VICINITY MAP 

THIS DRAWING IS 30" X 42" AT FULL SIZE. 15" X 21" AT HALF SIZE. © 2015 BY SALAS O'BRIEN ENGINEERS, INC.

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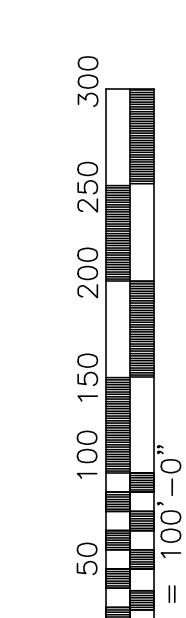
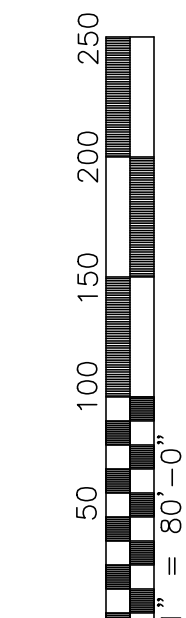
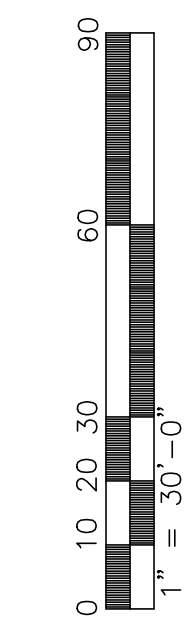
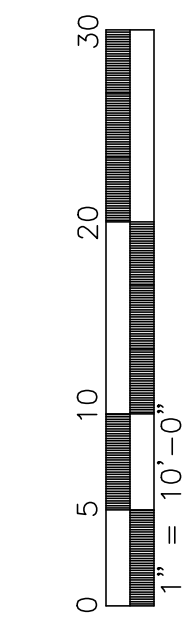
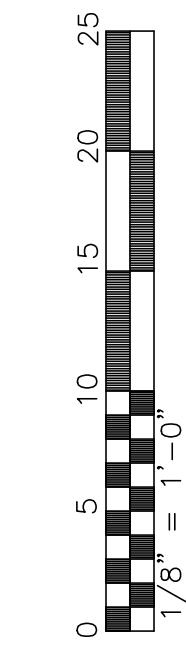
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## ELECTRICAL GENERAL NOTES

- CONTRACTOR IS RESPONSIBLE TO OBTAIN A COMPLETE SET OF CONTRACT DOCUMENTS, ADDENDA, DRAWINGS, AND SPECIFICATIONS. PRIOR TO SUBMITTING PROPOSAL, CONTRACTOR SHALL EXAMINE ARCHITECTURAL AND MECHANICAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS AND SHALL HAVE VISITED THE CONSTRUCTION SITE. HE/SHE SHALL BE FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH HE/SHE WILL HAVE TO OPERATE AND WHICH WILL IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT. NO SUBSEQUENT ALLOWANCE WILL BE MADE IN THIS CONNECTION IN BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS/HER PART. DETERMINE THE SEQUENCE OF CONSTRUCTION THROUGHOUT THE PROJECT, INCLUDING TEMPORARY FACILITIES AND CONNECTIONS REQUIRED FOR THE DURATION OF THE PROJECT.
2. ALL TEMPORARY CONNECTIONS SHALL BE CONSIDERED PART OF THIS CONTRACT AND NO EXTRA CHARGES WILL BE ALLOWED. THIS SHALL INCLUDE MINOR ITEMS OF MATERIAL OR EQUIPMENT NECESSARY TO MEET THE REQUIREMENTS AND INTENT OF THE PROJECT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY, PERSONAL, AND PROPERTY DAMAGE, TO FULLY PROTECT THE OWNER, ARCHITECT, AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.
4. THE CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ALL ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES.
5. THE CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS AT THE PROJECT SITE INDICATING ALL BUILDING ELECTRICAL SYSTEMS. THE CONTRACTOR SHALL, AT THE CONCLUSION OF THE PROJECT, PROVIDE A SET OF REPRODUCIBLE (AUTOCAD), ACCURATE AND NEAT "AS-BUILT" DRAWINGS ACCEPTABLE TO THE ARCHITECT.
6. THESE DRAWINGS DO NOT REPRESENT THE EXACT LOCATIONS, SIZES OR EXTENTS OF UTILITIES ON SITE. CONTRACTOR SHALL TAKE STANDARD PRECAUTIONS FOR WORK IN EXISTING FACILITIES.
7. EXISTING ELECTRICAL WIRING WHICH WILL NOT BE MADE OBSOLETE AND WHICH WILL BE DISTURBED DUE TO CONSTRUCTION CHANGES REQUIRED BY THIS CONTRACT SHALL BE RESTORED TO OPERATING CONDITION, AS REQUIRED AND/OR DIRECTED. WHERE REQUIRED, SHOWN AND/OR DIRECTED, OUTLETS AND CONDUIT RUNS SHALL BE RELOCATED. IN SOME CASES IT MAY BE NECESSARY TO EXTEND CONDUITS AND PULL IN NEW WIRING OR INSTALL JUNCTION BOXES AND SPLICE IN NEW WIRING OR REPLACE OLD WIRING WITH NEW.
8. CERTAIN REMODELING OF ELECTRICAL FACILITIES WILL BE REQUIRED IN THE EXISTING BUILDING. EXISTING CONDUIT RUNS ARE GENERALLY NOT SHOWN, ALTHOUGH A FULL ATTEMPT HAS BEEN MADE TO SHOW SOME EXISTING CONDITIONS, OF WHICH INFORMATION HAS BEEN TAKEN FROM EXISTING RECORD DRAWINGS AND/OR LIMITED FIELD INVESTIGATIONS. THE DRAWINGS SHOWING LOCATION OF EXISTING EQUIPMENT, OUTLETS, FIXTURES, ETC., ARE APPROXIMATE ONLY (CONTRACTOR TO FIELD VERIFY).
9. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY AND SHALL BE INSTALLED AS PER LISTING OR LABELING (IE. MAXIMUM FUSE SIZE MEANS FUSE PROTECTION IS REQUIRED).
10. ALL ELECTRICAL EQUIPMENT AND INSTALLATION SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:
- a. AMERICAN STANDARD ASSOCIATION (ASA)
  - b. AMERICAN NATIONAL STANDARD INSTITUTE (ANSI)
  - c. AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
  - d. CALIFORNIA CODE OF REGULATIONS TITLE 24 (CCR)
  - e. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
  - f. INSULATED POWER CABLE ENGINEERS ASSOCIATIONS (IPCEA)
  - g. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATIONS (NEMA)
  - h. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
  - i. ALL LOCAL CODE HAVING JURISDICTION
11. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, AND INCIDENTAL COSTS NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK, INCLUDING ALL CHARGES BY STATE, COUNTY AND LOCAL GOVERNMENTAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE ELECTRICAL UTILITY SYSTEM SHUT-DOWNS AND START-UP. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION REQUIRED WITH OTHER AGENCIES AND UTILITY COMPANIES.
12. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CROSSINGS ON NEW UTILITIES WITH THAT OF EXISTING ON SITE AND IN ADJACENT PROPERTIES. NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS OR DISCREPANCIES FROM THIS PLAN.
13. CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH OTHER TRADE ON SITE. ANY COST TO PERFORM WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE DRAWINGS SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF WORK. ANY CLARIFICATIONS, ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE ARCHITECT/ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
14. COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT. PROVIDE POWER AND CONNECTION TO MOTORS AND EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS AS INDICATED ON ELECTRICAL DRAWINGS AND DRAWINGS OF OTHER TRADES. CONTRACTOR SHALL REVIEW DRAWINGS OF OTHER TRADES FOR CONDUIT, DIAGRAMS, SIZE OF LOCATION OF EQUIPMENT, DISCONNECT SWITCHES, STARTERS, AND CONDUITS FOR CONTROL WIRING FOR MECHANICAL AND PLUMBING EQUIPMENT SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROUGHING IN ALL CONDUITS TO THIS EQUIPMENT.
15. BEFORE ROUGH-IN, VERIFY ALL MOUNTING HEIGHTS AND EXACT LOCATIONS FOR ALL ELECTRICAL, ELECTRICAL CONNECTIONS, STUB-UPS, RECEPTACLES, OUTLETS, CONDUIT RUNS, ETC. WITH ARCHITECT AND OWNER. PLACE ABOVE COUNTERS, SHELVEYS, ETC. AND IN BATHROOMS SO AS NOT TO CONFLICT WITH EDGES OF WANSICOUNTER, COUNTER SPLASH, SHELVEY, ETC. ARCHITECTURAL DRAWINGS SHALL GOVERN. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS OF ELECTRICAL DEVICES
16. MOUNTING HEIGHTS OF ALL CONTROL DEVICES TO BE USED BY OCCUPANT OF THE ROOM OR AREA SHALL BE MOUNTED AT THE FOLLOWING HEIGHTS:
- RECEPTACLES OUTLETS : +18" (TO BOTTOM OF OUTLETS)
  - TELEPHONE/TV/DATA OUTLETS : +18" (TO BOTTOM OF OUTLETS)
  - LIGHT SWITCHES : +44" (TO HIGHEST OPERABLE PART)
  - OUTLETS ABOVE COUNTER : +44" (TO HIGHEST OPERABLE PART)
- MOUNTING HEIGHTS OF ALL DEVICES AND EQUIPMENT ARE FROM FINISHED FLOOR TO LOCATION OF DEVICE AS NOTED. EQUIPMENT INSTALLED IN LOCATIONS NOT APPROVED BY THE ARCHITECT SHALL BE RELOCATED AS DIRECTED BY THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
17. COORDINATE ALL OUTLET BOX INSTALLATION WITH ARCHITECTURAL WALL FINISH SCHEDULES. SPACE BETWEEN FACEPLATE AND DEVICE BOX SHALL NOT EXCEED 1/8".
18. FOR RENOVATION WORK, THE CONTRACTOR SHALL CONCEAL ALL WORK WHERE POSSIBLE. ALL EXPOSED RACEWAY AND BOXES IN OCCUPIED AREAS OR ON EXTERIOR WALLS SHALL BE PAINTED TO MATCH ADJACENT FINISHES.
19. THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND/OR OTHER REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THIS SPECIFICATION. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC., AS REQUIRED.
20. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE RATED WALLS AND CEILINGS. FURNISH AND INSTALL FIRE RATED BACKBOXES AS REQUIRED, MAINTAINING FIRE RATING OF CEILING OR WALLS WHERE RECESSED ELECTRIC EQUIPMENT SUCH AS LIGHT FIXTURES, SWITCHES, RECEPTACLES, PANEL, ETC. ARE INSTALLED IN RATED WALL OR CEILINGS. PENETRATIONS OF FIRE RATED WALLS, CEILINGS, OR FLOORS SHALL COMPLY WITH CBC CHAPTER 7 (714) REQUIREMENTS. CONDUIT PENETRATIONS THAT ARE NOT STUBBED-OUT INSIDE THE WALL SHALL MEET F AND T RATING. ALL FIRE PROOFING METHODS SHALL BE UL APPROVED.
21. ALL EXTERIOR EQUIPMENT SHALL BE NEMA 3R RATED. ALL WALL PENETRATIONS TO EXTERIOR WALLS SHALL BE SEALED WATER TIGHT.
22. PULLING TAPES: ALL RACEWAY WITHOUT CABLE OR WIRE SHALL BE INSTALLED WITH A MINIMUM 1100 LBS. STRENGTH TEST POLYESTER PULLING TAPE. PULLING TAPES SHALL BE DETECTABLE MULE-TAPE WITH SEQUENTIAL FOOTAGE MARKING.
23. RUN NO MORE THAN 3 CURRENT CARRYING CONDUCTORS IN ANY WIREWAY UNLESS DE-RATING IS APPROVED BY ENGINEER OR SHOWN ON DRAWINGS.
24. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER, #12 AWG MINIMUM, RATED FOR 600V, THIN/THIN, 75 DEGREE CELSIUS INDOOR (90 DEGREE C OUTDOOR), CONDUCTORS #12 AWG AND SMALLER SHALL BE SOLID. CONDUCTOR #10 AWG AND LARGER SHALL BE STRANDED. SYSTEM VOLTAGE SHALL BE IDENTIFIED AS TO VOLTAGE AND PHASE CONNECTIONS BY MEANS OF COLOR IMPREGNATED INSULATION OR APPROVED COLORED MARKING TAPE.
25. WHERE MULTI-HOMERUNS ARE INDICATED ON DRAWINGS INDICATING THE SAME CIRCUIT NUMBER, PROVIDE A JUNCTION BOX ABOVE THE ACCESSIBLE LOCATION AND ROUTE ONE SET OF WIRES TO THE CIRCUIT BREAKER.
26. REFER TO THE SINGLE LINE DIAGRAM FOR THE CONDUIT AND CONDUCTOR SIZES HOMERUN TO ELECTRICAL PANELS. CONDUIT RUNS MAY NOT BE SHOWN ON DRAWINGS, BUT ARE PART OF THIS CONTRACT.
27. ALL CONDUIT RUNS INCLUDING STRAIGHT FEEDER AND BRANCH CIRCUIT SHALL BE PROVIDED WITH SUFFICIENT PULL BOXES OR JUNCTION BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 100 FEET. PULL BOXES SHALL BE SIZED PER CODE OR AS INDICATED ON DRAWINGS. LOCATIONS SHALL BE DETERMINED IN THE FIELD OR AS INDICATED ON THE DRAWINGS.
28. FINAL CONNECTIONS TO ALL EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIAL AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
29. DO NOT COMBINE DIFFERENT SYSTEM VOLTAGES AND NORMAL/EMERGENCY SYSTEMS IN CONDUIT/JUNCTION BOX (EG., 120/208V VS. 277/480V), UNLESS SEPARATION/DIVIDER IS PROVIDED WITH APPROVAL BY ENGINEER.
30. ELECTRICAL SYSTEMS SHALL BE INSTALLED FOR FINAL INSPECTIONS. PROVIDE NEUTRAL TEST AND PROOF OF TORQUE DURING FINAL INSPECTION FOR ALL UNITS. FINAL TERMINATIONS OF CONDUCTORS TO ELECTRICAL EQUIPMENT AND DEVICES SHALL BE TORQUE WRENCH TIGHTENED TO THE MANUFACTURER'S RECOMMENDED SPECIFICATION, NO EXCEPTION.
31. CIRCUIT BREAKER TERMINALS IN SWITCHBOARDS AND LOAD CENTER SHALL BE UL LISTED AND APPROVED FOR USE WITH COPPER 75 DEGREE CELSIUS CONDUCTORS.
32. SIZES OF BREAKERS, SWITCHES, FUSES AND FEEDERS ARE BASED ON DESIGNED EQUIPMENT SIZES. THESE SIZES SHALL BE ADJUSTED TO SATISFY REQUIREMENTS OF ACTUAL INSTALLED OR SUBSTITUTE EQUIPMENT, UP-SIZING OR DOWNSIZING OF FEEDERS SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER.
33. AS REQUIRED ALL OVERSIZED FEEDERS THAT WERE ADJUSTED IN SIZE TO COMPENSATE FOR VOLTAGE DROP SHALL BE PROVIDED WITH ADAPTER LUGS OR SPLICE BOX. ADAPTER LUGS SHALL BE PROVIDED IF SIZE IS AVAILABLE. OTHERWISE PROVIDE CABLE SPLICES IN THE SPLICE BOX TO REDUCE CABLES TO THE MAXIMUM SIZE THAT THE BREAKER LUGS CAN ACCOMMODATE.
34. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAW-CUTTING, TRENCHING, BACKFILLING, COMPACTION AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO COMPLETE WORK. USE EXTREME CAUTION WHEN TRENCHING NEAR EXISTING UNDERGROUND UTILITY LINES. CONTRACTOR SHALL PROVIDE ALL REQUIRED CUTTING, PATCHING, PAINTING, AND REPAIRS NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT THE START OF WORK.
35. ALL ELECTRICAL EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST HORIZONTAL FORCE ACTING IN ANY DIRECTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF ASCE.
36. ELECTRICAL METALLIC TUBING (EMT) WITH EMT COMPRESSION FITTINGS SHALL BE ALLOWED FOR ALL EXTERIOR AND INTERIOR APPLICATIONS. NO MC CABLE IS ALLOWED.
37. CONNECTIONS TO VIBRATING EQUIPMENT (MOTOR, TRANSFORMER ENCLOSURE, ETC.) AND SEISMIC SEPARATIONS SHALL BE PROVIDED WITH LIQUID-TIGHT FLEXIBLE STEEL CONDUIT WITH WATERTIGHT CONNECTORS. MAXIMUM LENGTH OF CONDUIT SHALL BE SIX FEET, UNLESS OTHERWISE NOTED.
38. POLYVINYL CHLORIDE (PVC) SCHEDULE 40 MAY BE INSTALLED BENEATH SLAB AND UNDERGROUND INSTALLATION. INSTALL PVC COATED RIGID STEEL CONDUIT FOR TRANSITION FROM UNDERGROUND TO ABOVE GRADE INSTALLATION.
39. CONTRACTOR SHALL PROVIDE TERMINATIONS FOR ALL DATA/VOICE CABLES INDICATED AT OUTLET LOCATIONS INDICATED ON DRAWINGS.
40. CONTRACTOR SHALL PROVIDE AND INSTALL ACCESS PANELS IN NON-ACCESSIBLE CEILINGS WHERE REQUIRED TO ACCESS ELECTRICAL EQUIPMENT IN CEILING SPACE. ACCESS DOORS SHALL HAVE FIRE RATING EQUAL TO THE CEILING ASSEMBLY IN WHICH THEY ARE INSTALLED.
41. ALL FIRE LIFE SAFETY EQUIPMENT, SUCH AS FIRE ALARM CONTROL PANEL, AND REMOTE POWER SUPPLIES SHALL BE PROVIDED WITH DEDICATED CIRCUITS. IDENTIFY CIRCUIT DESIGNATION AND PROVIDE PERMANENT LABELING, "FIRE ALARM CIRCUIT" ON ELECTRICAL PANEL. PROVIDE LOCKABLE CIRCUIT BREAKER.
42. CONTROL CONDUIT FOR ENERGY/BUILDING MANAGEMENT SYSTEM (E/BMS) SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
43. ROUTE CONDUIT PARALLEL AND PERPENDICULAR TO WALLS AND ADJACENT PIPING, ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT A NEAT APPEARANCE.
44. WHEN A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT, CIRCUIT BREAKERS, ETC., ARISES ON THE DRAWINGS OR SPECIFICATIONS, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL REQUIRED BY THE MOST STRINGENT CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO PROVIDE A COMPLETE AND OPERABLE SYSTEM, OR AS DIRECTED BY ENGINEER.
45. FOR SMALL AC MOTORS NOT HAVING BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE MANUAL MOTOR STARTERS WITH OVERLOAD HEATER ELEMENTS SIZED PER MANUFACTURER'S RECOMMENDATION. FOR SMALL AC MOTORS WITH BUILT-IN THERMAL OVERLOAD PROTECTION, PROVIDE A HORSEPOWER RATED TOGGLE DISCONNECT SWITCH.
46. DISCONNECT SAFETY SWITCHES SHALL BE HEAVY DUTY AND BE RATED FOR THE NUMBER OF POLES, VOLTAGE, CURRENT AND HORSEPOWER RATING AS REQUIRED. PROVIDE FUSE PROTECTION BASED ON THE MOTOR NAMEPLATE RATINGS.
47. PROVIDE PERMANENT IDENTIFICATION (NAMEPLATES, FED FROM, VOLTAGE, # OF PHASES, AMPERAGE) AND UPDATED PANEL SCHEDULE FOR ALL ELECTRICAL PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, TRANSFORM

## ELECTRICAL DEMOLITION NOTES

1. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO DISCONNECT AND REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AFFECTED BY THE PROJECT. THIS INCLUDES REROUTING OR THE REMOVAL OF EXISTING ELECTRICAL EQUIPMENT AND WIRING NECESSARY TO MAINTAIN OPERATION OF ANY EXISTING EQUIPMENT.
2. WHERE EXISTING CONDUIT IS TO BE ABANDONED OR DEMOLISHED, THE CONDUIT SHALL BE REMOVED IF IT IS EXPOSED, IN A CRAWL SPACE OR IN AN ACCESSIBLE CEILING. ABANDONED OR DEMOLISHED CONDUIT FEEDS UP THROUGH THE FLOOR SHALL BE CUT OFF AND PLUGGED FLUSH WITH THE FLOOR.
3. EXISTING CIRCUITS WHICH ARE REMOVED AND NOT REUSED SHALL BE IDENTIFIED ON THE PANEL SCHEDULE AS "SPARE".
4. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER PRIOR TO REMOVAL OF EXISTING ELECTRICAL EQUIPMENT AND TURN OVER REMOVED EQUIPMENT THAT THE OWNER REQUESTS IN AN "AS-FOUND" CONDITION.
5. ALL DEMOLITION WORK SHOWN, IF ANY, WAS PREPARED FOR THE CONVENIENCE OF THE CONTRACTOR. NO REPRESENTATION HAS BEEN MADE THAT ALL ITEMS THAT MAY REQUIRE DEMOLITION HAVE BEEN SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT A COMPLETE REVIEW OF THE CONTRACT DOCUMENTS AND TO PERFORM ALL DEMOLITION AND RECONSTRUCTION WHICH MAY BE REQUIRED FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK.
6. WHEN CALLED FOR, OR SCOPE OF WORK REQUIRES ELECTRICAL EQUIPMENT TO BE REMOVED ALL CONDUIT, WIRE, BOXES, HANGERS, ETC. SHALL BE REMOVED COMPLETELY. ALL OPENINGS SHALL BE PATCHED, SEALED AND PAINTED TO MATCH THE ADJACENT FINISH.

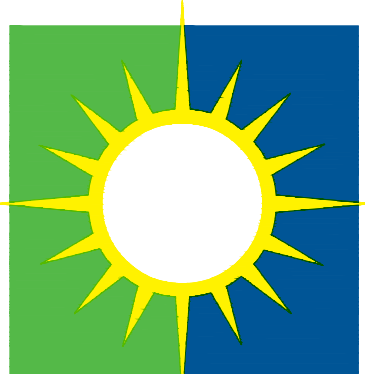
## ELECTRICAL SCOPE OF WORK

1. FURNISH AND INSTALL ELECTRICAL PANELS, MTS, ATS, GENERATOR, GENERATOR ANNUNCIATOR CAM-LOCK, EMS CONNECTION FROM EQUIPMENT/DEVICES TO EMS PANEL (COORDINATE WITH COUNTY OF SAN BERNARDINO FOR LOCATION AND REQUIREMENT), NEW WORK PER FLOOR PLAN.
2. FURNISH AND INSTALL DIESEL GENERATOR WITH LEVEL 2 ENCLOSURE, DUAL WALL BELLY TANK AND LEAK SENSOR, CONCRETE PAD AND FUEL TANK OF FUEL SHALL BE PROVIDED.
3. CONTRACTOR SHALL BE RESPONSIBLE TO APPLY AND OBTAIN APPROVAL FROM AQMD FOR THE NEW GENERATOR.
4. FURNISH AND INSTALL ALL ELECTRICAL CONNECTION, COMPONENTS, DEVICES AND EQUIPMENT PER FLOOR PLAN.
5. ALL PERMIT FEES SHALL BE CONTRACTOR'S RESPONSIBILITY.

\*\* GENERAC GENERATOR AND GE ATS WERE USED AS BASIS OF DESIGN. CONTRACTOR SHALL SUBMIT PRODUCTS PER BOD OR APPROVED EQUAL BY COUNTY AND EOR. ANY SUBSTITUTION PRODUCTS SHALL MATCH ALL SPECIFICATION AND PHYSICAL REQUIREMENT. CONTRACTOR IS RESPONSIBLE TO PROVIDE REVISED STRUCTURAL DESIGN, ELECTRICAL DESIGN AND MECHANICAL DESIGN AS REQUIRED.

## SYMBOLS & ABBREVIATIONS

- |        |   |
|--------|---|
|        | EXTENT OF DEMOLITION  |
|        | NEW TO EXISTING CONNECTION  |
|        | WORK ITEM (ELECTRICAL)  |
|        | DETAIL DESIGNATION  |
|        | DETAIL NUMBER<br>— DRAWING NUMBER<br>(IF BLANK, SAME SHEET)   |
|        | EQUIPMENT DESIGNATION   |
|        | EQUIPMENT TYPE<br>— EQUIPMENT NUMBER  |
|        | SECTION DESIGNATION   |
|        | SECTION NUMBER<br>— DRAWING NUMBER<br>(IF BLANK, SAME SHEET)  |
|        | EXISTING CONDUIT  |
|        | NEW CONDUIT   |
|        | CONDUIT TO BE DEMOLISHED  |
|        | PANEL BOARD/TERMINAL CABINET – FLUSH/SURFACE MOUNTED  |
|        | PANEL CIRCUIT WIRING IN CONDUIT CONCEALED IN CEILING SPACE OR WHERE POSSIBLE, EXPOSED ON ROOF OR BUILDING EXTERIOR. |
|        | BRANCH CIRCUIT WIRING IN CONDUIT CONCEALED UNDER FLOOR, UNDERGROUND OR WHERE POSSIBLE.                              |
|        | BRANCH CIRCUIT HOME RUN TO PANEL, CONCEALED IN CEILING SPACE OR WHERE POSSIBLE. * PANEL BOARD & CIRCUIT #           |
|        | EXISTING DEVICES, CONDUITS, WIRES, ETC TO REMAIN  |
|        | NEW (BOLD) DEVICES, CONDUITS, WIRES, ETC.   |
|        | CONDUIT UP  |
|        | CONDUIT DOWN  |
|        | DUPLEX GFI RECEPTACLE, WEATHERPROOF, 20A, 165V, 3WG, NEMA 5-20R, GFI  |
|        | JUNCTION BOX – CEILING/FLOOR/ROOF/WALL MOUNTED  |
|        | HORSEPOWER RATED TOGGLE WITH THERMAL OVERLOAD WEATHER PROOF   |
|        | HEAVY DUTY HEAVY NO-FUSED DISCONNECT SWITCH, WALL MOUNTED   |
|        | HEAVY DUTY HEAVY FUSED DISCONNECT SWITCH, WALL MOUNTED  |
|        | THERMOSTAT  |
|        | CARBON DIOXIDE SENSOR   |
|        | CARBON MONOXIDE DETECTOR WITH SOUNDER BASE  |
|        | AT  |
| AHJ    | AUTHORITY HAVING JURISDICTION   |
| BLDG   | BUILDING  |
| C      | CONDUIT   |
| CB     | CIRCUIT BREAKER   |
| CL     | CENTERLINE  |
| CLG    | CEILING   |
| CKT    | CIRCUIT   |
| C.O.   | CONDUIT ONLY (W/PULLROPE)   |
| CONT   | CONTINUATION  |
| CSFM   | CALIFORNIA STATE FIRE MARSHALL  |
| DN     | DOWN  |
| DS     | DISCONNECT SWITCH   |
| DWG    | DRAWING   |
| <E>    | EXISTING  |
| ELEC   | ELECTRICAL  |
| EM     | EMERGENCY   |
| EMS    | ENERGY MANAGEMENT SYSTEM  |
| EQ     | EQUAL   |
| EQUIP. | EQUIPMENT   |
| <ERR>  | EXISTING TO REMAIN AND BE RECONNECTED   |
| FA     | FIRE ALARM  |
| FACP   | FIRE ALARM CONTROL PANEL  |
| FATC   | FIRE ALARM TERMINAL CABINET   |
| FLR    | FLOOR   |
| GFI    | GROUND FAULT INTERRUPTER  |
| GND    | GROUND  |
| IOR    | INSPECTOR OF RECORD   |
| LTG    | LIGHTING  |
| LTS    | LIGHTS  |
| MAX.   | MAXIMUM   |
| MIN.   | MINIMUM   |
| <N>    | NEW (BOLD)  |
| NAC    | NETWORK AREA CONTROLLER   |
| N.T.S. | NOT TO SCALE  |
| PEC    | PROGRAMMABLE EQUIPMENT CONTROLLER   |
| PNL    | PANEL   |
| <R>    | REMOVE  |
| <RRN>  | REMOVE REPLACE W/ NEW   |
| REC    | RECEPTACLE  |
| RM     | ROOM  |
| RPS    | REMOTE POWER SUPPLY   |
| SPB    | SIGNAL PULL BOX   |
| SPECS  | SPECIFICATIONS  |
| TYP    | TYPICAL   |
| TP     | TWISTED PAIR (SHIELDED)   |
| U.O.N. | UNLESS OTHERWISE NOTED  |
| V      | VOLT  |
| VA     | VOLT AMP  |
| V.I.F. | VERIFY IN FIELD   |
| W      | WATTS   |
| WP     | WEATHERPROOF (NEMA 3R)  |
| XFMR   | TRANSFORMER   |



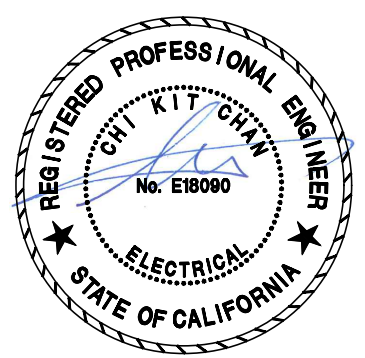
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CHINO HILLS  
MICROWAVE SITE  
GENERATOR**

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CHECKED BY:	-
APPROVED BY:	-

SHEET TITLE
ELECTRICAL GENERAL NOTES, SYMBOLS & ABBREVIATIONS

SCALE: AS NOTED

THIS DRAWING IS 30" X 42" AT FULL SIZE

## E-0.1



THIS DRAWING IS 30" X 42" AT FULL SIZE. 15" X 21" AT HALF SIZE. © 2015 BY SALAS O'BRIEN ENGINEERS, INC.

1/2" = 1'-0"

1/4" = 1'-0"

1/8" = 1'-0"

1/16" = 1'-0"

1/32" = 1'-0"

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**AEROJET  
CHINO HILLS  
MICROWAVE SITE  
GENERATOR**

[illegible]

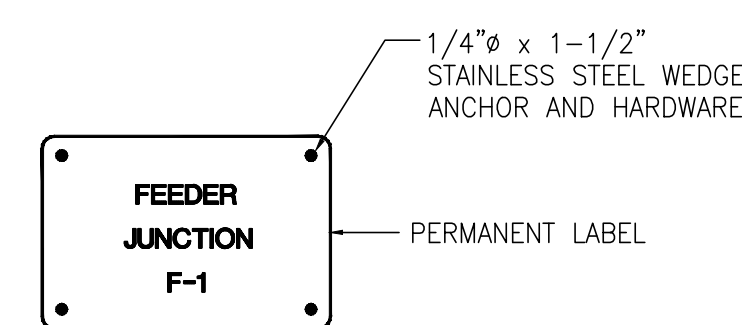
SOBE PROJECT NO:	1901789
DATE:	03/16/20
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CHECKED BY:	—
APPROVED BY:	—

SHEET TITLE
<b>ELECTRICAL DETAILS</b>

SCALE: AS NOTED

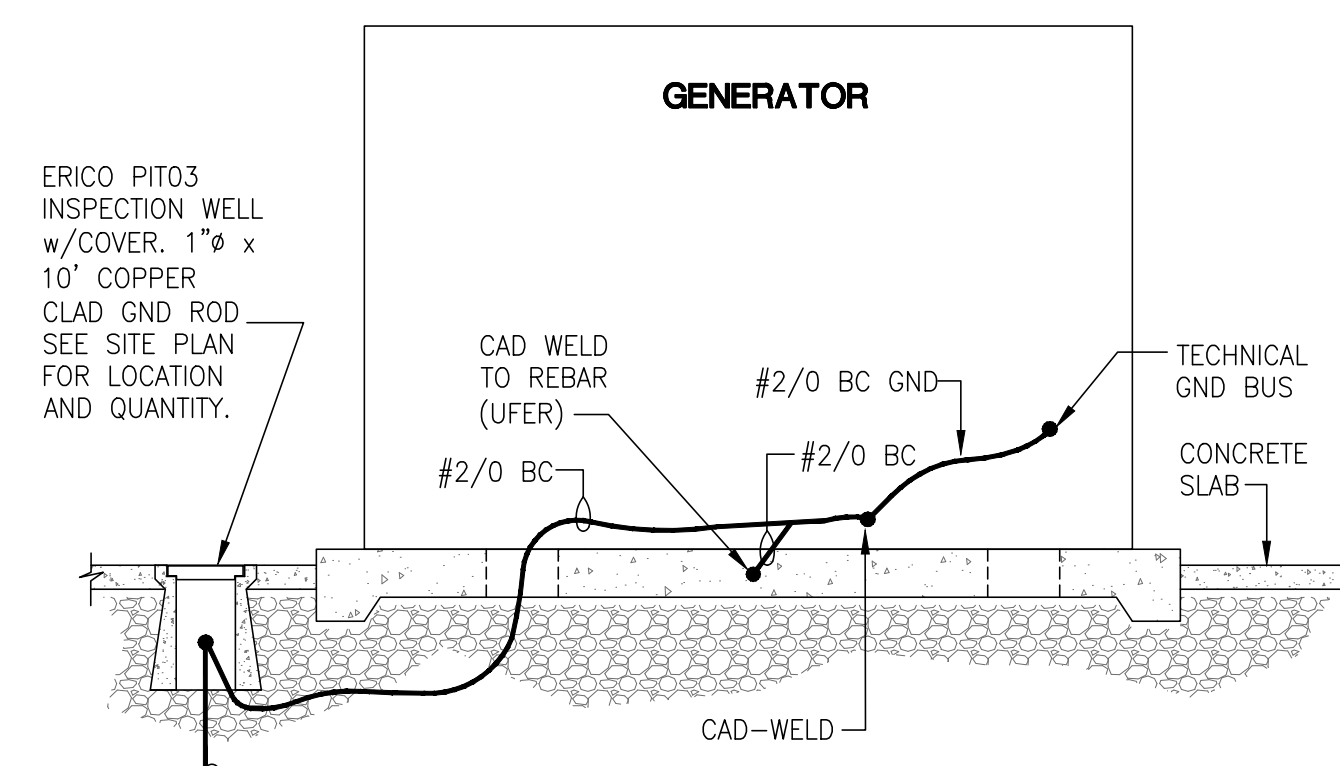
THIS DRAWING IS 30" X 42" AT FULL SIZE

### E-5.1



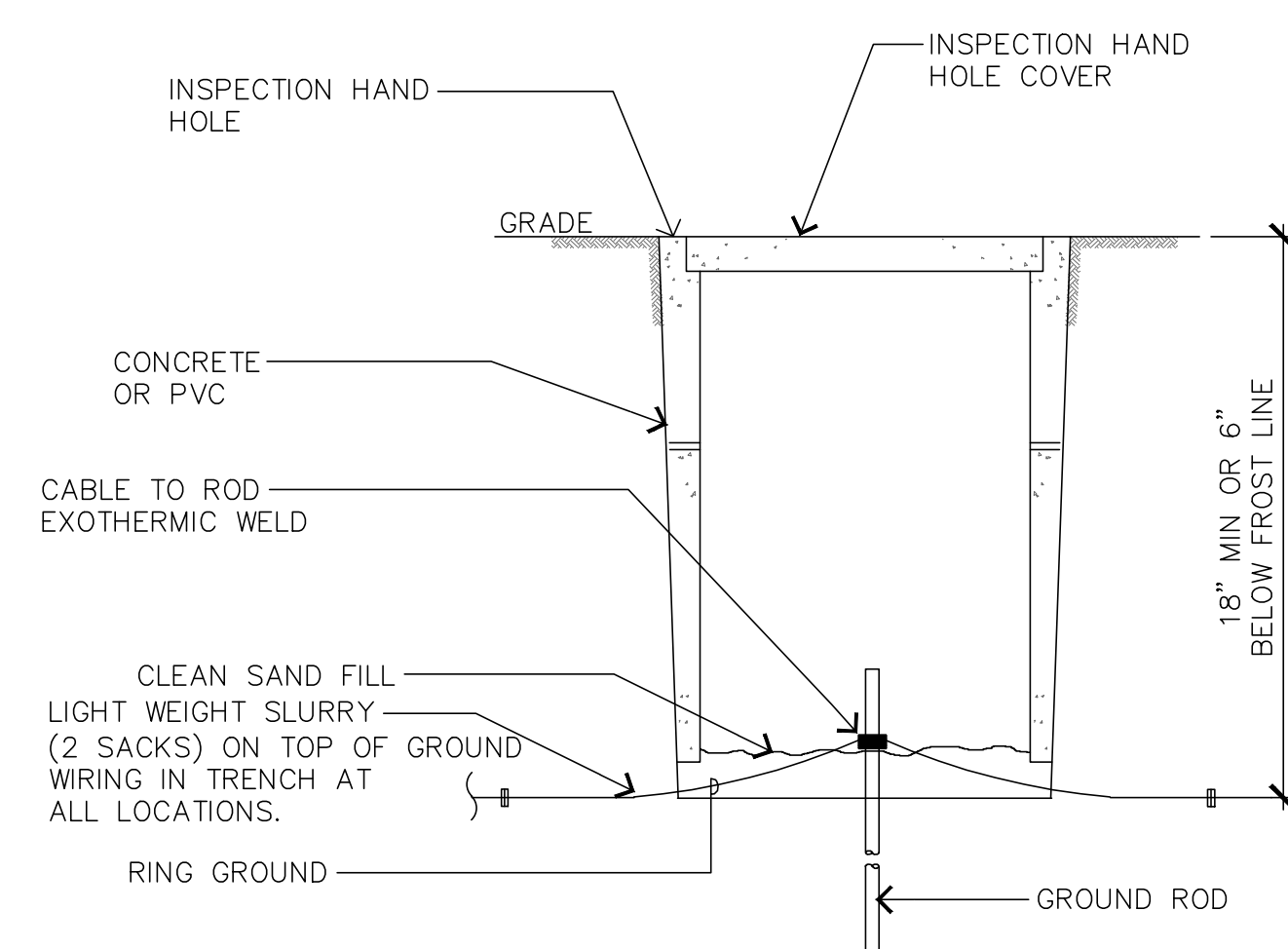
### 3 FEEDER NAMEPLATE

SCALE: N.T.S.



## 2 ELECTRICAL EQUIPMENT GROUNDING SECTION

SCALE: N.T.S.



NOTE: INSPECTION HAND HOLE MAY BE CONCRETE OR PVC  
AND SHALL BE A MINIMUM OF 6" IN WIDTH/DIAMETER

## 1 GROUND ROD WITH ACCESS

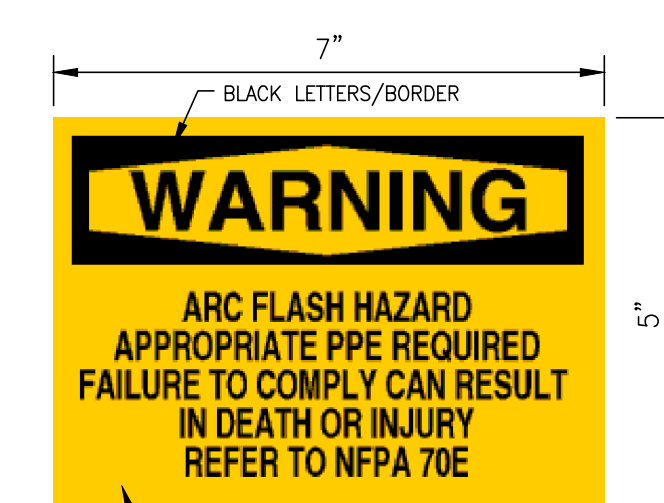
SCALE: N.T.S.



### AUTO START/STOP SIGN



HAZARDOUS VOLTAGE SIGN

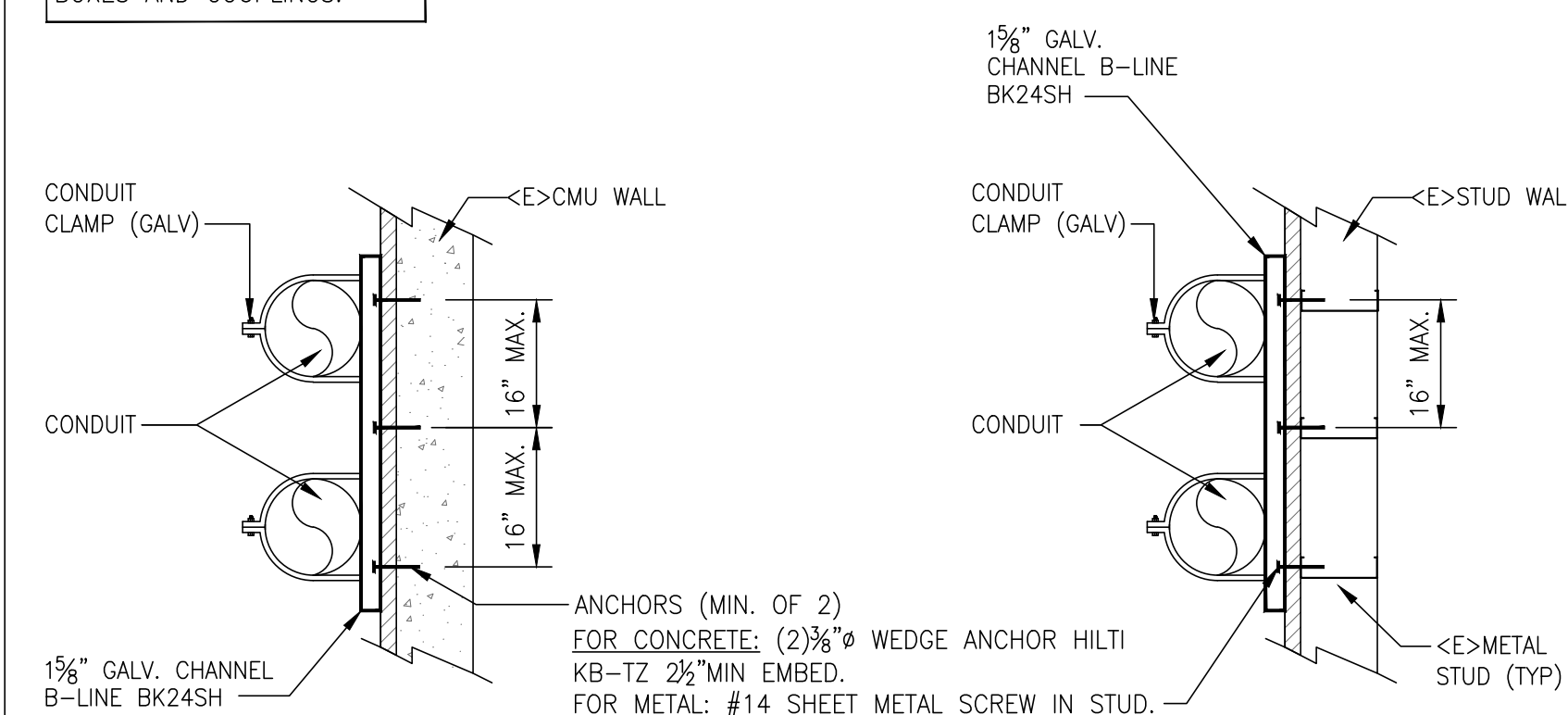


ARC FLASH WARNING LABEL

## 5 SIGNAGE

SCALE: N.T.S.

**NOTES:**  
PROVIDE CONDUIT SUPPORT  
MAXIMUM OF EVERY 10ft AND  
WITHIN 3ft FROM ELECTRICAL  
BOXES AND COUPLINGS.



## 1 CONDUIT SUPPORT

SCALE: N.T.S.

THIS DRAWING IS 30" X 42" AT FULL SIZE. 15" X 21" AT HALF SIZE. © 2015 BY SALAS OBRIEN ENGINEERS, INC.

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<E> PANEL				'A'				VOLTAGE				120/ 240 V			
LOCATION				EQUIPMENT ROOM				TYPE				QOC30U			
AIC RATING				10 KAIC				PHASE				WIRE			
DESCRIPTION				BRKR		KVA LOAD		KVA LOAD		BRKR		DESCRIPTION			
				P	T	LCL	A	B	A	B	LCL	P	T		
1	HVAC#2			2	30	X	0.5	1.8	1.8	0.5	X	2	30	HVAC#1	
3	----			-	-	X	0.5	1.8	1.8	0.5	X	-	-	----	
5	GENERATOR BLOCK HEATER			1	20		0.0	0.5						SPACE	
7	GENERATOR BATTERY CHARGER			1	20		0.0		0.5					SPACE	
9	SPACE						0.0				0.0			SPACE	
11	SPACE						0.0				0.0			SPACE	
13	SPACE						0.0				0.0			SPACE	
15	SPACE						0.0				0.0			SPACE	
17	SPACE						0.0				0.0			SPACE	
19	PNL 'B' VIA UPS			2	100		0.0		6.0		0.0			SPACE	
21	----			-	-		0.0		6.0		0.0			SPACE	
23	SPACE						0.0				0.0			SPACE	
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SUBTOTAL						0.9		8	8	2	2	0.9		SUBTOTAL	
MOB. OR MLD				MOB.				TOTAL LOAD PHASE A				10 KVA			
MAIN CIRCUIT BREAKER RATING				200 AMPS				TOTAL LOAD PHASE B				10 KVA			
BUS RATING				200 AMPS											
MOUNTING				SURFACE				TOTAL LCL (NEC/CEC 215.2 A. 1)				2 KVA			
								TOTAL PANEL LOAD (KVA)				22 KVA			
								TOTAL PANEL LOAD (AMPS)				92 AMPS			
OPTIONS:															
1 CONTRACTOR SHALL PROVIDE CIRCUIT BREAKER AT BOLD CIRCUITS															
MATCH EXISTING FOR RATING.															
2															
3															
4															
V 17															