

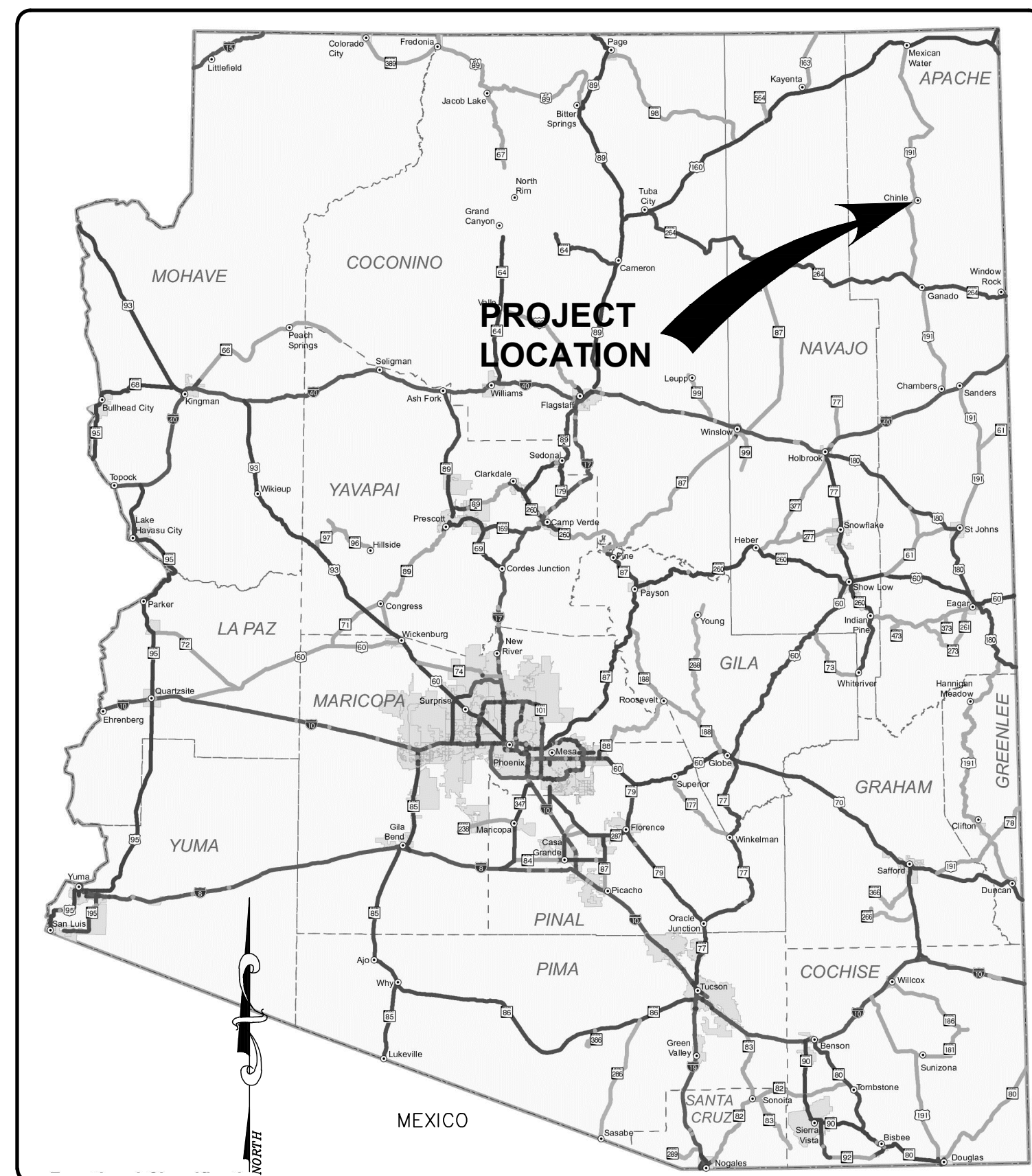
CONSTRUCTION PLANS
FOR

NAVAJO TRIBAL UTILITY AUTHORITY



CHINLE, ARIZONA WASTEWATER TREATMENT PLANT UPGRADE

FUNDED BY: NTUA

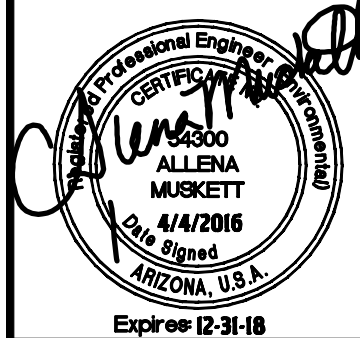


ARIZONA

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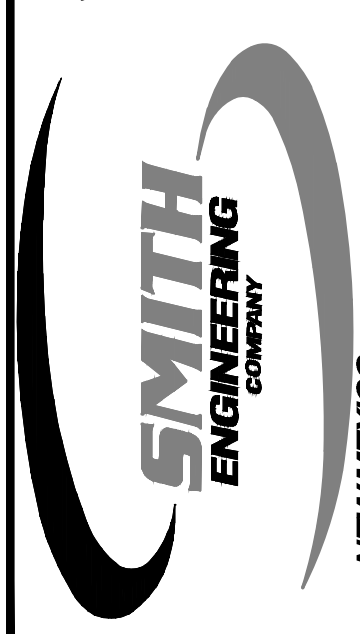
VICINITY MAP



NAVAJO TRIBAL UTILITY AUTHORITY CHINLE, ARIZONA	
NO.	REVISION DESCRIPTION
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CHINLE WASTEWATER TREATMENT PLANT
UPGRADE
GENERAL
COVER

SOLUTIONS FOR TODAY...
VISION FOR TOMORROW
2201 San Pedro Dr. NE
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JOB NO:
115111
DATE:
APR 2016
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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 UNLESS PRIOR APPROVAL IS OBTAINED FROM NTUA. 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 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 0.78 MGD.

SUGGESTED CONSTRUCTION PHASING OF HOLDING POND SITE
TASK
MOVE 34,747.23 CY OF SLUDGE FROM CELL 2 TO FILL CELL 3 TO A FINAL ELEVATION OF 5458.00. PORTION ABOVE EXISTING GRADE SHALL BE SLOPED @ 3:1.
GRADE CELL 2, COMPLETE YARD PIPING, CAP NEW PIPING UNTIL CELL 2 IS PUT ON LINE.
PUMP WATER FROM CELL 4 TO CELL 2.
TAKE CELL 1 OFF LINE.
PUT CELL 2 ON LINE.
PUMP WATER FROM CELL 1 TO CELL 2.



NAVAJO TRIBAL UTILITY AUTHORITY CHINLE, ARIZONA	5							
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	NO.	REVISION DESCRIPTION	DATE	BY				

CHINLE WASTEWATER TREATMENT PLANT UPGRADE	GENERAL NOTES
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**SOLUTIONS FOR TODAY...
VISION FOR TOMORROW**

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Albuquerque, NM 87110
Phone: (505) 884-0700
Fax: (505) 884-2376

SMITH ENGINEERING
Company

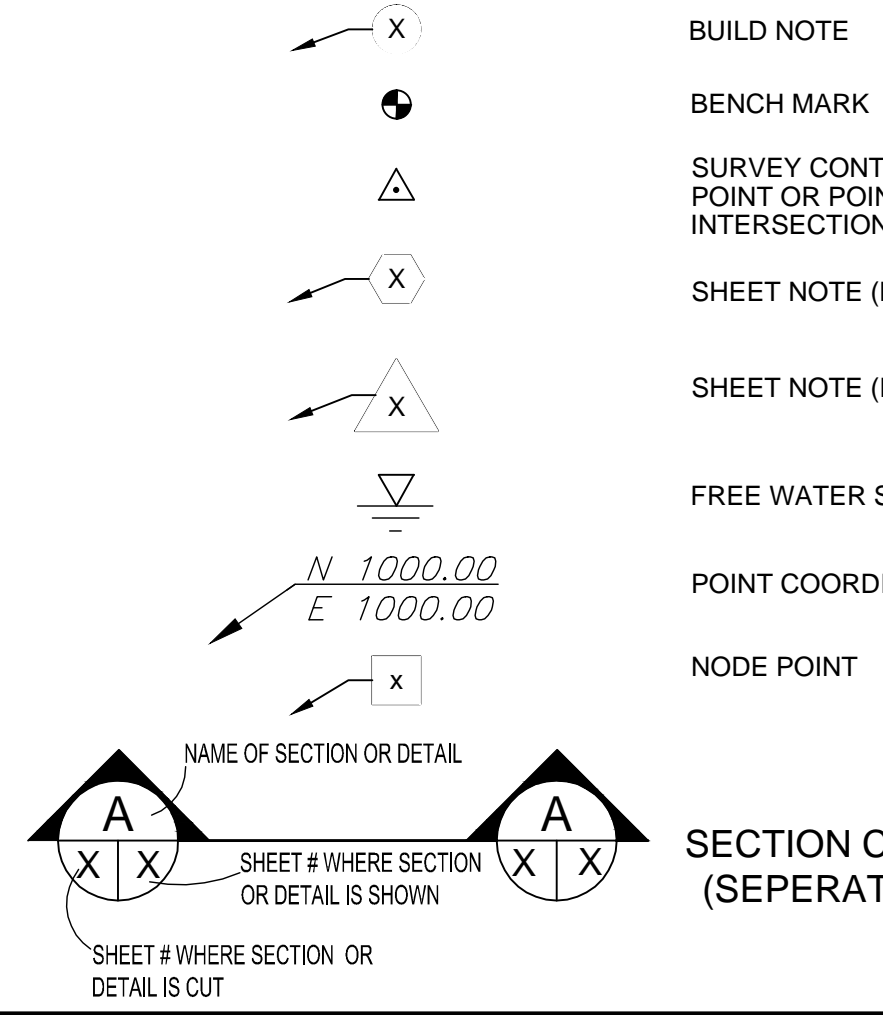
NEW MEXICO

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

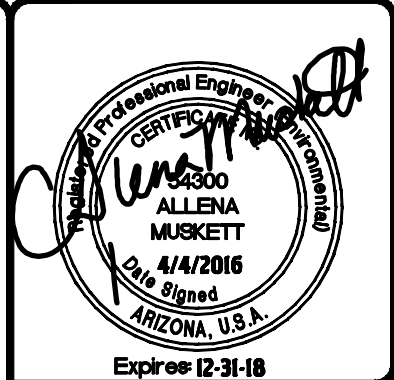
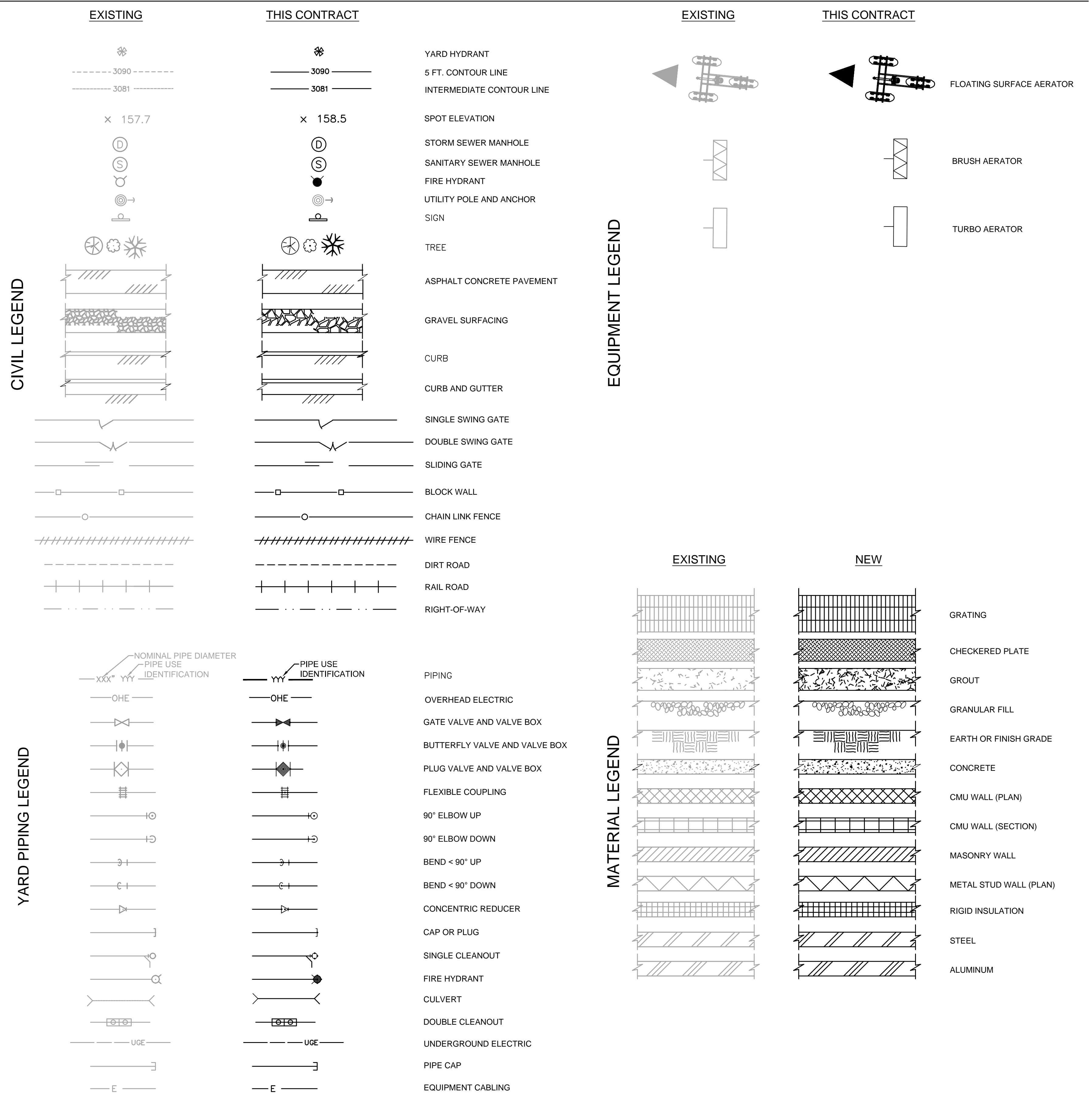
ABBREVIATIONS

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	PREFAB PREFABRICATED
BOP BOTTOM OF PIPE	PRESS PRESSURE
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	RSNTS 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
GPD GALVANIZED STEEL	TOW TOP OF WALL
GPH GALLONS PER DAY	TP TELEPHONE POLE
GPM GALLONS PER HOUR	UBC UNIFORM BUILDING CODE
GRD GALLONS PER MINUTE	UGE UNDERGROUND ELECTRIC
GV GRADE OR GROUND	UL UNDERWRITERS LABORATORIES
H GATE VALVE	UNKN UNKNOWN
HB HEIGHT	UP UTILITY POLE
HDPE HOSE BIB	UV ULTRAVIOLET
HGL HIGH DENSITY POLYETHYLENE	VIC VITALIC
HORIZ HYDRAULIC GRADE LINE	WAS WASTE ACTIVATED SLUDGE
HP HORIZONTAL	W WATER
HP HORSEPOWER	WL WATER LINE
I.D. INSIDE DIAMETER	WSTP WATER STOP
INFL INFLUENT	WV WATER VALVE
INS INSULATED	FT FOOT
INV INVERT	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.	
NFPA 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	

ANNOTATION LEGEND



LEGENDS



NAVAJO TRIBAL UTILITY AUTHORITY
CHINLE, ARIZONA

NO.	REVISION DESCRIPTION	DATE	BY
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CHINLE WASTEWATER TREATMENT PLANT
UPGRADE

CIVIL LEGEND AND ABBREVIATIONS

SOLUTIONS FOR TODAY...
VISION FOR TOMORROW

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Fax: (505) 884-2376

TEXAS

SMITH ENGINEERING
NEW MEXICO

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

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CHINLE, ARIZONA

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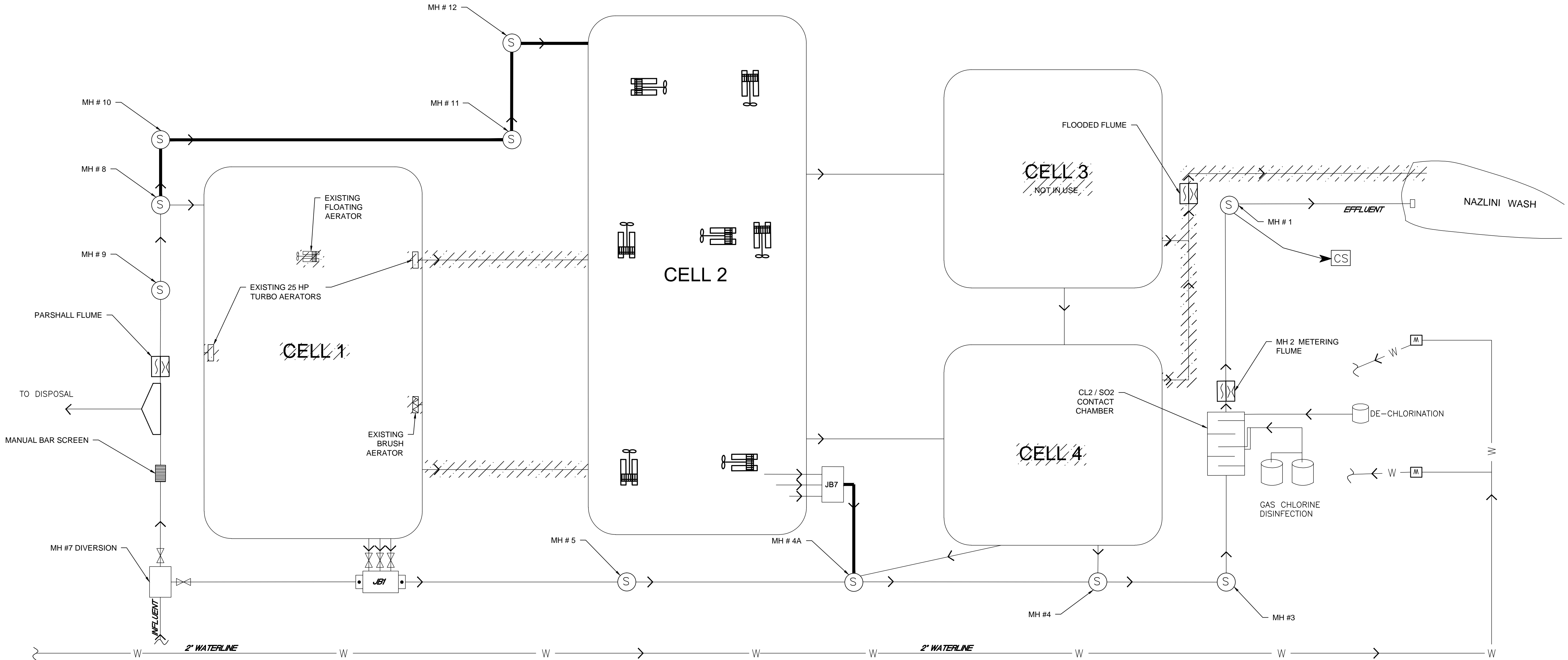
CHINLE WASTEWATER TREATMENT PLANT
UPGRADE
CIVIL
FLOW SCHEMATIC

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TEXAS



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



PROCESS SYMBOL LEGEND

EXISTING SYSTEM 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	SLUICE GATE
AERATOR	SLIDE GATE/STOP GATE
TURBO AERATOR	MOTORIZED SEDIMENT TRAP
BRUSH AERATOR	SUBMERSIBLE PUMP

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CHINLE, ARIZONA

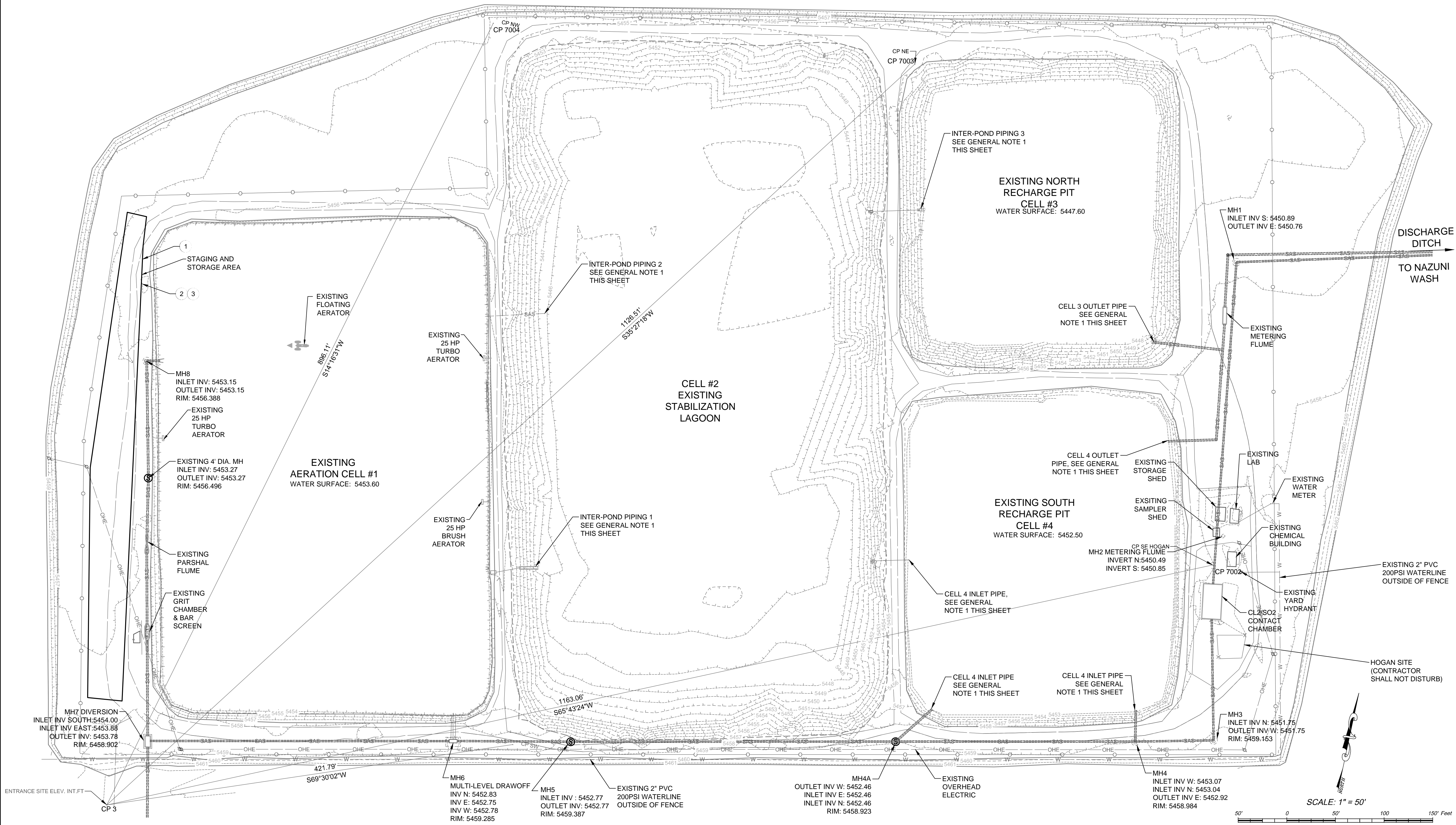
CHINLE WASTEWATER TREATMENT PLANT
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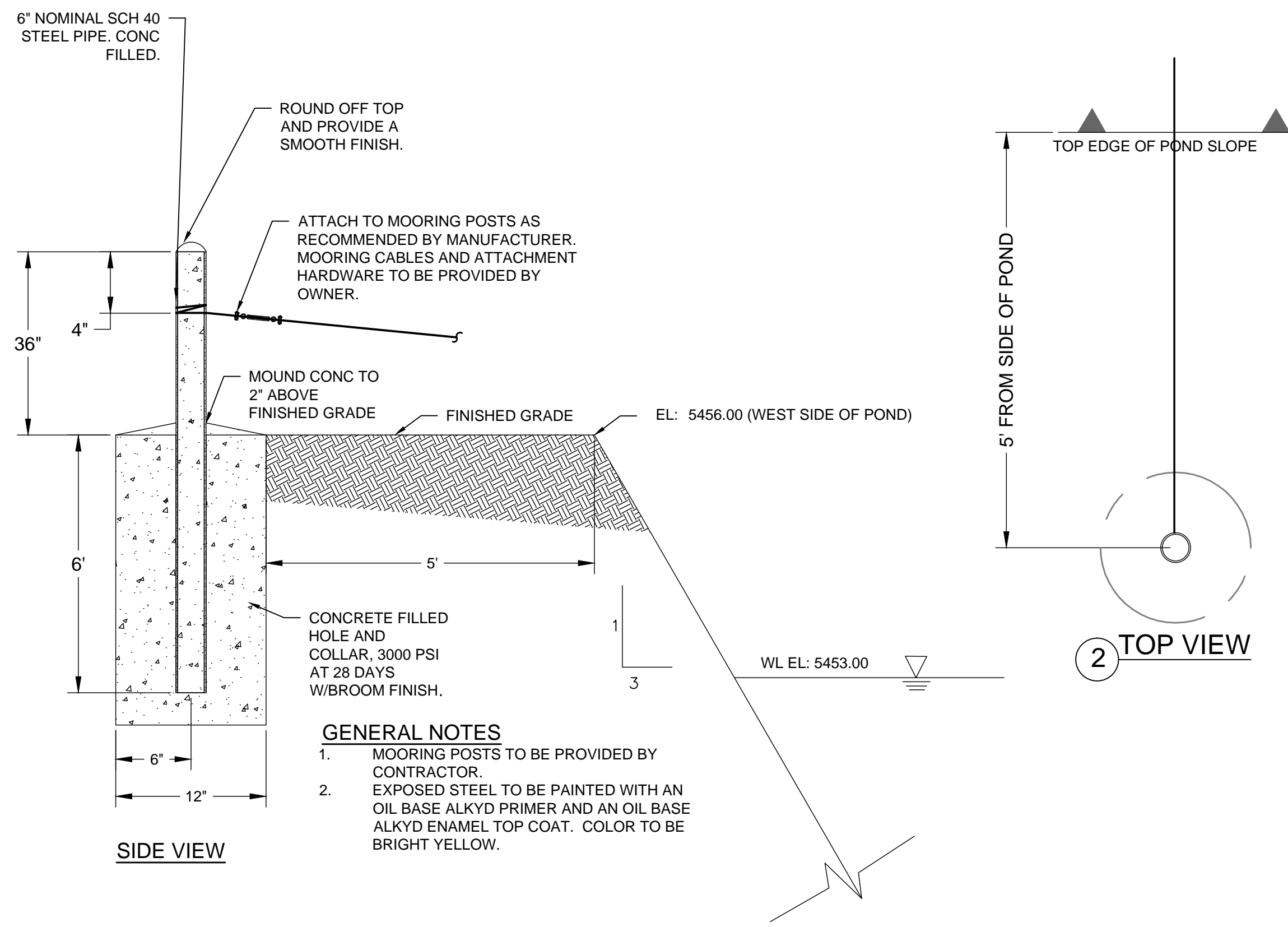
BUILD NOTES

- 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.

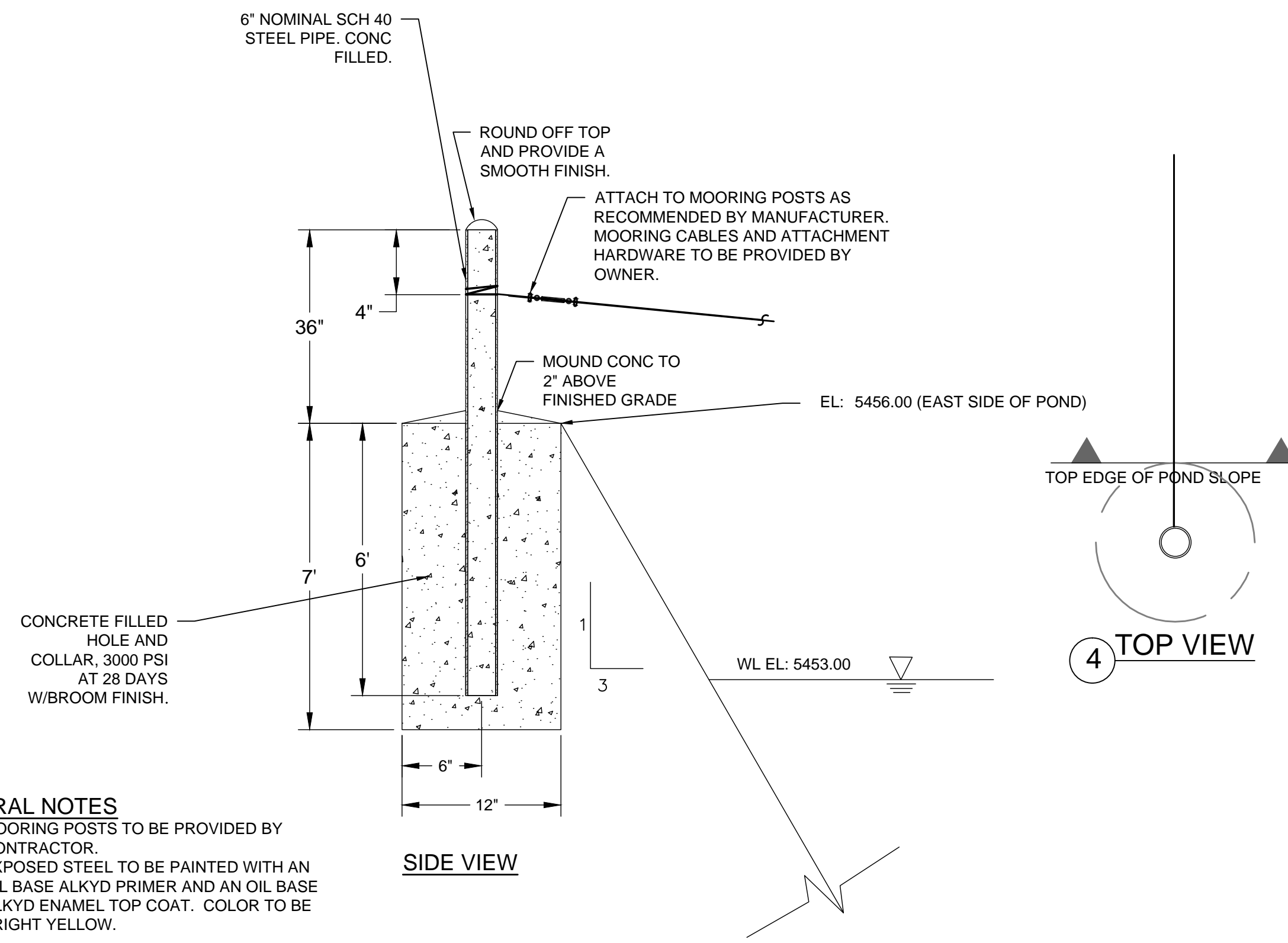
GENERAL NOTES

- PIPE DRAWN PER ASBUILTS NA-07-Y38 (06/16/08), CONTRACTOR TO FIELD LOCATE.
- WATER LEVEL & DEBRIS PREVENTED SURVEYOR FROM LOCATING INTERPOND PIPING.

DISTANCES & BEARINGS TO CP 3					
NUMBER	LENGTH	BEARING	NORTHING	EASTING	ELEVATION
3	---	---	1,887,497.58	869,888.74	5,462.18
7000	421.79'	S 69° 30' 02"W	1,887,645.30	870,283.82	5,458.57
7002	1163.06'	S 65° 43' 24"W	1,887,975.77	870,948.95	5,457.90
7003	1126.51'	S 35° 27' 18"W	1,888,415.21	870,542.18	5,455.79
7004	896.11'	S 14° 16' 31"W	1,888,366.02	870,109.70	5,455.54



① AERATOR ANCHOR POST WEST SIDE OF POND NOT TO SCALE



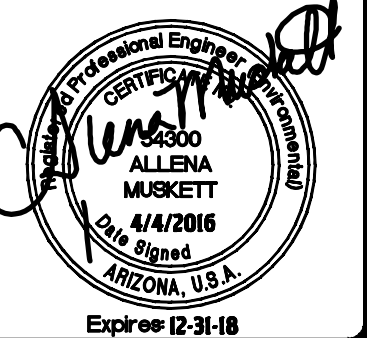
③ AERATOR ANCHOR POST (EAST SIDE OF POND) NOT TO SCALE

- 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.

TABLE 1
DISTANCE BETWEEN MOORS (ANCHOR POSTS)

ROW	DISTANCE (FT)
1	391
2	391
3	391

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



NAVAJO TRIBAL UTILITY AUTHORITY
CHINLE, ARIZONA

CHINLE WASTEWATER TREATMENT PLANT
UPGRADE

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DATE:
APR 2016

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- GENERAL NOTES:
- PROVIDE 10 FT. MINIMUM HORIZONTAL SEPARATION IN SEPARATE TRENCHES BETWEEN THE WATER AND SEWER SERVICES. PROVIDE 5 FT. MIN. HORIZONTAL SEPARATION BETWEEN THE SEWER SERVICE AND OTHER UTILITIES. IF SEWER SERVICE CROSSES OTHER SERVICES, SEE N.T.U.A. CROSSING POLICY OR CONTACT N.T.U.A. HEADQUARTERS ENGINEERING.
 - SEWER CLEANOUTS ARE REQUIRED ON ALL BENDS IN EXCESS OF 45° AS PER PLUMBING CODE ADOPTED BY THE NAVAJO NATION. MODIFY MATERIAL LIST ACCORDINGLY AFTER CONSULTING WITH N.T.U.A. HEADQUARTERS ENGINEERING.
 - ADDITIONAL SEWER CLEANOUTS ARE REQUIRED ON SEWER SERVICES LONGER THAN 50 FT. AS PER UNIFORM PLUMBING CODE ADOPTED BY THE NAVAJO NATION. MODIFY MATERIAL LIST ACCORDINGLY AFTER CONSULTING WITH N.T.U.A. HEADQUARTERS ENGINEERING. EACH ADDITIONAL CLEANOUT IS AT THE CUSTOMER'S EXPENSE. INSTALL AT LEAST ONE CLEANOUT AS REQUIRED BY NOTE 2. IF CUSTOMER REQUEST FEWER AND REALIZES THIS VIOLATES NAVAJO TRIBAL CODE, THEN INSTALL PER THE CUSTOMER'S REQUEST AND SO NOTE ON THE INDIVIDUAL AS-BUILT, N.T.U.A. RECOMMENDS THAT CLEANOUTS BE SPACED NO MORE THAN 100'.
 - PROVIDE PROPOSED ELEVATION AT WALL. PROVIDE 6 IN. DIAMETER SLEEVE IF PIPING PENETRATES WALL OR 4 IN. DEPTH OF SAND BETWEEN FOOTING AND TOP OF PIPING IS BELOW THE FOOTING. ORDER ASTM D-1785 SCH. 40 PIPE WITH LENGTH AS NEEDED FOR THE SLEEVE. CONTACT N.T.U.A. HEADQUARTERS ENGINEERING ON PIPING SMALLER THAN 2 IN. IN SIZE.
 - STATE THE EXISTING PIPE TYPE AND O.D. (e.g. ASTM D-3034, SDR 35, PVC, 8, 40"). SADDLE IS TO HAVE A GASKET SEAL OR O-RING AND NON-CORRODIBLE STRAP SECURING SYSTEM.
 - MINIMUM SLOPE OF 1/4 INCH PER FOOT (2%) OR CONTACT N.T.U.A. HEADQUARTERS ENGINEERING.
 - BACKFILL IS TO BE HAND TAMPED (NO-MECHANICAL) AND COMPACTED IN 6 INCH LAYERS FOR AT LEAST 12 IN. ABOVE PVC PIPE. INSTALL PER ASTM D-2321 AND UNIFORM PLUMBING CODE ADOPTED BY THE NAVAJO NATION.
 - PROVIDE THE AS-BUILT AND SWING TIES FOR THE TAP POINT.
 - THE MATERIAL LIST SHALL BE MODIFIED IF A FIELD MARKER OF THE TAP POINT IS TO BE INSTALLED. UNDER THE AS-BUILT TIE INFORMATION, PROVIDE THE SURFACE DESCRIPTION OF THE TAP POINT (e.g. OPEN FIELD, PAVED ROAD, etc)
 - ITEM 12 IS USUALLY DONE BY THE HOME OWNER. ITEM 7 MUST BE COMPATIBLE WITH ITEM 12. ITEM 7 AS LISTED IS FOR A CONNECTION BETWEEN TWO LENGTHS OF 3 IN. PVC-DWV ASTM D-2665. IN THE MATERIALS LIST, ITEM 12 NEEDS TO BE COMPLETED AND ITEM 7 MODIFIED AS REQUIRED.
 - ORDER CONCRETE AS NEEDED. THE CONCRETE MAY BE ELIMINATED IF N.T.U.A. DISTRICT WATER FOREMAN AND ENGINEER DETERMINE FIELD CONDITIONS DO NOT REQUIRE THIS FOR ADEQUATE COMPACTION AND 4 IN. PIPE STRUCTURAL SUPPORT. MARK THE AS-BUILT DRAWING TO SHOW WHEN THE CONCRETE IS NOT USED.
 - FOR MULTIPLE BENDS, A CLEANOUT IS REQUIRED UPSTREAM FROM THE FIRST BEND THAT CAUSED THE CUMULATIVE ANGLE TO EXCEED 45°.


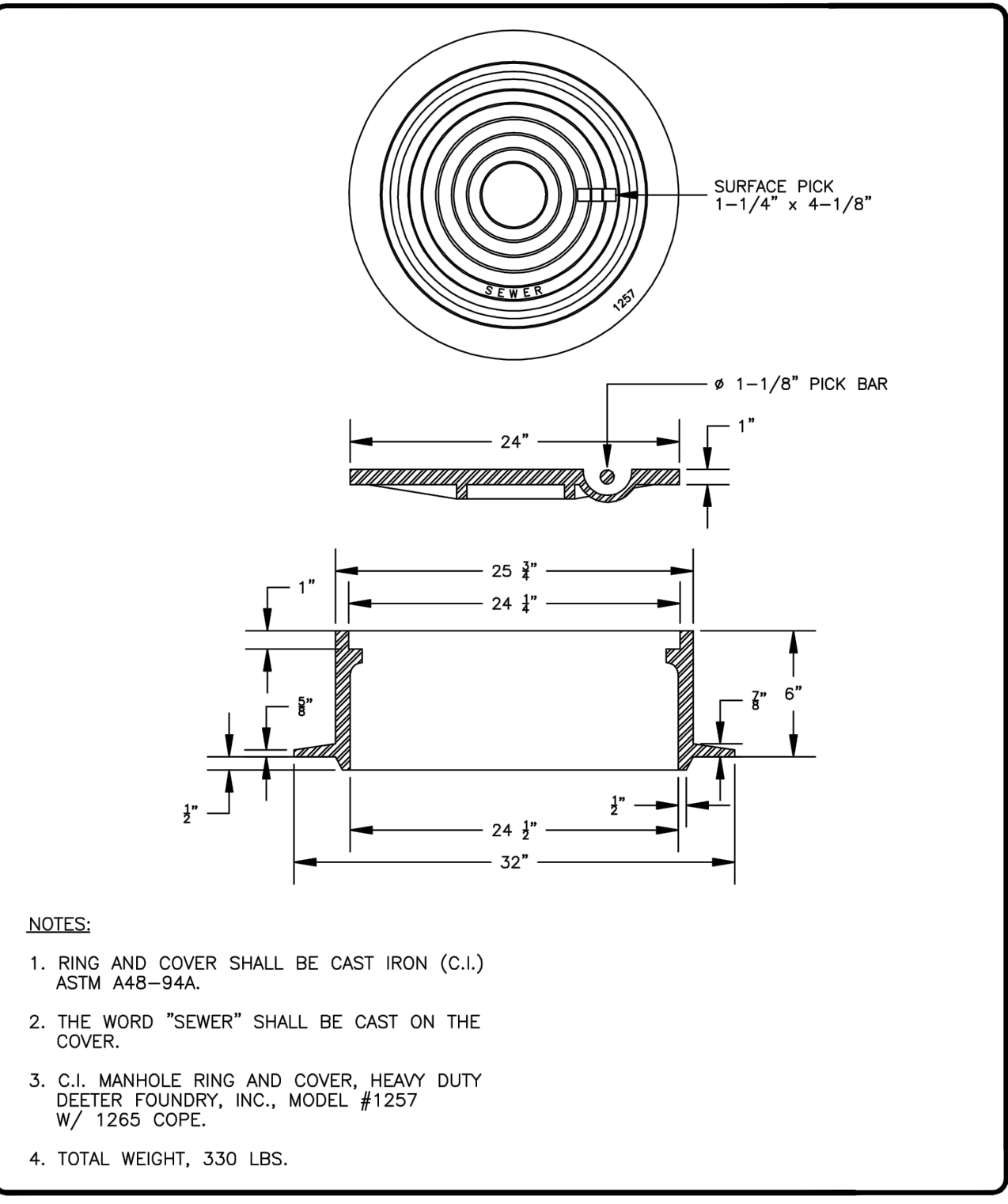
SHEET 3 OF 6

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CHECKED BY: N.T.U.A.
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DATE: 11/15/11

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CHINLE, ARIZONA

GENERAL NOTES
SEWER SERVICE

REV. DATE	BY	REVISIONS

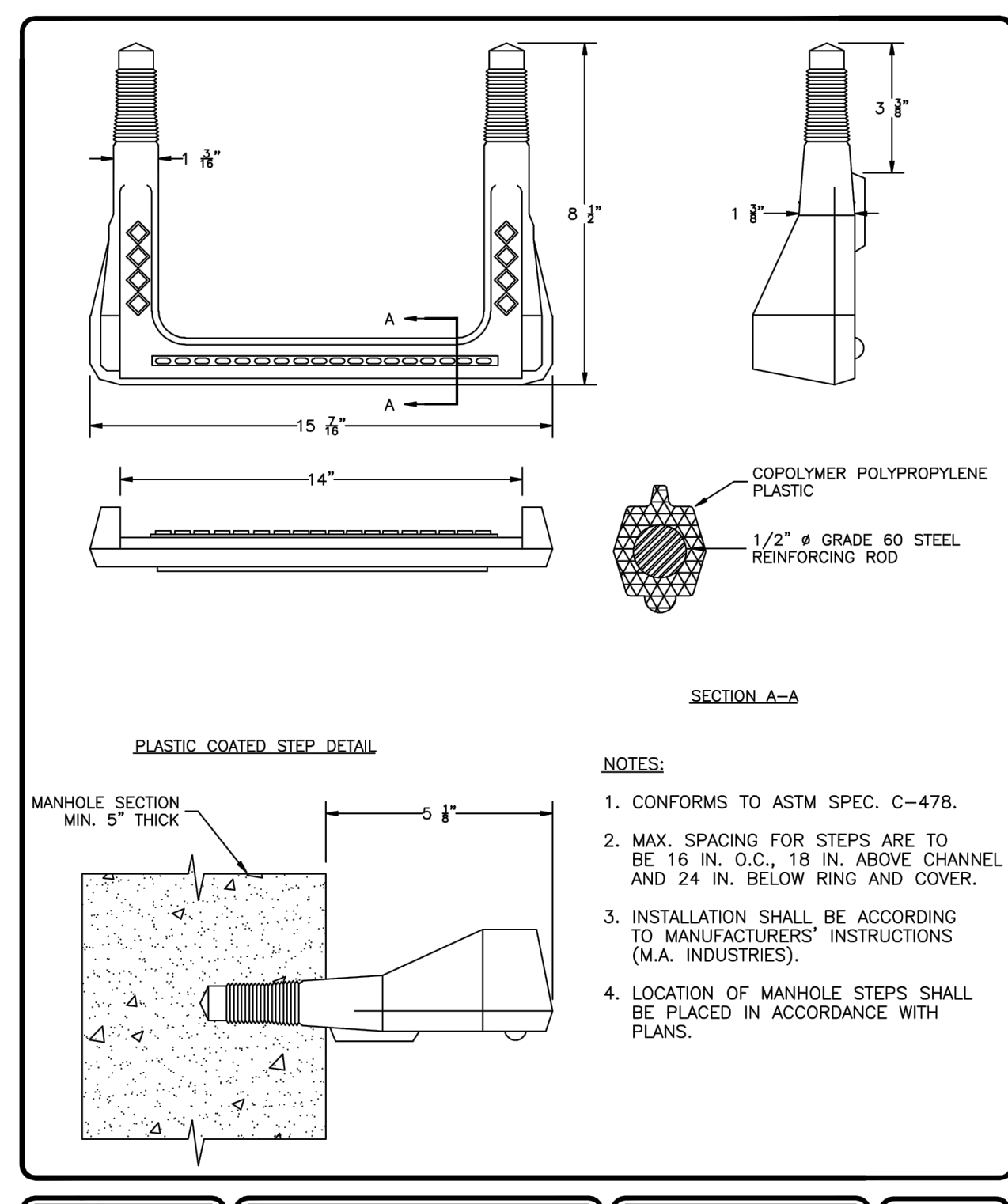



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STANDARD MANHOLE RING AND COVER

REV. DATE	BY	REVISIONS


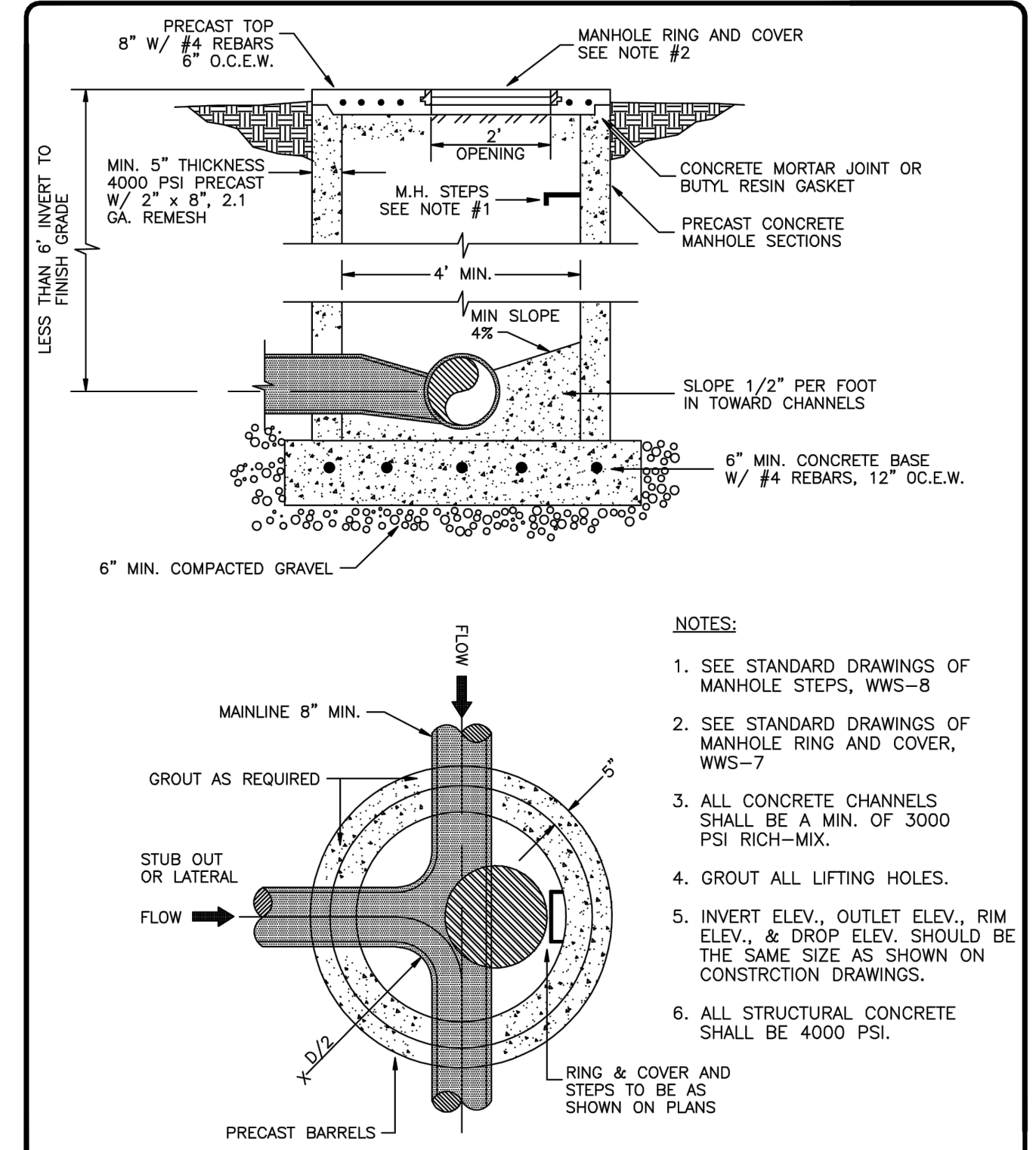



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MANHOLE STEPS

REV. DATE	BY	REVISIONS


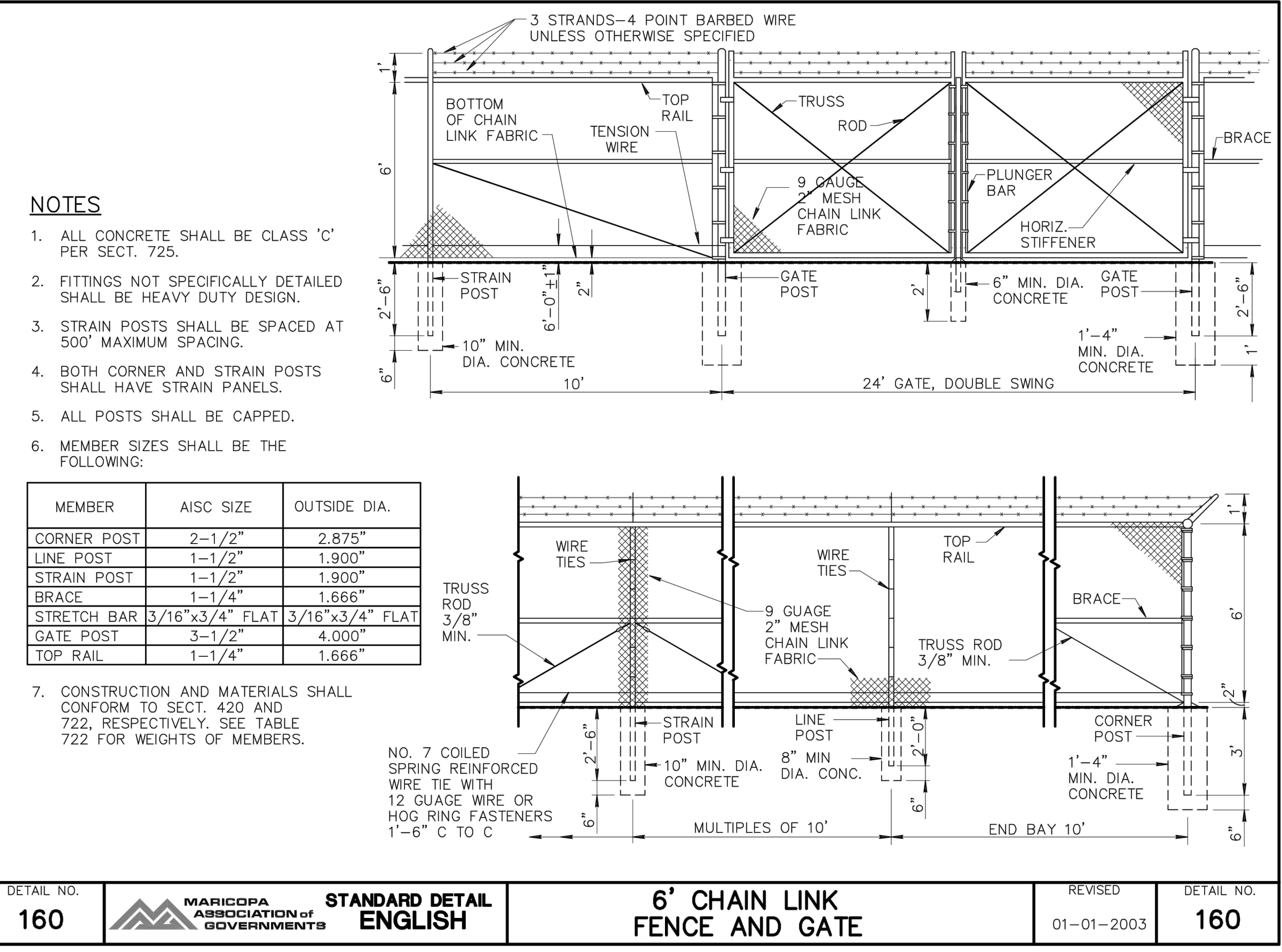



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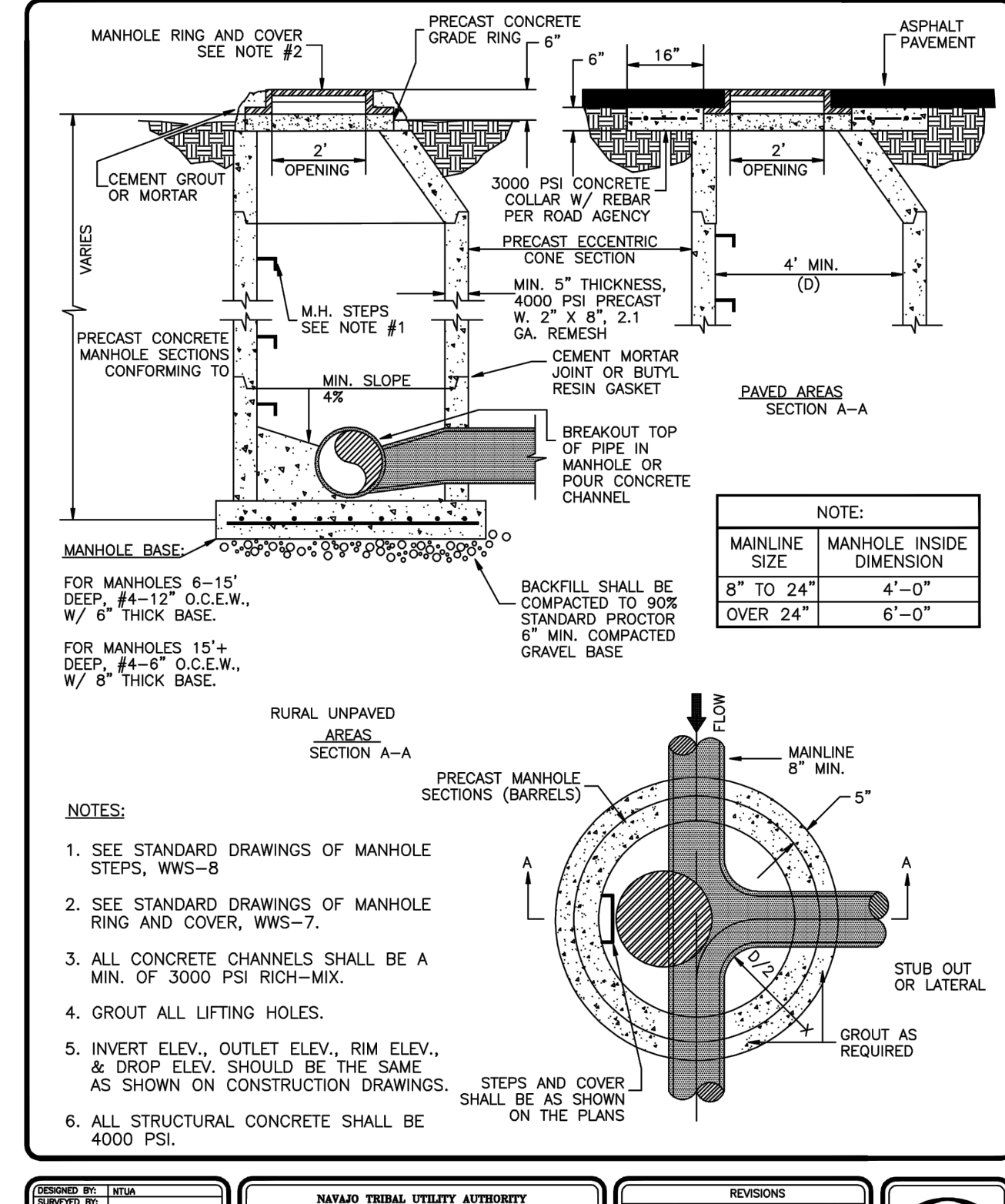
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SHALLOW PRECAST MANHOLE DETAIL

REV. DATE	BY	REVISIONS

DETAIL NO. 160
MARICOPA ASSOCIATION OF GOVERNMENTS
STANDARD DETAIL ENGLISH
REVISED 01-01-2003
DETAIL NO. 160





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NAVAJO TRIBAL UTILITY AUTHORITY
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STANDARD PRECAST SEWER MANHOLE DETAIL

REV. DATE	BY	REVISIONS



GENERAL NOTES

- NTUA DETAILS TAKE PRECEDENCE OVER MAG DETAILS. CONTRACTOR TO CONTACT ENGINEER IN CASE OF CONFLICTS.



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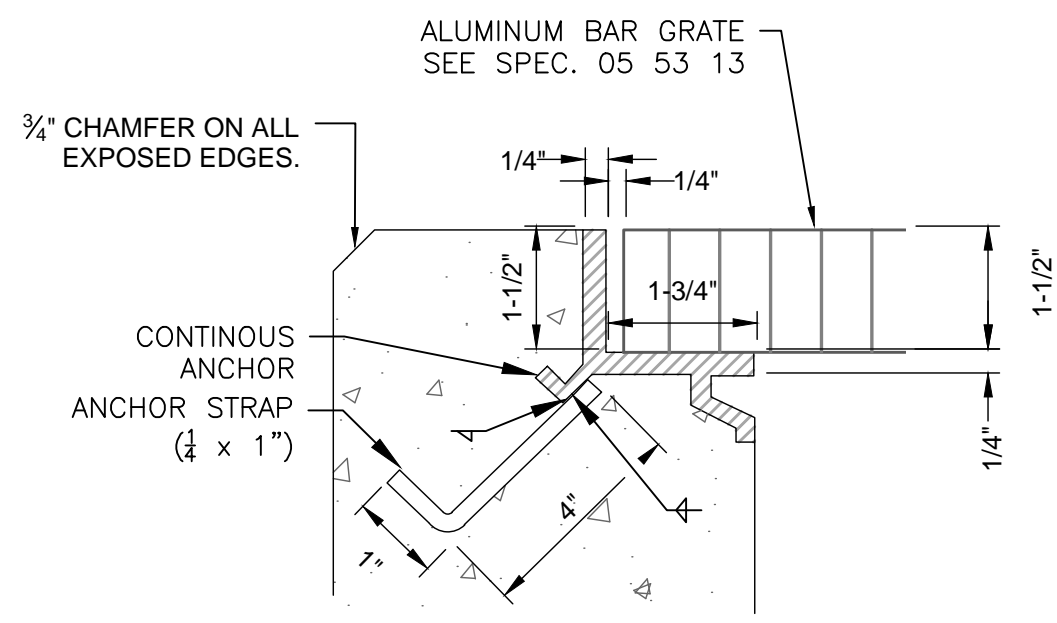
CIVIL
CIVIL DETAILS 2

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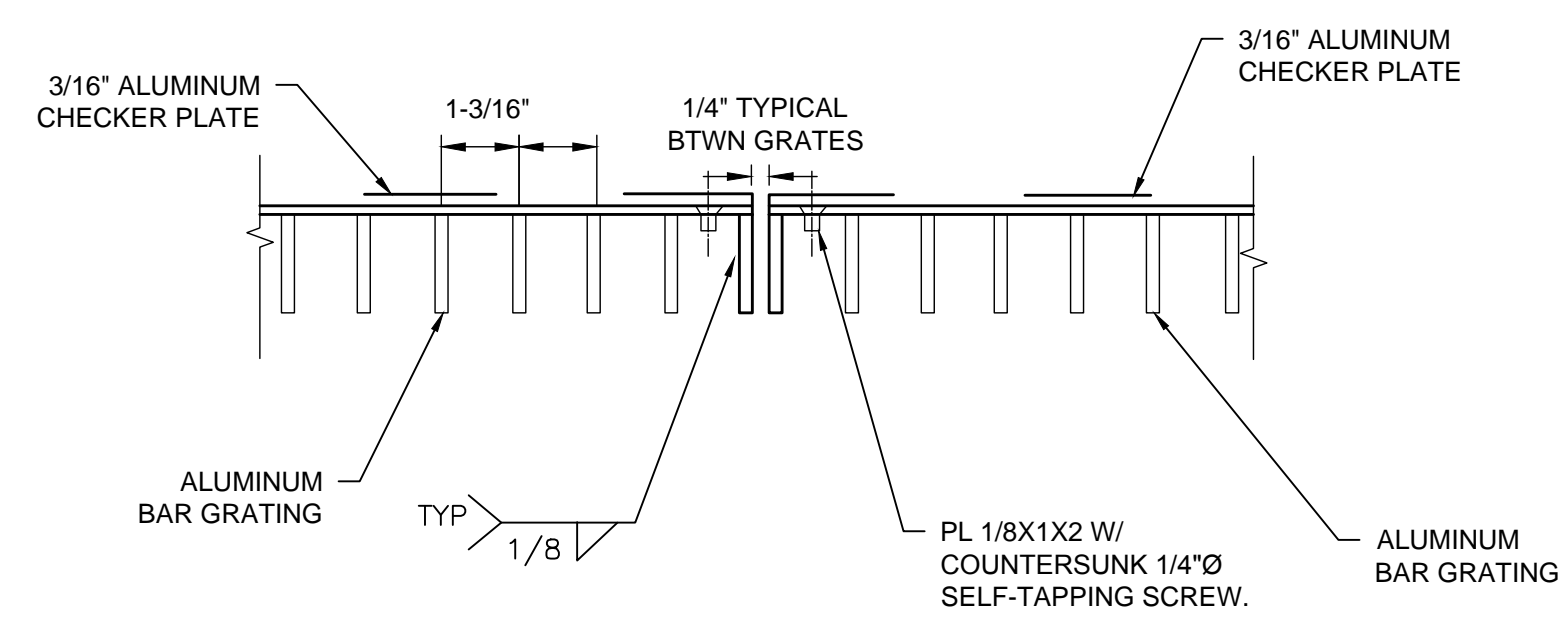
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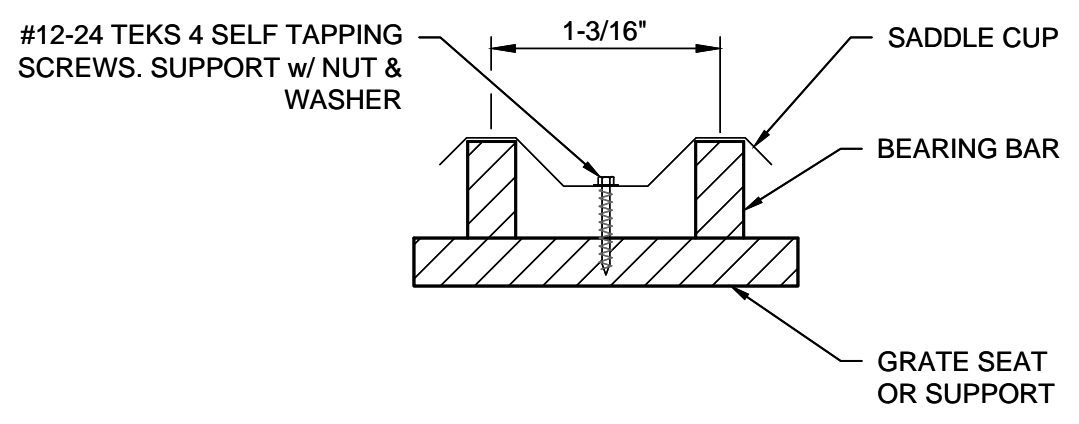


- NOTES:
1. ALL NEW STRUCTURES WITH GRATING SHALL USE EMBEDDED GRATING FRAMES.
 2. FRAMES SHALL HAVE MITRED CORNERS AND WELDED JOINTS AND SHALL BE SIZED TO MATCH GRATING DEPTHS. VERTICAL AND HORIZONTAL LEGS OF THE FRAME SHAPE SHALL HAVE 1/4-INCH WALL THICKNESS. FRAME SHALL BE DESIGNED TO PROVIDE CONTINUOUS SLOT TO ACCOMMODATE FASTENERS, AND SHALL HAVE A CONTINUOUS EXTRUDED ANCHOR. SURFACES COMING INTO CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF BITUMINOUS PAINT.
 - 3.
 - 4.

1 TYPICAL GRATE INSET (NEW STRUCTURES)
NOT TO SCALE

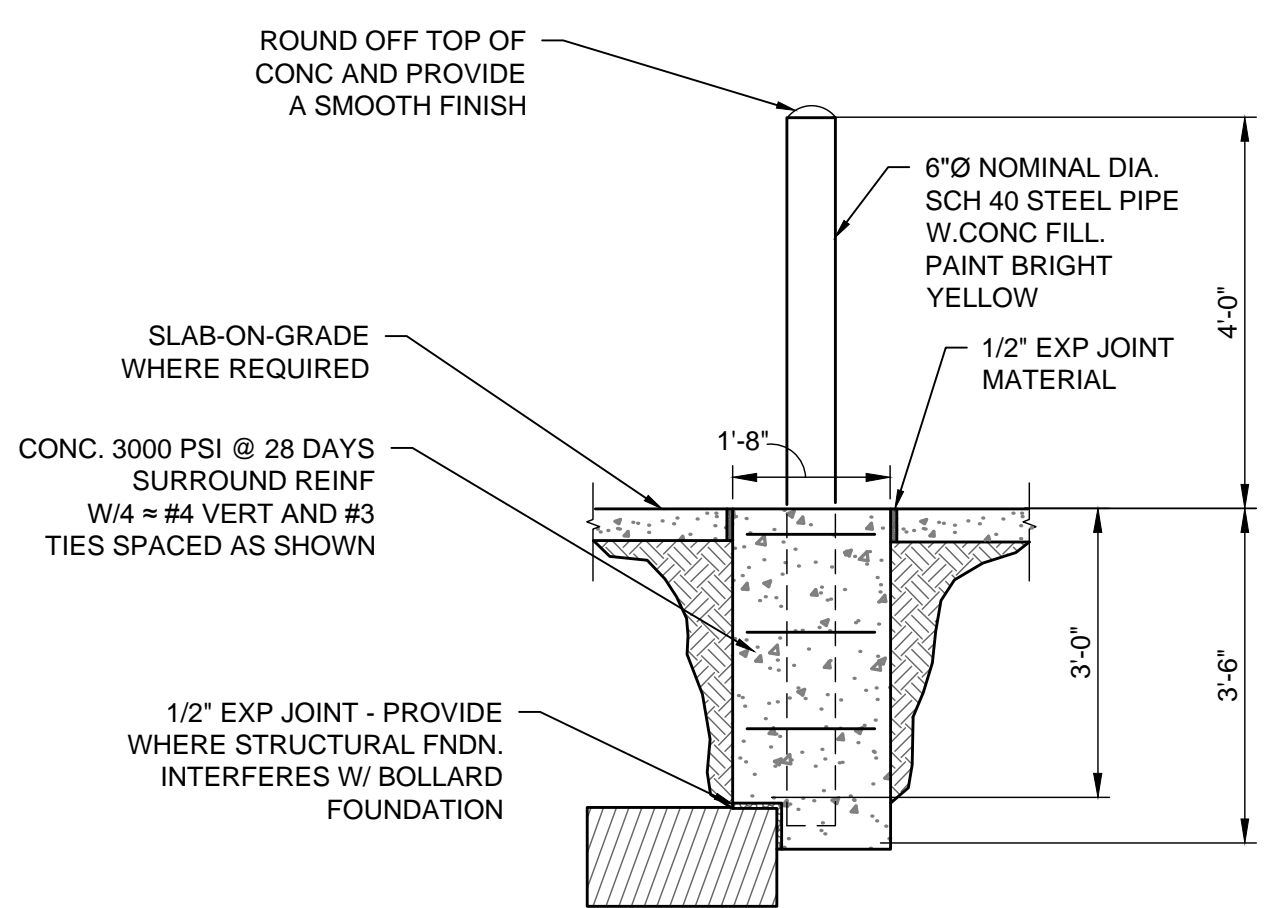


2 TYPICAL ALUMINUM CHECKERPLATE CONNECTION TO BAR GRATING
NOT TO SCALE

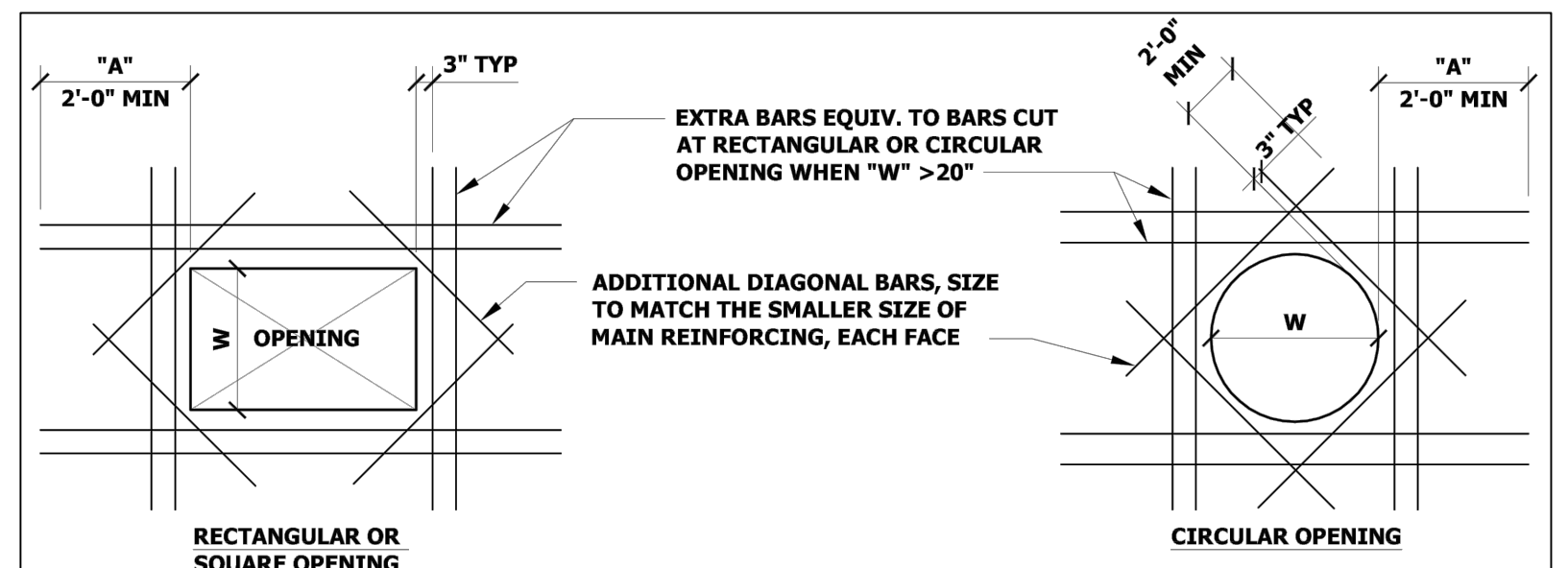


NOTE:
PROVIDE 4 CUPS PER GRATING PANEL APPROX. 4\"/>

3 GRATE FASTENING
NOT TO SCALE

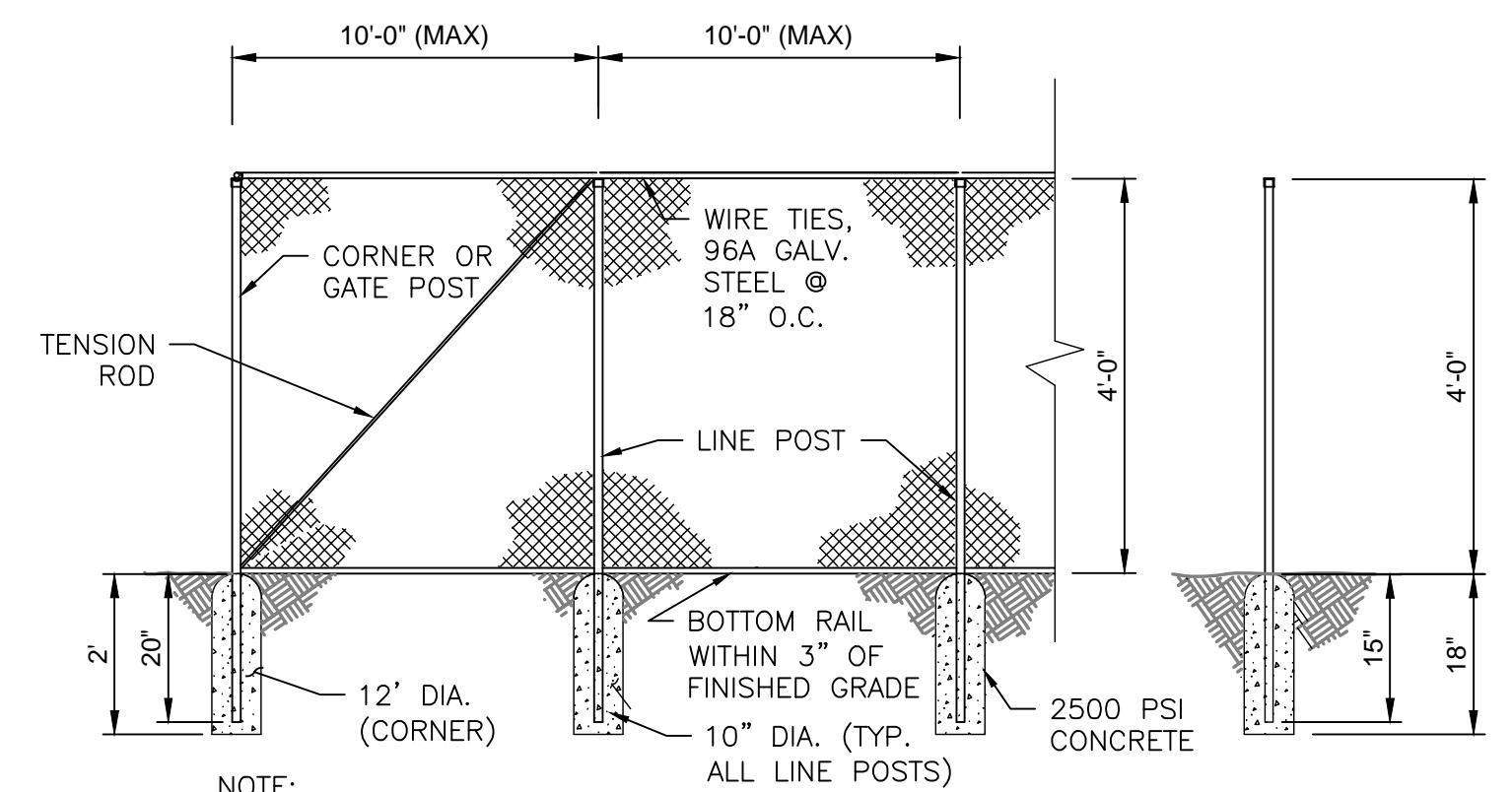


4 TYPICAL STATIONARY BOLLARD DETAIL
NOT TO SCALE



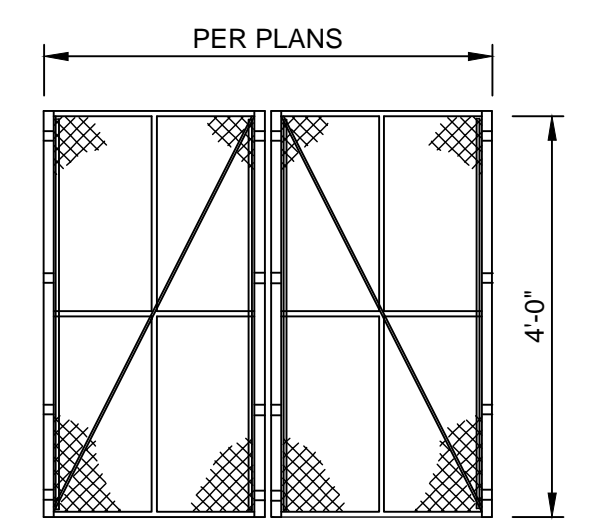
- NOTES:
1. DISCONTINUE TYPICAL REINFORCING AT OPENING.
 2. PLACE ADDITIONAL BARS IN SAME ORIENTATION AND POSITION AS BARS CUT BY OPENING. PROVIDE ONE SET OF BARS FOR EACH LAYER OF REINFORCING CUT.
 3. "A" = TOP BAR EMBEDMENT LENGTH (24\"/>

5 CONCRETE PIPE PENETRATION (OPENINGS 12\"/>



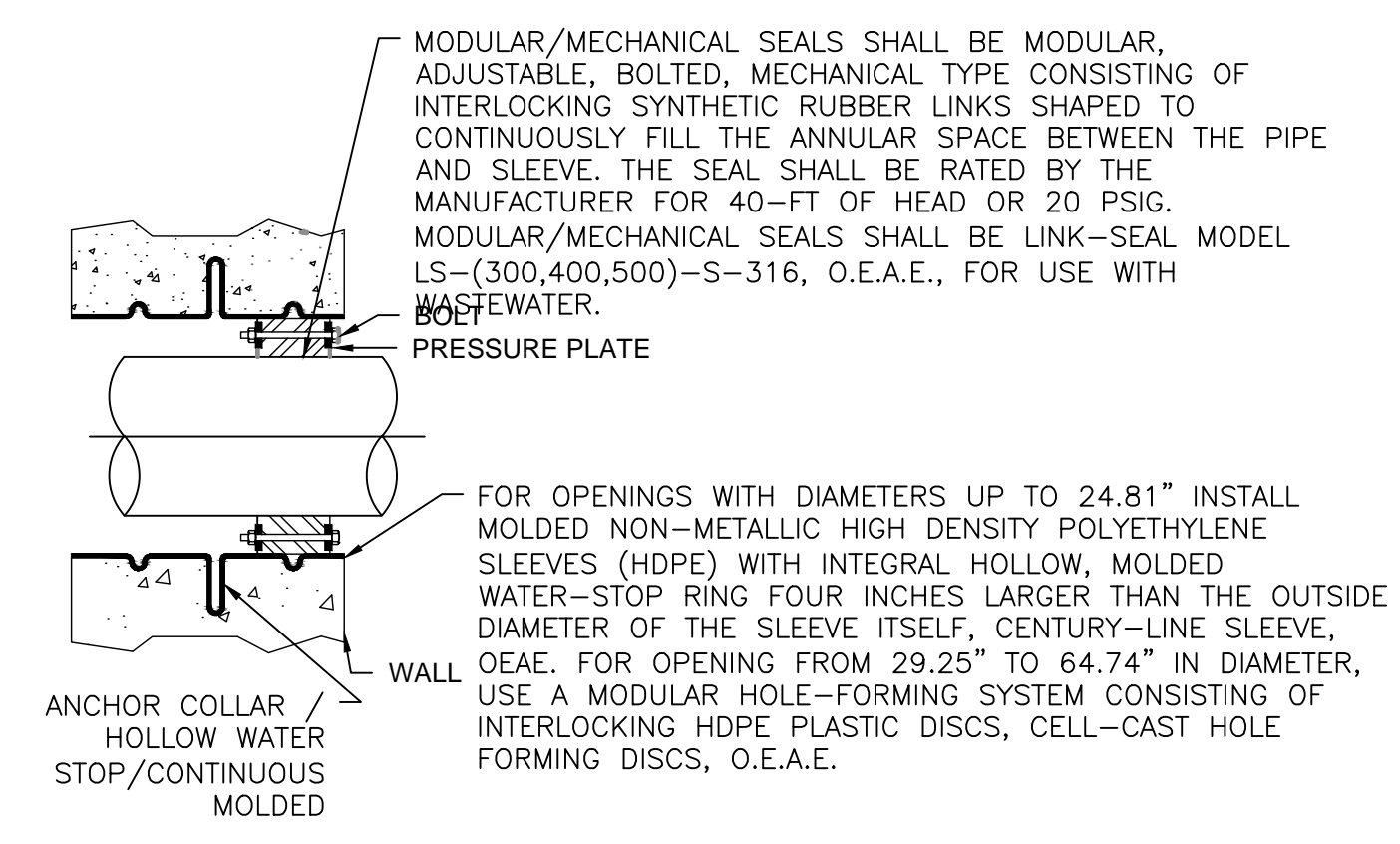
NOTE:
CHAINLINK FENCE PER STD. SPEC. 772, TYPE A.

6 CHAINLINK FENCE (4' HIGH, TYPE A)
NOT TO SCALE

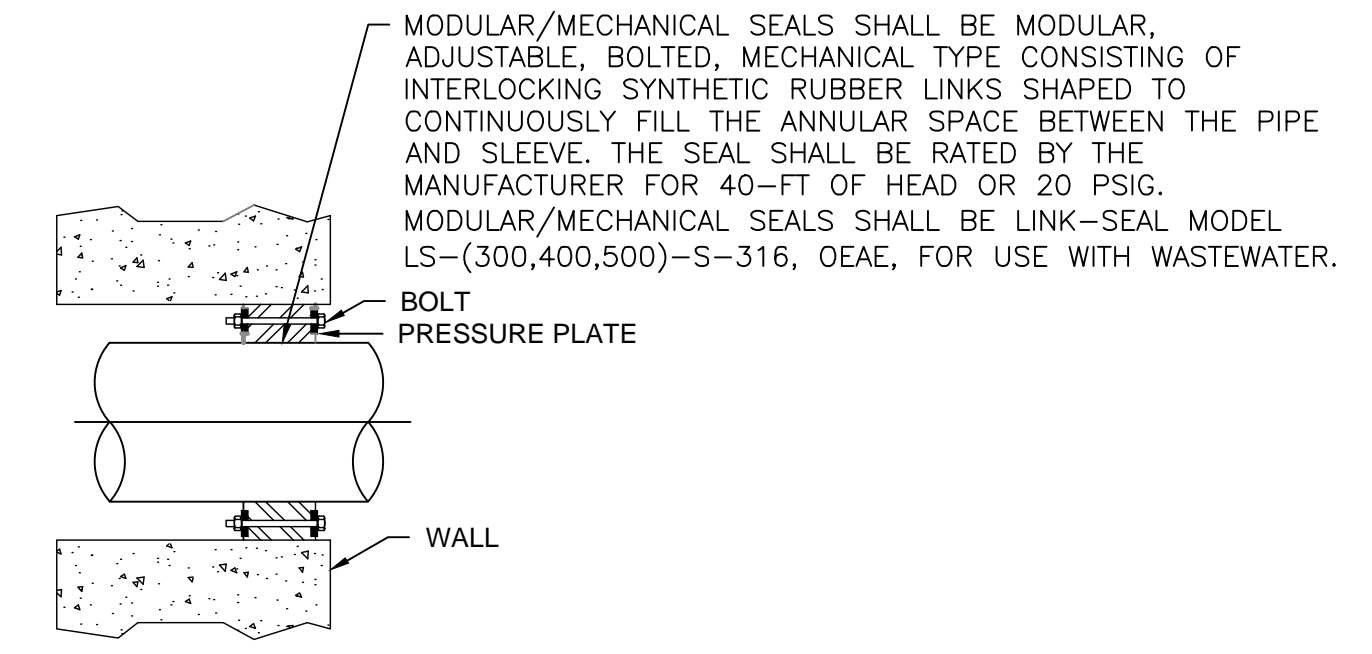


- NOTE:
1. ALL POSTS & GATE KEEPERS SHALL BE SET IN CONCRETE (2500 PSI MIN.).
 2. ALL PIPE SIZES SHOWN ARE NOMINAL DIA. PER STD. SPEC. 772

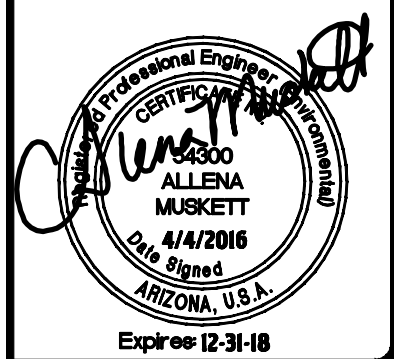
7 DOUBLE SWING GATE (TYP)
NOT TO SCALE



8 PIPE PENETRATION NEW WALLS OR FLOORS
NOT TO SCALE



9 PIPE PENETRATION EXIST. WALLS OR FLOORS
NOT TO SCALE



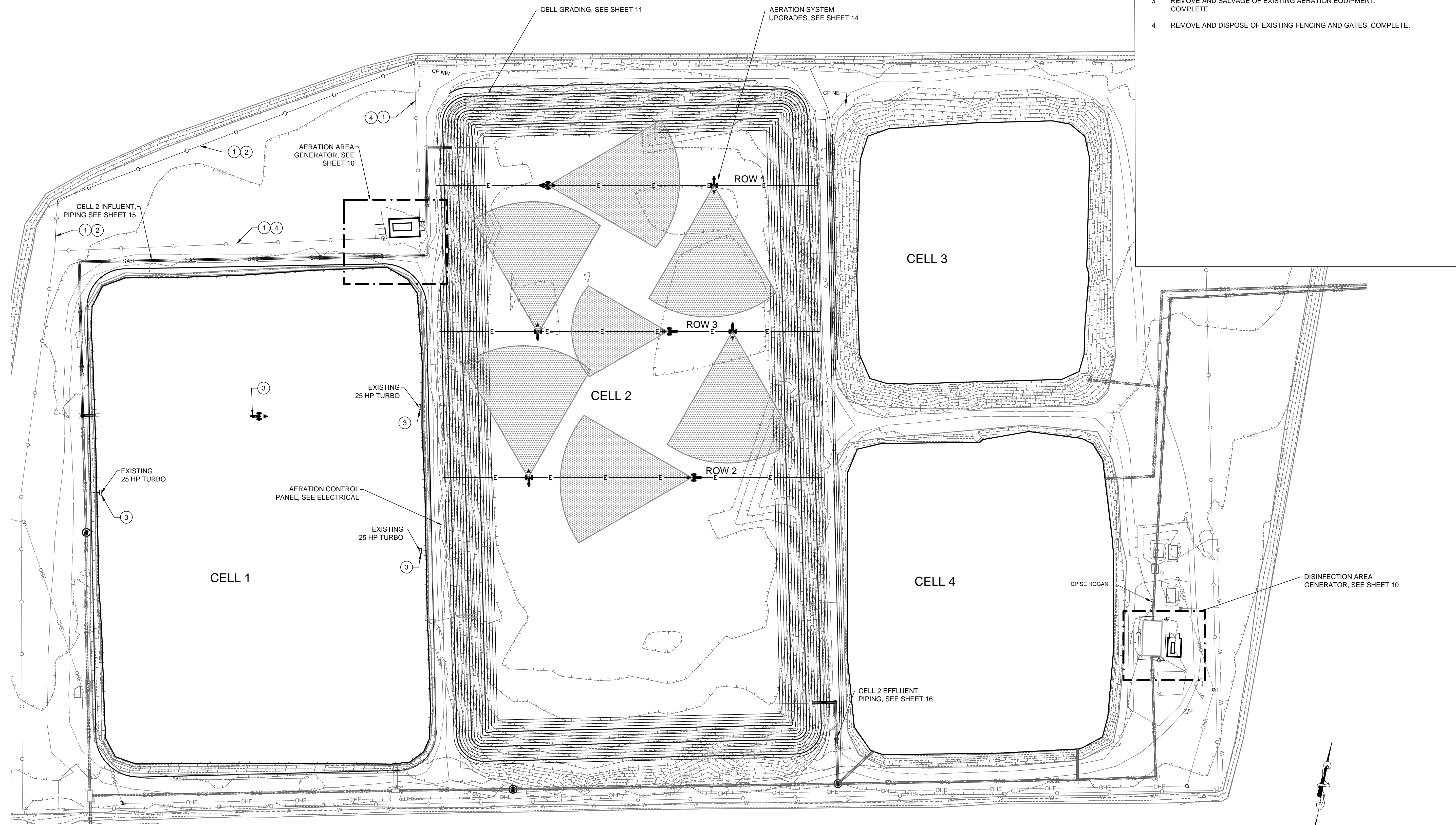
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CHINLE WASTEWATER TREATMENT PLANT
UPGRADE

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- BUILD NOTES**
- 1 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.
 - 2 6 FT FENCE: FURNISH AND INSTALL 6-FT HIGH CHAINLINK FENCE WITH 3-STRING BARB WIRE PER STD. SPEC 420, COMPLETE AND IN PLACE.
 - 3 REMOVE AND SALVAGE OF EXISTING AERATION EQUIPMENT, COMPLETE.
 - 4 REMOVE AND DISPOSE OF EXISTING FENCING AND GATES, COMPLETE.

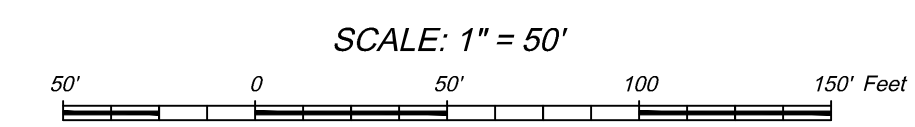


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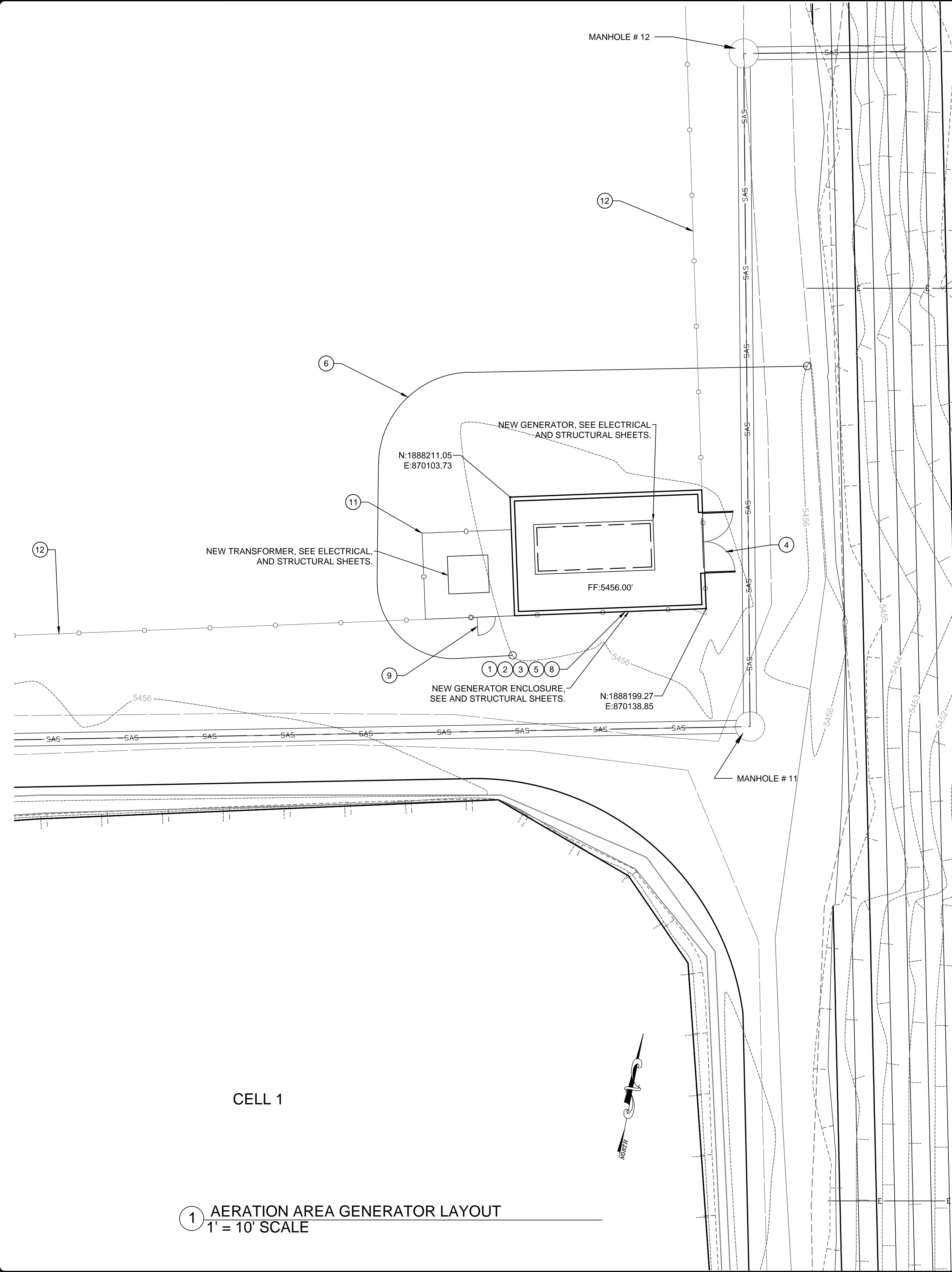
CHINLE WASTEWATER TREATMENT PLANT
UPGRADE
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SITE UPGRADES

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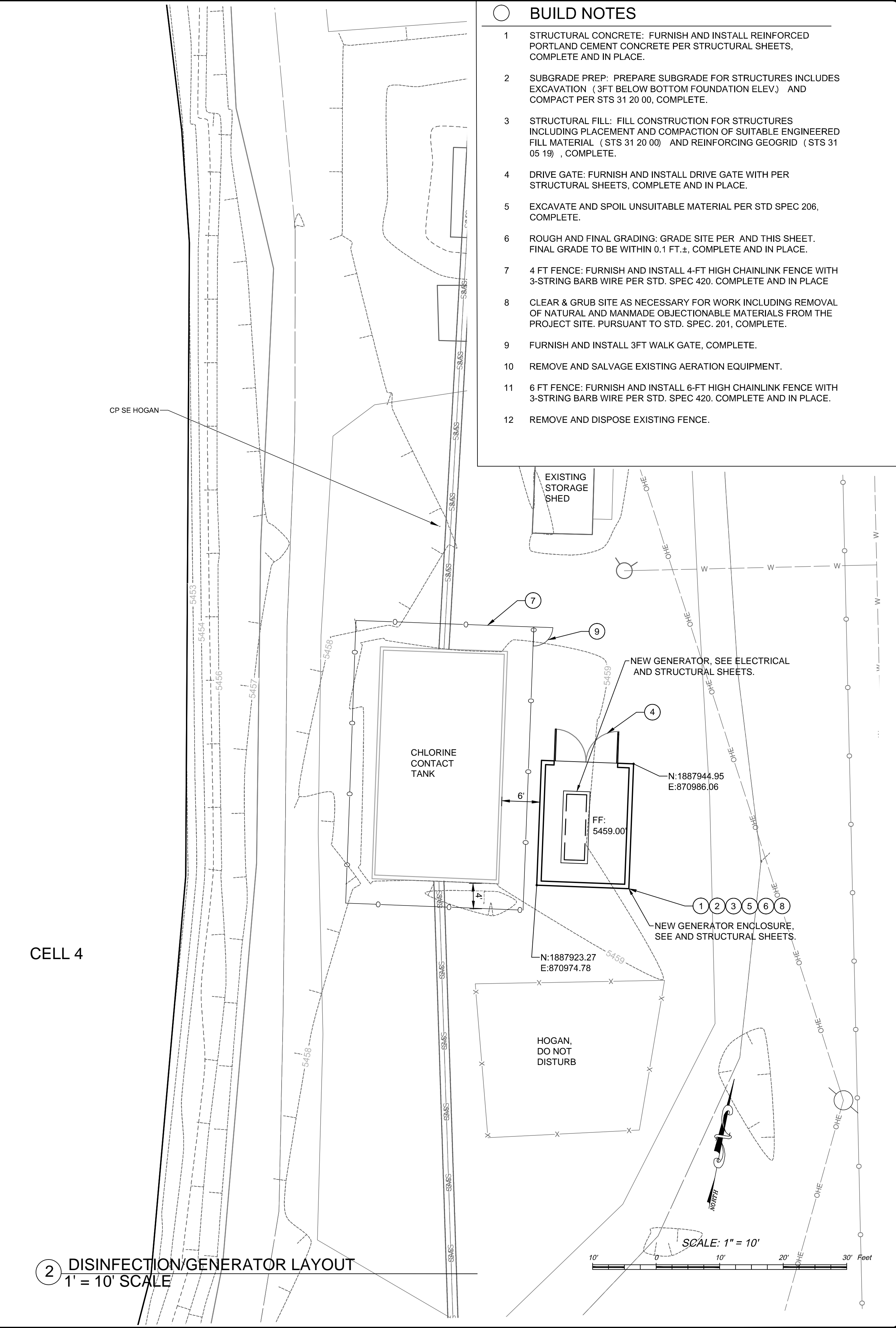


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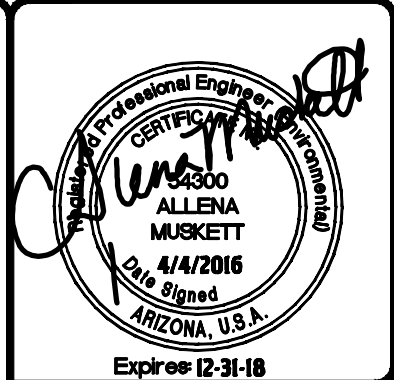


1 AERATION AREA GENERATOR LAYOUT
1" = 10' SCALE



2 DISINFECTION/GENERATOR LAYOUT
1" = 10' SCALE

- 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 PER AND THIS SHEET. FINAL GRADE TO BE WITHIN 0.1 FT.±, COMPLETE AND IN PLACE.
 - 4 FT FENCE: FURNISH AND INSTALL 4-FT HIGH CHAINLINK FENCE WITH 3-STRING BARB WIRE PER STD. SPEC 420, 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.
 - FURNISH AND INSTALL 3FT WALK GATE, COMPLETE.
 - REMOVE AND SALVAGE EXISTING AERATION EQUIPMENT.
 - 6 FT FENCE: FURNISH AND INSTALL 6-FT HIGH CHAINLINK FENCE WITH 3-STRING BARB WIRE PER STD. SPEC 420, COMPLETE AND IN PLACE.
 - REMOVE AND DISPOSE EXISTING FENCE.



NAVAJO TRIBAL UTILITY AUTHORITY
CHINLE, ARIZONA

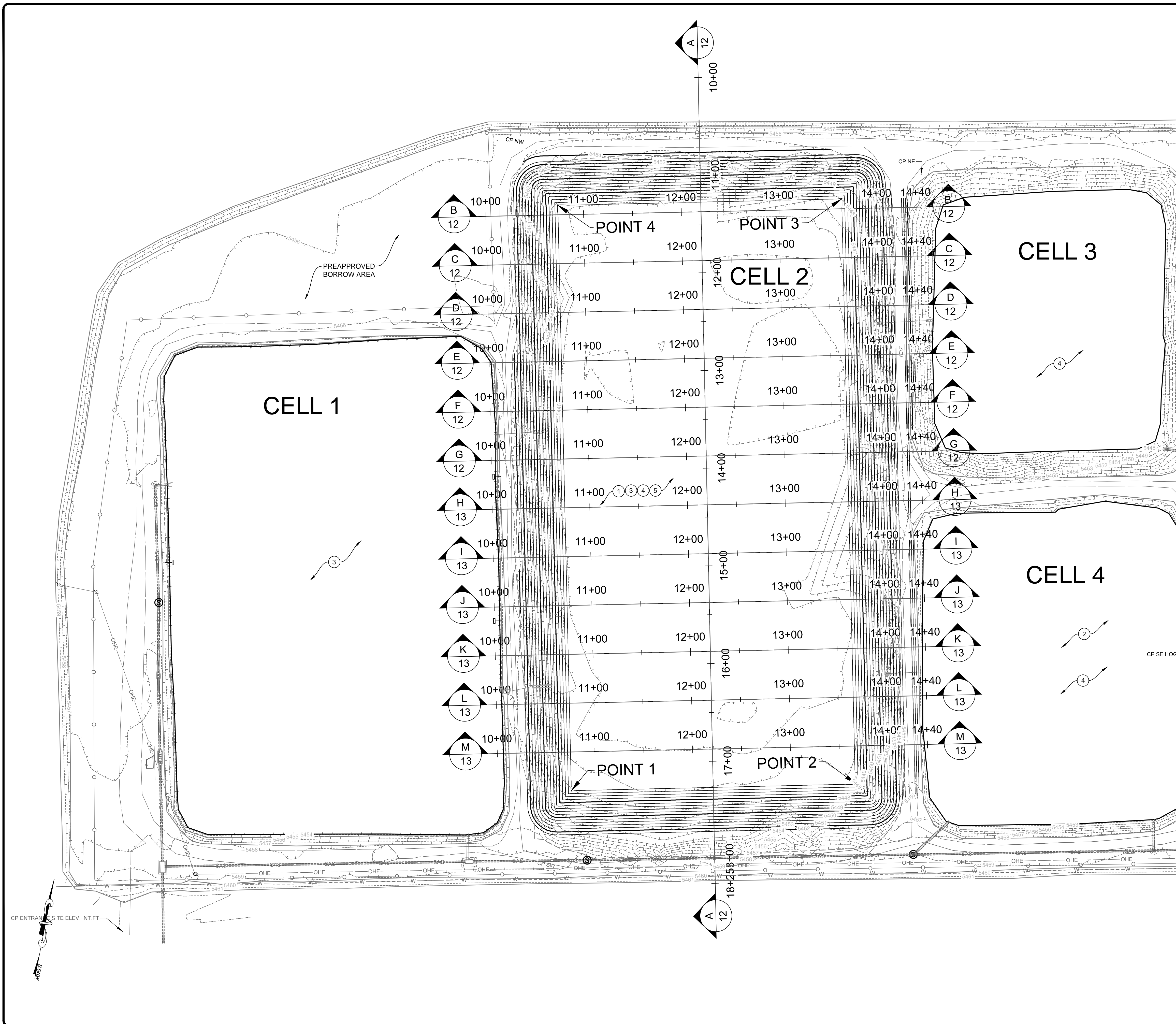
NO.	REVISION DESCRIPTION	DATE	BY
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CHINLE WASTEWATER TREATMENT PLANT
UPGRADE
CIVIL
GENERATOR AREA ENLARGEMENTS

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BUILD NOTES

- 1 ROUGH AND FINAL GRADING: GRADE SITE. FINAL GRADE TO BE WITHIN 0.1 FT.±, COMPLETE AND IN PLACE. COMPACT TO 95% ASTM-D-698.
- 2 PUMP WATER FROM CELL 4 TO CELL 2.
- 3 PUMP WATER FROM CELL 1 TO CELL 2.
- 4 REMOVE DRIED SLUDGE AND MOVE TO CELL 3 AND 4.

TABLE 1
EXISTING CELL 1 DATA

WATER SURFACE	5,453.00
EXISTING SLUDGE HEIGHT	3.28 FEET
EXISTING WATER DEPTH	8.59 FEET
EXISTING WATER VOLUME	3,382,331 GAL. (16,746 CY)

TABLE 2
CELL 2 EARTHWORK

CUT	34,747 CY
FILL	3,116 CY
NET	31,619 CY (CUT)

- NOTES**
- 1 ALL CUT VOLUMES IN TABLE 2 ARE DRIED SLUDGE AND SHALL BE DISPOSED OF IN CELL 3 AND 4.
 - 2 FILL MATERIAL SHALL NOT BE TAKEN FROM CELL 2

TABLE 3
FINAL CELL 2

#	NORTHING	EASTING	FINAL ELEVATION
1	1887727.3599	870311.9948	5441.000'
2	1887789.7716'	870595.8614'	5441.000'
3	1888374.9758'	870467.1434'	5441.000'
4	1888312.7177'	870183.4730'	5441.000'

TABLE 4
EXISTING CELL 3 DATA

BOTTOM ELEVATION	5,446.94 (AVG)
FINISHED ELEVATION	5,458.00
FILL VOLUME	34,747 CY

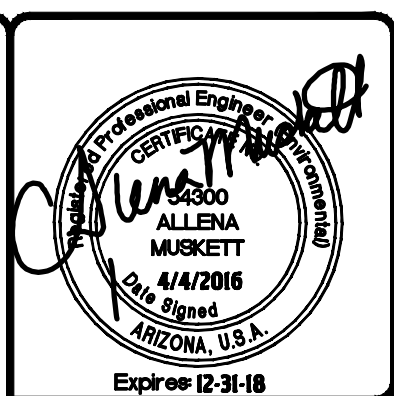
TABLE 5
EXISTING CELL 4 DATA

WATER SURFACE	5,452.50
EXISTING SLUDGE HEIGHT	1.07 FEET
EXISTING WATER DEPTH	11.07 FEET
EXISTING WATER VOLUME	24,910.04 GAL.

TABLE 6
FINAL WATER

FINISHED CELL	FINAL WATER VOLUMES (GAL)	HRT [2]
1	9,388,051	12
2	16,879,350	22
3 AND 4 [1]	0	0

- NOTES**
- 1 CELL 3 AND 4 ARE BEING CONVERTED TO A SLUDGE SURFACE DISPOSAL CELL.
 - 2 HRT @ Q=783,000 GPD
 - 3 HRT FOR CELL 1 IS FOR WHEN THE CELL HAS HAD SLUDGE REMOVED.



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UPGRADE
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GENERAL NOTES

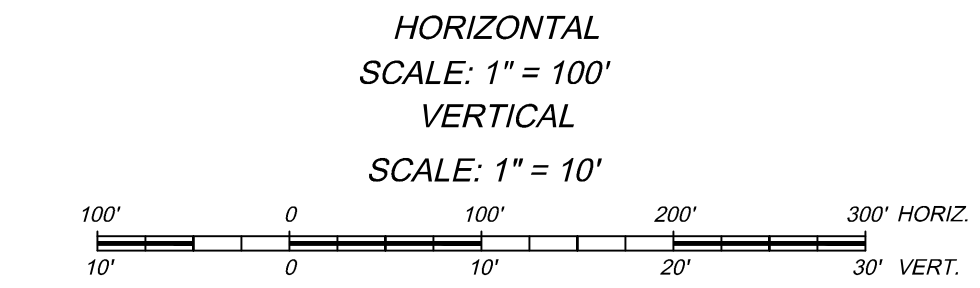
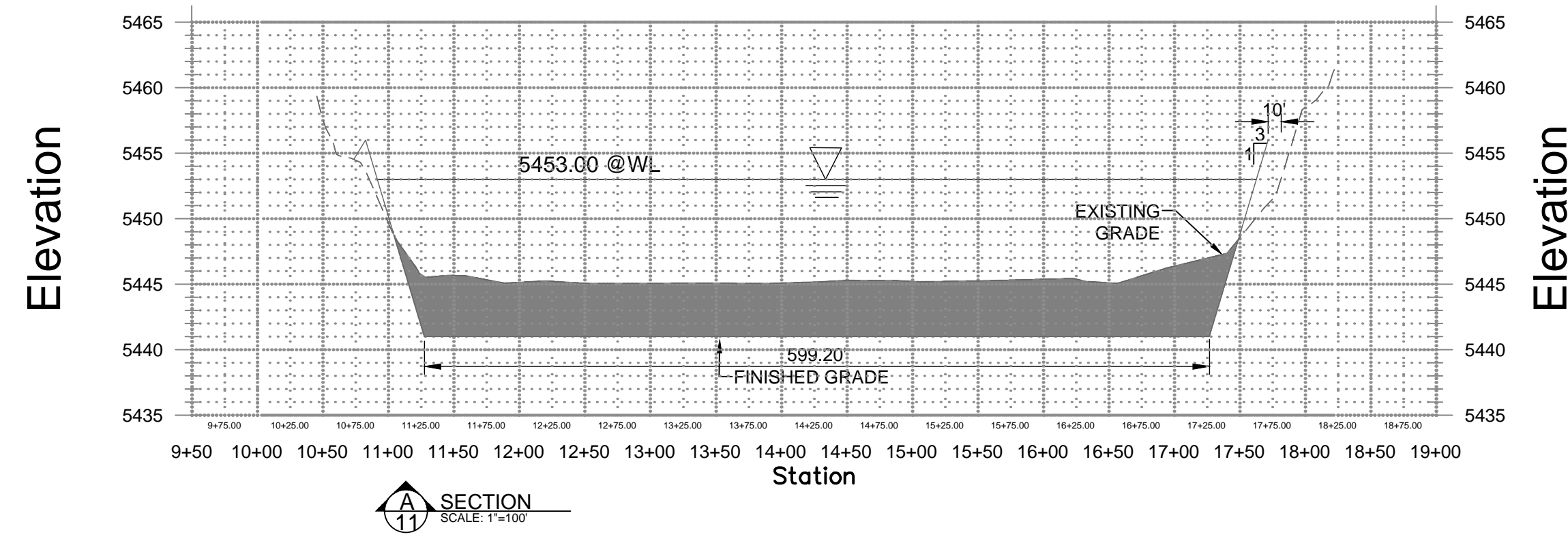
- CELL 2 INTERIOR SIDE WALLS SHALL BE GRADED AT A 3H:1V SLOPE.
- THE FINISHED GRADE SHALL BE COMPACTED TO 85% ASTM.D-698
- THE SOUTH FACE OF THE TOP OF THE POND SHALL BE GRADED TO 5456.00. A 10' WIDE ROAD SHALL BE GRADED AT A 1% SLOPE. THEN THE ROAD SHALL BE GRADED TO THE EXISTING SURFACE AT A 3H:1V SLOPE
- THE NORTH FACE OF THE POND SHALL BE GRADED TO A FINAL ELEVATION OF 5,456.00'
- THE WEST FACE SHALL BE GRADED TO A FINAL ELEVATION OF 5,456.00'



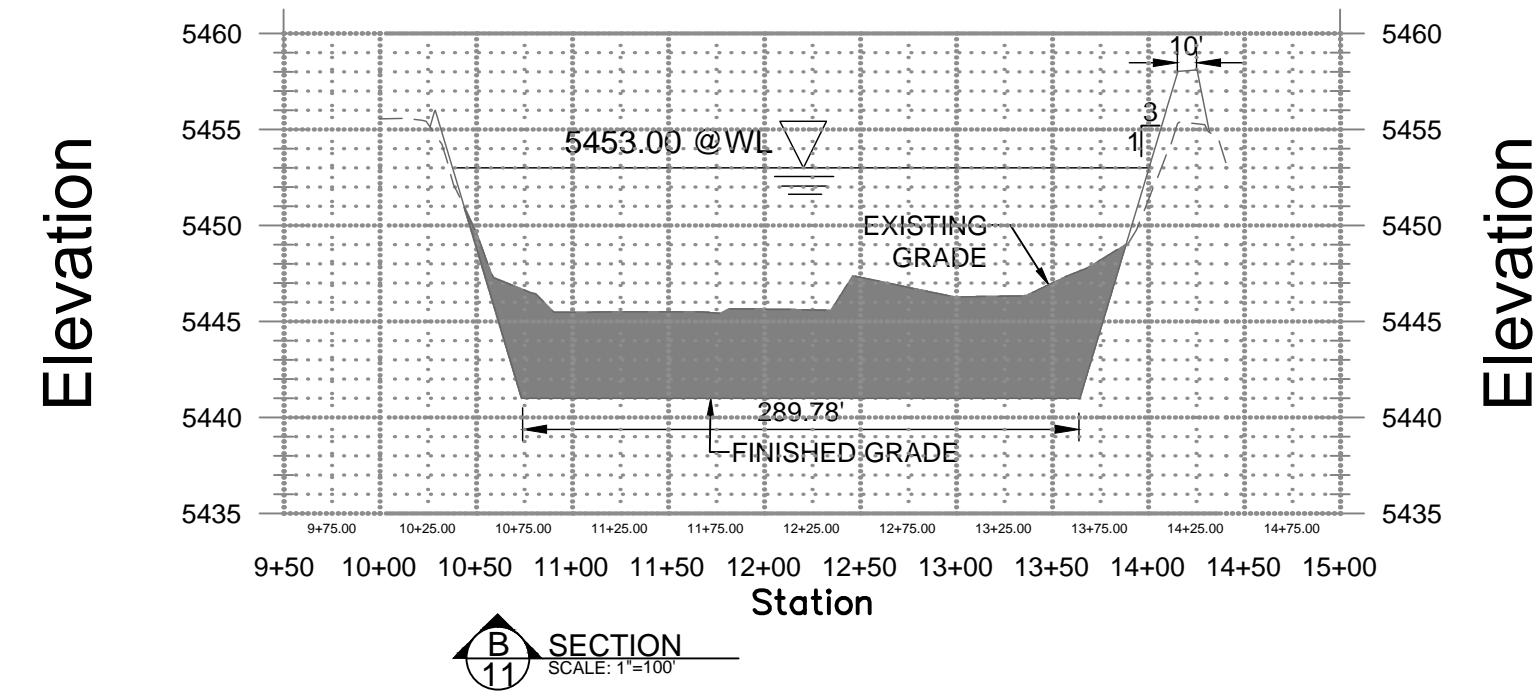
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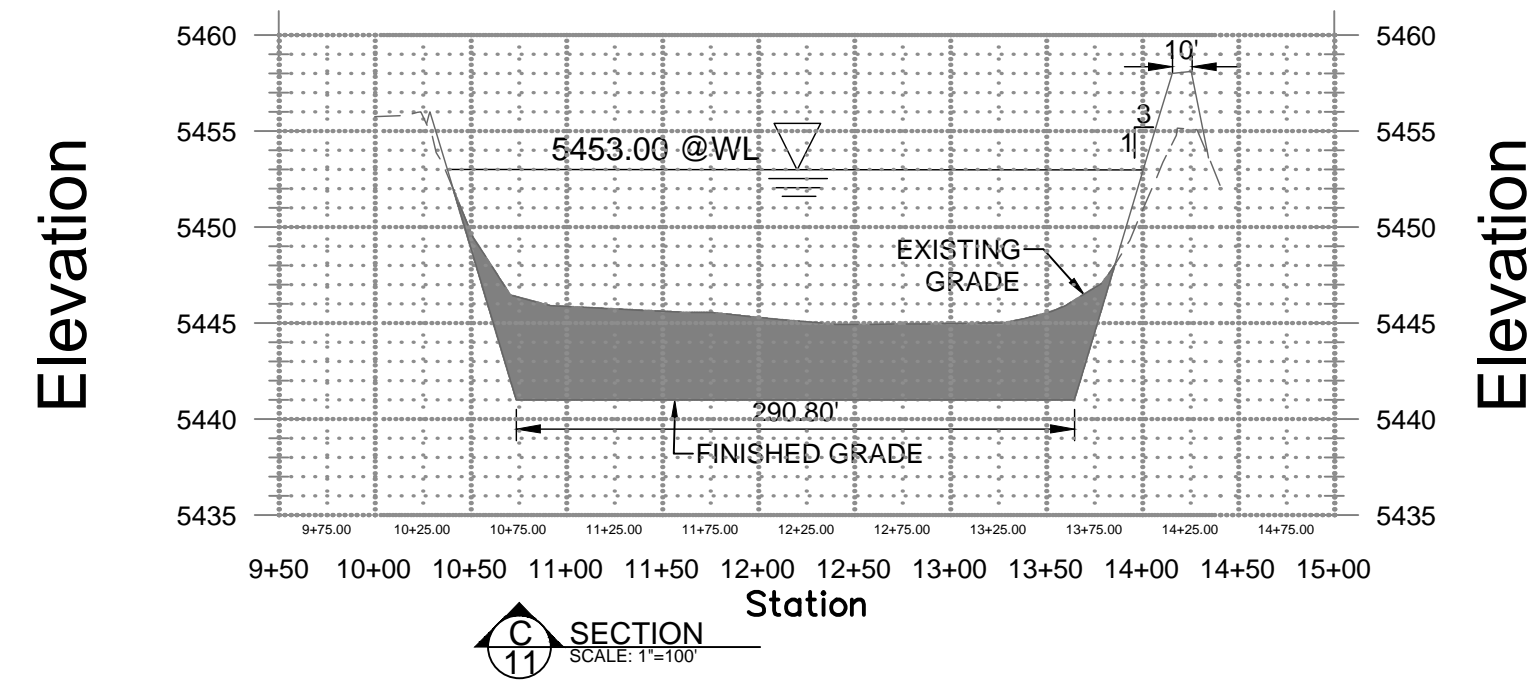
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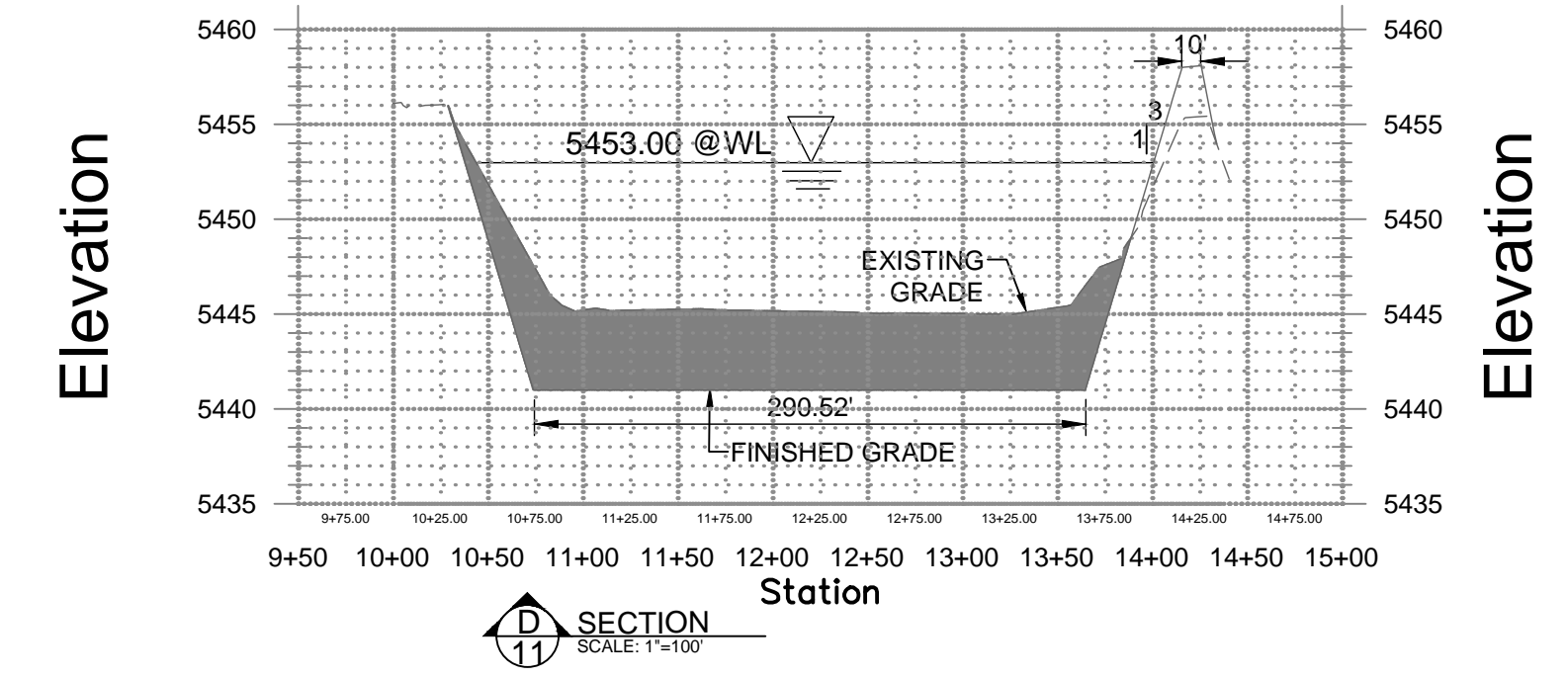
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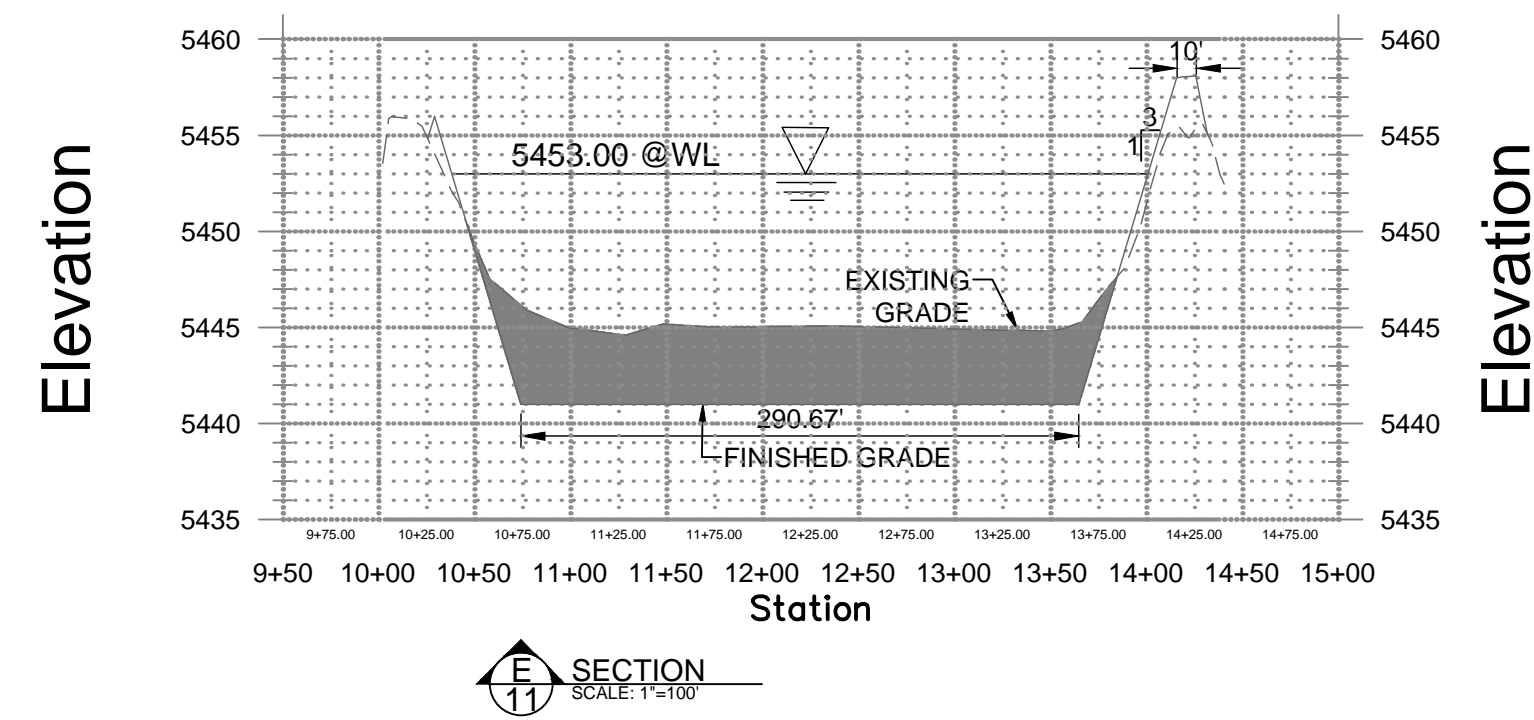
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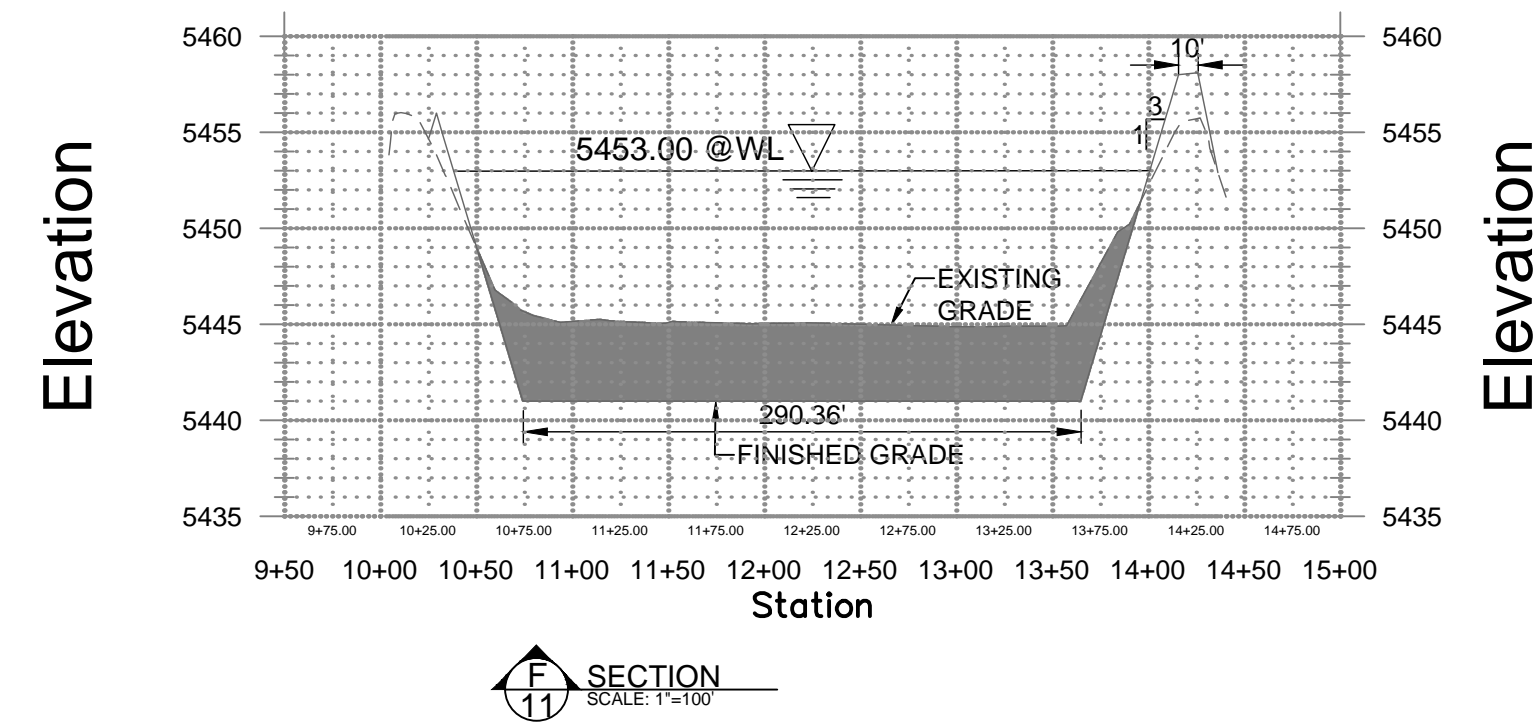
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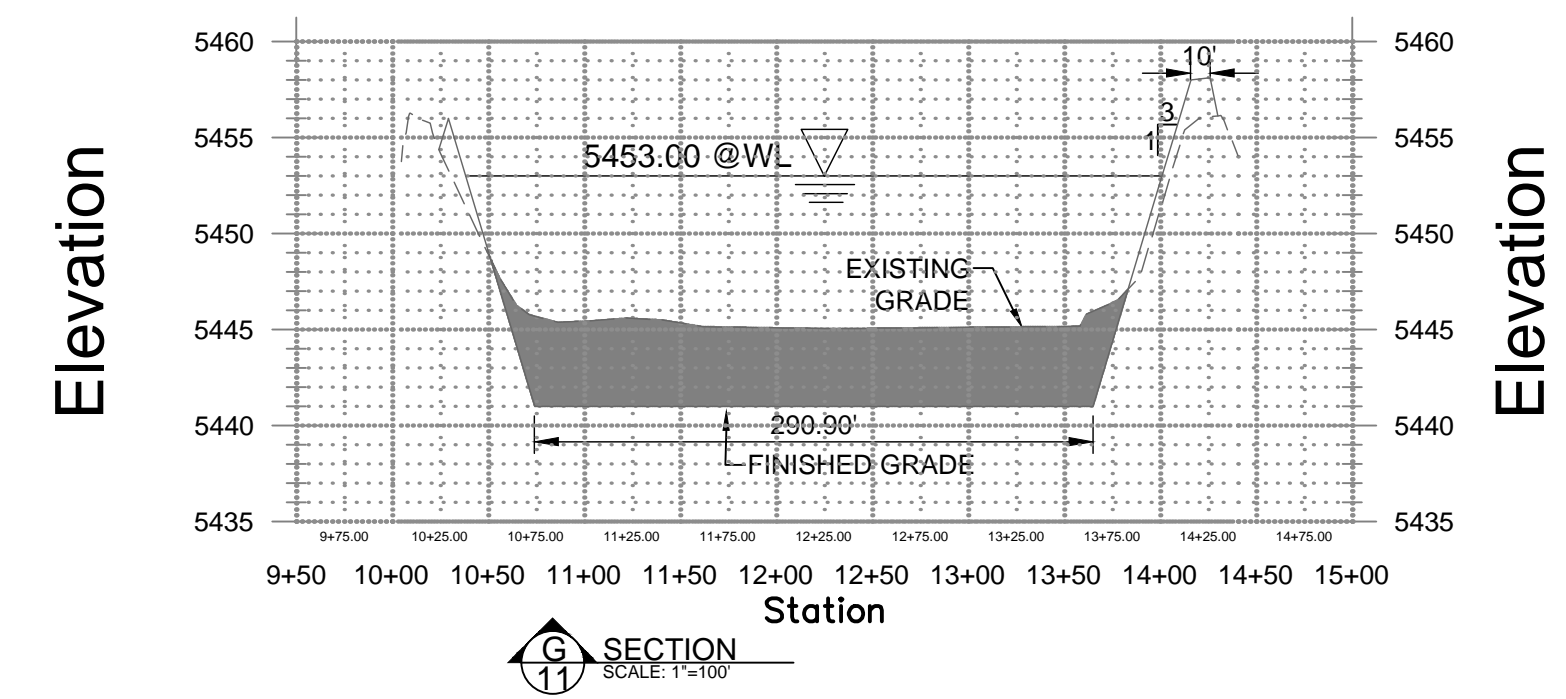
SECTION E PROFILE



SECTION F PROFILE



SECTION G PROFILE



CHINLE WASTEWATER TREATMENT PLANT
UPGRADE

CIVIL
GRADING PROFILES 1 - CELL 2

SOLUTIONS FOR TODAY...
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JOB NO: 115111
DATE: APR 2016
SHEET NO: 12



NAVAJO TRIBAL UTILITY AUTHORITY CHINLE, ARIZONA		NO.	REVISION DESCRIPTION	DATE	BY
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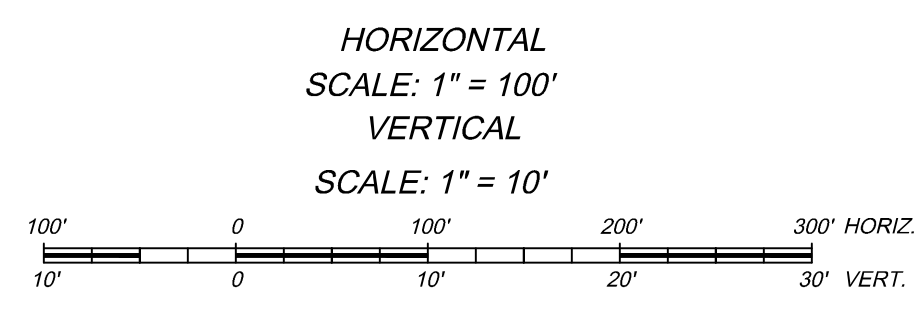
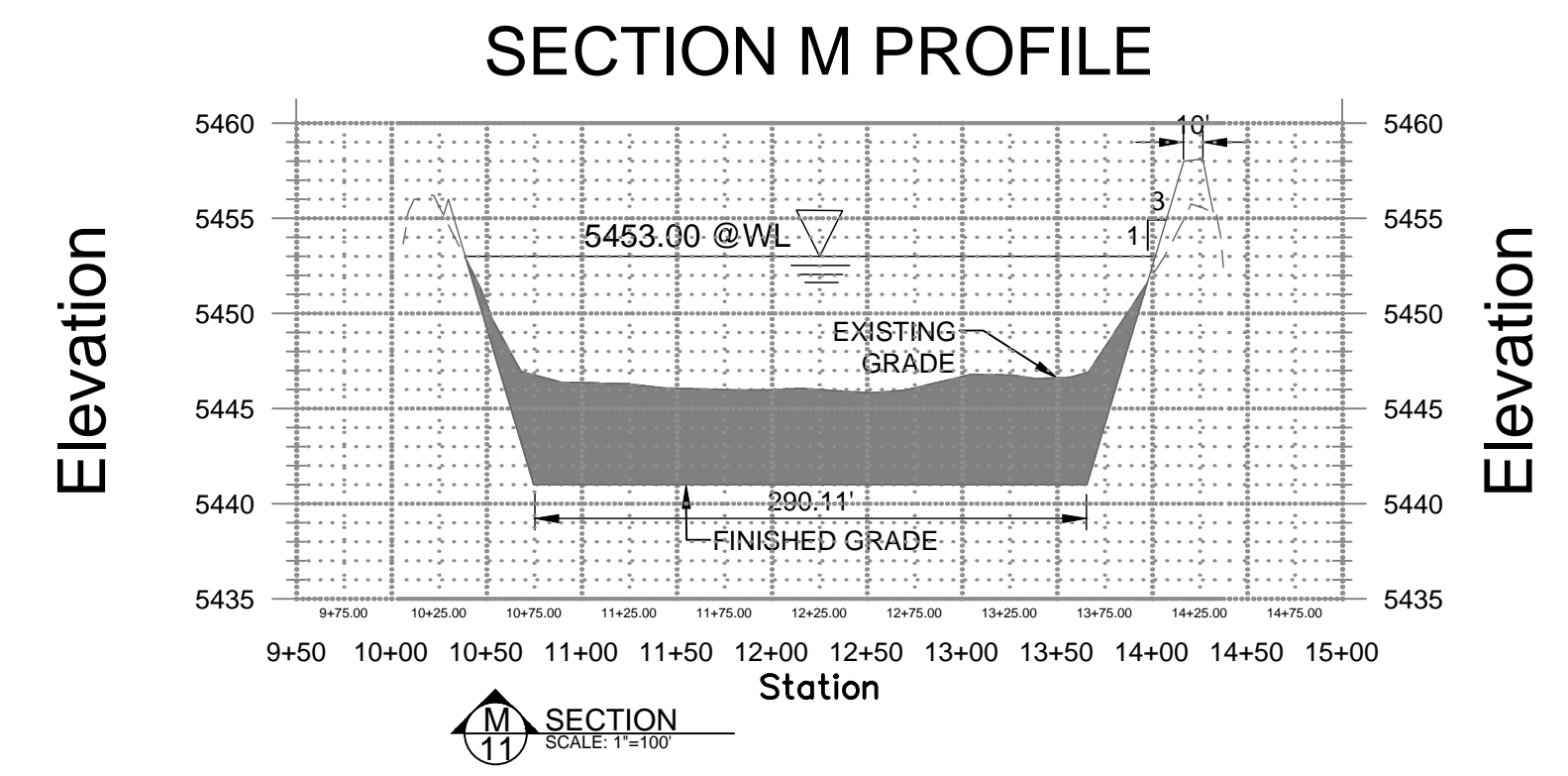
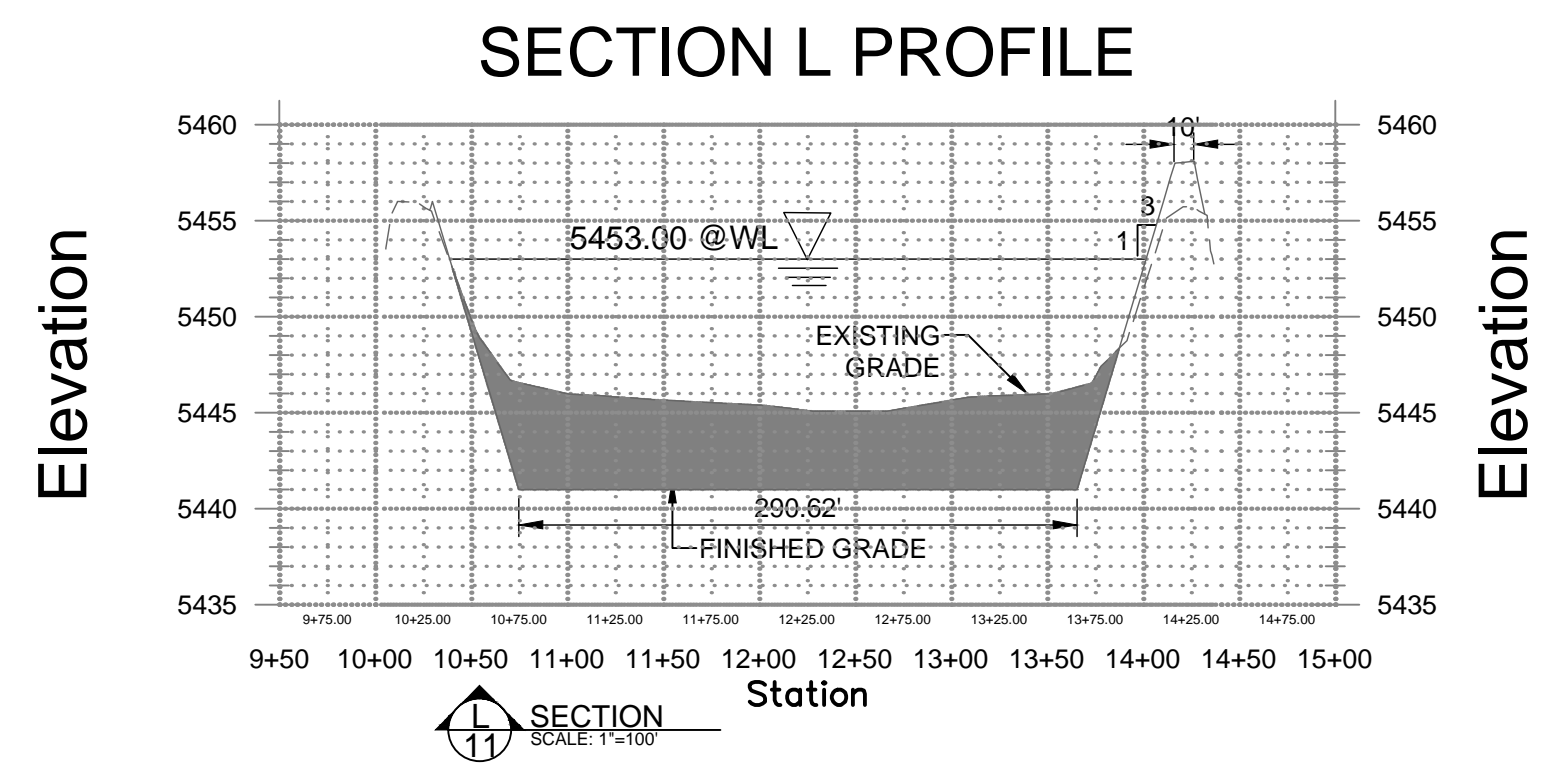
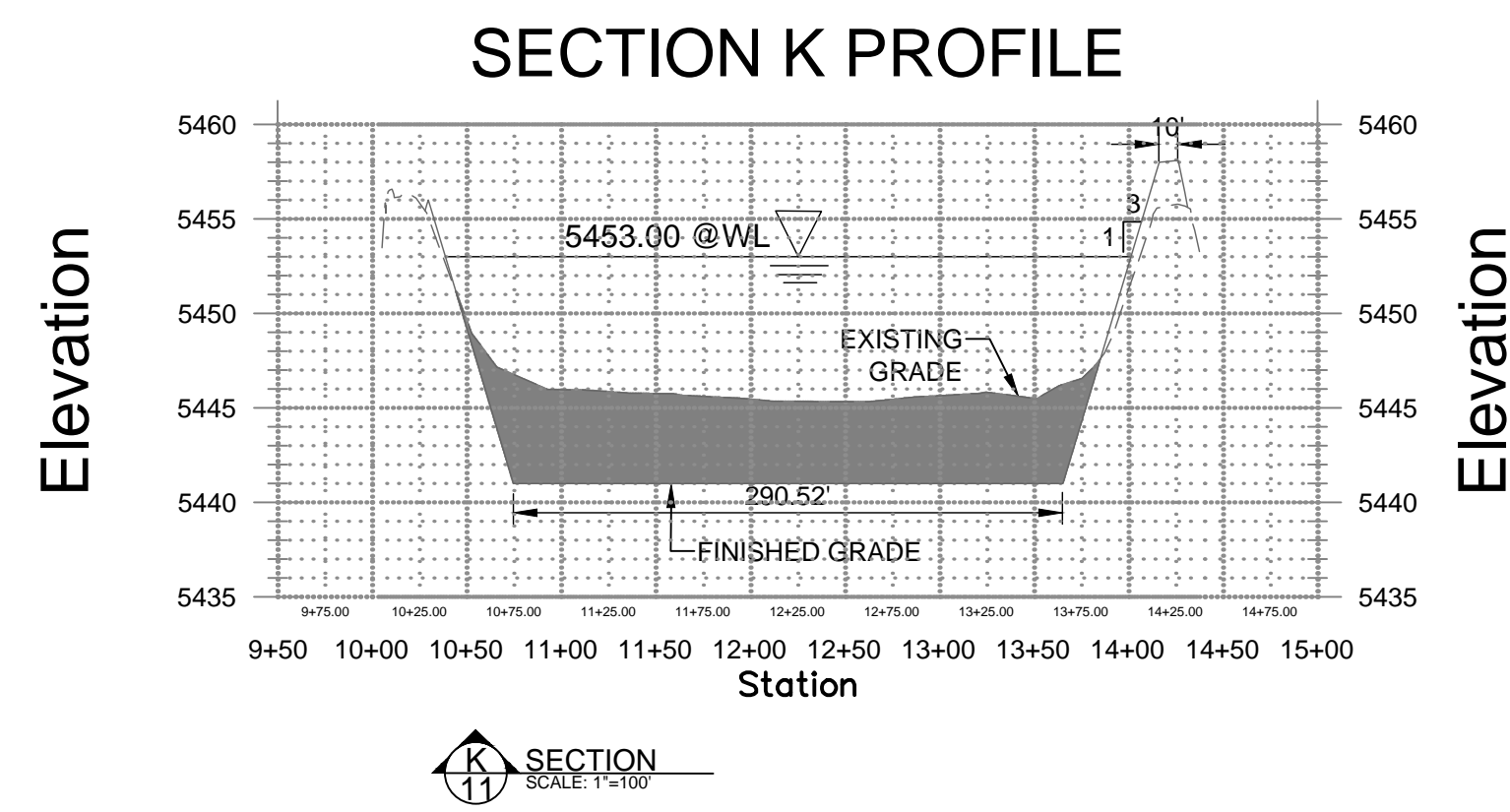
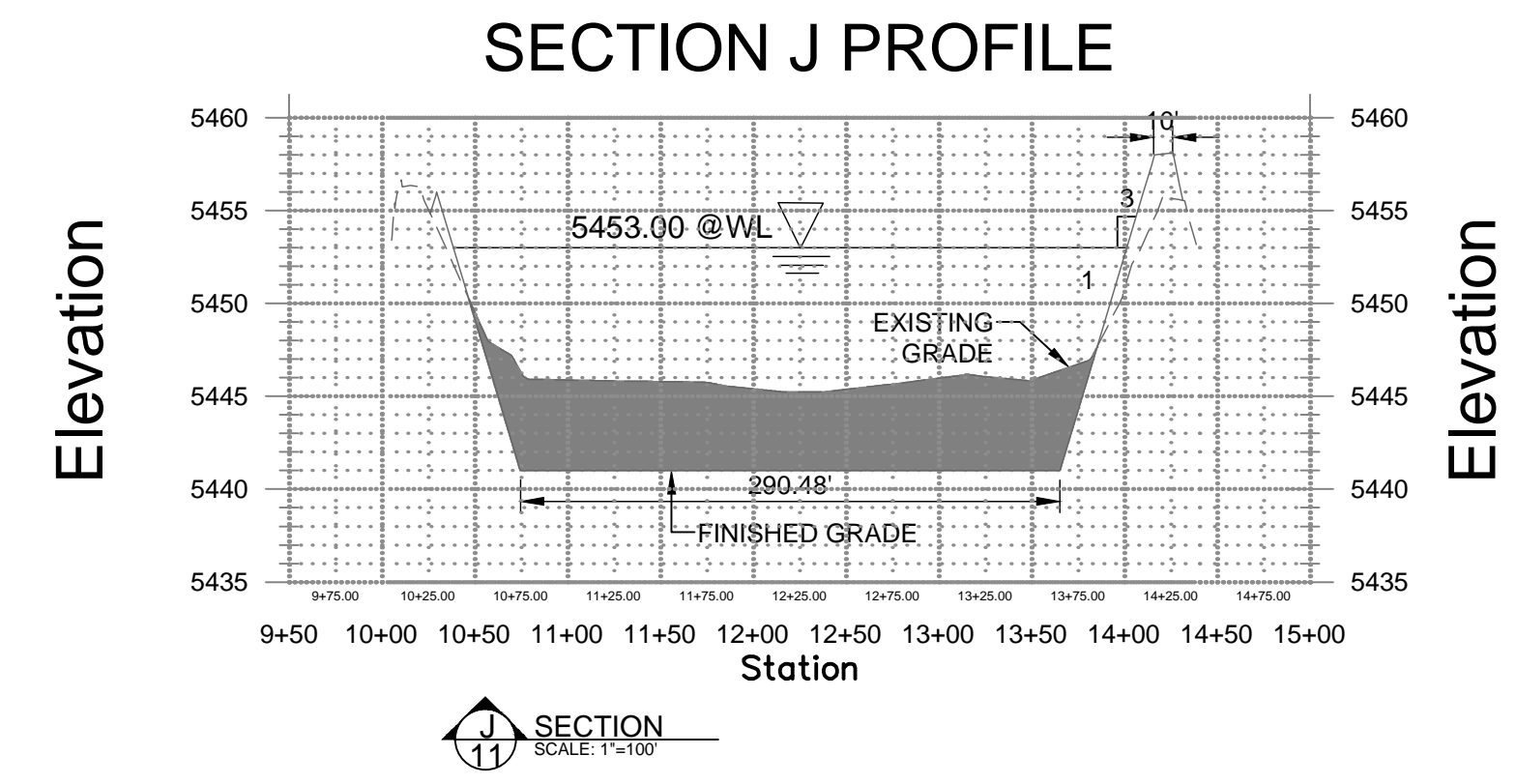
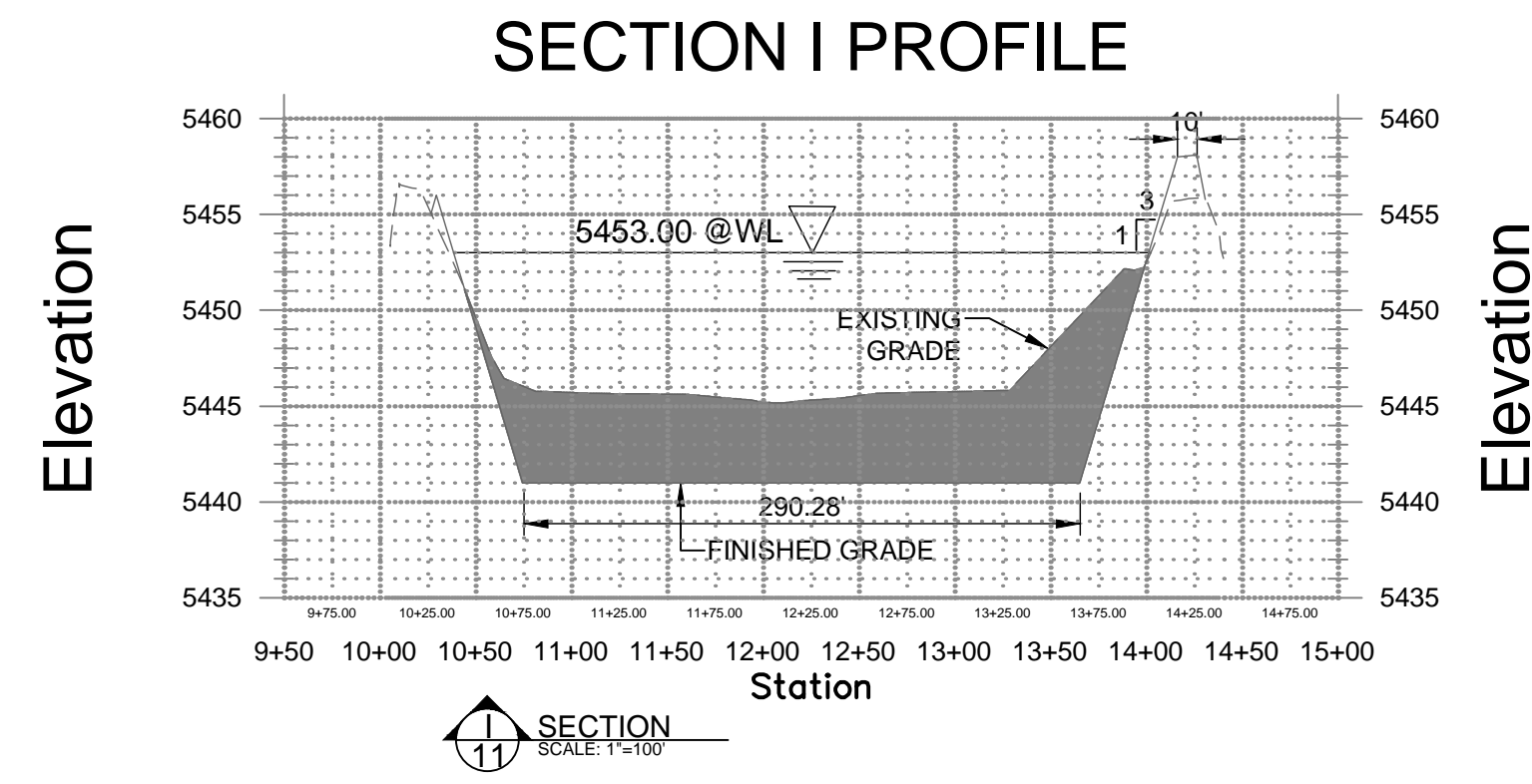
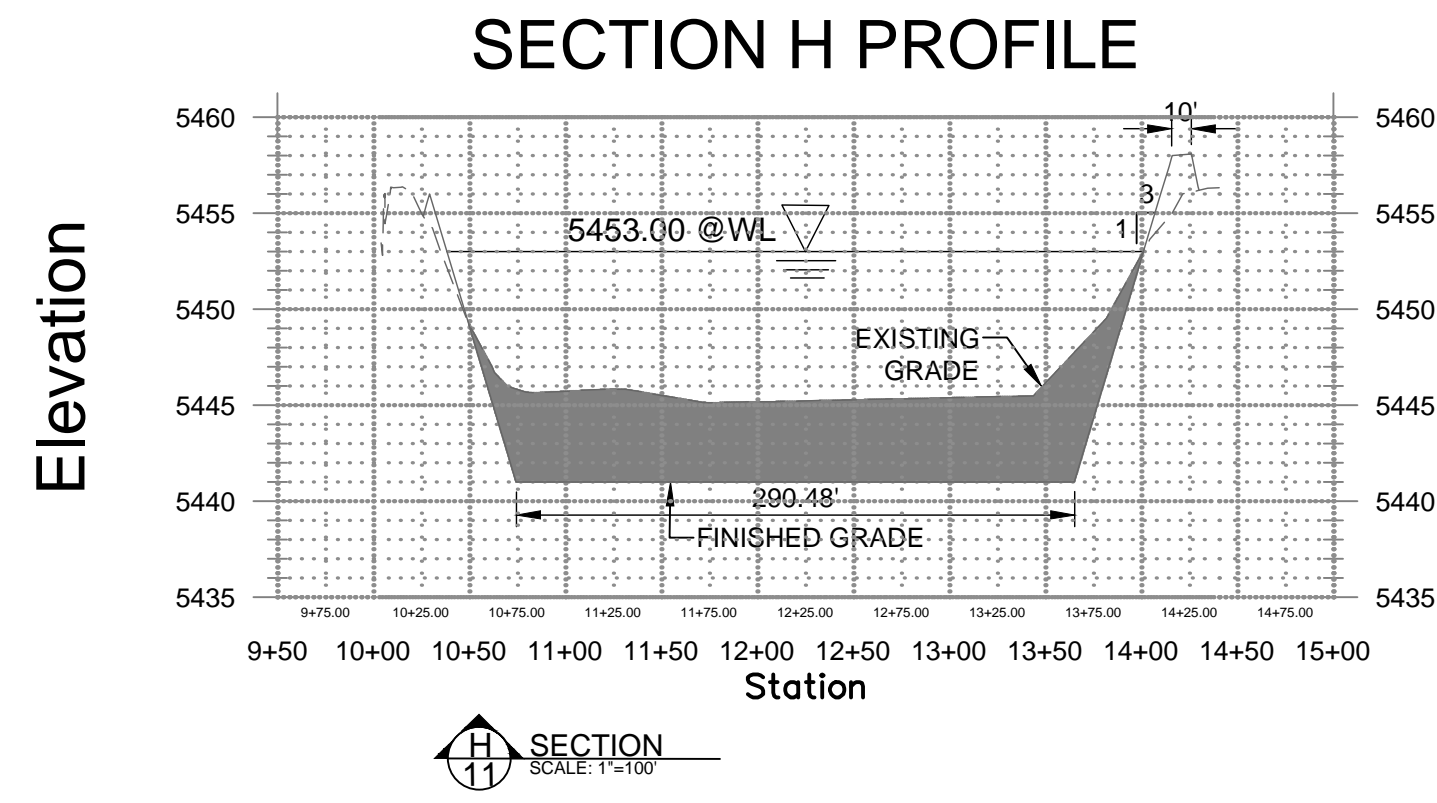
CHINLE WASTEWATER TREATMENT PLANT
UPGRADE
CIVIL
GRADING PROFILES 2 - CELL 2

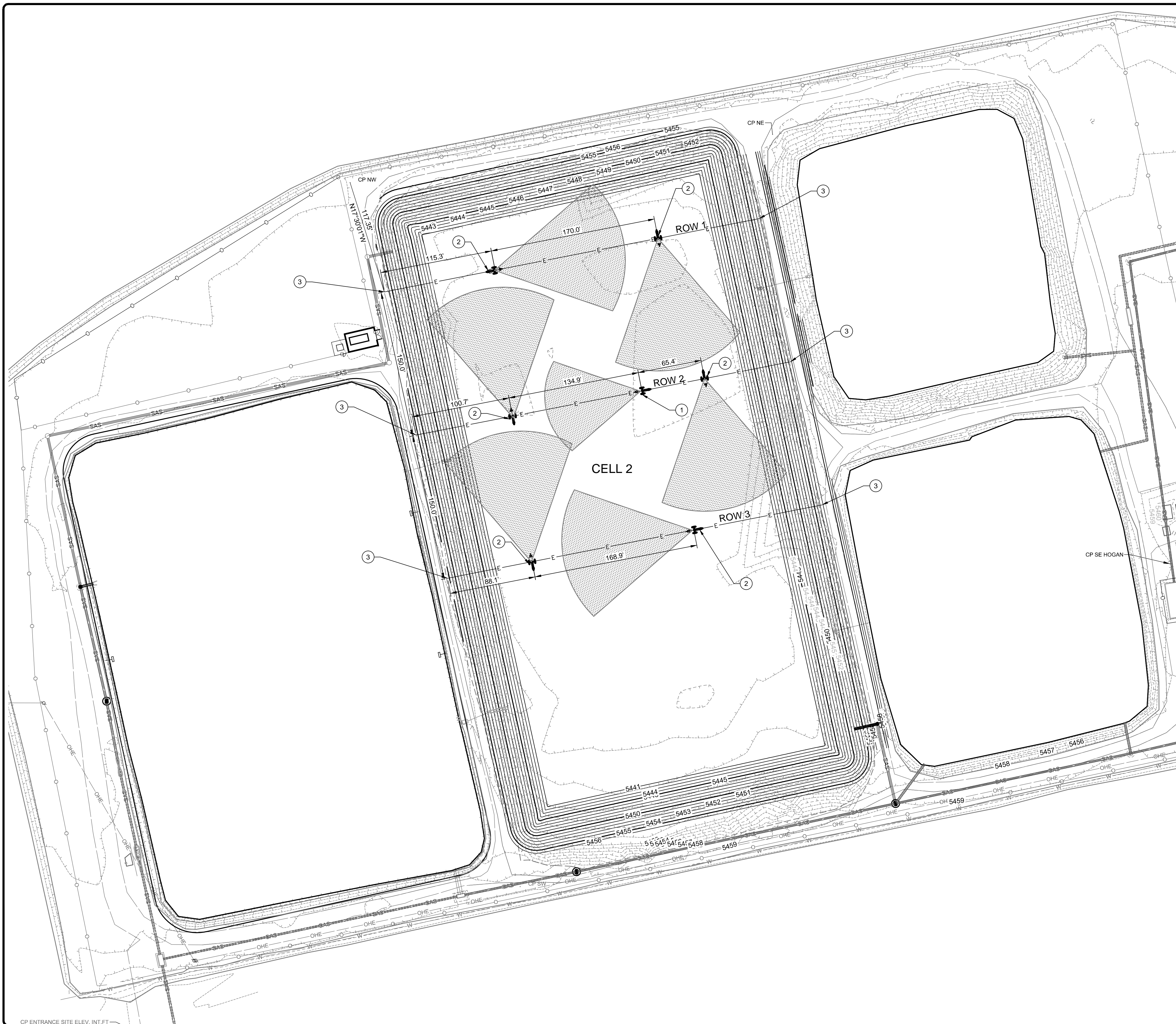
SOLUTIONS FOR TOMORROW...
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DATE: APR 2016
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BUILD NOTES

1. INSTALL 15 HP AIRO-02 ASPIRATING AERATOR BY AERATION INDUSTRIES INTERNATIONAL, LLC, COMPLETE IN PLACE AND OPERATING. INCLUDES AERATORS, ELECTRICAL CABLES, MOORING CABLES, ETC, COMPLETE IN PLACE AND OPERATING.
2. INSTALL 25 HP AIRO-02 ASPIRATING AERATOR BY AERATION INDUSTRIES INTERNATIONAL, LLC, COMPLETE IN PLACE AND OPERATING. INCLUDES AERATORS, ELECTRICAL CABLES, MOORING CABLES, ETC, COMPLETE IN PLACE AND OPERATING.
3. FURNISH AND INSTALL MOORING POSTS, CABLES, AND CONNECTING AS SHOWN IN DETAILS.



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NAVAJO TRIBAL UTILITY AUTHORITY
CHINLE, ARIZONA

CHINLE WASTEWATER TREATMENT PLANT
UPGRADE

CIVIL
AERATION UPGRADES

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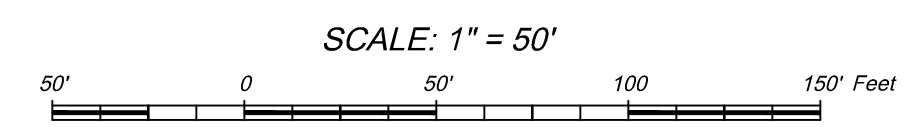
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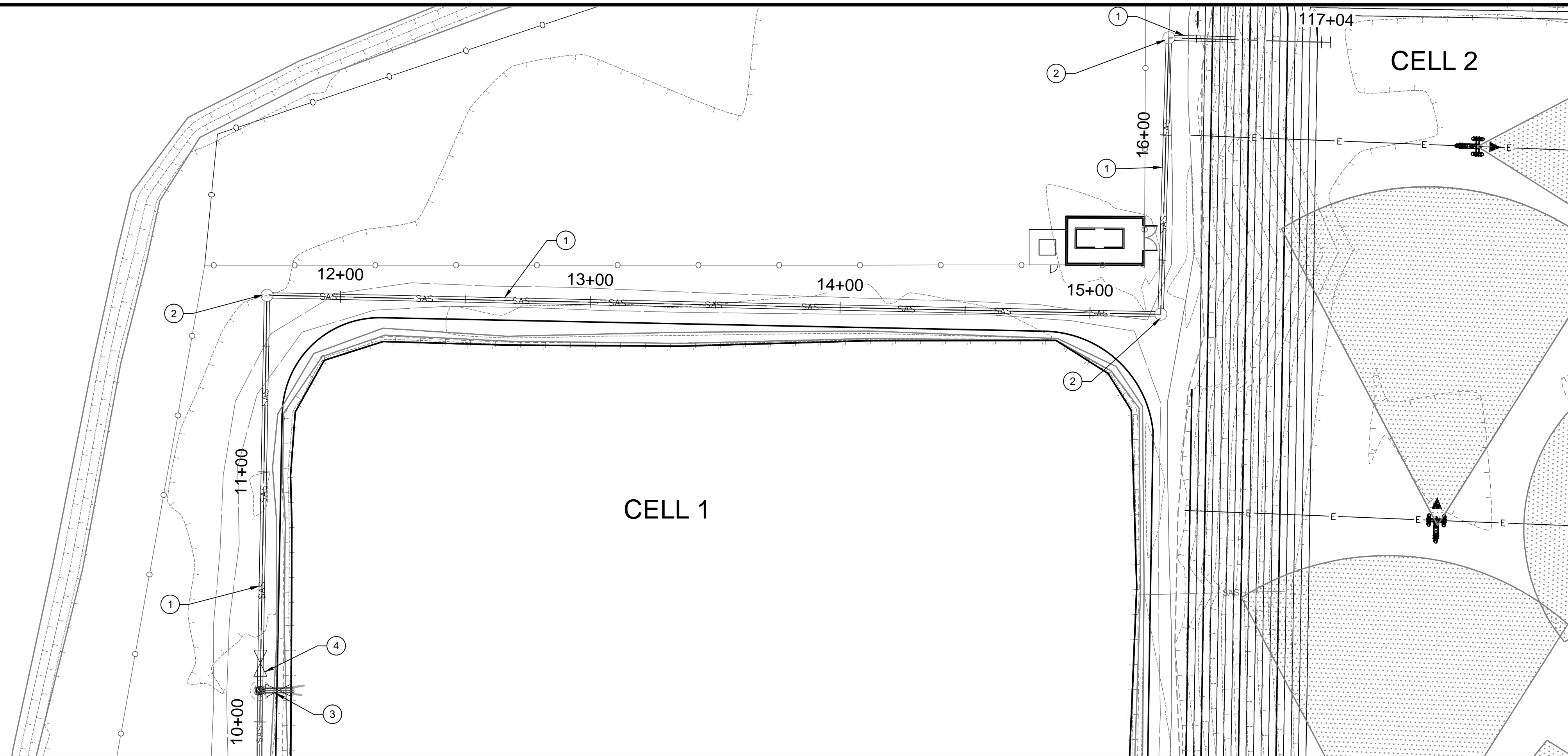


JOB NO:
115111

DATE:
APR 2016

SHEET NO:
14





- # BUILD NOTES**
- 24 INCH PVC SAS: FURNISH AND INSTALL 24-INCH SDR 35 PER STANDARD SPEC 615. INCLUDES TRENCHING, BACKFILL AND COMPACTION PER STANDARD 601; COMPLETE AND IN PLACE.
 - FURNISH AND INSTALL 4FT DIA. MANHOLE, PER DETAILS. SEE SHEET 7.
 - FURNISH AND INSTALL 18-INCH BUTTERFLY VALVE (AWWA-C504, CLASS 150B), MJ X MJ WITH TRANSITION COUPLINGS AND VALVE BOX.
 - FURNISH AND INSTALL 24-INCH BUTTERFLY VALVE (AWWA-C504, CLASS 150B), MJ X MJ WITH TRANSITION COUPLINGS AND VALVE BOX.



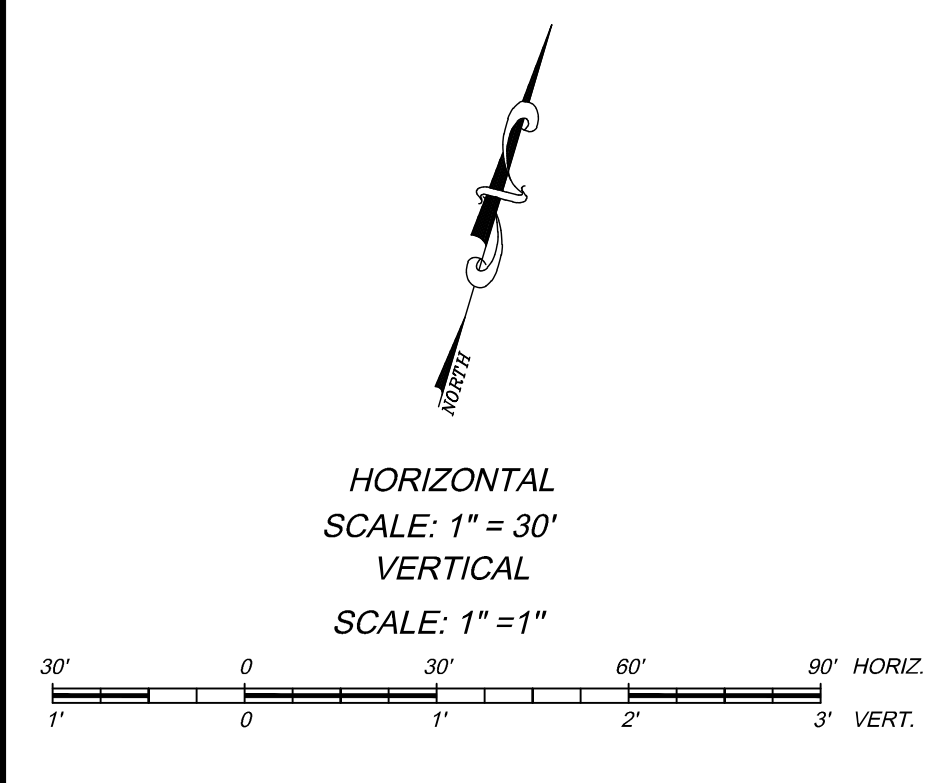
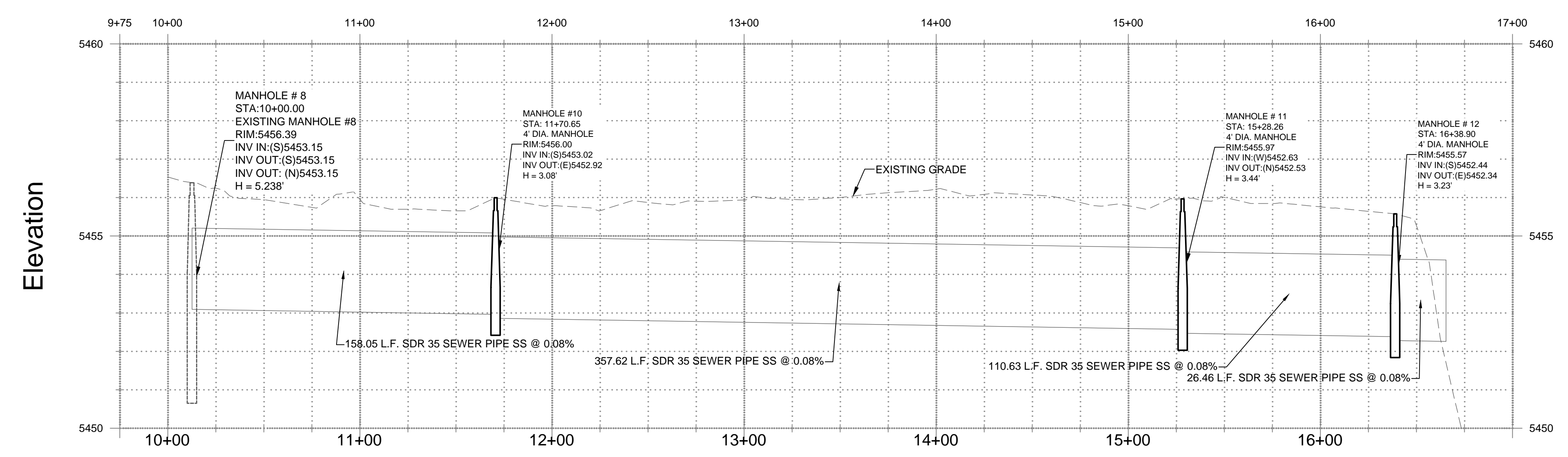
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NAVAJO TRIBAL UTILITY AUTHORITY
CHINLE, ARIZONA

CHINLE WASTEWATER TREATMENT PLANT
UPGRADE

CIVIL
CELL 2 INFLUENT STA 10+00.00 TO STA 17+03.56

CELL 2 INFLUENT STA: 10+00.00' TO STA: 17+03.56'



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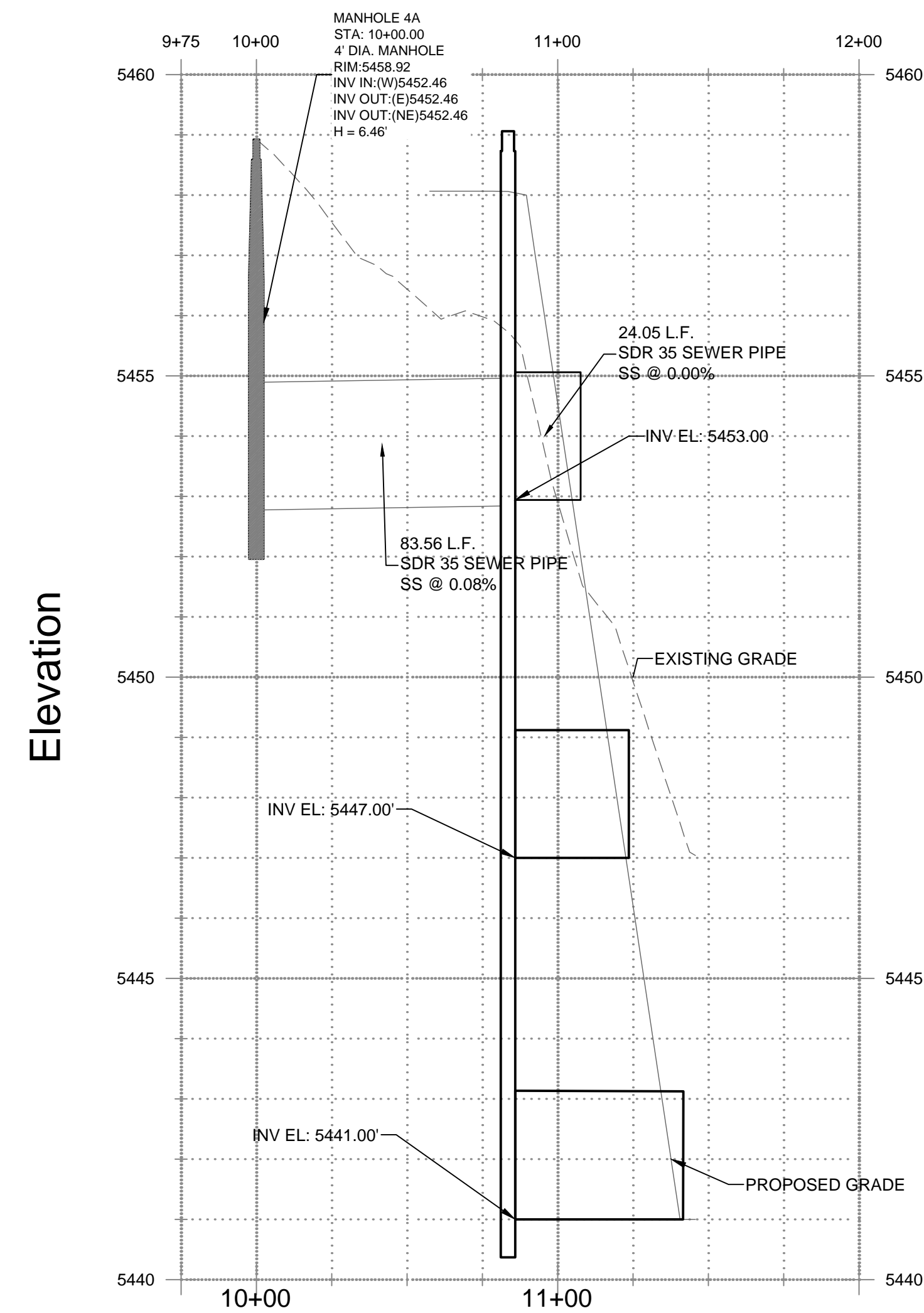
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JOB NO: 115111
DATE: APR 2016
SHEET NO: 15

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CELL 2 EFFLUENT STA: 10+00.00' TO STA: 11+45.68'



- # BUILD NOTES
- 24 INCH PVC SAS: FURNISH AND INSTALL 24-INCH SDR 35 PER STANDARD SPEC 615. INCLUDES TRENCHING, BACKFILL AND COMPACTION PER STANDARD 601; COMPLETE AND IN PLACE.
 - FURNISH AND INSTALL JUNCTION BOX, PER DETAILS. SEE SHEET 16.
 - PLUG SAS.



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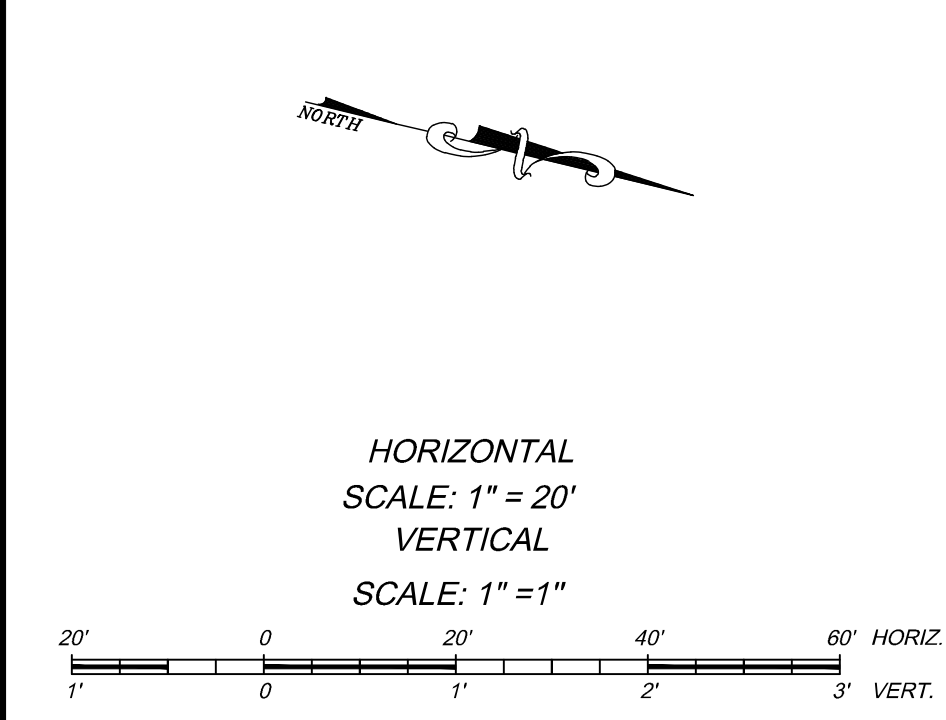
NAVAJO TRIBAL UTILITY AUTHORITY
CHINLE, ARIZONA

CHINLE WASTEWATER TREATMENT PLANT
UPGRADE

CIVIL
CELL 2 EFFLUENT STA 10+00.00 TO STA 11+45.68

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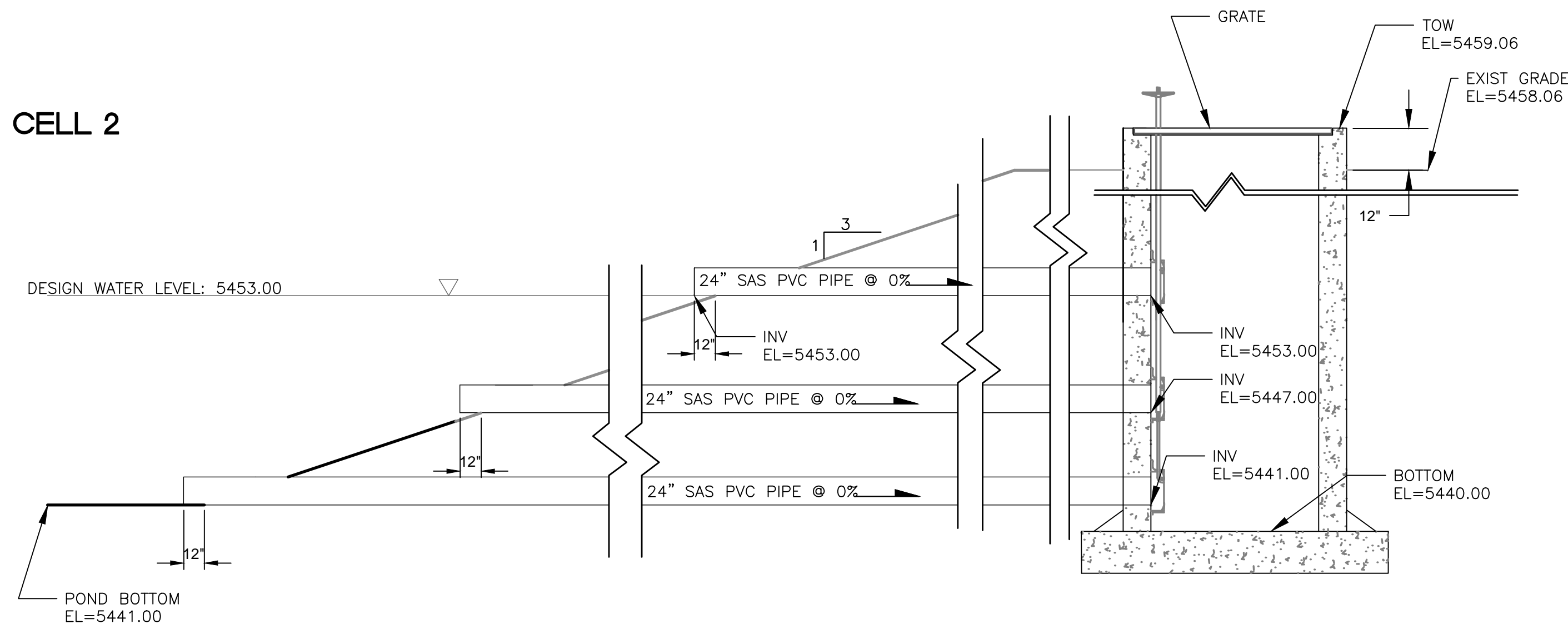


JOB NO:
115111

DATE:
APR 2016

SHEET NO:
16

CELL 2



JUNCTION BOX #7 PROFILE

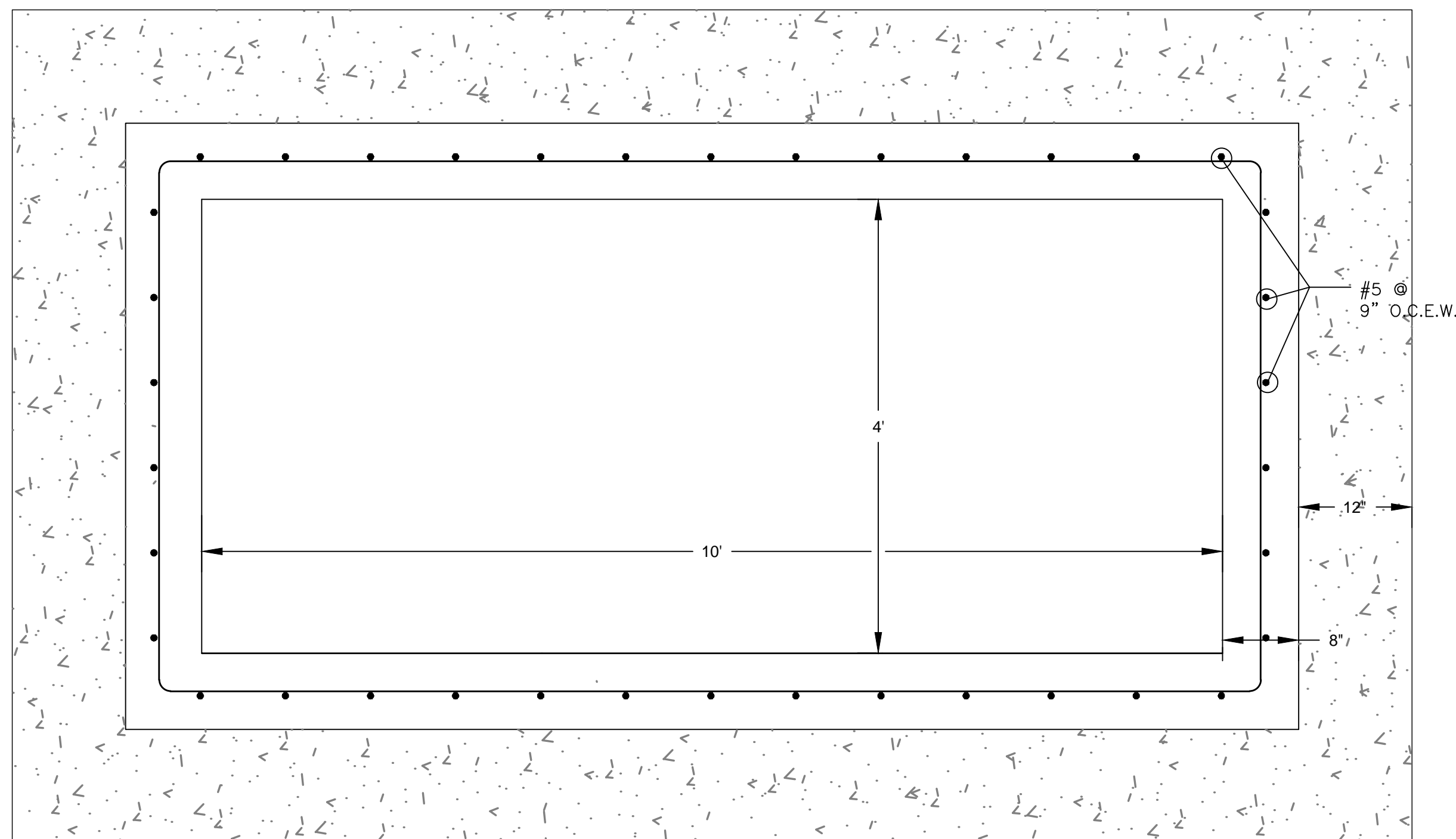
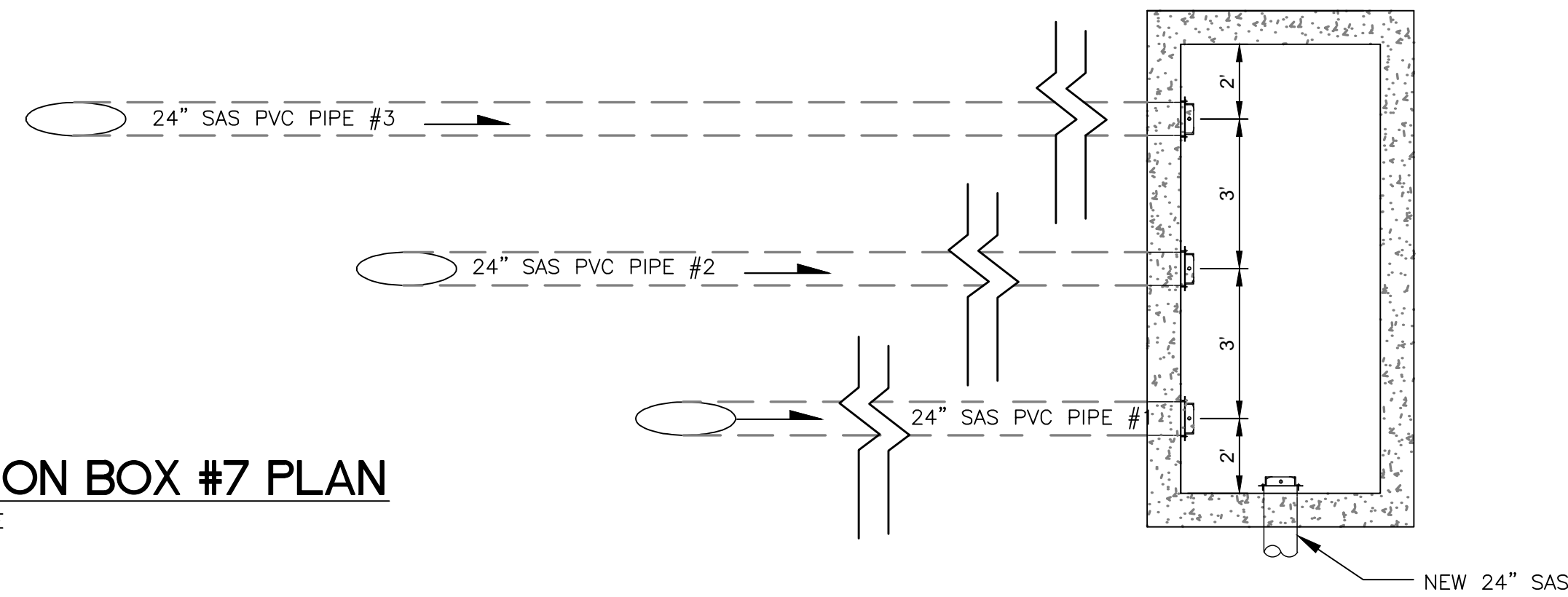
NOT TO SCALE

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 EXCAVATE AND SPOIL UNSUITABLE MATERIAL PER STD SPEC 206, COMPLETE.
- 5 FURNISH AND INSTALL SLUICE GATE PER SUPPLEMENTAL SPECIFICATION 35 20 16, COMPLETE AND IN PLACE.
- 6 FURNISH AND INSTALL GRATE PER SUPPLEMENTAL SPECIFICATION 05 53 13 , COMPLETE AND IN PLACE.
- 7 FURNISH AND INSTALL 3 24-INCH SDR SAS PIPING IN JUCTION BOX #7 PER JUNCTION BOX DETAIL, COMPLETE AND IN PLACE.

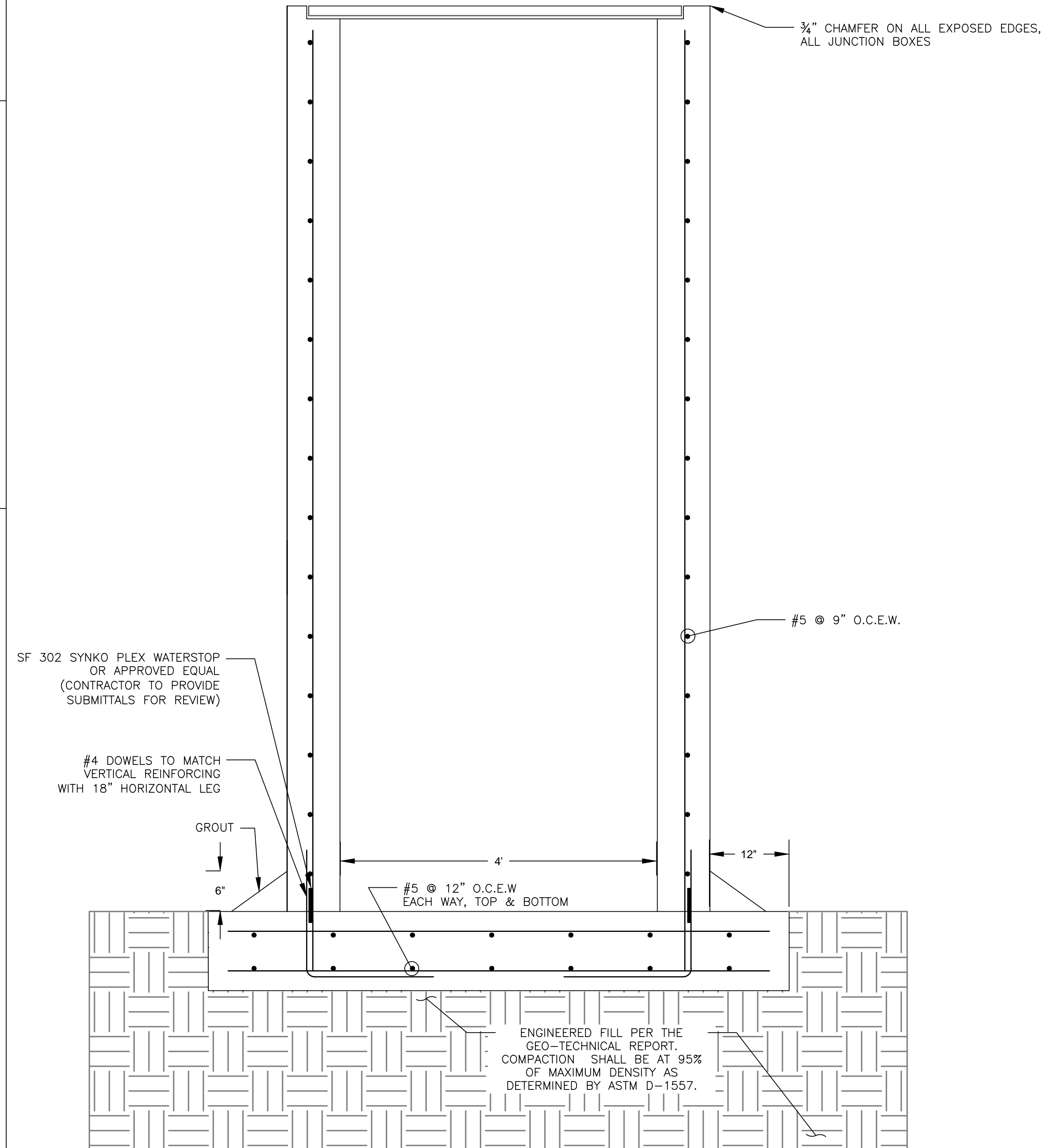
JUNCTION BOX #7 PLAN

NOT TO SCALE



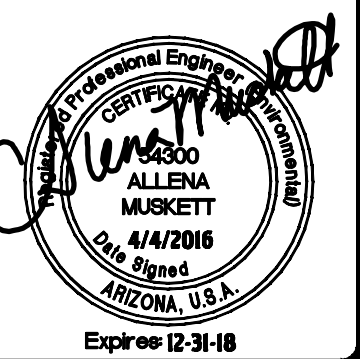
JUNCTION BOX #7 STRUCTURAL DETAILS (PLAN)

NOT TO SCALE



JUNCTION BOX #7 STRUCTURAL DETAILS (PROFILE)

NOT TO SCALE



NAVAJO TRIBAL UTILITY AUTHORITY
CHINLE, ARIZONA

CHINLE WASTEWATER TREATMENT PLANT
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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_{M5}=0.381, S_{M1}=0.125
 SITE COEFFICIENT: F_a=1.6, F_v=2.4
 SITE CLASS: D
 SPECTRAL RESPONSE COEFFICIENT: S_{d5}=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 2/21.
 LAP SPLICES IN MASONRY SHALL BE PER DETAIL 1/21.
 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 LATH REBAR TO FOUNDATIONS. SECURELY TIE ALL REBAR, INCLUDING DOWELS, IN LOCATION BEFORE PLACING CONCRETE OR GROUT.

STRUCTURAL CONSTRUCTION OBSERVATION:

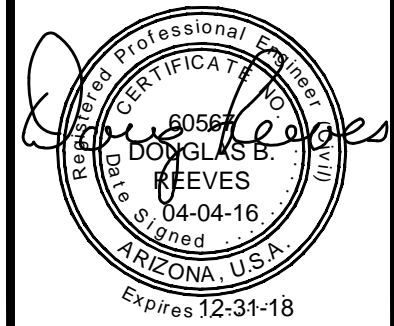
IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT ALL STRUCTURAL WORK FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY STRUCTURAL CONSTRUCTION OBSERVATION PROVIDED BY OTHERS DOES NOT RELIEVE HIM OF THIS RESPONSIBILITY. ANY STRUCTURAL DEVIATIONS FROM THE CONTRACT DOCUMENTS THAT ARE FOUND AT A LATER DATE 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.



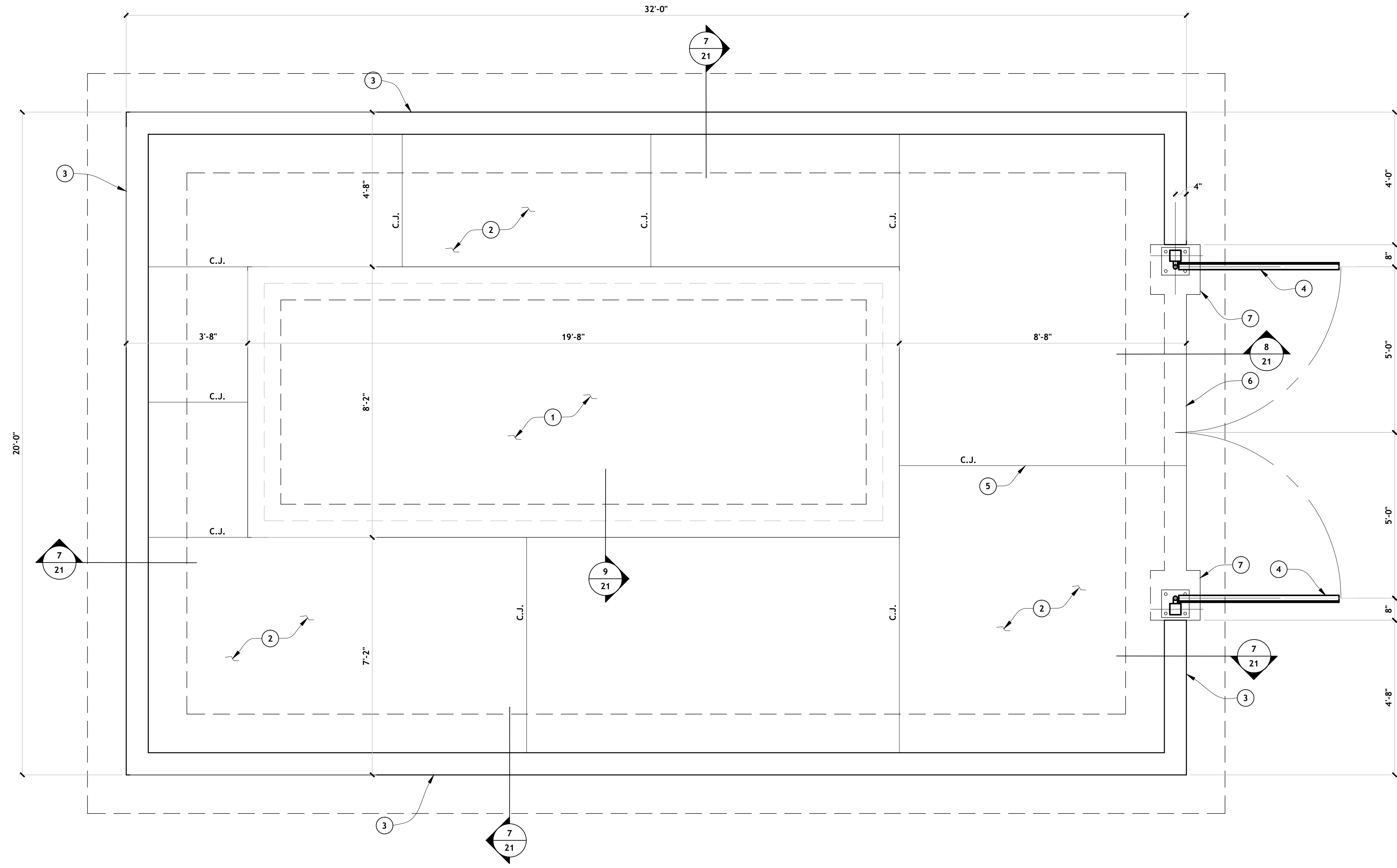
NAVAJO TRIBAL UTILITY AUTHORITY CHINLE, ARIZONA		BY
5		DATE
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NO.	REVISION DESCRIPTION	

CHINLE 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



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115111
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APR 2016
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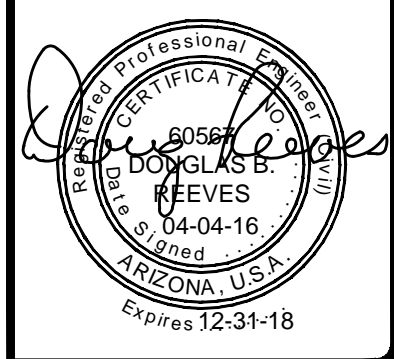
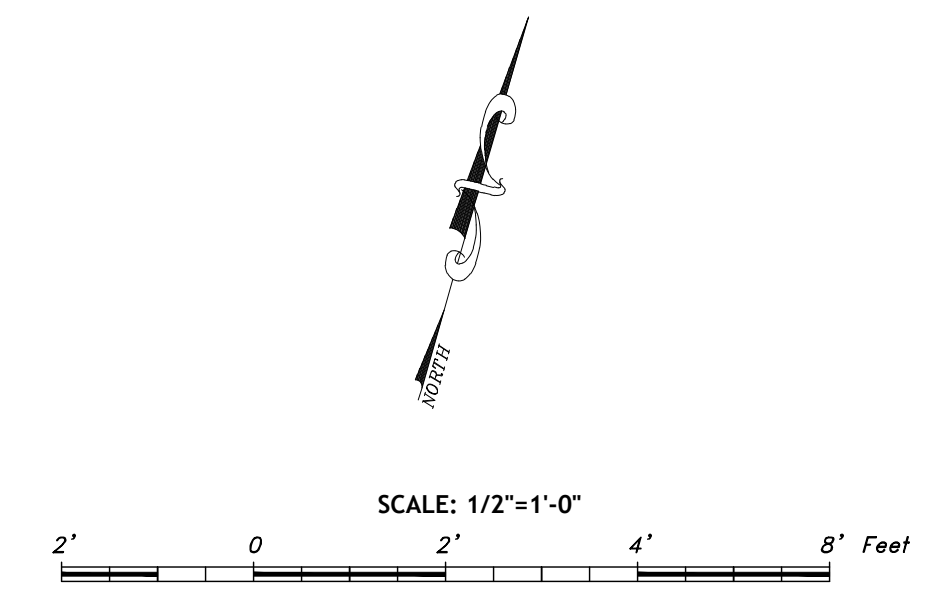


1. CONCRETE GENERATOR PAD, SEE DETAIL 9/21.
2. 4" CONCRETE SLAB WITH #4 BARS AT 18" O.C., E.W.
3. 8" CMU WALL, 8'-0" HIGH WITH (3) STRAND BARBED WIRE ALONG THE TOP OF WALL, SEE DETAIL 7/21.
4. GATE, SEE DETAIL 10/21 FOR ADDITIONAL INFORMATION.
5. C.J. INDICATES LOCATION OF CONSTRUCTION JOINT IN SLAB, SEE DETAIL 3/21.
6. 8" WIDE TURN DOWN SLAB EDGE ALONG GATE OPENING, SEE 8/21.
7. WIDEN TURN DOWN SLAB EDGE AT GATE POSTS TO 18" SQUARE, SEE DETAIL 10/21.

NOTES:
 1. SEE DETAILS 4/21 AND 5/21 FOR LOCATIONS WHERE PIPES OR CONDUITS PASS UNDER THE FOOTINGS.

1 ————— AERATION AREA GENERATOR YARD PLAN

STRUCT-CHINLE-PLAN-A



NAVAJO TRIBAL UTILITY AUTHORITY
 CHINLE, ARIZONA

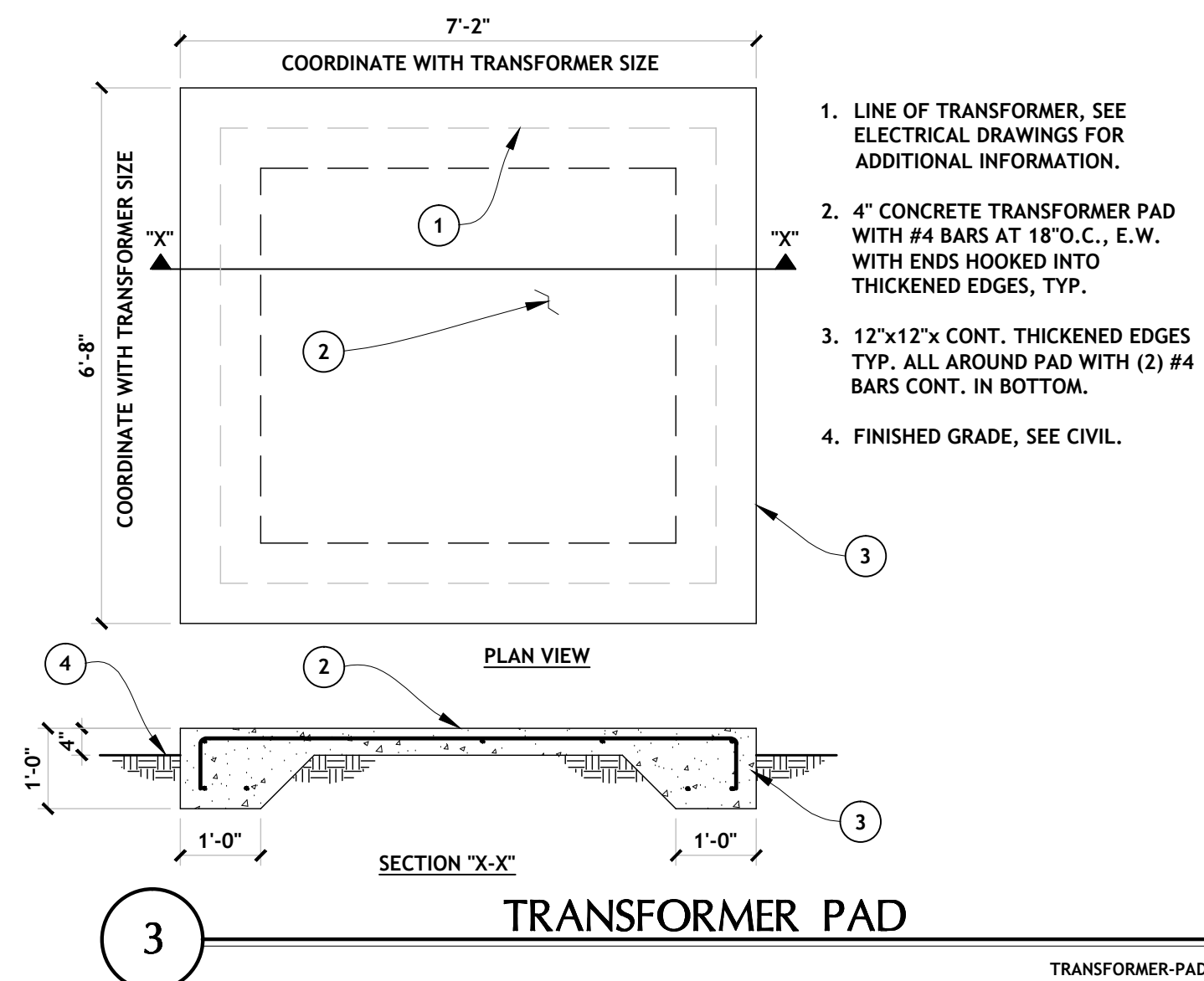
CHINLE WASTEWATER TREATMENT PLANT
 UPGRADE
 STRUCTURAL
 PLAN AT AERATION AREA

SOLUTIONS FOR TODAY...
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 TEXAS

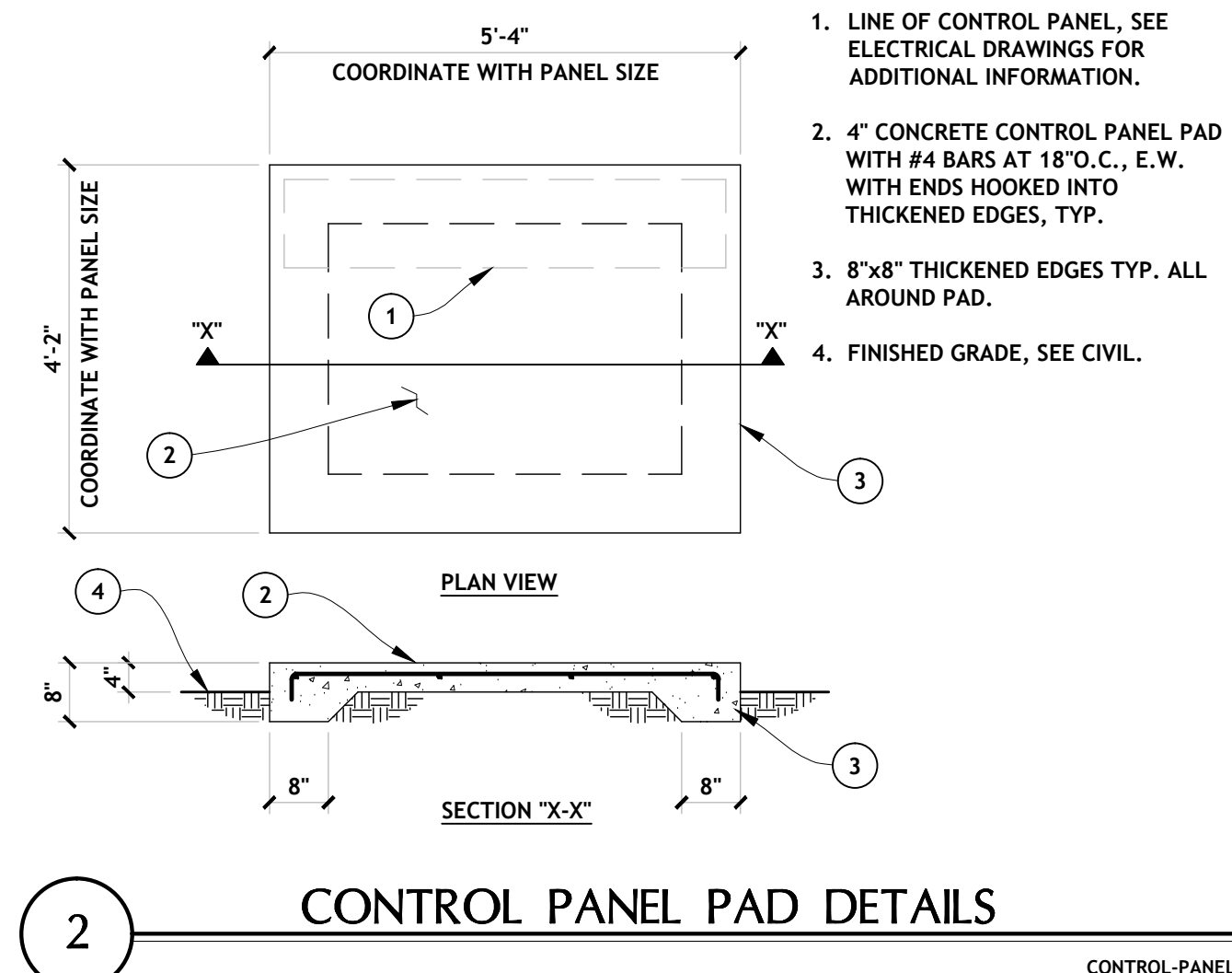


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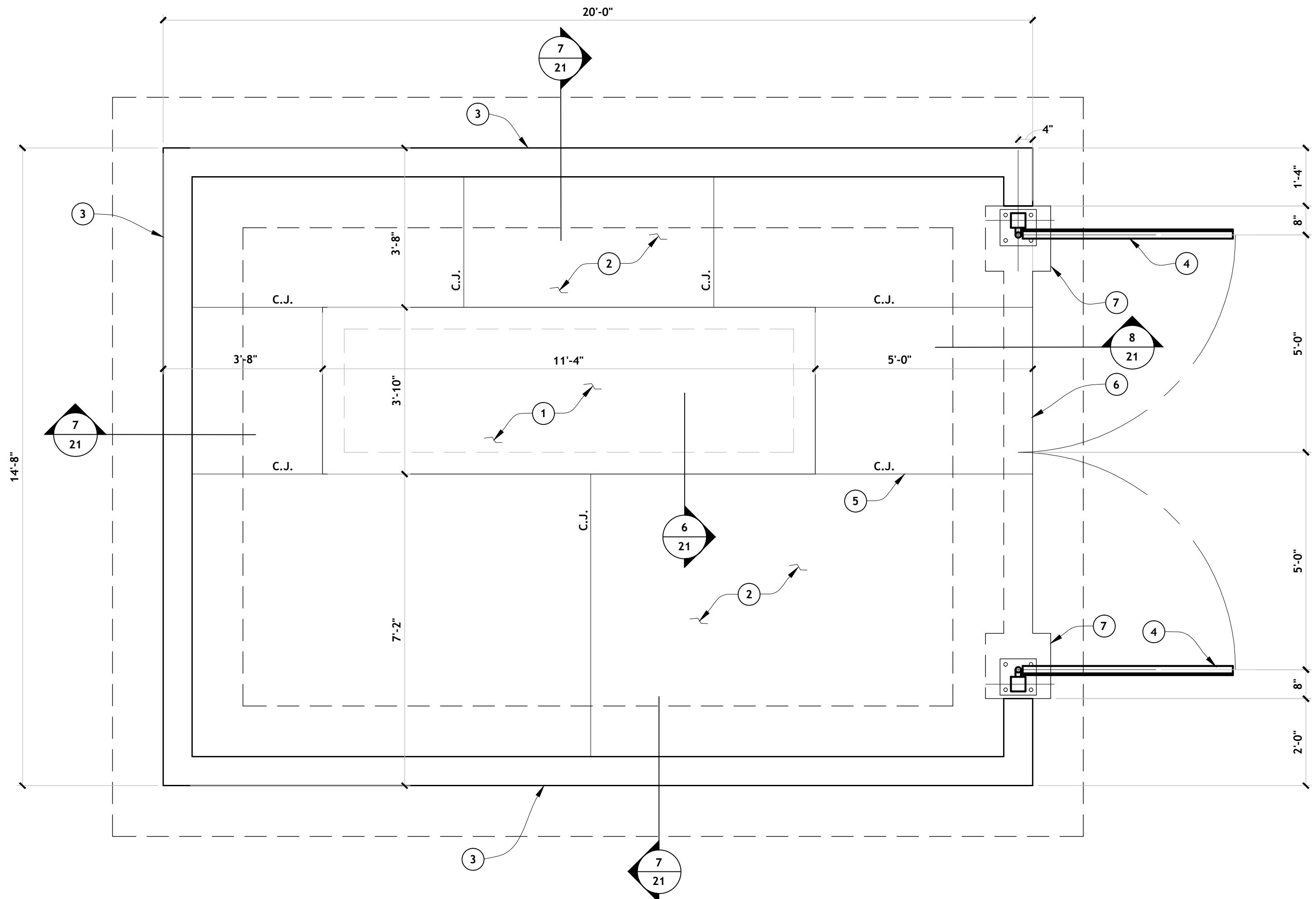
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1. LINE OF TRANSFORMER, SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. 4" CONCRETE TRANSFORMER PAD WITH #4 BARS AT 18" O.C., E.W. WITH ENDS HOOKED INTO THICKENED EDGES, TYP.
3. 12"x12"x CONT. THICKENED EDGES TYP. ALL AROUND PAD WITH (2) #4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

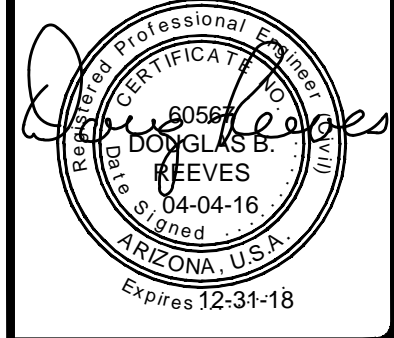
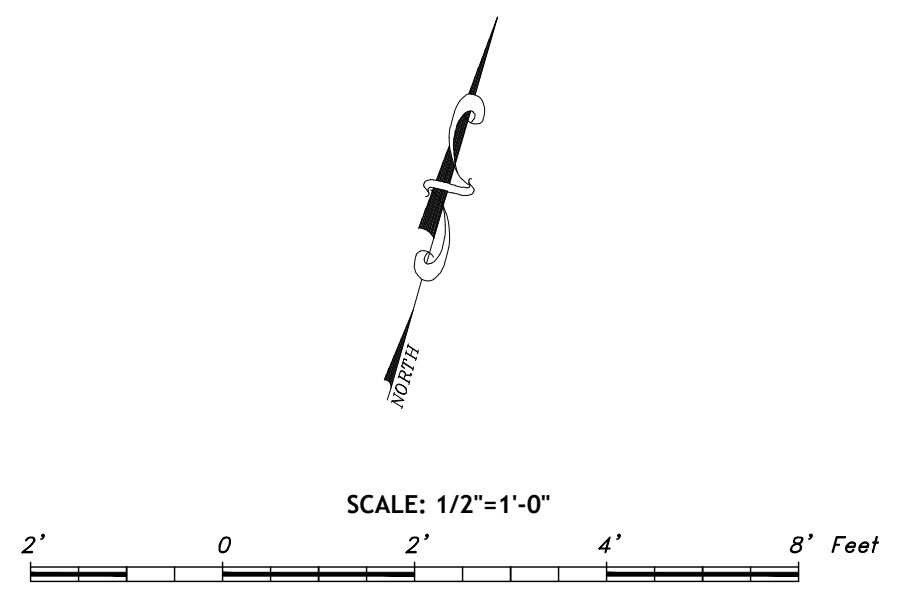


1. LINE OF CONTROL PANEL, SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. 4" CONCRETE CONTROL PANEL PAD WITH #4 BARS AT 18" O.C., E.W. WITH ENDS HOOKED INTO THICKENED EDGES, TYP.
3. 8"x8" THICKENED EDGES TYP. ALL AROUND PAD.
4. FINISHED GRADE, SEE CIVIL.



1. CONCRETE GENERATOR PAD, SEE DETAIL 6/21.
2. 4" CONCRETE SLAB WITH #4 BARS AT 18" O.C., E.W.
3. 8" CMU WALL, 6'-0" HIGH WITH (3) STRAND BARBED WIRE ALONG THE TOP OF WALL, SEE DETAIL 7/21.
4. GATE, SEE DETAIL 10/21 FOR ADDITIONAL INFORMATION.
5. C.J. INDICATES LOCATION OF CONSTRUCTION JOINT IN SLAB, SEE DETAIL 3/21.
6. 8" WIDE TURN DOWN SLAB EDGE ALONG GATE OPENING, SEE 8/21.
7. WIDEN TURN DOWN SLAB EDGE AT GATE POSTS TO 18" SQUARE, SEE DETAIL 10/21.

NOTES:
1. SEE DETAILS 4/21 AND 5/21 FOR LOCATIONS WHERE PIPES OR CONDUITS PASS UNDER THE FOOTINGS.



NAVAJO TRIBAL UTILITY AUTHORITY
CHINLE, ARIZONA

CHINLE WASTEWATER TREATMENT PLANT
UPGRADE

STRUCTURAL
PLAN AT DISINFECTION AREA

SOLUTIONS FOR TODAY...
VISION FOR TOMORROW

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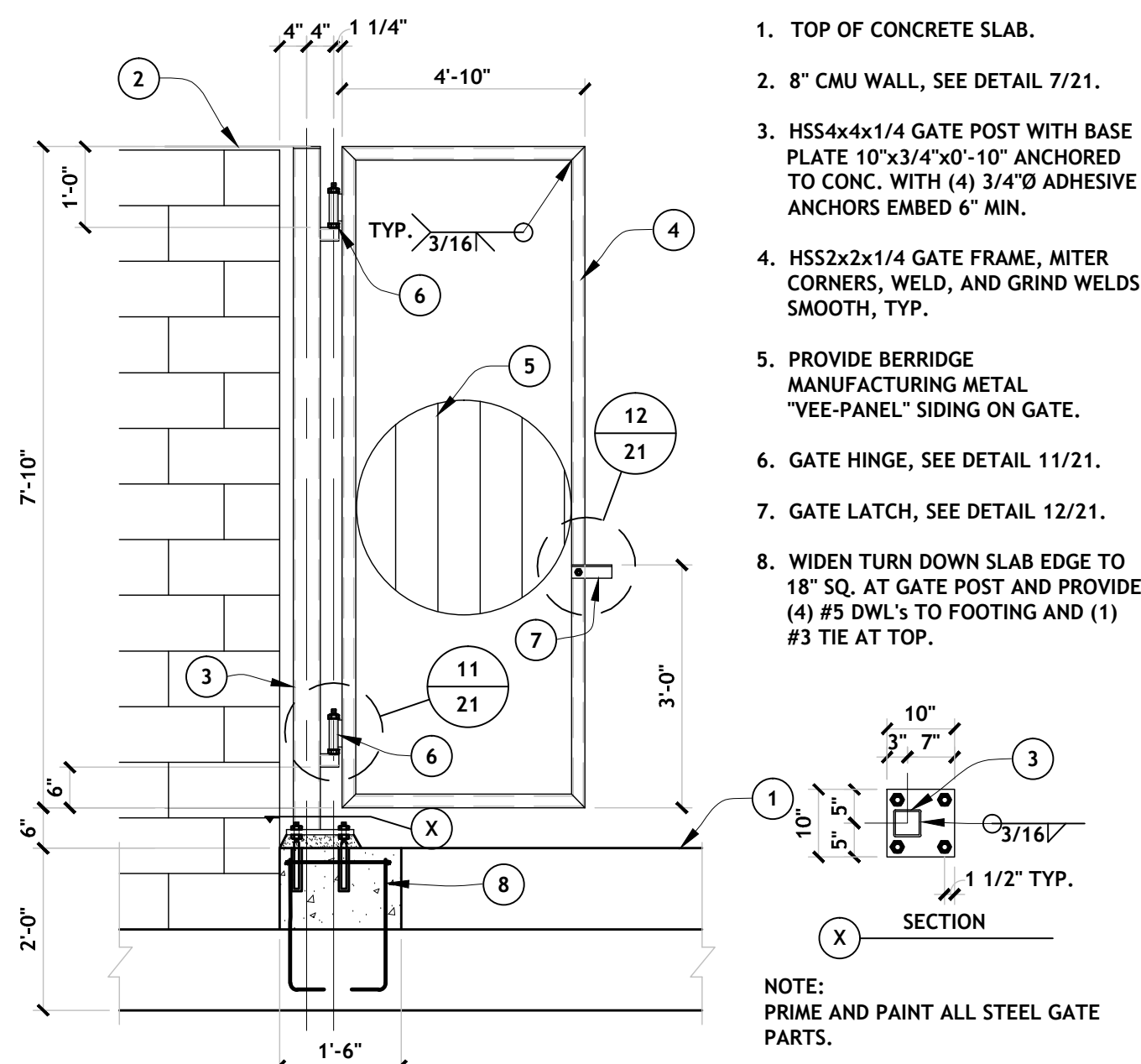
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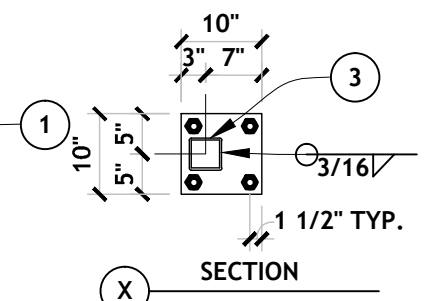
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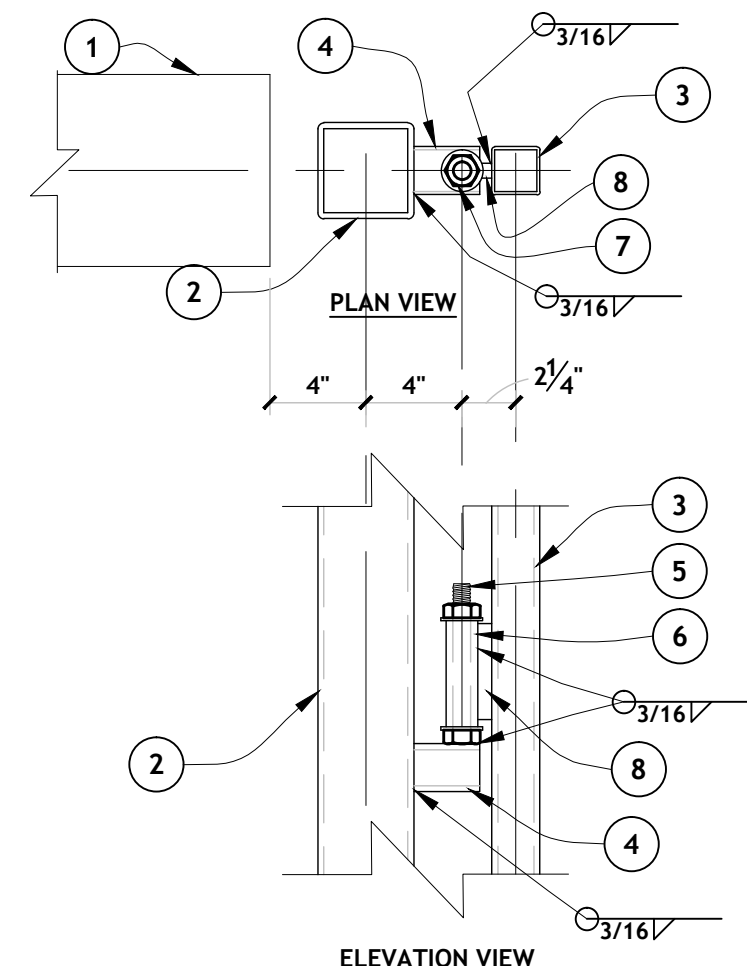
1. TOP OF CONCRETE SLAB.
2. 8" CMU WALL, SEE DETAIL 7/21.
3. HSS4x4x1/4 GATE POST WITH BASE PLATE 10"x3/4"x0'-10" ANCHORED TO CONC. WITH (4) 3/4" ADHESIVE ANCHORS EMBED 6" MIN.
4. HSS2x2x1/4 GATE FRAME, MITER CORNERS, WELD, AND GRIND WELDS SMOOTH, TYP.
5. PROVIDE BERRIDGE MANUFACTURING METAL "VEE-PANEL" SIDING ON GATE.
6. GATE HINGE, SEE DETAIL 11/21.
7. GATE LATCH, SEE DETAIL 12/21.
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

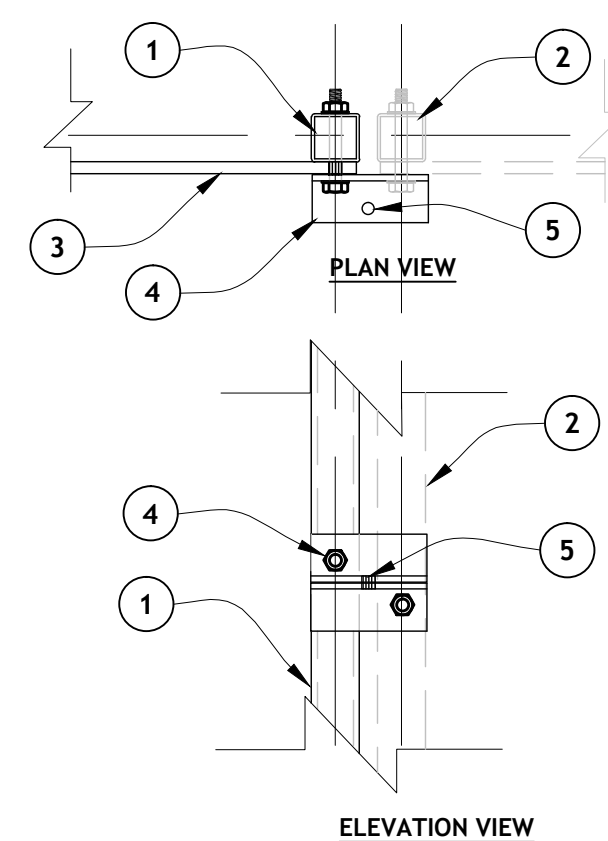
10-115111_CHINLE



1. 8" CMU WALL, SEE PLAN.
2. HSS4x4x1/4 GATE POST, SEE PLANS.
3. HSS2x2x1/4 GATE FRAME, SEE 10/21.
4. HSS2x2x1/4 STUB WELDED TO GATE POST, SEE 10/21.
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

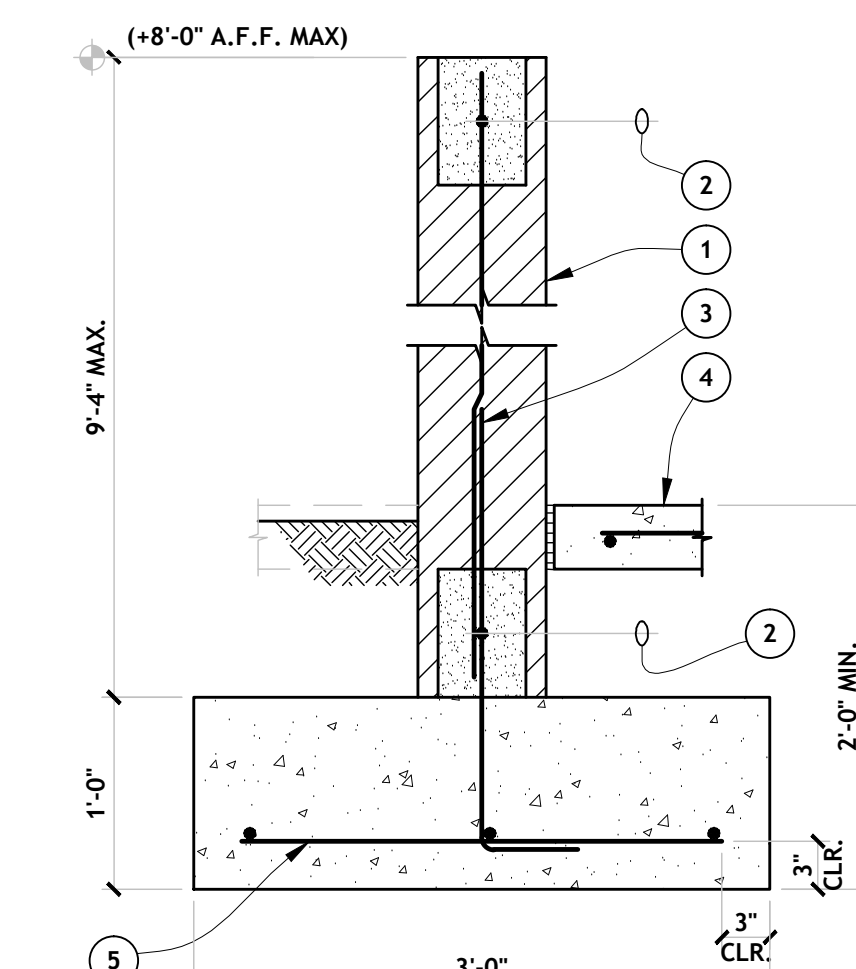
11-115111_CHINLE



1. HSS2x2x1/4 GATE FRAME, SEE PLAN.
2. OPPOSITE HSS2x2x1/4 GATE FRAME.
3. METAL SIDING ON GATE TO MATCH PRIVACY FENCE.
4. L2x2x1/4x0'-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

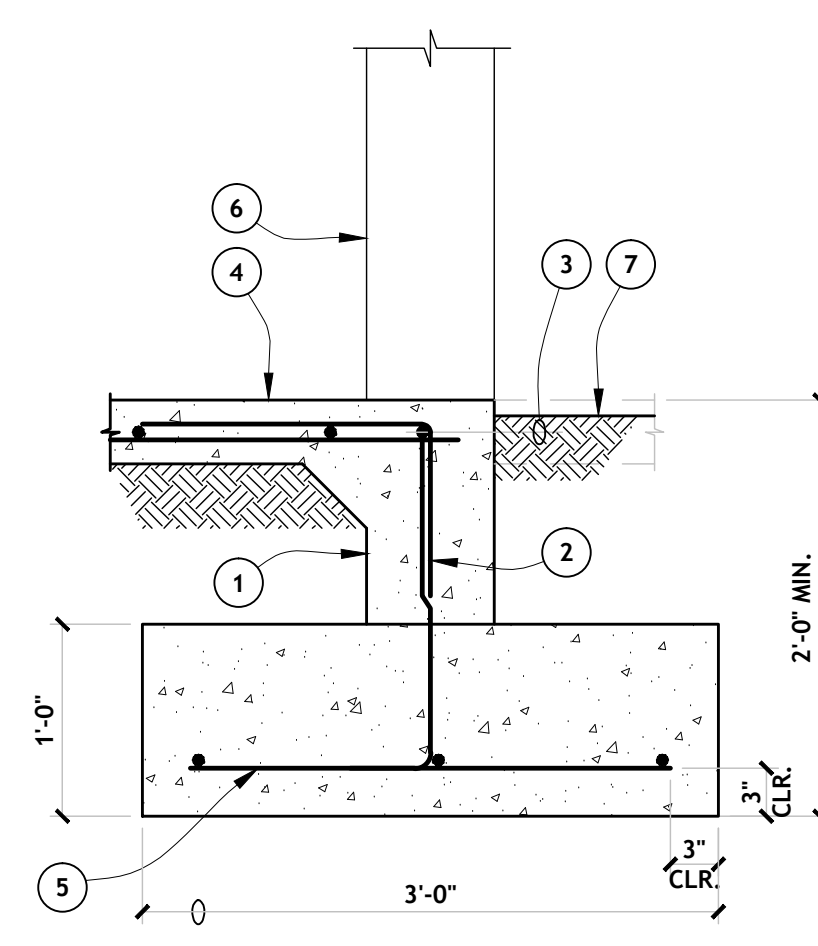
12-115111_CHINLE



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

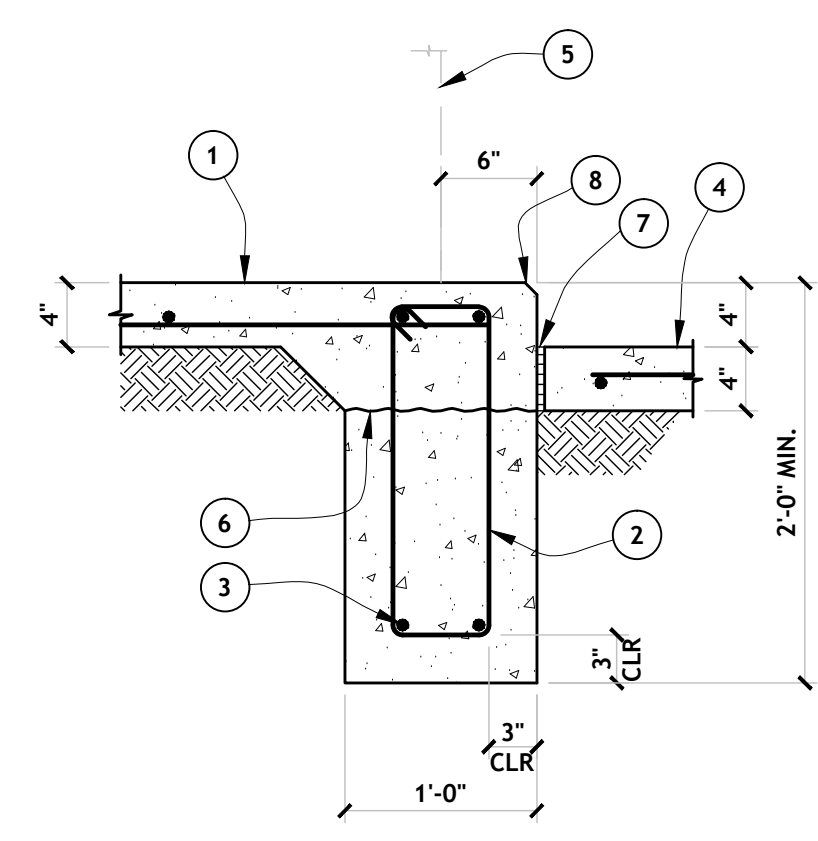
M118



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 7/17 FOR FOOTING SIZE AND REINFORCING.
6. MASONRY WALL BEYOND.
7. CONCRETE SLAB OR FINISH GRADE AS OCCURS.

8 FOOTING AT MASONRY WALL OPENING

M104



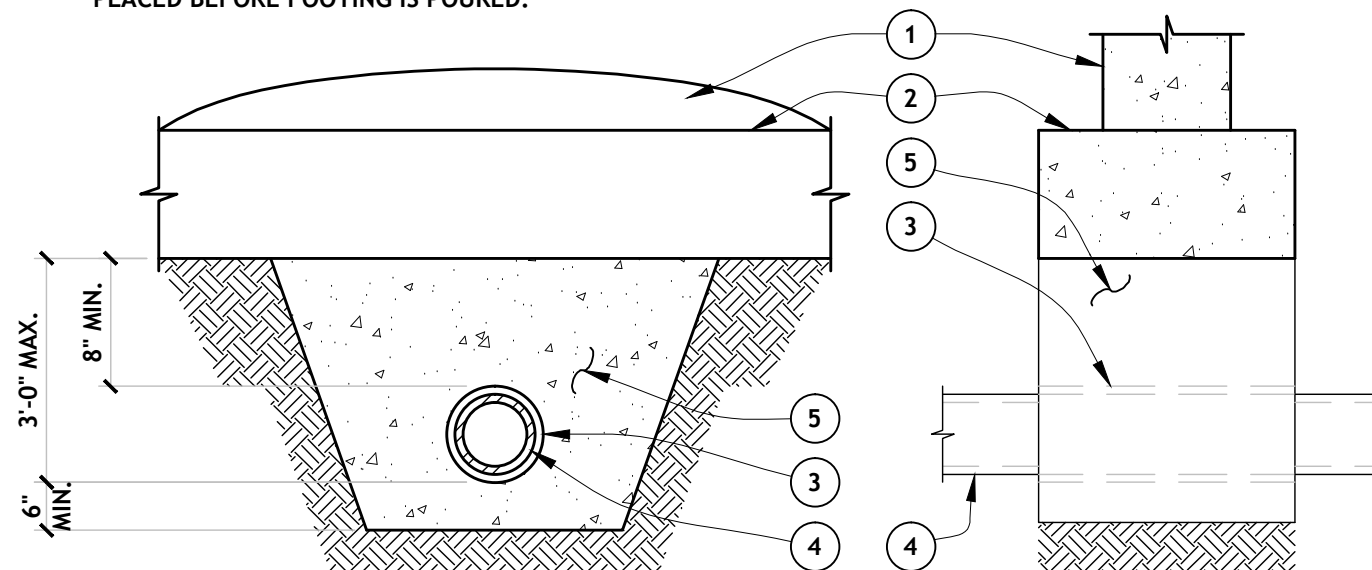
1. CONCRETE GENERATOR PAD WITH #5 BARS AT 18" O.C., E.W. AND WITH CONT. TURNED DOWN EDGE, SEE PLAN FOR DIMENSIONS.
2. #3 TIES AT 24" O.C.
3. (2) #5 CONT. TOP AND BOTTOM.
4. TYP. CONC. SLAB AROUND PAD, SEE PLAN FOR ADDITIONAL INFO.
5. FACE OF GENERATOR, SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.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

9 GENERATOR PAD DETAIL

52-115111

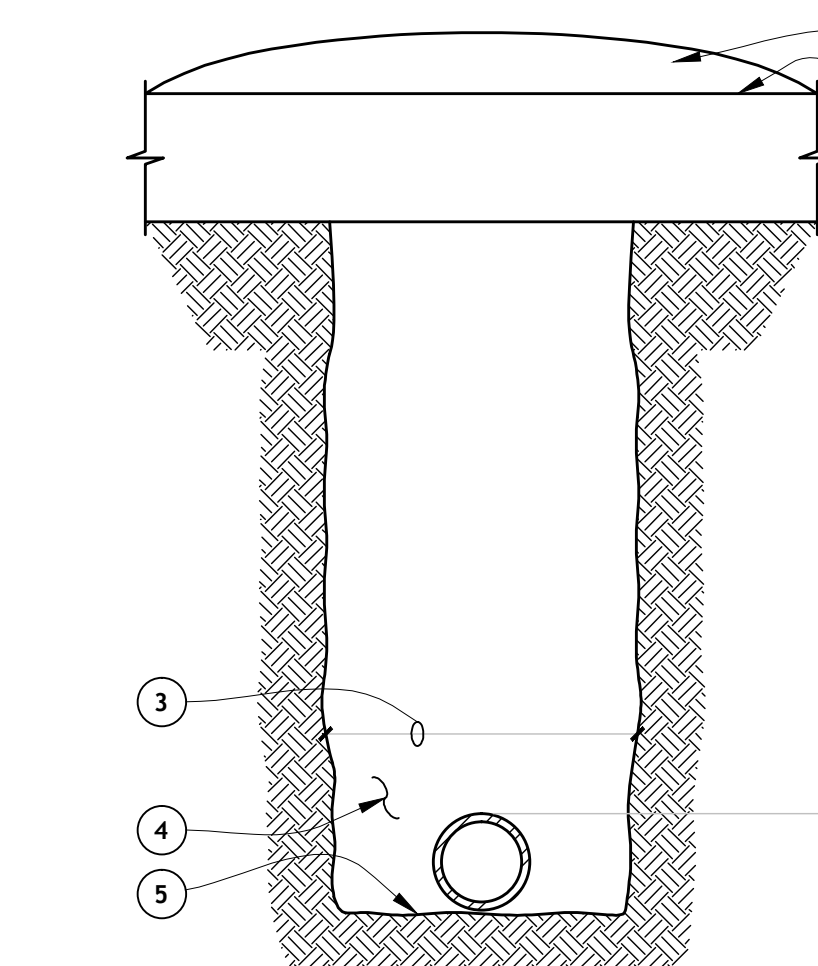
1. STEM WALL AS OCCURS.
2. CONCRETE FOOTING OR FOUNDATION.
3. SLEEVE, PROVIDE 1/2" MIN. CLEARANCE AROUND PIPE.
4. PIPE.
5. CONCRETE FILL TO POURED FULL WIDTH OF PIPE TRENCH AND BE PLACED BEFORE FOOTING IS POURED.

NOTE: FOR PIPE BURIAL DEPTH OF 3'-1" OR MORE, SEE TYPICAL PIPE UNDER FOOTING DETAIL 5/17.



4 PIPE PASSING BELOW CONT. FOOTING

TYP4

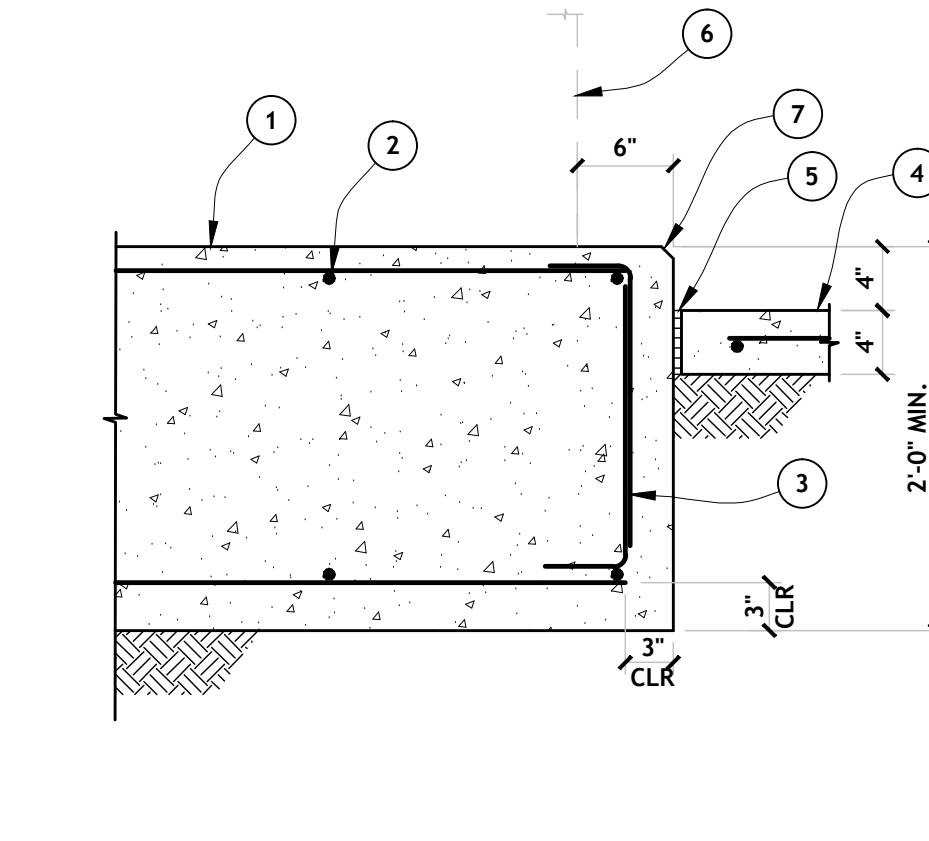


1. STEM WALL AS OCCURS.
2. CONCRETE FOOTING OR FOUNDATION.
3. 1'-6" MAX., NOTIFY THE STRUCTURAL ENGINEER PRIOR TO PLACEMENT OF FOOTING WHEN TRENCH EXCEEDS 1'-6".
4. BACKFILL AND RECOMPACTED TRENCH PER THE SOIL REPORT AND SPECIFICATIONS.
5. BOTTOM OF TRENCH.

NOTE: FOR PIPE BURIAL DEPTH OF 3'-0" OR LESS, SEE TYPICAL PIPE UNDER FOOTING DETAIL 4/17.

5 PIPE PASSING BELOW CONT. FOOTING

TYP3



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

51-115111

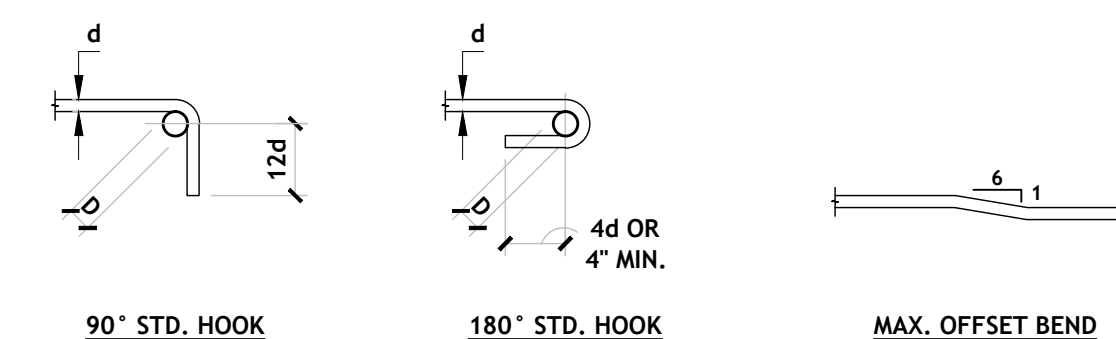
LAP SPLICE LENGTHS (IN.)

BAR SIZE	LENGTHS (IN.)			
	SINGLE MAT		DOUBLE MAT	
	6" CMU	8" CMU	12" CMU	2000 PSI
#3	16	14	18	18
#4	24	18	24	24
#5	32	28	30	30
#6	54	54	43	37
#7	N/A	N/A	59	51
#8	N/A	N/A	72	72
#9	N/A	N/A	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.

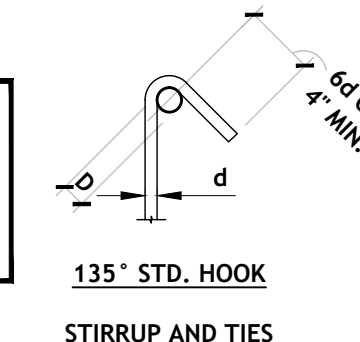
1 LAP-SPLICE SCHEDULE FOR MASONRY REINF'G

M9A



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

PRINCIPAL REINFORCING

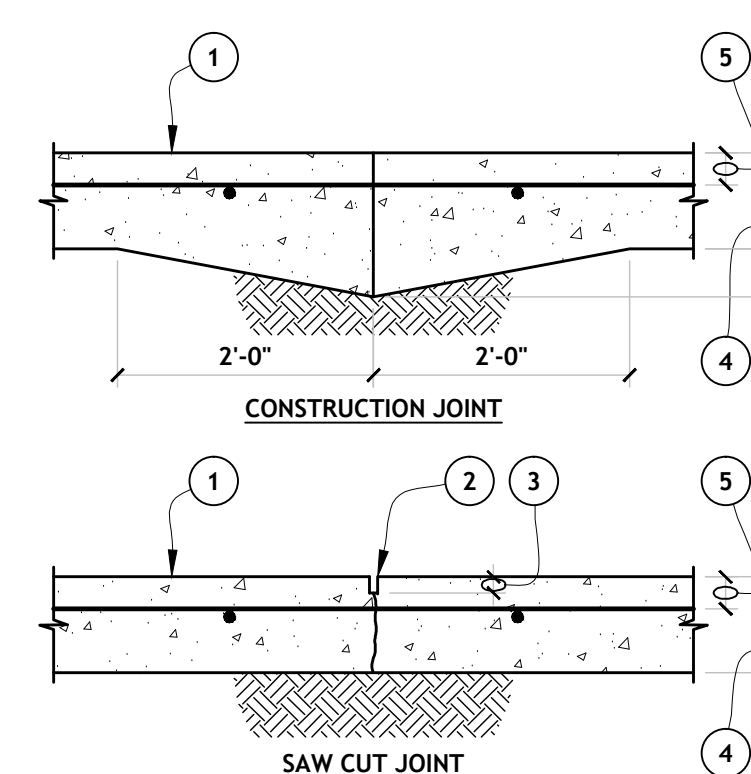


135° STD. HOOK
STIRRUP AND TIES

- 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

5

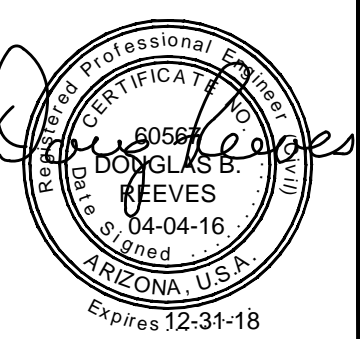


1. CONCRETE SLAB OVER STRUCTURE FILL PER THE G.S.N. AND SOILS REPORT.
2. SAWCUT SLAB AFTER CONCRETE IS HARD ENOUGH TO AVOID SPALLING AND DAMAGE BUT NOT LATER THAN 12 HOURS AFTER CONCRETE PLACEMENT.
3. DEPTH OF CUT=T/4.
4. SEE PLANS FOR (T) SLAB THICKNESS.
5. 2" MINIMUM COVER.

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

FN



NO.	REVISION DESCRIPTION	DATE	BY
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CHINLE WASTEWATER TREATMENT PLANT
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TEXAS



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
- SAS — EXISTING SEWER
- ⊕ 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)
- ⊞ R PUSH-TO-TEST PILOT LIGHT (LETTER DENOTES COLOR)
- ⊞ CR CONTROL RELAY
- ⊞ OR J JUNCTION BOX
- ⊞ 120V, 20A DUPLEX RECEPTACLE
- ⊞ LIGHT
- ⊞ M METER
- ⊞ LIGHT SWITCH
- ⊞ DISCONNECT SWITCH
- ⊞ NORMALLY OPEN CONTACT TIME TO CLOSE (ON DELAY)
- ⊞ NORMALLY OPEN MOMENTARY-CONTACT PUSHBUTTON
- ⊞ 3-POSITION SELECTOR SWITCH
- ⊞ MLO MAIN LUG ONLY
- ⊞ CIRCUIT BREAKER
- ⊞ NORMALLY OPEN CONTACTS
- ⊞ NORMALLY CLOSED CONTACTS
- ⊞ EARTH GROUND CONNECTION
- ⊞ OVERLOAD (ELECTRONIC TYPE)
- ⊞ NEUTRAL BUS
- ⊞ GROUND BUS
- ⊞ GROUND ROD AND WELL
- ⊞ AUTOMATIC TRANSFER SWITCH

GENERAL ELECTRICAL REQUIREMENTS

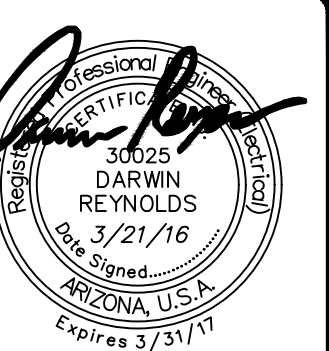
- A. THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODE ORDINANCES AND REGULATIONS. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES. ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE, FINISHED AND SAFE MANNER, ACCORDING 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

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



NAVAJO TRIBAL UTILITY AUTHORITY CHINLE, ARIZONA			
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CHINLE WASTEWATER TREATMENT PLANT UPGRADE
ELECTRICAL
LEGEND, NOTES & ABBREVIATIONS

SOLUTIONS FOR TODAY...
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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

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JOB NO: 115111
DATE: MAR 2016
SHEET NO: E100

Saved: March 10, 2016 File: 15053-CHINLE-E100.dwg Drafter: Drafter

Saved: March 17, 2016 File: 15053-CHINLE-E101.dwg Drafter: Drafter

GENERAL NOTE

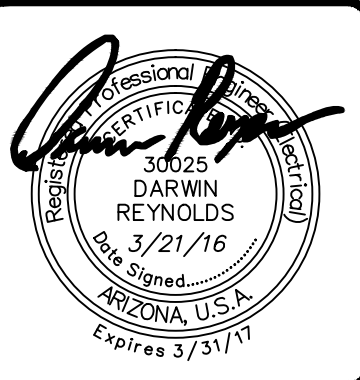
A. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND CONDUCTOR REQUIREMENTS.

DEMOLITION KEY NOTES

- 1 EXISTING ABOVE GRADE JUNCTION BOX. DISCONNECT EXISTING AERATOR MOTOR CIRCUIT CONDUCTORS AND CAP CONDUCTORS IN JUNCTION BOX.
- 2 DISCONNECT AND REMOVE EXISTING AERATOR MOTOR CIRCUIT CONDUCTORS FROM JUNCTION BOX TO CONTROL PANEL NEAR NE CORNER OF AERATOR CELL #1. REMOVE ALL EXPOSED CONDUIT AND ABANDON UNDERGROUND CONDUIT IN PLACE.
- 3 DISCONNECT AND REMOVE EXISTING 3-#4/0 CONDUCTORS AND UNDERGROUND CONDUIT.

CONSTRUCTION KEY NOTES

- 1 PACKAGED AERATION CONTROL PANEL FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
- 2 CUT AND TERMINATE CABLE FURNISHED WITH AERATORS IN EACH AERATOR MOTOR AND BOND PER MFR REQUIREMENTS.
- 3 DISCONNECT AND REMOVE EXISTING JUNCTION BOX AND INSTALL MOTOR STARTER ON MOUNTING STAND PER TYPICAL DETAIL "MS1". TERMINATE EXISTING AERATOR CABLE IN MOTOR STARTER USING A FLEXIBLE CORD CONNECTOR.
- 4 INSTALL JUNCTION BOX PER TYPICAL DETAIL "JB1" ADJACENT TO AERATOR ANCHOR MOORING POST.
- 5 INSTALL 2" RISER WITH STAND-OFF BRACKETS ON EXISTING WOOD POLE FOR NEW DISINFECTION FACILITY SERVICE DROP.
- 6 EXISTING POLE MOUNTED UTILITY TRANSFORMER TO REMAIN AND BE REUSED FOR NEW SERVICE.



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NAVAJO TRIBAL UTILITY AUTHORITY
CHINLE, ARIZONA

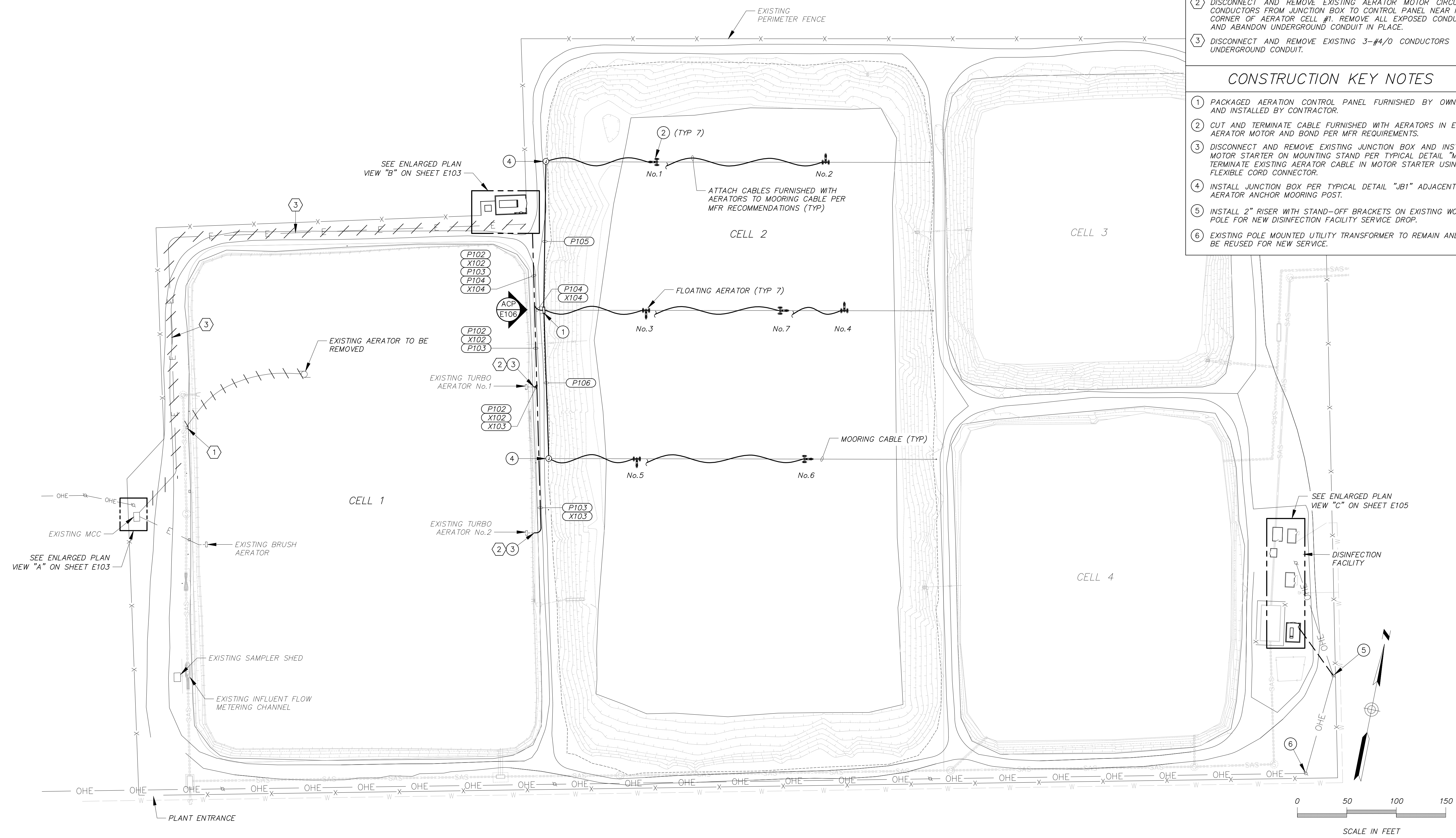
CHINLE WASTEWATER TREATMENT
PLANT UPGRADE
ELECTRICAL
OVERALL SITE PLAN

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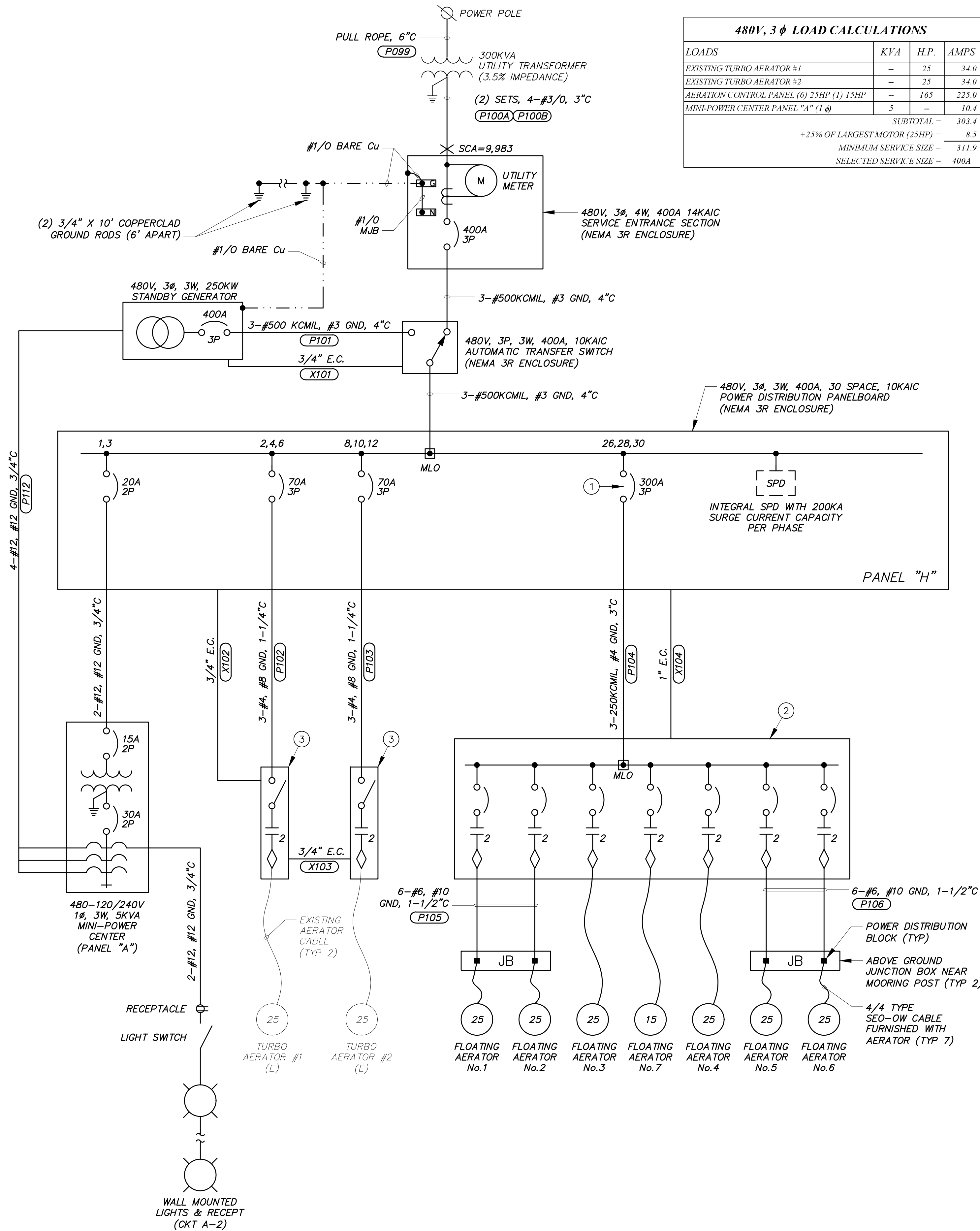
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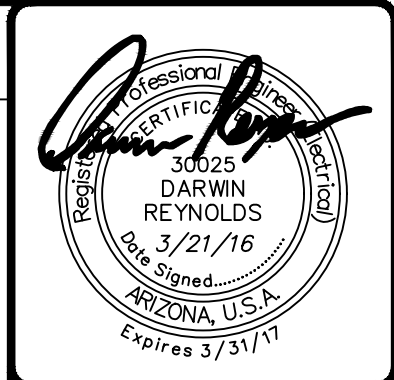
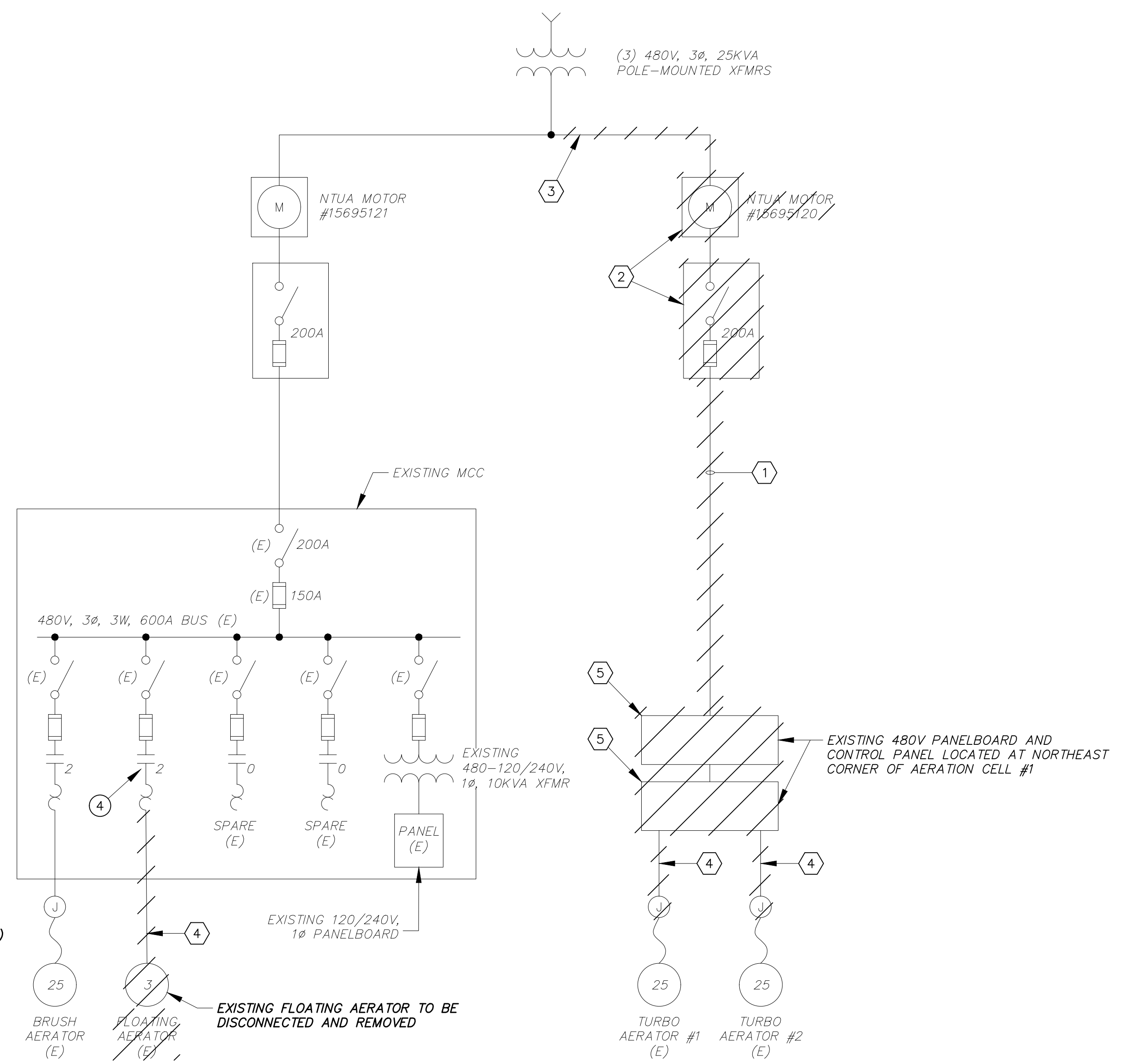
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PANEL: A	VOLTAGE: 480-120/240V, 10.5KVA	PRIMARY: 15A (14KAIC)					
TYPE: MINI-POWER CENTER	ENCLOSURE: SURFACE (NEMA 3R)	SECONDARY: 30A (10KAIC)					
VA LOAD							
CIRCUIT DESCRIPTION	BKR	CIR	ϕ A	ϕ B	CIR	BKR	CIRCUIT DESCRIPTION
GENERATOR BATTERY CHARGER	20	1	100	350	2	20	WALL MTD LIGHTS & RECEPTACLE
GENERATOR BLOCK HEATER	20	3	1000	0	4	20	SPARE
		5	1000	0	6	20	SPARE
CONNECTED VA PER PHASE			1450	1000	NOTES:		
CONNECTED AMPS PER PHASE			12.1	8.3	"X" DENOTES CONTINUOUS LIGHTING LOAD		
CONTINUOUS LIGHTING LOAD (25%) VA			88	0			
DEMAND VA PER PHASE			1788	1000			
TOTAL AMPS PER PHASE			14.9	8.3			

- ### DEMOLITION KEY NOTES
- EXISTING 200A SERVICE TO BE DISCONNECTED AND REMOVED.
 - DISCONNECT AND REMOVE UTILITY METER, SERVICE DISCONNECT AND WOOD POLE.
 - DISCONNECT AND REMOVE OVERHEAD SERVICE DROP AND RISER.
 - DISCONNECT AND REMOVE EXISTING AERATOR MOTOR CIRCUIT CONDUCTORS.
 - DISCONNECT AND REMOVE EXISTING 480V PANELBOARD AND AERATOR CONTROL PANEL.
- ### CONSTRUCTION KEY NOTES
- FURNISH CIRCUIT BREAKER WITH A PADLOCKING DEVICE TO ALLOW CIRCUIT BREAKER TO BE PADLOCKED IN THE OFF POSITION.
 - PACKAGED AERATION CONTROL PANEL FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
 - 480V, NEMA SIZE 2 MOTOR STARTER (NEMA 3R). REFER TO SCHEMATIC DIAGRAM ON SHEET E106 FOR ADDITIONAL INFORMATION.
 - RELABEL STARTER AS "SPARE".



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**CHINLE WASTEWATER TREATMENT
PLANT UPGRADE
ELECTRICAL
AERATION SYSTEM SINGLE LINE DIAGRAM**

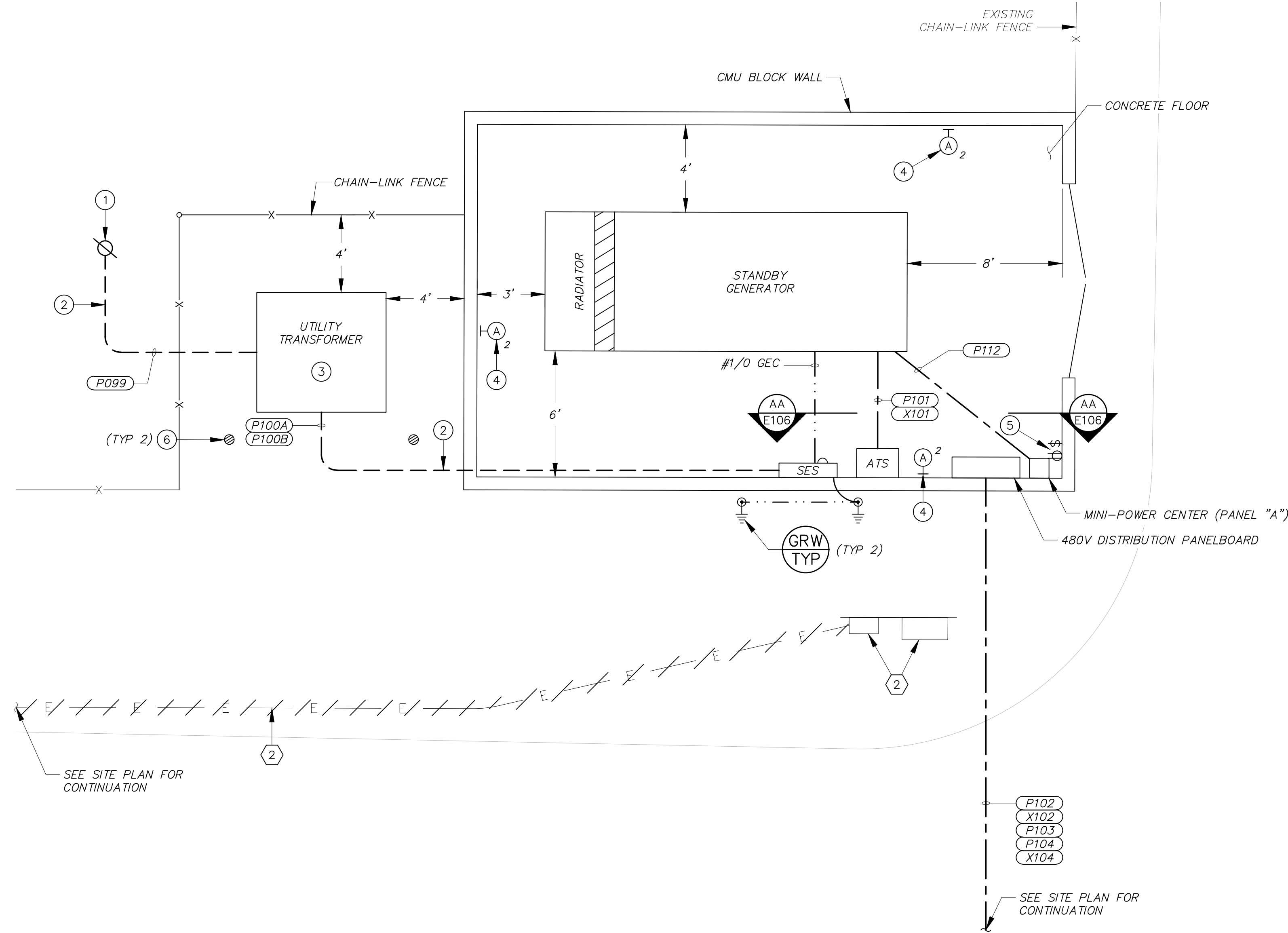
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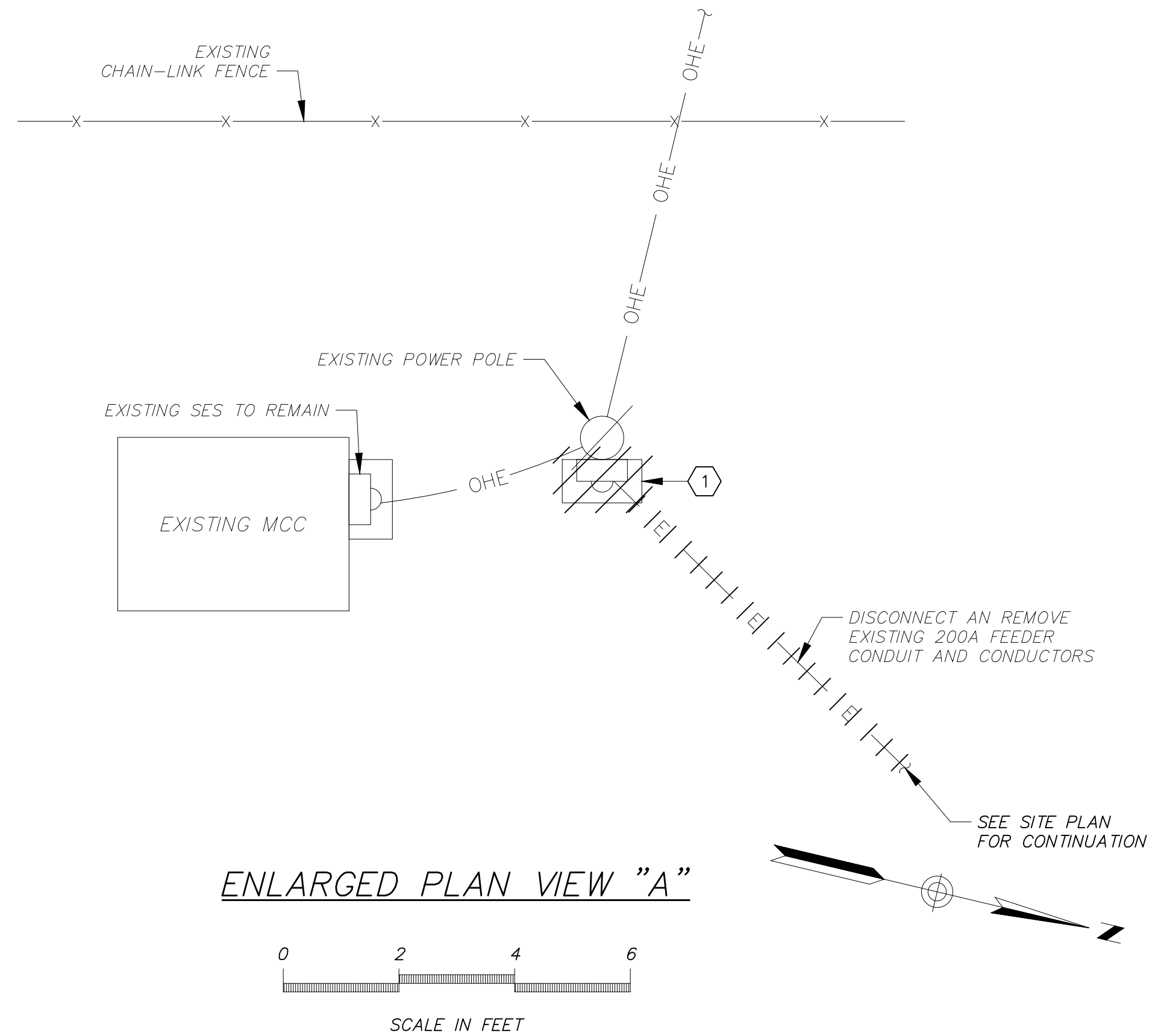
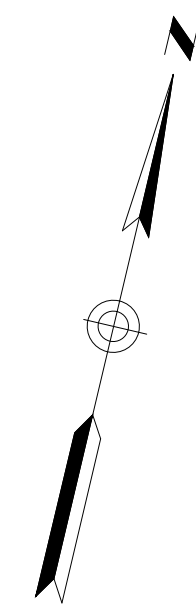
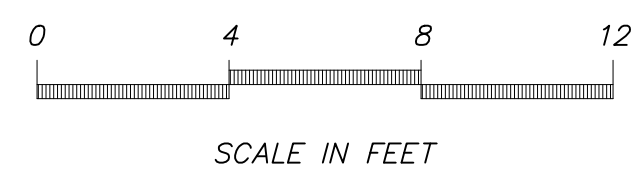
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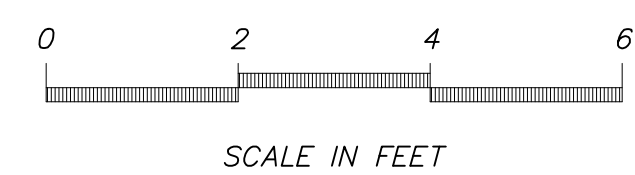
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ENLARGED PLAN VIEW "B"



ENLARGED PLAN VIEW "A"



GENERAL NOTES

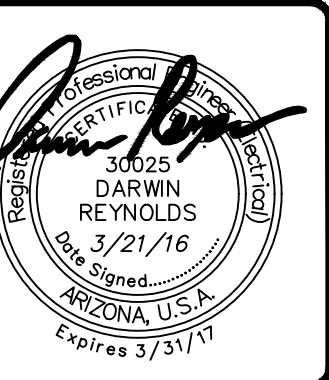
- A. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND CONDUCTOR REQUIREMENTS.
- B. ALL GENERATOR ENCLOSURE DIMENSIONS SHOWN ARE THE MINIMUM SPACE REQUIREMENT.

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 DISCONNECT AND REMOVE EXISTING ELECTRICAL PANELS, EQUIPMENT RACK INCLUDING CONDUIT AND CONDUCTORS BACK TO SOURCE.

CONSTRUCTION KEY NOTES

- 1 NEW POWER POLE TO BE INSTALLED BY NTUA. COORDINATE WITH NTUA FOR EXACT LOCATION AND CONSTRUCTION REQUIREMENTS TO INSTALL 6" RMC RISER, STAND-OFF BRACKETS AND WEATHERHEAD ON POLE.
- 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 E100 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-2). INSTALL 120V, 20A LIGHT SWITCH WITH WP COVER IN FLUSH MOUNTED BOX IN CMU WALL ABOVE RECEPTACLE AT +42" AFF (CKT A-2) TO CONTROL WALL MOUNTED LUMINAIRES. CONDUIT SHALL BE CONCEALED IN CMU BLOCK WALL.
- 6 INSTALL 4" X 6' CONCRETE FILLED BOLLARD PER NTUA REQUIREMENTS.



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CHINLE WASTEWATER TREATMENT
PLANT UPGRADE
ELECTRICAL
ENLARGED PLAN VIEWS "A" & "B"

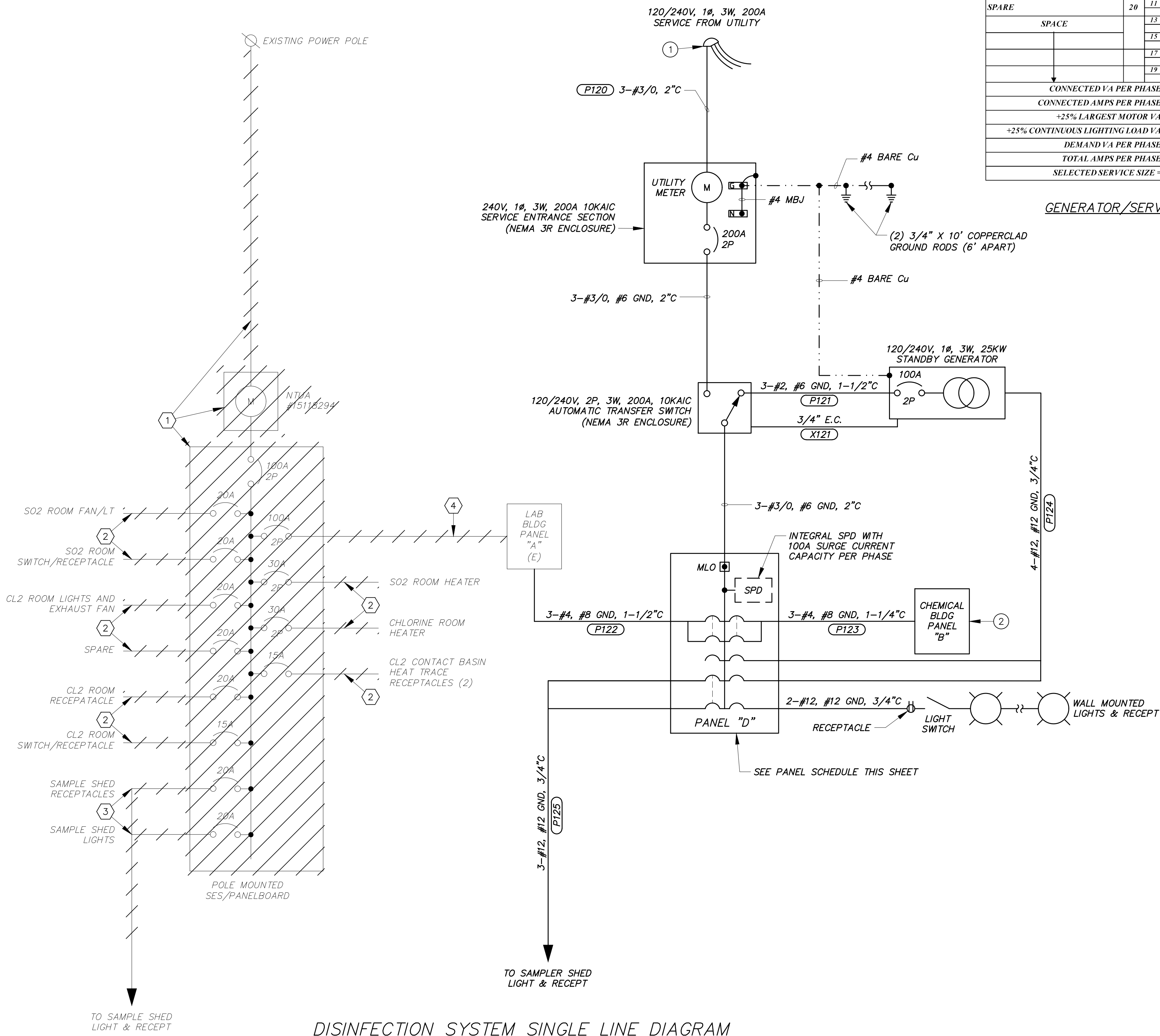
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DISINFECTATION SYSTEM SINGLE LINE DIAGRAM

PANEL: D		VOLTAGE: 240 / 120 1Ø		MAINS: MLO		BUS AMPS: 200A	
TYPE: BOLT-ON		ENCLOSURE: NEMA 3R		MOUNTING: SURFACE		MINAIC: 10,000	
VA LOAD							
CIRCUIT DESCRIPTION	BKR	CKT	φ A	φ B	CKT	BKR	CIRCUIT DESCRIPTION
LAB BLDG PANEL "A" (E)	70	1	5910		2	70	CHEMICAL BLDG PANEL "B"
		3	5910		4		
SPARE	20	5	0		6	20	GENERATOR BLOCK HEATER
		7	240	100	8	20	GENERATOR BATT CHARGER
SAMPLE SHED LIGHTS & RECEP	20	9	240		10	20	WALL MTD LIGHTS & RECEP
		11	350		12	20	SPARE
SPACE		13			14		SPACE
		15			16		
		17			18		
		19			20		
CONNECTED VA PER PHASE			13590	11840	NOTES:		
CONNECTED AMPS PER PHASE			113.3	98.7	"X" DENOTES CONTINUOUS LTG LOAD		
+25% LARGEST MOTOR VA			0	0	PANELBOARD TO INCLUDE INTEGRAL		
+25% CONTINUOUS LIGHTING LOAD VA			148	60	SPD		
DEMAND VA PER PHASE			13738	11900			
TOTAL AMPS PER PHASE			114.5	99.2			
SELECTED SERVICE SIZE =			200A				

GENERATOR/SERVICE PANEL "D" SCHEDULE

PANEL: A		VOLTAGE: 240 / 120 1Ø		MAINS: 100A MCB		BUS AMPS: 100A	
TYPE: EXISTING		ENCLOSURE: NEMA 1		MOUNTING: SURFACE		MIN AIC: 10,000	
VA LOAD							
CIRCUIT DESCRIPTION	BKR	CKT	φ A	φ B	CKT	BKR	CIRCUIT DESCRIPTION
PUMP CONTROL PANEL	20	1	100		2	15	EXHAUST FAN & RECEPTACLE
RECEPTACLES (3)	15	3	540		4	20	LIGHT & RECEPTACLE
		5	960		6	20	HEATER (5KW)
SO2 PUMP (1 HP)	10	7	2500		8	20	CL2 CONTACT BASIN RECEPTACLE
		9	1440		10	20	
CHLORINE PUMP (2 HP)	20	11	180		12		SPACE
		13			14		
SPACE		15			16		
CONNECTED VA PER PHASE			5460	5720	NOTES:		
CONNECTED AMPS PER PHASE			45.5	47.7	"X" DENOTES CONTINUOUS LIGHTING LOAD		
+25% LARGEST MOTOR VA			360	360	"XX" DENOTES LARGEST MOTOR LOAD		
+25% CONTINUOUS LIGHTING LOAD VA			0	70			
DEMAND VA PER PHASE			5820	6150			
TOTAL AMPS PER PHASE			48.5	51.3			

LAB BUILDING PANEL "A" SCHEDULE (EXISTING)
(FOR INFORMATION AND LOAD CALCS ONLY)

PANEL: B		VOLTAGE: 240 / 120 1Ø		MAINS: 100A MCB		BUS AMPS: 100A	
TYPE: BOLT-ON		ENCLOSURE: NEMA 3R		MOUNTING: SURFACE		MINAIC: 10,000	
VA LOAD							
CIRCUIT DESCRIPTION	BKR	CKT	φ A	φ B	CKT	BKR	CIRCUIT DESCRIPTION
SO2 ROOM FAN/LIGHTS	20	1	360		2	30	SPARE
SO2 ROOM SWITCH/RECEPTACLE	20	3	180		4		
CL2 ROOM LIGHTS AND EX FAN	20	5	280		6	30	SO2 ROOM HEATER
		7	2500		8		
SPARE	20	9	180		10	30	CHLORINE ROOM HEATER
CL2 ROOM RECEPTACLE	20	11	2500		12		
CL2 ROOM SWITCH/RECEPTACLE	15	13	0		14	15	CL2 BASIN HEAT TRACE
SPARE	20	15	500		16		
SPACE		17			18		SPACE
		19			20		
CONNECTED VA PER PHASE			6460	5360	NOTES:		
CONNECTED AMPS PER PHASE			53.8	44.7	"X" DENOTES CONTINUOUS LTG LOAD		
+25% LARGEST MOTOR VA			625	625	"XX" DENOTES LARGEST MOTOR LOAD		
+25% CONTINUOUS LIGHTING LOAD VA			0	0	"G" DENOTES GROUND FAULT PROTECTION		
DEMAND VA PER PHASE			7085	5985			
TOTAL AMPS PER PHASE			59.0	49.9			

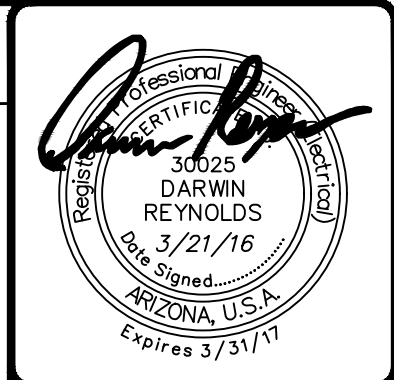
CHEMICAL BUILDING PANEL "B" SCHEDULE

DEMOLITION KEY NOTES

- DISCONNECT AND REMOVE EXISTING UTILITY METER, SERVICE RISER AND PANELBOARD FROM POWER POLE.
- DISCONNECT AND REMOVE EXISTING BRANCH CIRCUIT CONDUCTORS FROM PANELBOARD TO JUNCTION BOX ON SIDE OF CHEMICAL BUILDING. REMOVE EXPOSED CONDUIT AND ABANDON UNDERGROUND CONDUIT IN PLACE. RETAIN CONDUCTORS FOR TERMINATION IN NEW PANEL "B".
- DISCONNECT AND REMOVE EXISTING SAMPLE SHED BRANCH CIRCUIT CONDUCTORS. REMOVE EXPOSED CONDUIT ON POLE. PORTION OF EXISTING UNDERGROUND CONDUIT MAY BE REUSED FOR NEW BRANCH CIRCUIT CONDUCTORS.
- DISCONNECT AND REMOVE EXISTING LAB BUILDING FEEDER. REMOVE EXPOSED CONDUIT ON POLE. EXISTING UNDERGROUND CONDUIT SHALL BE USED FOR NEW FEEDER CONDUCTORS.

CONSTRUCTION KEY NOTES

- INSTALL 2" RMC RISER ON EXISTING WOOD POLE WITH WEATHERHEAD AND STAND-OFF BRACKETS AS REQUIRED BY NTUA.
- PANELBOARD TO BE INSTALLED ON EXTERIOR OF CHEMICAL BUILDING. TERMINATE EXISTING BRANCH CIRCUIT CONDUCTORS IN PANELBOARD PER PANEL "B" SCHEDULE THIS SHEET.



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CHINLE WASTEWATER TREATMENT PLANT UPGRADE
ELECTRICAL
DISINFECTATION SYSTEM SINGLE LINE DIAGRAM

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GENERAL NOTES

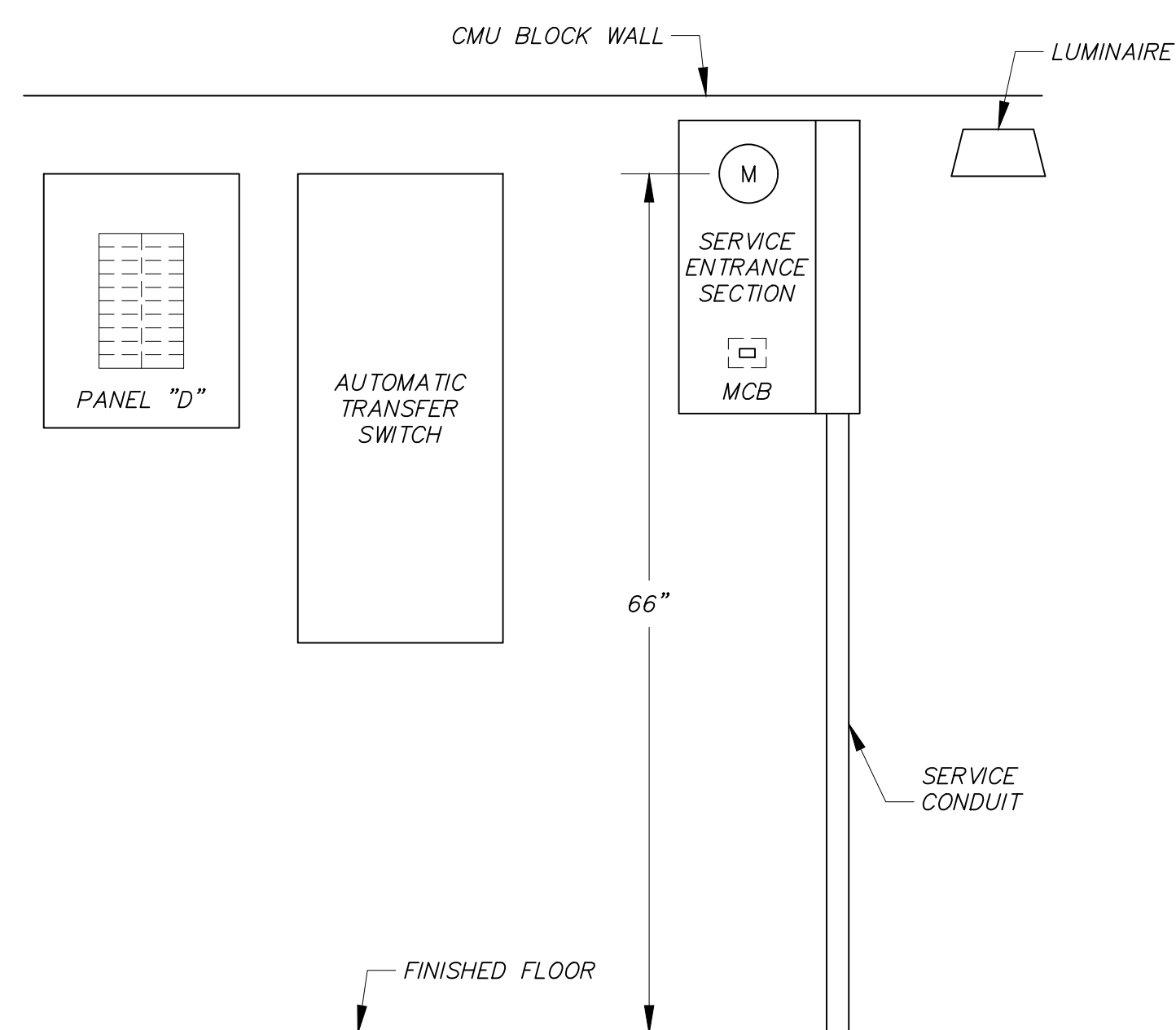
- A. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND CONDUCTOR REQUIREMENTS.
- B. ALL GENERATOR ENCLOSURE DIMENSIONS SHOWN ARE THE MINIMUM REQUIREMENT. REFER TO CIVIL PLANS FOR EXACT SPECIFICATIONS.

DEMOLITION KEY NOTE

- ① COORDINATE WITH NTUA TO DISCONTINUE POWER. THEN, DISCONNECT AND REMOVE EXISTING SERVICE ENTRANCE SECTION, PANELBOARD AND SERVICE DROP FROM POWER POLE. POLE AND AREA LIGHT TO REMAIN.
- ② DISCONNECT AND REMOVE EXISTING LAB BUILDING FEEDER CONDUCTORS. ABANDON UNDERGROUND CONDUIT IN PLACE.
- ③ DISCONNECT AND REMOVE EXISTING CHEMICAL BUILDING BRANCH CIRCUIT CONDUCTORS. ABANDON UNDERGROUND CONDUIT IN PLACE.
- ④ DISCONNECT AND REMOVE EXISTING SAMPLER SHED BRANCH CIRCUIT CONDUCTORS. ABANDON UNDERGROUND CONDUIT IN PLACE.

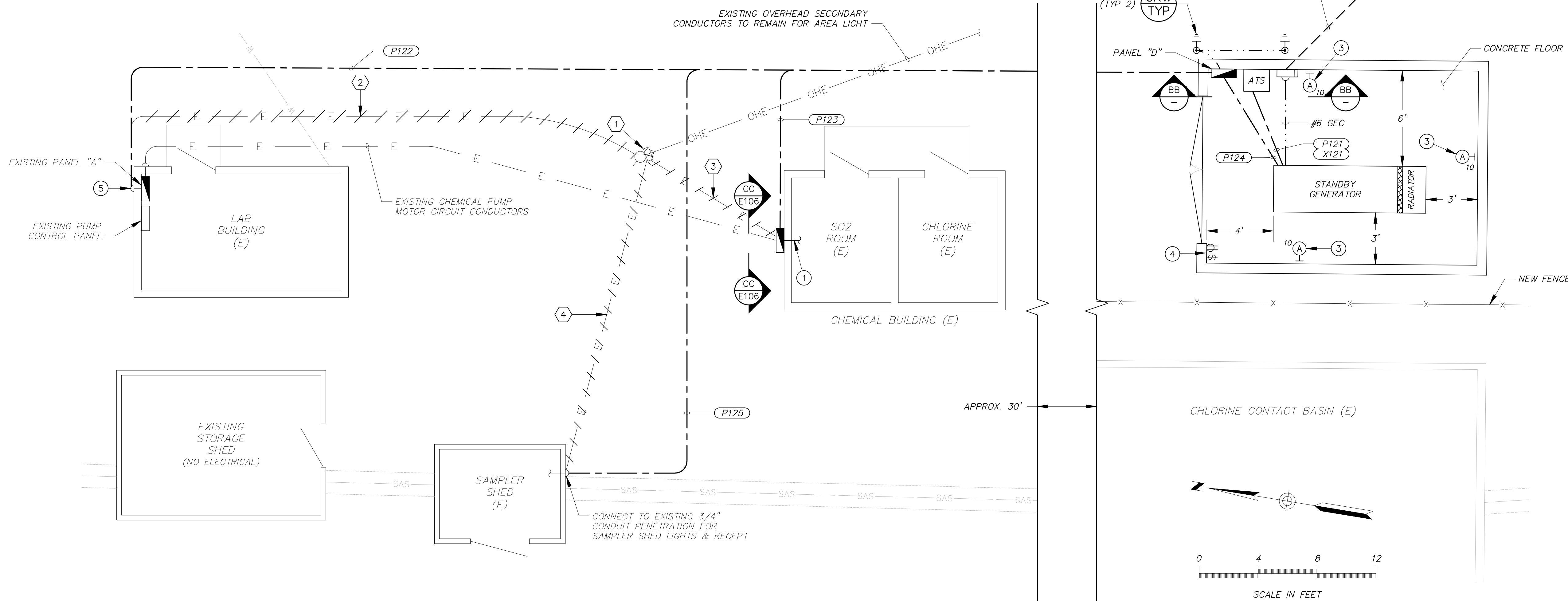
CONTRACTOR KEY NOTES

- ① TERMINATE EXISTING BRANCH CIRCUIT CONDUCTORS IN PANEL "B" PER PANEL SCHEDULE ON SHEET E104.
- ② INSTALL CONDUIT, TRENCH AND BACKFILL PER NTUA REQUIREMENTS APPROXIMATELY 60- FEET TO EXISTING WOOD POLE. REFER TO THE SINGLE LINE DIAGRAM FOR CONDUCTOR REQUIREMENTS.
- ③ INSTALL WALL MOUNTED LUMINAIRE ON FLUSH-MOUNTED BOX IN TOP ROW OF CMU BLOCK WALL. CONDUIT SHALL BE CONCEALED IN CMU BLOCK WALL.
- ④ 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.
- ⑤ CONNECT TO EXISTING 1-1/2" CONDUIT PENETRATING WALL TO FEED PANEL "A".



NOTE: ALL CONDUITS NOT INDICATED FOR CLARITY

BB ELECTRICAL EQUIPMENT ELEVATION
NTS



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DATE	BY: DFG

CHINLE WASTEWATER TREATMENT
PLANT UPGRADE
ELECTRICAL
ENLARGED PLAN VIEW "C"

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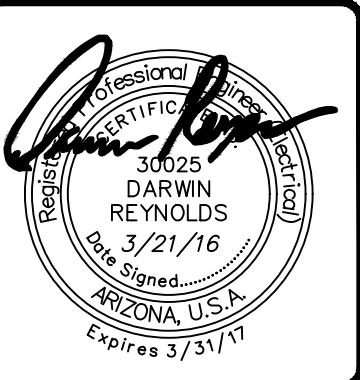


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CONSTRUCTION KEY NOTES

- 1 PACKAGED AERATION CONTROL PANEL FURNISHED BY OWNER.
- 2 ANCHOR ENCLOSURE TO CONCRETE PAD WITH (4) 3/8" CONCRETE ANCHORS.
- 3 FLEXIBLE CORD CONNECTOR (AERATORS No.3, 4 & 7)
- 4 SEO TYPE CABLE FURNISHED WITH AERATORS TO BE CUT AND TERMINATED AT EACH END (DO NOT SPLICE).
- 5 TERMINATE EXISTING CONDUIT NIPPLE PENETRATING WALL INTO BACK OF NEW WIREWAY.
- 6 TEMPORARILY DISCONNECT EXISTING CHEMICAL PUMP CONTROL WIRING AND CHLORINE CONTACT BASIN HEAT TRACE RECEPTACLE BRANCH CIRCUIT CONDUCTORS TO INSTALL WIREWAY. RE-INSTALL AND TERMINATE CONDUCTORS.



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CHINLE WASTEWATER TREATMENT PLANT UPGRADE

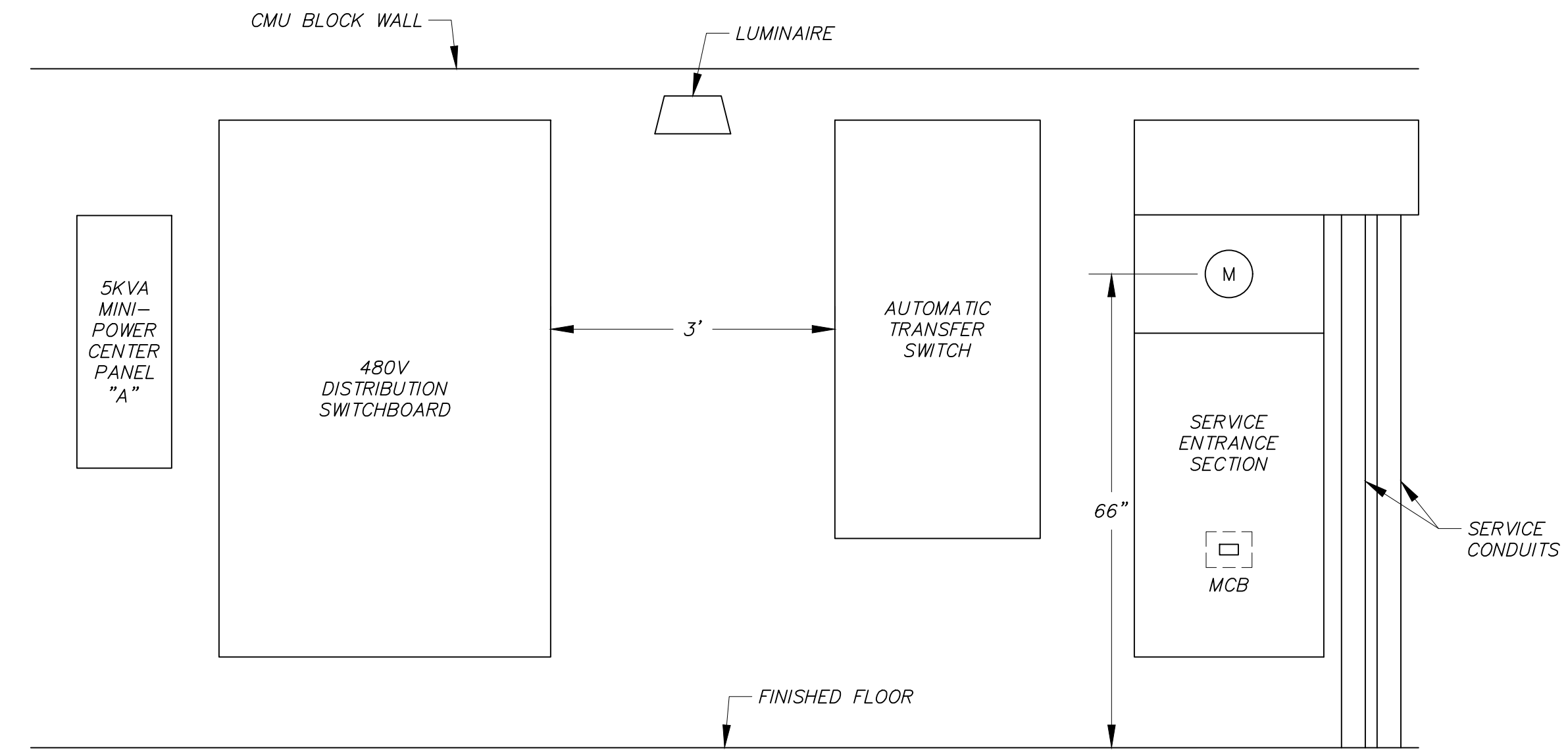
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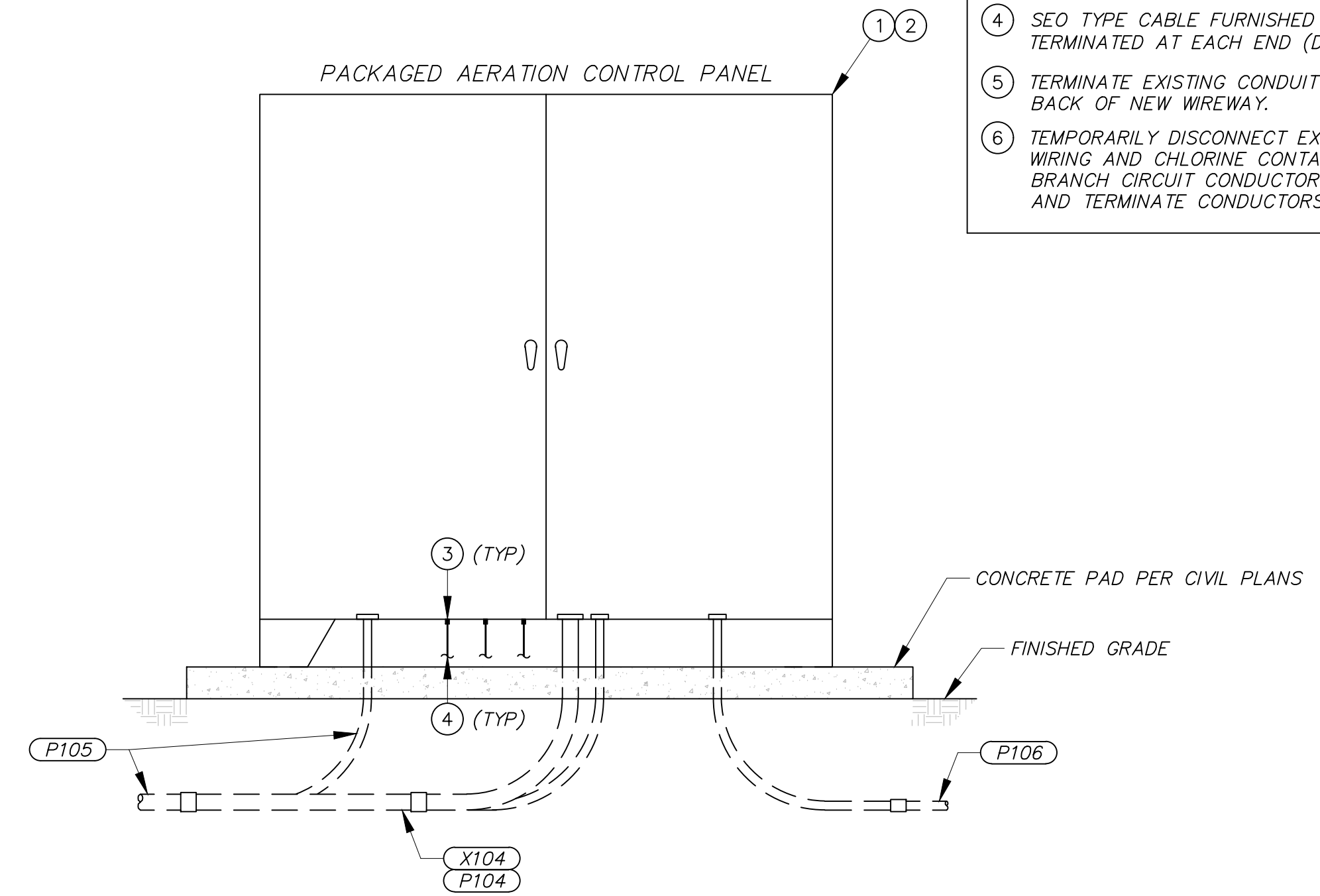


JOB NO: 115111
DATE: MAR 2016
SHEET NO: E106

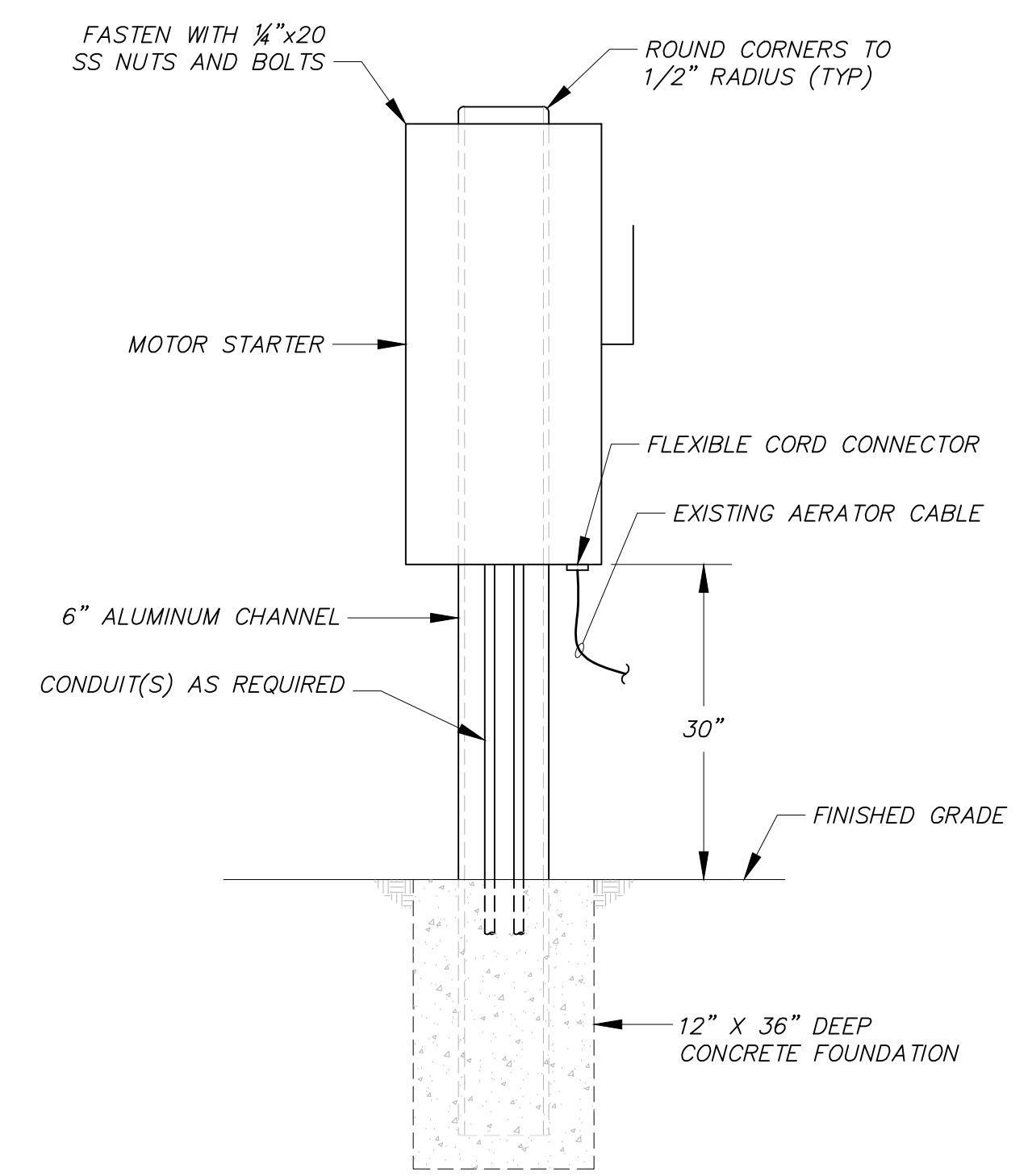


NOTE: ALL CONDUITS NOT INDICATED FOR CLARITY

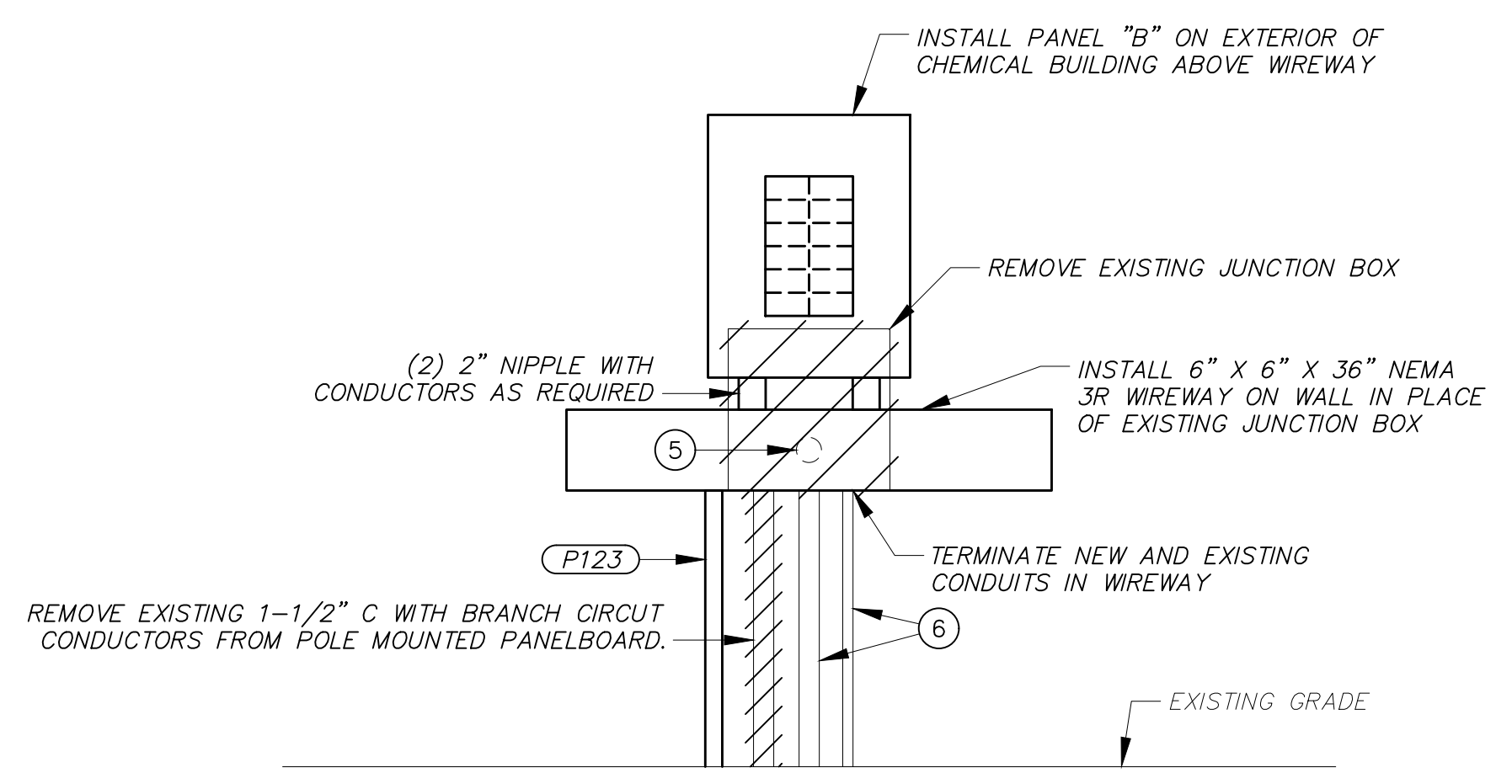
AA E103 AREA ELECTRICAL EQUIPMENT ELEVATION
NTS



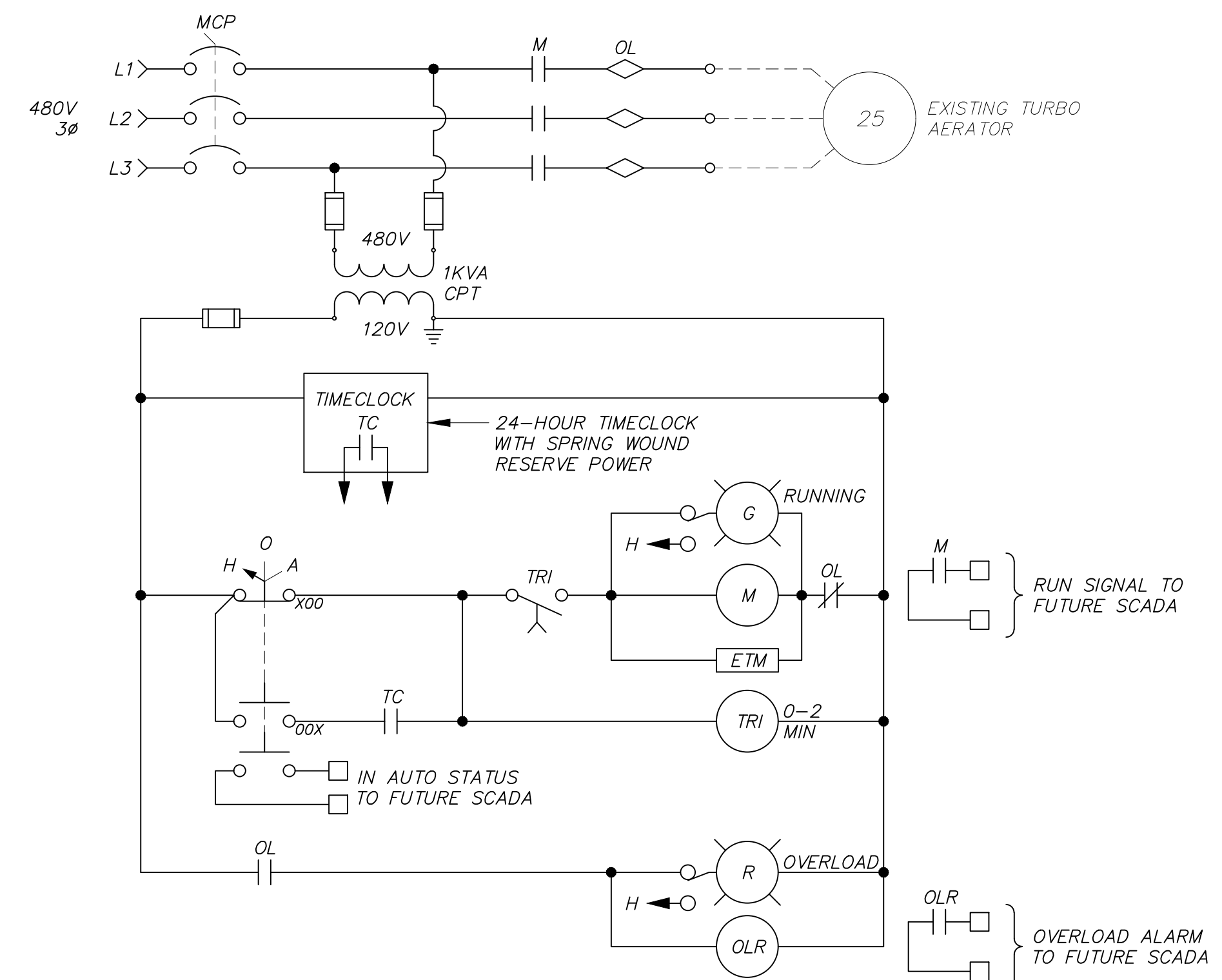
ACP E101 PACKAGED AERATION CONTROL PANEL ELEVATION
NTS



MS1 TYP EQUIPMENT MOUNTING STAND
NTS

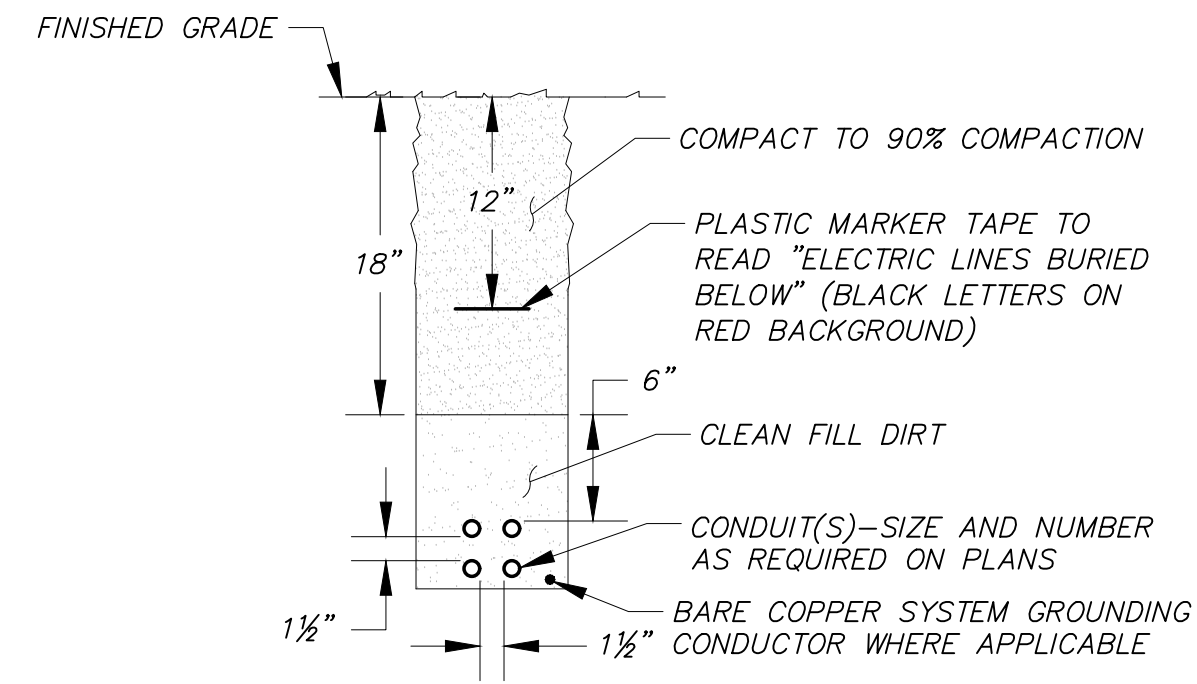


CC E105 PANEL "B" ELEVATION
NTS



TYPICAL TURBO AERATOR MOTOR CONTROL SCHEMATIC
(TYP FOR 2)

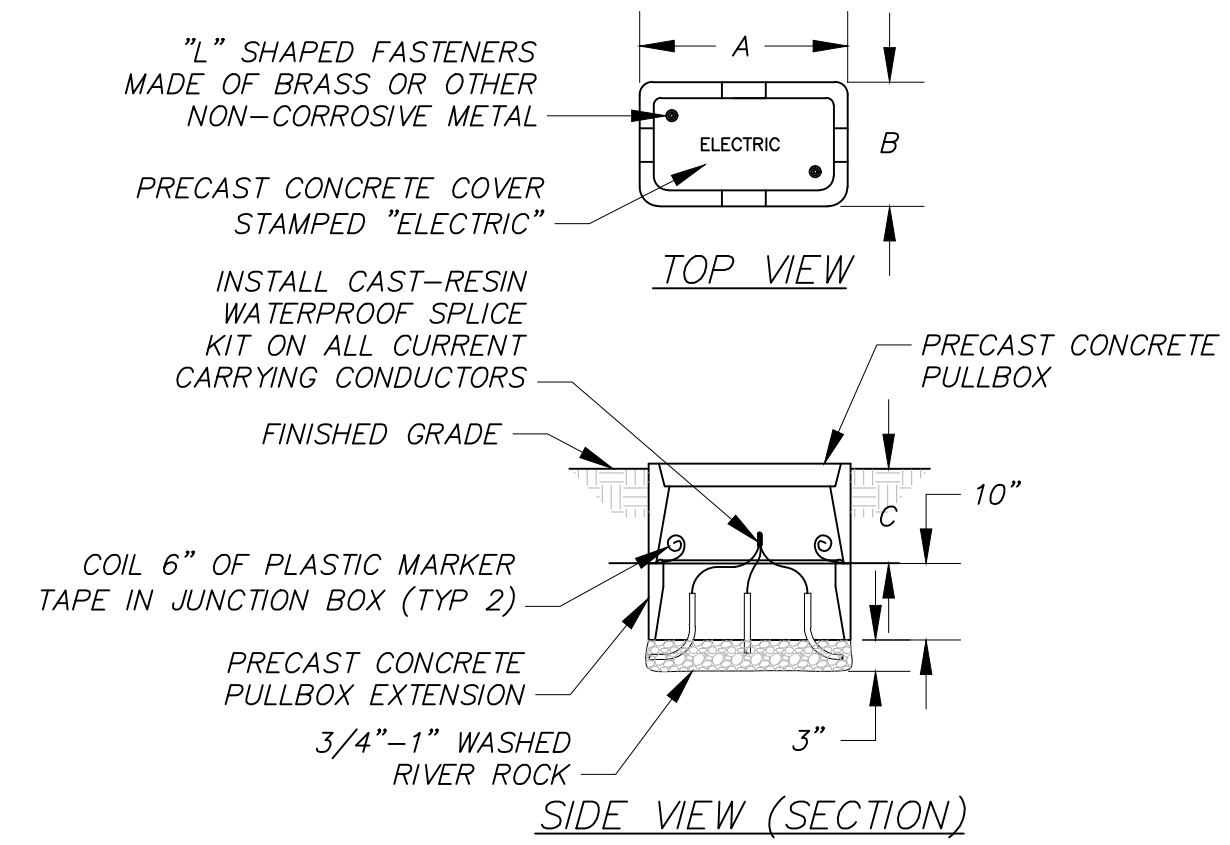
Saved: March 14, 2016 File: 15053-CHINLE-E106.dwg Drafter: Drafter



NOTES:

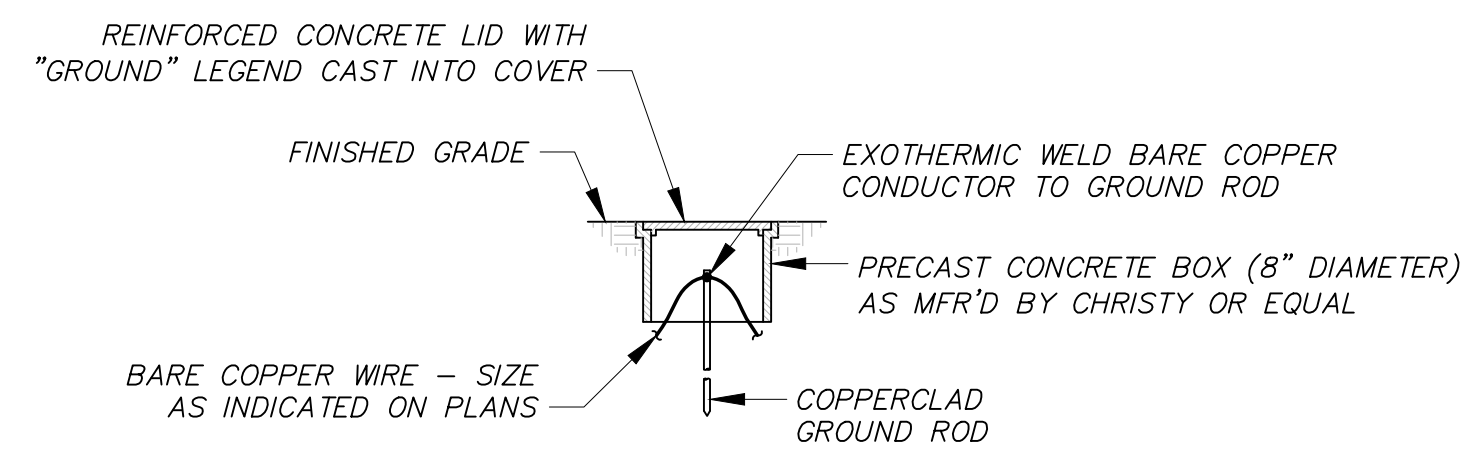
1. ALL DIMENSIONS INDICATED ABOVE ARE MINIMUM.
2. SPARE CONDUITS MUST BE LOCATED ON TOP OF DUCTBANKS.
3. THIS DETAIL APPLIES IN ALL CASES WHETHER SPECIFICALLY REFERRED TO OR NOT.
4. THIS DETAIL DOES NOT APPLY TO UTILITY DUCTBANKS.

UDG
TYP TYPICAL UNDERGROUND CONDUIT DUCTBANK DETAIL
NTS

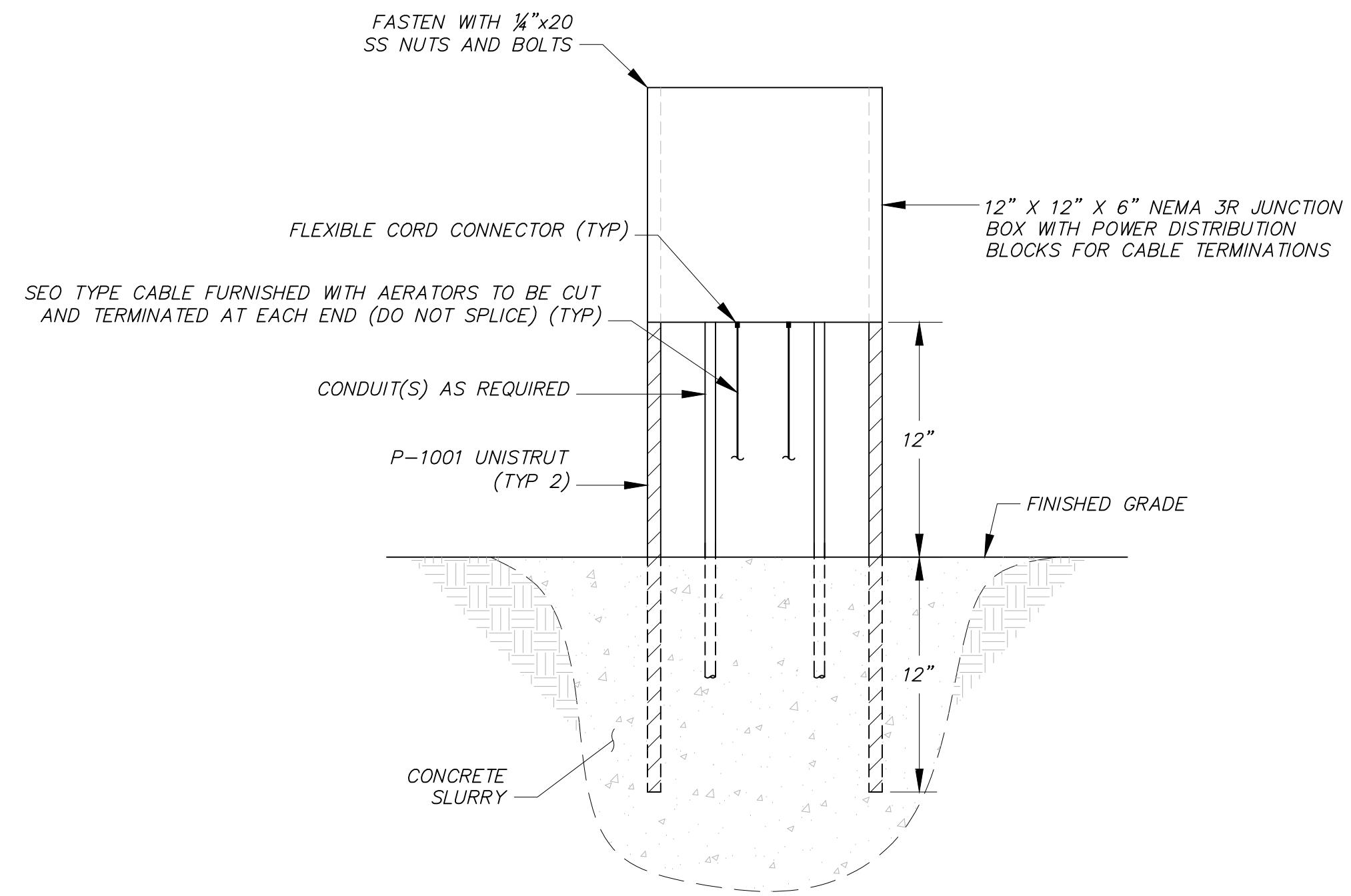


TYPE	DIM. A	DIM. B	DIM. C
#5	25"	15-1/2"	12"

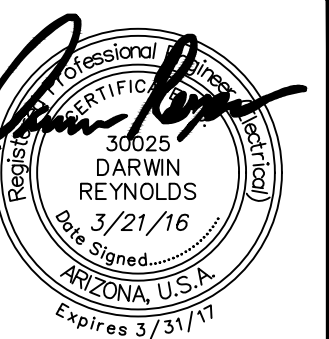
UJB
TYP TYPICAL UNDERGROUND JUNCTION BOX DETAIL
NTS



GRW
TYP TYPICAL GROUND ROD AND WELL DETAIL
NTS



JB1
TYP ABOVE GROUND JUNCTION BOX WITH FOUNDATION MOUNTING DETAIL
NTS



NAVAJO TRIBAL UTILITY AUTHORITY
CHINLE, ARIZONA

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

DESIGN BY: JLG DRAWN BY: DRC

CHINLE 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

