

ELECTRICAL SYMBOLS



LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	DESCRIPTION	LOCATION	MANUFACTURER	MODEL	(QUANTITY) LAMPING	VOLTAGE	CALCULATED VA (INCL. BALLAST)
A	FLOURESCENT, 1 X 4, SURFACE MOUNT WRAP, 2 LAMP, LOW VOLTAGE DIMMING BALLAST, COORDINATE WITH MANUFACTURER FOR NECESSARY COMPONENTS WHEN TANDUM DOUBLE LENGTH IS REQUIRED	OFFICES, CRAFT ROOM	LSI INDUSTRIES OR EQUAL	DW-2-28-S55D-WHT-120-MARK 7, 0-10V DIMMING	(2) F28T5	120V	59
AB	SAME AS "A" EXCEPT WITH EMERGENCY BATTERY PACK PROVIDING 1400 LUMENS FOR A MINIMUM OF 90 MINUTES	EGRESS	LSI INDUSTRIES OR EQUAL	DW-2-28-S55D-WHT-EM-120-MARK 7, 0-10V DIMMING	(2) F28T5	120V	59
B	FLOURESCENT, 1 X 4, SURFACE MOUNT WRAP, 2 LAMP, CLEAR PRISMATIC ACRYLIC LENS	VARIES	ORACLE OR EQUAL	4-OEW-2-32-T8-120	(2) F32T8	120V	62
BB	SAME AS "B" EXCEPT WITH EMERGENCY BATTERY PACK PROVIDING 1400 LUMENS FOR A MINIMUM OF 90 MINUTES	VARIES	ORACLE OR EQUAL	4-OEW-2-32-T8-120-EM-78-BX-1400	(2) F32T8	120V	62
C	FLOURESCENT, 1 X 2, SURFACE MOUNT WRAP, CLEAR PRISMATIC ACRYLIC LENS	CLOSETS / STORAGE	ORACLE OR EQUAL	2-OEW-2-17-T8-120	(2) F17T8	120V	35
E	LED, SURFACE MOUNT WRAP, 4500 LUMENS, 4000K COLOR TEMPERATURE, CLEAR PRISMATIC ACRYLIC LENS, 0-10V DIMMING STANDARD	IT ROOM	LSI INDUSTRIES OR EQUAL	DW-LED-SS-NW-LIE-MARK 7, 0-10V DIMMING	44 WATTS	120V	47
EB	SAME AS "E" EXCEPT WITH EMERGENCY BATTERY PACK PROVIDING 1400 LUMENS FOR A MINIMUM OF 90 MINUTES	IT ROOM	LSI INDUSTRIES OR EQUAL	DW-LED-SS-NW-LIE-EM-MARK 7, 0-10V DIMMING	44 WATTS	120V	47
K	FLOURESCENT, 2 X 4, RECESSED TRIGGER 2 LAMP, WET RATED, FULLY ENCLOSED AND GASKETED, 0-10V DIMMING	KITCHEN	LSI INDUSTRIES OR EQUAL	WL-A125-2-32-GRA-S55D-120-MARK 7, 0-10V DIMMING	(2) F32T8	120V	62
KB	SAME AS "K" EXCEPT WITH DAMP LOCATION EMERGENCY BATTERY PACK PROVIDING 1400 LUMENS FOR A MINIMUM OF 90 MINUTES	KITCHEN EGRESS	LSI INDUSTRIES OR EQUAL	WL-A125-2-32-GRA-S55D-120-MARK 7, 0-10V DIMMING-EMDL	(2) F32T8	120V	62
P	LED, TYPE 3 DISTRIBUTION, FULL CUT OFF, 19" SQUARE STEEL POLE, 3 CONCRETE BASE, BRONZE FINISH, NEMA PHOTOCONTROL, BUG RATING-B1-U0-G2	PARKING LOT	LUMARK OR EQUAL	PRV5-A15-UNV-T3-OA-RA-1016	57 WATTS	208V	64
V	FLOURESCENT, WALL MOUNT, 3' IN LENGTH, DAMP LOCATION RATED	VANITY	ORACLE OR EQUAL	3-OVLM-2-25-T8	(2) F25T8	120V	50
W	LED WALL PACK, FULL CUT-OFF, CORROSION RESISTANT SCREWS, BRONZE FINISH, BUTTON TYPE PHOTOCONTROL, BUG RATING-B1-U0-G1	EXTERIOR	MCGRAW-EDISON OR EQUAL	ISW-E01-LED-E1-BL3-B2-P	25 WATTS	120V	29
WB	SAME AS "W" EXCEPT WITH EMERGENCY BATTERY PACK PROVIDING 2700 LUMENS FOR A MINIMUM OF 90 MINUTES	EXTERIOR EGRESS	MCGRAW-EDISON OR EQUAL	ISW-E01-LED-E1-BL3-B2-P-BBB-82	25 WATTS	120V	29
X	LED (GREEN) EXIT LIGHT, GREEN LETTERING, WITH DIRECTIONAL ARROWS, NICKEL CADMIUM BATTERY, COORDINATE FINISH WITH ARCHITECT	EGRESS	LITHONIA OR EQUAL	LHOM-LED-G-HO-RO	-	120V	5
Y	LED (GREEN) EXIT LIGHT, WITH TWIN ADJUSTABLE LED LAMP HEADS, GREEN LETTERING, WITH DIRECTIONAL ARROWS, NICKEL CADMIUM BATTERY, COORDINATE FINISH WITH ARCHITECT	EGRESS	LITHONIA OR EQUAL	LHOM-LED-G-HO-EUA-T-Q-L0359	-	120V	5

DRAWING LIST

- E0.1 LEGEND AND GENERAL NOTES
- E0.2 ONE-LINE DIAGRAM - DEMOLITION/IMPROVEMENT AND LOAD SUMMARY
- E0.3 PANEL SCHEDULES - 1
- E0.4 PANEL SCHEDULES - 2
- E1.1 SITE PLAN - DEMOLITION AND IMPROVEMENT
- E2.1 POWER AND LIGHTING PLANS - DEMOLITION
- E2.2 POWER PLAN - IMPROVEMENT
- E3.1 LIGHTING PLAN - IMPROVEMENT
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SCOPE OF WORK

THIS SET OF DRAWINGS COVERS POWER DISTRIBUTION AND LIGHTING FOR THE 1,980 SQUARE-FOOT RENOVATION OF THE 5,180 SQUARE-FOOT EXISTING CHURCH FACILITY THAT WILL BE CONVERTED TO THE REDWOOD PREPARATORY CHARTER SCHOOL IN FORTUNA, CALIFORNIA. THIS PROJECT CONSISTS OF THE FOLLOWING:

EXISTING BUILDING WILL BE REMODELED AS FOLLOWS:

- RESTROOMS (APPROXIMATELY 220 SQUARE FEET)
- MECHANICAL ROOM
- CONVERT RESIDENTIAL KITCHEN INTO A MEETING/CRAFT ROOM
- CONVERT COVERED PATIO INTO A COMMERCIAL KITCHEN
- CONVERT OFFICE INTO AN I.T. ROOM

THE ADDITION INCLUDES:

- POWER DISTRIBUTION AND LIGHTING FOR THREE SMALL OFFICES (APPROXIMATELY 360 SQUARE FEET TOTAL) TO NORTH END OF THE EXISTING BUILDING
- POWER DISTRIBUTION AND COMMUNICATION RACEWAYS TO TEN MODULAR CLASSROOM BUILDINGS (9,600 SQUARE FEET TOTAL) EAST OF THE EXISTING BUILDING
- ONE MODULAR BATHROOM BUILDING (480 SQUARE FEET) EAST OF THE EXISTING BUILDING
- PARKING LOT LIGHTING

FIRE ALARM PERFORMANCE SPECIFICATIONS:

- CONTRACT DOCUMENTS INCLUDE A DESIGN/BUILD PERFORMANCE SPECIFICATION FOR A COMPLETE FIRE ALARM SYSTEM

COORDINATION WITH THE PHOTOVOLTAIC CONTRACTOR:

- COORDINATE BREAKER SIZE, PHASE, AND QUANTITY
- COORDINATE METERING REQUIREMENTS

COORDINATION WITH THE FOLLOWING UTILITIES IS REQUIRED:

- PG&E: ALEX MOSSMAN, 707.445.5594, AWM9@PGE.COM. OBTAIN THREE-PHASE POWER, UTILITY PAD-MOUNTED TRANSFORMER, AND NEW SERVICE ENTRANCE.
- SUDDENLINK: JASON WELCH, 707.268.5363, JASON.WELCH@SUDDENLINK.COM
- AT&T: BRIAN JOHNSON, 707.445.4091, BJ6832@ATT.COM

GENERAL NOTES

1. SEE ELECTRICAL AND FIRE ALARM SPECIFICATIONS.
2. UNLESS NOTED OTHERWISE, MOUNT RECEPTACLES AT 18 INCHES AND SWITCHES AT 48 INCHES ABOVE THE FLOOR. COORDINATE ALL RECEPTACLE LOCATIONS WITH ASSOCIATED CABINETS AND WORK PLANE HEIGHTS. RECEPTACLES SHALL BE SPECIFICATION GRADE.
3. RECEPTACLES AND JUNCTION BOXES FOR DEDICATED USES ARE SHOWN IN APPROXIMATE LOCATIONS. COORDINATE WITH EQUIPMENT SUPPLIERS AND ARCHITECT FOR EXACT LOCATIONS.
4. DISTRIBUTE TELEPHONE FROM EACH OUTLET LOCATION SHOWN ON THE PLANS TO THE I.T. ROOM.
5. WIRING FOR ELECTRICAL DEVICES IS NOT SHOWN ON THESE PLANS. INSTEAD, ELECTRICAL DEVICES IN EACH ROOM ARE TAGGED WITH THE SOURCE PANELBOARD AND CIRCUIT NUMBER THAT FEEDS THE DEVICE IN THAT ROOM.
6. ELECTRICAL BOXES LOCATED IN 1HR FIRE RATED WALLS SHALL NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL AREA.
7. VERIFY ALL WORK CONDITIONS PRIOR TO COMMENCING WORK, INCLUDING, BUT NOT LIMITED TO: DIMENSIONS, EQUIPMENT, STRUCTURAL ELEMENTS & MATERIALS INDICATED AS EXISTING. COORDINATE AMONG DISCIPLINES AND EQUIPMENT SUPPLIERS FOR INSTALLATION OF ALL MATERIALS & EQUIPMENT, ETC.
8. THIS IS A STANDARD LEGEND SHEET. THEREFORE, SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE PLANS.
9. ITEMS SHOWN BOLD ON THESE DRAWINGS REPRESENT WORK THAT IS PART OF THIS CONTRACT. BOLD TEXT ASSOCIATED WITH EQUIPMENT SHOWN AS THIN DESCRIBES WORK TO BE PERFORMED ON THE EQUIPMENT AS PART OF THE CONTRACT.

ABBREVIATIONS

A	AMP(S)	GFP	INTERRUPTER (PERSONNEL)	NTS	NOT TO SCALE
AFCI	ARC FAULT CIRCUIT INTERRUPTER	GFR	GROUND FAULT PROTECTION (EQUIPMENT)	OL	OVERLOAD
AFF	ABOVE FINISHED FLOOR	GRS	GROUND FAULT RELAY	PB	PULLBOX
AFG	ABOVE FINISHED GRADE	HP	GALVANIZED RIGID STEEL CONDUIT	PC	PHOTOCELL
AIC	AMPS INTERRUPTING CAPACITY	HZ	HORSEPOWER	PNL	PANEL, PANELBOARD
AL	ALUMINUM	IMC	INTERMEDIATE METAL CONDUIT	PVC	POLYVINYL CHLORIDE CONDUIT
ATS	AUTOMATIC TRANSFER SWITCH	KCMIL	THOUSAND CIRCULAR MILS	RECEPT	RECEPTACLE
AWG	AMERICAN WIRE GAUGE	KW	KILOWATT	SBC	SOUTHERN BELL COMMUNICATIONS
C	CONDUIT	MAX	MAXIMUM	SF	SQUARE FOOTAGE
CATV	CABLE TELEVISION	MIN	MINIMUM	SP	SPARE
CEC	CALIFORNIA ELECTRICAL CODE	MLO	MAIN LUG ONLY	SWGR	SWITCHGEAR
CFL	COMPACT FLOURESCENT	MPOE	MAIN POINT OF ENTRY	TSP	TWISTED SHIELDED PAIR
CU	COPPER	N	NEUTRAL	TST	TWISTED SHIELDED TRIAD
DC	DIRECT CURRENT	N/A	NOT APPLICABLE	Typ	TYPICAL
EA	EACH	NL	NIGHT LIGHT	V	VOLT(S)
EMT	ELECTRICAL METALLIC TUBING	NEC	NATIONAL ELECTRICAL CODE	VA	VOLT AMPS
EXST,(E)	EXISTING			W	WIRE
G	GROUND			WP	WEATHERPROOF
GFCI	GROUND FAULT CIRCUIT INTERRUPTER (PERSONNEL)			XFMR	TRANSFORMER

FILE: 1559.E0.1



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--- AS BUILT ---

REDWOOD PREPARATORY CHARTER SCHOOL

1480 ROSS HILL ROAD
FORTUNA, CA 95541

LEGEND AND GENERAL NOTES

SHEET NUMBER

E0.1

DATE: 01-29-2016
DRAWN BY: RCO
CHECKED BY: DCM

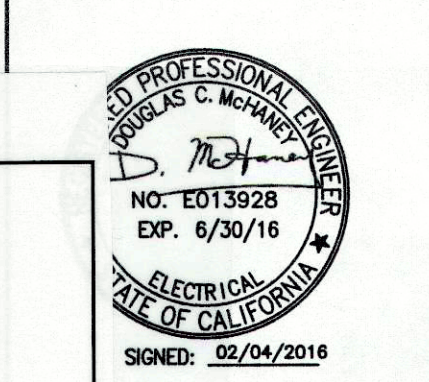
REDWOOD PREPARATORY CHARTER SCHOOL
1553.00

LOAD SUMMARY

SE-1 LOAD SUMMARY						
GIVEN:						
- Supply Voltage	208 /120V, 3 Phase, 4 Wire					
BUILDING AREA (5,180 SF, Main Building; 15,260 SF including modulars)						
GENERAL						
* SITE LIGHTING						1020 VA
* LIGHTING (CONTINUOUS)	@	3 VA / SF				15540 VA
RECEPTACLES	61 @	180 VA EA, First 10KVA				10000 VA
		Remainder over 10 KVA @ 50%				490 VA
Subtotal General						27050 VA
Note						
Loads	HP	Amps	Volts	Phase		
KITCHEN						
Microwave Oven	10.0	120	1	1 @	1200 VA EA	1200 VA
Coffee Maker	12.0	120	1	1 @	1440 VA EA	1440 VA
Blender	14.0	120	1	1 @	1680 VA EA	1680 VA
Convection Oven	1/2	15.8	120	1	1 @ 1896 VA EA	1896 VA
Refrigerator	1/3	5.8	120	1	1 @ 696 VA EA	696 VA
Freezer	11.0	120	1	1 @	1320 VA EA	1320 VA
Toaster	2.0	120	1	1 @	240 VA EA	240 VA
Dishwasher	16.0	120	1	1 @	1920 VA EA	1920 VA
Ice Machine	5.0	120	1	1 @	600 VA EA	600 VA
Buffet Unit	4.2	120	1	1 @	504 VA EA	504 VA
Garbage Disposal	12.0	120	1	1 @	1440 VA EA	1440 VA
Range w/Convection Oven	1/3	3.4	120	1	2 @ 408 VA EA	816 VA
Subtotal Kitchen Loads						13752 VA
Per NEC Table 220.56: 65% Demand factor for kitchen equipment applied						8939 VA
GENERAL						
Recirculation Pump	5.0	120	1	2 @	600 VA EA	1200 VA
MA1	6.9	208	1	1 @	1435.2 VA EA	1435 VA
EF-1, 2, 5	1.2	120	1	1 @	144 VA EA	144 VA
EF4	2.0	120	1	1 @	240 VA EA	240 VA
EF3, EF-6	1/2	9.8	120	1	2 @ 1176 VA EA	2352 VA
UFS	25.0	120	1	1 @	3000 VA EA	3000 VA
Monument Sign	6.0	120	1	1 @	720 VA EA	720 VA
F1, F2, F3	15.0	120	1	3 @	1800 VA EA	5400 VA
HP1	13.0	208	1	1 @	2704 VA EA	2704 VA
HP2	26.0	208	1	1 @	5408 VA EA	5408 VA
LCP	1.0	120	1	1 @	120 VA EA	120 VA
Hand Dryer	12.2	120	1	2 @	1464 VA EA	2928 VA
Water Heater	5.0	120	1	1 @	600 VA EA	600 VA
Subtotal General Loads						26251 VA
MODULAR BUILDINGS						
1 Classrooms	43.3	208	1	10 @	9006.4 VA EA	90064 VA
1 Bathroom	8.0	208	1	1 @	1664 VA EA	1664 VA
Subtotal Modular Loads						91728 VA
TOTAL CONNECTED LOAD						153968 VA
TOTAL DEM AND LOAD (CONTINUOUS LOADS @ 125%, "" = Continuous Load)						158108 VA
MINIMUM REQUIRED FEEDER AMPACITY						439 A
MINIMUM EQUIPMENT BUS RATING						600 A
NOTE:						
1. Load data provided by modular building manufacturer.						

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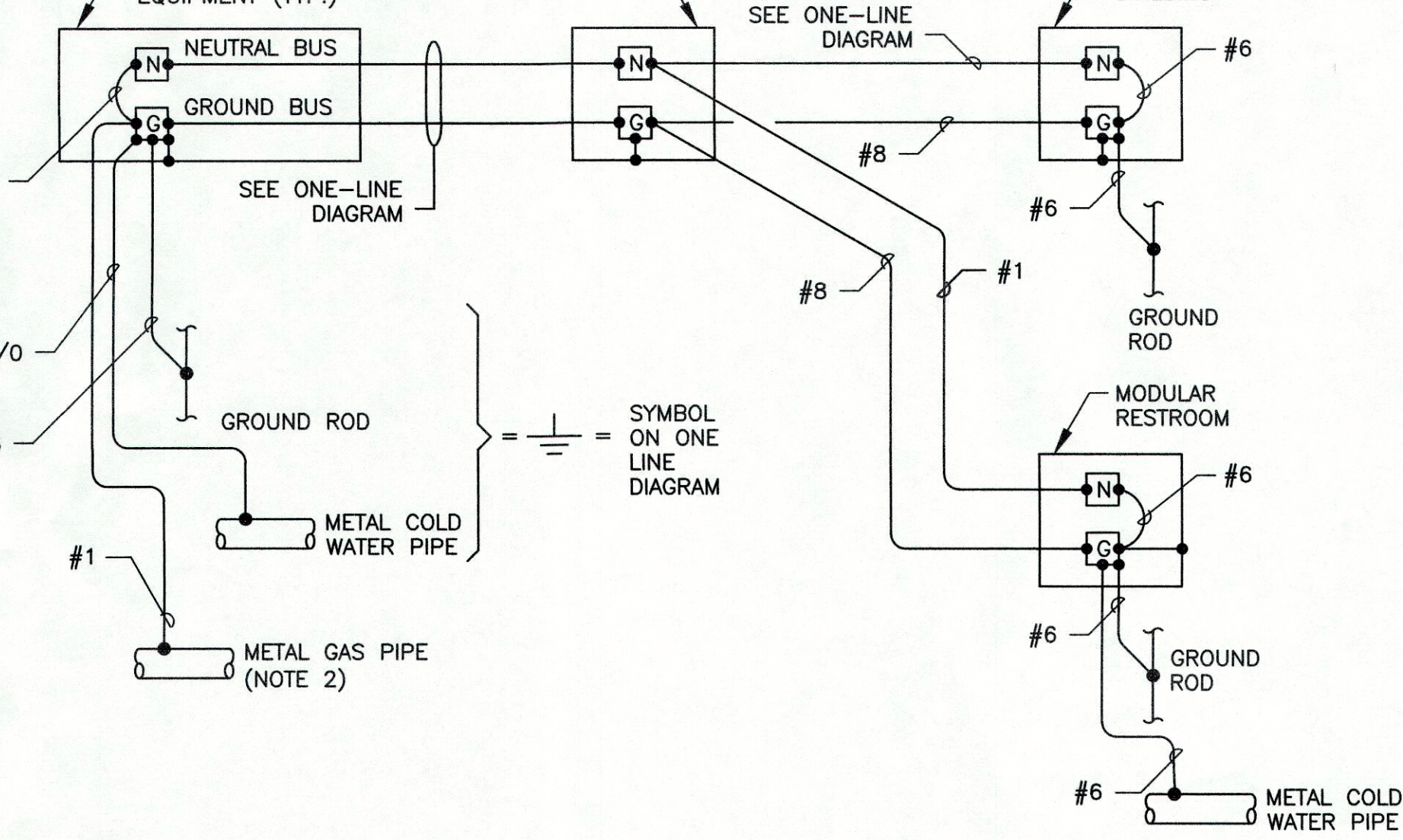
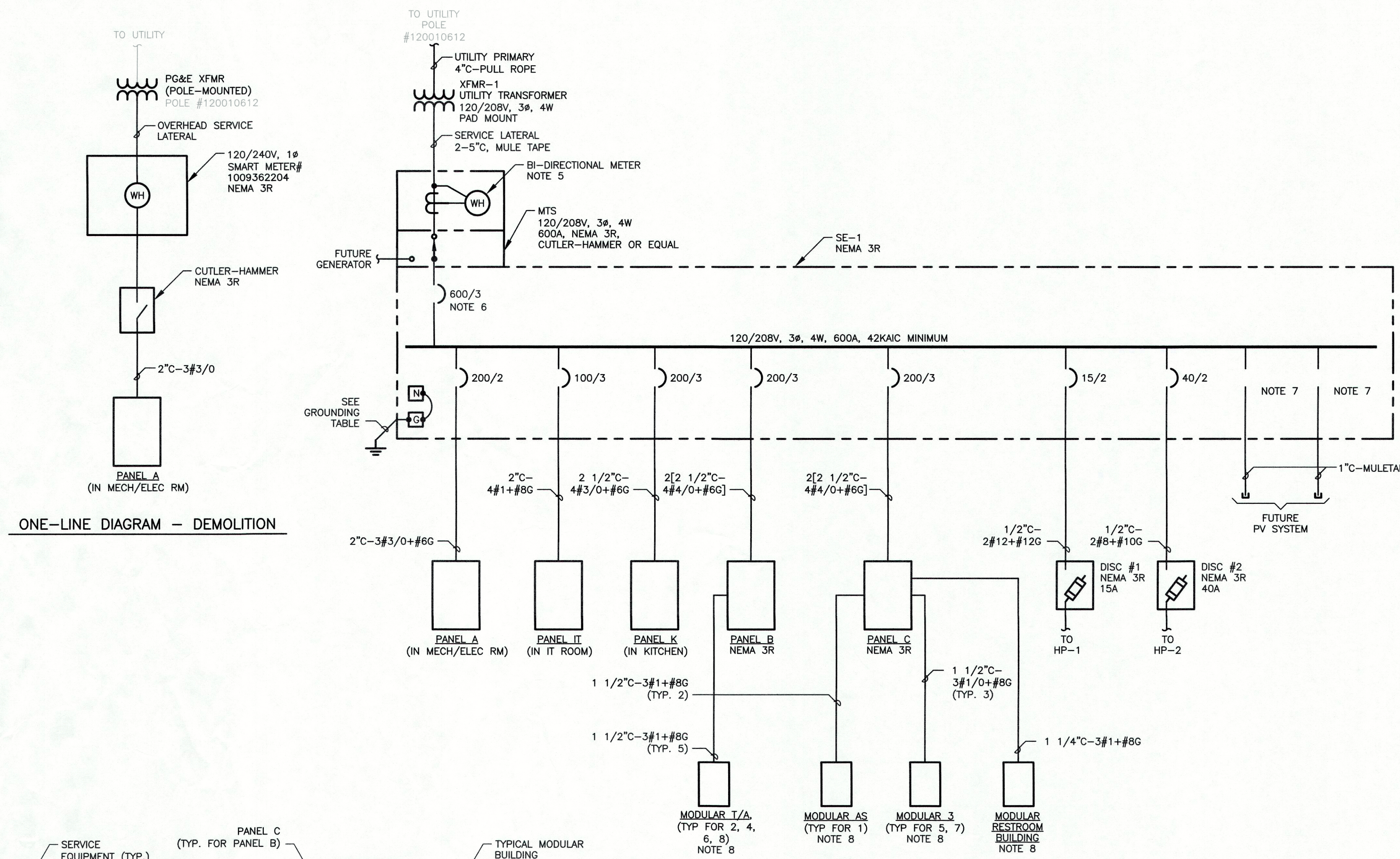
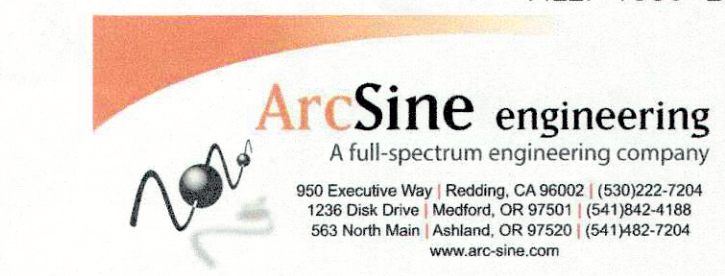


--- AS BUILT ---
PREPARATORY
CHARTER SCHOOL
1480 ROSS HILL ROAD
FORTUNA, CA 95541
AP# 202-371-03

ONE-LINE DIAGRAM -
DEMOLITION/IMPROVEMENT
AND LOAD SUMMARY

SHEET NUMBER
E0.2
DATE: 02-03-2016
DRAWN BY: RCO
CHECKED BY: DCM
REDWOOD PREPARATORY
CHARTER SCHOOL
1533.00

FILE: 1559.E0.2



ONE-LINE DIAGRAM - IMPROVEMENT

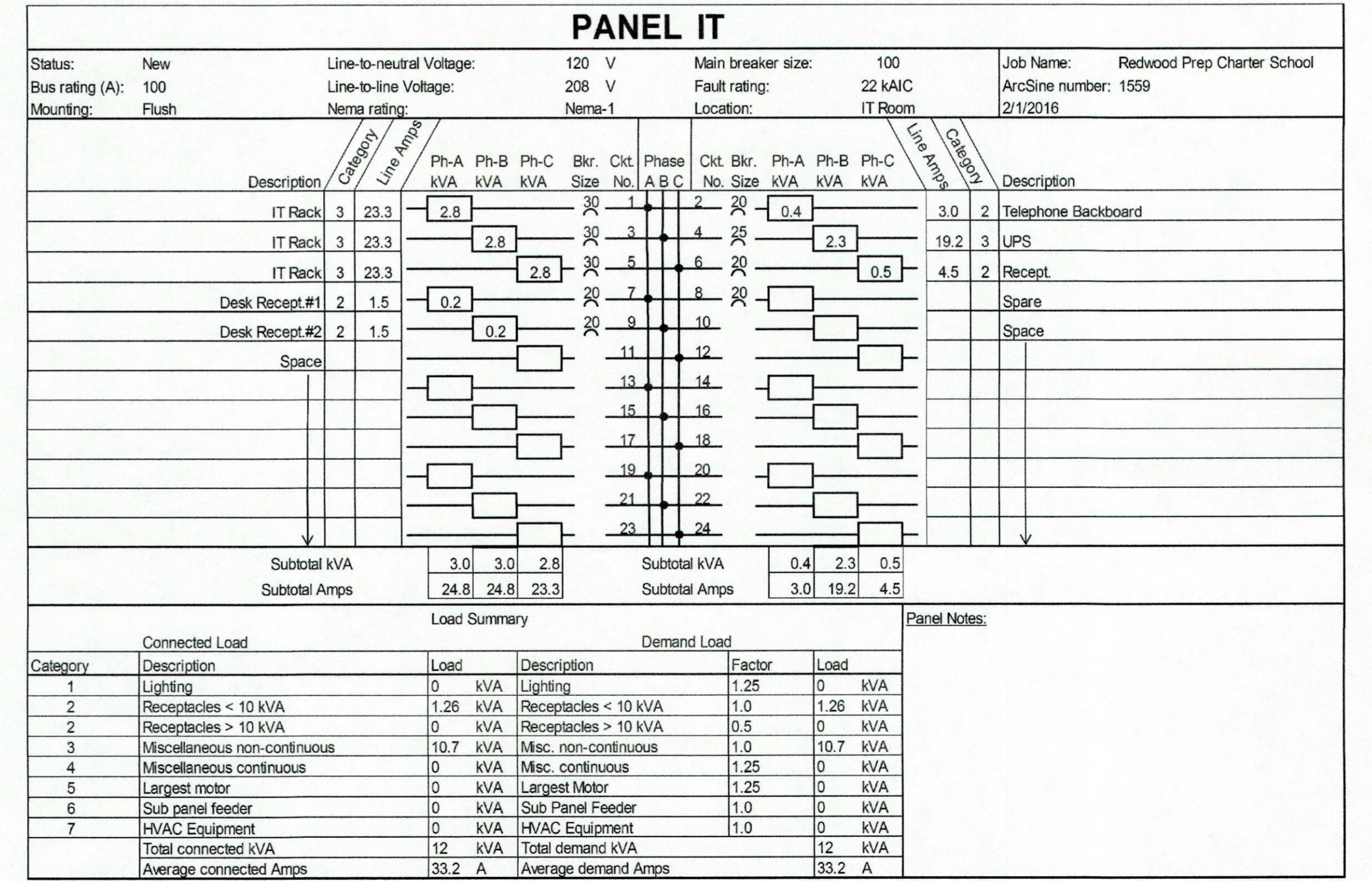
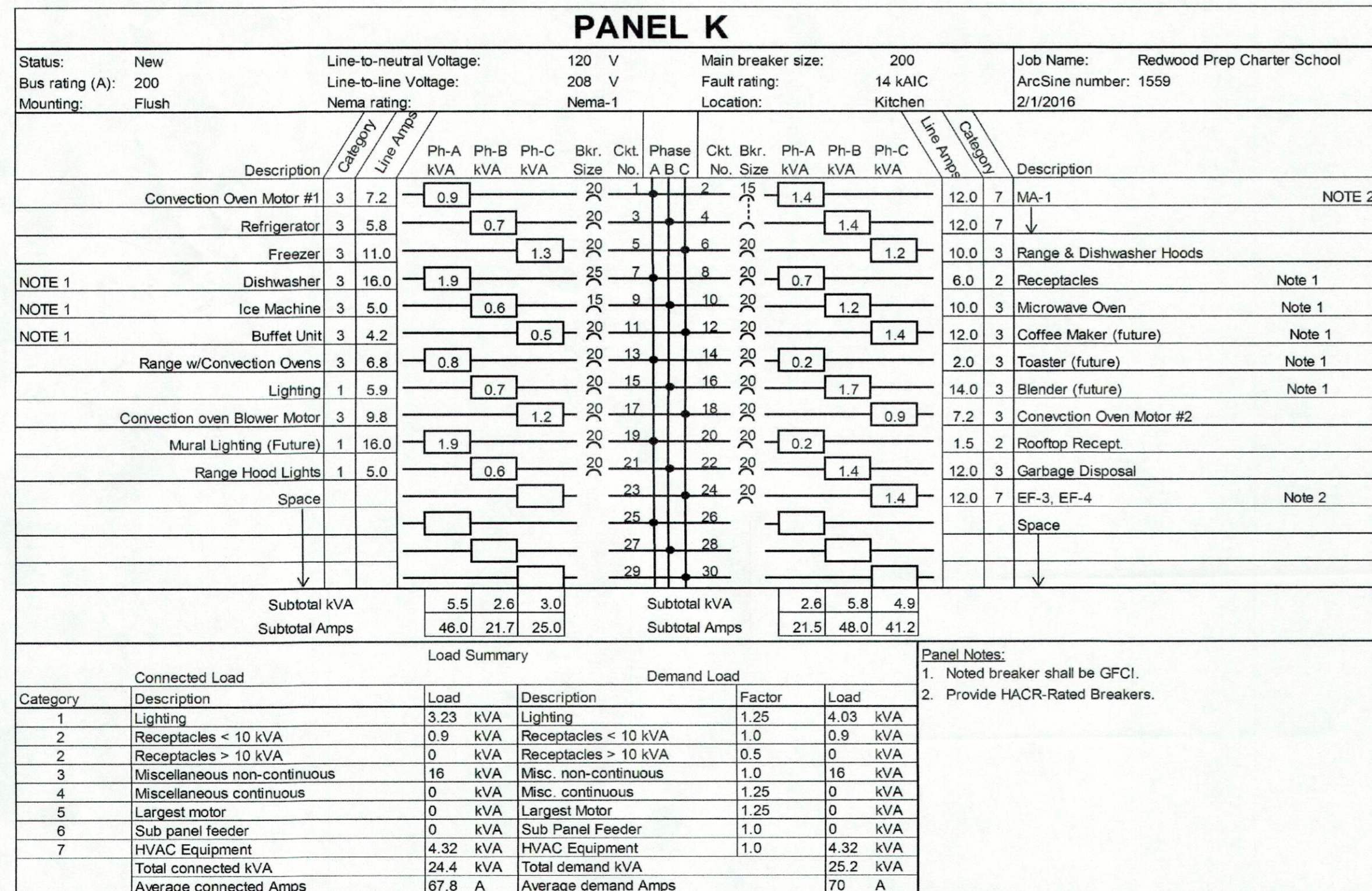
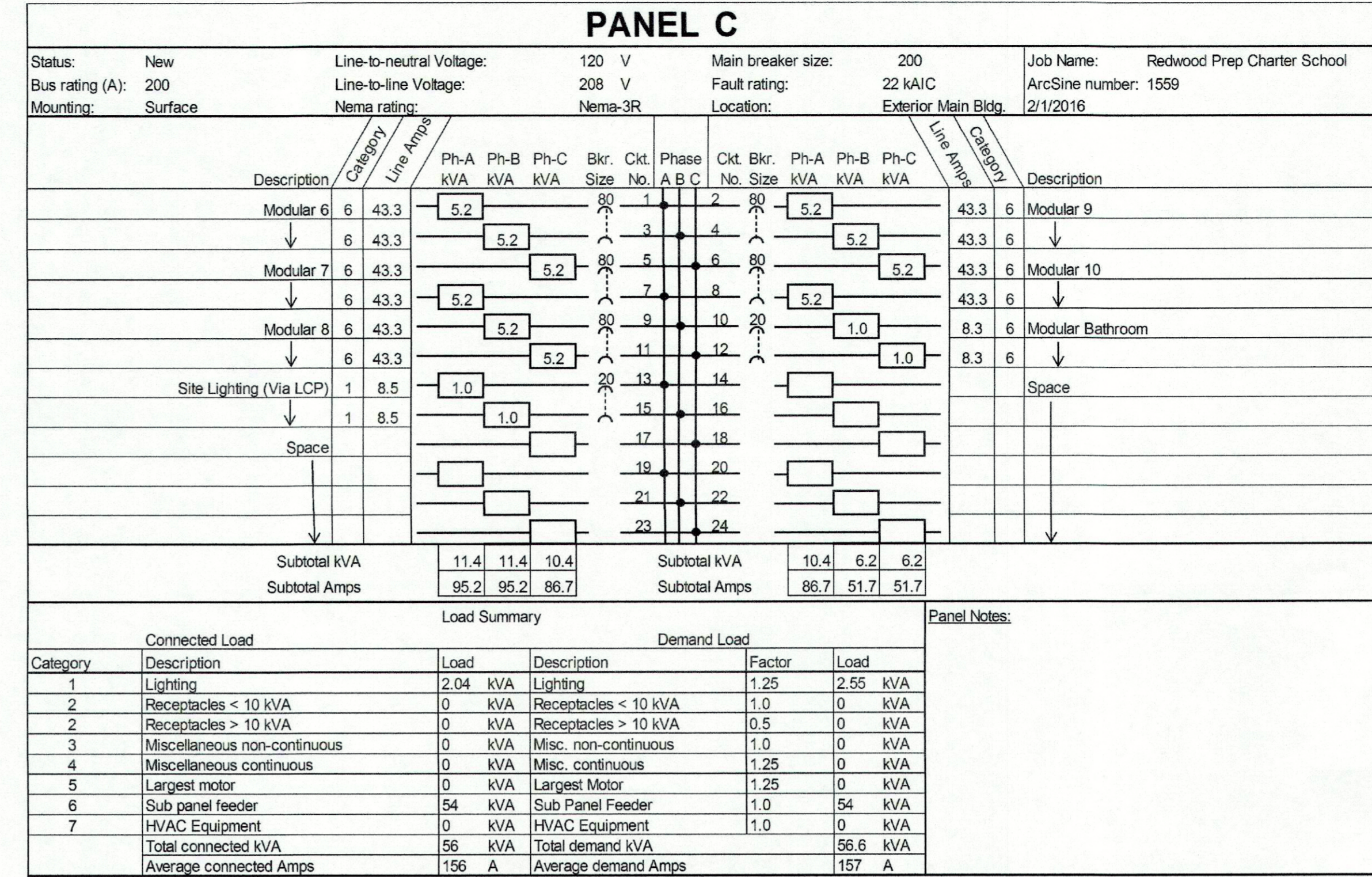
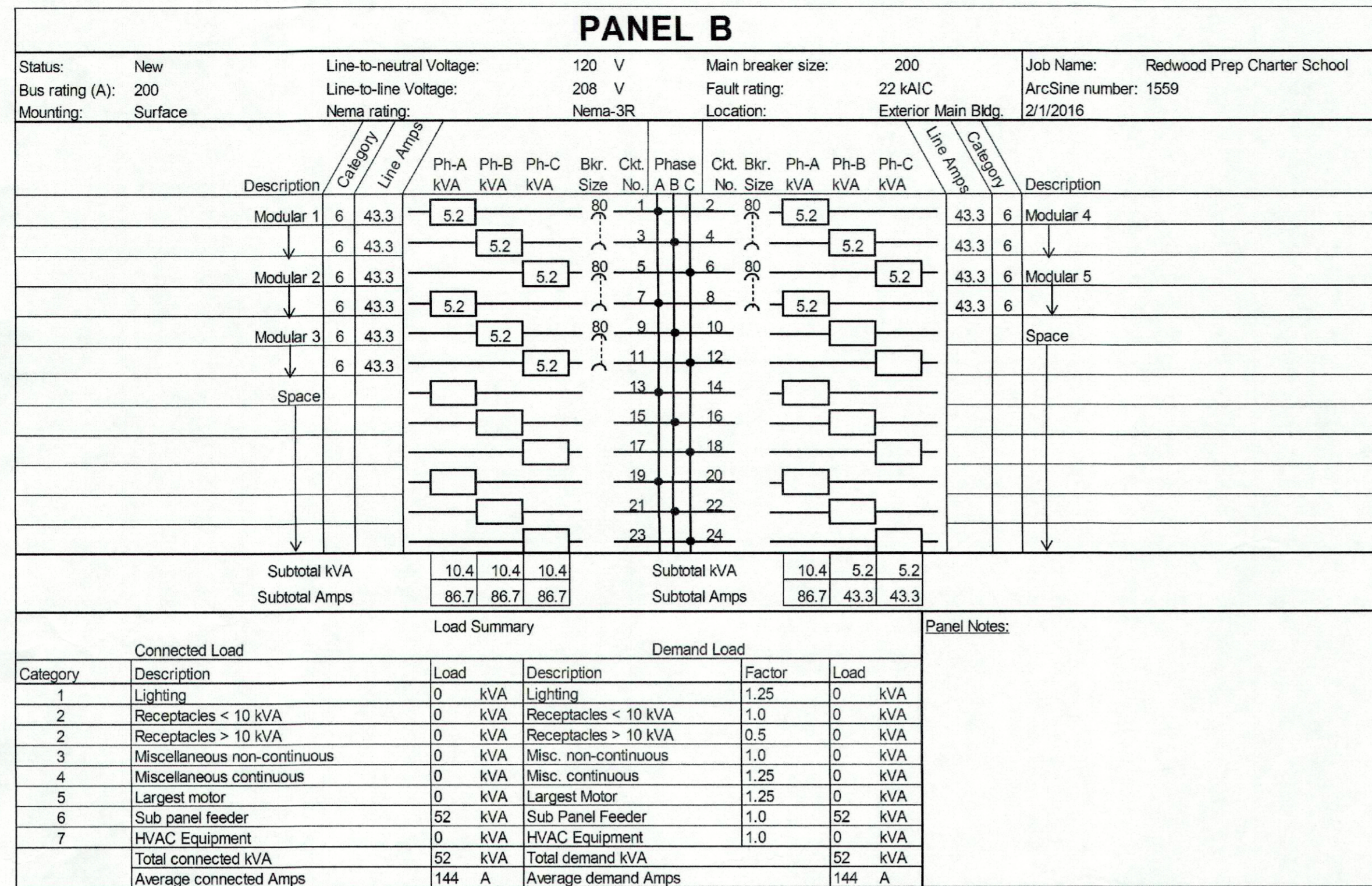
VOLTAGE DROP CALCULATIONS

RUN	PEAK DEMAND AMPS	ONE-WAY DISTANCE (FEET)	AWG	OHM/1000'	PARALLEL SETS	L-N VOLTAGE	VOLTAGE DROP %						
							MODULARS T/A, 2, 4, 6, 8	MODULARS AS, 1	MODULAR 3	MODULAR 5	MODULAR 7	MODULAR BATHROOM	
SE-1 to PANEL A	132	91	3/0	0.088	1	120	1.8						
SE-1 to PANEL K	66.1	82	3/0	0.088	1	120	0.8						
SE-1 to PANEL B	144	90	4/0	0.074	2	120	0.8	0.8					
SE-1 to PANEL C	156.6	90	4/0	0.074	2	120	0.9		0.9	0.9	0.9	0.9	
SE-1 to PANEL I	60	20	1	0.16	1	120	0.3						
PANEL B to MOD. T/A, 2, 4, 6, 8	43.3	154	1	0.16	1	120		1.8					
PANEL C to MOD. AS, 1	43.3	132	1	0.16	1	120			1.5				
PANEL C to MOD. 3	43.3	157	1/0	0.13	1	120			1.5				
PANEL C to MOD. 5	43.3	181	1/0	0.13	1	120				1.7			
PANEL C to MOD. 7	43.3	206	1/0	0.13	1	120					1.9		
PANEL C to MOD. BATHROOM	8	50	1	0.16	1	120						0.1	
MODULAR PANEL TO FURTHEST BRANCH CIRCUIT (TYPICAL FOR ALL MODULARS)	14	50	12	1.7	N/A	120		2.0	2.0	2.0	2.0	2.0	
TOTAL								4.6	4.4	4.3	4.6	4.8	3.0

NOTES:

- SEE LEGEND AND GENERAL NOTES ON SHEET E0.1.
- METAL GAS PIPING SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM BUT IS NOT PART OF THE GROUNDING ELECTRODE SYSTEM, PER NEC 250.52 (B) AND 250.104(B).
- SECOND SUPPLEMENTARY GROUND IS NOT REQUIRED IF A SINGLE GROUND ROD HAS A RESISTANCE OF 25 OHMS OR LESS. NEC 250.53(A)(3) EXCEPTION.
- COORDINATE ALL SELECTED KITCHEN EQUIPMENT LOADS AND ELECTRICAL REQUIREMENTS WHEN EQUIPMENT IS ORDERED.
- COORDINATE WITH UTILITY FOR A BI-DIRECTIONAL METER.
- NOTED SE-1 MAIN BREAKER SHALL BE SUITABLE FOR BACKFEEDING.
- NOTED SPACE ON SE-1 SHALL BE PERMANENTLY MARKED AS "FOR FUTURE SOLAR ELECTRIC" AS REQUIRED BY CALGREEN. PROVISION SHALL BE MADE FOR A 60AMP, 3-POLE BREAKER.
- ELECTRICAL DISTRIBUTION PANELBOARDS ARE PROVIDED WITH MODULAR BUILDINGS. PROVIDE A GROUND ROD FOR EACH MODULAR BUILDING.

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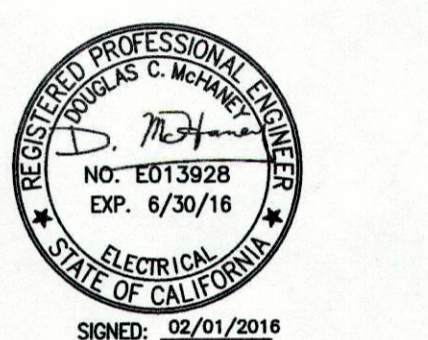
NOTES:
1. SEE LEGEND AND GENERAL NOTES ON SHEET E0.1.

FILE:1559 E0.4



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--- AS BUILT ---

**REDWOOD
PREPARATORY
CHARTER SCHOOL**

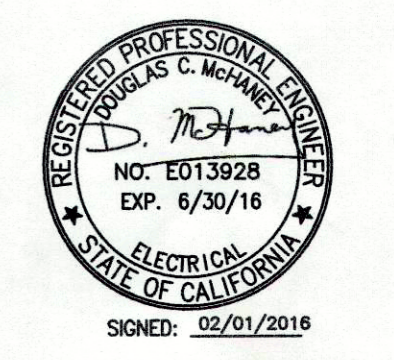
SHEET NAME
**PANEL
SCHEDULES - 2**

SHEET NUMBER
E0.4

DATE: 02/01/2016
DRAWN BY: RCO
CHECKED BY: DCM
REDWOOD PREPARATORY
CHARTER SCHOOL
1553.00

NO.	DESCRIPTION

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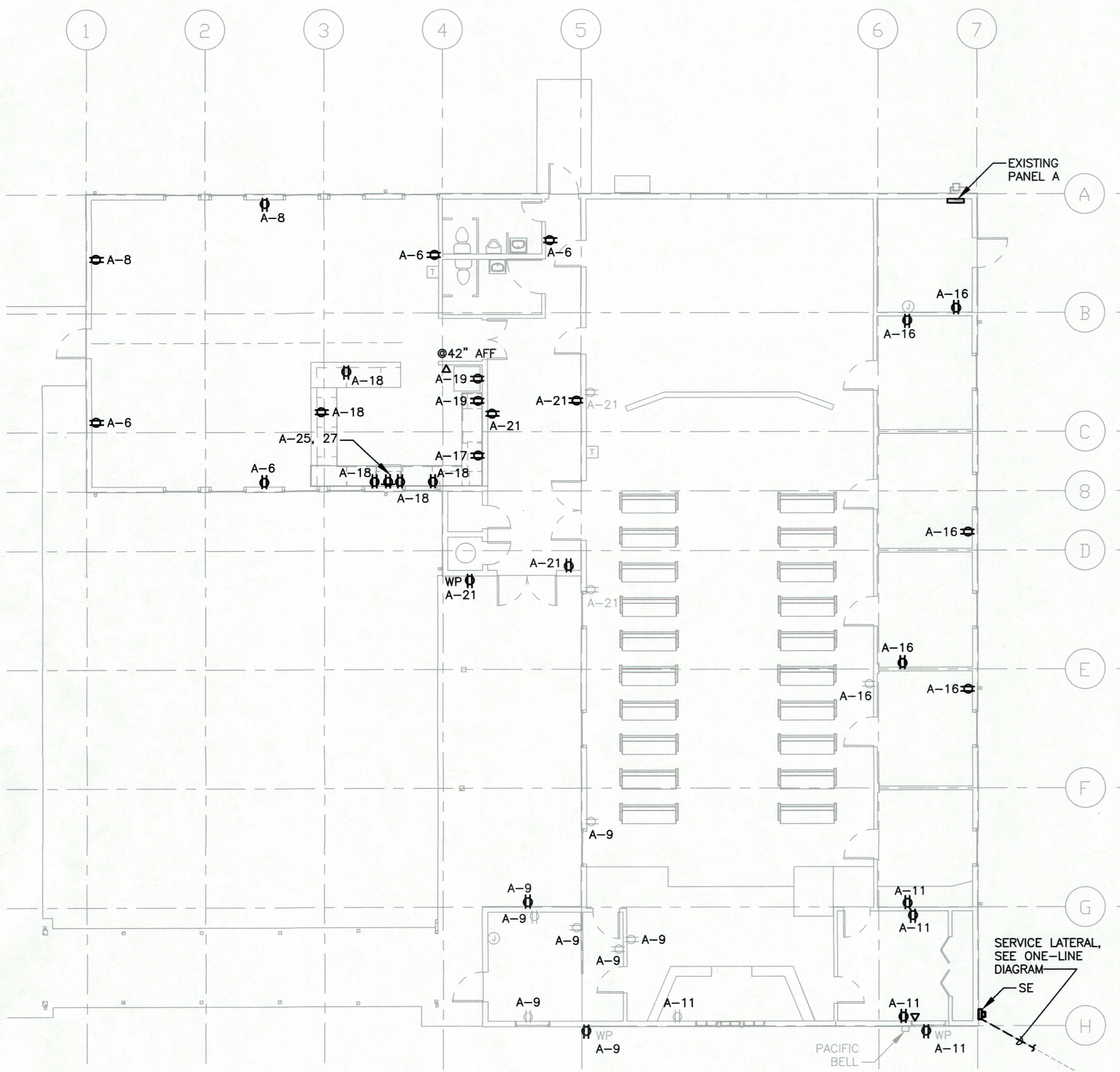
--- AS BUILT ---

**REDWOOD
 PREPARATORY
 CHARTER SCHOOL**
 1480 ROSS HILL ROAD
 FORTUNA, CA 95541

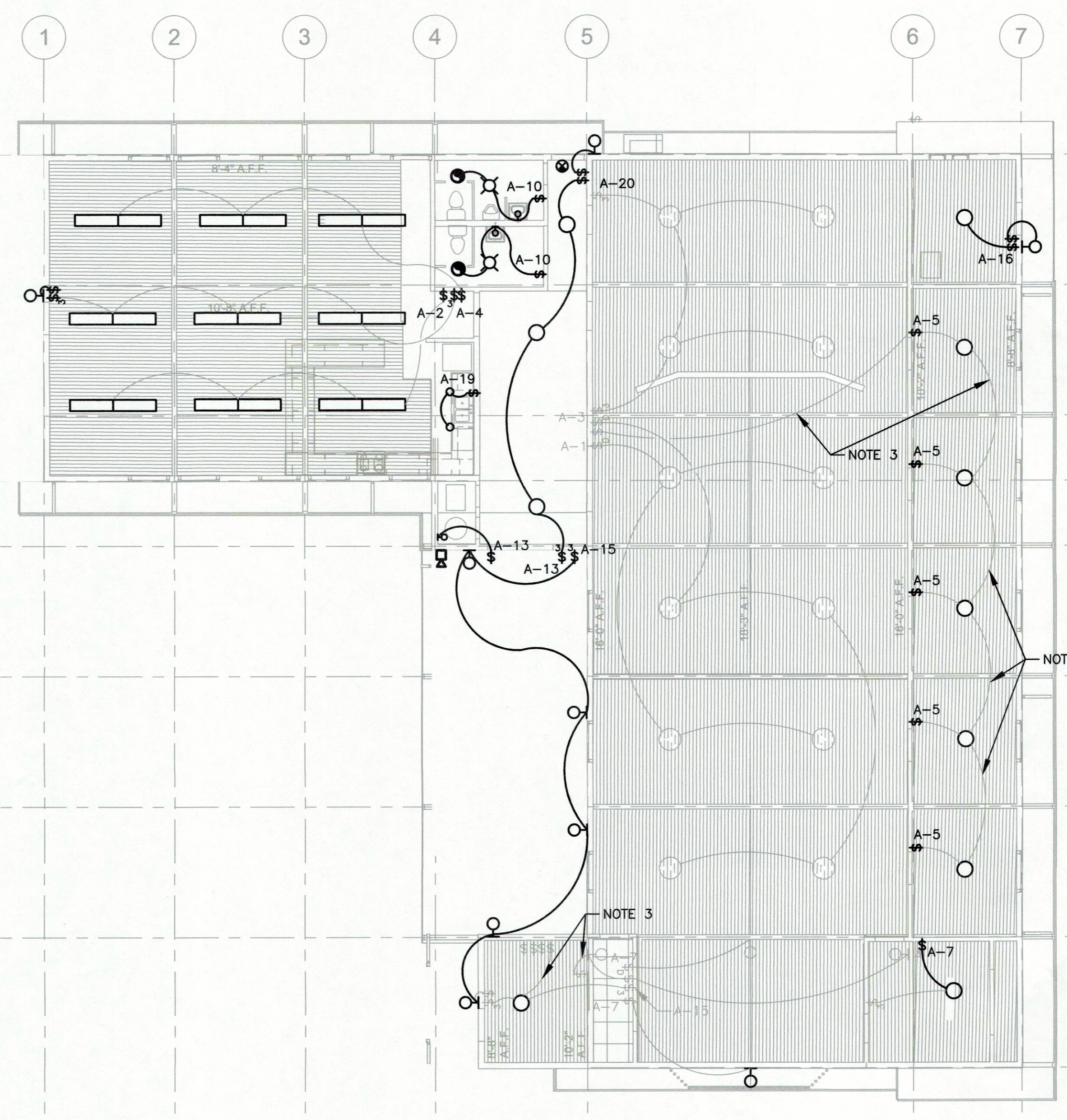
**POWER AND
 LIGHTING PLANS
 -DEMOLITION**

SHEET NUMBER
E2.1
 DATE: 02-01-2016
 DRAWN BY: RCO
 CHECKED BY: DCM
 REDWOOD PREPARATORY

FILE: 1559 E2.1



POWER PLAN - DEMOLITION
 SCALE: 1/8"=1'-0"



LIGHTING PLAN - DEMOLITION
 SCALE: 1/8"=1'-0"

- NOTES:**
- SEE LEGEND AND GENERAL NOTES ON SHEET E0.1.
 - NOTE NOT USED
 - NOTED LIGHTING CIRCUIT WAS NOT VERIFIED. FIELD INVESTIGATE PRIOR TO ANY DEMOLITION.
 - ALL BOLD ITEMS ON THIS SHEET SHALL BE DEMOLISHED BACK TO THE SOURCE (DISTRIBUTION PANELBOARD OR UPSTREAM DEVICE), INCLUDING CONDUIT, BRANCH CIRCUIT, PULLBOXES, AND STRAPS. FIELD VERIFY THAT EXISTING DEVICES WHICH ARE TO REMAIN AND ARE ON THE CIRCUIT TO BE DEMOLISHED ARE STILL ENERGIZED ONCE THE WORK IS COMPLETE.

1 INCH
 BAR EQUALS ONE
 INCH WHEN DRAWING
 IS PLOTTED FULL SIZE.
 IF NOT, SCALE ACCORDINGLY

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