

CONTRACT C19010

# CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT

Volume 3 – CONTRACT DRAWINGS / PLANS

PROJECT ADMINISTERED BY:



**Issued for Bid**

June 12, 2019

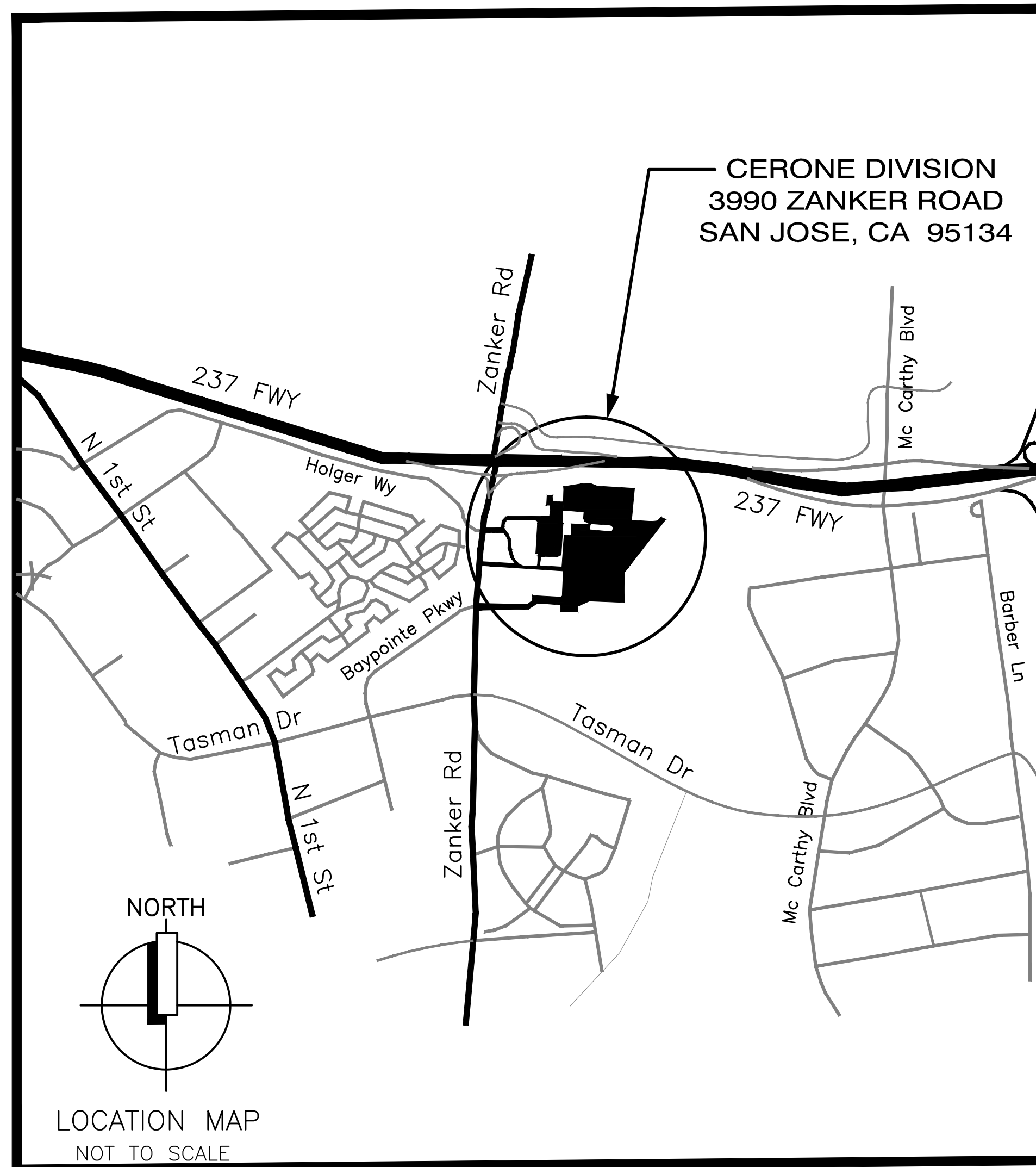


*Solutions that move you*

# SANTA CLARA VALLEY TRANSPORTATION AUTHORITY

## CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT

### CONTRACT C19010



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						<p><b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT</b></p>	SHEET 1 OF 33 DRAWING NO. <b>T-10</b> REVISION					
SUBMITTED	DESIGNED RP	CHECKED LM	DRAWN RP	CADD FILE NAME	APPROVED	CADD FILE DATE	SCALE NONE	PLOT DATE	BOARD APPROVAL DATE	SAP NO.	CONTRACT NO. C19010	FILE LOCATION
NO.	DATE	REVISIONS										

HIGHWAY 237

# PROJECT DESCRIPTION

1. SCOPE OF WORK: PROJECT CONSISTS OF THE REMOVAL OF TWO PROPANE FUELED STANDBY GENERATORS LOCATED INSIDE THE ENERGY BUILDING (BLDG. F) AT CERONE DIVISION, AND REPLACEMENT WITH A SINGLE DIESEL FUELED GENERATOR LOCATED OUTDOORS. PROJECT ALSO INCLUDES MODIFICATIONS TO AN EXISTING UNDERGROUND DIESEL STORAGE TANK, UNDERGROUND PIPING AND CONTROLS USED FOR BUS FUELING OPERATIONS. MODIFICATIONS TO BLDG. F INCLUDING STRUCTURAL, ELECTRICAL, MECHANICAL AND PLUMBING NECESSARY TO FACILITATE EQUIPMENT REMOVALS AND INSTALLATION. THE NEW GENERATOR SHALL SERVE AS THE PRIMARY ENERGY SOURCE BACK-UP SYSTEM DURING ENERGY INTERRUPTION. MAJOR COMPONENTS INCLUDE THE GENERATOR AND BELLY TANK, EQUIPMENT PAD AND FOUNDATION, FUEL PIPING, CONDUIT, WIRING AND AUTOMATIC TRANSFER SWITCH.

CAREFULLY EXAMINE THE CONTRACT DOCUMENTS FOR COMPLETE SCOPE OF WORK.

2. HAZARDOUS MATERIALS: HAZARDOUS MATERIALS ARE PRESENT IN BUILDING 'F' (ENERGY BUILDING). A REPORT ON THE PRESENCE OF HAZARDOUS MATERIALS IS INCLUDED IN THE APPENDIX. EXAMINE REPORT TO BECOME AWARE OF LOCATIONS WHERE HAZARDOUS MATERIALS ARE PRESENT, PRIOR TO COMMENCING DEMOLITION. CONTRACTOR'S WORK INCLUDES REMOVAL OF ALL ITEMS SHOWN ON THE CONTRACT DRAWINGS.

3. HAZMAT / ENVIRONMENTAL REGULATORY CLEARANCES: COMPLY WITH SPECIAL CONDITIONS - 6.7 "PERMITS, FEES AND INSPECTIONS". CONTRACTOR SHALL PROVIDE TO THE AUTHORITIES HAVING JURISDICTION (AHJ) ALL INFORMATION NECESSARY FOR HAZMAT / ENVIRONMENTAL PERMITS, CLEARANCES AND AUTHORIZATIONS NECESSARY FOR THIS PROJECT. CONTRACTOR SHALL COMPLY WITH ALL AHJ PROVISIONS, INCLUDING GIVING NOTICES FOR INSPECTIONS DURING CONSTRUCTION WHEN SO REQUIRED.

IDENTIFIED AUTHORITIES HAVING JURISDICTION:  
 SANTA CLARA COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS COMPLIANCE DIVISION (HMCD). HMCD IS THE CERTIFIED UNIFIED PROGRAM AGENCY (CUPA) FOR THIS PROJECT.  
 BAY AREA AIR QUALITY MANAGEMENT DISTRICT (BAAQMD). CALIFORNIA DIVISION OF OCCUPATIONAL SAFETY AND HEALTH (DOSH)

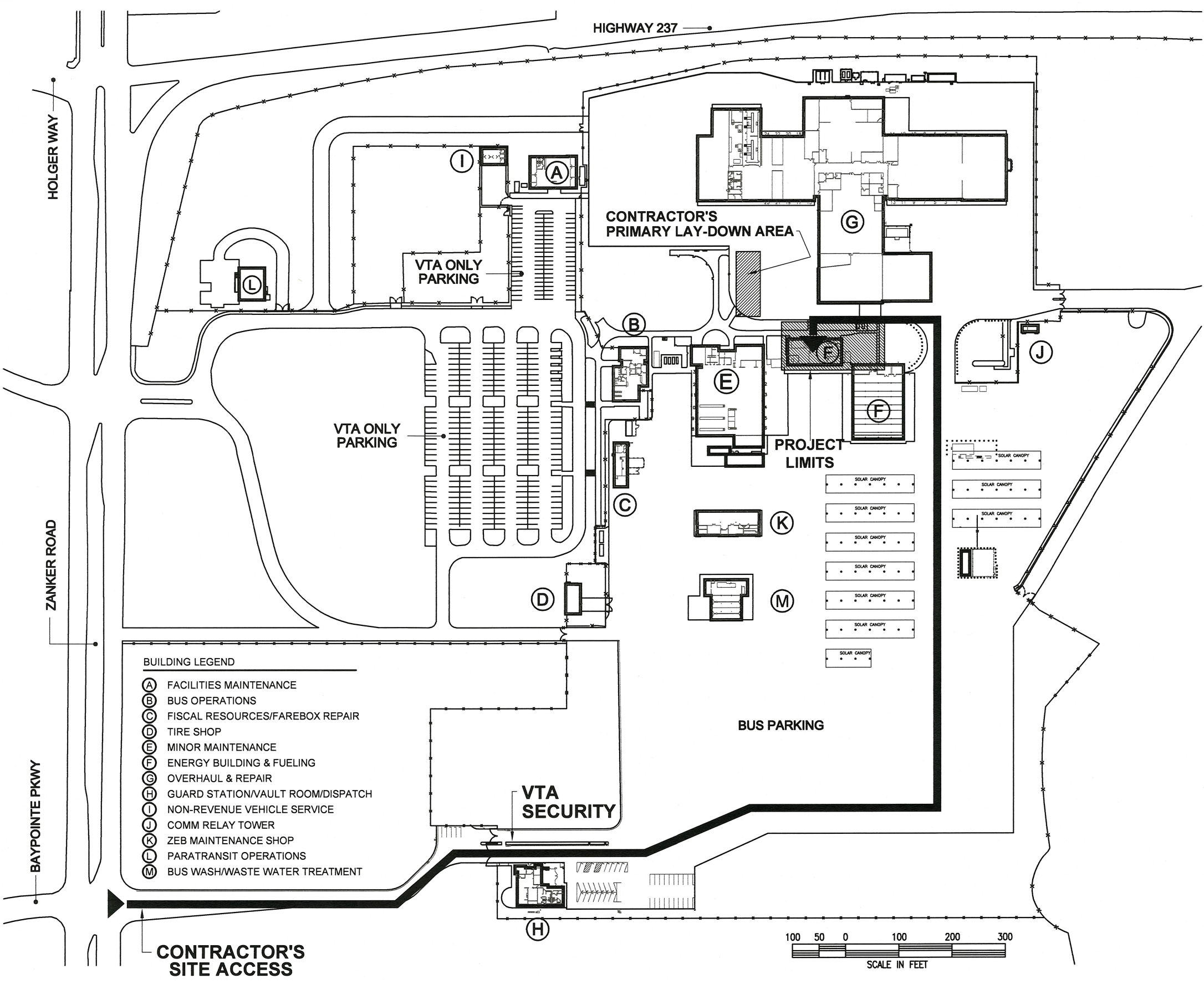
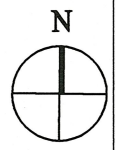
4. PARKING: CONTRACTOR SHALL PROVIDE PARKING FACILITIES FOR CONTRACTOR PERSONNEL AND SUBCONTRACTORS. CONTRACTOR AND SUBCONTRACTOR ARE PROHIBITED FROM PARKING PERSONAL VEHICLES AT CERONE DIVISION, INCLUDING AREAS INDICATED ON THIS DRAWING AS VTA EMPLOYEE PARKING LOTS.

5. SITE ACCESS AND EGRESS: THE MAIN VEHICULAR AND PEDESTRIAN ACCESS TO THE SITE SHALL BE THE ENTRANCE GATE AT VTA SECURITY, AS INDICATED ON THIS SHEET.

6. CONTRACTOR USE OF PREMISES: COMPLY WITH SPECIAL CONDITIONS - 6.10 "WORK SEQUENCE AND CONSTRAINTS". CONSTRUCTION WILL BE PERFORMED ON AN ACTIVE SITE WITH ONGOING 24 HOURS A DAY BUS MAINTENANCE AND OPERATIONS ACTIVITY. COORDINATE, PHASE, SCHEDULE AND PERFORM WORK IN SUCH A MANNER THAT ONGOING VTA ACTIVITIES CONTINUE WITHOUT DISRUPTION.

# GENERAL NOTES

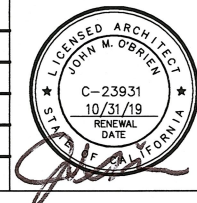
- NO DEVIATION FROM CONTRACT DOCUMENTS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE VTA RESIDENT INSPECTOR.
- DO NOT SCALE THE DRAWINGS. DIMENSIONS SHALL BE GOVERNED BY ACTUAL CONDITIONS AT THE SITE AND SHALL BE FIELD VERIFIED PRIOR TO COMMENCING CONSTRUCTION.
- WORK SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL CODES AND ORDINANCES IN EFFECT. ALL SAFETY PROVISIONS SHALL BE STRICTLY ADHERED TO IN EVERY DETAIL. CONTRACTOR SHALL PROVIDE AND MAINTAIN PROPER BARRICADES, DUST CONTROL, LIGHTING AND ANY OTHER TEMPORARY DEVICES NECESSARY FOR THE PROTECTION OF LIFE AND PROPERTY, AND OF ONGOING BUS MAINTENANCE OPERATIONS.



**BUILDING LEGEND**

(A)	FACILITIES MAINTENANCE
(B)	BUS OPERATIONS
(C)	FISCAL RESOURCES/FAREBOX REPAIR
(D)	TIRE SHOP
(E)	MINOR MAINTENANCE
(F)	ENERGY BUILDING & FUELING
(G)	OVERHAUL & REPAIR
(H)	GUARD STATION/VAULT ROOM/DISPATCH
(I)	NON-REVENUE VEHICLE SERVICE
(J)	COMM RELAY TOWER
(K)	ZEB MAINTENANCE SHOP
(L)	PARATRANSIT OPERATIONS
(M)	BUS WASH/WASTE WATER TREATMENT

NO.	DATE	REVISIONS
1		ISSUED FOR BID



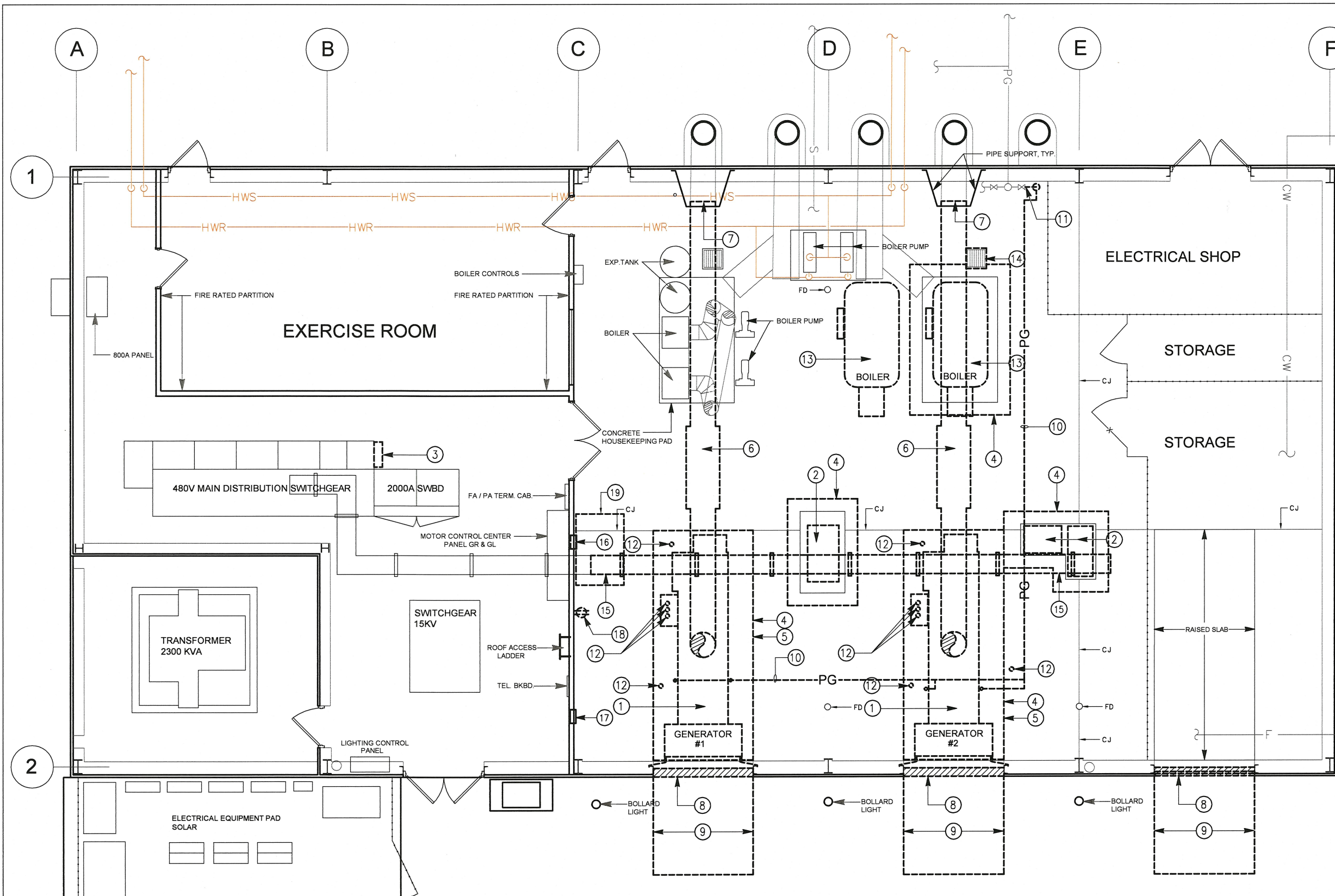
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PLOT DATE	BOARD APPROVAL DATE

CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT			SHEET 2 OF 33 DRAWING NO. G-1.0
<b>STAGING AND ACCESS PLAN</b>			
SAP NO.	CONTRACT NO. C19010	FILE LOCATION	





**LEGEND:**

- REMOVE EXISTING
- \_\_\_\_\_ EXISTING TO REMAIN

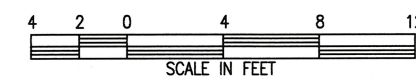
**NOTES:**

1. REFER TO 'E' AND 'F' SHEETS FOR DEMOLITION WORK NOT NOTED ON THIS SHEET.
2. REFER TO 'S' SHEETS FOR NEW CONCRETE INFILL WORK.

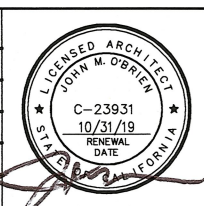
**KEYED NOTES:**

- 1 REMOVE ENGINE GENERATOR SET IN ITS ENTIRETY. REMOVALS INCLUDE MOUNTING FRAME AND HARDWARE, PROPANE FUEL, COOLANT, BATTERY AND ALTERNATOR, CONTROLS, HOSES, CABLES, FITTINGS AND ALL RELATED EQUIPMENT; SEE ELEC.
- 2 REMOVE GENERATOR CONTROL PANEL, CONDUCTORS, CONDUIT AND FITTINGS; SEE ELEC.
- 3 REMOVE TRANSFER SWITCH CONTROL PANEL, CONDUCTORS, CONDUIT AND FITTINGS; SEE ELEC.
- 4 SAWCUT AND REMOVE RAISED STRUCTURAL GENERATOR/BOILER SLAB, INCLUDING FOUNDATION; SEE STRUCT., 6/S2.0  
NOTE: (E) REBARS ARE CONTINUOUS AT TRANSITION FROM FINISHED FLOOR SLAB TO RAISED SLAB, TYP. AT ALL RAISED SLAB LOCATIONS, EXCEPT AT GENERATOR #1 AND #2.
- 5 REMOVE POLYSTYRENE EXPANSION JOINT MATERIAL, TYP. OCCURS ALONG ENTIRE PERIMETER OF GENERATOR SLAB; SEE STRUCT., 6/S2.0.
- 6 CUT AND REMOVE GENERATOR EXHAUST PIPE. REMOVAL SHALL INCLUDE PIPE INSULATION, MUFFLER, FITTINGS AND ALL RELATED EQUIPMENT. REMOVE BRACING, SUPPORTS, FITTINGS AND FASTENINGS TO UNDERSIDE OF ROOF DECK.  
NOTE: (E) PIPE IS SCHED. 40 BLACK STEEL.
- 7 CAP/SEAL GENERATOR EXHAUST PIPE HERE.
- 8 REMOVE EXHAUST DEFLECTOR AND LOUVER. PREP OPENING TO RECEIVE NEW WALL FINISHES.
- 9 REMOVE LOUVER. PREP OPENING TO RECEIVE NEW WALL FINISHES.
- 10 REMOVE PROPANE LINE FROM GENERATOR TO ISOLATION VALVE @ GRID LINE '1' AND 'E'.
- 11 PROVIDE BLANK OFF FLANGE AT ISOLATION VALVE.
- 12 REMOVE ALL GENERATOR CONDUIT TO BELOW TOP OF (E) SLAB. CHIP OUT AND REPAIR (E) SLAB WITH REPAIR MORTAR. REMOVE CONDUCTORS BACK TO THE ELECTRICAL PANEL FROM WHICH THEY ORIGINATE. REMOVE ALL JUNCTION BOXES AND DISCONNECT SWITCHES.
- 13 REMOVE BOILER, INCLUDING MOUNTING FRAME AND HARDWARE.  
NOTE: EXHAUST PIPE, PIPE INSULATION, HANGERS, MUFFLER, AND EXPANSION TANK ARE (E) TO REMAIN.
- 14 REMOVE FLOOR GRATE AND FRAME; CHIP OUT CONCRETE AS REQ'D TO REMOVE FRAME; REMOVE FLOOR SINK, DRAIN DOME STRAINER AND CAP SANITARY SEWER. INFILL OPENING WITH (N) CONCRETE; SEE STRUCT.
- 15 REMOVE 3000A BUSWAY; SEE ELEC. MODIFY HANGER ROD SUPPORTS TO SUIT CONDUITS TO REMAIN; SEE SH. A-4.2.
- 16 REMOVE RECESSED FIRE EXTINGUISHER CABINET (FEC). FILL IN AND PATCH WALL OPENING TO MATCH (E). RELOCATE FEC TO LOCATION SHOWN.
- 17 NEW LOCATION FOR RELOCATED FEC.
- 18 REMOVE RECEPTACLE AND RECEPTACLE BOX. PATCH WALL OPENING TO MATCH (E).
- 19 SAWCUT AND REMOVE FOR (N) TRANSFER SWITCH HOUSEKEEPING PAD; SEE ELEC.

**BLDG. F - ENERGY BUILDING**



NO.	DATE	REVISIONS
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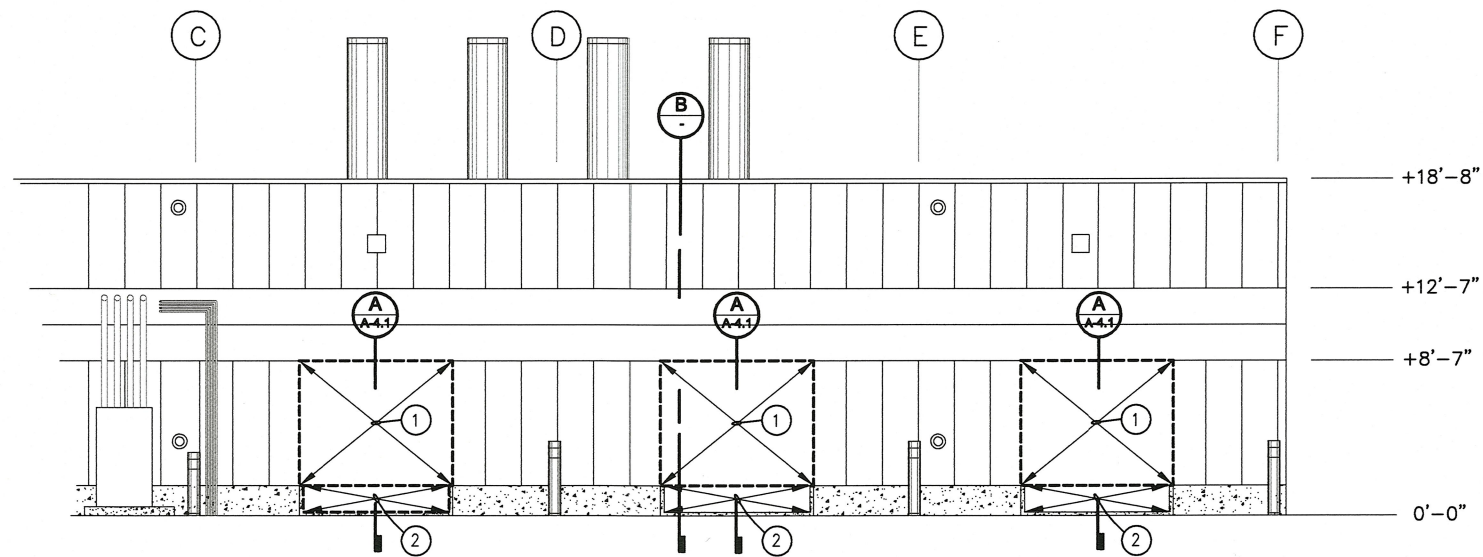


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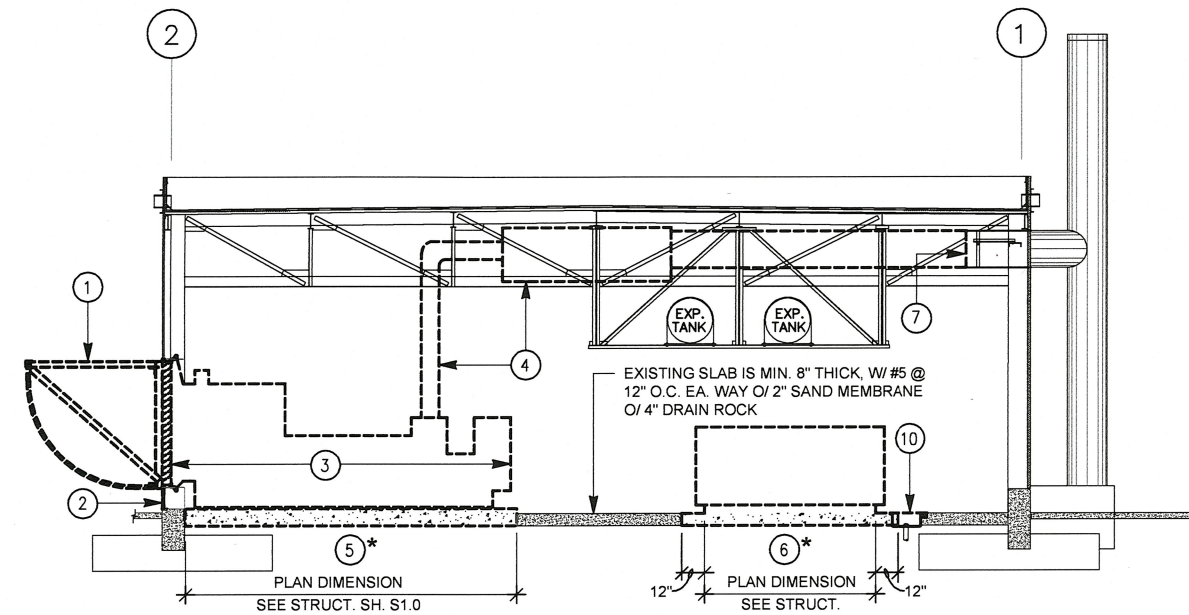
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PLT DATE	BOARD APPROVAL DATE

<b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT DEMOLITION FLOOR PLAN</b>			SHEET OF 33 DRAWING NO. <b>D-1.1</b> REVISION
BAP NO.	CONTRACT NO. C19010	FILE LOCATION	

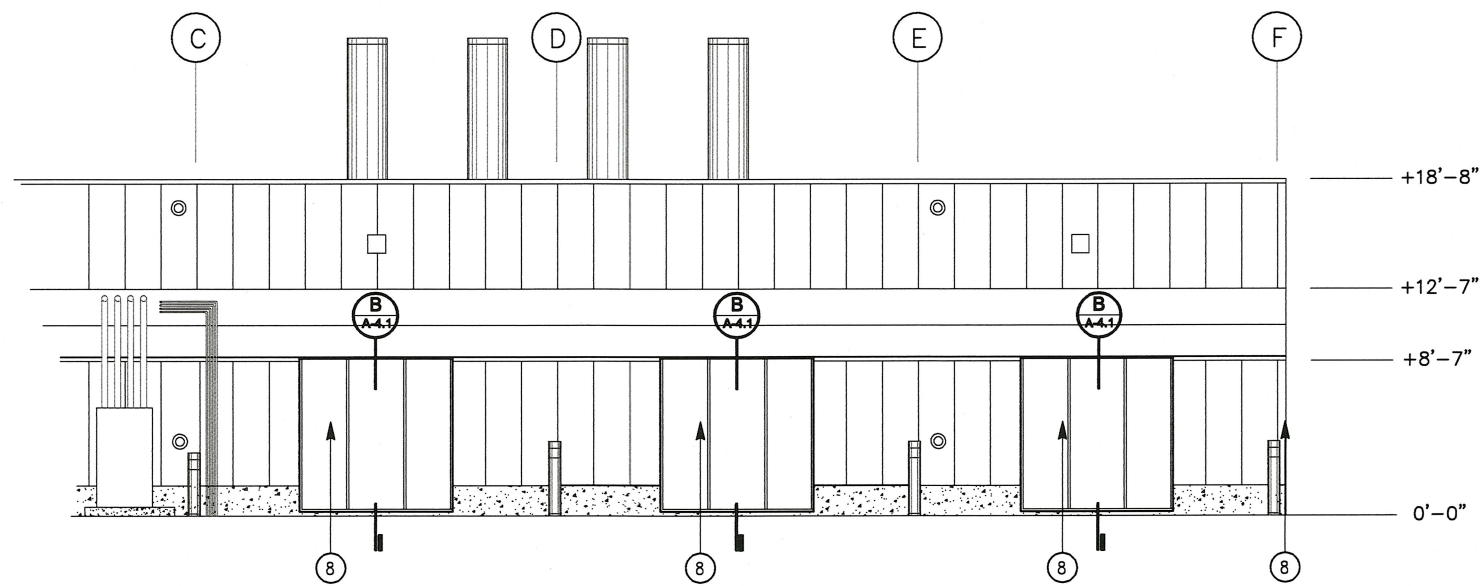


**A** EXT. ELEVATION - DEMOLITION

- ① REMOVE EXHAUST DEFLECTOR AND LOUVER; SEE DTL. A, SH. A-4.1
- ② REMOVE INSULATED METAL SIDING; SEE DTL. A, SH. A-4.1
- ③ REMOVE GENERATOR SET IN ITS ENTIRETY; SEE ELEC.
- ④ REMOVE GENERATOR EXHAUST PIPE, FITTINGS AND INSULATION.
- ⑤ REMOVE RAISED CONCRETE EQUIPMENT PAD AND EXPANSION JOINT MATERIAL; SEE STRUCT.
- ⑥ SAWCUT AND REMOVE RAISED CONCRETE PAD AND ADJACENT FLOOR SLAB; SEE STRUCT.
- ⑦ CAP/SEAL GENERATOR EXHAUST PIPE HERE.

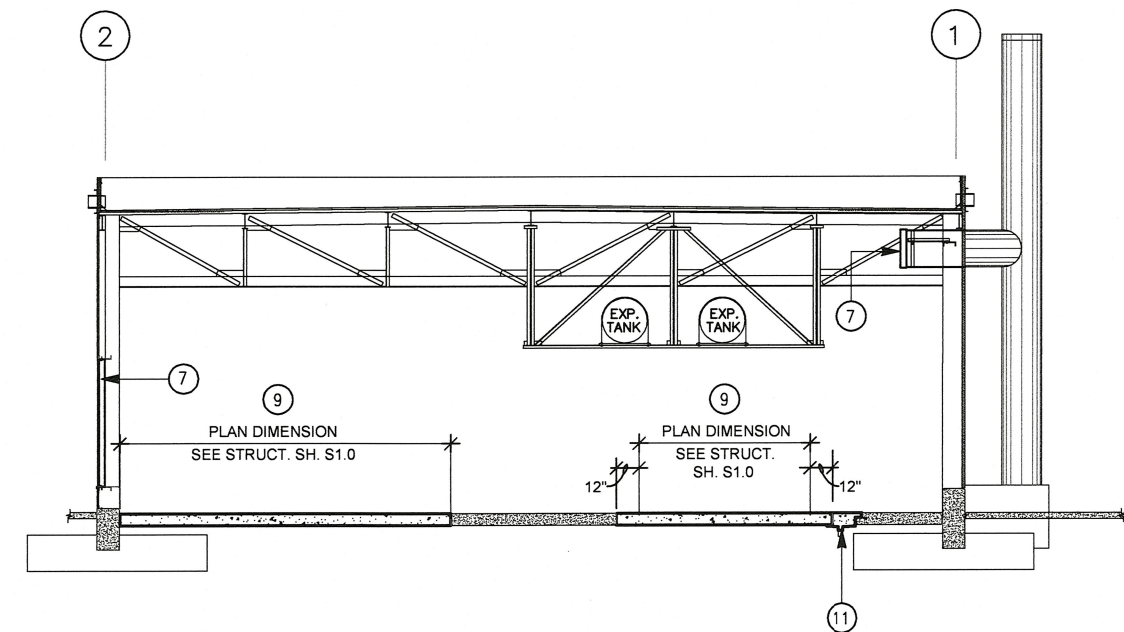


**B** SECTION - DEMOLITION



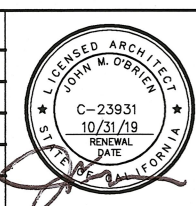
**C** EXT. ELEVATION - (N) WORK

- ⑧ (N) FIBER CEMENT SIDING; SEE DTL. B, SH. A-4.1
- ⑨ (N) CONCRETE SLAB; SEE STRUCTURAL.
- ⑩ REMOVE FLOOR SINK, STRAINER, FLOOR GRATE AND FRAME.
- ⑪ (N) INFILL SLAB AT REMOVED FLOOR SINK LOCATION; SEE STRUCTURAL.



**D** SECTION - (N) WORK

NO.	DATE	REVISIONS
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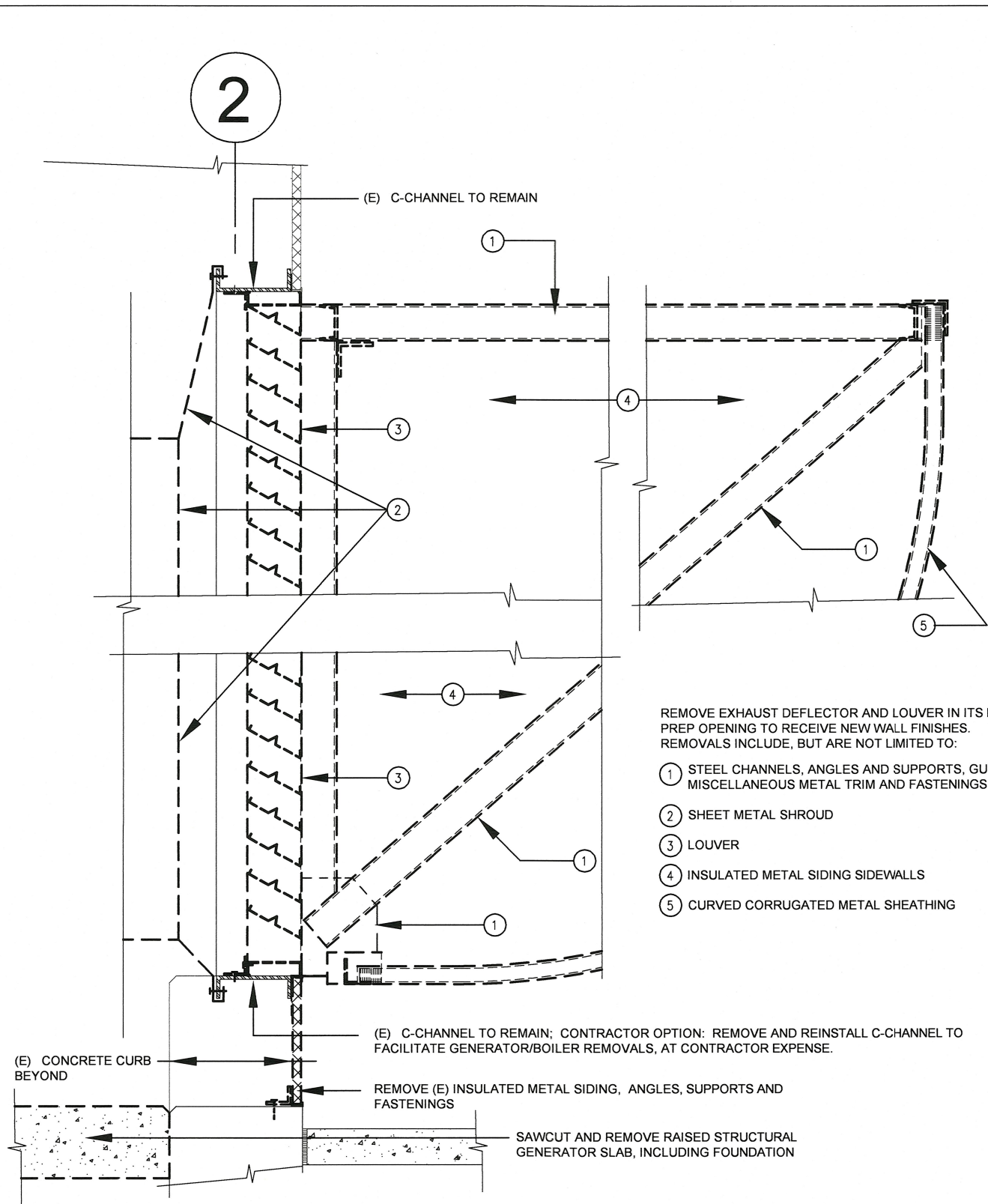


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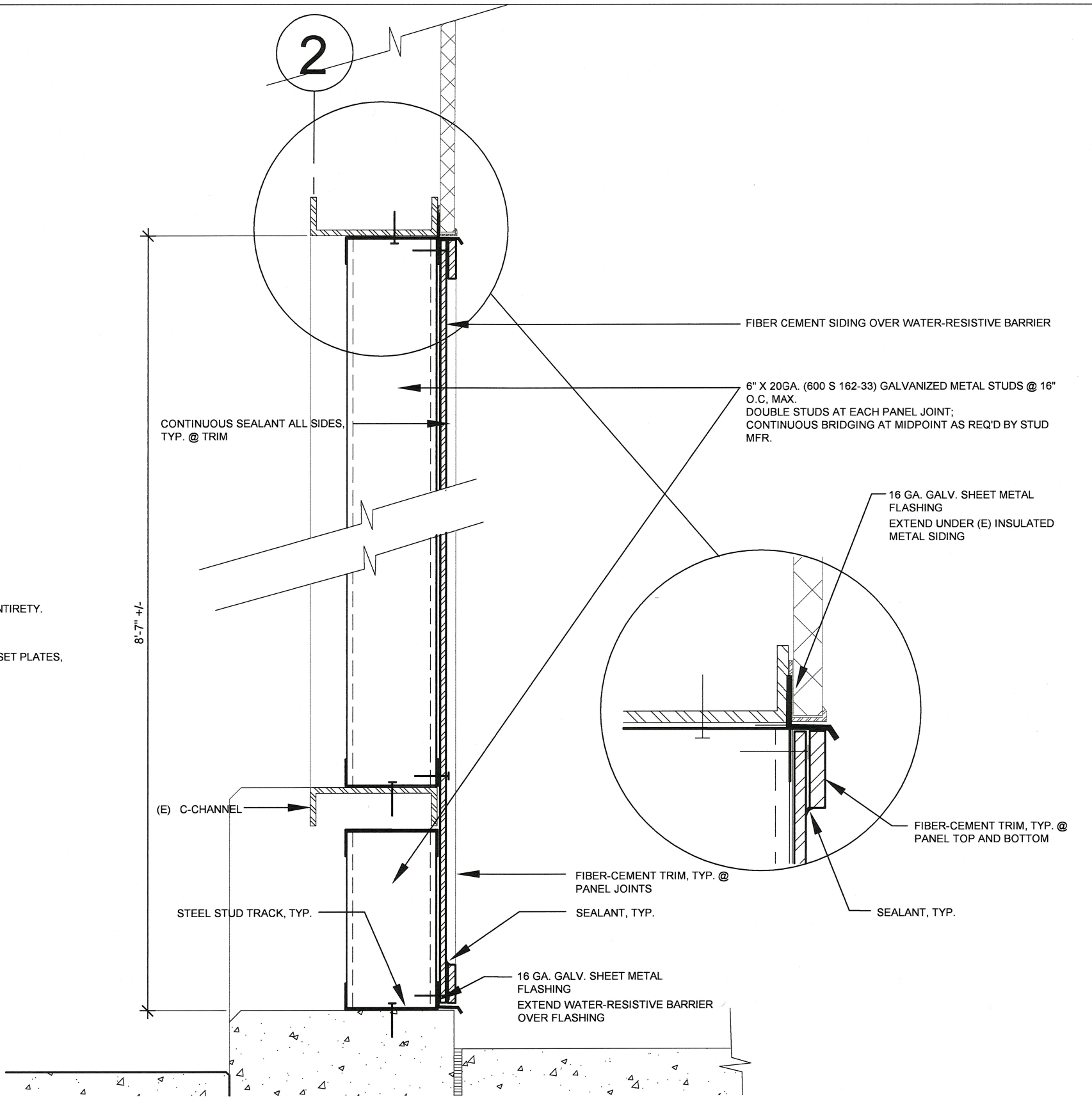


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PLT DATE	BOARD APPROVAL DATE

<b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT ELEVATION AND SECTION</b>			SHEET OF 33 DRAWING NO. <b>A-4.0</b> REVISION
BAP NO.	CONTRACT NO. C19010	FILE LOCATION	



**A SECTION - DEMOLITION**  
SCALE: 1 1/2" = 1'-0"



**B SECTION - (N) WORK**  
SCALE: 3" = 1'-0"

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1		ISSUED FOR BID

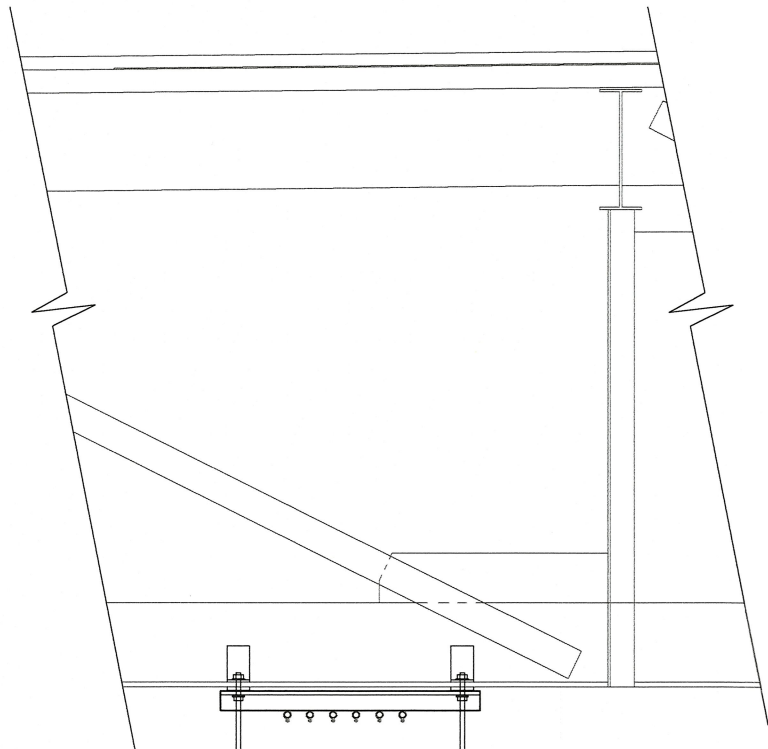


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PLT DATE	BOARD APPROVAL DATE

<b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT DETAILS</b>			SHEET OF 33 DRAWING NO. <b>A-4.1</b> REVISION
SAP NO.	CONTRACT NO. C19010	FILE LOCATION	



(E) CONDUITS, UNISTRUT AND HANGER ROD SUPPORTS TO REMAIN

REMOVE 3000A BUSWAY AND SUPPORTS; SEE ELEC.

REMOVE AND RELOCATE CONDUITS AND POWER CONDUCTORS FOR (E) EQUIPMENT TO REMAIN. REINSTALL ON SAME UNISTRUT CONDUIT SUPPORT SYSTEM TO REMAIN. \*

REMOVE AND RELOCATE EMERGENCY LIGHTING FIXTURE. REINSTALL ON SAME UNISTRUT CONDUIT SUPPORT SYSTEM TO REMAIN. \*

FIELD VERIFY AND REMOVE GENERATOR CONTROL PANEL CONDUCTORS, CONDUIT AND FITTINGS; SEE ELEC.

\* PROVIDE (N) CONDUIT AND POWER CONDUCTORS AS NECESSARY, MATCHING (E) SIZE. PROVIDE ADDITIONAL JBOXES FOR SPLICING (N) POWER CONDUCTORS TO THE (E) POWER CONDUCTORS. REMOVE ABANDONED CONDUIT, UNISTRUT AND JBOXES.

**A** **BUSWAY REMOVAL**  
SCALE: 1 1/2" = 1'-0"

NO.	DATE	REVISIONS
1		ISSUED FOR BID



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PLD DATE	BOARD APPROVAL DATE

<b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT DETAILS</b>		
SAP NO.	CONTRACT NO. C19010	FILE LOCATION

SHEET	7
OF 33	
DRAWING NO.	A-4.2
REVISION	



# PROJECT DATA

- PLANS AND CALCULATIONS FOR THE STRUCTURAL DESIGN WERE BASED UPON:
  - THE 2016 CALIFORNIA BUILDING CODE.
  - GEOTECHNICAL REPORT BY PARIKH CONSULTANTS, INC DATED JANUARY 21, 2010
- DESIGN LOADS ARE AS FOLLOWS:
 

VERTICAL	
FLOOR DEAD LOAD	SELF WEIGHT
FLOOR LIVE LOAD	100 PSF AND REDUCED PER CODE
FLOOR EQUIPMENT LOAD	ACTUAL OPERATING WEIGHT

# GENERAL NOTES

### MATERIAL PROPERTIES

CONCRETE  $f'c = 3,000$  PSI  
 REINFORCING STEEL  $Fy = 60$  KSI  
 STRUCTURAL STEEL (PIPE)  $Fy = 35$  KSI

### STRUCTURAL OBSERVATION, BY VTA

VTA WILL PERFORM STRUCTURAL OBSERVATION AS DEFINED IN SECTION 1702 OF THE CALIFORNIA BUILDING CODE (CBC). OBSERVED DEFICIENCIES WILL BE REPORTED IN WRITING TO THE CONTRACTOR. VTA WILL SUBMIT TO THE CONTRACTOR A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFY ANY REPORTED DEFICIENCIES WHICH, TO THE BEST OF VTA KNOWLEDGE, HAVE NOT BEEN RESOLVED. THE CBC REQUIRES THE FOLLOWING STAGES OF CONSTRUCTION BE OBSERVED. STRUCTURE SHALL REMAIN EXPOSED AND ACCESSIBLE UNTIL VTA HAS REVIEWED THEM FOR CORRECTNESS AND QUALITY OF WORKMANSHIP.

### CONCRETE:

- AFTER PLACEMENT OF EPOXY
- AFTER PLACEMENT OF FOOTING REINFORCEMENT

OTHER ITEMS NOT LISTED ABOVE MAY BE DETERMINED BY VTA DURING CONSTRUCTION AS REQUIRING STRUCTURAL OBSERVATION.

**NOTES:** THE CONTRACTOR SHALL NOTIFY VTA AT LEAST 48 HOURS PRIOR TO COVERING UP ABOVE ITEMS OF CONSTRUCTION.

# SPECIAL INSPECTION

### STRUCTURAL SPECIAL INSPECTION AND TESTING GENERAL

CONTRACTOR SHALL HIRE AND PAY FOR ALL SPECIAL INSPECTION AND TESTING SERVICES. THESE PROVISIONS SHALL GOVERN THE QUALITY, WORKMANSHIP, AND REQUIREMENTS FOR WORK COVERED. MATERIALS OF CONSTRUCTION AND TESTS SHALL CONFORM TO THE APPLICABLE STANDARDS LISTED. THE CONTRACTOR SHALL PROVIDE THE SPECIAL INSPECTOR WITH THE USE OF A LIFT OR OTHER EQUIPMENT AS REQUIRED TO ALLOW ACCESS TO THE WORK THAT REQUIRES INSPECTION. THE CONTRACTOR SHALL PROVIDE THE SPECIAL INSPECTOR ACCESS TO THE APPROVED PLANS AND SPECIFICATIONS AND RETAIN SPECIAL INSPECTION RECORDS AT THE JOB-SITE.

### DEFINITIONS

CONTINUOUS SPECIAL INSPECTION: THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.  
 PERIODIC SPECIAL INSPECTION: THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK.

### REFERENCE STANDARDS (EDITIONS ADOPTED BY CURRENT GOVERNING CALIFORNIA BUILDING CODE)

- CBC - CALIFORNIA BUILDING CODE 2016
- ACI 318 - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY; AMERICAN CONCRETE INSTITUTE
- ASTM - ASTM INTERNATIONAL

### REPORT REQUIREMENTS

SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS, AND SHALL FURNISH INSPECTION REPORTS TO VTA. VTA REPORTS SHALL INDICATE THAT THE WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF VTA. A FINAL REPORT DOCUMENTING THE REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON PRIOR TO THE START OF THE WORK.

### POST-INSTALLED ANCHORS

#### \* ADHESIVE ANCHORS IN CONCRETE

- PERIODICALLY INSPECT ANCHOR TYPE, DIAMETER, LENGTH AND CLEANLINESS
- PERIODICALLY INSPECT ADHESIVE PRODUCT NAME AND EXPIRATION
- PERIODICALLY INSPECT HOLE LOCATION, DIAMETER, DEPTH AND CLEANLINESS
- PERIODICALLY INSPECT ANCHOR EMBEDMENT, SPACING AND EDGE DISTANCE
- PERIODICALLY INSPECT ADHERENCE TO MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS
- CONTINUOUSLY INSPECT SUBSTRATE TEMPERATURE AT TIME OF INSTALLATION
- PERIODICALLY INSPECT ADHESIVE AND ANCHOR INSTALLATION PER ICC/IAPMO EVALUATION REPORT

### NONSHRINK/EXPANSIVE GROUT

- CONFIRM MATERIALS COMPLY TO SPECIFICATIONS
- CONTINUOUSLY INSPECT INSTALLATION
- FABRICATE TESTING SAMPLES
- PERFORM COMPRESSION TESTING

# ABBREVIATIONS

⊙	AT	(E)	EXISTING	RAD OR R	RADIUS
∅	DIAMETER	EA	EACH	REINF	REINFORCED, REINFORCING
#	NUMBER	EL	ELEVATION	REQ'D	REQUIRED
±	PLUS OR MINUS	EQ	EQUAL	REV	REVISION
AB	ANCHOR BOLT	EW	EACH WAY	S.A.D.	SEE ARCH. DRAWINGS
APPROX	APPROXIMATE(LY)	FIN	FINISH(ED)	S.E.D.	SEE ELECTRICAL DRAWINGS
ARCH.	ARCHITECT(URAL)	FND	FOUNDATION	SHT	SHEET
		FTG	FOOTING	SIM	SIMILAR
BLDG	BUILDING			SPEC(S)	SPECIFICATION(S)
BM	BEAM	JT	JOINT	SQ	SQUARE
BOT	BOTTOM	LL	LIVE LOAD	STD	STANDARD
		LW	LIGHT WEIGHT	STL	STEEL
⏟	CENTER LINE	STRUCT	STRUCTURAL		
CBC	CALIFORNIA BLDG CODE			T&B	TOP & BOTTOM
CLG	CEILING	MAX	MAXIMUM	T.O.	TOP OF
CMU	CONCRETE MASONRY UNIT	MIN	MINIMUM	TOS	TOP OF SLAB OR STEEL
COL	COLUMN	MISC	MISCELLANEOUS	TRANS	TRANSVERSE
CONC	CONCRETE			TYP	TYPICAL
CONN	CONNECTION	(N)	NEW		
CONST	CONSTRUCTION	No.	NUMBER	UON	UNLESS OTHERWISE NOTED
CONT	CONTINUOUS	NOM	NOMINAL		
		NTS	NOT TO SCALE		
DBL	DOUBLE			VERT	VERTICAL
DIAG	DIAGONAL	OC	ON CENTER	VIF	VERIFY IN FIELD
DWG	DRAWING				
		P	METAL PLATE	W/	WITH
		PSF	POUNDS PER SQUARE FOOT	WT	WEIGHT
		PSI	POUNDS PER SQUARE INCH		

# STRUCTURAL DRAWING INDEX

S0.0	GENERAL NOTES AND SPECIAL INSPECTION
S1.0	GROUND FLOOR PLAN - BUILDING F
S1.1	GENERATOR PAD LAYOUT
S2.0	DETAILS 1 OF 2
S2.1	DETAILS 2 OF 2

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NO.	DATE	REVISIONS
1		ISSUED FOR BID



**SUBMITTED**  
**BIGGS CARDOSA ASSOCIATES INC**  
 STRUCTURAL ENGINEERS

885 The Alameda  
 San Jose, California 95126  
 408-296-5515

**DESIGNED** G.J. TOLAN  
**CHECKED** D.B. DEVLIN  
**DRAWN** R.L. QUETULIO  
**CADD FILE NAME** 2018113500



APPROVED	
<b>CADD FILE DATE</b> JUNE 4, 2019	<b>SCALE</b> AS NOTED
<b>PLOT DATE</b> JUNE 4, 2019	<b>BOARD APPROVAL DATE</b>

**CERONE DIVISION  
 EMERGENCY GENERATOR  
 REPLACEMENT**

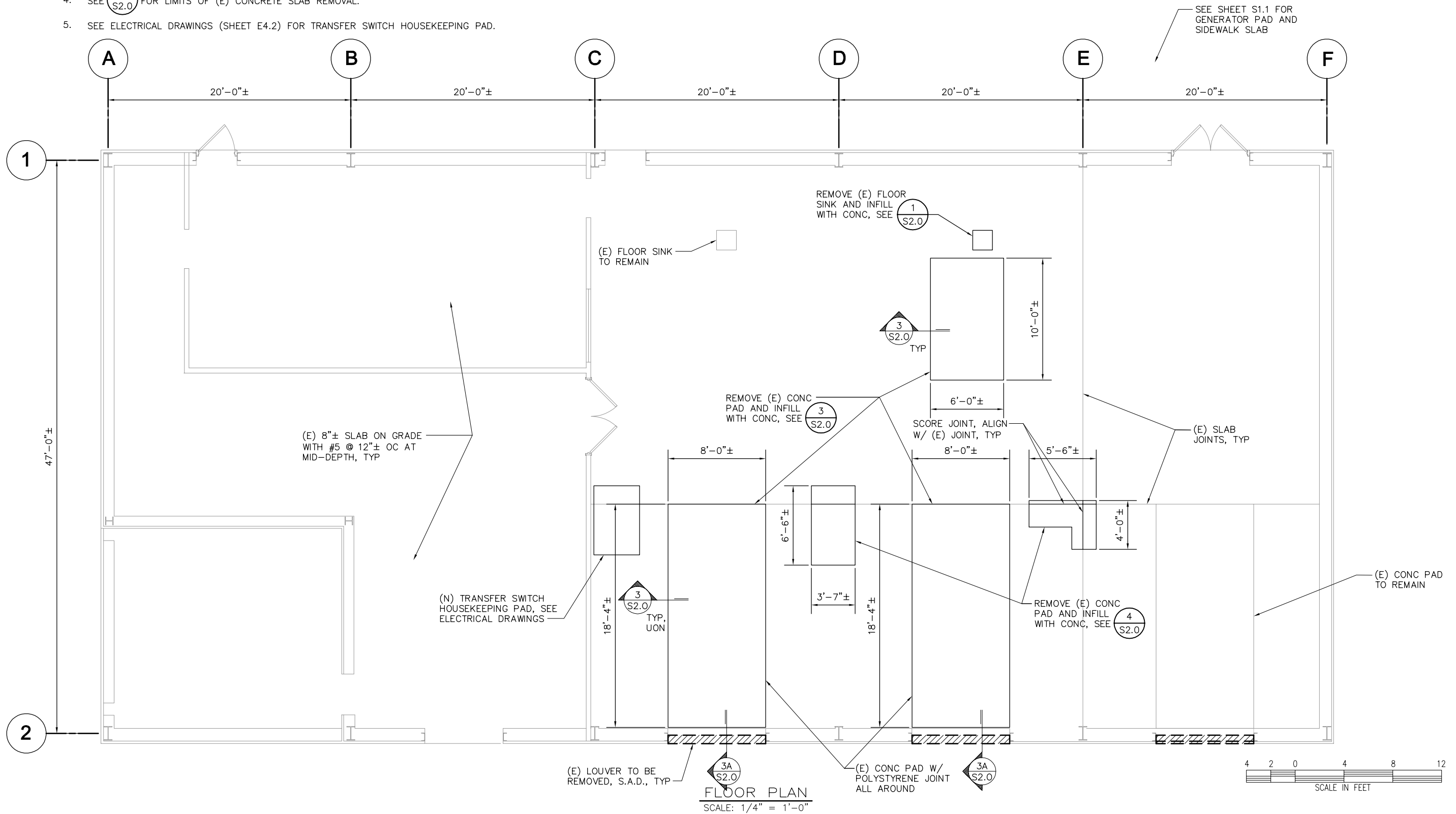
**GENERAL NOTES AND SPECIAL INSPECTION**

<b>SHEET</b> 8 OF 33 DRAWING NO. S0.0	<b>REVISION</b> A
<b>SAP NO.</b>	<b>CONTRACT NO.</b> C19010
<b>FILE LOCATION</b> W:\2018\2018113	

2018113 (2018113500)

**NOTES:**

- FOR GENERATOR PAD AND SIDEWALK SLAB, SEE SHEET S1.1.
- SEE ARCHITECTURAL DRAWINGS FOR ALL EQUIPMENT LAYOUT, DEMOLITION PLAN, AND ALL DIMENSIONS NOT SHOWN.
- MATCH SLOPES OF INFILL SLABS WITH (E) FLOOR SLAB.
- SEE  $\frac{6}{S2.0}$  FOR LIMITS OF (E) CONCRETE SLAB REMOVAL.
- SEE ELECTRICAL DRAWINGS (SHEET E4.2) FOR TRANSFER SWITCH HOUSEKEEPING PAD.



FLOOR PLAN  
SCALE: 1/4" = 1'-0"

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NO.	DATE	REVISIONS
1		ISSUED FOR BID



SUBMITTED <b>BIGGS CARDOSA ASSOCIATES INC</b> STRUCTURAL ENGINEERS 865 The Alameda San Jose, California 95126 408-296-5515	
DESIGNED	G.J. TOLAN
CHECKED	D.B. DEVLIN
DRAWN	R.L. QUETULIO
CADD FILE NAME 2018113S10	



APPROVED	
CADD FILE DATE	JUNE 4, 2019
PLOT DATE	JUNE 4, 2019
SCALE	AS NOTED
BOARD APPROVAL DATE	

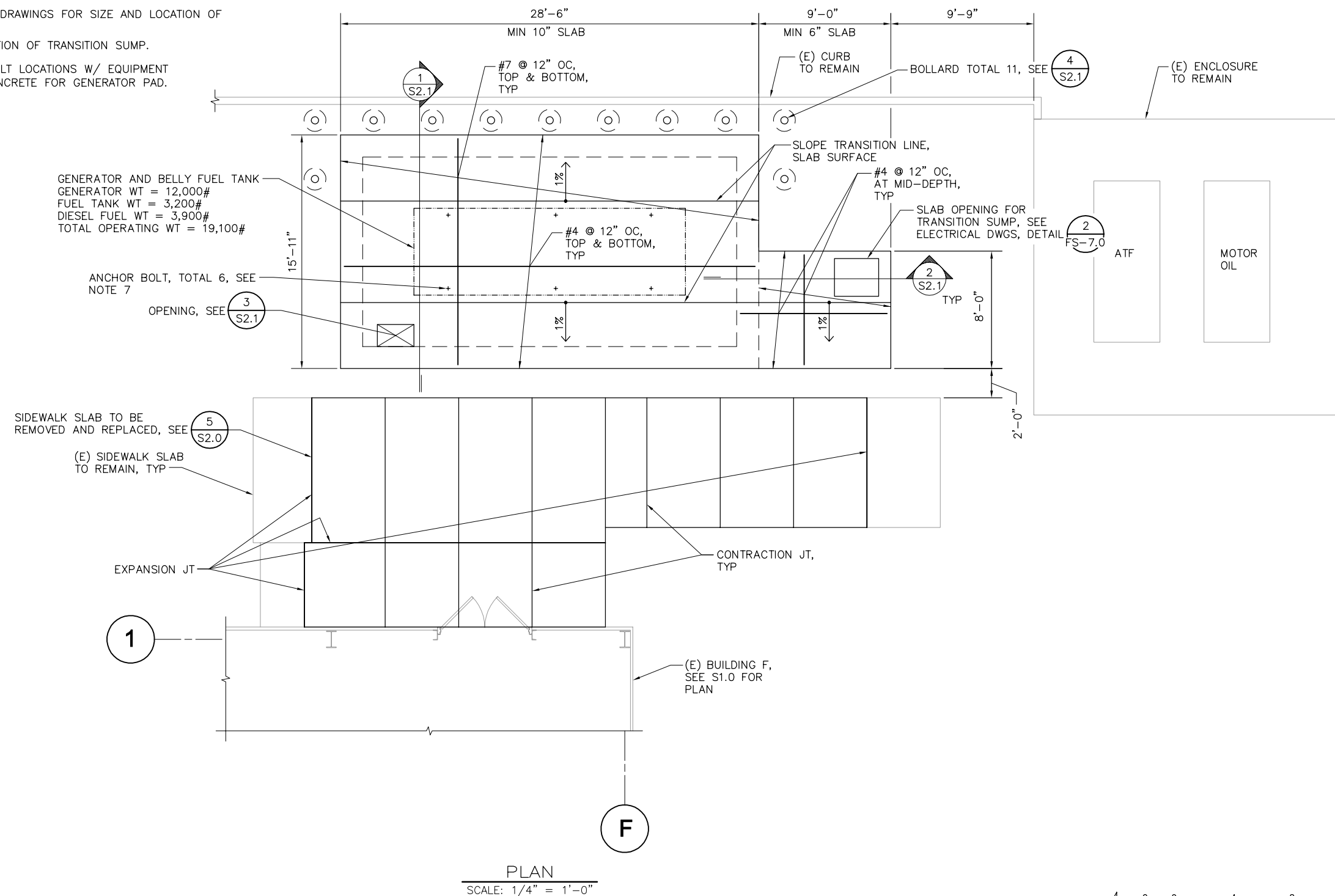
<b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT</b>		
<b>GROUND FLOOR PLAN - BUILDING F</b>		
SAP NO.	CONTRACT NO. C19010	FILE LOCATION W:\2018\201813

SHEET	9
OF 33	
DRAWING NO.	S1.0
REVISION	A

2018113 2018113S10

**NOTES:**

- SEE ARCHITECTURAL DRAWINGS FOR DEMOLITION PLAN, ALL EQUIPMENT LAYOUT, ALL DIMENSIONS NOT SHOWN.
- SEE ARCHITECTURAL DRAWINGS FOR BOLLARD LAYOUT.
- SEE ARCHITECTURAL DRAWINGS FOR TOP OF CONC SLAB ELEVATIONS AND LOCATION OF SIDEWALK SLAB JOINTS.
- SEE SHEET R-1.1 FOR EXISTING GRADE ELEVATIONS.
- SEE ARCHITECTURAL DRAWINGS AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF SLAB OPENINGS.
- SEE ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF TRANSITION SUMP.
- COORDINATE GENERATOR/FUEL TANK ANCHOR BOLT LOCATIONS W/ EQUIPMENT MANUFACTURER/SUPPLIER BEFORE PLACING CONCRETE FOR GENERATOR PAD.



PLAN  
SCALE: 1/4" = 1'-0"



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NO.	DATE	REVISIONS
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SUBMITTED <b>BIGGS CARDOSA ASSOCIATES INC</b> STRUCTURAL ENGINEERS 865 The Alameda San Jose, California 95126 408-296-5515		
DESIGNED G.J. TOLAN	CHECKED D.B. DEVLIN	
DRAWN R.L. QUETULIO	CADD FILE NAME 2018113S10	

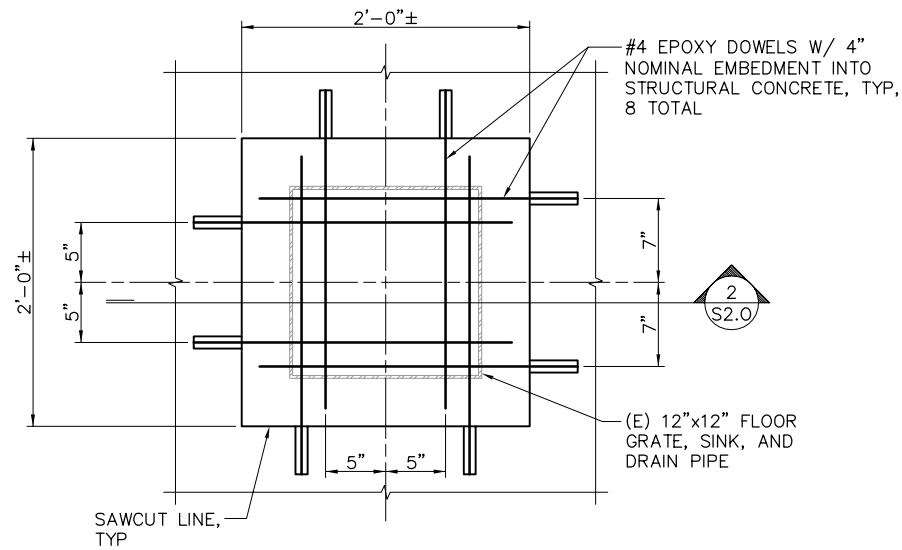


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CADD FILE DATE JUNE 4, 2019	SCALE AS NOTED
PLOT DATE JUNE 4, 2019	BOARD APPROVAL DATE

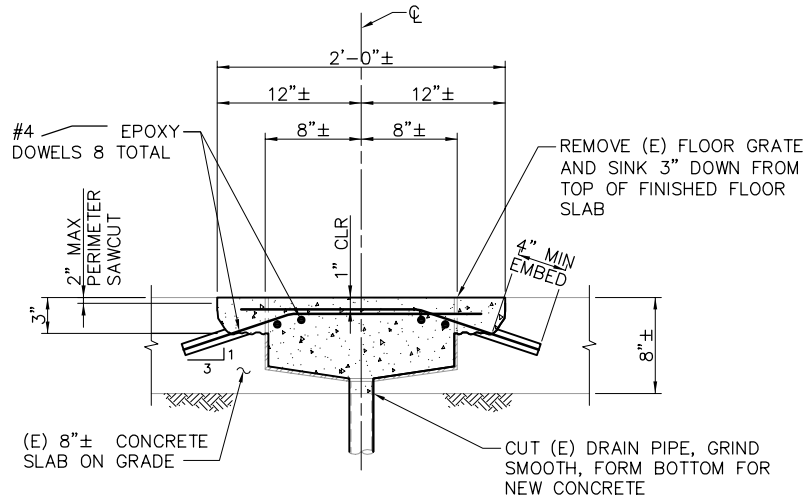
<b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT GENERATOR PAD LAYOUT</b>		
S&P NO.	CONTRACT NO. C19010	FILE LOCATION W:\2018\2018113

SHEET	10
OF 33	
DRAWING NO.	S1.1
REVISION	A

2018113 2018113S11

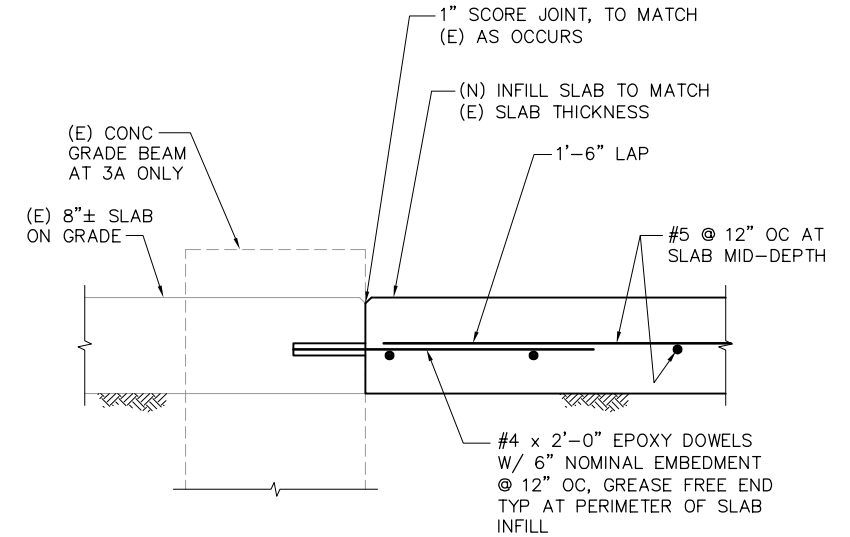


1 PLAN AT EXISTING FLOOR SINK  
1 1/2" = 1'-0"



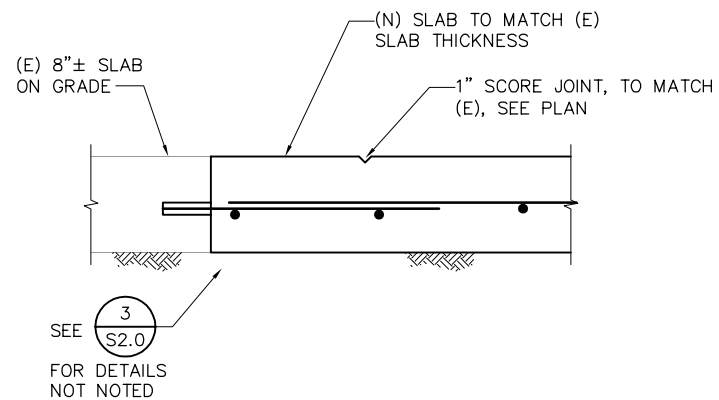
- NOTES:
1. MAXIMUM PERIMETER SAWCUT = 2" FROM TOP OF FINISHED FLOOR SLAB.
  2. CHIP CONCRETE APPROXIMATELY 3" DOWN FROM TOP OF FINISHED FLOOR SLAB.
  3. DO NOT CUT OR DAMAGE EXISTING SLAB REBAR.

2 SECTION AT EXISTING FLOOR SINK  
1 1/2" = 1'-0"



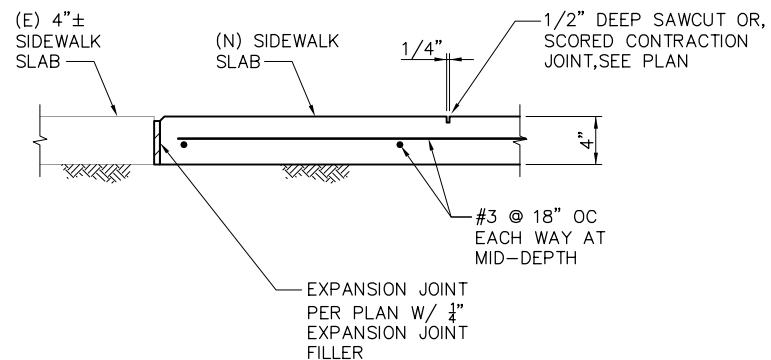
- NOTES:
1. REMOVE AND DISCARD (E) 1/2" POLYSTYRENE EXPANSION JOINT FILLER AT (E) JOINT WHERE OCCURS.
  2. SEE 6 S2.0 FOR LIMITS OF (E) CONCRETE REMOVAL.

3A SECTION AT SLAB INFILL  
1 1/2" = 1'-0"

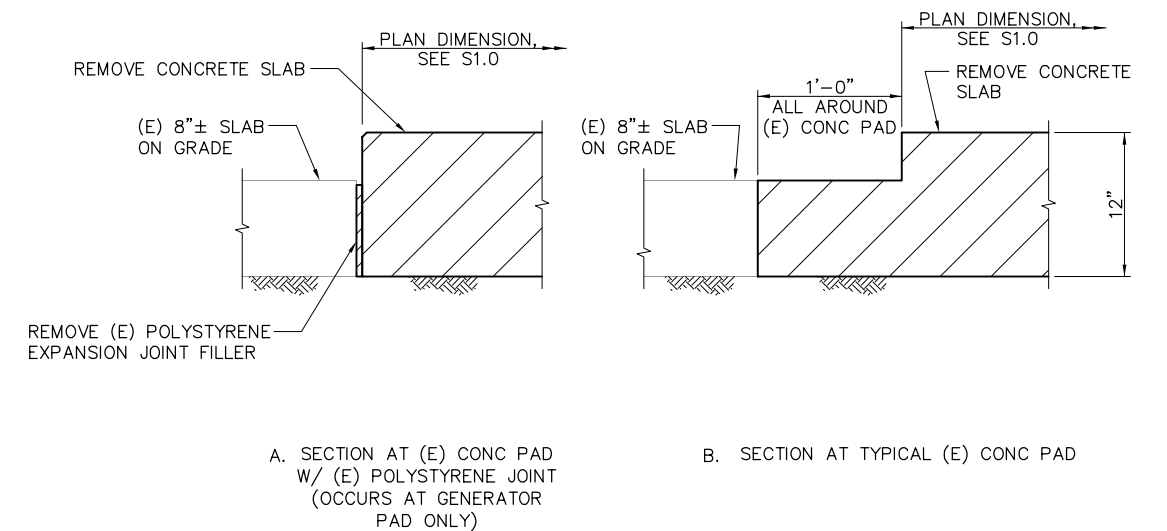


- NOTES:
- SEE 6 S2.0 FOR LIMITS OF (E) CONCRETE REMOVAL.

4 SECTION AT SLAB INFILL  
1 1/2" = 1'-0"



5 SIDEWALK SLAB  
1 1/2" = 1'-0"



6 LIMITS OF (E) CONCRETE SLAB REMOVAL  
1 1/2" = 1'-0"

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NO.	DATE	REVISIONS
1		ISSUED FOR BID



SUBMITTED <b>BIGGS CARDOSA ASSOCIATES INC</b> STRUCTURAL ENGINEERS	
865 The Alameda San Jose, California 95126 408-296-5515	
DESIGNED G.J. TOLAN	CHECKED D.B. DEVLIN
DRAWN R.L. QUETULIO	CADD FILE NAME 2018113S20

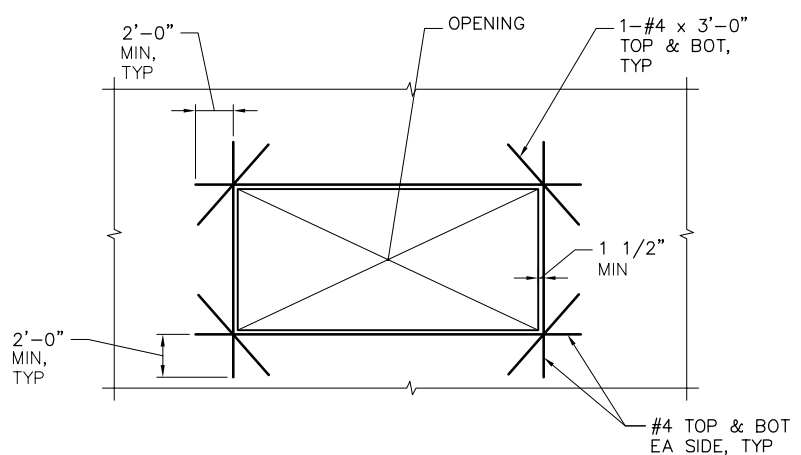
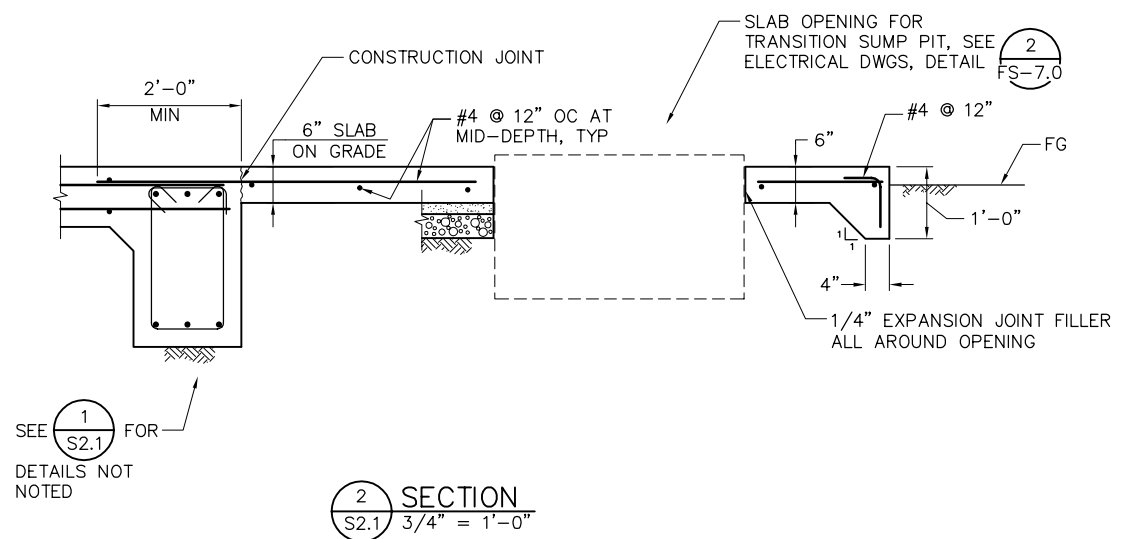
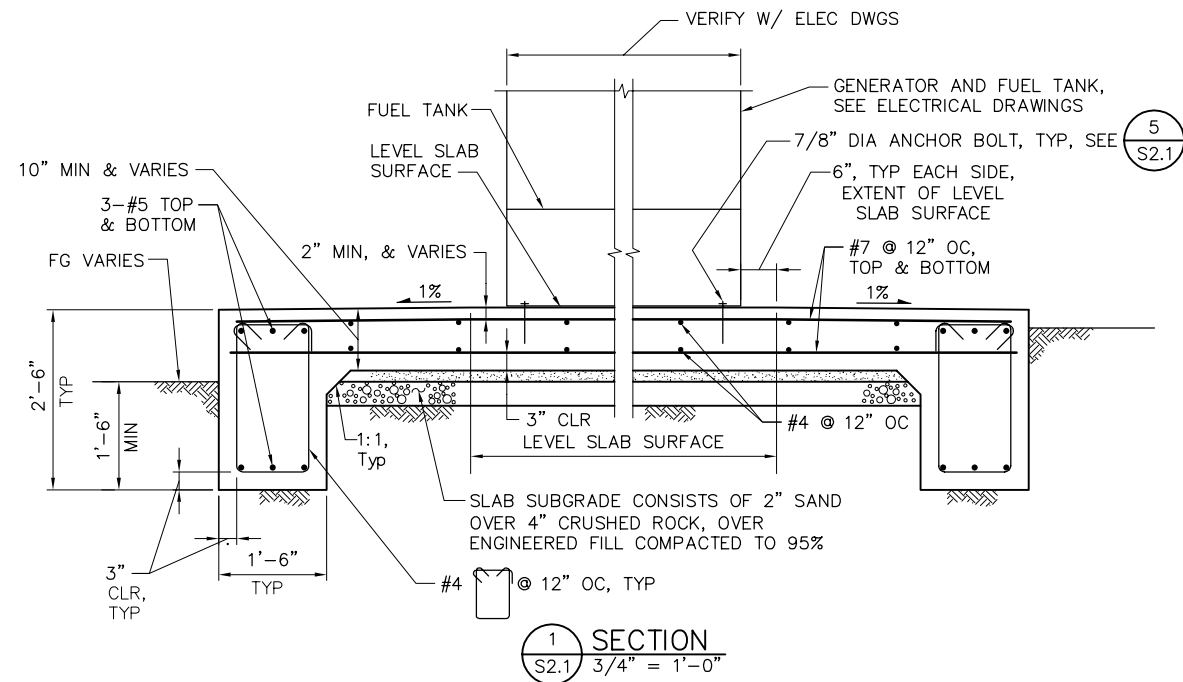


APPROVED	
CADD FILE DATE JUNE 4, 2019	SCALE AS NOTED
PLOT DATE JUNE 4, 2019	BOARD APPROVAL DATE

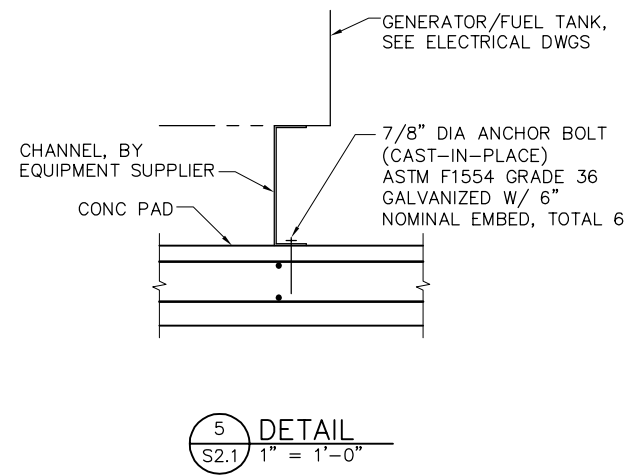
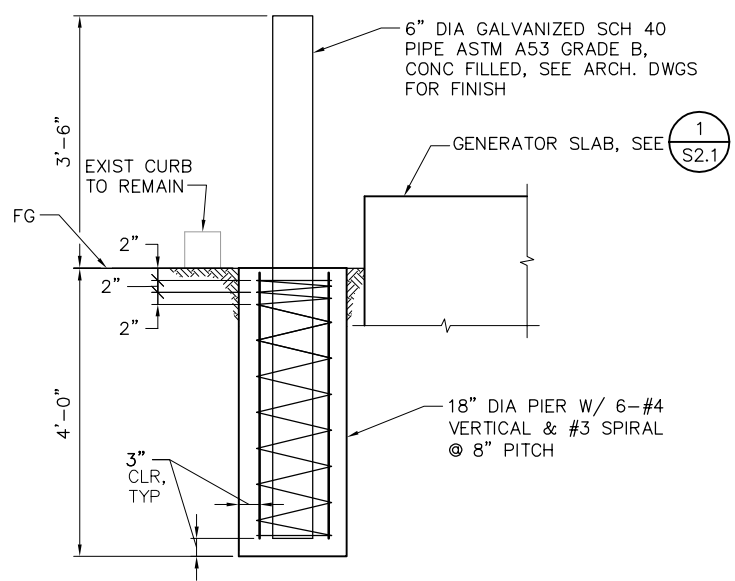
CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT DETAILS 1 OF 2		
SAP NO.	CONTRACT NO. C19010	FILE LOCATION W:\2018\2018113

SHEET OF 33 DRAWING NO. S2.0 REVISION A	11
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2018113



- NOTES:
1. THESE BARS ARE IN ADDITION TO REBAR SHOWN ON PLANS.
  2. DIAGONAL BARS MAY BE OMITTED FOR OPENINGS LESS THAN 2'-0" x 2'-0".



3 TRIM BARS FOR OPENINGS IN SLAB  
S2.1 NO SCALE

4 DETAIL  
S2.1 3/4" = 1'-0"

5 DETAIL  
S2.1 1" = 1'-0"

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NO.	DATE	REVISIONS
1		ISSUED FOR BID



SUBMITTED <b>BIGGS CARDOSA ASSOCIATES INC</b> STRUCTURAL ENGINEERS 865 The Alameda San Jose, California 95126 408-296-5515		
DESIGNED G.J. TOLAN	CHECKED D.B. DEVLIN	
DRAWN R.L. QUETULIO	CADD FILE NAME 2018113S21	



APPROVED	
CADD FILE DATE JUNE 4, 2019	SCALE AS NOTED
PLOT DATE JUNE 4, 2019	BOARD APPROVAL DATE

<b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT DETAILS 2 OF 2</b>		
SAP NO.	CONTRACT NO. C19010	FILE LOCATION W:\2018\2018113

SHEET OF 33 DRAWING NO. REVISION	12 S2.1 A
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2018113

**GENERAL NOTES**

1. AT ALL TIMES THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITION OF JOB SITE, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. VTA'S JOB SITE REVIEW IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTORS SAFETY MEASURES.
2. THE CONTRACTOR SHALL MAKE AN EXAMINATION OF THE SITE AND COMPARE THE SITE WITH THE DRAWINGS AND SPECIFICATIONS AND SATISFY HIMSELF AS TO CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED. THE CONTRACTOR SHALL ASCERTAIN AND CHECK THE LOCATIONS OF ANY EXISTING STRUCTURES OR EQUIPMENT WHICH MAY AFFECT WORK THAT HAS TO BE PERFORMED, NO ALLOWANCE SHALL SUBSEQUENTLY BE MADE IN CONTRACTOR'S BEHALF FOR ANY EXPENSE TO WHICH THE CONTRACTOR MAY BE PUT DUE TO FAILURE OR NEGLECT BY CONTRACTOR TO MAKE SUCH EXAMINATION.
3. ALL WORK SHALL BE COORDINATED WITH VTA TO MAINTAIN CONTINUITY OF SERVICE AND MAXIMUM UTILIZATION OF THE VTA.
4. THE CURRENT EDITION OF ALL NFPA, UBC, UFC, ANSI, OSHA, ASTM, NEMA, AND OTHER NATIONALLY PUBLISHED CODES OR STANDARDS SHALL APPLY TO THIS WORK WHETHER ADOPTED BY LOCAL AGENCIES OR NOT. THE MOST STRINGENT CODES SHALL APPLY.
5. NOTHING IN THE DRAWINGS OR SPECIFICATIONS IS INTENDED TO ALLOW A VIOLATION OF ELECTRICAL WORKING SPACE AROUND ELECTRICAL EQUIPMENT. ANY DEVIATION FROM THIS REQUIREMENT SHALL BE APPROVED IN WRITING, BY THE VTA. THE CONTRACTOR SHALL RELOCATE ANY EQUIPMENT IN VIOLATION OF THE ELECTRICAL CODE AT HIS OWN COST.
6. IDENTIFY EACH CONDUCTOR BY SHRINK-ON INDELIBLY MARKED WIRE TAGS, AND EACH ELECTRICAL ITEM BY BLACK-WHITE-BLACK, ENGRAVED, SCREW-ON PLASTIC NAMEPLATE, LEGEND PER DRAWING.
7. CONTRACTOR SHALL VERIFY THE CONDITION OF ANY AFFECTED EXISTING PANEL, DISCONNECT AND REMOVE ALL EXISTING UNUSED BRANCH CIRCUIT WIRING WHERE APPLICABLE. PANELBOARD SHALL BE CLEANED (DUST-FREE) AND RESTORED TO AS-NEW CONDITION PRIOR TO INSTALLATION OF NEW WORK. PROVIDE NECESSARY HARDWARE AND ACCESSORIES AS REQUIRED. COORDINATE WITH VTA PRIOR TO CUT OVER WORK FOR APPROVED/SCHEDULED OCCURENCES.
8. REFER TO THE DRAWINGS FOR LOCATIONS AND SPACE REQUIREMENTS OF ELECTRICAL EQUIPMENT. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH OTHER TRADES.
9. POWER FEEDERS MAY NOT BE SHOWN ON THE DRAWINGS. REFER TO THE SINGLE LINE DIAGRAM FOR FEEDER INFORMATION.
10. NOT USED.
11. CONTRACTOR SHALL PROVIDE COMPLETE INSTALLATION IN ACCORDANCE WITH ESTABLISHED TECHNIQUES AND ACCEPTED PRACTICES AND ALL LOCAL, STATE, AND NATIONAL CODES HAVING JURISDICTION.
12. ELECTRICAL REQUIREMENTS SUCH AS CONDUIT ROUTING AND LOCATIONS OF ELECTRICAL DEVICES (RECEPTACLES, SWITCHES, FLOOR OUTLETS, CONDUIT STUBS, ETC.) SHOWN ON THESE PLANS ARE DIAGRAMMATIC AND SUBJECT TO VERIFICATION BY ELECTRICAL CONTRACTOR FOR THE INTERFACING OF THE ELECTRICAL WORK WITH THE INSTALLATION. CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS TO CLEAR THE OTHER FACILITIES.
13. CONTRACTOR SHALL PROVIDE REQUIRED TEMPORARY POWER DURING CONSTRUCTION.
14. REFER TO ARCHITECTURAL DRAWINGS IN ORDER TO COORDINATE SCHEDULED LOCATIONS OF ELECTRICAL DEVICES.
15. ELECTRICAL EQUIPMENT SHOWN OR SPECIFIED FOR THIS PROJECT HAS BEEN GENERALLY SELECTED BASED ON DIMENSIONS TO FIT THE SPACE. THE CONTRACTOR SHALL FIELD VERIFY EQUIPMENT DIMENSIONS AND/OR ANY CLEARANCES PRIOR TO ORDERING THE EQUIPMENT.
16. MANUFACTURER'S RECOMMENDATIONS FOR CONDUCTOR SIZING, CIRCUIT BREAKER OR FUSE RATING OF ELECTRICALLY OPERATED EQUIPMENT MAY DIFFER FROM THOSE INDICATED ON DRAWINGS. CONTRACTOR SHALL CONFIRM RATINGS WITH VTA PRIOR TO ORDERING AN EQUIPMENT.
17. CONTRACTOR SHALL REVIEW THE 'FE' AND 'FS' DRAWINGS, AND CONNECT ELECTRICALLY OPERATED EQUIPMENT UNLESS OTHERWISE NOTED. COORDINATE THE LOCATION AND ELECTRICAL CONNECTION REQUIREMENTS PRIOR TO ORDERING OF ELECTRICAL AND MECHANICAL EQUIPMENT.
18. CONTRACTOR SHALL REVIEW THE CONTRACT DOCUMENTS IN ITS ENTIRETY, INCLUDING ALL TECHNICAL SPECIFICATION SECTION, AND PROVIDE CONNECTIONS TO ELECTRICALLY OPERATED EQUIPMENT AS MAY BE SPECIFIED THEREIN.
19. ALL CONDUIT ONLY (CO) NOTED SHALL HAVE YELLOW POLYPROPYLENE PULL ROPES, OR, WIRES, INSTALLED, TENSILE STRENGTH MINIMUM OF 200 FT/LBS.
20. COORDINATE ALL UG PULLBOX LOCATIONS SHOWN ON OTHER DRAWINGS. REPORT AND RESOLVE ANY DISCREPANCIES PRIOR TO START OF WORK.
21. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE LISTED BY

22. ELECTRICAL EQUIPMENT AND FEEDERS SHALL BE SUPPORTED AND/OR ANCHORED IN ACCORDANCE WITH CBC SEISMIC ZONE REQUIREMENTS. DO NOT SUPPORT CONDUITS FROM MECHANICAL DUCTS, PLUMBING, PIPING, OR EQUIPMENT OF ANY KIND.
23. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, FEES AND EQUIPMENT SPECIFIED. INDICATED OR IMPLIED IN THESE DOCUMENTS TO ACCOMPLISH THE CONSTRUCTION IN A PROFESSIONAL, WORKMANLIKE MANNER. ANY DISCREPANCIES BETWEEN THE CONSTRUCTION TASKS INDICATED AND LOCAL CODES AND/OR ORDINANCES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF VTA FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK AT ISSUE.
24. THE CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, MECHANICAL, STRUCTURAL, AND OTHER DRAWINGS AND DOCUMENTATION RELATED TO THE PROJECT FOR ADDITIONAL WORK TO BE PROVIDED.

25. ANY WORK INSTALLED INCORRECTLY, OR BEFORE APPROVAL HAS BEEN OFFICIALLY GRANTED FOR THOSE ITEMS AT ISSUE, SHALL BE CORRECTED BY THE CONTRACTOR AT NO CHARGE TO VTA.

26. ALL MATERIALS AND EQUIPMENT FURNISHED BY THE CONTRACTOR SHALL BE NEW AND COMPLETELY SERVICEABLE UNLESS OTHERWISE SPECIFIED.

27. CONTRACTOR SHALL COORDINATE ROUGH-IN AND FINAL CONNECTION REQUIREMENTS WITH VTA, EQUIPMENT SUPPLIERS, GENERAL CONTRACTOR AND OTHER BUILDING TRADES BEFORE PROCEEDING WITH ANY FURTHER RELATED WORK. INSTALLATIONS SHALL BE IN FULL ACCORDANCE WITH EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND REQUIRED CODES. CONFLICTS AND INTERFERENCES SHALL BE RESOLVED IMMEDIATELY, BEFORE ANY INSTALLATION BEGINS.

28. THE CONTRACTOR SHALL PROVIDE ANY AND ALL FUSES AND/OR OVERLOAD HEATER ELEMENTS REQUIRED FOR THIS CONTRACT INSTALLATION INCLUDING ANY FUSES BLOWN DURING INITIAL TESTING.

29. CONDUIT AND WIRE SCHEDULE FOR NEW EQUIPMENT ARE GENERALLY INDICATIVE. CONTRACTOR SHALL REFER TO MANUFACTURER AND SUPPLIER OF EQUIPMENT FOR DETAILED WIRING DIAGRAM AND VERIFY THE EXACT ROUTING AND CONDUCTOR SIZE.

30. THE CONTRACTOR SHALL REFER TO MANUFACTURER AND SUPPLIER OF ELECTRICAL CONTROL EQUIPMENT FOR EXACT WIRING INTERCONNECTION.

31. ALL CONDUCTORS SHALL BE COPPER, STRANDED #12 AWG MINIMUM, AND HAVE INSULATION TEMPERATURE RATING NOT LESS THAN 90deg C, UNLESS OTHERWISE NOTED.

32. IDENTIFICATION OF UNGROUNDED CONDUCTORS IS REQUIRED FOR MULTIWIRED CIRCUITS:

SYSTEM	480Y/277V	208Y/120V	240/120V
PHASE A	BROWN	BLACK	BLACK
PHASE B	ORANGE	RED	ORANGE
PHASE C	YELLOW	BLUE	BLUE
NEUTRAL	GRAY	WHITE	WHITE
GROUND	GREEN	GREEN	GREEN

33. USE WIRE IDENTIFICATION COLOR CODE PER SPECIFICATIONS BELOW.

COLOR	DESCRIPTION
LT. BLUE	INTRINSICALLY SAFE CIRCUITS
GREEN	EQUIPMENT GROUNDING CONDUCTOR
YELLOW	CONTROL CIRCUITS SUPPLIED FROM EXTERNAL POWER SOURCE, INTERLOCKS

34. ALL FEEDERS & BRANCH CIRCUITS SHALL HAVE SEPARATE GREEN INSULATED COPPER EQUIPMENT GROUNDING CONDUCTOR INSTALLED WITH PHASE AND GROUNDED CONDUCTORS. CONDUIT SHALL NOT BE USED AS SOLE MEANS OF EQUIPMENT GROUNDING.

**STATE OF CALIFORNIA-TITLE 24 DISCLAIMER**

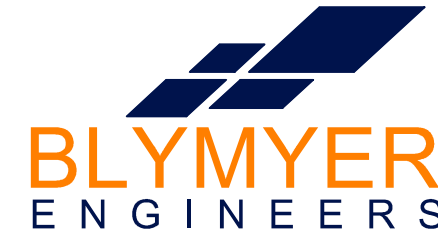
THIS PROJECT HAS NO QUALIFYING LIGHTING OR LIGHTING RELATED WORK AS DEFINED BY TITLE 24. THEREFORE, THERE IS NO SHEET FOR TITLE 24 DOCUMENTATION AND NO LIGHTING SHEETS ARE INCLUDED.

**ELECTRICAL SYMBOLS**

- EXPOSED CONDUIT OR CABLE
- - - CONDUIT (UNDERGROUND OR CONCEALED IN FLOOR, WALL OR CEILING)
- ⊕ JUNCTION BOX WITH COVER
- ⊞ PULL BOX WITH SCREW (HINGED) COVER
- ⊞ SPECIAL RECEPTACLE OUTLET. AMPERE, VOLTAGE, PHASE AND NEMA RATING AS NOTED ON THE DRAWINGS
- ⊞ 20A-120V DUPLEX RECEPTACLE OUTLET, NEMA 5-20R SPECIFICATION GRADE. WALL MOUNTED
- ⊞ 20A-120V DUPLEX RECEPTACLE OUTLET, NEMA 5-20R SPECIFICATION GRADE. MOUNTED ABOVE COUNTER SPLASH
- ⊞ 20A-120V CEILING MOUNTED SINGLE TWIST-LOCK RECEPTACLE OUTLET, NEMA L5-20R SPECIFICATION GRADE
- ⊞ 20A-120V DUPLEX FLOOR RECEPTACLE OUTLET, NEMA 5-20R
- ⊞ 20A-120V TWO DUPLEX RECEPTACLE OUTLET IN ONE COVER PLATE. WALL MOUNTED, NEMA 5-20R
- WM SURFACE METAL RACEWAY
- ⊞ MOTOR CONNECTION
- ⊞ HEAVY-DUTY DISCONNECT SWITCH, MOUNTED +6'-6" MAXIMUM TO HANDLE
- ⊞ HEAVY-DUTY FUSED DISCONNECT SWITCH, MOUNTED +6'-6" MAXIMUM TO HANDLE
- ⊞ MECHANICAL PACKAGED EQUIPMENT WITH INTEGRAL STARTER AND CONTROL PANEL
- 208V PANEL BOARD
- SWITCHBOARD, DISTRIBUTION PANEL, MCC
- 480V PANEL BOARD
- T TRANSFORMER
- ⊞ CIRCUIT BREAKER, INSCRIBED NUMBER INDICATES IEEE DEVICE NUMBER
- CONDUIT SEAL
- EMERGENCY POWER OFF
- NON-FUSIBLE LOAD INTERRUPTER SWITCH, AIR INSULATED
- FUSIBLE LOAD INTERRUPTER SWITCH, AIR INSULATED
- CIRCUIT BREAKER, MOLDED CASE
- MOTOR CIRCUIT PROTECTOR
- CIRCUIT BREAKER WITH CURRENT LIMITING FUSES
- CIRCUIT BREAKER, DRAW-OUT TYPE
- GFCI MAIN CIRCUIT BREAKER W/ GFCI
- MOTOR OVERLOAD RELAY
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT
- BUS DUCT (SINGLE LINE ONLY)
- W/H WATT/HOUR REVENUE METER
- VAR/H VOLTAMPERES REACTIVE REVENUE METER
- NEUTRAL DISCONNECT LINK
- TRANSFORMER
- HIGH VOLTAGE CABLE TERMINATION
- ⊙ COPPERWELD GROUND ROD AND INSPECTION WELL
- ⊙ COPPERWELD GROUND ROD; 10' x 3/4" U.O.N.
- GROUND CONNECTION
- G BARE COPPER GROUND CABLE, ABOVEGROUND OR EXPOSED
- MC METAL CLAD CABLE
- FLEXIBLE RACEWAY
- XXXXX SHORT CIRCUIT AMPERES, RMS SYMMETRICAL 3-PHASE
- 52 ANSI/IEEE DEVICE NUMBER

**ABBREVIATIONS**

A, AMPS	AMPERES	MCC	MOTOR CONTROL CENTER
A/C	AIR CONDITIONER	MCB	MAIN CIRCUIT BREAKER
AC	ALTERNATING CURRENT	MCP	MOTOR CIRCUIT PROTECTOR
ACB	ALTERNATOR CIRCUIT BREAKER	MFR	MANUFACTURER
AF	AMPERE FRAME	MH	MANHOLE
AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
AFG	ABOVE FINISHED GRADE	MISC	MISCELLANEOUS
AHJ	AUTHORITY HAVING JURISDICTION	MLO	MAIN LUGS ONLY
AIC	AMPERE INTERRUPTING CURRENT	MOP	METHOD OF PROCEDURES
AL	ALUMINUM	MTD	MOUNTED
AS	AMPERE SWITCH	MSB	MAIN SWITCHBOARD
AT	AMPERES TRIP	MSG	MAIN SWITCHGEAR
ATS	AUTOMATIC TRANSFER SWITCH	MV	MEDIUM VOLTAGE
AWG	AMERICAN WIRE GAUGE	MVA	MEGA VOLT AMPERES
BC	BARE COPPER	(N)	NEW
BL	BUS LOAD	N	NEUTRAL
BLDG	BUILDING	NC	NORMALLY CLOSED
BMS	BUILDING MANAGEMENT SYSTEM	NIC	NOT IN CONTRACT
BN	BUS NORMAL	NL	NIGHT LIGHT
C	CONDUIT	NO	NORMALLY OPEN
CB	CIRCUIT BREAKER	NTS	NOT TO SCALE
CC	CENTER TO CENTER	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED OVERHEAD
CKT	CIRCUIT	OH	OVERHEAD
CLG	CEILING	PH, Ø	PHASE
CLR	CLEAR	PB	PUSHBUTTON
CO	CONDUIT ONLY WITH PULL ROPE	PDU	POWER DISTRIBUTION UNIT
CONC	CONCRETE	PNL	PANEL
CU	COPPER	POCC	POINT OF COMMON CONNECTION
DB	DIRECT BURIAL	PV	PHOTOVOLTAIC
DC	DIRECT CURRENT	PVC	POLYVINYL CHLORIDE
DIA	DIAMETER	(R)	RECONNECT EXISTING
DN	DOWN	(RE)	NEW LOCATION OF RELOCATED DEVICE
DP	DISTRIBUTION PANEL	(RL)	EXISTING TO BE RELOCATED
DW	DRAWING	SCA	SHORT CIRCUIT AVAILABLE
EM	EMERGENCY	SEC	SECONDARY
EMT	ELECTRICAL METALLIC TUBING	SPECS	SPECIFICATIONS
EPO	EMERGENCY POWER OFF	STD	STANDARD
EQ	EQUAL	STP	SHIELDED TWISTED PAIR
EQUIP	EQUIPMENT	SWBD	SWITCHBOARD
(E)	EXISTING	SYM	SYMMETRICAL
(ER)	EXISTING REMAIN	TBD	TO BE DETERMINED
(ERD)	REMOVE EXISTING	TD	TIME DELAY
FA	FIRE ALARM	TEL	TELEPHONE
FAFAP	FIRE ALARM CONTROL PANEL	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
FLA	FULL LOAD AMPERES	TYP	TYPICAL
(F)	FUTURE	UG	UNDERGROUND
GND	GROUND	UL	UNDERWRITERS LABORATORIES
GALV	GALVANIZED	UON	UNLESS OTHERWISE NOTED
GRS	GALVANIZED RIGID STEEL	UPB	UNDERGROUND PULLBOX
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UTP	UNSHIELDED TWISTED PAIR
HH	HANDHOLE	V	VOLTS
HOA	HAND-OFF-AUTO	VA	VOLT-AMPERES
HP	HORSEPOWER	VFD	VARIABLE FREQUENCY DRIVE
HV	HIGH VOLTAGE	VFI	VACUUM FUSED INTERRUPTER
HVAC	HEATING, VENTILATION, AIR CONDITIONING	VP	VAPORPROOF
HZ	HERTZ	W	WATTS, WIRE
IMC	INTERMEDIATE METAL CONDUIT	WH	WATER HEATER
ISC	INTERRUPTING SHORT CIRCUIT	WP	WEATHERPROOF
IG	ISOLATED GROUND	WT	WATERTIGHT
INST	INSTANTANEOUS	XFMR	TRANSFORMER
JB	JUNCTION BOX	XLPE	CROSS-LINKED POLYETHYLENE
KAIC	KILO AMPERES INTERRUPTION CAPACITY	XP	EXPLOSION PROOF
KCMIL	KILO CIRCULAR MILS		
KV	KILOVOLTS		
KVA	KILOVOLT-AMPERES KW KILO WATTS		
KWH	KILO WATT-HOURS		
LCP	LIGHTING CONTROL PANEL		
LTG	LIGHTING		
MAX	MAXIMUM		

SUBMITTED	
	
DESIGNED	CHECKED
RP	LM
DRAWN	CADD FILE NAME
RP	



APPROVED	
CADD FILE DATE	SCALE NONE
PLOT DATE	BOARD APPROVAL DATE
	-

<b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT ELEC. NOTES &amp; SYMBOLS</b>		
SAP NO.	CONTRACT NO. C19010	FILE LOCATION

SHEET 13
OF 33
DRAWING NO. E-10
REVISION



NO.	DATE	REVISIONS
1		ISSUED FOR BID

# SANTA CLARA VTA CERONE FACILITY

## GENERAL NOTES

- ALL (N) EQUIPMENT SHALL BE UL LISTED OR UTILITY GRADE AND APPROVED BY VTA. THE AHJ HAS FINAL JURISDICTIONAL AUTHORITY ON CODE APPLICATION AND COMPLIANCE.
- ALL GENSET WIRING AND GROUNDING METHODS SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDED PRACTICES.
- EXPOSED NON-CURRENT CARRYING METAL PARTS OF EQUIPMENT AND ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250.134 AND 250.136(A).
- ALL BREAKERS AND DISCONNECT SWITCHES ARE CLOSED UNDER NORMAL OPERATING CONDITIONS UNLESS OTHERWISE NOTED.
- DISTANCES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ACTUAL DISTANCES IN FIELD.
- HEAVY LINE WEIGHT INDICATE (N) WORK.

## KEYED NOTES

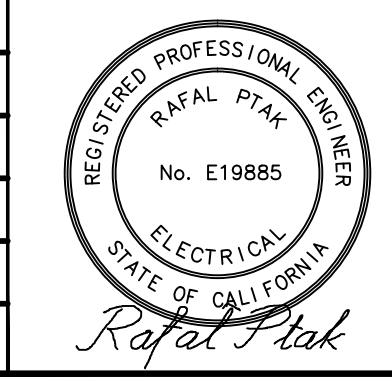
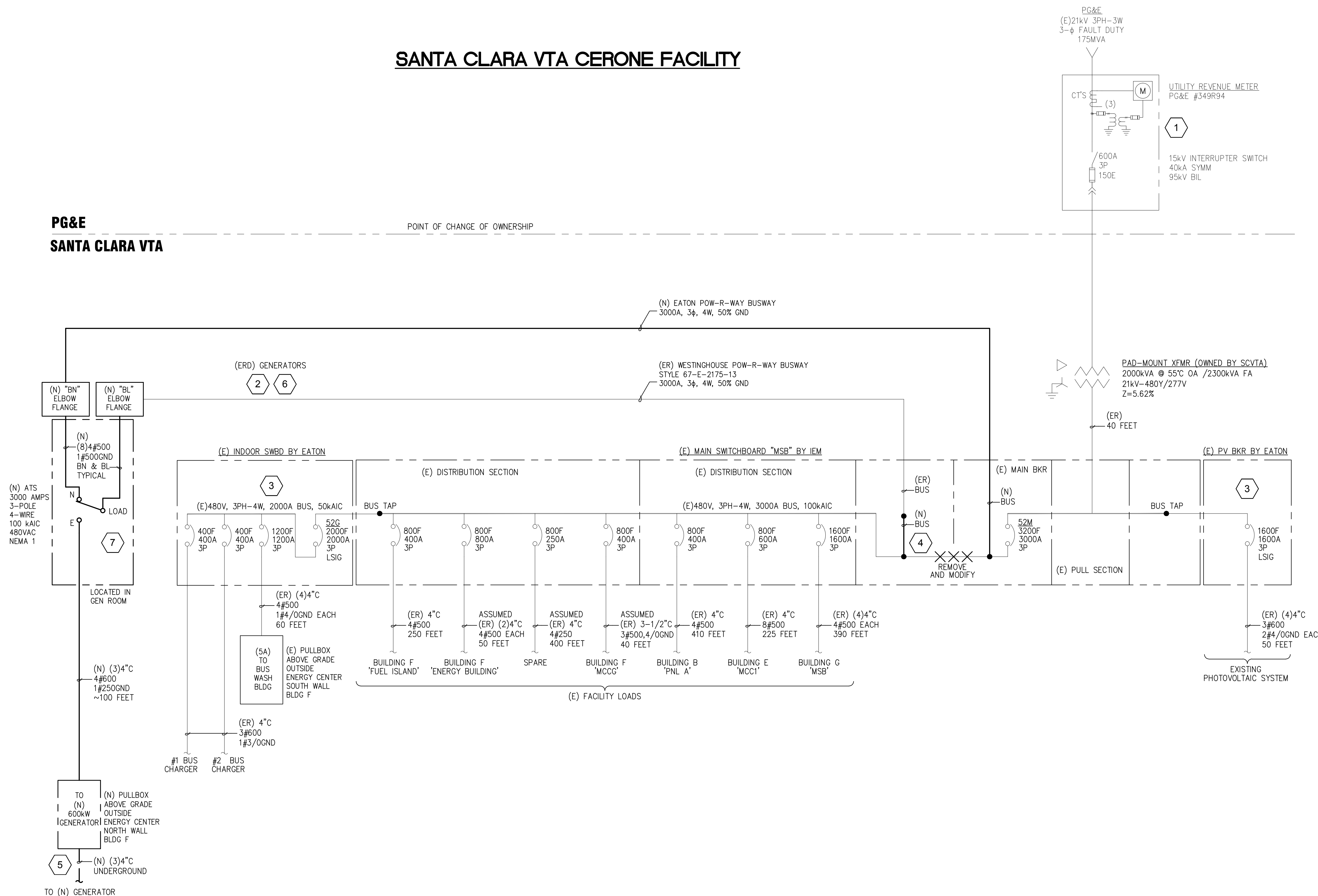
- (ER) MAIN SERVICE METERING AND MAIN DISCONNECT IS LOCATED IN PG&E SERVICE ENCLOSURE IN "ENERGY BUILDING" F.
- REFER TO SHEET E-3.X FOR ADDITIONAL DEMOLITION NOTES AND DETAILS NOT SHOWN ON THIS SHEET.
- (ER) 2000A 480/277V, 3Φ, 4W SWBD AND (ER) 1600A PV DISCONNECT ARE LOCATED IN "ENERGY BUILDING" F.
- REMOVE EXISTING 3000 AMPS GENERATOR BREAKER AND AUTOMATIC THROWOVER CONTROLS. REMOVE/DIVIDE BUSING IN THE LOWER SECTION OF EXISTING MSB SWBD. EXTEND 3000 AMPS (ER) BUS RISER IN THE GENERATOR SECTION TO THE LOWER/HORIZONTAL SECTION OF THE BUS AS REQUIRED; PROVIDE NEW 3000A BUS RISER IN THE MAIN BREAKER COMPARTMENT TO THE TOP OF MSB SWBD. PROVIDE UL LABELING FOR ALL MODIFICATIONS TO MSB SWBD. PROVIDE (N) ARC-FLASH WARNING LABELS AS REQUIRED PER NEC 110.16. THE SHORT CIRCUIT RATING OF EXISTING MAIN SWBD MUST REMAIN UNCHANGED, 100KAIC AT 480VAC. SEE SHEET E-4.4.
- PROVIDE (N) MULTIPLE CONDUITS FOR AUXILIARY POWER, ALARMS AND CONTROL CIRCUITS BETWEEN (N) 600kW GENERATOR, ATS AND 208Y/120V PANELBOARD. REFER TO SHEET E-2.1, AND E-3.1 FOR CONDUIT SCHEDULE.
- COORDINATE ALL DEMOLITION WITH NEW WORK TO MINIMIZE DOWNTIME DURATION. AFTER REMOVING EXISTING GENERATOR'S 3000A BUSWAY AND CONTROL WIRING, CLEAN AND PROTECT EXISTING EQUIPMENT. RECONNECT ANY EXISTING LOADS TO REMAIN.
- (N) ATS DELAYED-TRANSITION TRANSFER DEVICE TO BE BASED ON LOW VOLTAGE 3000AMP FRAME DOUBLE-THROW OPERATION SWITCH. AUTOMATIC CONTROLLER TO COMPLETELY MANAGE BOTH INITIATION AND OPERATION OF NEW GENERATOR. ASCO PART # G3ADTS-A33000N-GX-C. PROVIDE OPTIONAL ACCESSORIES: 1UP (30SEC BACKUP POWER), 135L (POWER METER), 72EE CONNECTIVITY MODULE, 11BE (PROGRAMMABLE ENGINE EXERCISER WITH RS485 COMM. PORT), 44G (STRIP HEATER).

## ABBREVIATIONS

- (BL) BUS LOAD
- (BN) BUS NORMAL
- (E) EXISTING
- (ER) EXISTING TO REMAIN
- (ERD) REMOVE EXISTING
- (F) FUTURE
- (N) NEW
- (R) RECONNECT EXISTING

PG&E  
SANTA CLARA VTA

POINT OF CHANGE OF OWNERSHIP



**BLYMYER ENGINEERS**

DESIGNED: RP      CHECKED: LM

DRAWN: RP      CADD FILE NAME:



APPROVED:

CADD FILE DATE:      SCALE: NONE

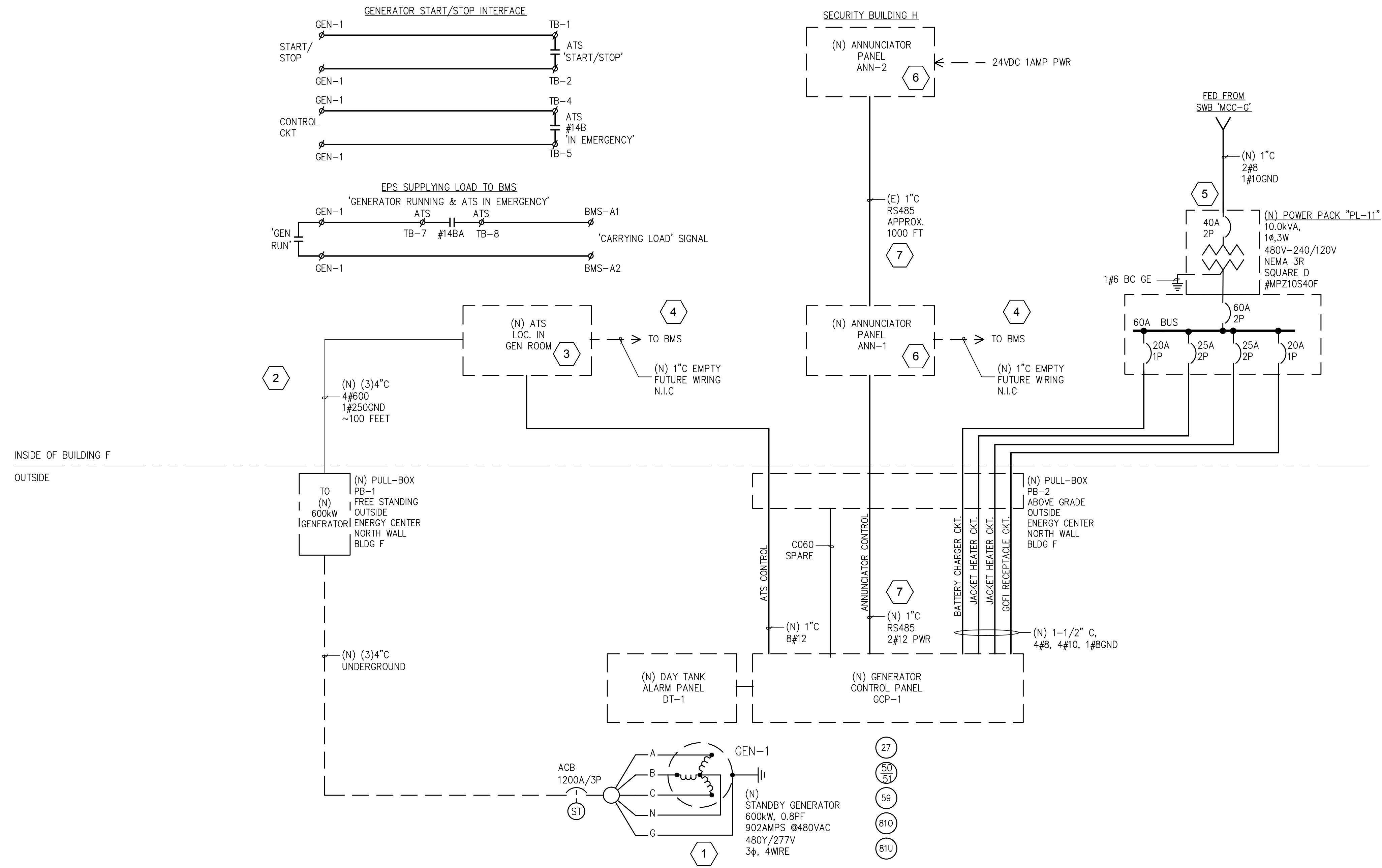
PLOT DATE:      BOARD APPROVAL DATE: -

**CERONE DIVISION  
EMERGENCY GENERATOR  
REPLACEMENT  
SINGLE LINE**

SHEET 14 OF 33  
DRAWING NO. **E-2.0**  
REVISION:

SAP NO.      CONTRACT NO. C19010      FILE LOCATION:

NO.	DATE	REVISIONS
1		ISSUED FOR BID



**GENERAL NOTES**

1. ALL (N)EQUIPMENT SHALL BE UL LISTED OR UTILITY GRADE AND APPROVED BY VTA. THE AHJ HAS FINAL JURISDICTIONAL AUTHORITY ON CODE APPLICATION AND COMPLIANCE.
2. ALL GENSET WIRING AND GROUNDING METHODS SHALL CONFORM TO THE MANUFACTURER'S WRITTEN RECOMMENDED PRACTICES.
3. EXPOSED NON-CURRENT CARRYING METAL PARTS OF EQUIPMENT AND ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250.134 AND 250.136(A).
4. ALL BREAKERS AND DISCONNECT SWITCHES ARE CLOSED UNDER NORMAL OPERATING CONDITIONS UNLESS OTHERWISE NOTED.
5. DISTANCES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ACTUAL DISTANCES IN FIELD.
6. ALL ELECTRICAL TERMINATIONS SHALL BE PERFORMED USING THE PRESCRIBED MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, INCLUDING ANY TORQUING VALUES IDENTIFIED THEREIN. WHERE TORQUE VALUES ARE NOT SPECIFIED, REFER TO UL STANDARDS 486A AND 486B. FINAL TORQUING SHALL BE OBSERVED BY VTA WITH DOCUMENTATION PROVIDED BY CONTRACTOR INDICATING THE TORQUE VALUE ATTAINED DURING INSTALLATION.

**KEYED NOTES**

- 1 GENERATOR NEUTRAL SHALL NOT BE GROUNDED AT THE GENERATOR LOCATION. MAIN SERVICE NEUTRAL GROUND SHALL BE THE ONLY GROUND 250.30(A)(1).
- 2 REFER TO SHEET E-3.0 FOR DEMOLITION NOTES AND DETAILS.
- 3 (N) 3-POLE DELAYED-TRANSITION ATS PROVIDE A BREAK-BEFORE-MAKE SWITCHING ACTION. PROVIDE AUXILIARY CONTACTS FOR INTERFACE WITH GENERATOR AND BMS AS REQUIRED.
- 4 PROVIDE AND INSTALL (N)1\"/>

**ABBREVIATIONS**

- (ACB) ALTERNATOR CIRCUIT BREAKER
- (AHJ) AUTHORITY HAVING JURISDICTION
- (BMS) BUILDING MANAGEMENT SYSTEM
- (E) EXISTING
- (ER) EXISTING TO REMAIN
- (ERD) REMOVE EXISTING
- (F) FUTURE
- (N) NEW
- (R) RECONNECT EXISTING

**LEGEND:**

- (WHM) WATTHOUR METER
- (27) UNDERVOLTAGE
- (50/51) OVERCURRENT/TIME OVERCURRENT
- (59) OVERVOLTAGE
- (810) OVERFREQUENCY
- (81U) UNDERFREQUENCY

								APPROVED CADD FILE DATE: _____ SCALE: NONE PLOT DATE: _____ BOARD APPROVAL DATE: _____		SHEET 15 OF 33 DRAWING NO. <b>E-21</b> REVISION: _____	
1		ISSUED FOR BID		DESIGNED: RP      CHECKED: LM DRAWN: RP      CADD FILE NAME: _____				CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT GENERATOR SINGLE LINE		SAP NO. _____ CONTRACT NO. C19010 FILE LOCATION _____	
NO.	DATE	REVISIONS									



**GENERAL NOTES**

1. ALL (N)EQUIPMENT SHALL BE UL LISTED OR UTILITY GRADE AND APPROVED BY VTA. THE AHJ HAS FINAL JURISDICTIONAL AUTHORITY ON CODE APPLICATION AND COMPLIANCE.
2. ALL GENSET WIRING AND GROUNDING METHODS SHALL CONFORM TO THE MANUFACTURER'S WRITTEN RECOMMENDED PRACTICES.
3. EXPOSED NON-CURRENT CARRYING METAL PARTS OF EQUIPMENT AND ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250.134 AND 250.136(A).

**KEYED NOTES NEW WORK**

- 1 (ER) MAIN SERVICE METERING AND MAIN DISCONNECT IS LOCATED IN PG&E SERVICE ENCLOSURE IN BUILDING F.
- 2 PROVIDE (N)3000 AMP ATS, BUSING AND RACEWAYS. USE EXISTING SUPPORTS AS APPLICABLE. MODIFY EXISTING MSB SWBD AFTER REMOVING GENERATOR BREAKER. RECONNECT EXISTING FEEDERS AS NECESSARY. MSB SWBD SHALL RETAIN 100 KAIC AT 480VAC SHORT CIRCUIT RATING. COORDINATE ALL DEMOLITION WITH NEW WORK TO MINIMIZE DOWNTIME DURATION. AFTER REMOVING EXISTING FEEDERS AND WIRING, CLEAN AND PROTECT EXISTING EQUIPMENT. RECONNECT EXISTING LOADS TO REMAIN TO SWBD AND/OR PANELBOARD.
- 3 PROVIDE TEMPORARY POWER FROM PORTABLE GENERATORS FOR SELECTED LOADS FED FROM MSB. COORDINATE PORTABLE GENERATOR SIZE AND CONNECTION POINTS WITH VTA. REFER TO SHEET E-3.2.
- 4 PROVIDE (N)600 kW 0.8PF 480Y/277V STAND-BY GENERATOR IN SOUND ATTENUATED CORROSION RESISTANT ENCLOSURE.
- 5 PROVIDE (N)FUELING SYSTEM FOR (N)600kW GENERATOR. REFER TO FS & FE SERIES DRAWINGS.
- 6 PROVIDE (N) PULL-BOX WITH TERMINALS ABOVE GRADE ON NORTH WALL BLDG F FOR TRANSITION EXPOSED RACEWAYS TO UNDERGROUND.
- 7 PROVIDE (N) THREE (3) 4" GR S CONDUIT WITH 4#600, 1#250GND EACH TO CONNECT NEW PULLBOX TO ATS.
- 8 PROVIDE (N) THREE (3) 4" PVC SCHEDULE 80 UNDERGROUND CONDUIT WITH 4#600, 1#250GND EACH TO CONNECT NEW PULLBOX TO 600kW GENERATOR.
- 9 PROVIDE (N) MULTIPLE CONDUITS FOR AUXILIARY POWER, ALARMS AND CONTROL CIRCUITS BETWEEN (N)600kW GENERATOR, ATS AND 208Y/120V PANELBOARD. REFER TO SHEET E-2.1, AND E-3.1 FOR CONDUIT SCHEDULE.
- 10 PROVIDE (N)AUTOMATIC TRANSFER SWITCH (ATS).

**ELECTRICAL DEMOLITION NOTES**

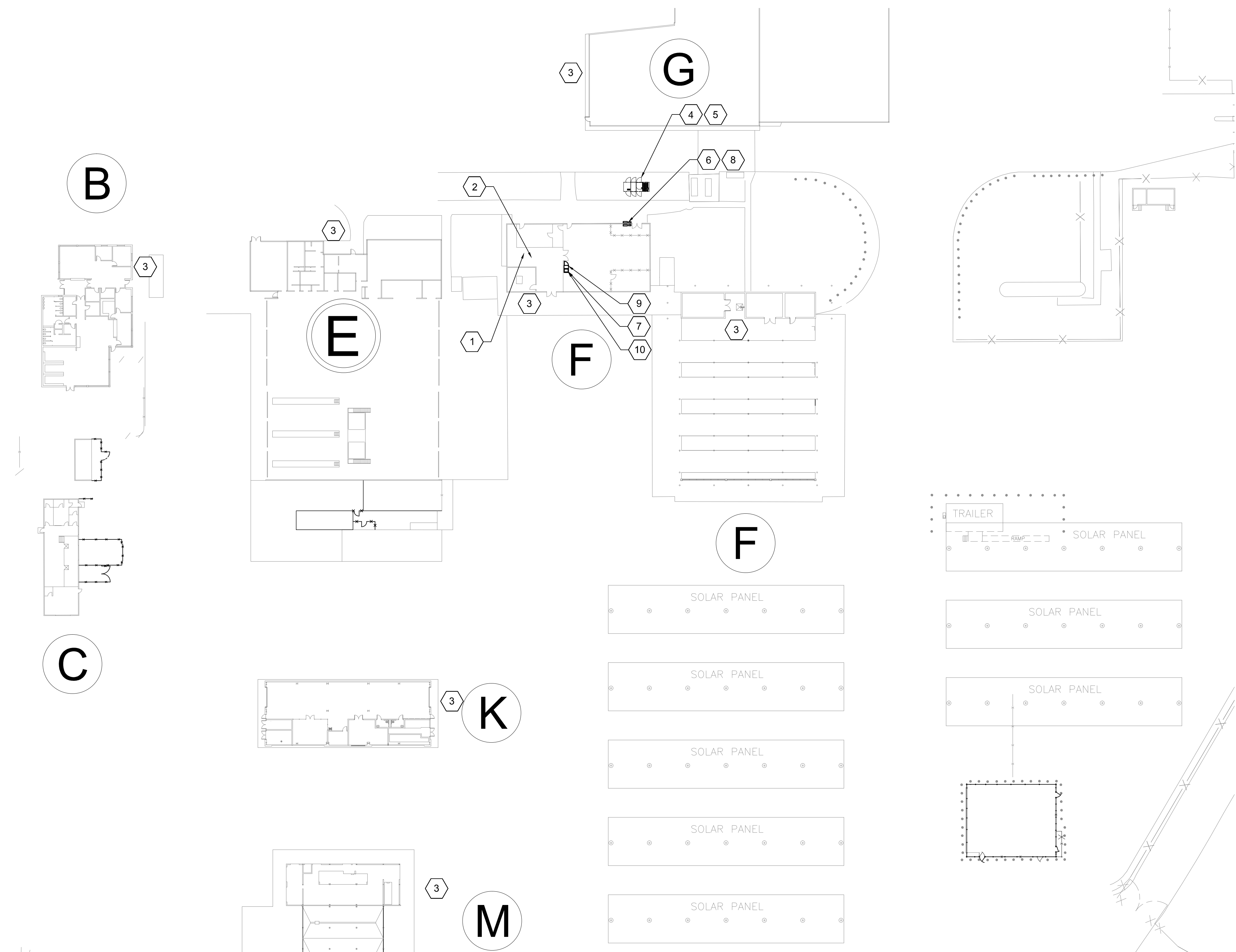
1. (E) EQUIPMENT AND/OR WIRING WHICH ARE TO REMAIN, BUT HAVE BEEN REMOVED TO FACILITATE THE INSTALLATION OF NEW EQUIPMENT SHALL BE RESTORED TO ITS ORIGINAL OPERATING CONDITION. ALL REMOVED WIRING SHALL BE REPLACED WITH NEW WIRING.
2. REMOVED FIXTURES AND EQUIPMENT SHALL HAVE ALL WIRING REMOVED BACK TO THE PANEL FROM WHICH IT IS SERVED. MARK ALL DISASSOCIATED BREAKER "SPARE". IF REMOVAL OF WIRING AFFECT POWER TO OTHER OUTLETS AND FIXTURE TO REMAIN, PROVIDE J-BOXES AND EXTEND WIRING AS NECESSARY, TO RESTORE POWER TO THESE OUTLETS AND FIXTURES.
3. REMOVE ALL EMPTY CONDUITS BACK TO THE PANELBOARD OR TO THE CONCRETE SURFACE FROM WHICH IT EMERGES. REMOVE ALL ABANDONED FASTENING, SUPPORT, BOXES AND CONDUCTORS TO THE SOURCE.
4. LABEL EXISTING PANELS TO REFLECT CHANGES MADE TO EXISTING ELECTRICAL SYSTEM.
5. MAINTAIN ALL FIRE AND LIFE SAFETY SYSTEMS IN AN OPERATIVE CONDITION AT ALL TIMES.

**ABBREVIATIONS**

- (E) EXISTING
- (ER) EXISTING TO REMAIN
- (ERD) REMOVE EXISTING
- (F) FUTURE
- (N) NEW
- (R) RECONNECT EXISTING

**BUILDING LEGEND**

- (B) BUS OPERATIONS
- (C) FISCAL RESOURCES/FAREBOX REPAIR
- (E) MINOR MAINTENANCE
- (F) ENERGY BUILDING & FUELING
- (G) OVERHAUL & REPAIR
- (F) FUEL ISLAND
- (K) ZEB MAINTENANCE SHOP
- (M) BUS WASH/WASTE WATER TREATMENT



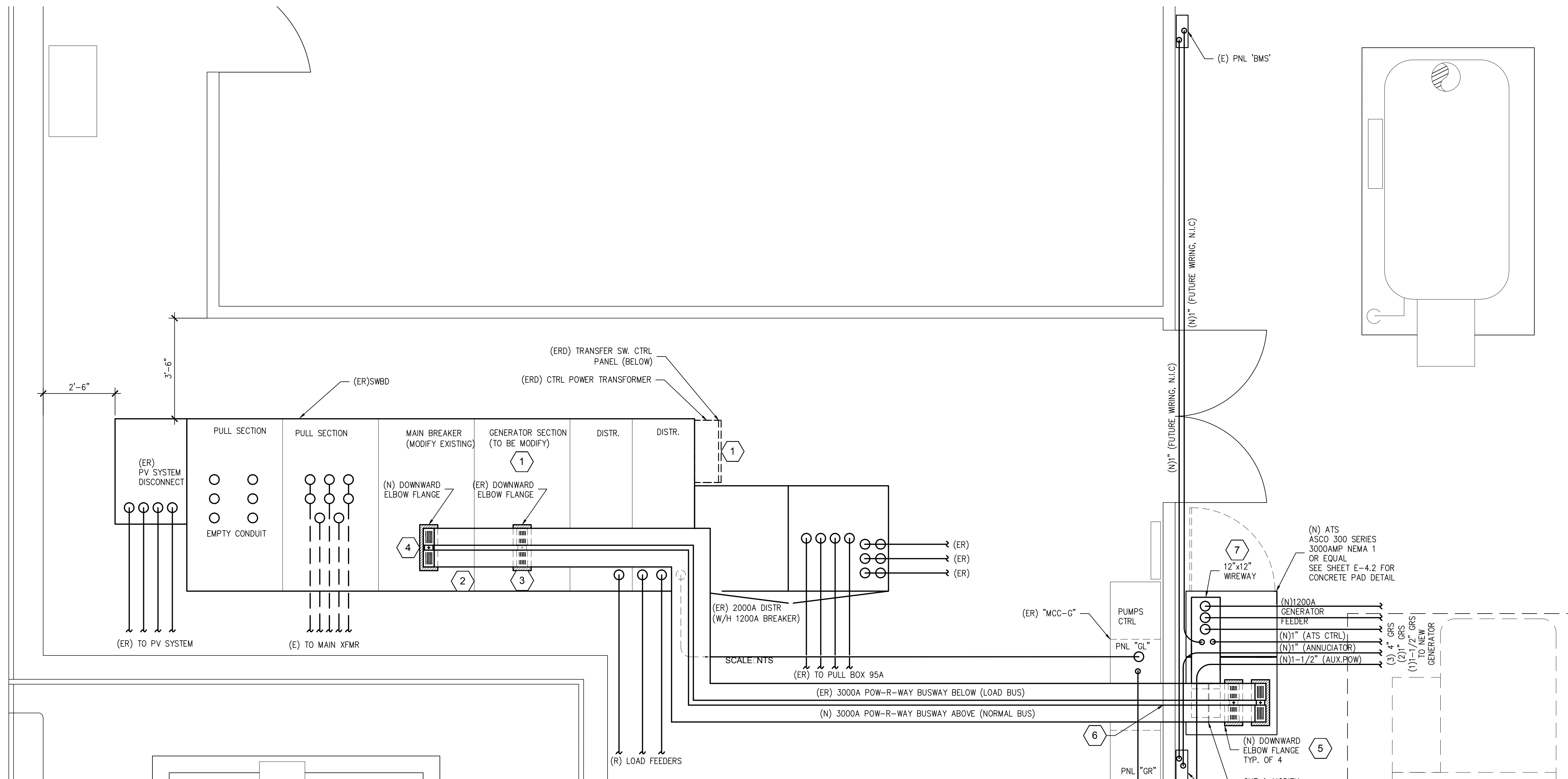
**ELECTRICAL SITE PLAN**  
SCALE: 1" = 40'-0"



			SUBMITTED 		APPROVED  		CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT ELECTRICAL SITE PLAN			SHEET 16 OF 33 DRAWING NO. <b>E-3.0</b>	
1 ISSUED FOR BID			DESIGNED RP DRAWN RP	CHECKED LM CADD FILE NAME	CADD FILE DATE PLOT DATE	SCALE NONE BOARD APPROVAL DATE				SAP NO. CONTRACT NO. C19010 FILE LOCATION	REVISION







1 (E) ELECTRICAL SWBD (BY IEM) AND (N) ATS LAYOUT

**KEYED NOTES**

- 1 REMOVE EXISTING 3000 AMPS GENERATOR BREAKER AND AUTOMATIC THROWOVER CONTROLS.
- 2 REMOVE/DIVIDE BUSING IN THE LOWER SECTION OF EXISTING MSB SWBD BETWEEN EMERGENCY AND MAIN CIRCUIT BREAKER.
- 3 EXTEND 3000 AMPS (ER) BUS RISER IN THE GENERATOR SECTION TO THE LOWER/HORIZONTAL SECTION OF THE BUS AS REQUIRED. THIS BUS WILL BE SERVING AS A SWBD (ER) LOAD BUS.
- 4 PROVIDE NEW 3000A BUS RISER IN THE MAIN BREAKER COMPARTMENT FROM THE BUS IN THE LOWER SECTION, TO THE TOP OF MSB SWBD. INSTALL (N) EATON POW-R-WAY 3000A BUSWAY SYSTEM TO THE ATS. THIS BUS SHALL BE RUN ON THE TOP OF (ER) LOAD BUS, AND WILL BE SERVING AS A SWBD (N) NORMAL BUS.
- 5 PROVIDE DOWNWARD ELBOW FLANGES TO ENTER ATS ENCLOSURE. EXTEND TO ATS TERMINALS WITH EIGHT (8) 500 kcmil COPPER CABLES PER PHASE. CONTRACTOR TO FIELD VERIFY EXACT ENCLOSURE PENETRATION LOCATION.
- 6 RELOCATE EXISTING CONDUITS THAT PENETRATE THE WALL ABOVE (E) GENERATOR BUSWAY TO MAKE A SPACE FOR THE NEW NORMAL POWER BUS; AND/OR MAKE A TEMPORARY FLEXIBLE OVERRIDE CONNECTION FOR A CONDUITS/WIRING THAT ARE PART OF (E) GENERATOR'S SYSTEM TO BE REMOVED (AFTER INTERCONNECTION OF THE NEW GENERATOR).
- 7 PROVIDE 12"x12" WIREWAY SYSTEM TO INTERFACE CONDUIT INTO ATS ENCLOSURE.

**GENERAL NOTES**

- 1. CONDUITS SHOWN ARE DIAGRAMATIC. CONTRACTOR IS RESPONSIBLE FOR FIELD CHECKING AND VERIFYING LOCATION AND SIZES.
- 2. SEE SHEET E-4.4 FOR ADDITIONAL INFO NOT NOTED HERE, & SEQUENCE OF CONSTRUCTION.

**ABBREVIATIONS**

- (E) EXISTING
- (ER) EXISTING TO REMAIN
- (ERD) REMOVE EXISTING
- (F) FUTURE
- (N) NEW
- (R) RECONNECT EXISTING



**BLMYER ENGINEERS**

DESIGNED RP CHECKED LM  
DRAWN RP CADD FILE NAME



APPROVED	
CADD FILE DATE	SCALE NONE
PLOT DATE	BOARD APPROVAL DATE

**CERONE DIVISION  
EMERGENCY GENERATOR  
REPLACEMENT  
ELECTRICAL DETAILS**

SHEET 19 OF 33 DRAWING NO. **E-4.0** REVISION

SAP NO. CONTRACT NO. C19010 FILE LOCATION

NO.	DATE	REVISIONS
1		ISSUED FOR BID



**GENERAL NOTES**

1. NOT USED

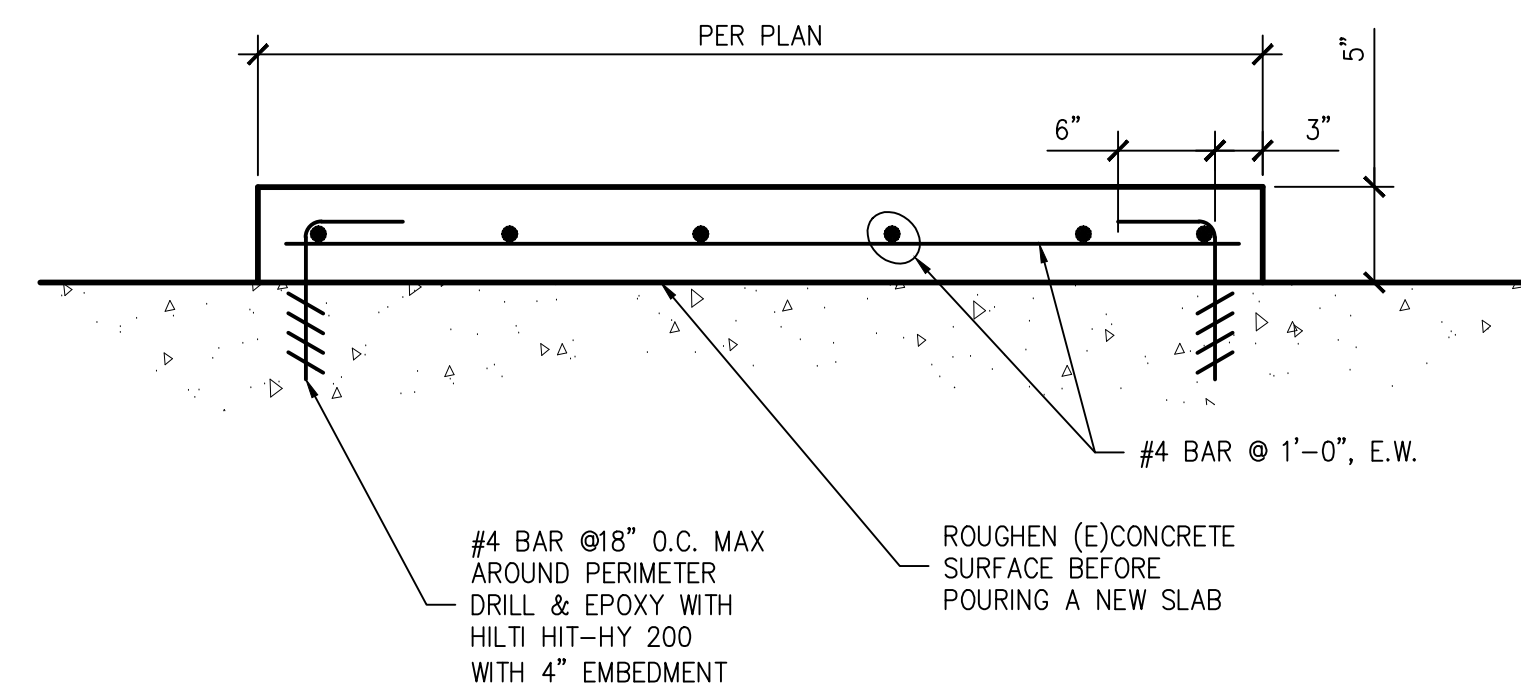
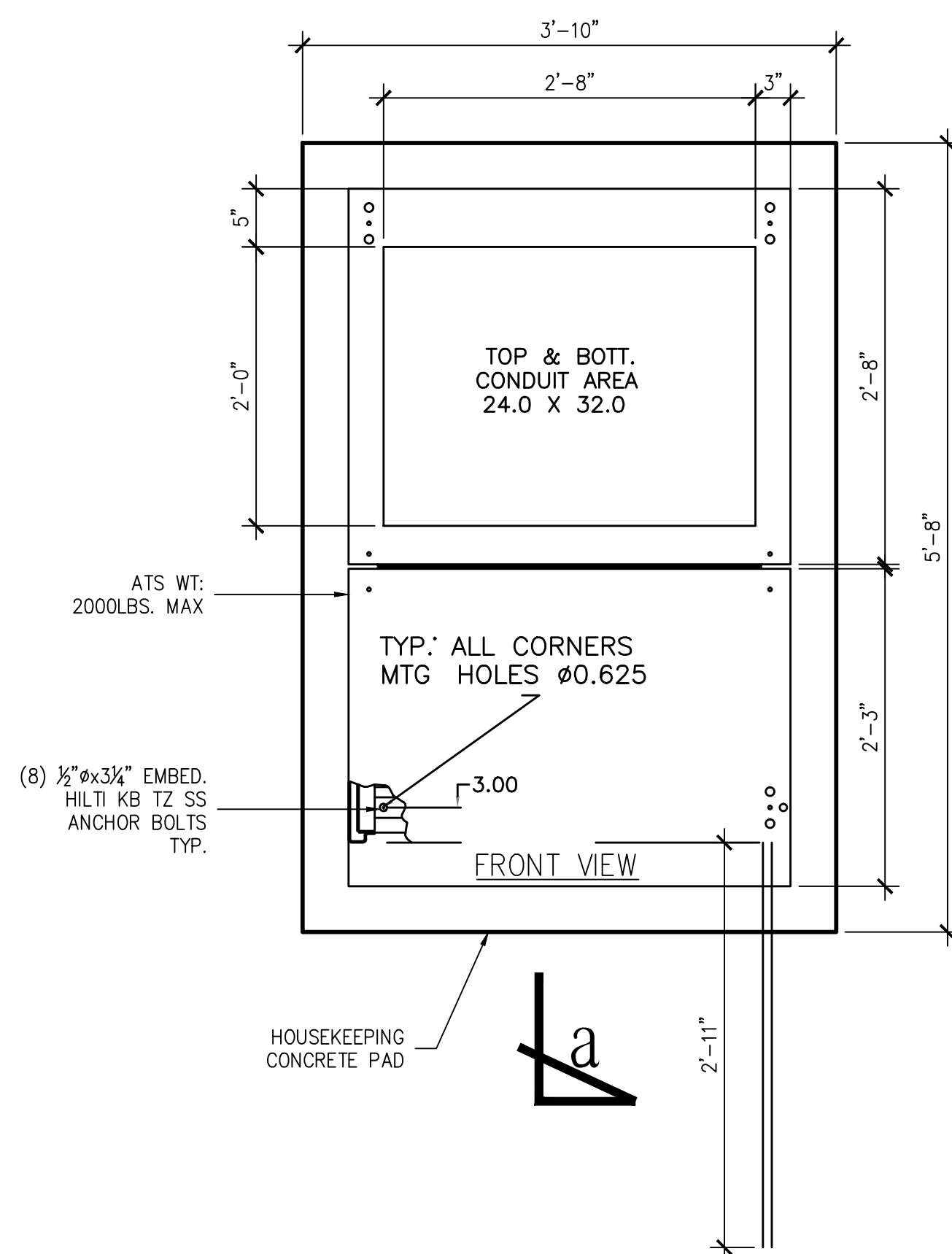
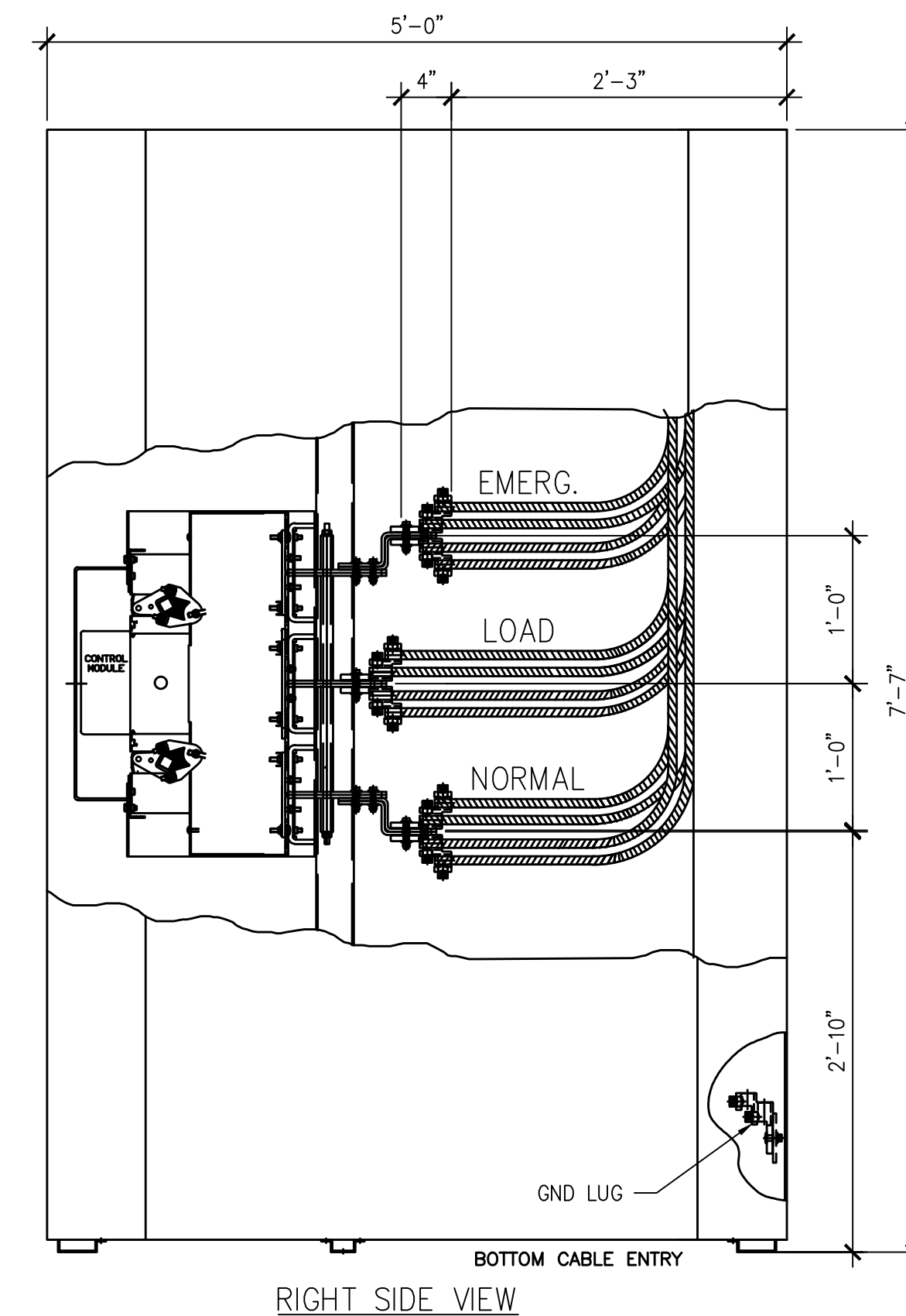
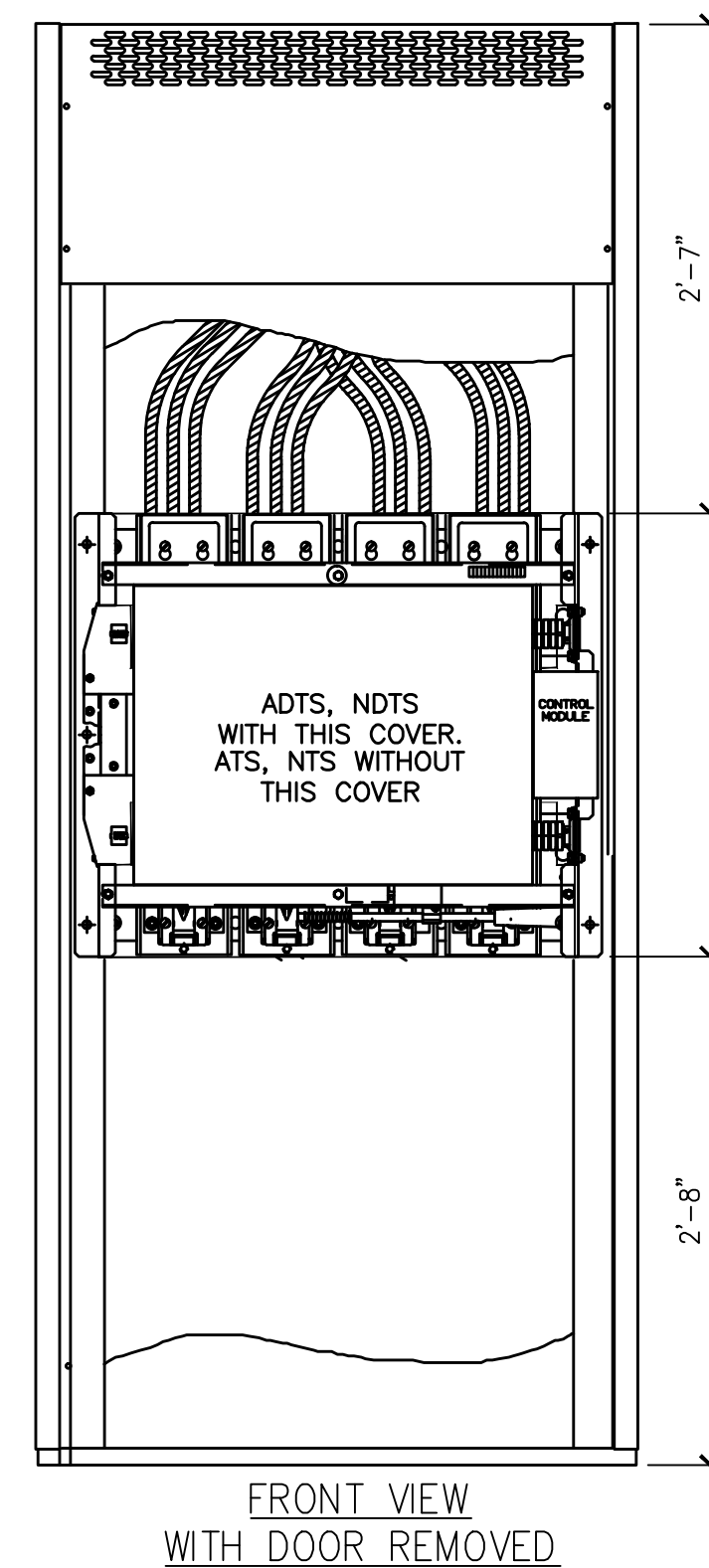
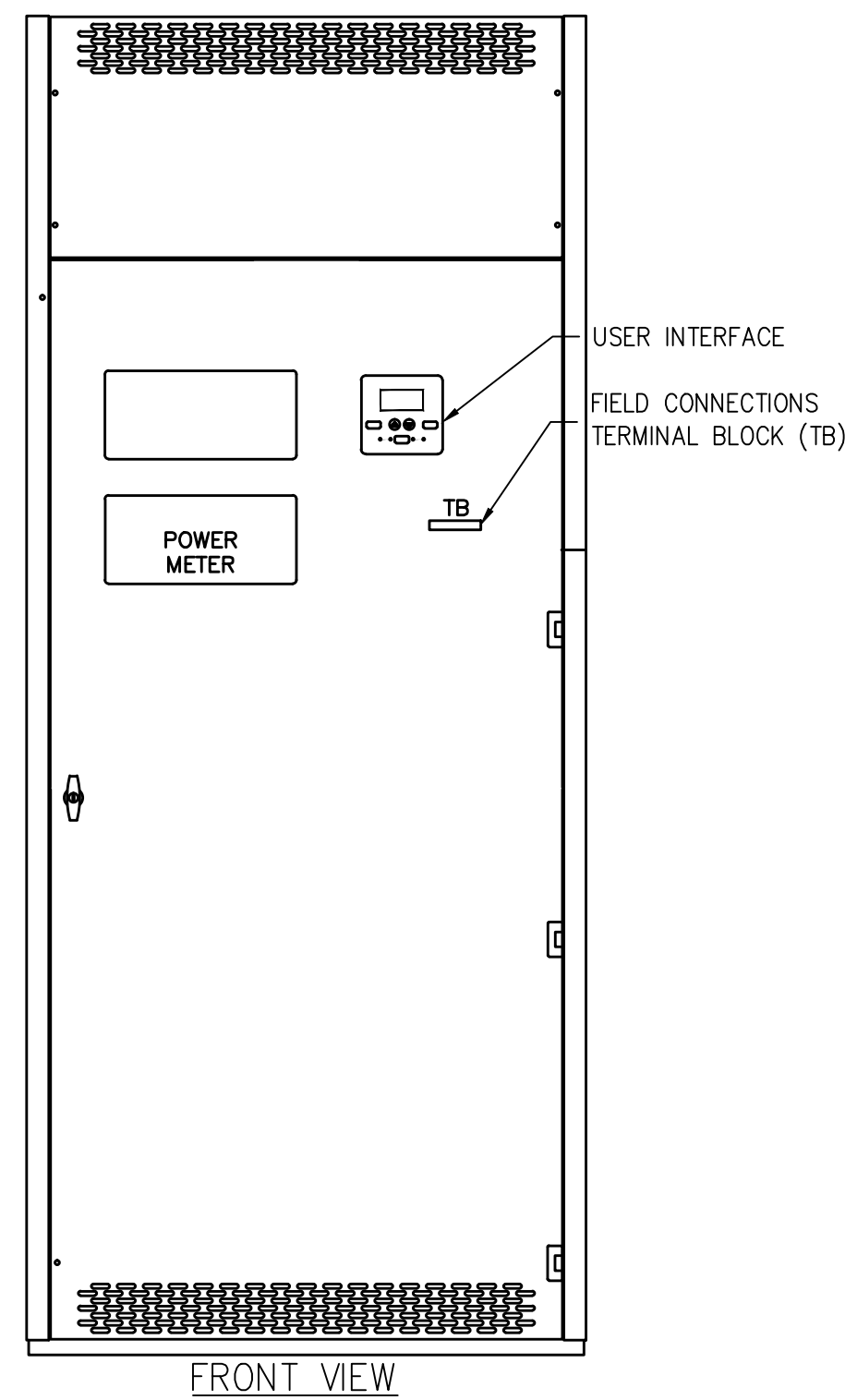
**KEYED NOTES**

1 NOT USED.

ASCO PART # G3ADTS-A33000N-GX-C

PROVIDE ACCESSORIES:

1. 1UP (30SEC BACKUP POWER)
2. 135L (POWER METER)
3. 72EE (COLLECTIVITY MODULE)
4. 11BE (PROGRAMMABLE ENGINE EXERCISER WITH RS485 COMM. PORT)
5. 44G (STRIP HEATER)



**CONCRETE NOTES**

1. ALL CONCRETE WORK SHALL COMPLY WITH ACI 301 & 318 LATEST EDITION.
  2. ALL SLAB ON GRADE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 302.1R.
  3. CONCRETE SHALL BE:  
3,000 psi @28 DAY COMPRESSIVE STRENGTH, TYPE I/TYPE II CONCRETE
  4. MAXIMUM SLUMP 4". WATER TO CEMENT RATIO: FROM .47 TO .53
  5. AGGREGATE GRADATION AND QUALITY SHALL BE IN ACCORDANCE WITH ACI 302-1R.
  6. REINFORCEMENT SHALL BE ASTM A615 GR60.
  7. MINIMUM CONCRETE COVER SHALL BE 3" TO EARTH, 2" TO SKY.
  8. ANCHOR ELECTRICAL EQUIPMENT WITH HILTI KB TZ STAINLESS STEEL ANCHOR BOLTS. INSTALLATION AND SPECIAL INSPECTION PER SECTION 4.3 AND 4.4 OF ICC REPORT ESR-1917.
- ANCHOR BOLT INSTALLATION TORQUE:  
1/2"Ø - 40 LB.-FT. TORQUE  
5/8"Ø - 60 LB.-FT. TORQUE  
3/4"Ø - 110 LB.-FT. TORQUE



**BLMYER ENGINEERS**

DESIGNED RP CHECKED LM  
DRAWN RP CADD FILE NAME



APPROVED

CADD FILE DATE SCALE NONE  
PLOT DATE BOARD APPROVAL DATE

CERONE DIVISION  
EMERGENCY GENERATOR  
REPLACEMENT  
ATS SWITCH DIMENSION  
(ASCO 300)

SHEET 21 OF 33 DRAWING NO. E-4.2 REVISION

SAP NO. CONTRACT NO. C19010 FILE LOCATION

NO.	DATE	REVISIONS
1		ISSUED FOR BID

**GENERAL NOTES**

- THE SWITCH CONFIGURATION IS FOR TOP LUGS EMERGENCY, CENTER LUGS LOAD, AND BOTTOM LUGS NORMAL (REFER TO THE WIRING DIAGRAM FURNISHED WITH EACH TRANSFER SWITCH TO DETERMINE TERMINATION POSITIONS).
- NEUTRAL CONFIGURATIONS:  
AN FULL RATED NEUTRAL CONFIGURATION FOR EACH SOURCE AND THE LOAD MAY BE PROVIDED. WHEN EQUIPPED IT IS IN ONE OF THE FOLLOWING FORMATS AS SPECIFIED BY THE CATALOG NUMBER NO. NEUTRAL TYPE:  
(A) SOLID (COPPER BUS) NEUTRAL  
(B) SWITCHED NEUTRAL POLE
- THE STANDARD MECHANICAL (SCREW TYPE) AL/CU TERMINAL LUGS ARE SHOWN FOR REFERENCE.
- SWITCH NEUTRAL POLE IS SHOWN FOR REFERENCE.
- WHEN INSTALLING CONDUCTORS, CONNECT TO SIMILARLY MARKED PHASES OF NORMAL, EMERGENCY & LOAD.
- ALL INTERNAL CONNECTIONS ARE MADE AT FACTORY.
- MAINTAIN ELECTRICAL CLEARANCE OF 1.00" [25,4mm] BETWEEN LIVE METAL PARTS AND GROUNDED METAL.
- WHEN MOUNTING THE TRANSFER SWITCH IN THE ENCLOSURE, THE CONTROL PANEL(S) AND OPERATOR CONTROLS SHOULD BE MOUNTED ON THE INSIDE, REAR SURFACE OF THE DOOR. 6.00" [152,4mm] MIN. DEPTH TO TRANSFER SWITCH FOR CONTROLS IS REQUIRED.
- THE CONTROL PANEL(S) IS CONNECTED TO THE TRANSFER SWITCH BY A HARNESS WITH A QUICK DISCONNECT PLUG(S). THE HARNESS EXITS THE TRANSFER SWITCH ON THE RIGHT SIDE. CONSULT FACTORY FOR EXTENSION HARNESSES.
- OPTIONAL ACCESSORY ADD-ON PANELS.
- FOR TYPE 1 ENCLOSURE SEE DETAIL A -1 AND DETAIL B -1 FOR CUTOUT DATA.  
FOR TYPE 3R, 4, & 12 ENCLOSURE SEE DETAIL A -2 & DETAIL B -2 FOR CUTOUT DATA.  
GASKETS AND BEZELS ARE PROVIDED FOR TYPE 3R, 4, & 12 ENCLOSURE.
- CUSTOMER TERMINAL BLOCKS (SEE SHEET 2):  
FOR 3ATS, 3NTS, 3ADTS AND 3NDTS THE TB WILL BE MOUNTED ON THE TRANSFER SWITCH.

ASCO®

ASCO PART # G3ADTS-A33000N-GX-C  
 PROVIDE ACCESSORIES:  
 1. IUP (30SEC BACKUP POWER)  
 2. 135L (POWER METER)  
 3. 72EE (COLLECTIVITY MODULE)  
 4. 11BE (PROGRAMMABLE ENGINE EXERCISER WITH RS485 COMM. PORT)  
 5. 44G (STRIP HEATER)

MINIMUM ENCLOSURE REQUIREMENTS INCH (mm)

SWITCH RATING (AMPS)	HEIGHT	WIDTH	DEPTH
2600 & 3200	90 (2286)	38 (965)	60 (1524)

ENCLOSURE VENTILATION REQUIRED  
 TOTAL VENTILATION = 173 IN<sup>2</sup> (111613mm<sup>2</sup>) MINIMUM.  
 RECOMMENDED: 33 IN<sup>2</sup> (21290mm<sup>2</sup>) FRONT  
 140 IN<sup>2</sup> (90322mm<sup>2</sup>) REAR

AMP SIZE DIMENSIONS

AMP SIZE	A	B	C	D	E	F	G	H	J	K
2600 & 3200	33.27 (845,1)	28.00 (711,2)	24.00 (609,6)	31.75 (806,5)	6.88 (174,8)	—	8.20 (208,3)	0.68 (17,27)	1.75 (44,45)	1.09 (27,7)

AMP SIZE DIMENSIONS

AMP SIZE	L	M	N	P	Q	R	S	T	U	V
2600 & 3200	1.37 (34,80)	9.00 (228,6)	6.50 (165,1)	2.18 (55,37)	—	2.00 (50,8)	14.9 (378,5)	—	—	25.29 (642,4)

AMP SIZE DIMENSIONS

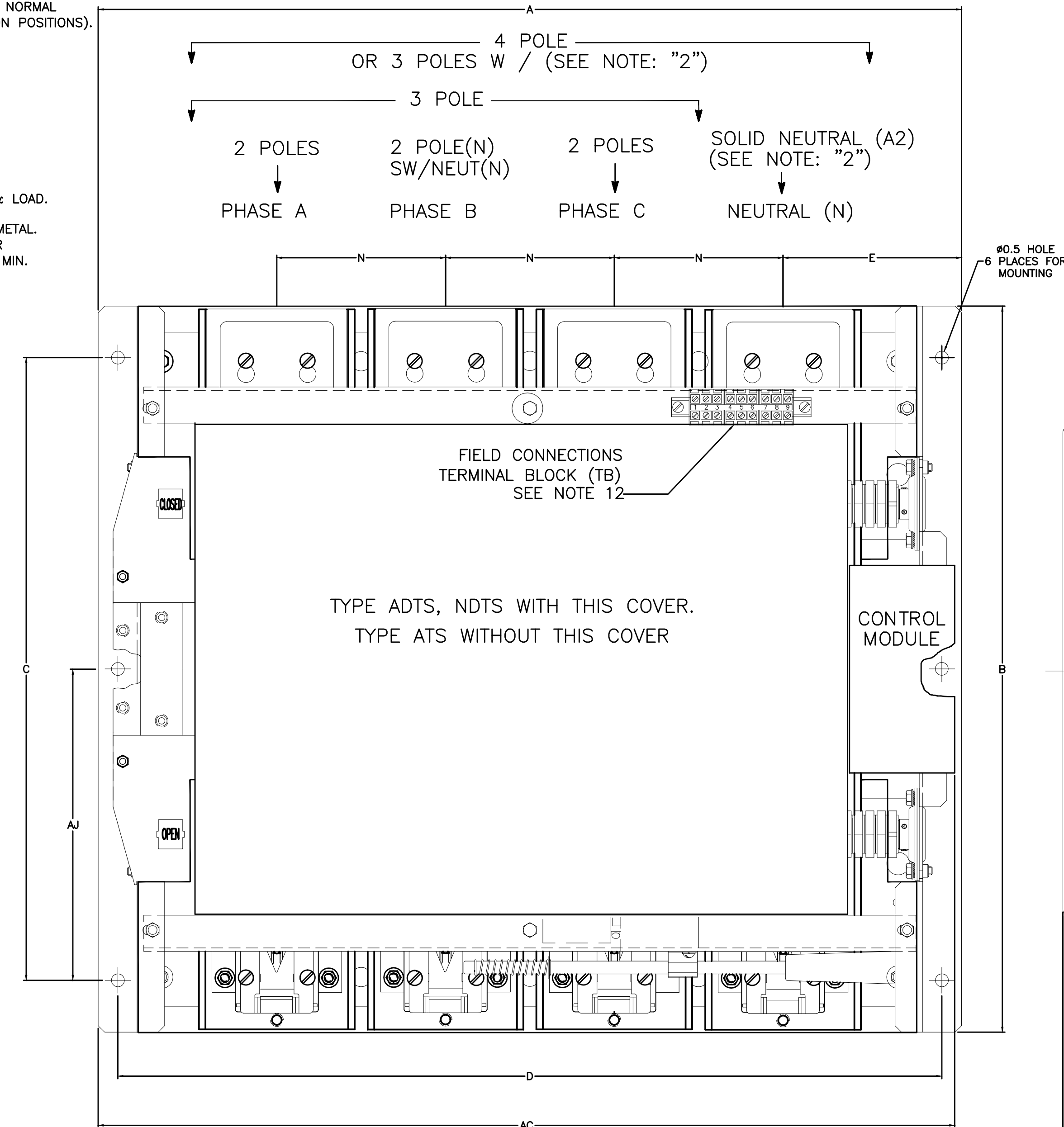
AMP SIZE	W	X	Y	Z	AA	AB	AC	AD	AE	AF
2600 & 3200	12.36 (313,9)	—	—	6.90 (175,3)	5.69 (144,5)	0.112 (2,85)	33.00 (838,2)	30.57 (776,5)	—	—

AMP SIZE DIMENSIONS

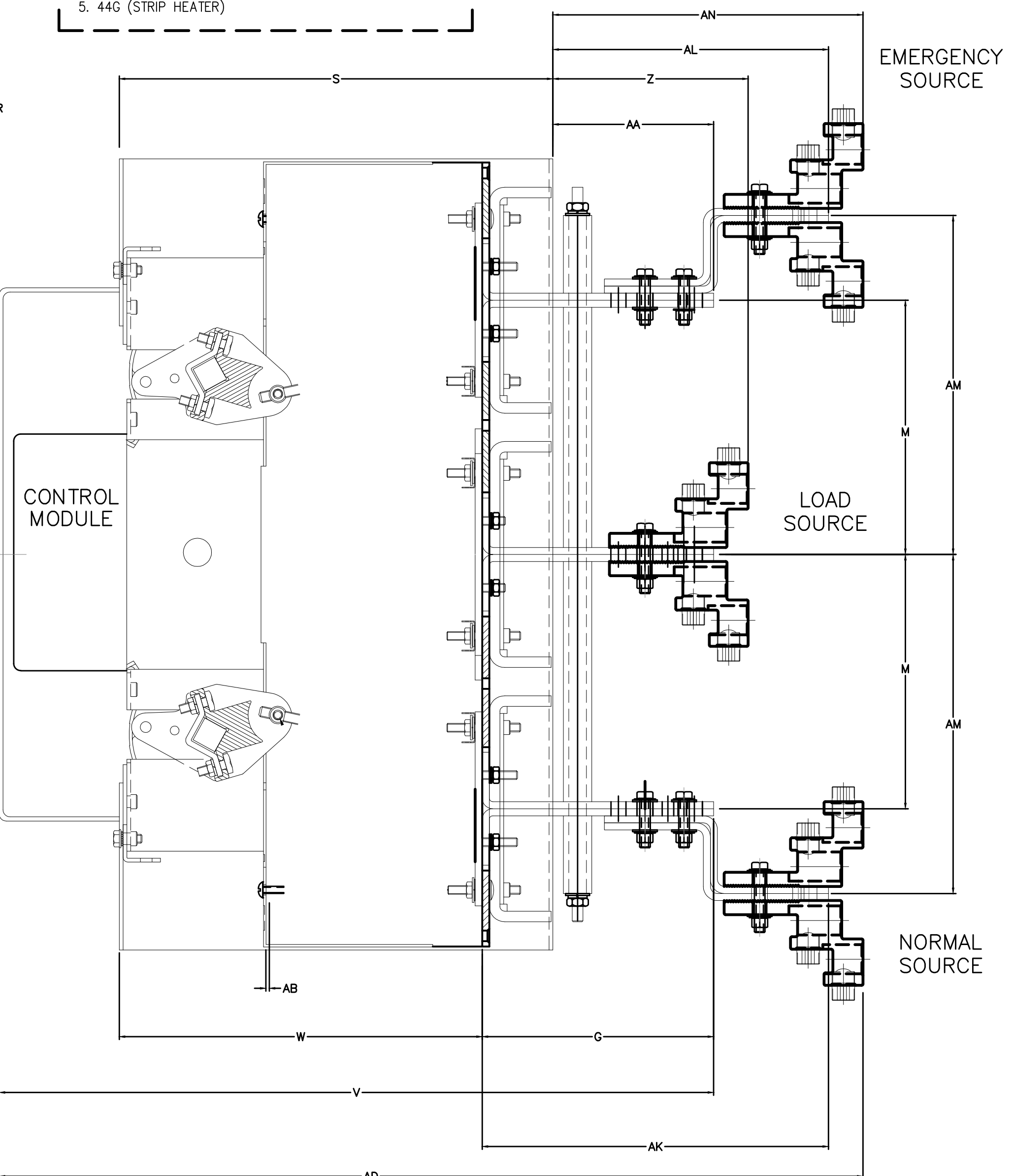
AMP SIZE	AG	AH	AJ	AK	AL	AM	AN
2600 & 3200	—	—	12.00 (304,8)	12.25 (311,2)	9.75 (247,7)	12.00 (304,8)	11.00 (279,4)

SIZE	CABLE ACCOMMODATIONS (PER PHASE & NEUTRAL)
2600-3200	SCREW TYPE (STANDARD)- (12) 1/0 - 750 MCM AL/CU

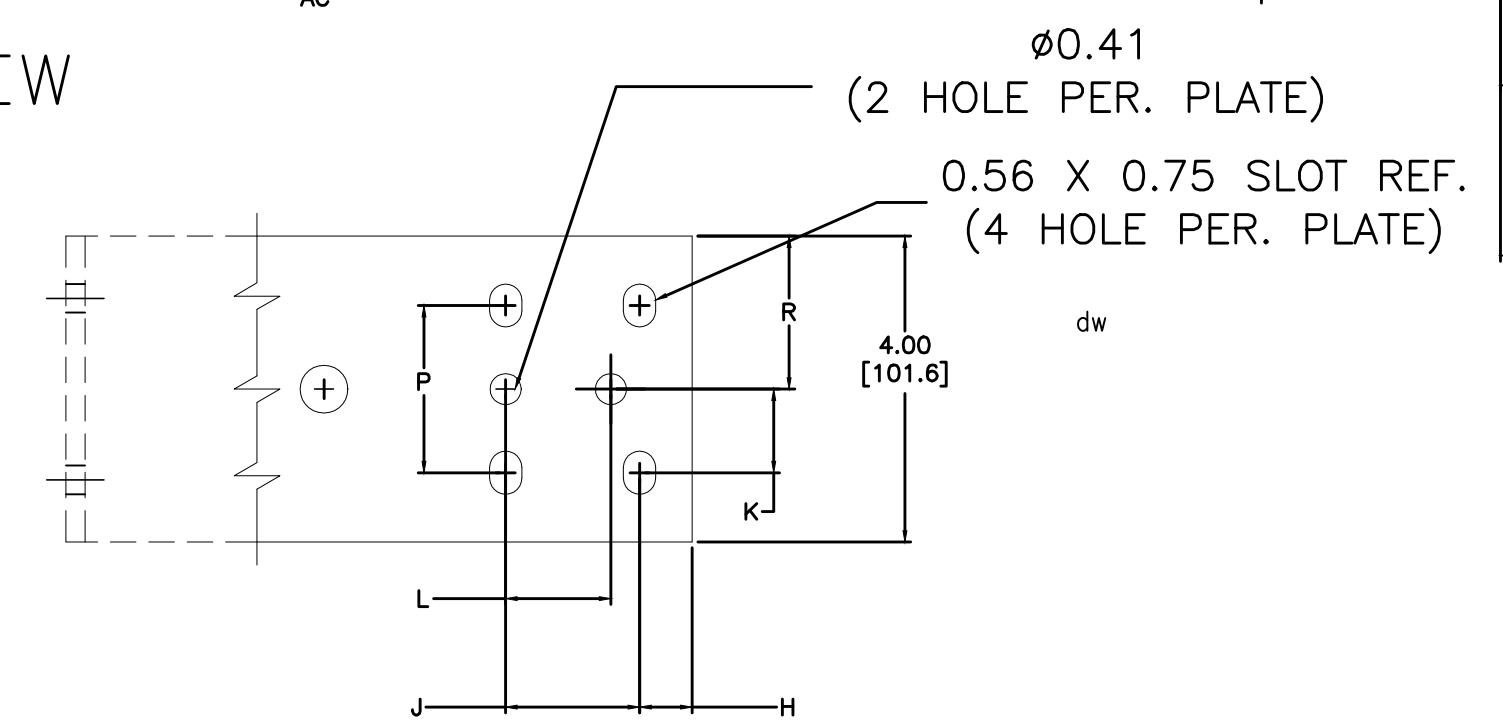
NOTE: CONSULT/COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR CABLING & TERMINATION REQUIREMENTS.



FRONT VIEW



SIDE VIEW



BUS TERMINATION DETAIL (TYP.)

AMP SIZE	BUS BAR PER PHASE BOLTING SURFACE
2600 THRU 3200	0.25" x 4.00" [6,4mm x 101,6mm]



**BLMYER ENGINEERS**

DESIGNED: RP      CHECKED: LM  
 DRAWN: RP      CADD FILE NAME:



APPROVED

CADD FILE DATE:      SCALE: NONE  
 PLOT DATE:      BOARD APPROVAL DATE: -

CERONE DIVISION  
 EMERGENCY GENERATOR  
 REPLACEMENT  
 ATS FRAME OUTLINE  
 (ASCO 300)

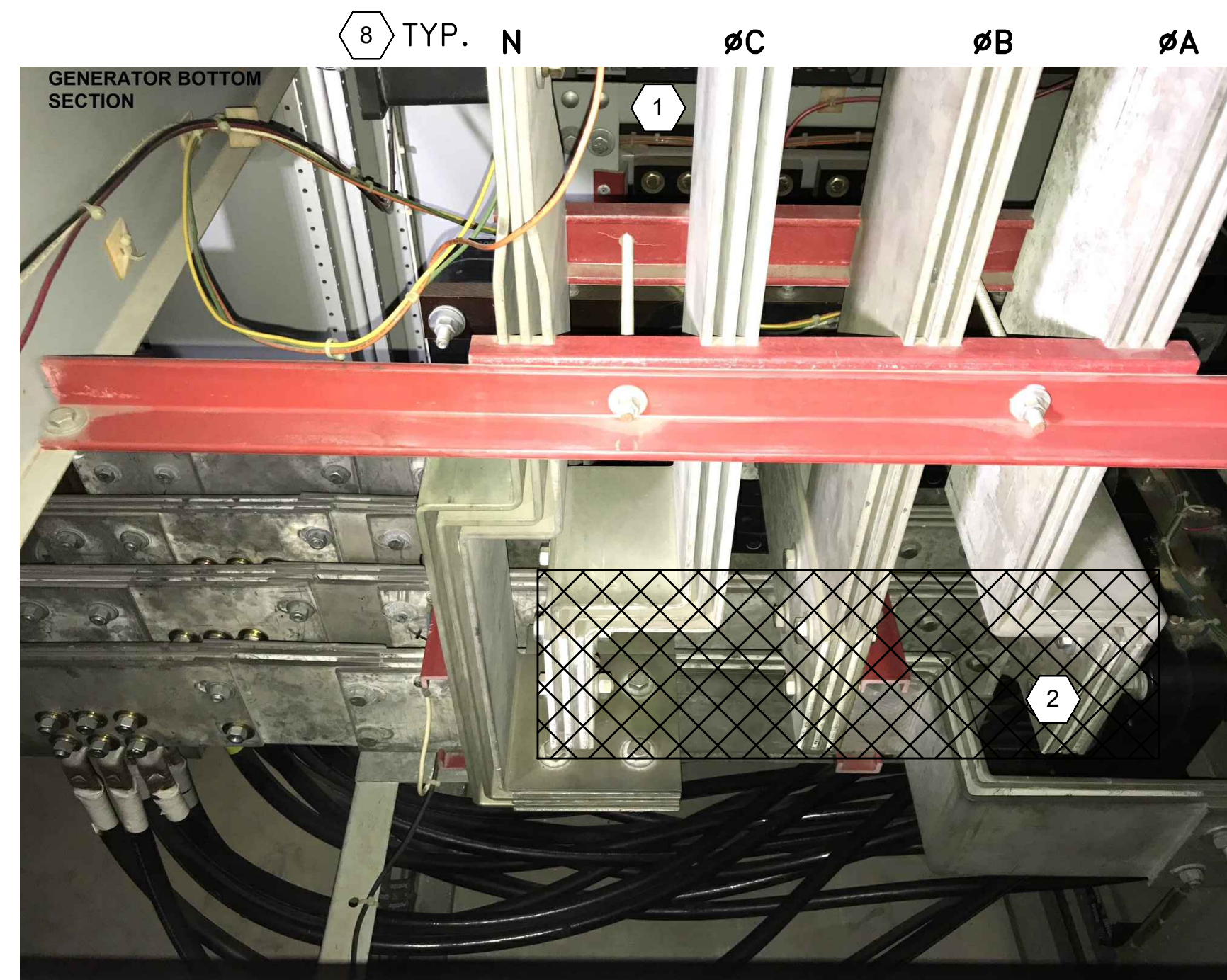
SHEET 22 OF 33  
 DRAWING NO. E-4.3  
 REVISION

SAP NO.      CONTRACT NO. C19010      FILE LOCATION

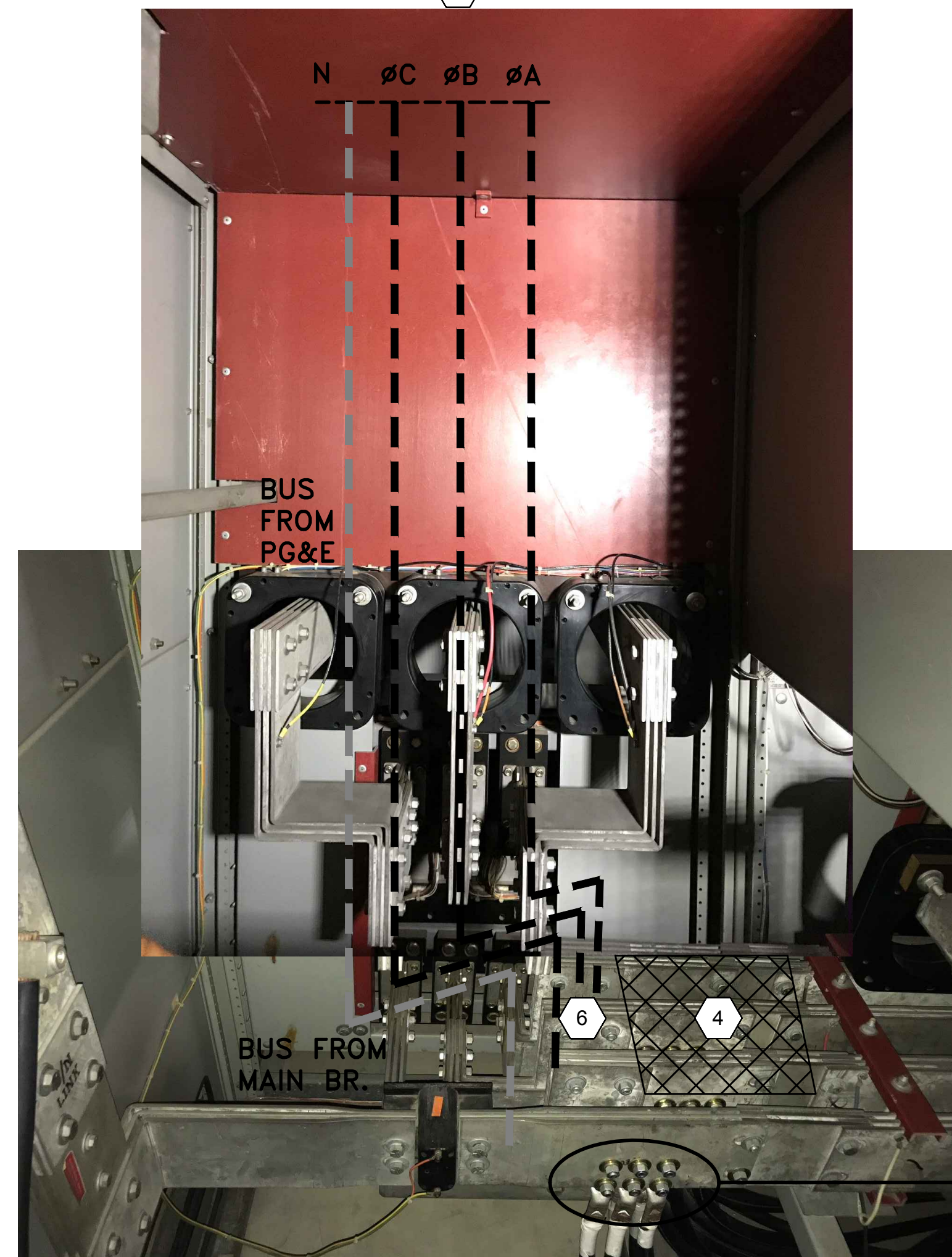
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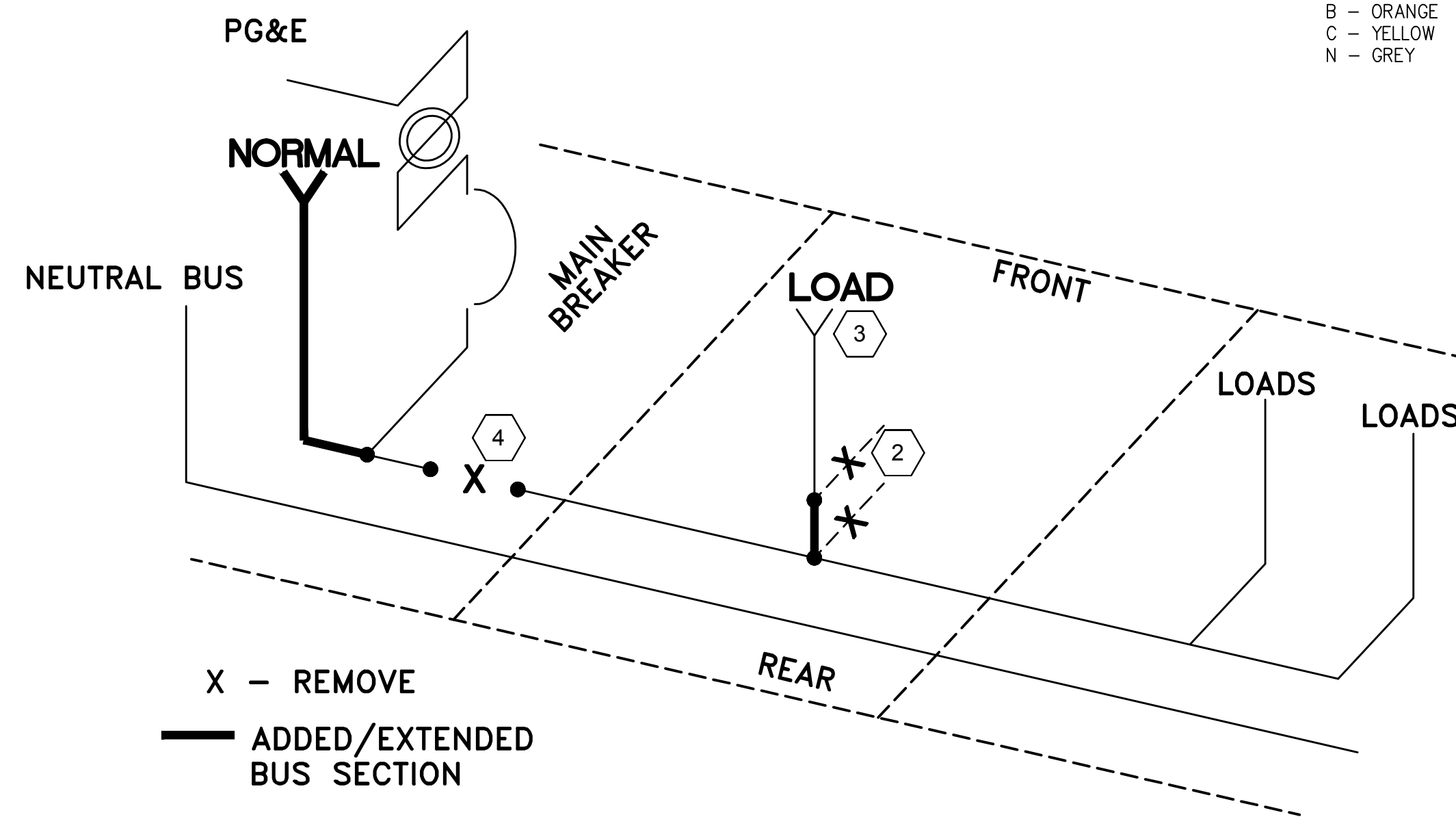
8 TYP.



(E) GENERATOR BREAKER LOAD SIDE



(E) PG&E BUS TO MAIN BREAKER



(N) POWER FLOW

**GENERAL NOTES**

1. PERFORM IR THERMOGRAPHIC SURVEY OF THE EXISTING BUSING SYSTEM UNDER NORMAL LOAD CONDITIONS BEFORE AND AFTER BUS RISER MODIFICATIONS. PROVIDE RESULTS TO VTA. PERFORM TESTING IN ACCORDANCE WITH NETA STANDARD, SECTION 9.
2. ALL NEW BOLTS CONNECTION SHALL USE MATERIAL GRADE SAE 8 WITH FLAT WASHERS, SPRING WASHER AND HEX NUT AS APPLICABLE AT PARTICULAR BUS SECTION.
3. PROPERLY TIGHTEN ALL BOLTS AND LUGS CONNECTIONS IN ACCORDANCE WITH THE TORQUE LABEL PROVIDED BY SWBD MANUFACTURER, OR AS PER NETA STANDARD, TABLE 100.12.1.

**KEYED NOTES**

- 1 REMOVE EXISTING 3000AMPS GENERATOR BREAKER AND AUTOMATIC THROWOVER CONTROLS. THE EXISTING EMERGENCY GROUND FAULT TEST PANEL AND CIRCUITS MUST REMAIN.
- 2 DISCONNECT AND REMOVE HORIZONTAL, SHORT SECTIONS OF THE BUS AFTER GENERATOR BREAKER REMOVAL:  
a) INCOMING FROM THE (E)RISER/SUPPLY BUS TO GENERATOR BREAKER  
b) OUTGOING FROM GENERATOR BREAKER TO THE (E) LOAD BUS.
- 3 CONNECT LOAD BUS TO (N) ATS SWITCH.
- 4 SEPARATE BUS IN THIS LOCATION BY REMOVING INDICATED SHORT HORIZONTAL SECTIONS OF THE BUSES IN LOWER SECTION OF THE MAIN BREAKER COMPARTMENT, FOR ALL A, B, & C PHASES. CAUTION: DO NOT CUT AND/OR REMOVE ANY SECTION OF THE NEUTRAL BUS !
- 5 REROUTE (E)NEUTRAL BUS IN THE UPPER SECTION OF THE MAIN BREAKER COMPARTMENT AS NECESSARY, TO MAKE A SPACE FOR A NEW BUS RISER AND FLANGE. FOR DIMENSIONS REFERENCE SEE DETAIL 1/E-5.2.
- 6 INSTALL RISER BUS FROM THE SEPARATED SUPPLY BUS TO THE PRE-INSTALLED FLANGE AT THE TOP OF THE SWBD. CONNECT TO (N) POW-R-WAY BUSWAY. THIS WILL BE NORMAL/SUPPLY POWER BUS TO THE ATS SWITCH.
- 7 TAPED CONDUCTORS TO EATON 2000A SWBD MUST BE MOVED TO NEXT SECTION LOAD BUS/(E)GENERATOR BREAKER.
- 8 MARK BUS WITH APPROPRIATE PHASE COLOR FOR 480V, 3ø, 4W SYSTEM:  
A - BROWN  
B - ORANGE  
C - YELLOW  
N - GREY

**SEQUENCE OF CONSTRUCTION**

- REVIEW, CONFIRM AND/OR PROVIDE MODIFICATIONS TO MOP BASED ON THE FILED CONDITIONS FOR VTA AND EOR APPROVAL.
1. INSTALL (N)ATS AND (N)GENERATOR IN PLACE AND RUN ALL CONDUITS FROM THE ATS TO THE GENERATOR, INCLUDING CTRL, AND AUX POWER.
  2. INSTALL ALL CONDUITS FROM NEW GENERATORS/PUMPING SUMP TO THE (E)FUEL TANK AND FMS LOCATION AS PER PLAN, DRAWING FE-2.0.
  3. PULL ALL WIRES, MAKE ALL NECESSARY CONNECTIONS AS APPLICABLE, TEST AND VERIFY.
  4. PERFORM IR THERMOGRAPHIC SURVEY OF THE (E)SWGR AS DESCRIBED IN GENERAL NOTE #1.
  5. INSTALL TEMPORARY POWER FOR PRE-SELECTED LOADS, PER SHEET E-3.2.
  6. ELECTRICAL SHUTDOWN #1.
  - 6.1. REROUTE EXISTING NEUTRAL BUS AS PER KEYED NOTE #5.
  - 6.2. INSTALL DOWNWARD ELBOW FLANGE FOR NEW BUSWAY 'NORMAL POWER' IN THE MAIN BREAKER SECTION (IEM A15959). FIELD VERIFY DIMENSION, TO PREPARE A NEW SECTION OF THE 'NORMAL POWER' RISER BUS FROM THIS ELBOW TO SEPARATED LOWER SECTION OF THE UTILITY SUPPLY BUS.
  - 6.3. VERIFY ALL OTHER DIMENSIONS TO PREPARE NECESSARY HARDWARE TO MAKE ALL OTHER MODIFICATIONS AS DESCRIBED IN KEYED NOTES.
  7. REMOVE TEMPORARY POWER AND RESTORE UTILITY POWER.
  8. RELOCATE (E)CONDUITS AND/OR MAKE A TEMPORARY FLEXIBLE OVERRIDE CONNECTION AS PER KEYED NOTE #6 ON SHEET E-4.0, TO MAKE SPACE FOR (N)BUSWAY.
  9. INSTALL (N)BUSWAY FROM THE MAIN BREAKER SECTION TO THE ATS LOCATION. THIS BUS TO BE INSTALLED AT THE TOP OF (E)GENERATOR SUPPLY BUS. VERIFY DIMENSIONS AND PREPARE DOWNWARD ELBOW FLANGE TO MAKE A CONNECTION/ENTER THE ATS ENCLOSURE IN LATER PHASE OF CONSTRUCTION.
  10. INSTALL TEMPORARY POWER FOR PRE-SELECTED LOADS, PER SHEET E-3.2.
  11. ELECTRICAL SHUTDOWN #2.
  - 11.1. SEPARATE BUS AS PER KEYED NOTE #4.
  - 11.2. INSTALL RISER BUS A PER KEYED NOTE #6.
  - 11.3. REMOVE GENERATOR BREAKERS AS PER KEYED NOTE #1.
  - 11.4. MODIFY BUS AND RISER IN (E)GENERATOR BREAKER SECTION AS PER KEYED NOTE #2.
  - 11.5. MOVE TAP CONDUCTORS TO EATON 2000A SWBD PER KEYED NOTE #7. RECONNECT ALL DISCONNECTED CIRCUITS.
  - 11.6. SEPARATE (E)GENERATOR BUS AND EXTEND TO ATS USING BUSWAY ELBOW FLANGE.
  - 11.7. INSTALL PREVIOUSLY PREPARED DOWNWARD ELBOW TO CONNECT/EXTEND (N)POWER SUPPLY BUS TO ATS SWITCH.
  12. START AND TEST GENERATOR IN COORDINATION WITH VTA, ATS & GENERATOR MANUFACTURER REQUIREMENTS.
  - 12.1. PERFORM FULL LOAD TESTING OF NEW GENERATOR, WITH RESISTIVE AND REACTIVE LOAD.
  - 12.2. REMOVE LOAD BANK AND ASSOCIATED EQUIPMENT.
  - 12.3. PERFORM MANUAL TEST OF NEW GENERATOR AND ATS WITH FACILITY LOADS.
  - 12.4. PERFORM SIMULATED NORMAL POWER FAILURE AND AUTOMATIC OPERATION OF WHOLE EMERGENCY SYSTEM WITH ATS AND GENERATOR IN AUTOMATIC MODE.
  13. REMOVE TEMPORARY POWER AND RESTORE UTILITY POWER.
  14. PERFORM IR THERMOGRAPHIC SURVEY AS DESCRIBED IN GENERAL NOTE 1; AND OF THE POWER CONNECTIONS AT THE NEW ATS & GENERATOR, UNDER NORMAL LOAD CONDITION.
  15. REMOVE ABANDONED BUSWAY TO (ERD) GENERATORS AND ASSOCIATED CONDUITS/EQUIPMENT.

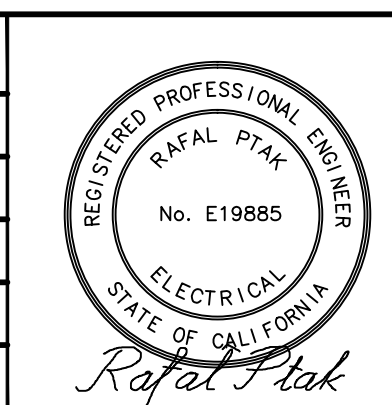
TABLE 100.12.1

Bolt-Torque Values for Electrical Connections  
US Standard Fasteners<sup>a</sup>  
Heat-Treated Steel - Cadmium or Zinc Plated<sup>b</sup>

Grade	SAE 1&2	SAE 5	SAE 7	SAE 8
Head Marking				
Minimum Tensile (Strength) (lb/in <sup>2</sup> )	64K	105K	133K	150K
Bolt Diameter (Inches)	Torque (Pound-Feet)			
1/4	4	6	8	8
5/16	7	11	15	18
3/8	12	20	27	30
7/16	19	32	44	48
1/2	30	48	68	74
9/16	42	70	96	105
5/8	59	96	135	145
3/4	96	160	225	235
7/8	150	240	350	380
1.0	225	370	530	570

a. Consult manufacturer for equipment supplied with metric fasteners.  
b. Table is based on national coarse thread pitch.

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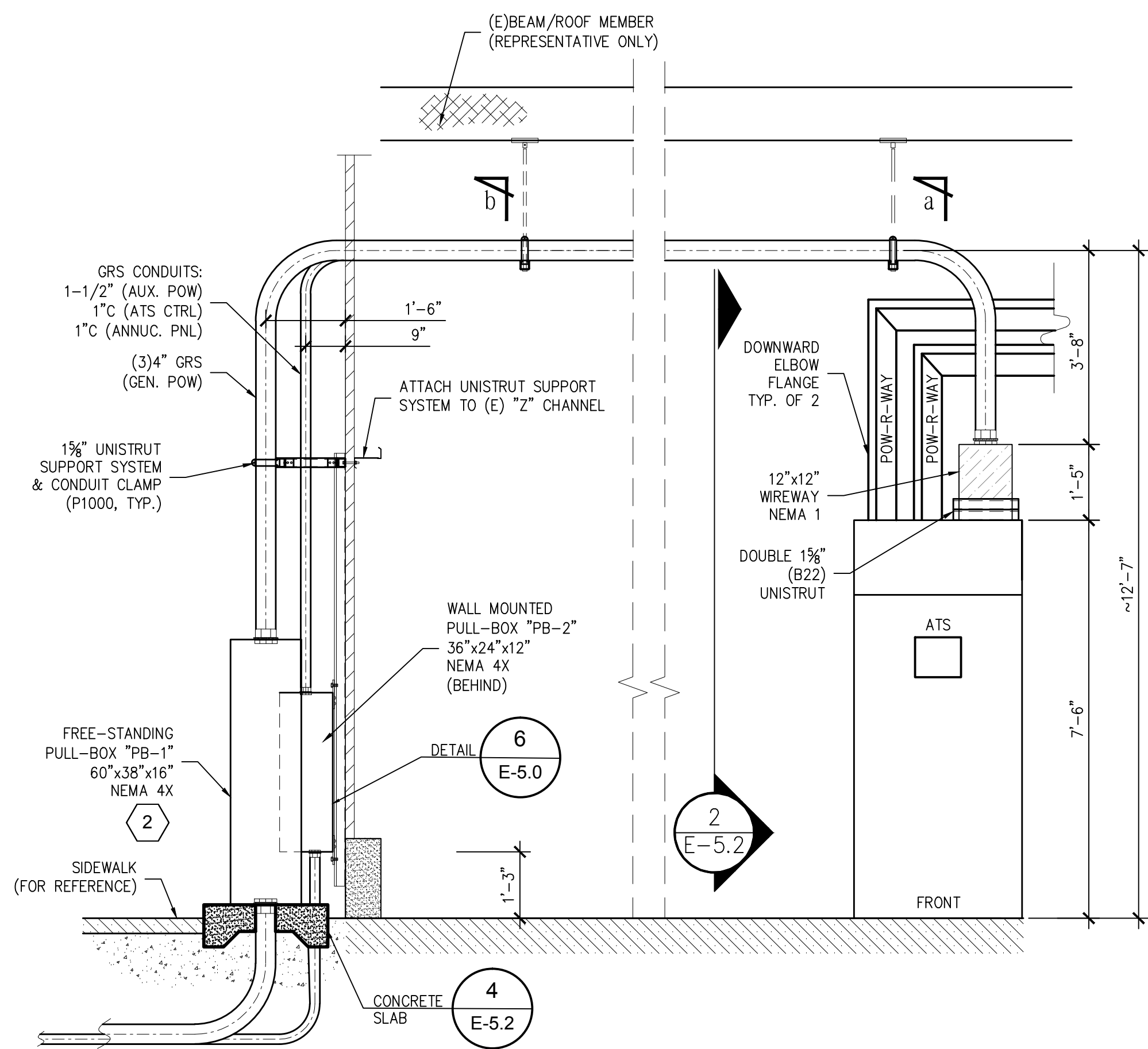


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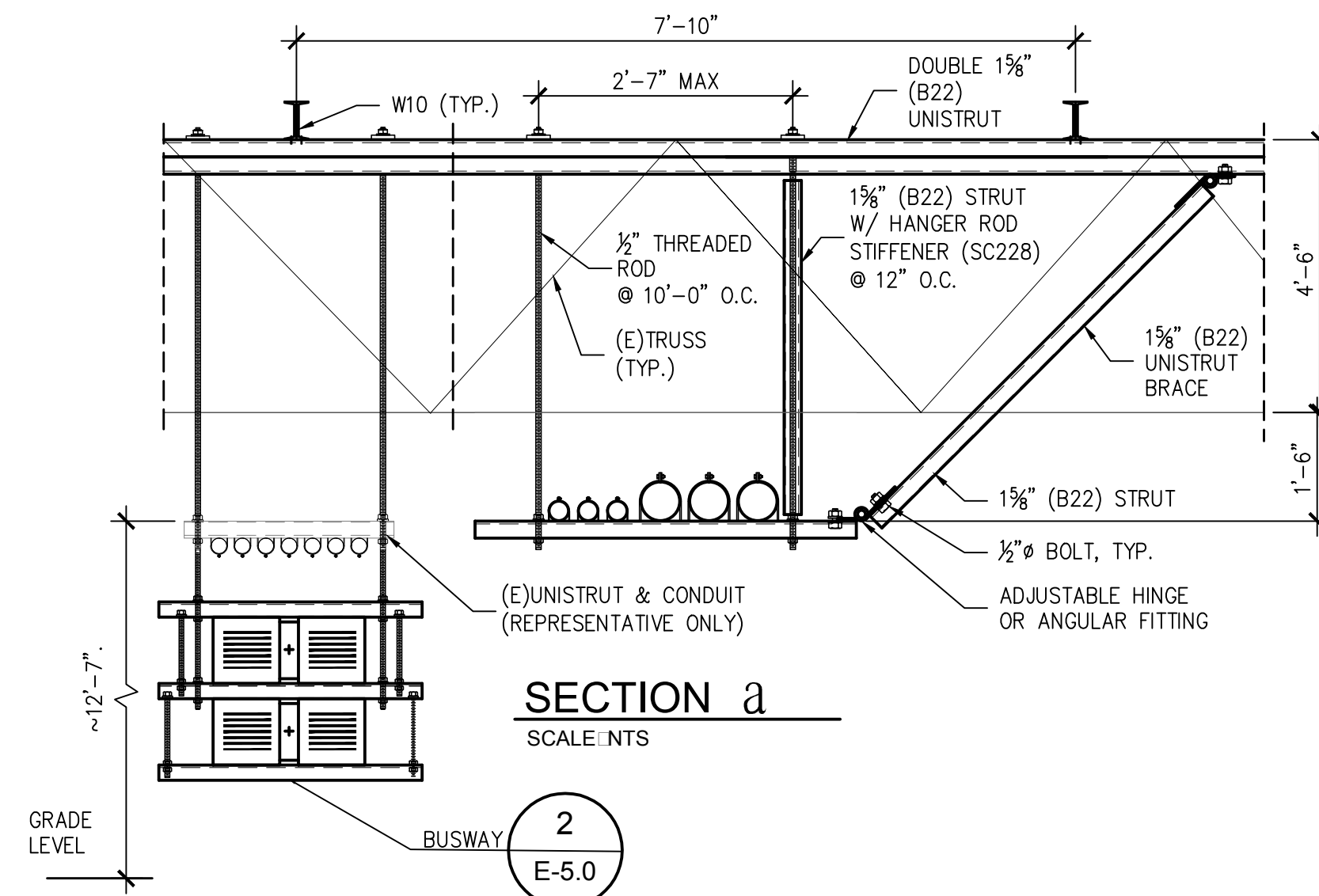


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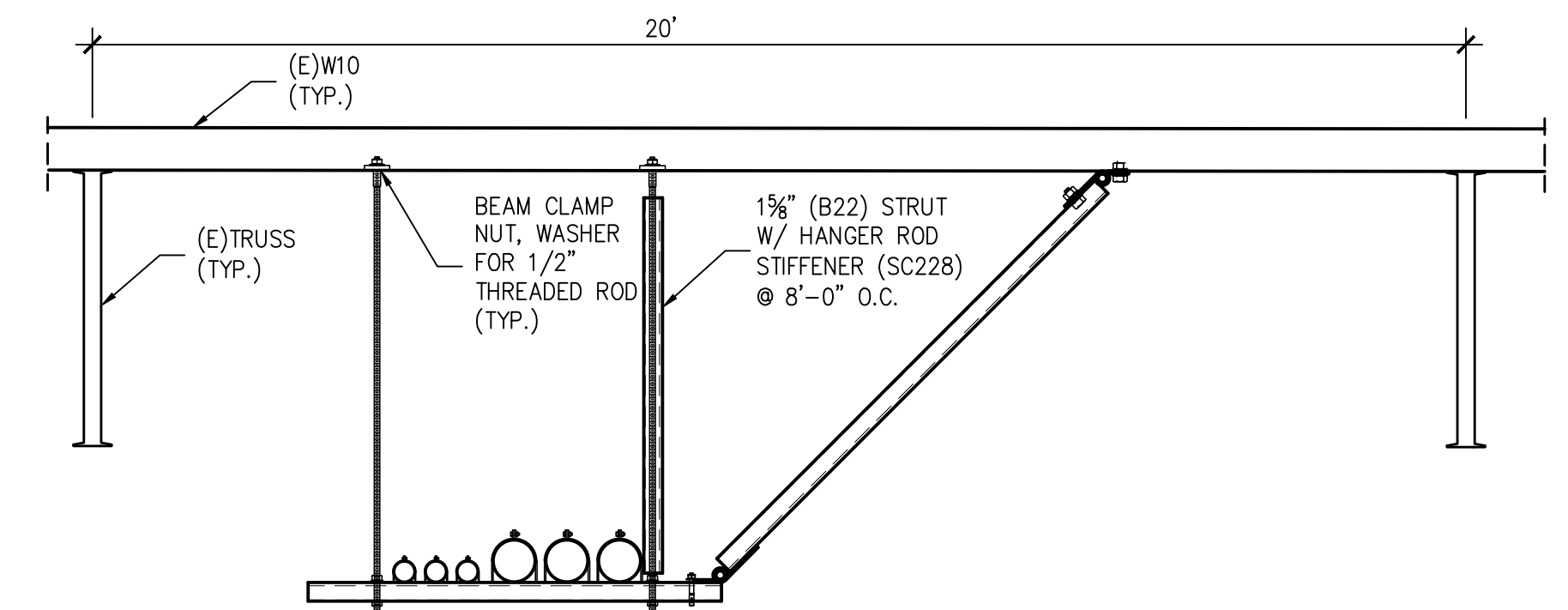
CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT SWBD BUS CONFIGURATION AND SEQUENCE OF OPERATION			SHEET 23
SAP NO.			OF 33
CONTRACT NO. C19010			DRAWING NO. E-4.4
FILE LOCATION			REVISION



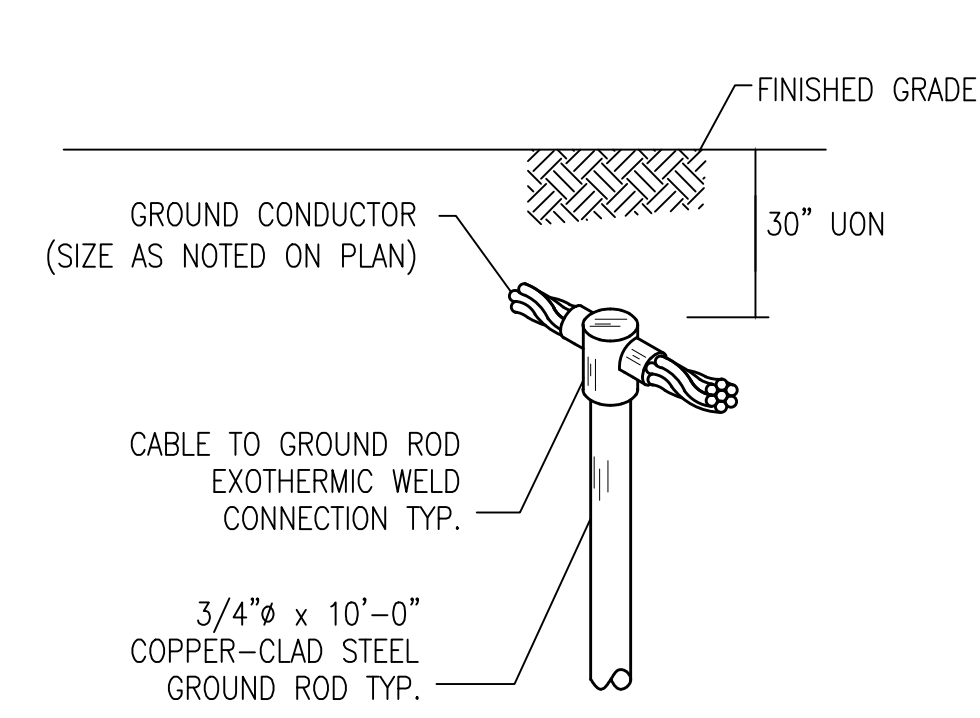
**1 GENERATOR FEEDER CONDUIT INSTALLATION**  
E-5.0 SCALE: NTS



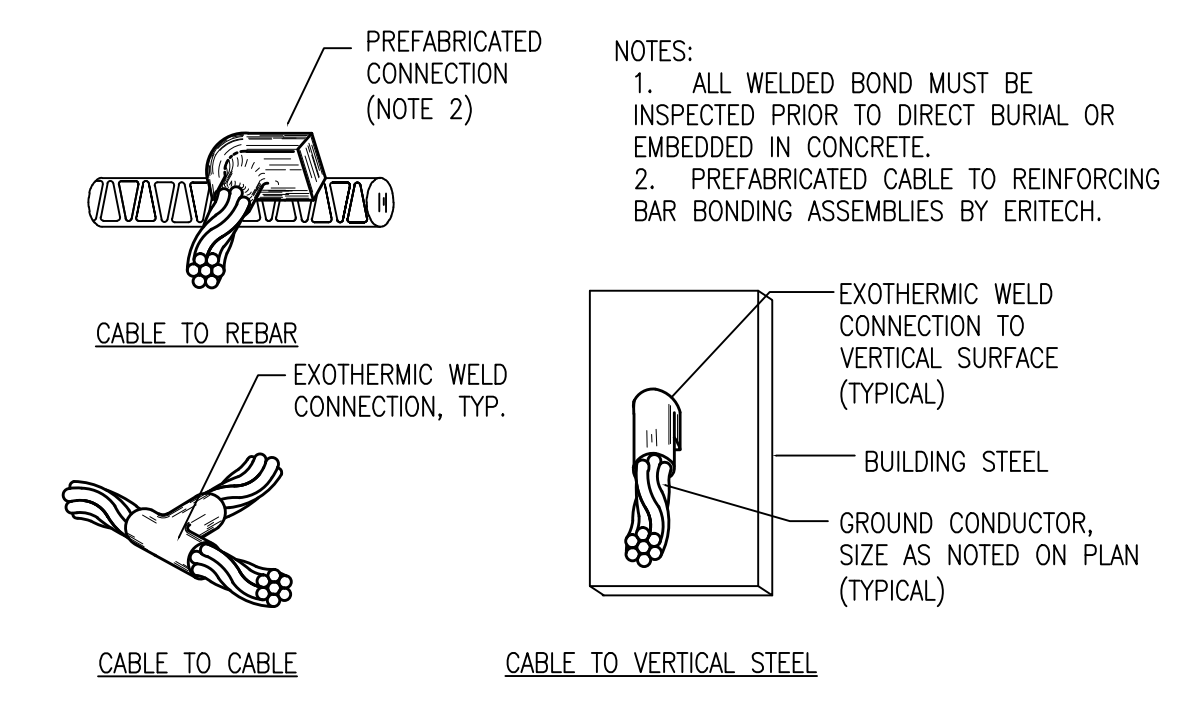
**2 BUSWAY ATTACHEMENT**  
E-5.0 SCALE: NTS



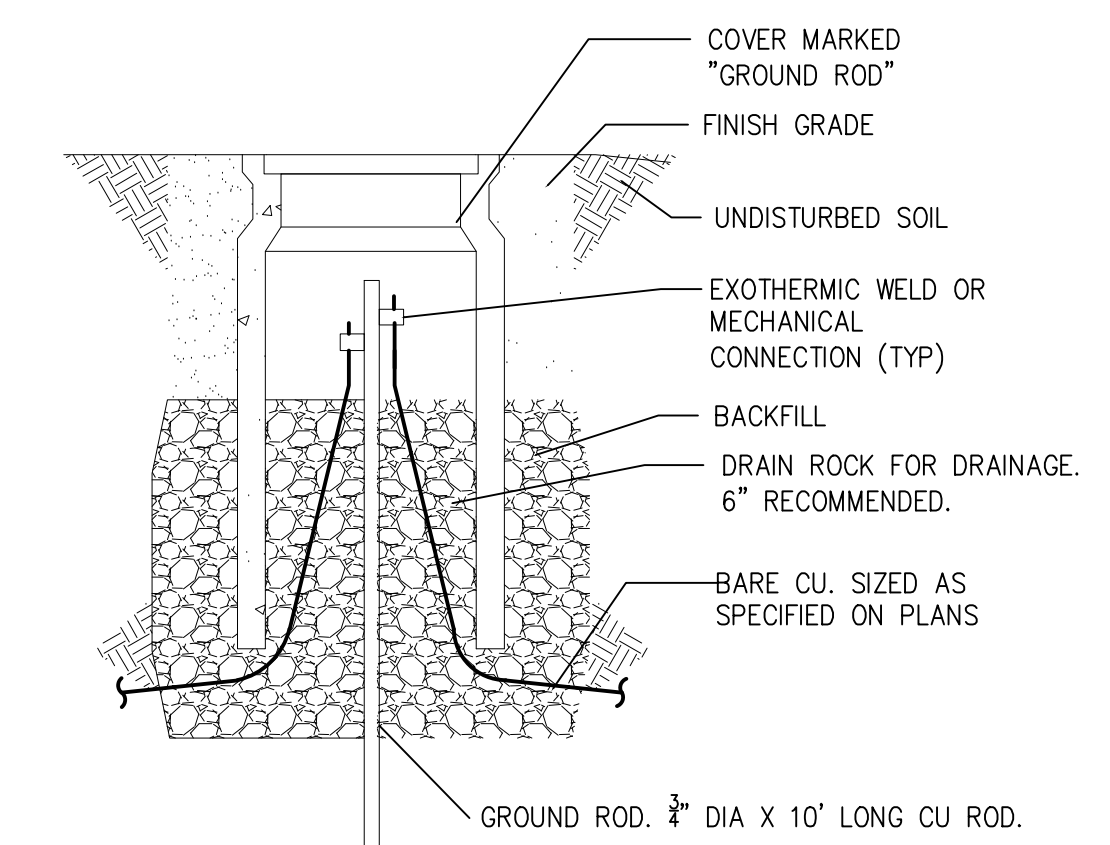
**6 PULL-BOX ATTACHEMENT**  
E-5.0 SCALE: NTS



**3 GROUNDING ROD**  
E-5.0 SCALE: NTS



**4 EXOTHERMIC CONNECTION**  
E-5.0 SCALE: NTS



**5 GROUNDING WELL**  
E-5.0 SCALE: NTS

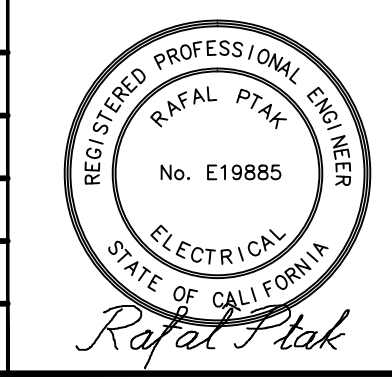
- INSTALLATION NOTES:**
- ANCHOR ELECTRICAL EQUIPMENT WITH HILTI KB-TZ STAINLESS STEEL ANCHOR BOLTS. INSTALLATION AND SPECIAL INSPECTION PER SECTION 4.3 AND 4.4 OF ICC REPORT ESR-1917.
  - ANCHOR BOLT INSTALLATION TORQUE:  
 $3\frac{1}{2}\phi$  - 40 LB.-FT. TORQUE  
 $4\frac{3}{8}\phi$  - 60 LB.-FT. TORQUE  
 $5\frac{1}{4}\phi$  - 110 LB.-FT. TORQUE

**GENERAL NOTES**

- EXPANSION ANCHOR, ANCHOR BOLTS, HARDWARE AND FASTENINGS, ETC. INSTALLED OUTDOORS SHALL BE STAINLESS STEEL.
- PAINTING REQUIREMENTS: REFER TO PAINT APPLICATION SCHEDULE, TS 09 91 23, PART 3.05 "APPLICATION SCHEDULE".

**KEYED NOTES**

- BUSWAY ATTACHMENT TO THE (E) ROOF MEMBERS SHALL BE AS CONDUITS SUPPORT SHOWN ON DETAIL "SECTION 'a'", IN INTERVALS AS NOTED.
- PROVIDE BULK FASTENING TERMINAL BLOCKS TO SPLICE THE CABLE INSIDE THE PULL BOX; MARATHON, PART #BFPD-50-2-3 OR EQUAL. WIRE BENDING SPACE AT TERMINALS SHALL BE PROVIDED IN ACCORDANCE WITH NEC TABLE 312.6(B).



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**BLMYER ENGINEERS**

DESIGNED RP CHECKED LM

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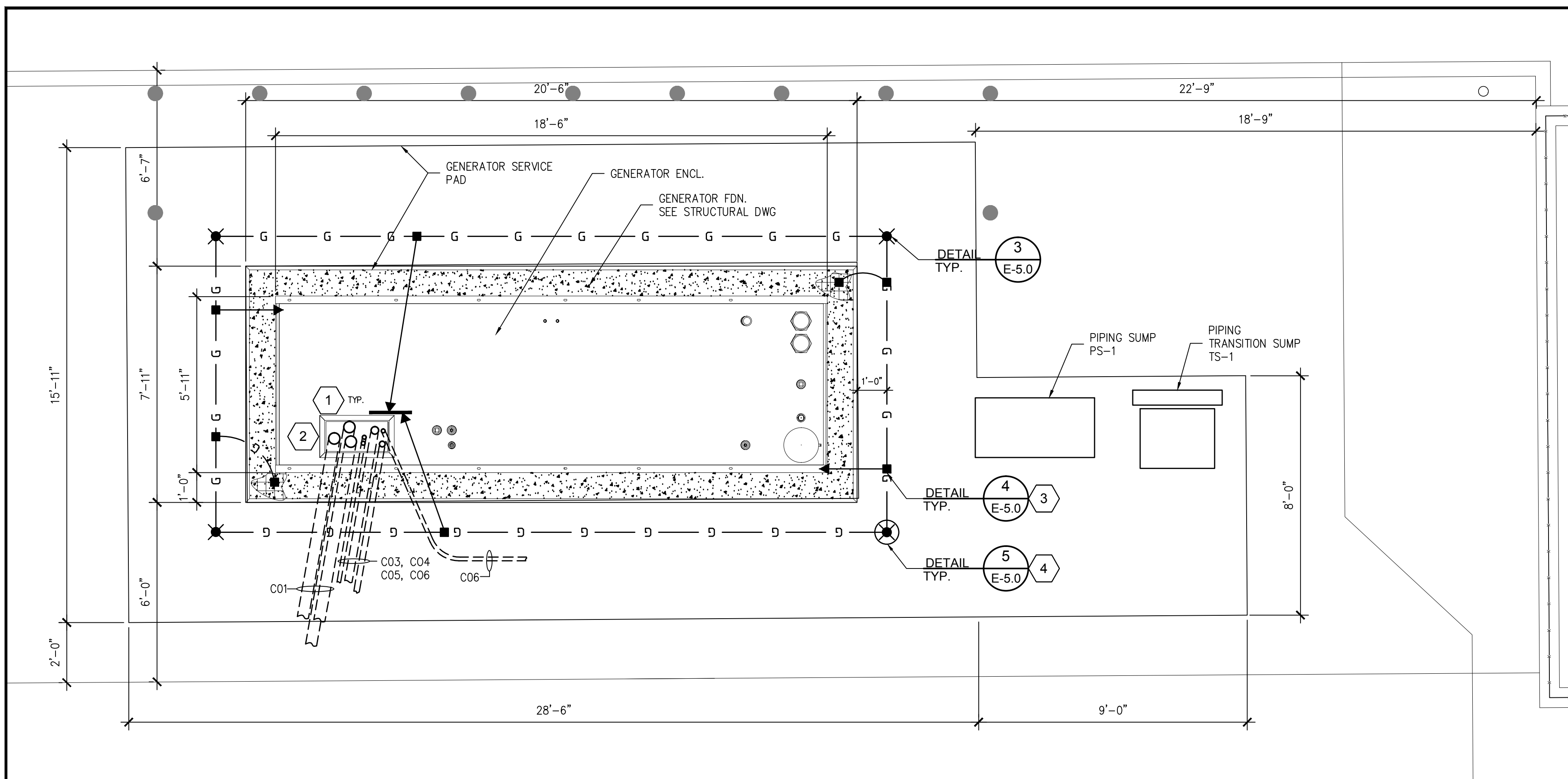
CERONE DIVISION  
EMERGENCY GENERATOR  
REPLACEMENT  
ELECTRICAL DETAILS

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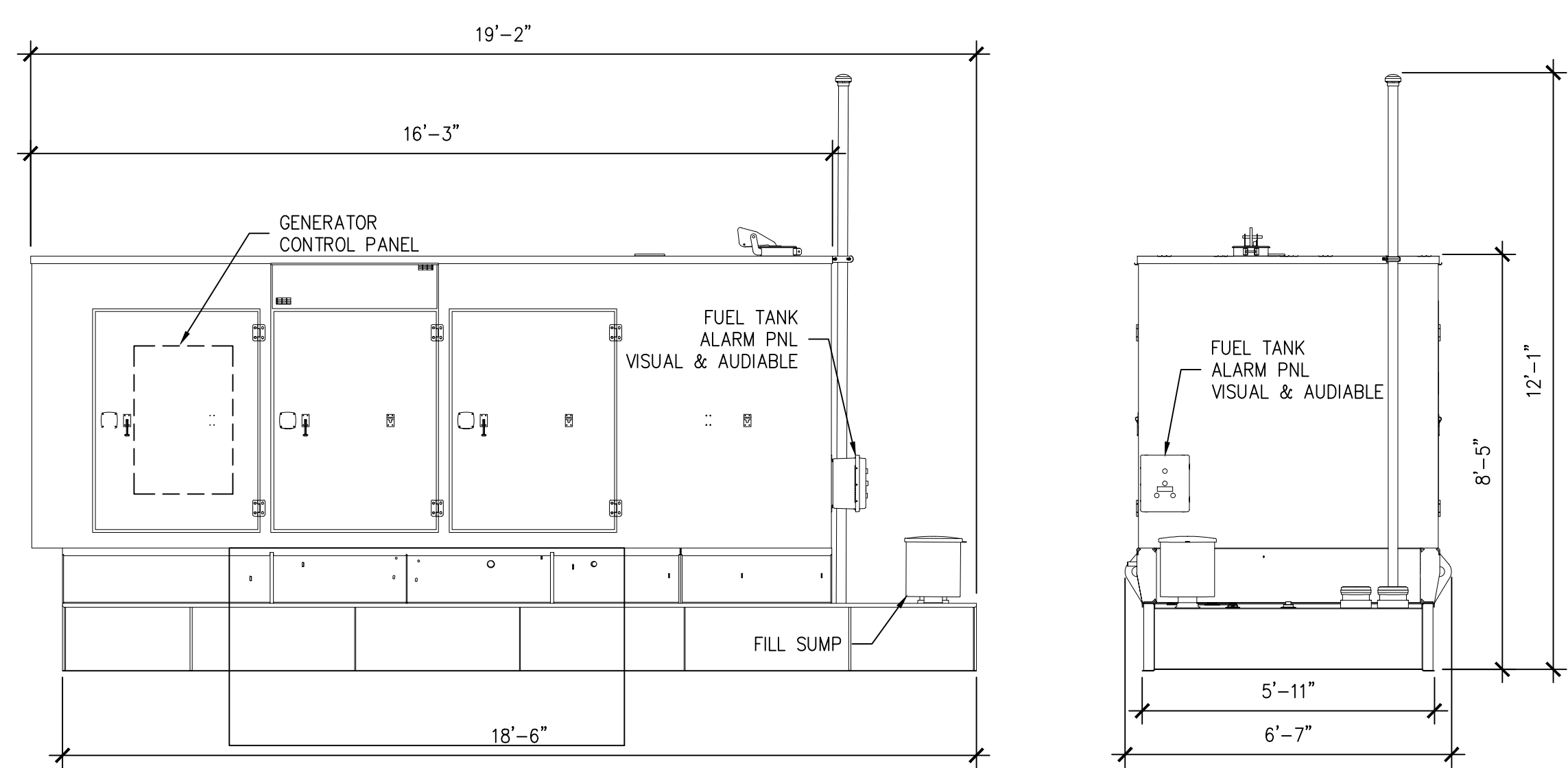
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**1 GENERATOR PAD LAYOUT**  
E-5.1 SCALE: 3/8" = 1'-0"  
NORTH



**2 GENERATOR ELEVATION**  
E-5.1 SCALE: 3/8" = 1'-0"

- ABBREVIATIONS**
- (E) EXISTING
  - (ER) EXISTING TO REMAIN
  - (ERD) REMOVE EXISTING
  - (F) FUTURE
  - (N) NEW
  - (R) RECONNECT EXISTING

**GENERAL NOTES**

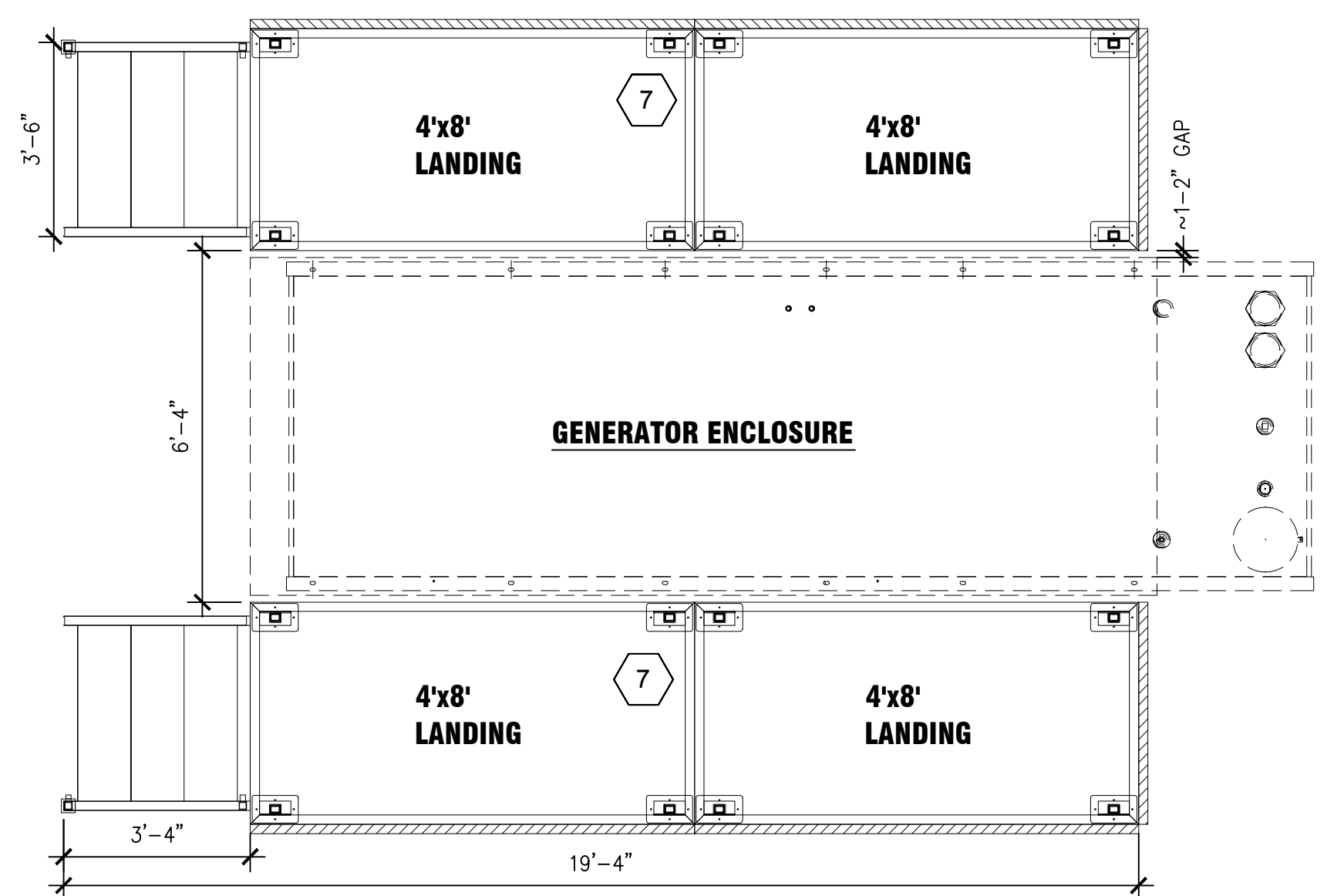
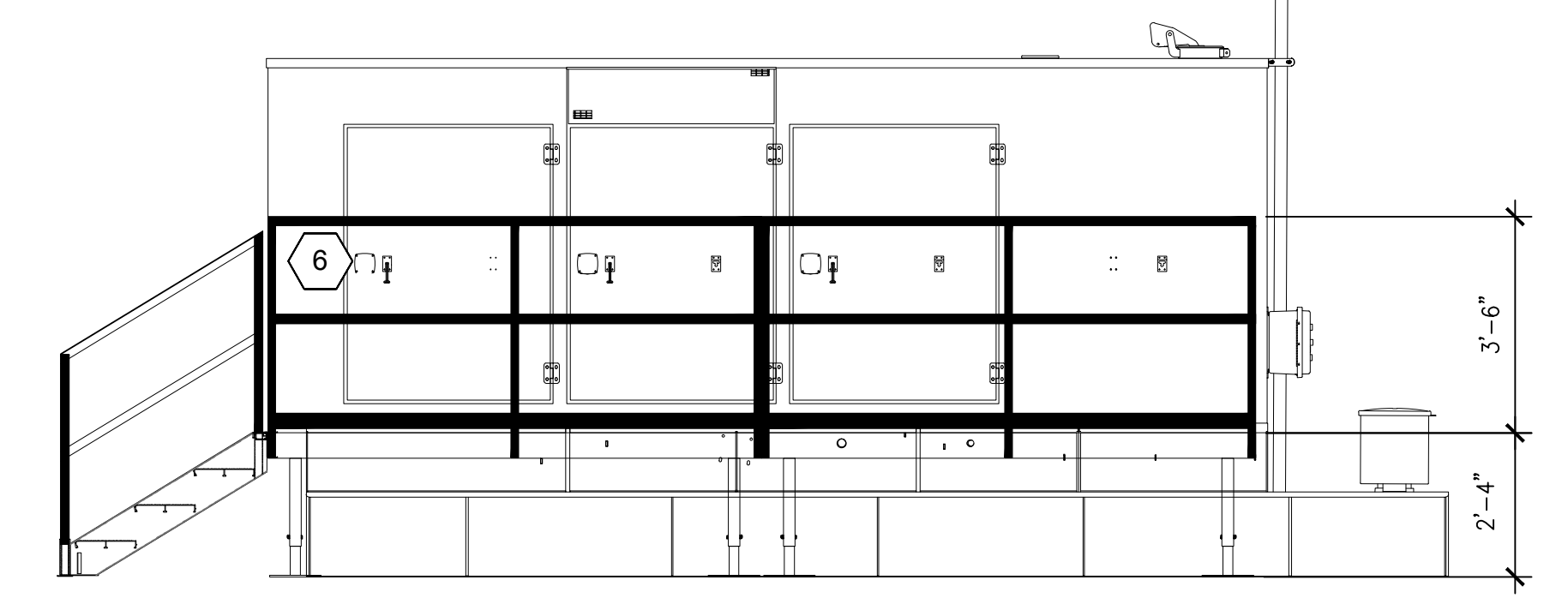
1. ALL (N)EQUIPMENT SHALL BE UL LISTED AND APPROVED BY VTA.
2. COORDINATE CONDUIT ROUTING TO AVOID INTERFERENCES WITH OTHER UTILITIES/UNDERGROUND INSTALLATIONS. CONTRACTOR IS RESPONSIBLE FOR FIELD CHECKING AND MAKING ALL NECESSARY OFFSETS AS REQUIRED.
3. INSTALLATION OF THE EQUIPMENT SHALL FOLLOW MANUFACTURER INSTALLATION MANUAL RECOMMENDATION.
4. REFER TO CONDUIT SCHEDULE FOR WIRE SIZE.

**LEGEND**

- UNDERGROUND RACEWAY
- EQUIPMENT GROUND BUS (REPRESENTATIVE)
- #4/0 AWG CU., BARE, SOFT DRAWN
- 3/4"x10'-0" COPPERWELD GROUND ROD
- 3/4"x10'-0" COPPERWELD GROUND ROD IN TESTING WELL
- #4/0 CU., BARE, PIGTAIL TO EQUIP. OR STRUCTURE
- IRREVERSIBLE CONNECTION
- FOUNDATION STEEL REINFORCING

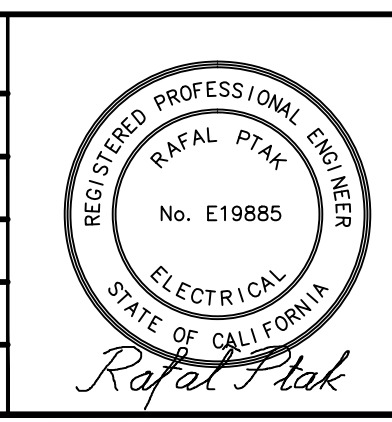
**KEYED NOTES**

- 1 REFER TO GENERATOR INSTALLATION MANUAL FOR CABLES CONNECTION DETAILS.
- 2 COORDINATE CONDUIT STUB-UP LOCATION WITH GENERATOR SHOP DRAWING.
- 3 BOND GROUNDING GRID TO THE GENERATOR ENCLOSURE USING 4/0AWG BC WIRE, IN TWO(2) PLACES MINIMUM, AND PROVIDE (2) TWO GND CONNECTIONS TO THE CTRL PANEL.
- 4 PROVIDE GND WELL AT ONE GND ROD LOCATION. VERIFY ELECTRODE RESISTANCE TO THE GROUND BY 3-POINT TESTING METHOD, AND PROVIDE THE TESTING RESULTS TO THE VTA. THIS RESISTANCE SHALL NOT EXCEED 100Ω.
- 5 THE GENERATOR SERVICE PAD DIMENSIONS ARE BASED ON THE CATERPILLAR C18 ACERT 600KW/750KVA, WHICH ESTABLISH THE DESIGN AND QUALITY STANDARD FOR THIS ITEM; AND REFERS TO DRAWINGS QU# 65448, PREPARED BY 'FIDELITY MANUFACTURING' DATED 2/20/2018. IT IS UNDERSTOOD THAT SUCH REFERENCE ARE USED TO FACILITATE THE DESCRIPTION OF THE PRODUCT AND IS DEEMED TO BE FOLLOWED BY THE WORDS 'OR EQUAL'. CONTRACTOR SHALL IDENTIFY DIMENSIONAL REVISION OR REDESIGN OF STRUCTURAL, MEP OR OTHER MODIFICATION THAT MIGHT BE REQUIRED AS A RESULT OF PROPOSED 'OR EQUAL' PRODUCT SUBSTITUTION. SERVICE PAD DIMENSIONS SHALL BE VERIFIED WITH FINAL GENERATOR SUBMITTAL BEFORE POURING THE CONCRETE.
- 6 ALUMINUM ACCESS STAIR SYSTEM WITH 38" HIGH TWO RAIL GUARDIAN, DOUBLE CONFIGURATION (BOTH SIDES OF THE GENERATOR), BY SAPA EXTRUSION INC. OR EQUAL PROVIDED BY GENERATOR SUPPLIER.
- 7 ACCESS STAIR TO BE ANCHORED WITH 4-3/8"x2" EMBEDMENT HILTI KWIK BOLT TZ PER POST BASE PLATE.



**3 GENERATOR ACCESS STAIR SYSTEM**  
E-5.1 SCALE: 3/8" = 1'-0"

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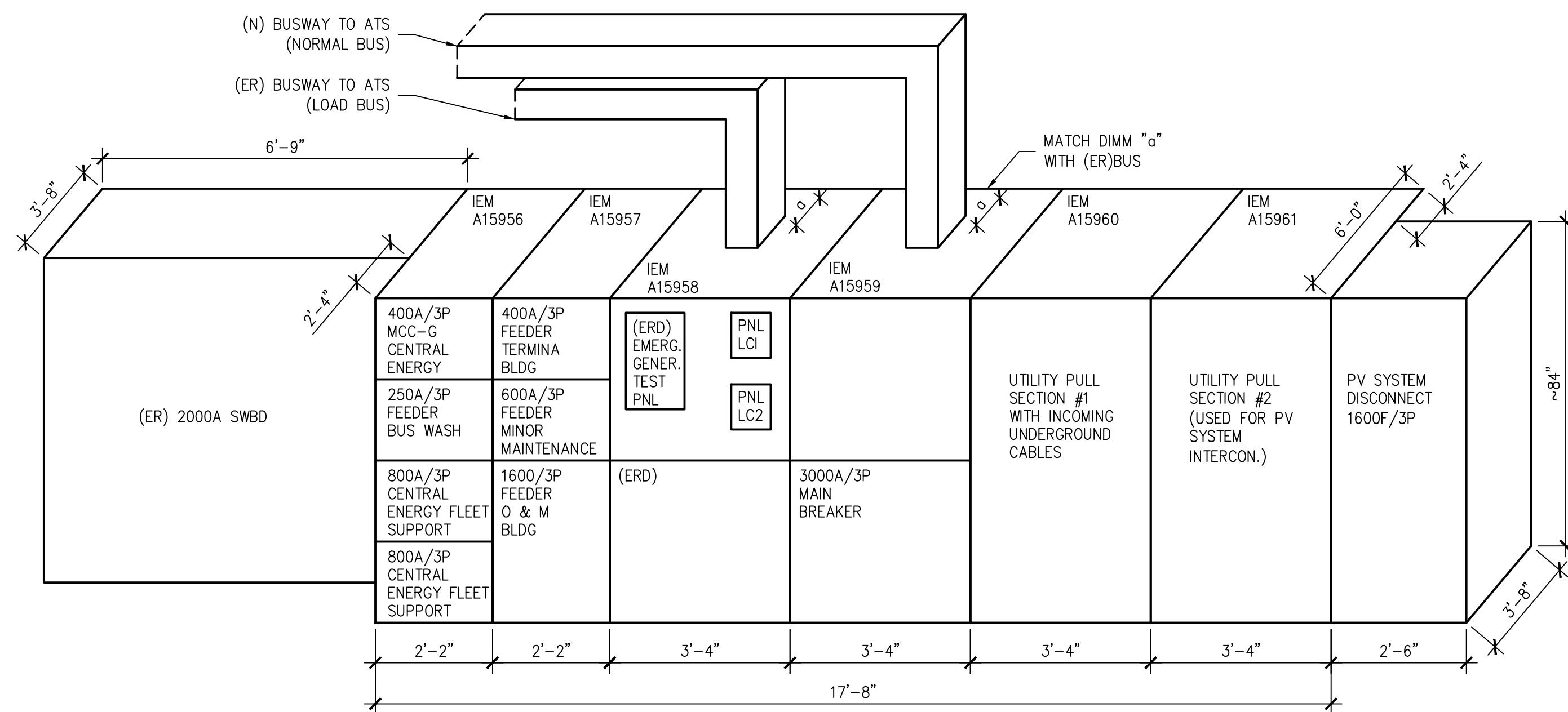
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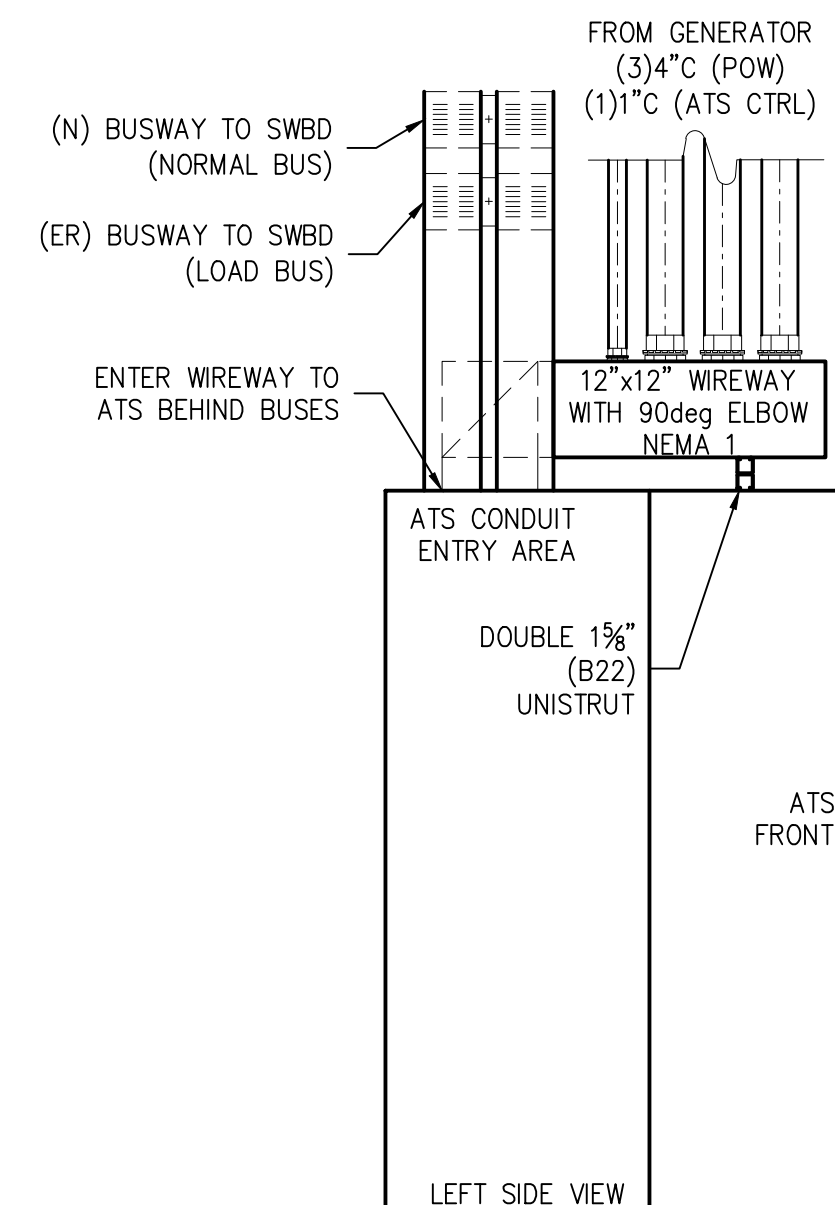
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<b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT GENERATOR DETAILS</b>		
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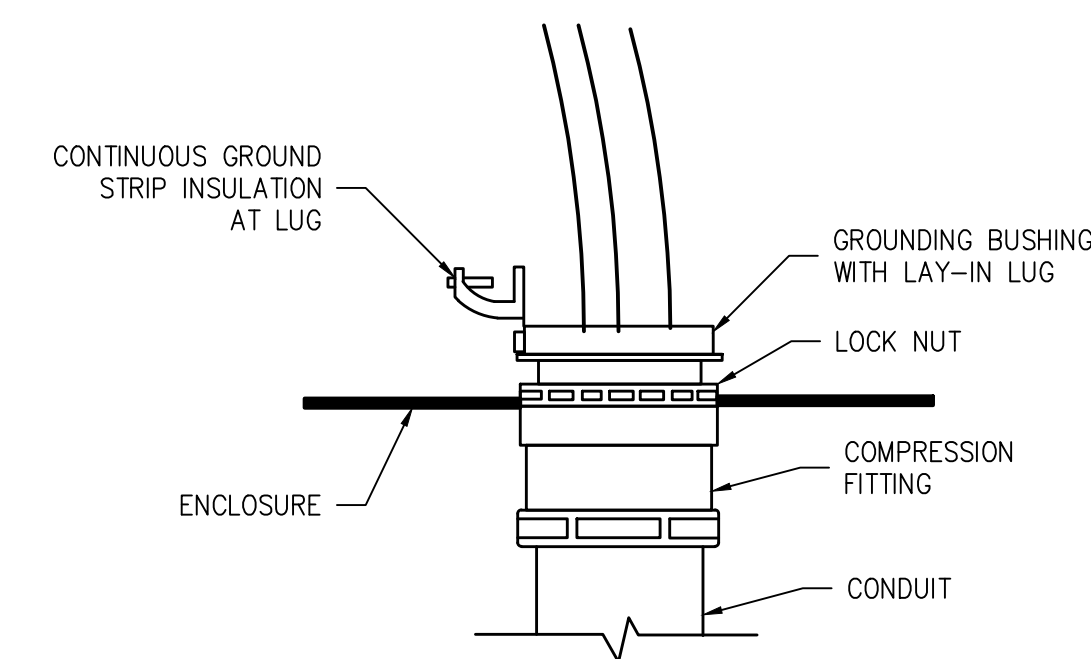
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DRAWING NO. <b>E-5.1</b>
REVISION



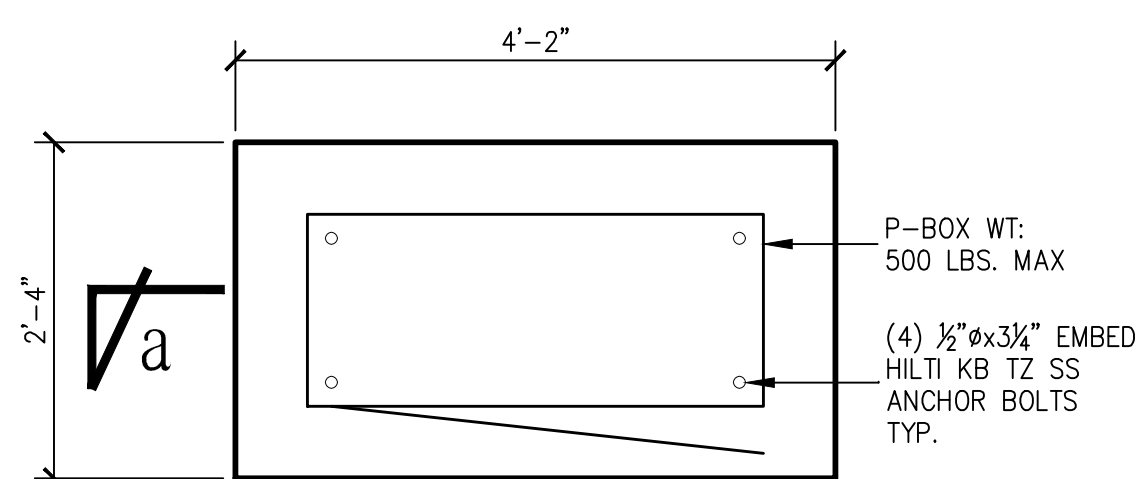
**1 (E) ELECTRICAL SWBD ELEVATION (BY IEM) AFTER MODIFICATIONS**  
E-5.2 SCALE: NTS



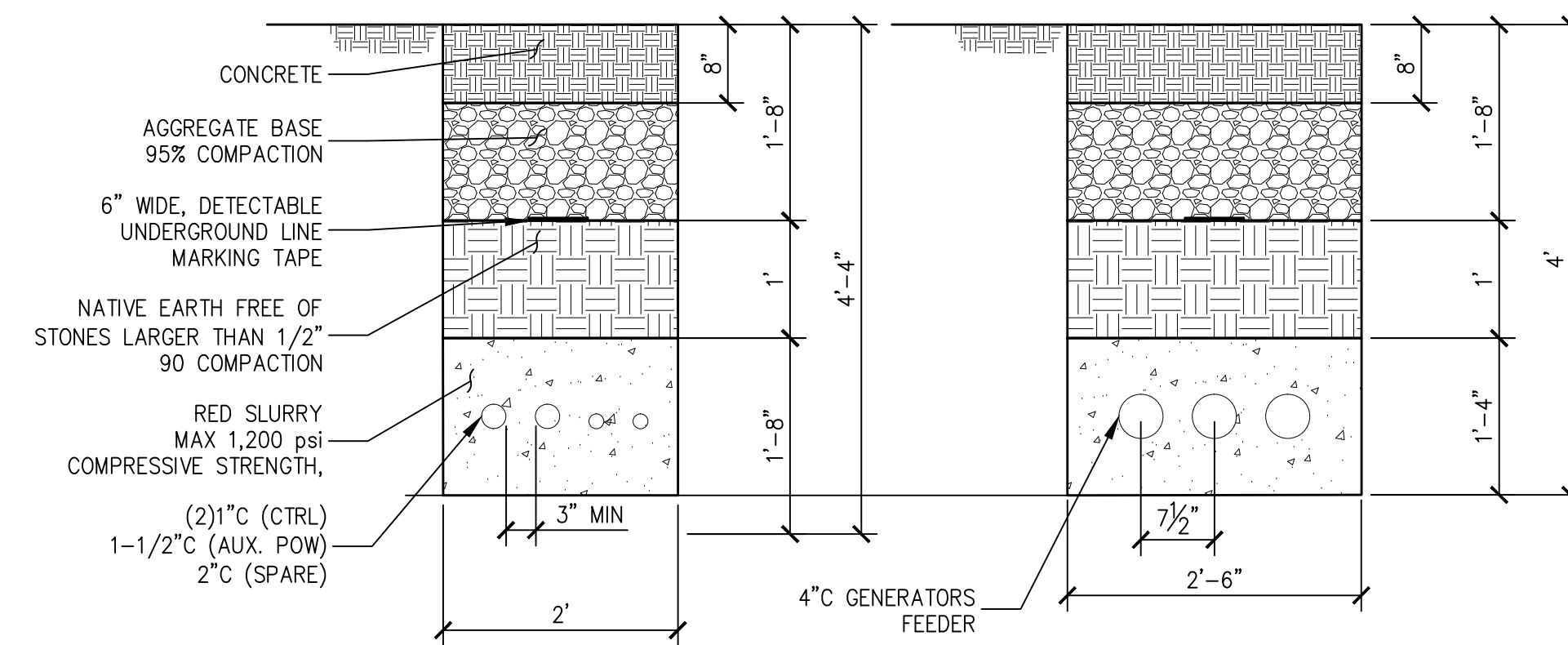
**2 CONDUIT TO ATS ENTRANCE DETAIL**  
E-5.2 SCALE: NTS



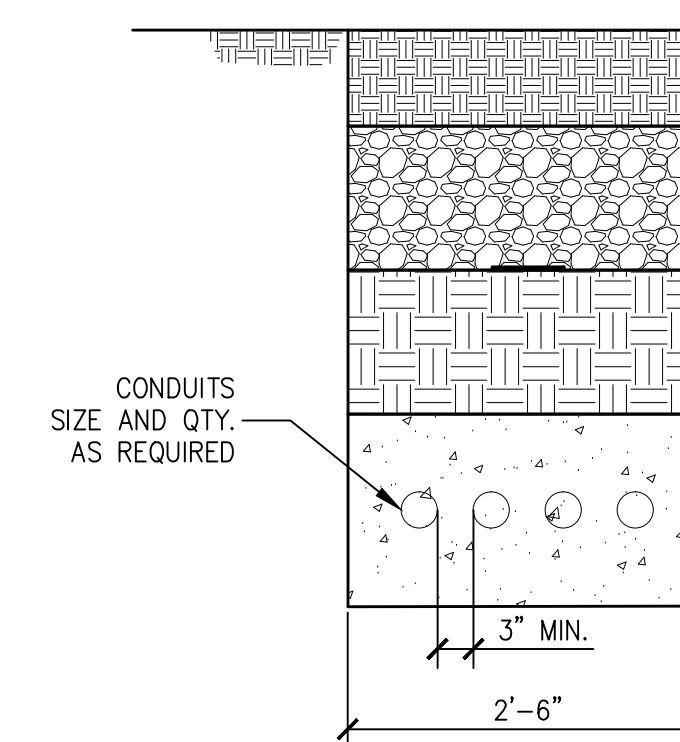
**3 CONDUIT GROUNDING**  
E-5.2 SCALE: NTS



**4 PULL-BOX "PB-1" CONCRETE PAD**  
E-5.2 SCALE: NTS



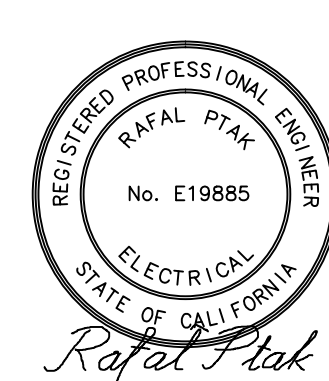
**5a GENERATOR CONDUIT DUCTBANK**  
E-5.2 SCALE: NTS



**5b CONDUIT DUCTBANK, (TYP.)**  
E-5.2 SCALE: NTS

**NOTES**

- FINAL PAD DIMENSIONS AND EQUIPMENT LOCATION TO BE DETERMINED PENDING ELECTRICAL EQUIPMENT SUBMITTALS
- REFER TO "S" SHEETS FOR GENERATOR SLAB.



**BLMYER ENGINEERS**

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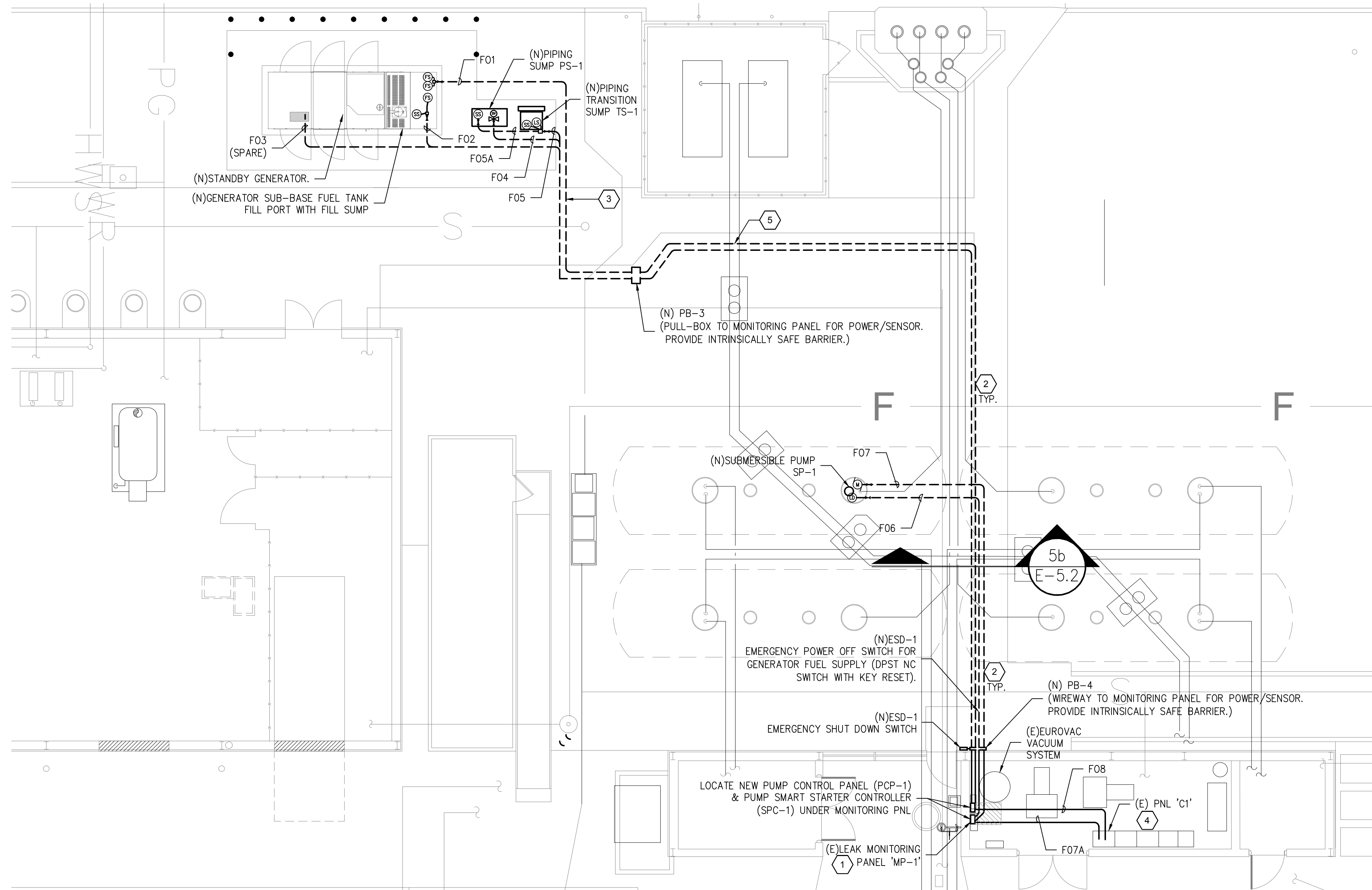
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**CERONE DIVISION  
EMERGENCY GENERATOR  
REPLACEMENT  
ELECTRICAL DETAILS**

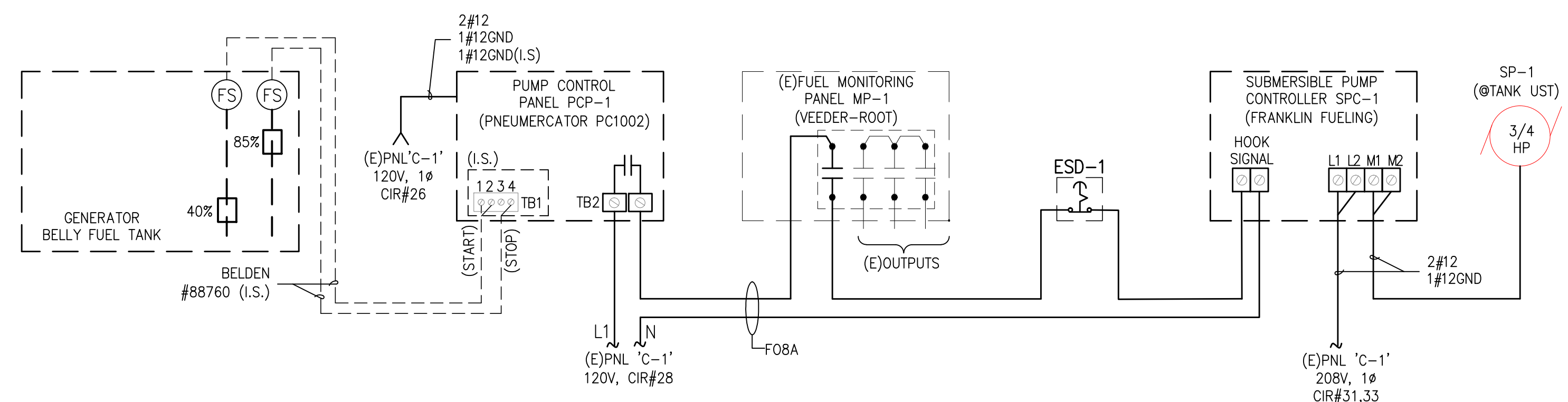
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**GENERATOR FUELING ELECTRICAL PLAN**



**FUEL PUMP CTRL DIAGRAM**

**GENERAL NOTES**

- MECHANICAL EXCAVATORS AND BACKHOES ARE NOT ALLOWED FOR TRENCHING EXCAVATIONS, DUE TO (E) UNDERGROUND UTILITIES. USE HAND TOOLS TO EXCAVATE AROUND (E) UTILITIES "SOFT DIGGING" METHODS, INCLUDING THE USE OF AIR EXCAVATION EQUIPMENT MAY BE USED, SUBJECT TO PRIOR REVIEW AND APPROVAL BY VTA.
- WHILE DIESEL FUEL IS A COMBUSTIBLE FUEL NOT REQUIRING A CLASS 1, DIV 2 INSTALLATION ALL CONDUITS AND WIRING SHALL BE INSTALL TO MEET THE REQUIREMENTS OF CLASS 1, DIV 2.

**KEYED NOTES**

- EXISTING MONITORING PANEL HAS ONLY TWO KNOCKOUTS, ONE FOR POWER AND ONE FOR INTRINSICALLY SAFE. CONSOLIDATE NEW CONDUITS AS NECESSARY TO ACCOMMODATE KNOCKOUTS.
- REMOVE AND REPLACE EXISTING CONCRETE PAVING AS NECESSARY TO PERFORM THE WORK SHOWN IN THIS AREA. DEMOLITION, SAW-CUTTING AND REMOVAL OF EXISTING CONCRETE, EXCAVATION AND OTHER REMOVALS SHALL BE DONE TO THE MINIMUM REQUIRED TO REMOVE EXISTING AND REPLACE WITH NEW. NEW CONCRETE SHALL MATCH EXISTING; REPAIRING ANY MARKINGS WHICH ARE DAMAGE TO MATCH EXISTING.
- REFER TO SH. D-1.0 FOR DEMOLITION, SAW-CUTTING AND REMOVALS OF EXISTING CONCRETE, EXCAVATION AND OTHER REMOVALS IN THIS AREA.
- PROVIDE NEW 20A/2P BREAKER FOR CIR#31.33; AND TWO (2)20A/1P FOR CIRCUITS #26 & 28. NEW BREAKER TYPE AND SHORT CIRCUIT RATING SHALL MATCH EXISTING, AND SHALL BE A TYPE APPROVED TO BE INSTALLED IN (E)PNL "C1". SEE MANUFACTURER INFORMATIONAL LABEL OR REFER TO CATALOG.
- UTILITY CROSSING AT DEPTH ~30" AND 36". RUN NEW CONDUITS UNDER, KEEP MIN 6" OF SEPARATION.

**SENSORS**

- (LS) LEAK SENSOR
- (SS) SUMP SENSOR
- (LD) LINE LEAK DETECTOR
- (FS) FLOAT SWITCH

**LEGEND**

- MIN. REQUIRED WORK SPACE AT FRONT OF THE EQUIPMENT 30"WIDE X 36"DEEP
- MUSHROOMED NC PUSHBUTTON LATCHING, MANUAL RESET

**ABBREVIATIONS**

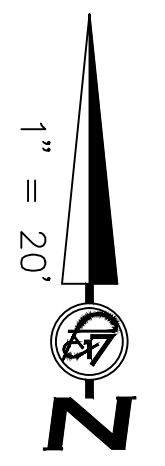
- (E) EXISTING
- (ER) EXISTING TO REMAIN
- (ERD) REMOVE EXISTING
- (F) FUTURE
- (N) NEW
- (R) RECONNECT EXISTING

**(N) PULL-BOX SCHEDULE**

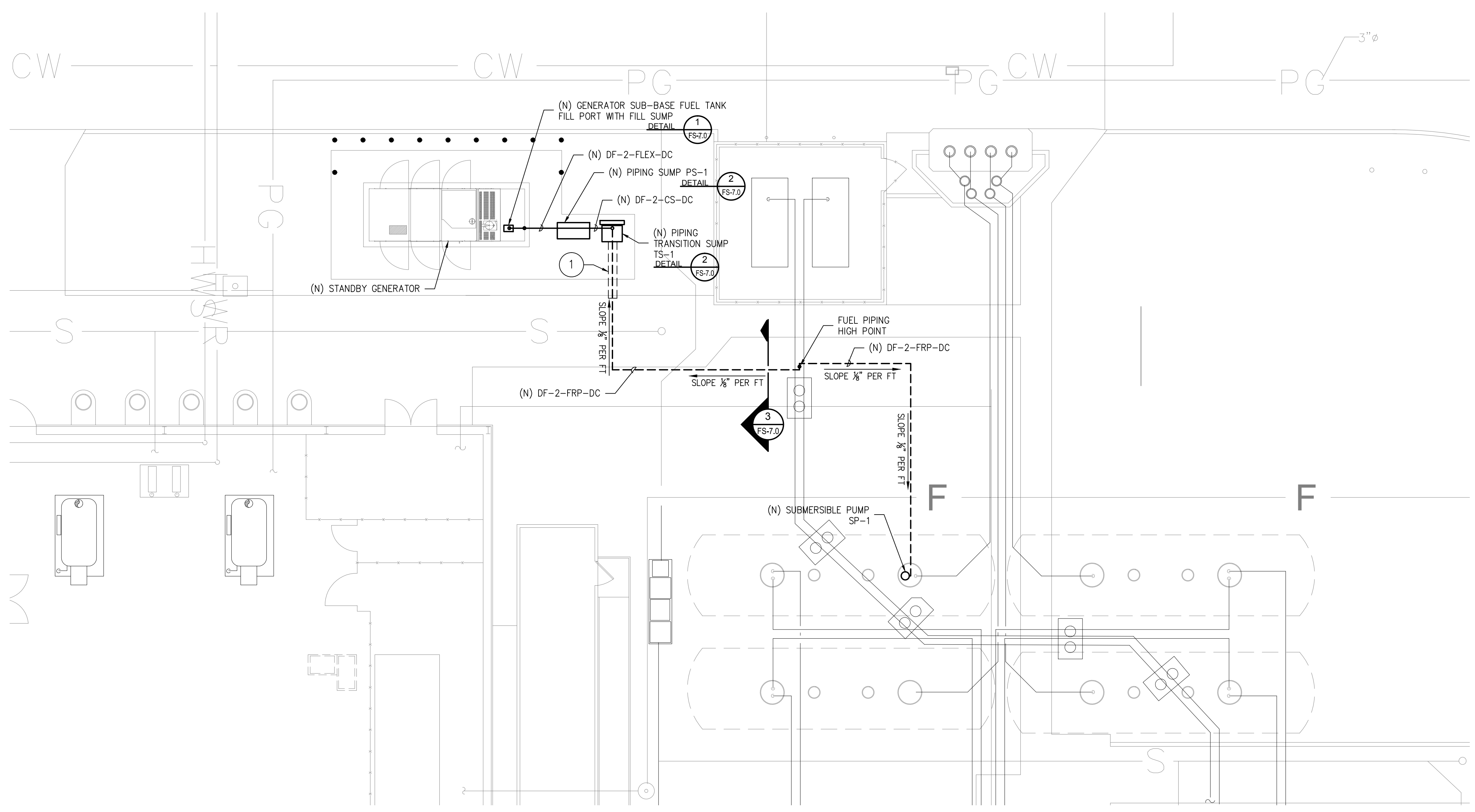
ID	PULL-BOX SIZE	NEMA	PART#/(REMARKS)
PB-3	11-3/4"x22-1	-	CHISTY N16
PB-4	10"x10"x24"	4X	(WIREWAY)

**(N) FUELING SYSTEM CONDUIT SCHEDULE**

ID	CONDUIT, WIRE SIZE	FROM	TO	CONDUIT TYPE/REMARKS
F01	3/4", 2-BELDEN #88760	GENERATOR BELLY TANK	PNL PCP-1	PVC COATED GRS
F02	3/4", 2-BELDEN #88760	GENERATOR BELLY TANK	PNL MP-1	PVC COATED GRS
F03	1" (SPARE)	GENERATOR CTRL PANEL	TO MP-1 VIA PCP-1	PVC COATED GRS
F04	3/4", 2#12, 1#12GND	PIPING SUMP PS-1	PNL MP-1	PVC COATED GRS
F05	3/4", 3-BELDEN #88760	TRANSITION SUMP TS-1	PNL MP-1	PVC COATED GRS
F05A	3/4", 1-BELDEN #88760	PIPING SUMP PS-1	TRANSITION SUMP TS-1	PVC COATED GRS
F06	3/4", 1-BELDEN #88760	UNDERGROUND TANK/PUMP SP-1	PNL MP-1	PVC COATED GRS
F07	3/4", 2#12, 1#12GND	'SPC-1'	PUMP SP-1	PVC COATED GRS
F07A	3/4", 2#12, 1#12GND	(E)PNL 'C1'	'SPC-1'	GRS (CIR#31,33)
F08	3/4", 2#12, 1#12GND (I.S.); 2#12	(E)PNL 'C1'	'PCP-1'	GRS (CIR#26-POW) (CIR#28-CTRL LOOP)
F08A	3/4", 2#12, 1#12GND	'PCP-1'	'SPC-1'	GRS (CIR#28-CTRL LOOP)



		 BLYMYER ENGINEERS	 Santa Clara Valley Transportation Authority		<b>CERONE DIVISION</b> <b>EMERGENCY GENERATOR</b> <b>REPLACEMENT</b> <b>GENERATOR FUELING</b> <b>FUEL ELECTRICAL PLAN</b>	SHEET 27 OF 33 <b>DRAWING NO.</b> <b>FE-20</b> REVISION	
SUBMITTED DESIGNED RP DRAWN RP		CHECKED LM CADD FILE NAME		APPROVED CADD FILE DATE PLOT DATE		SCALE NONE BOARD APPROVAL DATE	
ISSUED FOR BID NO. DATE REVISIONS				SAP NO. CONTRACT NO. C19010 FILE LOCATION			



**LINE DESIGNATION**

- DF-2-FRP-DC
  - DOUBLE CONTAINED MATERIAL
  - CS - CARBON STEEL
  - CSG - CARBON STEEL GALVANIZED
  - FRP - FIBERGLASS REINFORCED PIPE
  - FLEX - FLEXIBLE PIPING
  - PRIMARY PIPING SIZE
  - SERVICE
  - DF - DIESEL FUEL

**SHEET NOTES:**

- 1 REFER TO SHEET D-1.0 FOR DEMOLITION, SAW-CUTTING AND REMOVAL OF EXISTING CONCRETE, EXCAVATION AND OTHER REMOVALS IN THIS AREA.

**GENERAL NOTES:**

- 1. MECHANICAL EXCAVATORS AND BACKHOES ARE NOT ALLOWED FOR TRENCH EXCAVATIONS, DUE TO (E) UNDERGROUND UTILITIES. USE HAND TOOLS TO EXCAVATE AROUND (E) UTILITIES. "SOFT DIGGING" METHODS, INCLUDING THE USE OF AIR EXCAVATION EQUIPMENT MAY BE USED, SUBJECT TO PRIOR REVIEW AND APPROVAL BY VTA.

**LEGEND:**

- (E) - EXISTING
- (N) - NEW

**GENERATOR FUELING PIPING PLAN**  
SCALE: 1/8" = 1'-0"  
NORTH

NO.	DATE	REVISIONS
1		ISSUED FOR BID



SUBMITTED	
<b>BLMYER ENGINEERS</b>	
DESIGNED	CHECKED
RP	LM
DRAWN	CADD FILE NAME
RP	



APPROVED	
CADD FILE DATE	SCALE
	NONE
PLOT DATE	BOARD APPROVAL DATE
	-

CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT GENERATOR FUELING FUEL PIPING PLAN			SHEET 28 OF 33 DRAWING NO. <b>FS-20</b> REVISION
SAP NO.	CONTRACT NO. C19010	FILE LOCATION	

**SHEET NOTES**

- 1 EQUIPMENT SHIPPED LOOSE WITH BELLY TANK AND INSTALLED BY CONTRACTOR

**ABBREVIATIONS**

- (E) EXISTING
- (ER) EXISTING TO REMAIN
- (ERD) REMOVE EXISTING
- (F) FUTURE
- (N) NEW
- (R) RECONNECT EXISTING

**LINE DESIGNATION**

- DF-2-FRP-DC
  - DOUBLE CONTAINED MATERIAL
  - CS - CARBON STEEL
  - CSG - CARBON STEEL, GALVANIZED
  - FRP - FIBERGLASS REINFORCED PIPE
  - PRIMARY PIPING SIZE
  - SERVICE
  - DF - DIESEL FUEL

**PIPING AND FITTINGS**

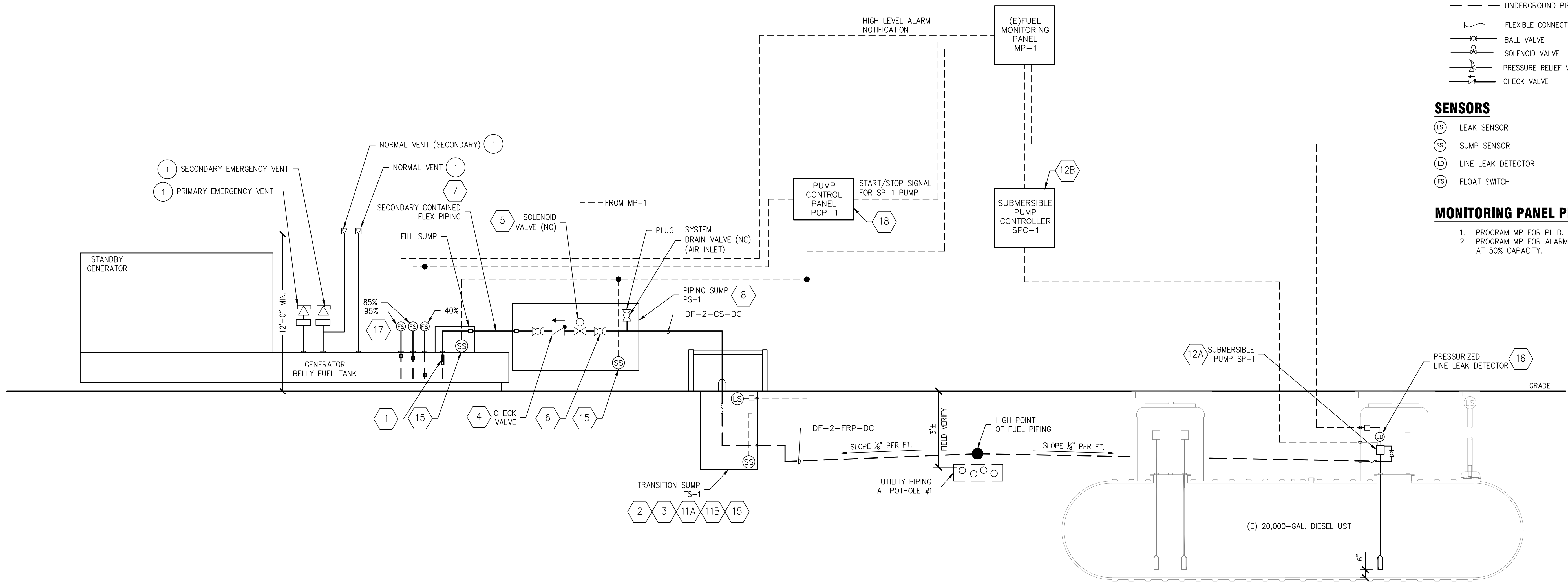
- ABOVEGROUND PIPING
- - - ELECTRICAL CONDUIT
- - - UNDERGROUND PIPING
- ~ FLEXIBLE CONNECTOR
- ⊘ BALL VALVE
- ⊘ SOLENOID VALVE
- ⊘ PRESSURE RELIEF VALVE
- ⊘ CHECK VALVE

**SENSORS**

- LS LEAK SENSOR
- SS SUMP SENSOR
- LD LINE LEAK DETECTOR
- FS FLOAT SWITCH

**MONITORING PANEL PROGRAMMING**

- PROGRAM MP FOR PLLD.
- PROGRAM MP FOR ALARM AT 50% CAPACITY.



**GENERATOR FUELING PIPING AND INSTRUMENTATION DIAGRAM**

SCALE: NTS

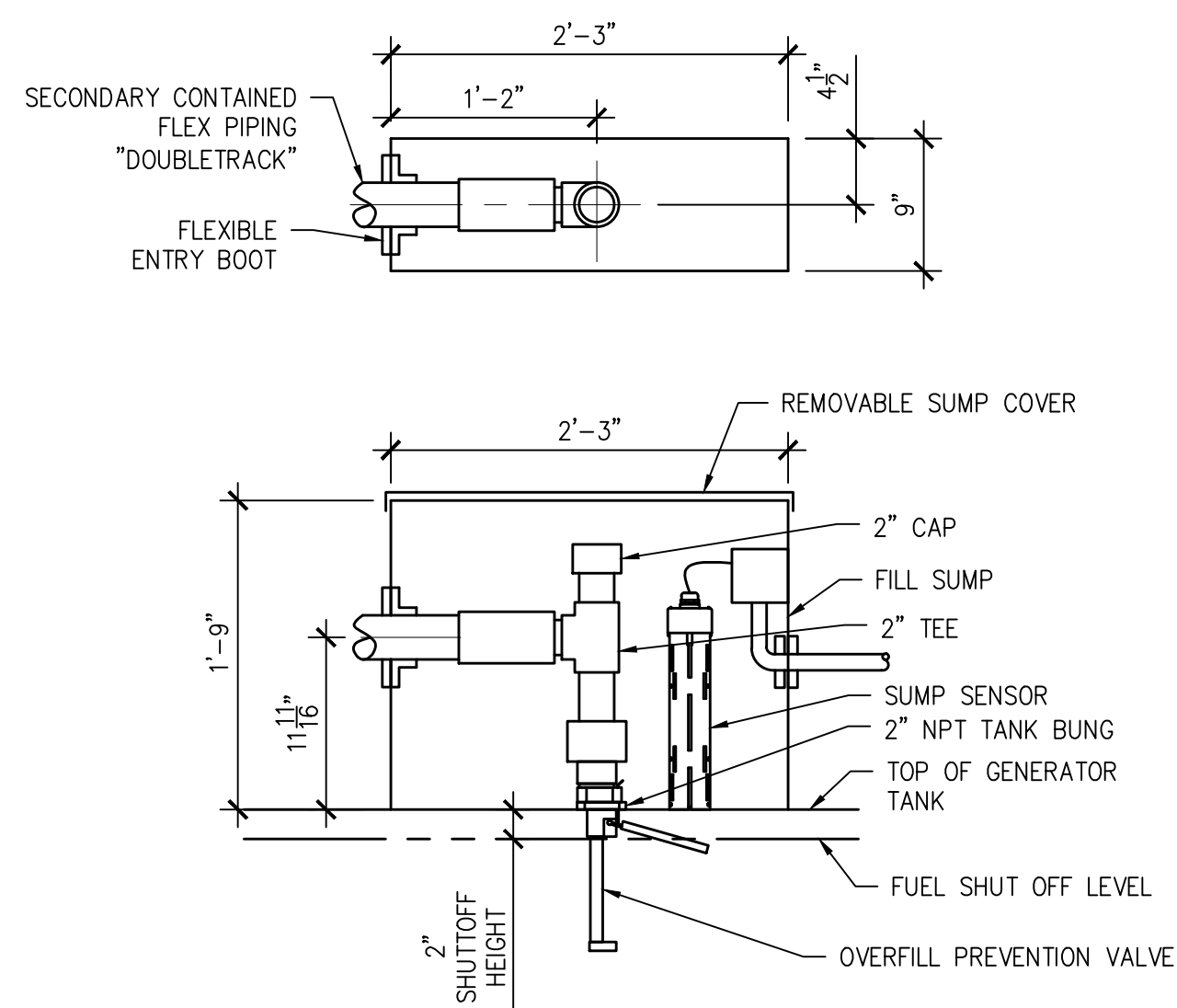
				SUBMITTED 		APPROVED 		CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT GENERATOR FUELING P&I DIAGRAM			SHEET 29 OF 33 DRAWING NO. FS-50 REVISION
1		ISSUED FOR BID		DESIGNED RP CHECKED LM DRAWN RP CADD FILE NAME		CADD FILE DATE SCALE NONE PLOT DATE BOARD APPROVAL DATE		SAP NO. CONTRACT NO. C19010 FILE LOCATION			
NO.	DATE	REVISIONS									

**GENERAL NOTES:**

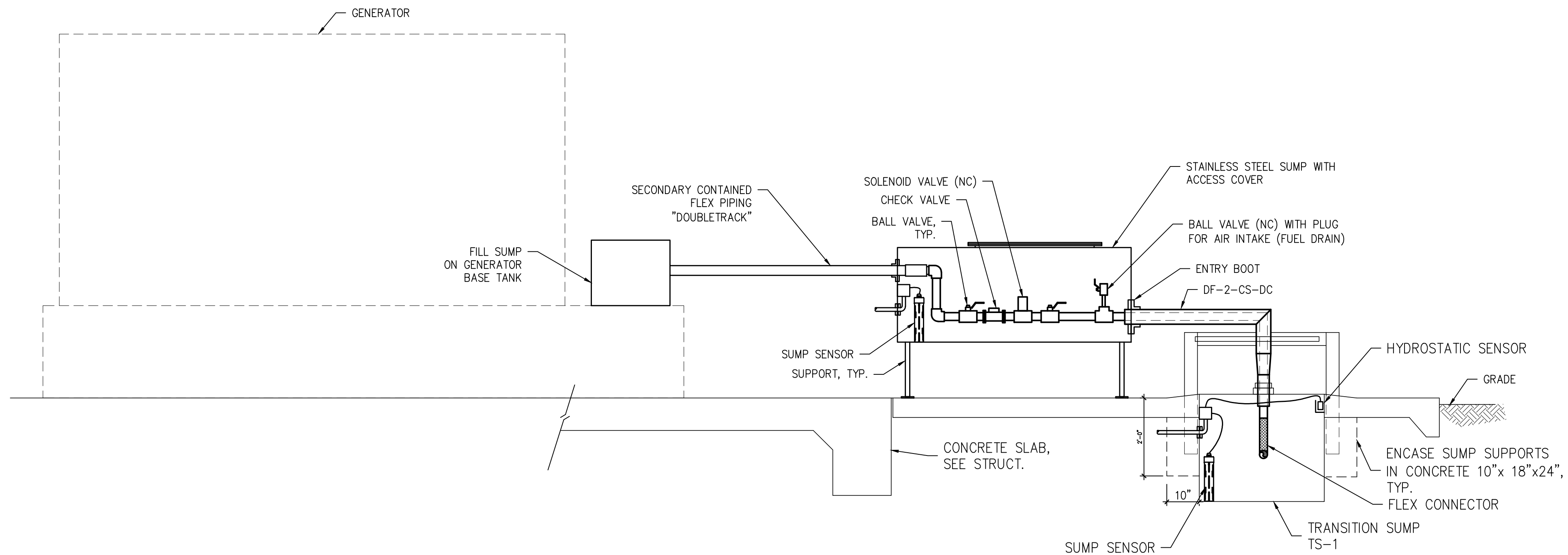
- EQUIPMENT, PART #S AND QUANTITIES ARE LISTED TO ASSIST CONTRACTOR IN MATERIAL TAKEOFF ONLY. ADDITIONAL EQUIPMENT AND/OR QUANTITIES NOT LISTED MAY BE REQUIRED. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXACT QUANTITIES OF EQUIPMENT, PART #S AND MATERIALS NECESSARY TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL SYSTEM.

EQUIPMENT SCHEDULE											
ITEM NO. REQ'D	DESCRIPTION	MANUFACTURER	MODEL NUMBER	SIZE/CAPACITY	CONNECTIONS	FURNISHED BY:		INSTALLED BY:		REMARKS	
						OWNER	CONTR.	OWNER	CONTR.		
<b>FUELING EQUIPMENT</b>											
1	1	OVERFILL PREVENTION VALVE WITH DROP TUBE – GENERATOR BELLY TANK	MORRISON BROS	9095DS2200 AV	2" NPT			✓	✓	SET @ 90%	
2 A B	A/R A/R	BULKHEAD FITTING (PRODUCT) BULKHEAD (ELECTRICAL)	BRAVO SYSTEMS	MODEL SHALL BE BASED ON TYPE OF PIPING, CONDUITS AND SUMPS USED	--	--		✓	✓	--	
3	2	FLEX CONNECTOR	FLEX-ING	VARIES	2 x 24"	--		✓	✓	BRAIDED FLEX CONNECTOR WITH MALE SWIVEL AND TWO END CAPS	
4	1	CHECK VALVE WITH EXPANSION RELIEF @ 25 PSI	MORRISON BROS	246A-0600AV	2"			✓	✓		
5	1	SOLENOID VALVE WITH EXPANSION RELIEF, NORMALLY CLOSED, 0 PSI MIN., 100 PSI MAX. PRESSURE DIFFERENTIAL	MORRISON BROS	710-0200 1V	2"	120V, 1PH		✓	✓		
6	4	BALL VALVE	MORRISON BROS	691	2"	--		✓	✓	--	
7	A/R	SECONDARY CONTAINED FLEX PIPING WITH END FITTINGS	OMEGAFLEX, INC.		2"			✓	✓		
8	1	PIPING SUMP WITH COVER, STAINLESS STEEL	BRAVO	B-8700-1PL	48"x17.25"x20"			✓	✓		
9	A/R	PIPING, DOUBLE-WALLED, CARBON STEEL	ROVAN CO.	--	VARIES	--		✓	✓	--	
10	A/R	PIPING, DOUBLE-WALLED COAXIAL, FIBERGLASS	AMERON	DUALOY 3000/LCX	VARIES	--		✓	✓	--	
11 A B	1 1	PIPING TRANSITION SUMP – DOUBLE WALL, UNDERGROUND-ABOVEGROUND, WITH MONITORING SYSTEM AND ONE (1) 3" FITTINGS VENT RACK SYSTEM	BRAVO SYSTEMS BRAVO SYSTEMS	B-600-D-AB RS-500	39"x23"x60" 36"	--		✓	✓	TS-1	
12 A B	1 1	SUBMERSIBLE PUMP WITH MODEL R CHECK VALVE – DIESEL GENERATOR SYSTEM SMART CONTROLLER	FRANKLIN FUELING FRANKLIN FUELING	STP75-VL2 STP-SCI	¾ HP FIXED SPEED	208V, 1PH, 60Hz.		✓	✓	SP-1 SPC-1	
13 A B	1 1	6-INPUT PLLD INTERFACE THREE OUTPUT PLLD INTERFACE	VEEDER ROOT VEEDER ROOT	330843-001 330374-001	--	--		✓	✓	--	
14 A B	1 1	SINGLE-POINT MINI HYDROSTATIC SENSOR UNIVERSAL SENSOR MOUNTING KIT	VEEDER ROOT VEEDER ROOT	794380-304 330020-012							
15 A B	3 3	PIPING SUMP SENSOR (OPTICAL) SENSOR MOUNTING KIT	VEEDER ROOT VEEDER ROOT	794380-320 330020-011	--	--		✓	✓	--	
16	1	PRESSURIZED LINE LEAK DETECTOR (PLLD)	VEEDER ROOT	848480-001				✓	✓		
17	3	LEVEL SWITCH – GENERATOR BELLY TANK	PNEUMERCATOR	LS600	--	--		✓	✓		
18	1	PUMP CONTROLLER WITH MANUAL OVERRIDE, EMERGENCY STOP – GENERATOR BELLY TANK SUPPLY PUMP	PNEUMERCATOR	PC1002	--	--		✓	✓		

			SUBMITTED 		APPROVED 		CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT GENERATOR FUELING FUEL EQUIPMENT SCHEDULE			SHEET 30 OF 33 DRAWING NO. <b>FS-60</b>
1	ISSUED FOR BID		DESIGNED RP CHECKED LM DRAWN RP CADD FILE NAME	CADD FILE DATE SCALE NONE PLOT DATE BOARD APPROVAL DATE		SAP NO. CONTRACT NO. C19010 FILE LOCATION			REVISION	



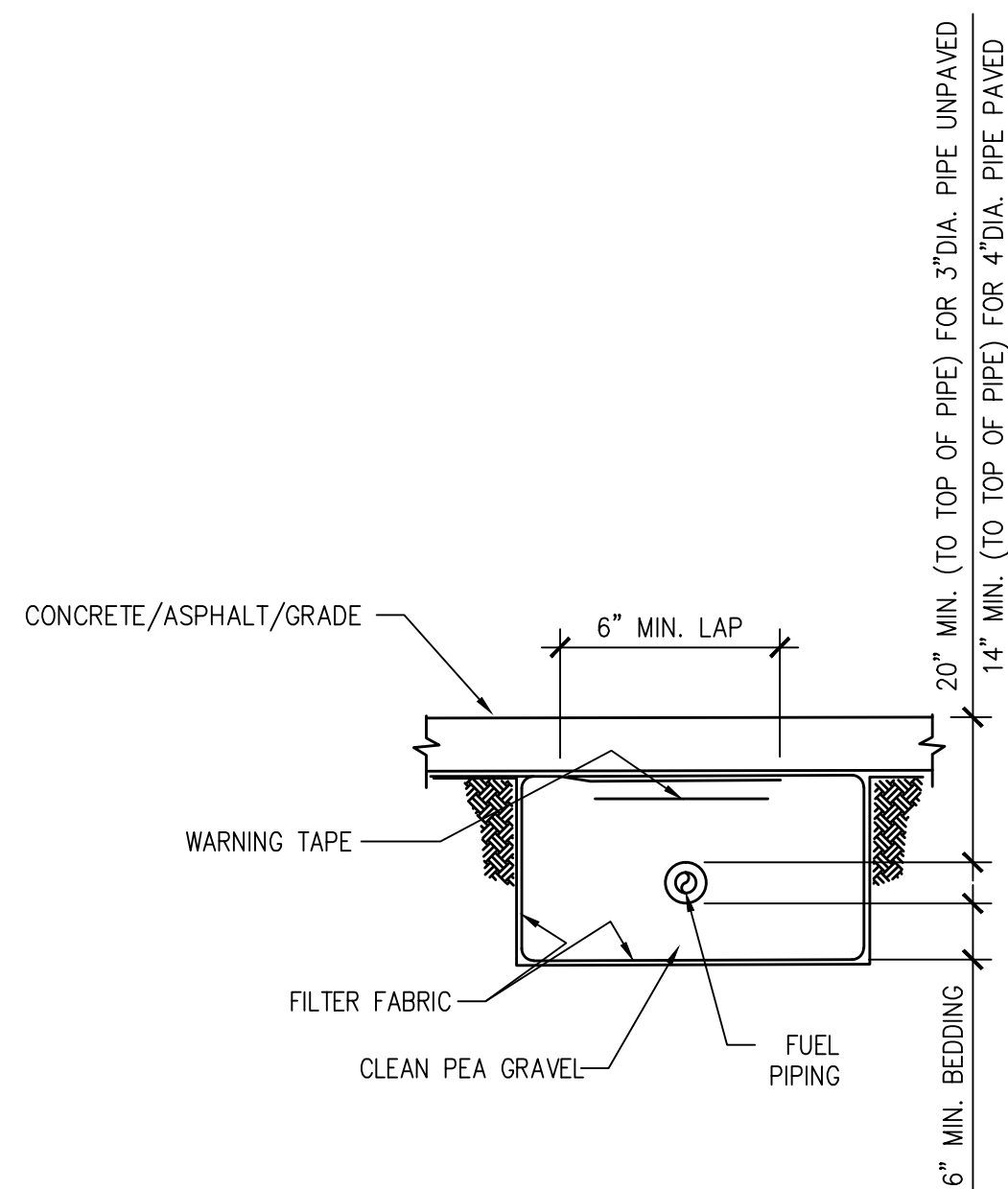
**1** GENERATOR TANK FILL DETAIL  
FS-7.0 SCALE: NTS



**2** PIPING SUMPS DETAIL  
FS-7.0 SCALE: NTS

**GENERAL NOTES:**

1. EXPANSION ANCHORS, ANCHOR BOLTS, HARDWARE AND FASTENINGS, ETC. INSTALLED OUTDOORS SHALL BE STAINLESS STEEL.
2. PAINTING REQUIREMENTS: REFER TO PAINT APPLICATION SCHEDULE, TS 09 91 23, PART 3.05 "APPLICATION SCHEDULE"
3. CONTRACTOR TO COMPLY WITH FIBERGLASS PIPE INSTALLATION MANUAL.



**3** NEW FUEL PIPING SECTION DETAIL  
FS-7.0 SCALE: NTS

NO.	DATE	REVISIONS
1		ISSUED FOR BID



SUBMITTED	
<b>BLYMYER ENGINEERS</b>	
DESIGNED	CHECKED
RP	LM
DRAWN	CADD FILE NAME
RP	

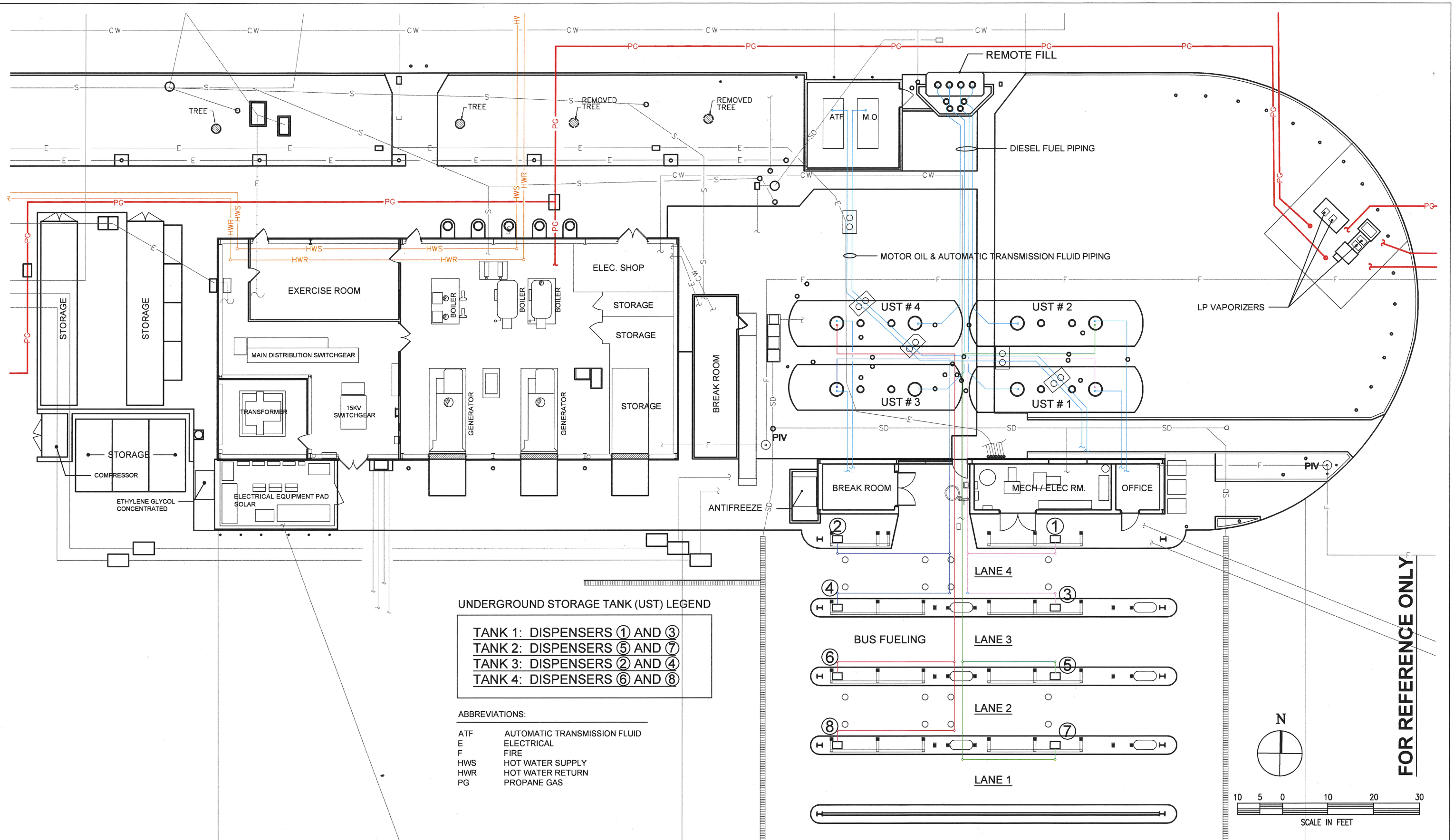


APPROVED	
CADD FILE DATE	SCALE
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PLOT DATE	BOARD APPROVAL DATE
	-

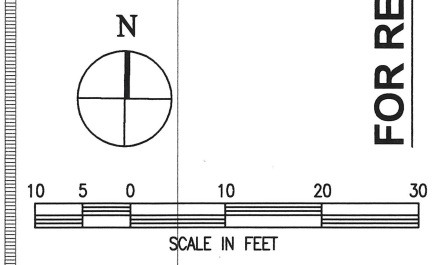
SAP NO.	CONTRACT NO.	FILE LOCATION
	C19010	

<b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT GENERATOR FUELING FUEL DETAILS</b>		
SAP NO.	CONTRACT NO.	FILE LOCATION
	C19010	

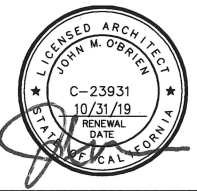
SHEET	31
OF	33
DRAWING NO.	<b>FS-7.0</b>
REVISION	



FOR REFERENCE ONLY



NO.	DATE	REVISIONS
1		ISSUED FOR BID



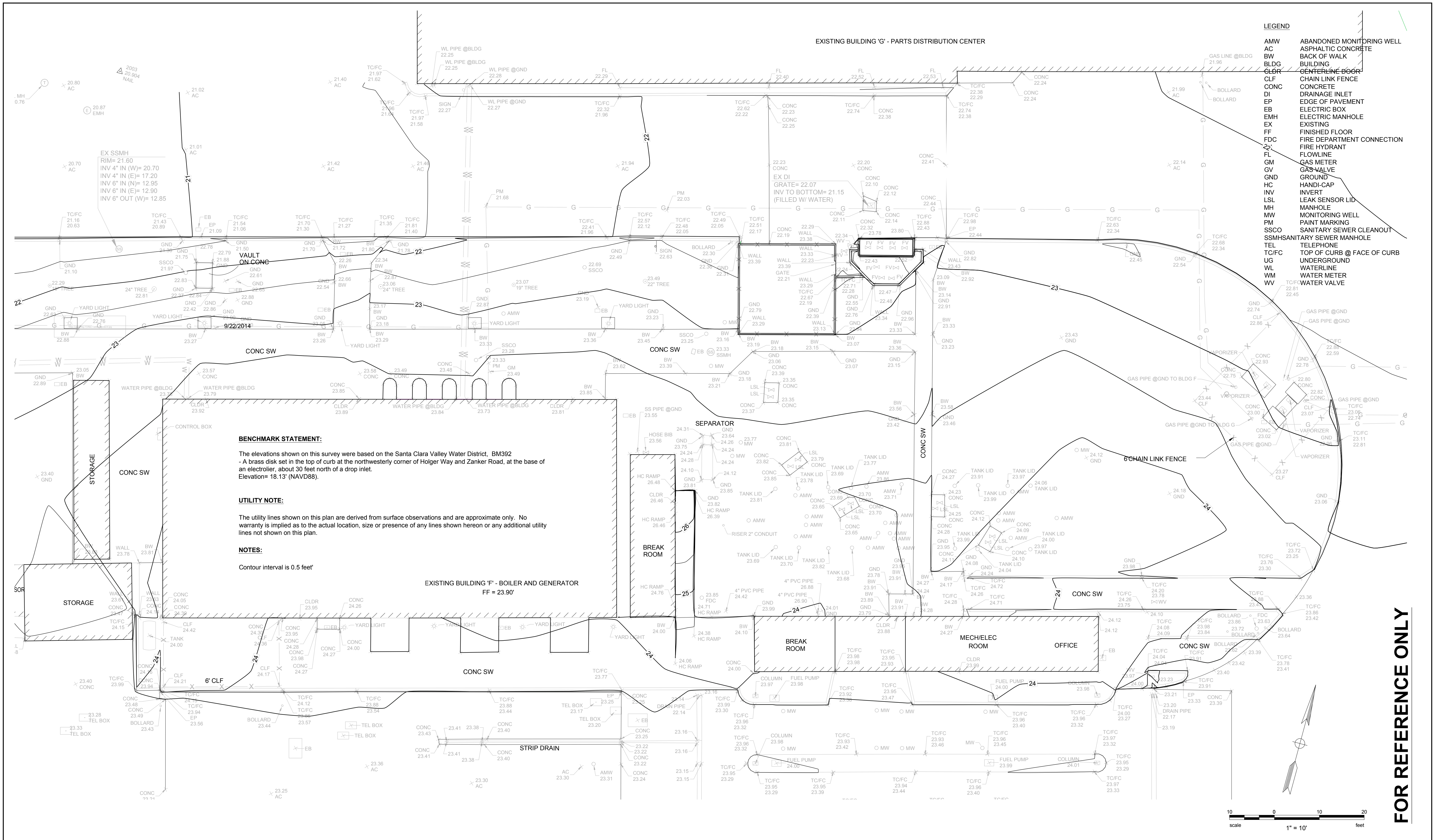
SUBMITTED	
DESIGNED	JO
CHECKED	JO
DRAWN	JO
CADD FILE NAME	



APPROVED	
CADD FILE DATE	SCALE 1" = 10'
PLOT DATE	BOARD APPROVAL DATE

<b>CERONE DIVISION EMERGENCY GENERATOR REPLACEMENT EXISTING SITE PLAN</b>			SHEET OF 33 DRAWING NO. <b>R-1.0</b> REVISION
BAP NO.	CONTRACT NO. C19010	FILE LOCATION	





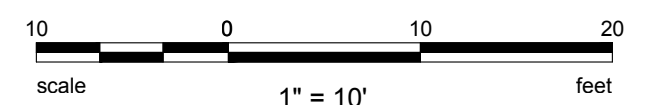
**LEGEND**

AMW	ABANDONED MONITORING WELL
AC	ASPHALTIC CONCRETE
BW	BACK OF WALK
BLDG	BUILDING
CLDR	CENTERLINE DOOR
CLF	CHAIN LINK FENCE
CONC	CONCRETE
DI	DRAINAGE INLET
EP	ELECTRIC BOX
EMH	EXISTING MANHOLE
EX	EXISTING
FF	FINISHED FLOOR
FDC	FIRE DEPARTMENT CONNECTION
FV	FIRE HYDRANT
FL	FLOWLINE
GM	GAS METER
GV	GAS VALVE
GND	GROUND
HC	HANDI-CAP
INV	INVERT
LSL	LEAK SENSOR LID
MH	MANHOLE
MW	MONITORING WELL
PM	PAINT MARKING
SSCO	SANITARY SEWER CLEANOUT
SSMHS	SANITARY SEWER MANHOLE
TEL	TELEPHONE
TC/FC	TOP OF CURB @ FACE OF CURB
UG	UNDERGROUND
WL	WATERLINE
WM	WATER METER
WV	WATER VALVE

**BENCHMARK STATEMENT:**  
 The elevations shown on this survey were based on the Santa Clara Valley Water District, BM392  
 - A brass disk set in the top of curb at the northwesterly corner of Holger Way and Zanker Road, at the base of an electrolier, about 30 feet north of a drop inlet.  
 Elevation= 18.13' (NAVD88).

**UTILITY NOTE:**  
 The utility lines shown on this plan are derived from surface observations and are approximate only. No warranty is implied as to the actual location, size or presence of any lines shown hereon or any additional utility lines not shown on this plan.

**NOTES:**  
 Contour interval is 0.5 feet'



**FOR REFERENCE ONLY**

NO.	DATE	ISSUED FOR BID	REVISIONS
1			



SUBMITTED	
DESIGNED	JO
CHECKED	JO
DRAWN	JO
CADD FILE NAME	20070065-50



APPROVED	
CADD FILE DATE	SCALE
FLOT DATE	BOARD APPROVAL DATE

<b>CERONE DIVISION          BOILER AND PROPANE TANK          REPLACEMENT</b>			SHEET <b>33</b> OF 33 DRAWING NO. <b>R-1.1</b> REVISION
<b>TOPOGRAPHIC SURVEY</b>			
SAP NO.	CONTRACT NO. C19010	FILE LOCATION	