CODE, RULES & REGULATIONS

ALL WORK AND MATERIALS SHALL COMPLY WITH THE LATEST REGULATIONS OF THE STATE FIRE MARSHAL, CALIFORNIA ADMINISTRATIVE CODES, SERVING UTILITY COMPANIES AND OTHER APPLICABLE STATE ORDINANCES. NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. WHERE WORK OF A HIGHER DEGREE IS INDICATED IN THE PLANS OR SPECIFICATIONS THAT REQUIREMENT SHALL GOVERN.

SEISMIC REQUIREMENT

ALL ELECTRICAL EQUIPMENT SHALL BE BRACED OR ANCHORED TO RESIST A HORIZONTAL FORCE ACTING IN ANY DIRECTION USING THE FOLLOWING CRITERIA:

FIXED EQUIPMENT ON GRADE	33% OF OPERATING WEIGHT
FIXED EQUIPMENT ON STRUCTURE	50% OF OPERATING WEIGHT
EMERGENCY POWER EQUIPMENT ON GRADE	50% OF OPERATING WEIGHT
EMERGENCY POWER EQUIPMENT ON STRUCTURE	75% OF OPERATING WEIGHT

FOR FLEXIBLY MOUNTED EQUIPMENT, USE 2 X THE ABOVE VALUES. SIMULTANEOUS VERTICAL FORCE SHALL BE 1/3 X HORIZONTAL FORCE.

WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER AND THE FIELD REPRESENTATIVE OF THE OFFICE OF THE STATE ARCHITECT.

ELECTRICAL SYMBOLS

(ALL DIMENSIONS TO CENTER OF BOX, U.O.N.)

②	JUNCTION BOX
②ₐ	JUNCTION BOX WITH FLEX CONNECTION
	MOTOR OUTLET
	FUSED DISCONNECT SWITCH, BY ELECT CONTRACTOR ,U.O.N.
	CONDUIT RUN IN WALL / ATTIC (1/2"C - 2#12 + 1#12 GND, THW/THHN-CU)
	CONDUIT RUN IN FLOOR OR U.G. (1/2"C - 2#12 + 1#12 GND, THW/THHN-CU)
	HASH LINES DENOTE NUMBER OF #12 + 1#12 GND (THW/THHN-CU), U.O.N. 1/2"C FOR UP TO 5#12 + 1#12 GND, 3/4"C FOR 6#12 TO 10#12 + 1#12 GND.
	FLEXIBLE CONDUIT CONNECTION
	ELECTRICAL PANEL
①	ELECTRICAL NOTE #1 (REFER TO ELECT NOTES ON SAME SHEET)
TC	LIGHTING CONTROL TIME CLOCK (+84" U.O.N.)

ELECTRICAL NOTES:

1. INSTALL NEW BREAKERS IN EXISTING MAIN SWITCHBOARD FOR NEW HVAC UNITS AS INDICATED.
2. EXISTING BREAKERS AND FEEDERS TO REMAIN.
3. REMOVE EXISTING ELECTRICAL CONNECTION FOR EVAP COOLERS TO BE REMOVED. SEE MECHANICAL DRAWINGS FOR LOCATIONS. CAP EXISTING CONDUITS AND REMOVE EXISTING WIRING NOT BEING REUSED. RECONNECT ALL THROUGH CIRCUITING IF EXISTS. LABEL BREAKERS IN EXISTING PANELS AS SPARES.
4. REMOVE EXISTING ELECTRICAL CONNECTION FOR FURNACES TO BE REMOVED. SEE MECHANICAL DRAWINGS FOR LOCATIONS. CAP EXISTING CONDUITS AND REMOVE EXISTING WIRING NOT BEING REUSED. RECONNECT ALL THROUGH CIRCUITING IF EXISTS. LABEL BREAKERS IN EXISTING PANELS AS SPARES.
5. TYPICAL OF ALL NEW MECHANICAL TIMECLOCKS: PICK UP EXISTING 120V 20A CIRCUIT AT EXISTING EVAP COOLER LOCATION, OR NEARBY UNSWITCHED 20A CIRCUIT FOR NEW MECHANICAL TIMECLOCK. PROVIDE ALL NEW CONDUITS AND WIRING AS REQUIRED.
6. TYPICAL AT ALL NEW HVAC UNITS: CONNECT CONTROL CIRCUITS AND DUCT SMOKE DETECTORS PER MECHANICAL CONTROL DIAGRAM.
7. 1/2"C WITH CONTROL WIRING TO CONTROL DEVICES IN ROOMS AS DIRECTED BY MECHANICAL CONTRACTOR.
8. 1/2"C - 4#14 (CONTROL + DETECTOR POWER).
9. 3/4"C - 6#14 (CONTROL + DETECTOR POWER).
10. 3/4"C - 9#14 (CONTROL + DETECTOR POWER).
11. 1"C - 12#14 (CONTROL + DETECTOR POWER).
12. 1"C - 14#14 (CONTROL + DETECTOR POWER).
13. TYPICAL: WEATHERPROOF JUNCTION BOX ON ROOF NEXT TO NEW HVAC UNIT.
14. TYPICAL: WEATHERPROOF FUSED DISCONNECT SWITCH AT HVAC UNIT. LOCATE AS DIRECTED BY ENGINEER.
15. 1/2"C - 2#12 + 1#12 GROUND.
16. 1/2"C - 3#12 + 1#12 GROUND.
17. 1"C - 2#6 + 1#10 GROUND.
18. 1"C - 3#6 + 1#10 GROUND.
19. EXISTING PANEL "M" IN STORE ROOM, 120/208V 3-PHASE 4-WIRE 400A. PROVIDE NEW 50A/2P BREAKER IN EXISTING SPACE FOR NEW HVAC UNITS ON ROOF.
20. 3/4"C - 3#10 + 1#10 GROUND.
21. 1-1/2"C - 3#2/0 + 1#8 GROUND.
22. 2"C - 3#3/0 + 1#8 GROUND.
23. RUN CONDUITS ON TOP OF EXISTING WALK COVER.
24. PROVIDE WEATHERPROOF PULL BOX ON WALK COVER.
25. PROVIDE WEATHERPROOF PULL BOX ON BUILDING AT +12" FROM BOTTOM ABOVE FINISHED GRADE.
26. 3/4"C - 3#8 + 1#10 GROUND.
27. 1-1/2"C - 3#1 + 1#8 GROUND.

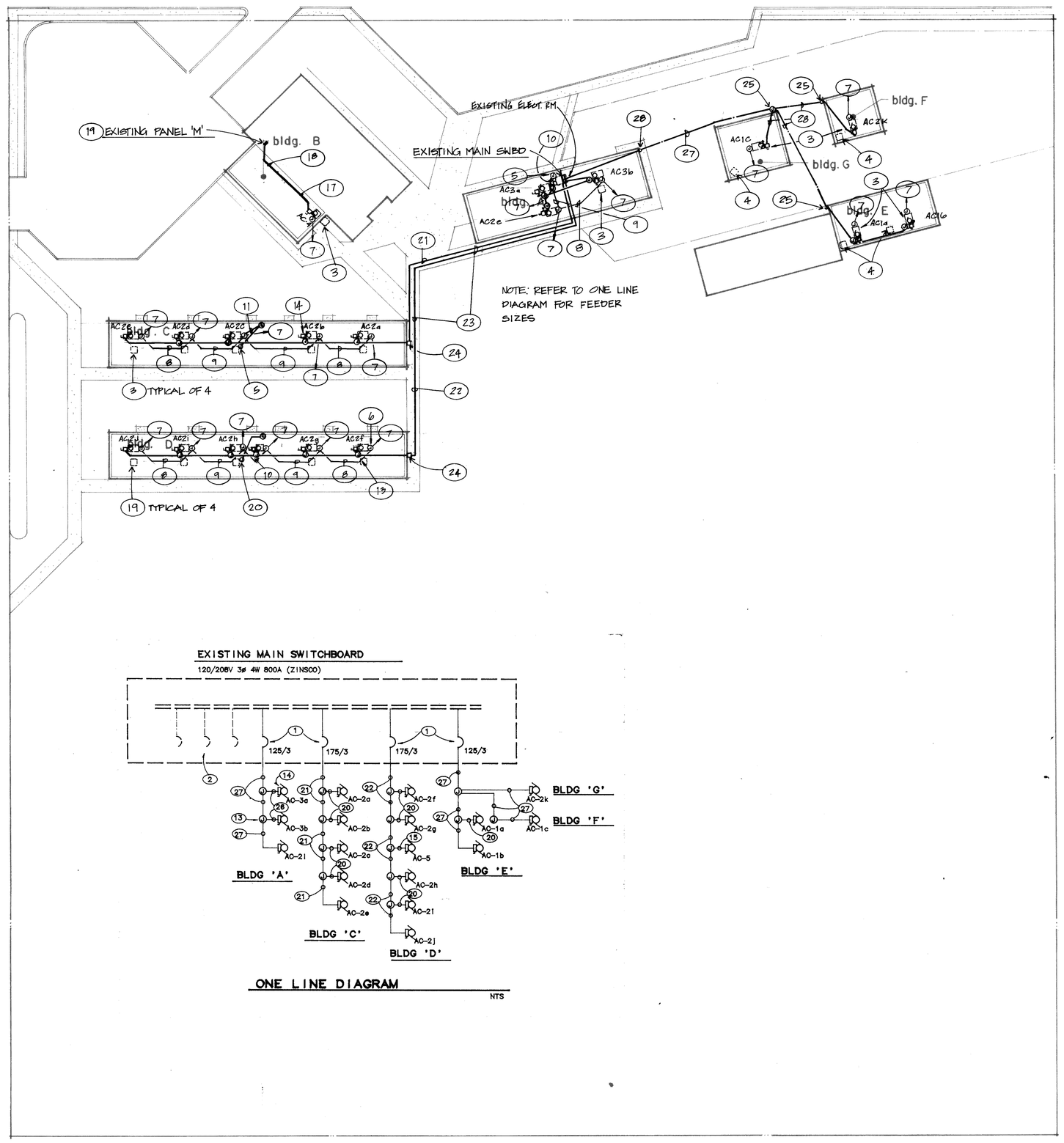
SERVICE LOAD CALCULATION:

EXISTING SWITCHBOARD:
120/208V 3-PHASE 4-WIRE 800A

MAXIMUM DEMAND PER PG&E: 112.KW

NEW 3-PHASE HVAC LOADS:		146.48 KW
3 AC1 @ 20.7A	62.1A	
12 AC2 @ 23.6A	283.2A	
2 AC3 @ 30.8A	61.6A	
	406.9A	
NEW 1-PHASE HVAC LOADS:		8.32 KW
1 AC4 @ 16.8A	16.8A	
1 AC5 2 14.2A	14.2A	
1 EC1 @ 9.0A	9.0A	
	40.0A	

TOTAL NEW HVAC LOADS	154.8 KW
SUBTOTAL	266.8 KW
LESS EVAP COOLERS REMOVED	16.0 KW
SUBTOTAL	250.8 KW
PLUS 25% OF EST. 72KW LTG LOADS	18.0 KW
NET TOTAL LOAD	268.8 KW
@120/208V 3-PHASE 4-WIRE	746.66 A



EXISTING MAIN SWITCHBOARD
120/208V 3ø 4W 800A (ZINSCO)

ONE LINE DIAGRAM
NTS

PARTIAL SITE PLAN ELECTRICAL LAYOUT 40'=1'

CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS AT THE SITE AND AS SHOWN ON THE DRAWINGS. REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH ANY WORK.

APPROVED FIRE AND PANIC ONLY
STATE FIRE MARSHAL

Peter Kwon Engineering
320 N. Bedford, #106
Fresno, CA 93711
(Peter Kwon, EE - 10411)

DATE REVISIONS

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E. NASH

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BAKERSFIELD CITY SCHOOLS

LEONARD J. SCHROEDER AND ASSOCIATE · ARCHITECT · A.I.A.