

GENERAL NOTES :

- UNLESS OTHERWISE NOTICED, ALL DEVICES SHOWN ARE 3 POLE.
- EQUIPMENT LOCATED ON ROOF SHALL BE WP TYPE
- THE SERIES RATED OVERCURRENT PROTECTION DEVICES SHALL BE IDENTIFIED AND LABELED IN ACCORDANCE WITH CEC 110-22.
- ALL INDOOR TRANSFORMERS TO BE 115K RISE, ENERGY EFFICIENT. WINDINGS AND BUS SHALL BE COPPER.
- ALL SERVICE DISCONNECT DEVICES SHALL BE LABELED AS A "SERVICE DISCONNECTING MEANS".
- CONTRACTOR SHALL ACQUIRE AN APPROVED SCE DRAWING AND INCLUDE IN BID ALL REQUIREMENTS PER SCE.
- ALL ELECTRICAL PANELS, SWITCHGEAR SHALL HAVE COPPER BUS

KEY NOTES:

- 3/4" 1-2/0 TO BUILDING COLDWATER.
- 3/4" 1-1/0 TO BUILDING COLDWATER.
- 3/4" #2 TO BUILDING COLDWATER.
- 3/4" #6 TO BUILDING COLDWATER.
- 4" CONDUITS PER SCE DRAWINGS. CONDUITS SHALL BE INSTALLED TO NEW SLAB BOX PER SCE DRAWINGS. CONCRETE ENCASE CONDUITS PER SCE DRAWINGS.
- 30' CIRCUITS LIGHTING CONTROL PANEL W/ BUILT-IN TIME CLOCK. MANUFACTURED BY LC&D. PROVIDE LC&D PHOTOCELL & ALL L.V. CONTROLS SHOWN ON LIGHTING. THIS SYSTEM IN CASE OF POWER FAILURE REMAINS ENERGIZED. INCLUDE PHONE MODEM.
- 24 CIRCUITS LIGHTING CONTROL PANEL MANUFACTURED BY LC&D.
- EXTEND EXISTING GROUNDING ELECTRODE THAT WAS CAPPED OFF DURING DEMO TO NEW LOCATION AS SHOWN ON SHEET E0.40.
- 1#250 KCMIL CONNECT TO GROUND ROD. PROVIDE (1) 3/4" DIAMETER BY 10 FOOT LONG COPPER GROUND ROD. INSTALL GROUND ROD ADJACENT TO THE MAIN SWITCHBOARD "BDS1". INSTALL IN CONCRETE GROUND WELL MARKED "GROUND". TIE GROUND ROD TO THE MAIN GROUND BUS WITH 4/0 BARE COPPER. INSTALL COPPER WIRE INSIDE OF SLAB 2" FROM EARTH, TIE TO REBAR IN SLAB. USE APPROVED U.L. CLAMP TO GROUND ROD.
- SEE SHEET E-0.40 DETAIL #3 FOR ADDITIONAL GROUNDING
- NOT USED.
- NOT USED
- INCLUDE AUXILIARY CONTACTS FOR ELEVATOR CONTROLLER. INSTALL 2#12 FROM DISCONNECT TO ELEVATOR CONTROLLER.
- TIE PANELS TOGETHER WITH LOW VOLTAGE CAT. 6 CABLE PER MANUFACTURER INSTRUCTION. 3-4" C. SHALL BE USE FOR ALL LOW VOLTAGE WIRES. INCLUDE CHELSEA SWITCHES FOR BYPASS CONTROL SEE LIGHTING PLAN FOR LOCATION.

LOAD SUMMARY FOR "BDS1":

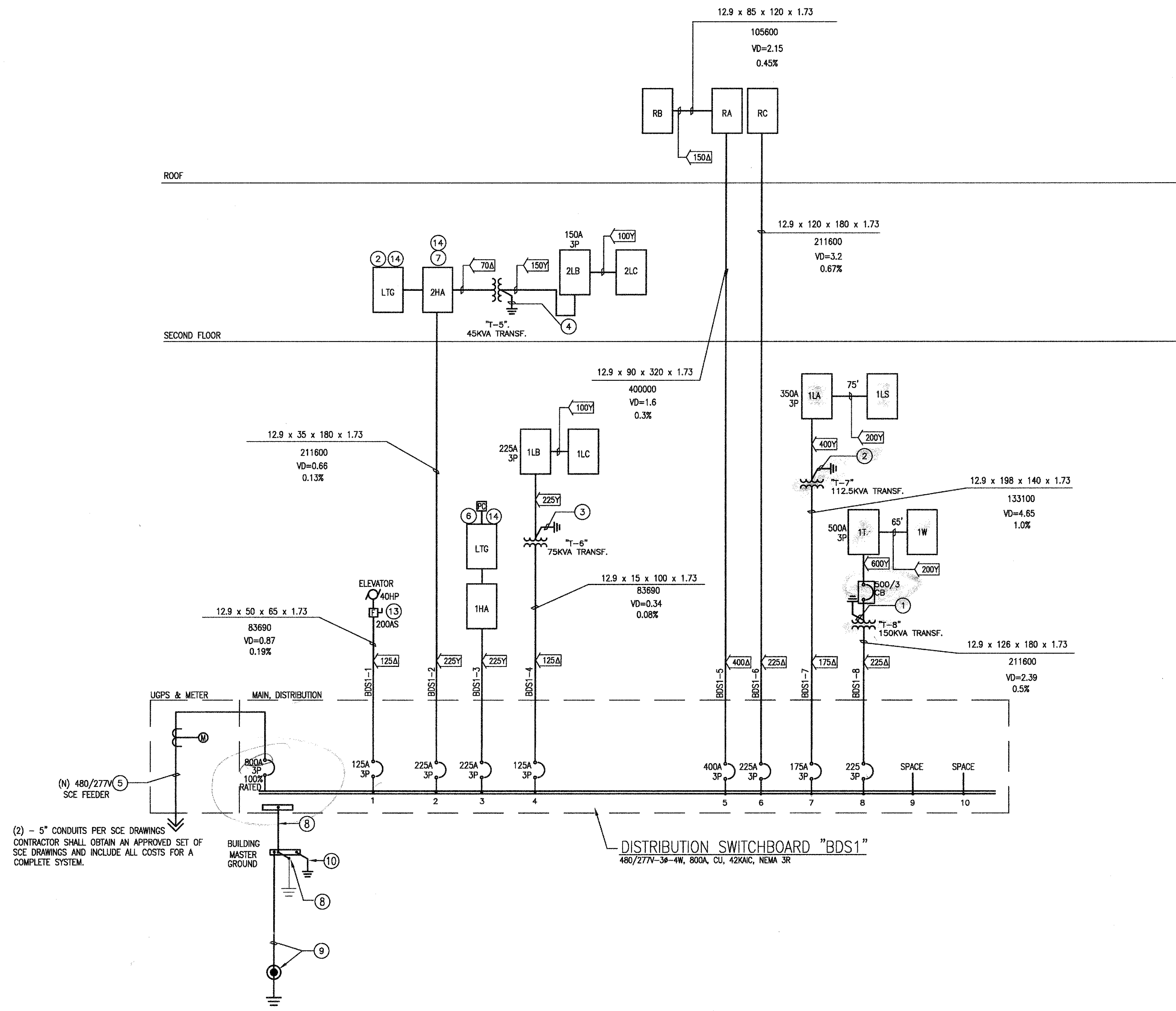
ELEVATOR	=	54.0 KVA
2HA	=	48.9 KVA
1HA	=	31.6 KVA
T-6	=	36.5 KVA
RA	=	123.0 KVA
RC	=	58.6 KVA
T-7	=	79.0 KVA
T-8	=	124.7 KVA
		556.3 KVA
20% SPARE		111.3 KVA
TOTAL		667.6 KVA
480/277V-3Ø-4W	=	803.3 AMPS
MAIN SERVICE IS 800 AMPS 100% RATED		

VD = VOLTAGE DROP
I = AMPS
L = ONE-WAY LENGTH OF CIRCUIT (FT.)
K = RESISTANCE IN OHMS OF ONE CIRCULAR MIL FOOT OF CONDUCTOR
CM = CIRCULAR MILS
 $VD = \frac{K \times L \times I \times I \times 1.73}{CM}$

FEEDER SCHEDULE

3 WIRE FEEDERS			4 WIRE FEEDERS		
SYMBOL	CONDUIT SIZE & CONDUCTOR		SYMBOL	CONDUIT SIZE & CONDUCTOR	
20A	1/2" C. 3 #12		20Y	3/4" C. 4 #12	
30A	3/4" C. 3 #10		30Y	3/4" C. 4 #10	
40A	1" C. 3 #8		40Y	1" C. 4 #8	
50A	1 1/4" C. 3 #6		50Y	1 1/4" C. 4 #6	
60A	1 1/4" C. 3 #6		60Y	1 1/4" C. 4 #6	
70A	1 1/2" C. 3 #4		70Y	1 1/2" C. 4 #4	
80A	1 1/2" C. 3 #2		80Y	2" C. 4 #2	
90A	1 1/2" C. 3 #2		90Y	2" C. 4 #2	
100A	1 1/2" C. 3 #2		100Y	2" C. 4 #2	
125A	2" C. 3 #1		125Y	2" C. 4 #1	
150A	2" C. 3 #1/0		150Y	2" C. 4 #1/0	
175A	2" C. 3 #2/0		175Y	2 1/2" C. 4 #2/0	
200A	2" C. 3 #2/0		200Y	2 1/2" C. 4 #2/0	
225A	2 1/2" C. 3 #4/0		225Y	3" C. 4 #4/0	
250A	2 1/2" C. 3-250 kcmil		250Y	3" C. 4-250 kcmil	
300A	3" C. 3-350 kcmil		300Y	3 1/2" C. 4-350 kcmil	
350A	3" C. 3-500 kcmil		350Y	4" C. 4-500 kcmil	
400A	3" C. 3-500 kcmil		400Y	4" C. 4-500 kcmil	
500A	2 1/2" C. 6-250 kcmil		500Y	2-3" C. 8-250 kcmil	
600A	2-3" C. 6-350 kcmil		600Y	2-3 1/2" C. 8-350 kcmil	
800A	2-3" C. 6-500 kcmil		800Y	2-4" C. 8-500 kcmil	
1000A	3-3" C. 9-500 kcmil		1000Y	3-4" C. 12-500 kcmil	
1200A	4-3" C. 12-350 kcmil		1200Y	4-3 1/2" C. 16-350 kcmil	
1500A	4-4" C. 12-600 kcmil		1500Y	4-4" C. 16-600 kcmil	
2000A	5-4" C. 16-600 kcmil		2000Y	5-4" C. 20-600 kcmil	
2500A	6-4" C. 18-600 kcmil		2500Y	6-4" C. 24-600 kcmil	
3000A	9-4" C. 24-500 kcmil		3000Y	8-4" C. 32-600 kcmil	
4000A	10-4" C. 30-600 kcmil		4000Y	10-4" C. 40-600 kcmil	
607G	1 1/4" C. 4 #6 & 1 #10		607Y	1 1/4" C. 4 #6 & 4 #2 & 1 #6	
100YG	2" C. 1 #6				
150YG	2" C. 4 #1/0 & 1 #6				
175YG	2 1/2" C. 1 #1/0 & 5 #2/0 & 1 #1 & 1 #6				

NOTE: PROVIDE GROUND CONDUCTOR IN ALL FEEDER. SIZE PER CODE REQUIREMENT. INCREASE CONDUIT SIZE AS REQUIRED.



(2) - 5" CONDUITS PER SCE DRAWINGS. CONTRACTOR SHALL OBTAIN AN APPROVED SET OF SCE DRAWINGS AND INCLUDE ALL COSTS FOR A COMPLETE SYSTEM.

LEGEND:

- INDICATES EXISTING TO REMAIN.
- - - INDICATES EXISTING TO BE REMOVED
- INDICATES NEW.

FAULT CURRENT/COORDINATION STUDY

ELECTRICAL CONTRACTOR SHALL INCLUDE AN OVERCURRENT DEVICE COORDINATION AND FAULT CURRENT / DEVICE EVALUATION STUDY.

ALL STUDIES SHALL BE PERFORMED USING POWER TOOLS FOR WINDOWS BY SKM SYSTEMS, INC.

THE COORDINATION STUDY SHALL INCLUDE ALL OVERCURRENT DEVICES FROM THE 480 VOLT SWITCHGEAR CIRCUIT PROTECTION.

THE COORDINATION STUDY SHALL DEMONSTRATE COORDINATION OF CIRCUIT BREAKERS.

THE COORDINATION STUDY SHALL ALSO DEMONSTRATE COORDINATION BETWEEN MOTOR/TRANSFORMER INRUSH AND UPSTREAM OVERCURRENT PROTECTION.

THE COORDINATION STUDY SHALL INCLUDE A TABLE OF ALL ADJUSTABLE CIRCUIT BREAKER SETTINGS IN THE SYSTEM.

THE FAULT CURRENT STUDY SHALL BE PERFORMED USING THE ACTUAL FAULT CURRENT AVAILABLE AT THE 480 VOLT SWITCHGEAR, AND INCLUDE CONTRIBUTION FROM ALL MOTORS IN THE SYSTEM.

FAULT CURRENT STUDY SHALL INCLUDE A DEVICE EVALUATION WHICH WILL INCLUDE AN EVALUATION OF ALL SWITCHBOARDS, PANELBOARDS, OVERCURRENT DEVICES AND DISCONNECT SWITCHES. THE DEVICE EVALUATION SHALL INCLUDE ALL DERATING REQUIRED BY ANSI STANDARDS.

PRELIMINARY FAULT CURRENT AND COORDINATION STUDY SHALL BE SUBMITTED WITH THE SWITCHBOARD SHOP DRAWING PACKAGE. CONTRACTOR SHALL MAKE ALL ADJUSTMENTS THAT THE STUDY SHOWS AND INCLUDE IN PRICE FOR A COMPLETE AND OPERATIONAL SYSTEM.

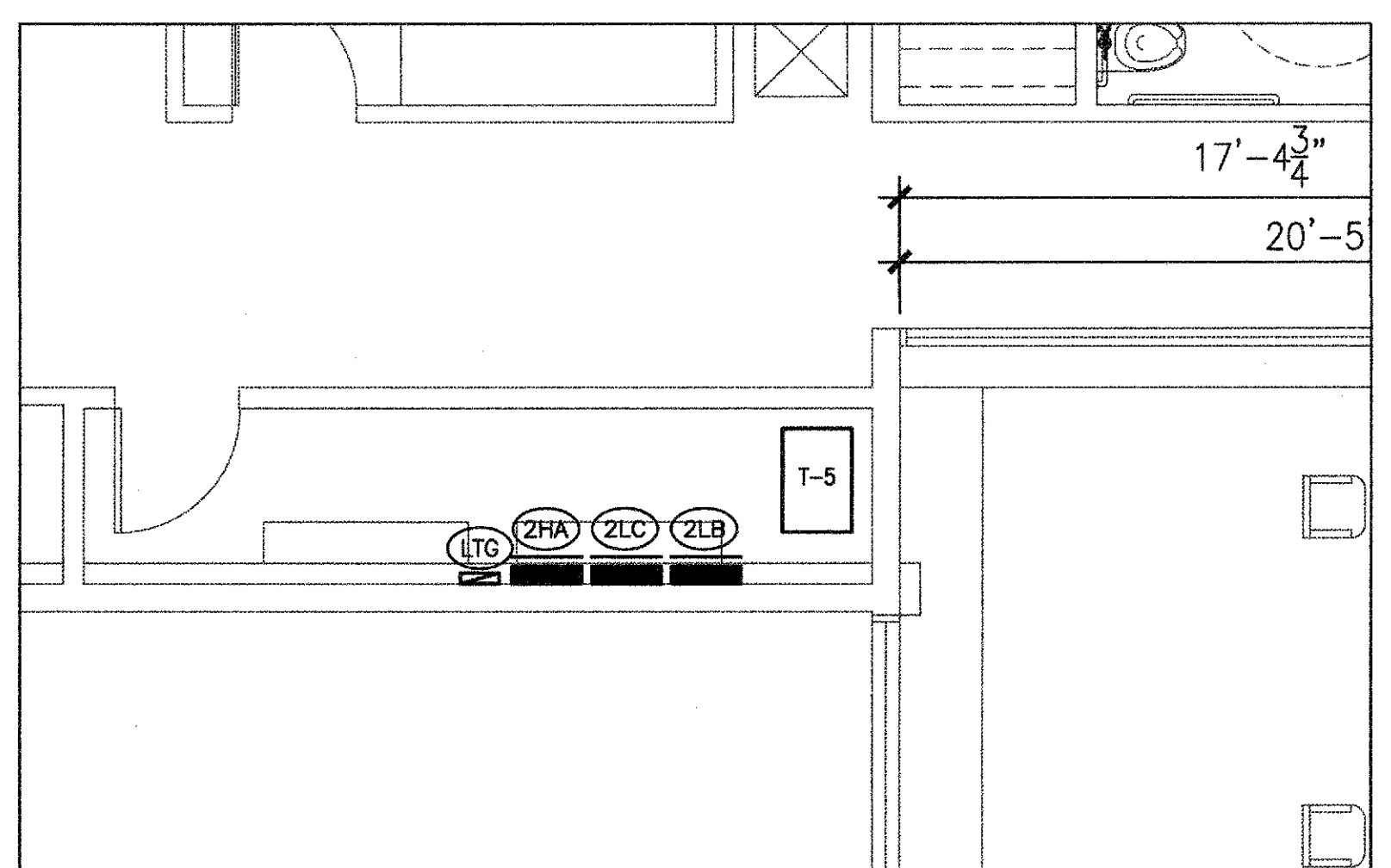
EQUIPMENT RATINGS SHALL EXCEED THE AVAILABLE FAULT CURRENT AT EACH DEVICE. SERIES RATED EQUIPMENT IS PERMITTED. PROVIDE SERIES RATING INFORMATION WITH SHOP DRAWING SUBMITTAL.

FINALIZED STUDIES SHALL BE PREPARED BEFORE EQUIPMENT IS MANUFACTURED.

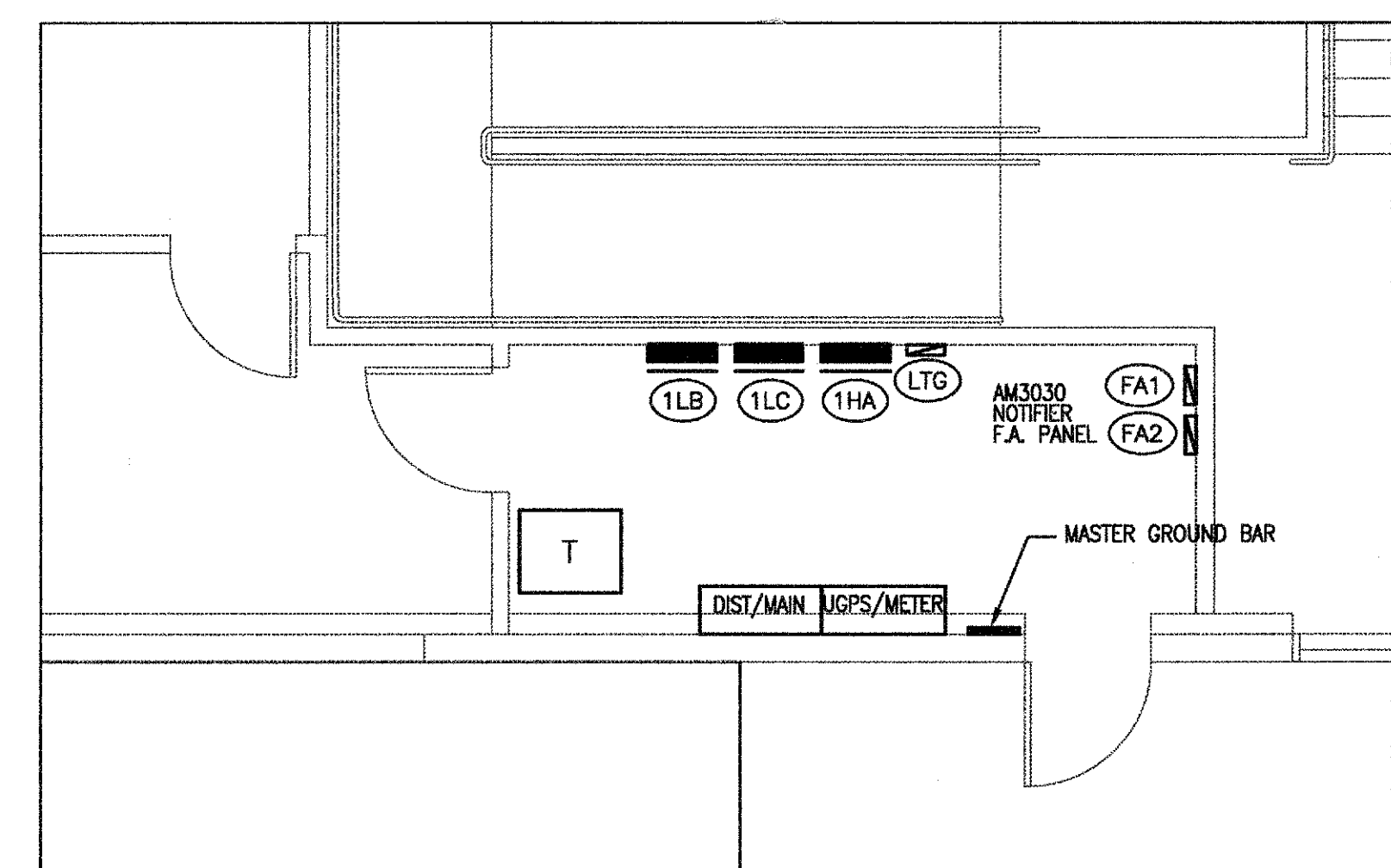
STUDIES SHALL BE SIGNED AND SEALED BY THE PROFESSIONAL ELECTRICAL ENGINEER LICENSED IN THE STATE OF CALIFORNIA UNDER WHOSE DIRECTION THE STUDIES ARE PERFORMED.

A NOTE SHALL BE APPLIED TO ALL EQUIPMENT THAT EQUIPMENT WITH SERIES RATING SHALL BE FIELD MARKED "CAUTION-SERIES COMBINATION SYSTEM RATED FOR 42KAIC AMPERES, IDENTIFIED REPLACEMENT COMPONENTS REQUIRED" PER N.E.C., SECTION 110-22. EQUIPMENT RATINGS SHALL EXCEED THE AVAILABLE FAULT CURRENT AT EACH DEVICE. SERIES RATED EQUIPMENT IS PERMITTED, PROVIDE INFORMATION WITH SHOP DRAWING SUBMITTALS.

MISSION - SINGLE LINE DIAGRAM



2ND FLOOR ELECTRICAL ROOM
SCALE: 1/4" = 1'-0"



MAIN ELECTRICAL ROOM
SCALE: 1/4" = 1'-0"

SIGNATURE DATE:
PLANS ARE NOT FOR CONSTRUCTION UNLESS APPROVED AND STAMPED BY BUILDING DEPARTMENT.

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Project Title:

1515 WEST MISSION ROAD
ALHAMBRA, CA 91803

Sheet Title:
MISSION BUILDING
SINGLE LINE
DIAGRAM

Project No: 00601
Scale: NONE
Date: 02-06-2007
Sheet No:

E- 0.2B
of ## Sheets