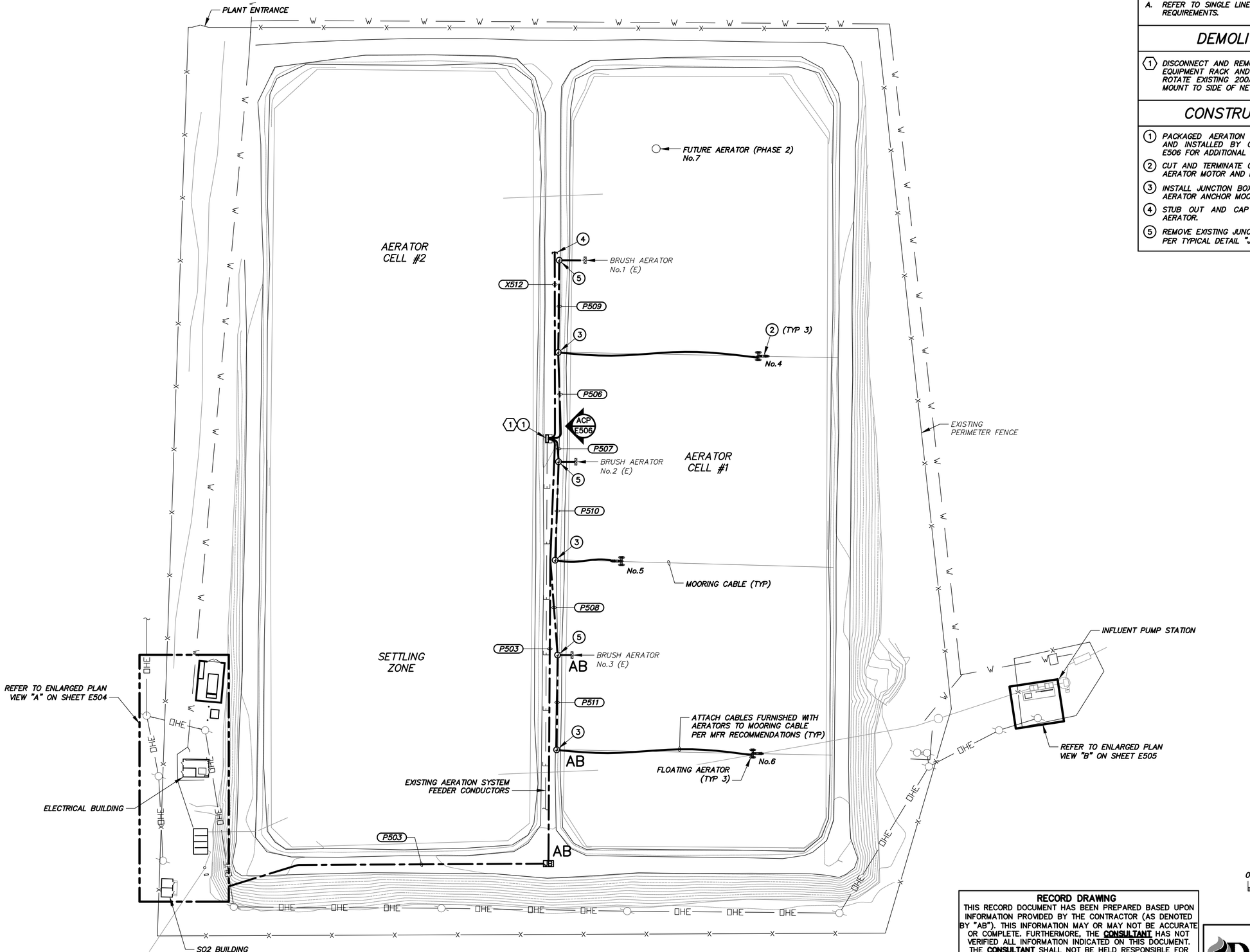
(1) PACKAGED AERATION CONTROL PANEL FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR. SEE ELEVATION ON SHEET E506 FOR ADDITIONAL INFORMATION.

(2) CUT AND TERMINATE CABLE FURNISHED WITH AERATORS IN EACH AERATOR MOTOR AND BOND PER MFR REQUIREMENTS.

(3) INSTALL JUNCTION BOX PER TYPICAL DETAIL "JB1" ADJACENT TO AERATOR ANCHOR MOORING POST.

(4) STUB OUT AND CAP EMPTY CONDUIT FOR FUTURE PHASE 2 AERATOR.

(5) REMOVE EXISTING JUNCTION BOX AND INSTALL NEW JUNCTION BOX PER TYPICAL DETAIL "JB1".



0 40 80 120

SCALE IN FEET

RECORD DRAWING
THIS RECORD DOCUMENT HAS BEEN PREPARED BASED UPON INFORMATION PROVIDED BY THE CONTRACTOR (AS DENOTED BY "AB"). THIS INFORMATION MAY OR MAY NOT BE ACCURATE OR COMPLETE. FURTHERMORE, THE **CONSULTANT** HAS NOT VERIFIED ALL INFORMATION INDICATED ON THIS DOCUMENT. THE **CONSULTANT** SHALL NOT BE HELD RESPONSIBLE FOR ANY ERRORS OR OMISSIONS ON THIS DOCUMENT. THIS DOCUMENT IS FOR GENERAL INFORMATION PURPOSES ONLY. ANY OTHER USE OF THIS DOCUMENT IS AT YOUR SOLE RISK!

DARCOR ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST. SUITE 212 PHOENIX, AZ 85020
Ph: (602) 795-2699 WWW.DARCORINC.COM

Registered Professional Engineer CERTIFICATE 30025 DARWIN REYNOLDS 3/21/16 Date Signed ARIZONA, U.S.A. Expires 3/31/17

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO.	BY	DESCRIPTION	DATE
1	AB	AS BUILT PER CONTRACTOR REDLINES	3/13/2017
2			
3			
4			

DSGND BY: JLG | CHKD BY: DAR | DRWN BY: DRG | DAR

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

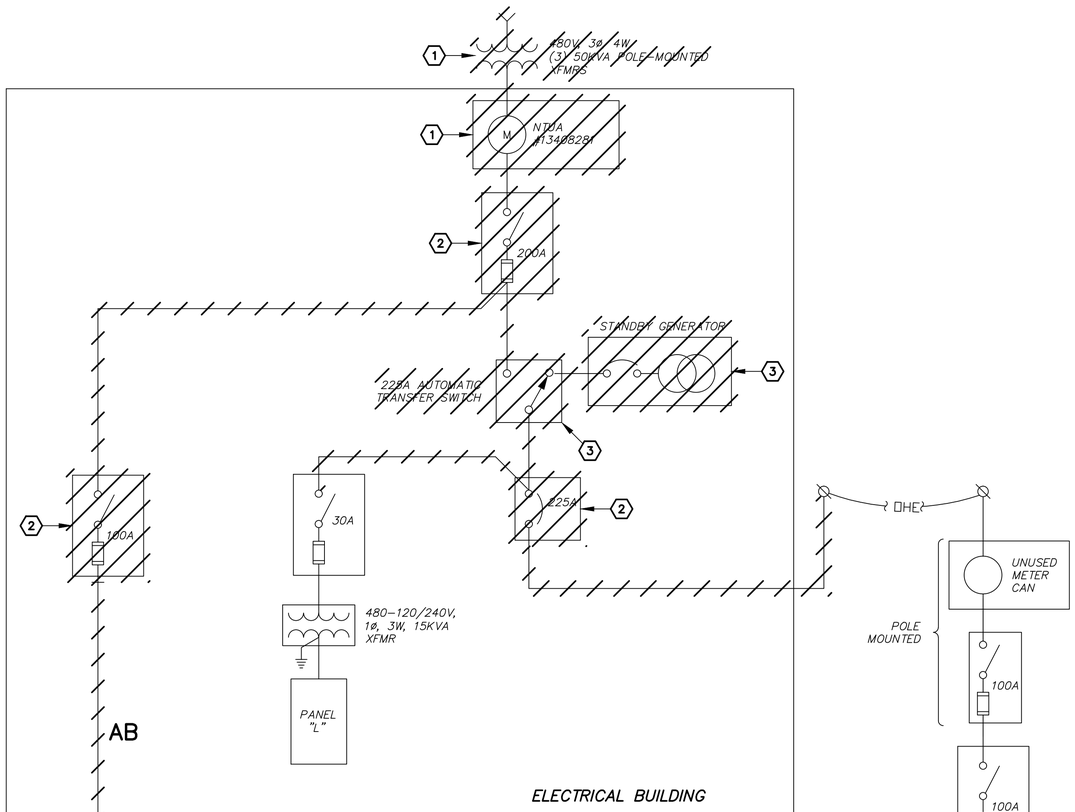
ELECTRICAL
OVERALL SITE PLAN

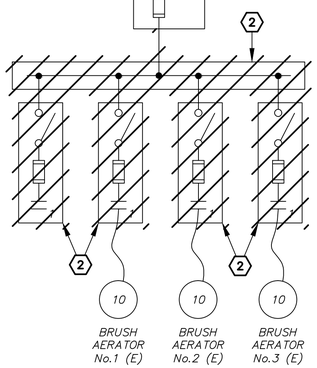
SOLUTIONS FOR TODAY... VISION FOR TOMORROW
2201 San Pedro Dr. NE
Building 4, Suite 200
Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376
SMITH ENGINEERING COMPANY
NEW MEXICO TEXAS

JOB NO: 115111
DATE: MAR 2016
SHEET NO: E501

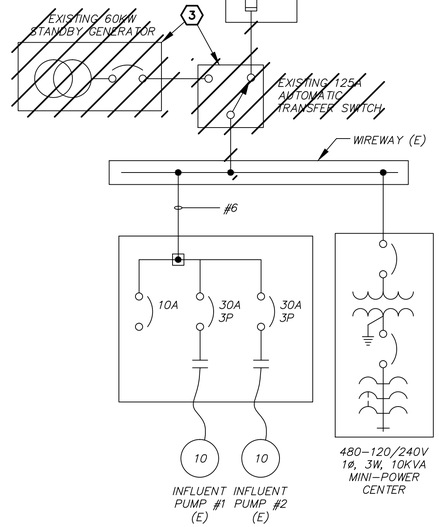
DEMOLITION KEY NOTES

1. COORDINATE WITH NTUA TO DISCONTINUE POWER, THEN DISCONNECT AND REMOVE EXISTING ELECTRICAL SERVICE EQUIPMENT AS INDICATED, INCLUDING EXISTING FEEDER CONDUCTORS AND ANY EXPOSED CONDUIT. ABANDON UNDERGROUND CONDUIT IN PLACE.
2. DISCONNECT AND REMOVE EXISTING ELECTRICAL EQUIPMENT AS INDICATED, INCLUDING ALL EXISTING CONDUCTORS AND ANY EXPOSED CONDUIT AND JUNCTION BOXES. ABANDON UNDERGROUND CONDUIT IN PLACE.
3. DISCONNECT AND REMOVE EXISTING STANDBY GENERATOR AND AUTOMATIC TRANSFER SWITCH.



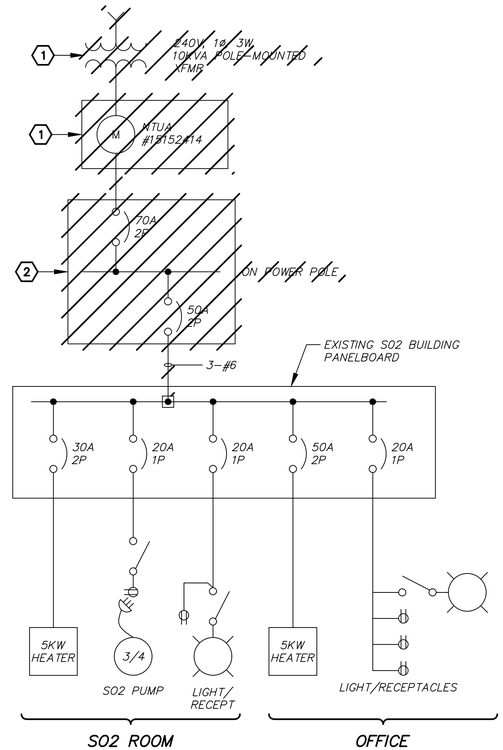


ELECTRICAL AERATION EQUIPMENT BETWEEN LAGOONS



INFLUENT PUMP STATION

MAIN PLANT SINGLE LINE DIAGRAM DEMOLITION



SO2/OFFICE BUILDING SINGLE LINE DIAGRAM DEMOLITION

RECORD DRAWING
THIS RECORD DOCUMENT HAS BEEN PREPARED BASED UPON INFORMATION PROVIDED BY THE CONTRACTOR (AS DENOTED BY "AB"). THIS INFORMATION MAY OR MAY NOT BE ACCURATE OR COMPLETE. FURTHERMORE, THE **CONSULTANT** HAS NOT VERIFIED ALL INFORMATION INDICATED ON THIS DOCUMENT. THE **CONSULTANT** SHALL NOT BE HELD RESPONSIBLE FOR ANY ERRORS OR OMISSIONS ON THIS DOCUMENT. THIS DOCUMENT IS FOR GENERAL INFORMATION PURPOSES ONLY. ANY OTHER USE OF THIS DOCUMENT IS AT YOUR SOLE RISK!

DARCOR ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST. SUITE 212 PHOENIX, AZ 85020 Ph: (602) 795-2699 WWW.DARCORINC.COM

Registered Professional Engineer Certificate 30025 DARWIN REYNOLDS Date Signed 3/21/16 ARIZONA, U.S.A. Expires 3/31/17

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO.		REVISION DESCRIPTION	DATE	BY
1	AB	AS BUILT PER CONTRACTOR REDLINES	3/13/2017	DAR
2				
3				
4				

DSGND BY: JLG | CHKD BY: DAR | DRWN BY: DRG

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

ELECTRICAL
SINGLE LINE DIAGRAM DEMOLITIONS

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
SMITH ENGINEERING COMPANY

JOB NO: 115111
DATE: MAR 2016
SHEET NO: E502

480V, 3 ϕ LOAD CALCULATIONS

LOADS	KVA	H.P.	AMPS
EXISTING INFLUENT PUMP No.1	--	10	14.0
EXISTING INFLUENT PUMP No.2	--	10	14.0
EXISTING PANEL "L" TRANSFORMER (1 ϕ)	15	--	31.3
EXISTING MINI-POWER CENTER (1 ϕ)	10	--	20.8
EXISTING BRUSH AERATOR No.1	--	10	14.0
EXISTING BRUSH AERATOR No.2	--	10	14.0
EXISTING BRUSH AERATOR No.3	--	10	14.0
CELL 1 AERATOR No.4	--	25	34.0
CELL 1 AERATOR No.5	--	25	34.0
CELL 1 AERATOR No.6	--	25	34.0
FUTURE CELL 1 AERATOR No.7	--	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
PANEL "A" TRANSFORMER (1 ϕ)	25	--	52.1
SUBTOTAL =			446.2
+25% OF LARGEST MOTOR (25HP) =			8.5
MINIMUM SERVICE SIZE =			454.7
SELECTED SERVICE SIZE =			600A

PANEL: A	VOLTAGE: 240 / 120 1Ø	MAINS: 125A MCB	BUS AMPS: 225A
TYPE: BOLT-ON	ENCLOSURE: OPEN STYLE	MOUNTING: IN SWBD	MIN AIC: 10,000

VA LOAD

	CIRCUIT DESCRIPTION	BKR	CKT	ϕA	ϕB	CKT	BKR	CIRCUIT DESCRIPTION
	GENERATOR BATTERY CHARGER	20	1	100		2	70	SO2/OFFICE BLDG PANELBOARD
			3		2493			
	GENERATOR BLOCK HEATER	30			6720	4		
			5	2493		6	20	SPARE
X	WALL MTD LTS & RECEPT	20	7		330	8	20	SPARE
	SPACE		9		0	10		SPACE
			11			12		
			13			14		
			15			16		
			17			18		
			19			20		
			21			22		
			23			24		
			25			26		
			27			28		
			29			30		
			31			32		
			33			34		
			35			36		
			37			38		
			39			40		
			41			42		
	CONNECTED VA PER PHASE			9315	9565			
	CONNECTED AMPS PER PHASE			77.6	79.7			
	+25% CONTINUOUS LIGHTING LOAD VA			0	88			
	DEMAND VA PER PHASE			9315	9653			
	TOTAL AMPS PER PHASE			77.6	80.4			

NOTES:
"X" DENOTES CONTINUOUS LIGHTING LOAD

AB

CONSTRUCTION KEY NOTES

1. FURNISH CIRCUIT BREAKER WITH A PADLOCKING DEVICE TO ALLOW CIRCUIT BREAKER TO BE PADLOCKED IN THE OFF POSITION.
2. EXISTING AERATOR CABLE
3. AFTER REMOVAL OF AUTOMATIC TRANSFER SWITCH, INSTALL 3-#2, #8 GND, 1-1/2"C FROM 100A DISCONNECT SWITCH TO WIREWAY AND SPLICE TO EXISTING CONDUCTORS IN WIREWAY.
4. INSTALL 3-#4, #8 GND IN EXISTING CONDUIT NIPPLE PASSING THROUGH BUILDING WALL.

EXISTING POWER POLE
PULL ROPE, 6"C (P099)
UTILITY TRANSFORMER (3.35% IMPEDANCE)
(2) SETS, 4-#350KCMIL, 4"C (P500A) (P500B)
#2/0 BARE Cu
SCA =17,973
UTILITY METER
(2) 3/4" X 10' COPPERCLAD GROUND RODS (6" APART)
#2/0 MBJ
600A 3P
#2/0 BARE Cu
BUSSED CONNECTION
480V, 3ø, 3W, 450KW STANDBY GENERATOR
600A 3P
(2 SETS) 3-#250KCMIL, #1 GND, 2-1/2"C (P501A) (P501B)
2-#14 3/4"C (X501)
480V, 3P, 3W, 600A, 22KAIC AUTOMATIC TRANSFER SWITCH
BUSSED CONNECTION
4-#10, #10 GND, 3/4"C (P502)
MLO
480V, 3ø, 3W, 600A, 22KAIC DISTRIBUTION SWITCHBOARD (NEMA 3R)
125A 2P
PANEL "A"
70A 2P
480-120/240V, 1ø, 3W, 25KVA TRANSFORMER
200A 3P
30A 3P
SPD
INTEGRAL SPD WITH 200KA SURGE CURRENT CAPACITY PER PHASE
150A 3P
70A 3P
60A 3P
3-#4, #8 GND, 1-1/2"C (P517)
OHE
OHE
UNUSED METER CAN (E)
POLE MOUNTED
(E) 100A
(E) 100A
3
WIREWAY (E)
10A
30A 3P
30A 3P
10
10
INFLUENT PUMP #1 (E)
INFLUENT PUMP #2 (E)
480-120/240V 1ø, 3W, 10KVA MINI-POWER CENTER (E)
INFLUENT PUMP STATION
2-#12, #12 GND, 3/4"C
3-#4, #8 GND, 1-1/4"C (P516)
SEE PANEL SCHEDULE ON THIS SHEET FOR ADDITIONAL INFO
240V, 2P, 3W, 100A DISCONNECT SWITCH (NEMA 3R ENCLOSURE)
4
PANEL (E)
RECEPTACLE
LIGHT SWITCH
WALL MOUNTED LIGHTS & RECEPT (CKT A-7)
SO2/OFFICE BLDG
3-#250KCMIL, #3 GND, 3"C (P503)
AB
AB
1-1/2"E.C. (X513)
1"E.C. (X514)
3-#6, #10 GND, 1-1/2"C (P515)
PACKAGED CELL 1 AERATION CONTROL PANEL FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR
200A
EXISTING AERATION SYSTEM DISCONNECT SWITCH
MLO
2
1-1/2" E.C. (X512)
3-#6, 3-#10, #10 GND, 1-1/2"C (P506)
3-#6, 3-#10, #10 GND, 1-1/2"C (P507)
3-#6, 3-#10, #10 GND, 1-1/2"C (P508)
JB
3-#10, #10 GND, 1"C (P509)
3-#6, #10 GND, 1"C (P510)
3-#6, #10 GND, 1"C (P511)
POWER DISTRIBUTION BLOCK (TYP)
ABOVE GROUND JUNCTION BOX NEAR MOORING POST (TYP 6)
4/4 TYPE SEO-OW CABLE FURNISHED WITH AERATOR (TYP 3)
25
FUTURE CELL 1 AERATOR No.7
FUTURE PHASE-2
10
CELL 1 BRUSH AERATOR No.1 (E)
25
CELL 1 AERATOR No.4
10
CELL 1 BRUSH AERATOR No.2 (E)
25
CELL 1 AERATOR No.5
10
CELL 1 BRUSH AERATOR No.3 (E)
25
CELL 1 AERATOR No.6
STUBOUT AND CAP FOR FUTURE USE
FUTURE CELL 2 AERATION CONTROL PANEL
MLO
25
FUTURE CELL 2 AERATOR No.1
25
FUTURE CELL 2 AERATOR No.2
FUTURE PHASE-2
25
FUTURE CELL 2 AERATOR No.3
25
FUTURE CELL 2 AERATOR No.4
FUTURE PHASE-3
(E) 30A
TRANSFORMER DISCONNECT (E)
480-120/240V, 1ø, 3W, 15KVA XFMR (E)
PANEL "L" (E)
ELECTRICAL BLDG

RECORD DRAWING
THIS RECORD DOCUMENT HAS BEEN PREPARED BASED UPON INFORMATION PROVIDED BY THE CONTRACTOR (AS DENOTED BY "AB"). THIS INFORMATION MAY OR MAY NOT BE ACCURATE OR COMPLETE. FURTHERMORE, THE CONSULTANT HAS NOT VERIFIED ALL INFORMATION INDICATED ON THIS DOCUMENT. THE CONSULTANT SHALL NOT BE HELD RESPONSIBLE FOR ANY ERRORS OR OMISSIONS ON THIS DOCUMENT. THIS DOCUMENT IS FOR GENERAL INFORMATION PURPOSES ONLY. ANY OTHER USE OF THIS DOCUMENT IS AT YOUR SOLE RISK!

Registered Professional Engineer CERTIFICATE 30325 DARWIN REYNOLDS Date Signed 3/21/16 ARIZONA, U.S.A. Expires 3/31/17

NO.	BY	REVISION DESCRIPTION	DATE	DRAWN BY: DRG
1	AB	AS BUILT PER CONTRACTOR REDLINES	3/13/2017	DAR
2				CHKD BY: DAR
3				DSGND BY: JLG
4				

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

ELECTRICAL
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
SMITH ENGINEERING COMPANY
NEW MEXICO TEXAS

DARCOR ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST. SUITE 212 PHOENIX, AZ 85020
PH: (602) 795-2699
WWW.DARCORINC.COM

JOB NO: 115111
DATE: MAR 2016
SHEET NO: E503

RECORD DRAWING
THIS RECORD DOCUMENT HAS BEEN PREPARED BASED UPON INFORMATION PROVIDED BY THE CONTRACTOR (AS DENOTED BY "AB"). THIS INFORMATION MAY OR MAY NOT BE ACCURATE OR COMPLETE. FURTHERMORE, THE **CONSULTANT** HAS NOT VERIFIED ALL INFORMATION INDICATED ON THIS DOCUMENT. THE **CONSULTANT** SHALL NOT BE HELD RESPONSIBLE FOR ANY ERRORS OR OMISSIONS ON THIS DOCUMENT. THIS DOCUMENT IS FOR GENERAL INFORMATION PURPOSES ONLY. ANY OTHER USE OF THIS DOCUMENT IS AT YOUR SOLE RISK!

GENERAL NOTES

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

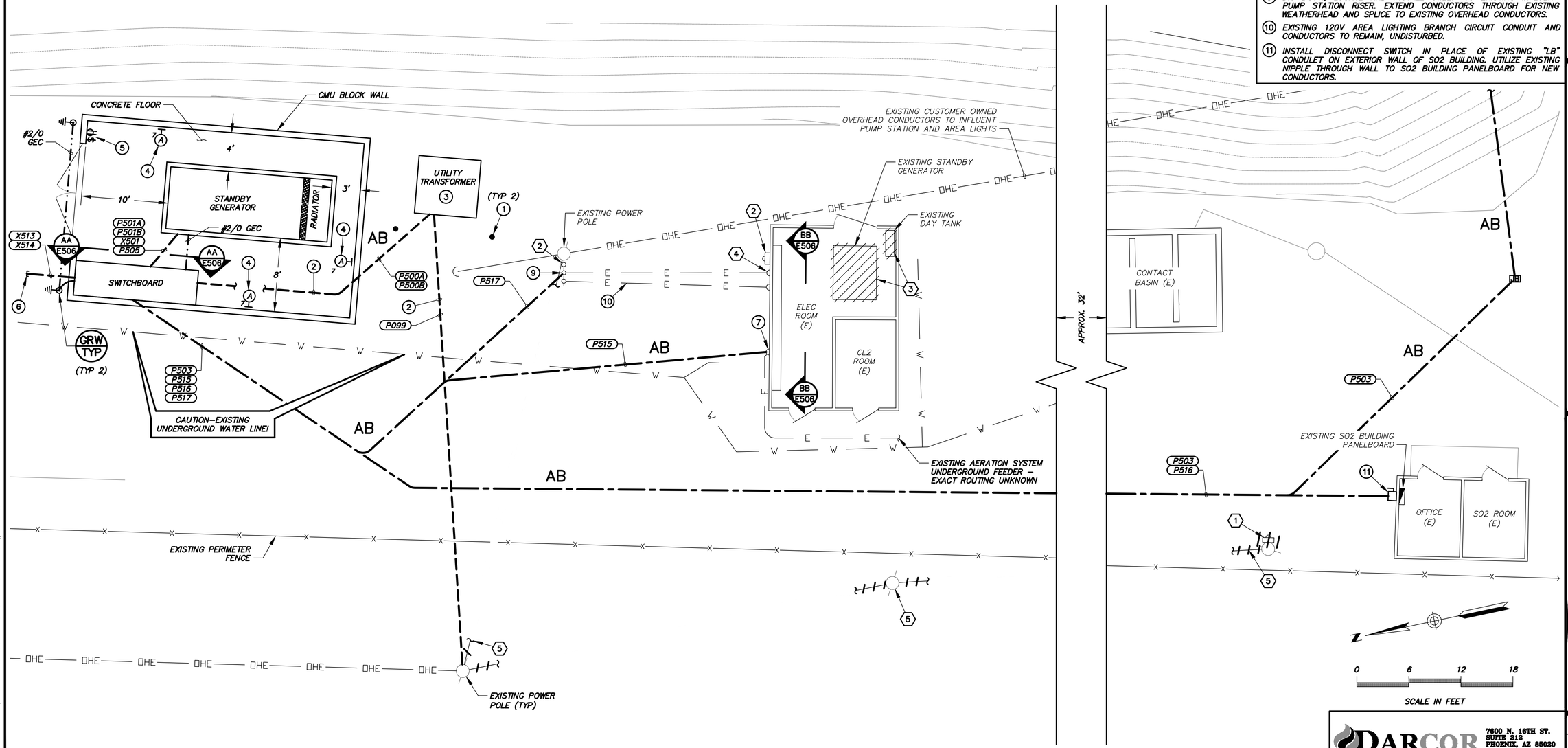
B. ALL GENERATOR ENCLOSURE DIMENSIONS SHOWN ARE THE MINIMUM SPACE REQUIREMENTS.

DEMOLITION KEY NOTES

1. COORDINATE WITH NTUA TO DISCONTINUE POWER, THEN DISCONNECT AND REMOVE EXISTING ELECTRICAL SERVICE EQUIPMENT AS INDICATED, INCLUDING ALL EXISTING FEEDER CONDUCTORS AND ANY EXPOSED CONDUIT. ABANDON UNDERGROUND CONDUIT IN PLACE.
2. COORDINATE WITH NTUA TO DISCONTINUE POWER, THEN DISCONNECT AND REMOVE EXISTING ELECTRICAL SERVICE ENTRANCE SECTION INCLUDING FEEDER, SERVICE RISER, WEATHERHEAD AND EXPOSED CONDUIT. ABANDON UNDERGROUND CONDUIT IN PLACE.
3. DISCONNECT AND REMOVE EXISTING STANDBY GENERATOR AND DAY TANK, INCLUDING ALL EXISTING CONDUCTORS AND EXPOSED CONDUITS. ABANDON UNDERGROUND CONDUIT IN PLACE.
4. DISCONNECT AND REMOVE EXISTING INFLUENT PUMP STATION FEEDER CONDUCTORS BETWEEN OVERHEAD CONDUCTOR SPLICES AND ELECTRICAL ROOM. ABANDON UNDERGROUND CONDUIT IN PLACE.
5. EXISTING OVERHEAD POWER TO BE REMOVED BY NTUA.

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 CONDUIT & 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 E500 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. STUB OUT AND CAP CONDUITS 5-FEET PAST GENERATOR ENCLOSURE WALL FOR FUTURE USE.
7. TERMINATE CONDUIT IN A "LB" ON EXTERIOR OF ELECTRICAL BUILDING AND INSTALL CONDUCTORS PER SINGLE LINE DIAGRAM.
8. INSTALL 18" X 12" X 6" NEMA 3R JUNCTION BOX IN PLACE OF EXISTING "LB" CONDULET ON EXTERIOR WALL. STUB-UP CONDUIT AND TERMINATE IN JUNCTION BOX AND SPLICE TO EXISTING AERATION SYSTEM FEEDER CONDUCTORS.
9. DIG DOWN, LOCATE AND INSTALL SWEEP TO EXISTING INFLUENT PUMP STATION RISER. EXTEND CONDUCTORS THROUGH EXISTING WEATHERHEAD AND SPLICE TO EXISTING OVERHEAD CONDUCTORS.
10. EXISTING 120V AREA LIGHTING BRANCH CIRCUIT CONDUIT AND CONDUCTORS TO REMAIN, UNDISTURBED.
11. INSTALL DISCONNECT SWITCH IN PLACE OF EXISTING "LB" CONDULET ON EXTERIOR WALL OF SO2 BUILDING. UTILIZE EXISTING NIPPLE THROUGH WALL TO SO2 BUILDING PANELBOARD FOR NEW CONDUCTORS.



Registered Professional Engineer
30025
DARWIN REYNOLDS
Not Signed
3/21/16
ARIZONA, U.S.A.
Expires 3/31/17

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO.	REVISION DESCRIPTION	DATE	BY
1	AS BUILT PER CONTRACTOR REDLINES	3/13/2017	DAR
2			
3			
4			

DSGND BY: JLG | CHKD BY: DAR | DRWN BY: DRG

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

ELECTRICAL
ENLARGED PLAN VIEW "A"

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 COMPANY
NEW MEXICO TEXAS

DARCOR
ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST.
SUITE 212
PHOENIX, AZ 85020
Ph: (602) 795-2699
WWW.DARCORINC.COM

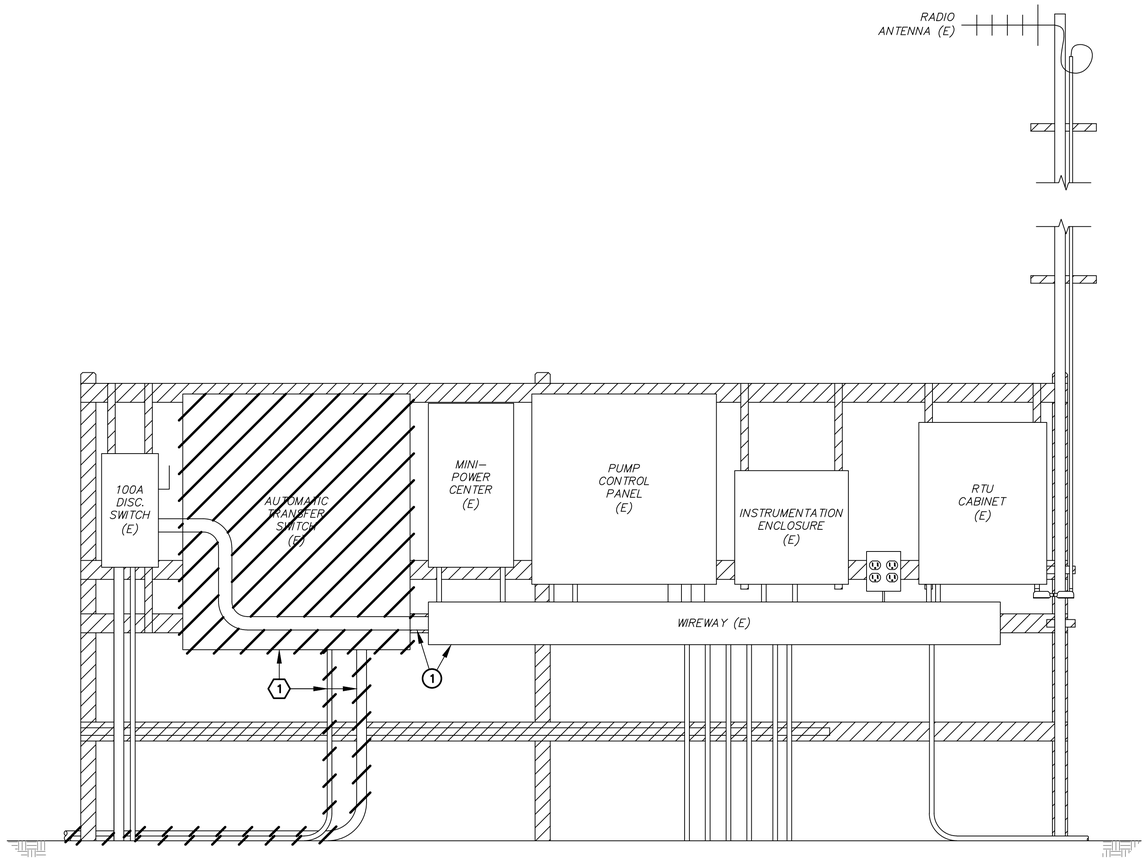
JOB NO: 115111
DATE: MAR 2016
SHEET NO: E504

DEMOLITION KEY NOTE

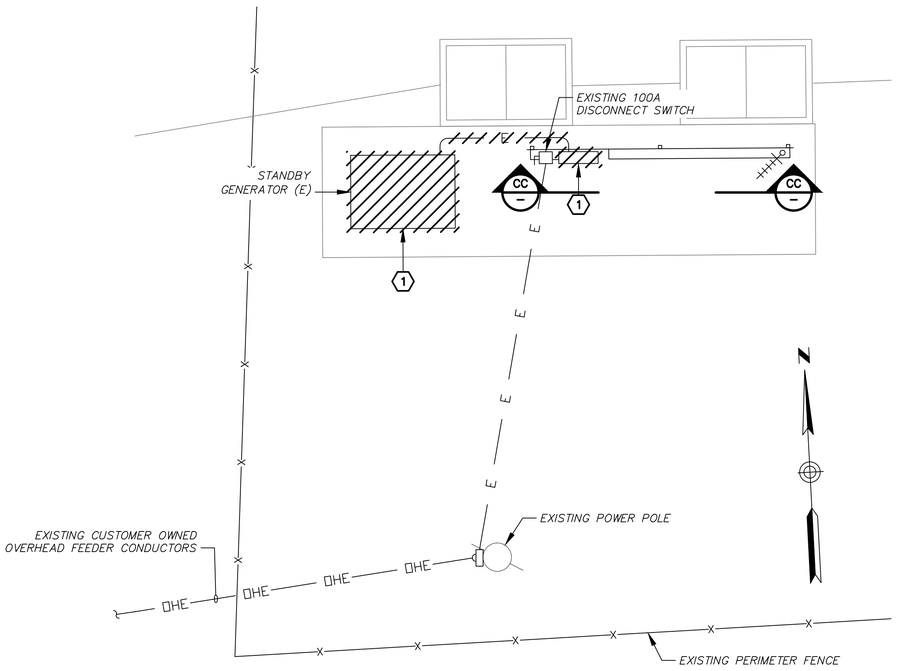
(1) DISCONNECT AND REMOVE EXISTING STANDBY GENERATOR AND AUTOMATIC TRANSFER SWITCH, INCLUDING ALL CONDUIT AND CONDUCTORS. DELIVER GENERATOR AND TRANSFER SWITCH TO NTUA CHINLE DISTRICT WAREHOUSE IN CHINLE, ARIZONA.

CONSTRUCTION KEY NOTE

(1) INSTALL CONDUIT AND CONDUCTORS FROM EXISTING 100A DISCONNECT SWITCH TO WIREWAY PER SINGLE LINE DIAGRAM ON SHEET E503. SPLICE TO EXISTING CONDUCTORS IN WIREWAY AS PREVIOUS CONDUCTORS WERE SPLICED



CC ELECTRICAL EQUIPMENT ELEVATION
NTS



ENLARGED PLAN VIEW "B" (INFLUENT P.S.)

0 4 8 12

SCALE IN FEET

RECORD DRAWING
THIS RECORD DOCUMENT HAS BEEN PREPARED BASED UPON INFORMATION PROVIDED BY THE CONTRACTOR (AS DENOTED BY "AB"). THIS INFORMATION MAY OR MAY NOT BE ACCURATE OR COMPLETE. FURTHERMORE, THE **CONSULTANT** HAS NOT VERIFIED ALL INFORMATION INDICATED ON THIS DOCUMENT. THE **CONSULTANT** SHALL NOT BE HELD RESPONSIBLE FOR ANY ERRORS OR OMISSIONS ON THIS DOCUMENT. THIS DOCUMENT IS FOR GENERAL INFORMATION PURPOSES ONLY. ANY OTHER USE OF THIS DOCUMENT IS AT YOUR SOLE RISK!

DARCOR ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST. SUITE 212 PHOENIX, AZ 85020
PH: (602) 795-2699 WWW.DARCORINC.COM

Registered Professional Engineer CERTIFICATE 30025 DARWIN REYNOLDS Date Signed 3/21/16 ARIZONA, U.S.A. Expires 3/31/17

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO.	BY	REVISION DESCRIPTION	DATE	BY
1	AB	AS BUILT PER CONTRACTOR REDLINES	3/13/2017	DAR
2				
3				
4				

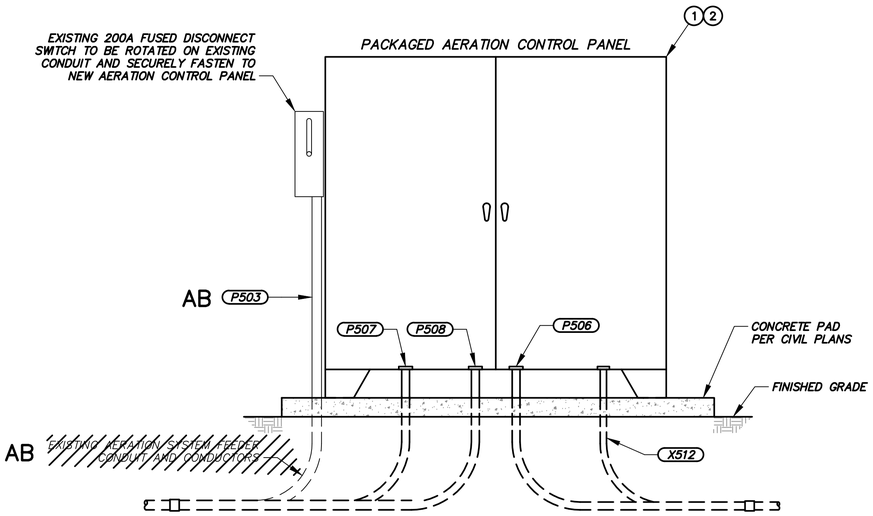
DSGND BY: JLG | CHKD BY: DAR | DRWN BY: DRG

GANADO WASTEWATER TREATMENT PLANT
LAGOON UPGRADE

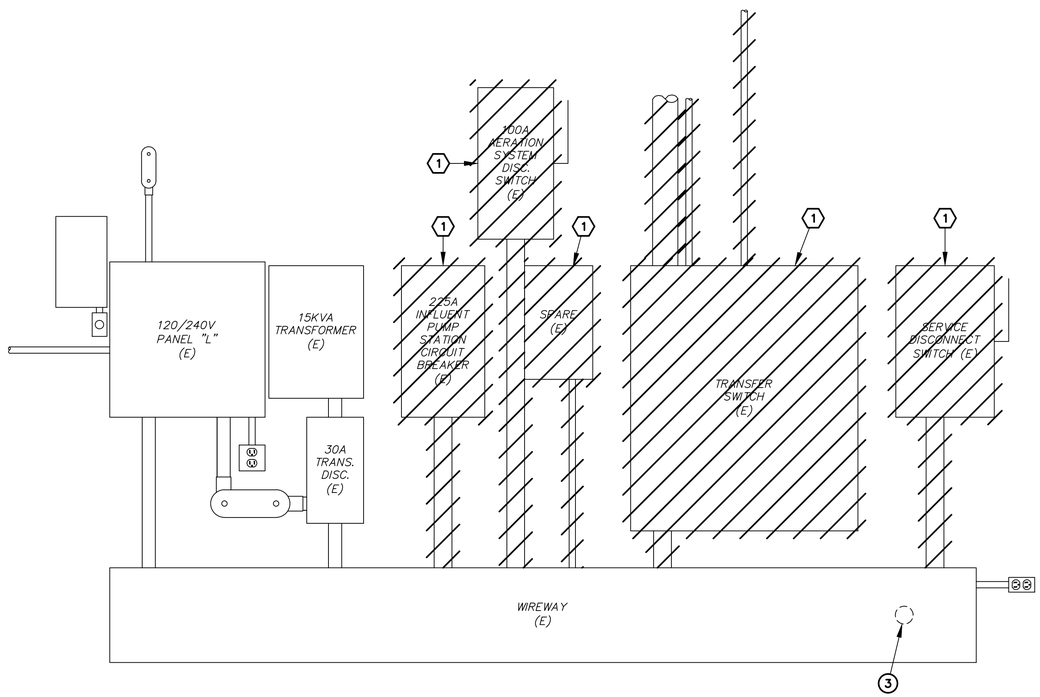
ELECTRICAL
ENLARGED PLAN VIEW "B"

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
SMITH ENGINEERING COMPANY
NEW MEXICO

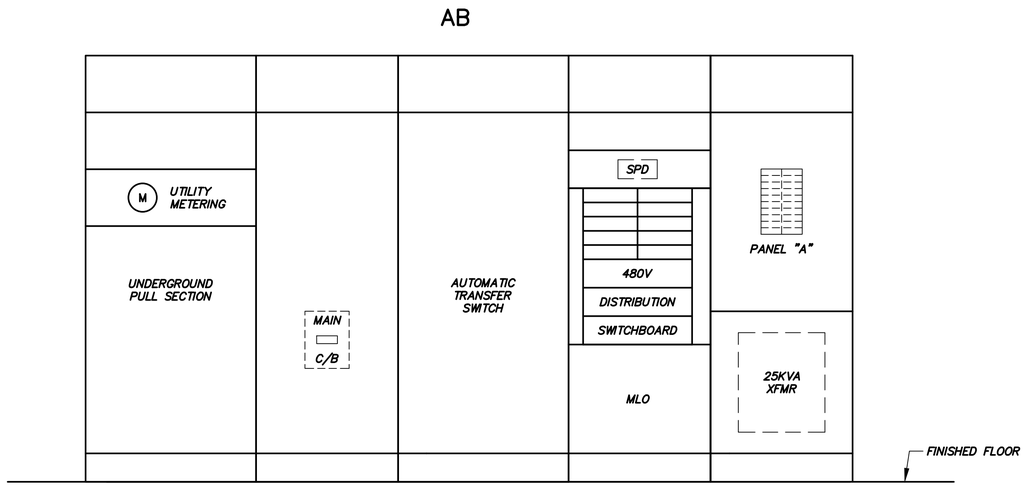
JOB NO: 115111
DATE: MAR 2016
SHEET NO: E505



ACP E501 *PACKAGED AERATION CONTROL PANEL ELEVATION*
NTS



BB E504 *ELECTRICAL EQUIPMENT ELEVATION*
NTS



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

AA E504 *ELECTRICAL EQUIPMENT ELEVATION*
NTS

DEMOLITION KEY NOTE

1. DISCONNECT AND REMOVE EXISTING SERVICE DISCONNECT SWITCH, TRANSFER SWITCH, AERATION SYSTEM DISCONNECT SWITCH, AND INFLUENT PUMP STATION CIRCUIT BREAKER INCLUDING ALL CONDUITS AND CONDUCTORS.

CONSTRUCTION KEY NOTES

1. PACKAGED AERATION CONTROL PANEL FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
2. ANCHOR ENCLOSURE TO CONCRETE PAD WITH (4) 3/8" CONCRETE ANCHORS.
3. UTILIZE EXISTING 1-1/2" CONDUIT STUBBED THROUGH WALL INTO WIREWAY FOR CONDUCTORS IN CONDUIT P515.

DARCOR ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST. SUITE 212 PHOENIX, AZ 85020
Ph: (602) 795-2699 WWW.DARCORINC.COM

Registered Professional Engineer CERTIFICATE 30025 DARWIN REYNOLDS Date Signed 3/21/16 ARIZONA, U.S.A. Expires 3/31/17

NO.	BY	REVISION DESCRIPTION	DATE	DRWN BY: DRG
1	AB	AS BUILT PER CONTRACTOR REDLINES	3/13/2017	DAR
2				CHKD BY: DAR
3				DSGND BY: JLG
4				

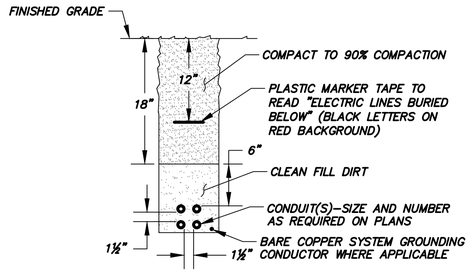
NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

GANADO WASTEWATER TREATMENT PLANT
LAGOON 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 NEW MEXICO
SMITH ENGINEERING COMPANY

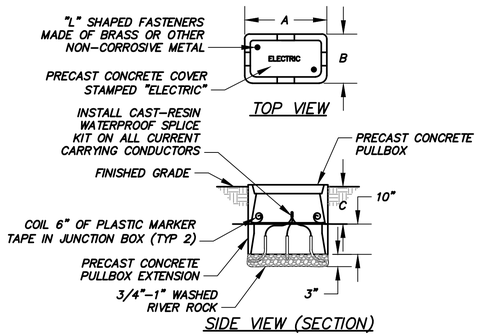
JOB NO: 115111
DATE: MAR 2016
SHEET NO: E506



NOTES:

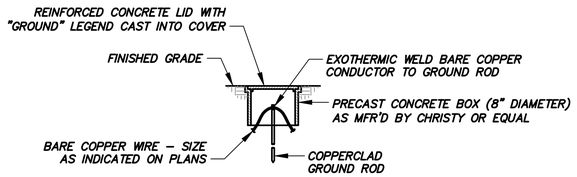
1. ALL DIMENSIONS INDICATED ABOVE ARE MINIMUM.
2. SPARE CONDUITS MUST BE LOCATED ON TOP OF DUCTBANKS.
3. THIS DETAIL APPLIES IN ALL CASES WHETHER SPECIFICALLY REFERRED TO OR NOT.
4. THIS DETAIL DOES NOT APPLY TO UTILITY DUCTBANKS.

UDG TYP — TYPICAL UNDERGROUND CONDUIT DUCTBANK DETAIL
NTS

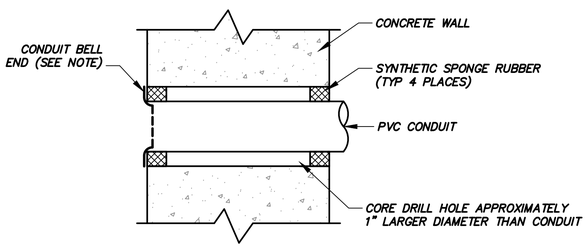


TYPE	DIM. A	DIM. B	DIM. C
#5	25"	15–1/2"	12"

UJB TYP — TYPICAL UNDERGROUND JUNCTION BOX DETAIL
NTS

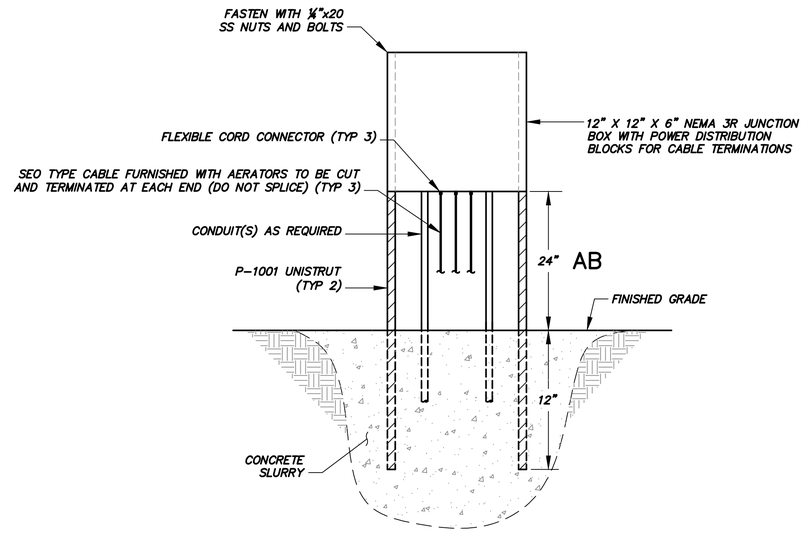


GRW TYP — TYPICAL GROUND ROD AND WELL DETAIL
NTS



NOTE: WHERE CONDUIT TERMINATES IN VAULT, HANDHOLE, WETWELL, ETC., INSTALL A CONDUIT BELL END ON END OF CONDUIT, UNLESS OTHERWISE INDICATED.

CWP TYP — TYPICAL CONCRETE WALL PENETRATION DETAIL
NTS



JB1 TYP — ABOVE GROUND JUNCTION BOX WITH FOUNDATION MOUNTING DETAIL
NTS

RECORD DRAWING
THIS RECORD DOCUMENT HAS BEEN PREPARED BASED UPON INFORMATION PROVIDED BY THE CONTRACTOR (AS DENOTED BY "AB"). THIS INFORMATION MAY OR MAY NOT BE ACCURATE OR COMPLETE. FURTHERMORE, THE **CONSULTANT** HAS NOT VERIFIED ALL INFORMATION INDICATED ON THIS DOCUMENT. THE **CONSULTANT** SHALL NOT BE HELD RESPONSIBLE FOR ANY ERRORS OR OMISSIONS ON THIS DOCUMENT. THIS DOCUMENT IS FOR GENERAL INFORMATION PURPOSES ONLY. ANY OTHER USE OF THIS DOCUMENT IS AT YOUR SOLE RISK!

Registered Professional Engineer — Certificate 30025 — DARWIN REYNOLDS — Date Signed 3/21/16 — ARIZONA, U.S.A. — Expires 3/31/17

NAVAJO TRIBAL UTILITY AUTHORITY
GANADO, ARIZONA

NO.	REVISION DESCRIPTION	DATE	BY
1	AB AS BUILT PER CONTRACTOR REDLINES	3/13/2017	DAR
2			
3			
4			

DSGND BY: JLG | CHKD BY: DAR | DRWN BY: DRG

GANADO WASTEWATER TREATMENT PLANT
LAGOON 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
SMITH ENGINEERING COMPANY
NEW MEXICO

DARCOR ELECTRICAL CONSULTING ENGINEERS
7600 N. 16TH ST.
SUITE 212
PHOENIX, AZ 85020
PH: (602) 795-2699
WWW.DARCORINC.COM

JOB NO: 115111
DATE: MAR 2016
SHEET NO: E507