

Section

A



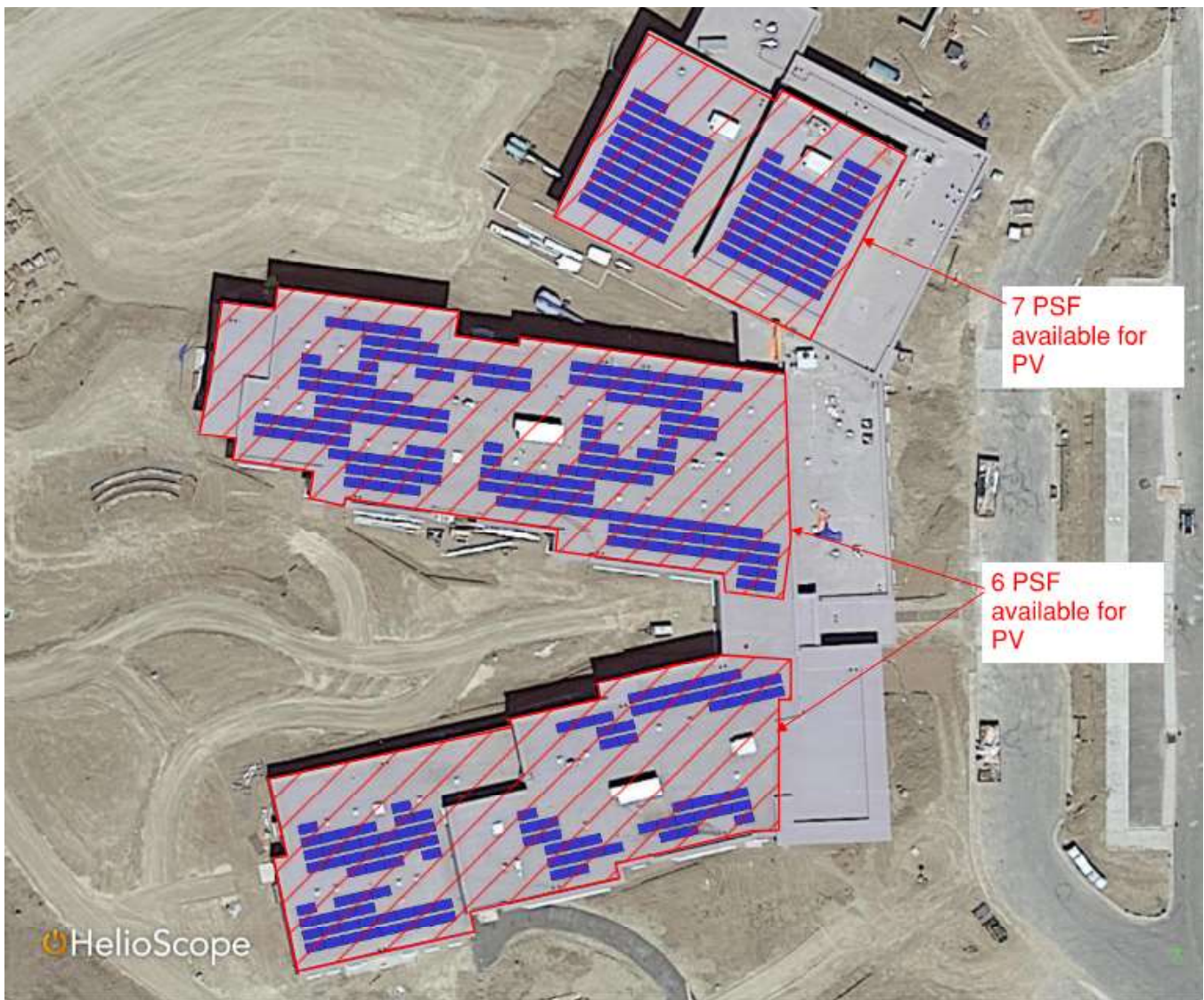
Appendix A: Structural Capacity Assessments

Appendix: Structural Capacity Assessments

McKinstry contracted JVA Inc. to complete the rooftop structural capacity assessments provided in this appendix. Roof capacity assessments were performed on all technically and financially feasible roofs. The minimum capacity needed for rooftop PV on a flat roof is typically 4 psf, while a flush mount roof system needs a minimum of 3 psf. As seen below, all the roofs in this study have enough available capacity for the recommended solar systems.

Roof structural capacity assessments were not performed for sites that were deemed technically not feasible due to roof age.

BAMFORD ELEMENTARY SCHOOL



Appendix: Structural Capacity Assessments

BOLTZ MIDDLE SCHOOL

At the request of PSD, Boltz MS was assessed for available roof capacity. The layout below was designed to provide the maximum sized PV system while avoiding PV on shaded areas of the roof. As seen below, the red highlighted roof sections would not support the added weight of the PV system. The maximum PV system size for this site given roof capacity limitations would be ~388 kWDC.



Appendix: Structural Capacity Assessments

CACHE LA POUVRE ELEMENTARY SCHOOL



The system layout was revised to align with available structural capacity.

Appendix: Structural Capacity Assessments

EYESTONE NORTH ELEMENTARY SCHOOL



The system layout was revised to align with available structural capacity.

Appendix: Structural Capacity Assessments

EYESTONE SOUTH ELEMENTARY SCHOOL



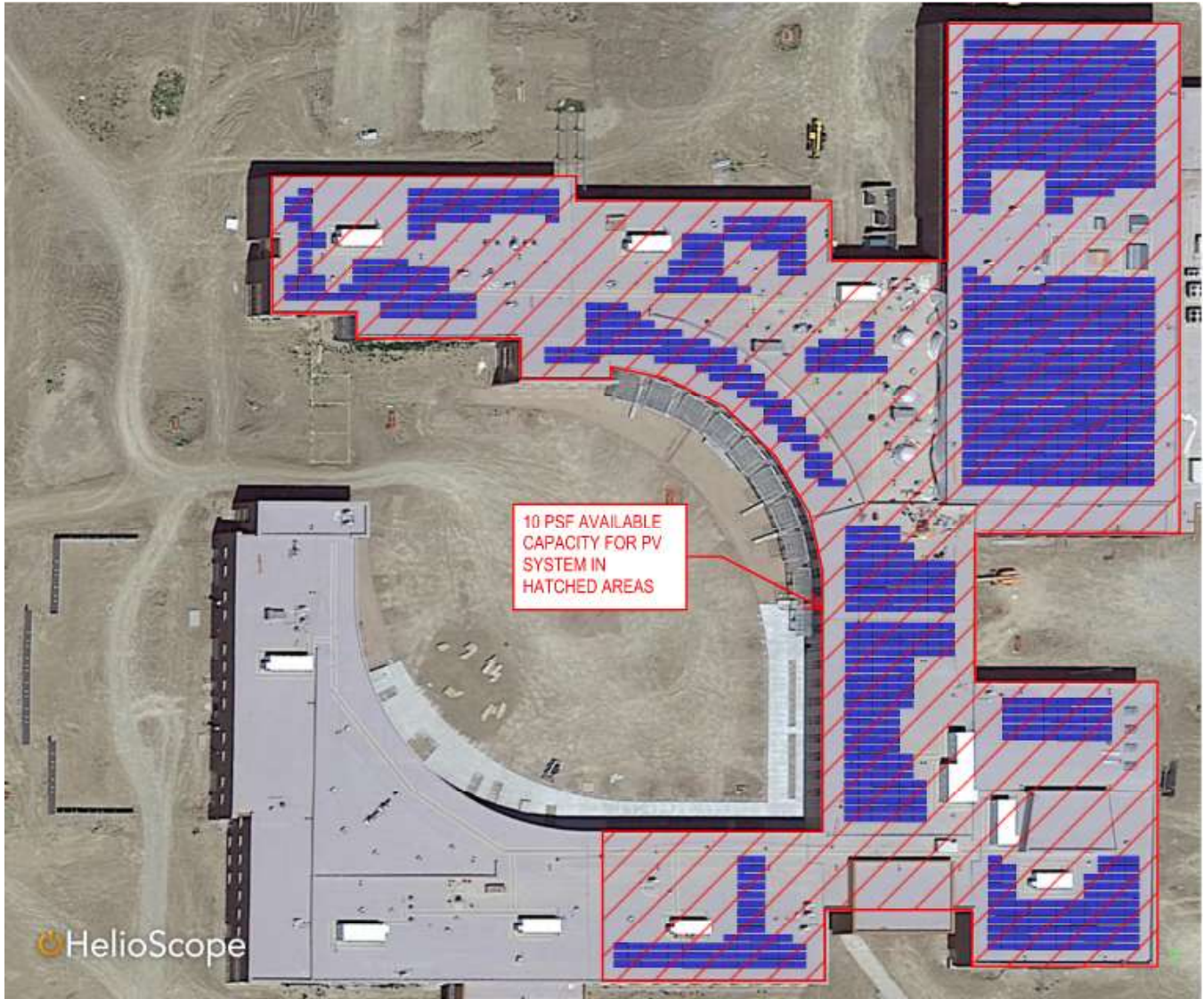
9 psf available capacity

6 psf available capacity, stay
min 6' from all parapets

10 psf available capacity

Appendix: Structural Capacity Assessments

TIMNATH AND WELLINGTON MIDDLE/ HIGH SCHOOL



Appendix: Structural Capacity Assessments

SOUTH BUS TERMINAL

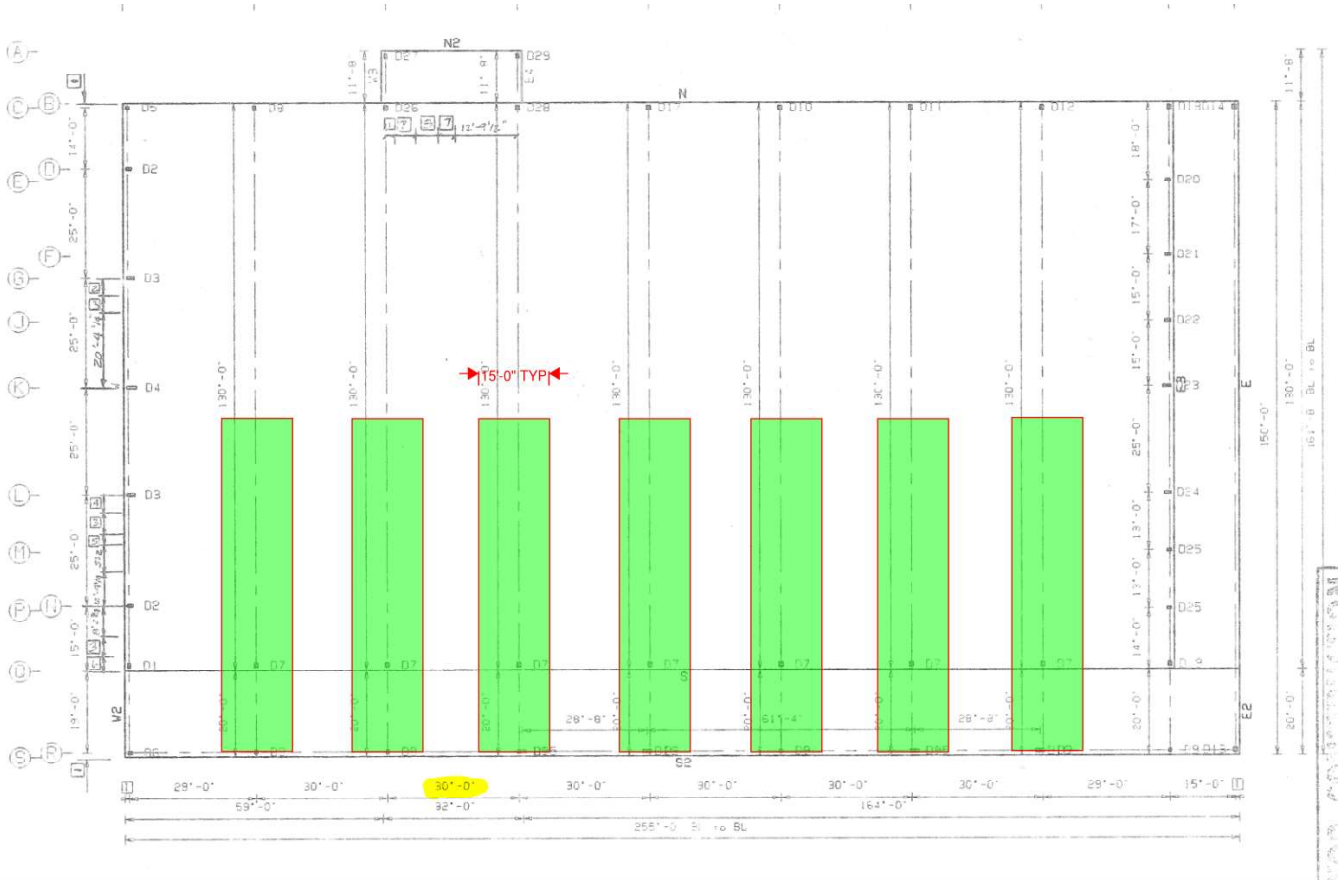


Appendix: Structural Capacity Assessments

WAREHOUSE 5

JVA Notes:

“We ran the calculations on the roof structure for Warehouse 5 and came up with really no available capacity for PV—by analysis, the existing structure is right at capacity with the existing loads. We can use the IEBC provision allowing additional load on the roof if it doesn’t increase the forces to any member by more than 5%—if we do that, we can add up to 3 psf of PV in 15’ wide strips centered on the existing building frames (see image below).”



Section

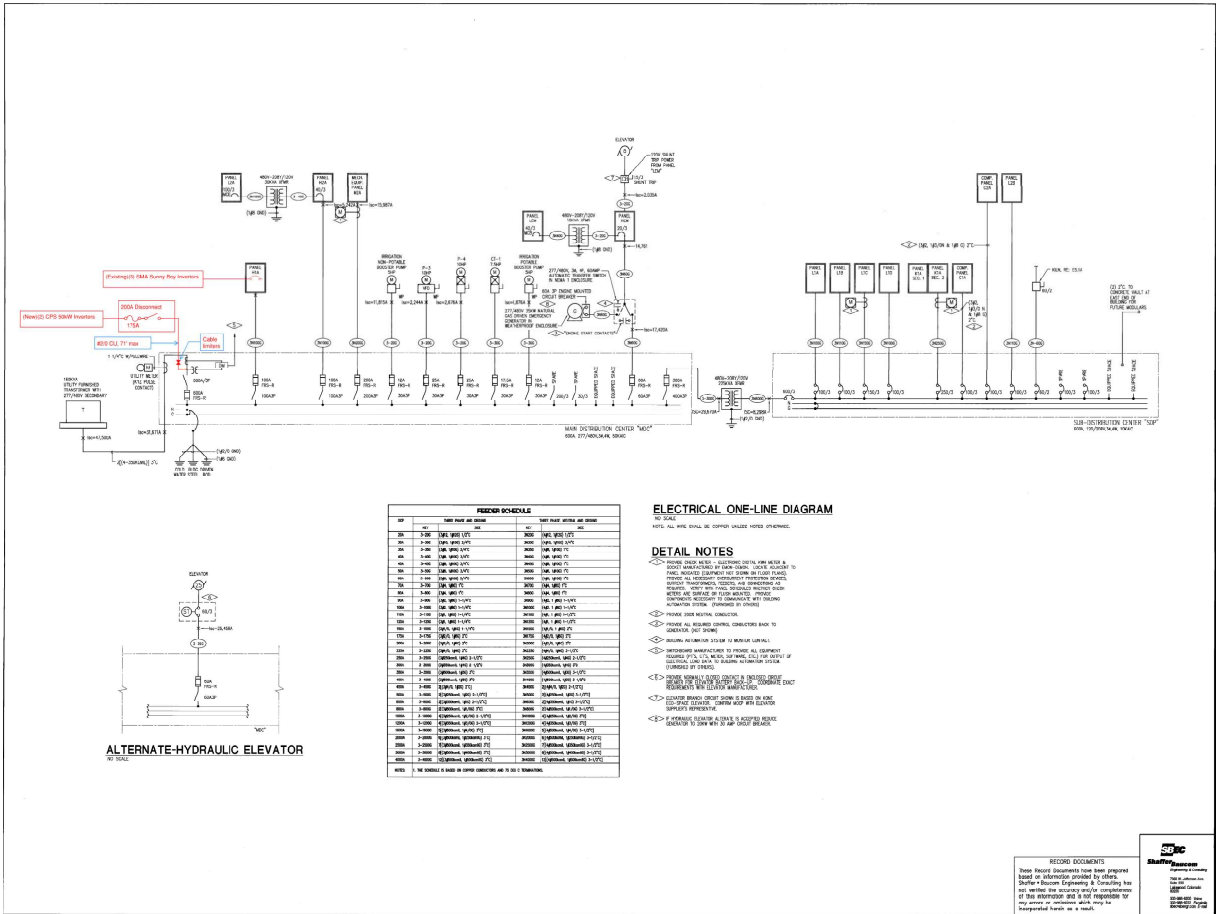
B



Appendix B: Interconnection Assessments

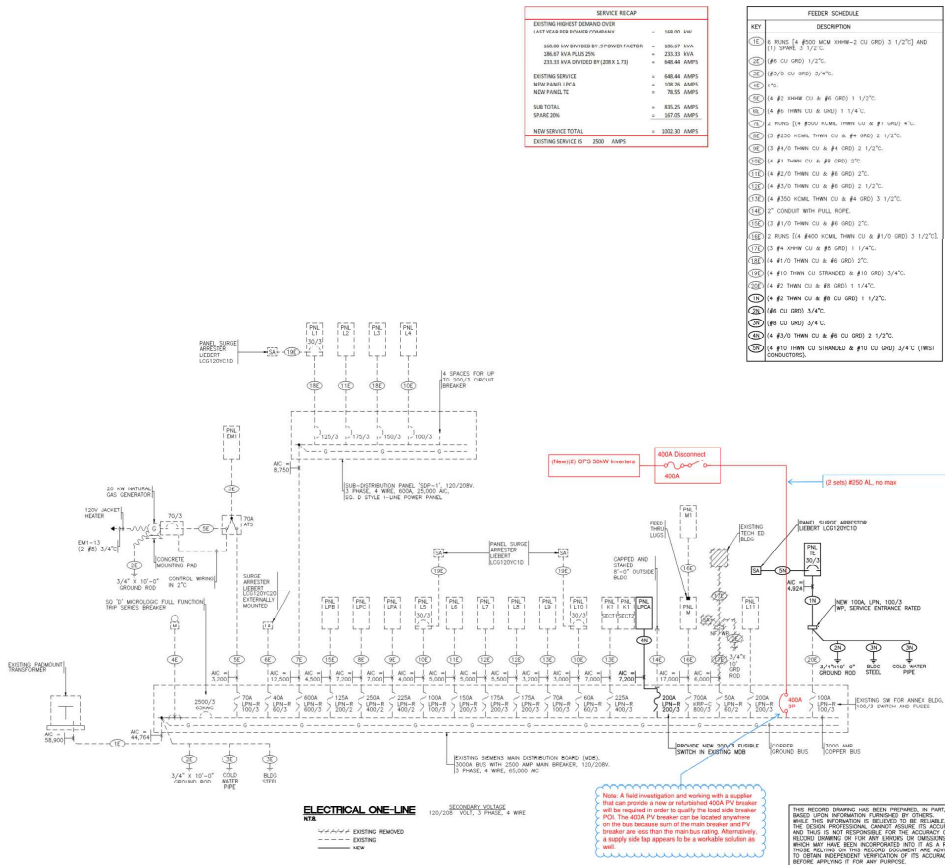
Appendix: Interconnection Assessments

BETHKE ELEMENTARY SCHOOL



Appendix: Interconnection Assessments

EYESTONE SOUTH ELEMENTARY SCHOOL – GROUND MOUNT PV SYSTEM



Wellington Middle School Major Renovation Package

Owner: Poudre School District

Architect: JZ Architects, Inc.

Electrical: JZ Architects, Inc.

Mechanical & Plumbing: JZ Architects, Inc.

Contractor: JZ Architects, Inc.

Project Number: 1000

Scale: 1/8" = 1'-0"

Revision: 01

Date: 04/15/2024

Drawn: JZ

Checked: JZ

Approved: JZ

Project: Wellington Middle School Major Renovation Package

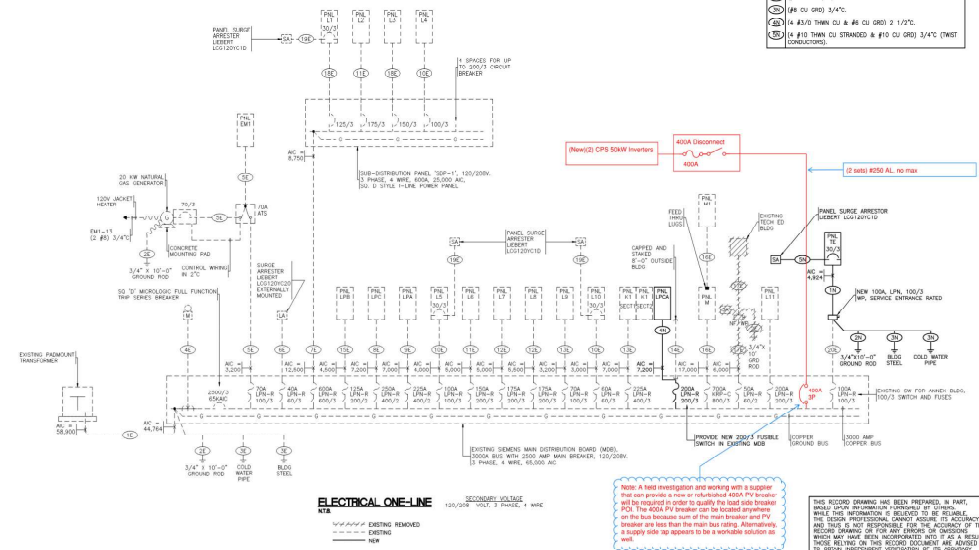
Sheet: F5.0

Appendix: Interconnection Assessments

EYESTONE SOUTH ELEMENTARY SCHOOL – ROOF MOUNT PV SYSTEM

SERVICE RECAP	
EXISTING HIGHEST DEMAND OVER LAST YEAR (FOR POWER COMPANY)	= 288.00 KW
5000 KW DIVIDED BY SPDF FACTOR	= 286.07 KW
SMART MVA PLUS ZEN	= 233.33 KW
2000 KW DIVIDED BY SPDF (1.75)	= 1136.58 AMPS
EXISTING SERVICE	= 548.48 AMPS
NEW PANEL 1/20	= 108.00 AMPS
NEW PANEL 2	= 78.55 AMPS
SUB TOTAL	= 835.03 AMPS
SPACE ZONE	= 187.85 AMPS
NEW SERVICE TOTAL	= 1022.88 AMPS
EXISTING EQUIPMENT	= 700 AMPS

FEEDER SCHEDULE	
KEY	DESCRIPTION
1	2 #10 CU THHN CU & #4 GND 3 1/2" TC
2	2 #10 CU THHN CU & #4 GND 2 1/2" TC
3	2 #10 CU THHN CU & #4 GND 2 1/2" TC
4	2 #10 CU THHN CU & #4 GND 2 1/2" TC
5	2 #10 CU THHN CU & #4 GND 2 1/2" TC
6	2 #10 CU THHN CU & #4 GND 2 1/2" TC
7	2 #10 CU THHN CU & #4 GND 2 1/2" TC
8	2 #10 CU THHN CU & #4 GND 2 1/2" TC
9	2 #10 CU THHN CU & #4 GND 2 1/2" TC
10	2 #10 CU THHN CU & #4 GND 2 1/2" TC
11	2 #10 CU THHN CU & #4 GND 2 1/2" TC
12	2 #10 CU THHN CU & #4 GND 2 1/2" TC
13	2 #10 CU THHN CU & #4 GND 2 1/2" TC
14	2 #10 CU THHN CU & #4 GND 2 1/2" TC
15	2 #10 CU THHN CU & #4 GND 2 1/2" TC
16	2 #10 CU THHN CU & #4 GND 2 1/2" TC
17	2 #10 CU THHN CU & #4 GND 2 1/2" TC
18	2 #10 CU THHN CU & #4 GND 2 1/2" TC
19	2 #10 CU THHN CU & #4 GND 2 1/2" TC
20	2 #10 CU THHN CU & #4 GND 2 1/2" TC
21	2 #10 CU THHN CU & #4 GND 2 1/2" TC
22	2 #10 CU THHN CU & #4 GND 2 1/2" TC
23	2 #10 CU THHN CU & #4 GND 2 1/2" TC
24	2 #10 CU THHN CU & #4 GND 2 1/2" TC
25	2 #10 CU THHN CU & #4 GND 2 1/2" TC
26	2 #10 CU THHN CU & #4 GND 2 1/2" TC
27	2 #10 CU THHN CU & #4 GND 2 1/2" TC
28	2 #10 CU THHN CU & #4 GND 2 1/2" TC
29	2 #10 CU THHN CU & #4 GND 2 1/2" TC
30	2 #10 CU THHN CU & #4 GND 2 1/2" TC
31	2 #10 CU THHN CU & #4 GND 2 1/2" TC
32	2 #10 CU THHN CU & #4 GND 2 1/2" TC
33	2 #10 CU THHN CU & #4 GND 2 1/2" TC
34	2 #10 CU THHN CU & #4 GND 2 1/2" TC
35	2 #10 CU THHN CU & #4 GND 2 1/2" TC
36	2 #10 CU THHN CU & #4 GND 2 1/2" TC
37	2 #10 CU THHN CU & #4 GND 2 1/2" TC
38	2 #10 CU THHN CU & #4 GND 2 1/2" TC
39	2 #10 CU THHN CU & #4 GND 2 1/2" TC
40	2 #10 CU THHN CU & #4 GND 2 1/2" TC
41	2 #10 CU THHN CU & #4 GND 2 1/2" TC
42	2 #10 CU THHN CU & #4 GND 2 1/2" TC
43	2 #10 CU THHN CU & #4 GND 2 1/2" TC
44	2 #10 CU THHN CU & #4 GND 2 1/2" TC
45	2 #10 CU THHN CU & #4 GND 2 1/2" TC
46	2 #10 CU THHN CU & #4 GND 2 1/2" TC
47	2 #10 CU THHN CU & #4 GND 2 1/2" TC
48	2 #10 CU THHN CU & #4 GND 2 1/2" TC
49	2 #10 CU THHN CU & #4 GND 2 1/2" TC
50	2 #10 CU THHN CU & #4 GND 2 1/2" TC
51	2 #10 CU THHN CU & #4 GND 2 1/2" TC
52	2 #10 CU THHN CU & #4 GND 2 1/2" TC
53	2 #10 CU THHN CU & #4 GND 2 1/2" TC
54	2 #10 CU THHN CU & #4 GND 2 1/2" TC
55	2 #10 CU THHN CU & #4 GND 2 1/2" TC
56	2 #10 CU THHN CU & #4 GND 2 1/2" TC
57	2 #10 CU THHN CU & #4 GND 2 1/2" TC
58	2 #10 CU THHN CU & #4 GND 2 1/2" TC
59	2 #10 CU THHN CU & #4 GND 2 1/2" TC
60	2 #10 CU THHN CU & #4 GND 2 1/2" TC
61	2 #10 CU THHN CU & #4 GND 2 1/2" TC
62	2 #10 CU THHN CU & #4 GND 2 1/2" TC
63	2 #10 CU THHN CU & #4 GND 2 1/2" TC
64	2 #10 CU THHN CU & #4 GND 2 1/2" TC
65	2 #10 CU THHN CU & #4 GND 2 1/2" TC
66	2 #10 CU THHN CU & #4 GND 2 1/2" TC
67	2 #10 CU THHN CU & #4 GND 2 1/2" TC
68	2 #10 CU THHN CU & #4 GND 2 1/2" TC
69	2 #10 CU THHN CU & #4 GND 2 1/2" TC
70	2 #10 CU THHN CU & #4 GND 2 1/2" TC
71	2 #10 CU THHN CU & #4 GND 2 1/2" TC
72	2 #10 CU THHN CU & #4 GND 2 1/2" TC
73	2 #10 CU THHN CU & #4 GND 2 1/2" TC
74	2 #10 CU THHN CU & #4 GND 2 1/2" TC
75	2 #10 CU THHN CU & #4 GND 2 1/2" TC
76	2 #10 CU THHN CU & #4 GND 2 1/2" TC
77	2 #10 CU THHN CU & #4 GND 2 1/2" TC
78	2 #10 CU THHN CU & #4 GND 2 1/2" TC
79	2 #10 CU THHN CU & #4 GND 2 1/2" TC
80	2 #10 CU THHN CU & #4 GND 2 1/2" TC
81	2 #10 CU THHN CU & #4 GND 2 1/2" TC
82	2 #10 CU THHN CU & #4 GND 2 1/2" TC
83	2 #10 CU THHN CU & #4 GND 2 1/2" TC
84	2 #10 CU THHN CU & #4 GND 2 1/2" TC
85	2 #10 CU THHN CU & #4 GND 2 1/2" TC
86	2 #10 CU THHN CU & #4 GND 2 1/2" TC
87	2 #10 CU THHN CU & #4 GND 2 1/2" TC
88	2 #10 CU THHN CU & #4 GND 2 1/2" TC
89	2 #10 CU THHN CU & #4 GND 2 1/2" TC
90	2 #10 CU THHN CU & #4 GND 2 1/2" TC
91	2 #10 CU THHN CU & #4 GND 2 1/2" TC
92	2 #10 CU THHN CU & #4 GND 2 1/2" TC
93	2 #10 CU THHN CU & #4 GND 2 1/2" TC
94	2 #10 CU THHN CU & #4 GND 2 1/2" TC
95	2 #10 CU THHN CU & #4 GND 2 1/2" TC
96	2 #10 CU THHN CU & #4 GND 2 1/2" TC
97	2 #10 CU THHN CU & #4 GND 2 1/2" TC
98	2 #10 CU THHN CU & #4 GND 2 1/2" TC
99	2 #10 CU THHN CU & #4 GND 2 1/2" TC
100	2 #10 CU THHN CU & #4 GND 2 1/2" TC



Wellington Middle School Major Renovation Package

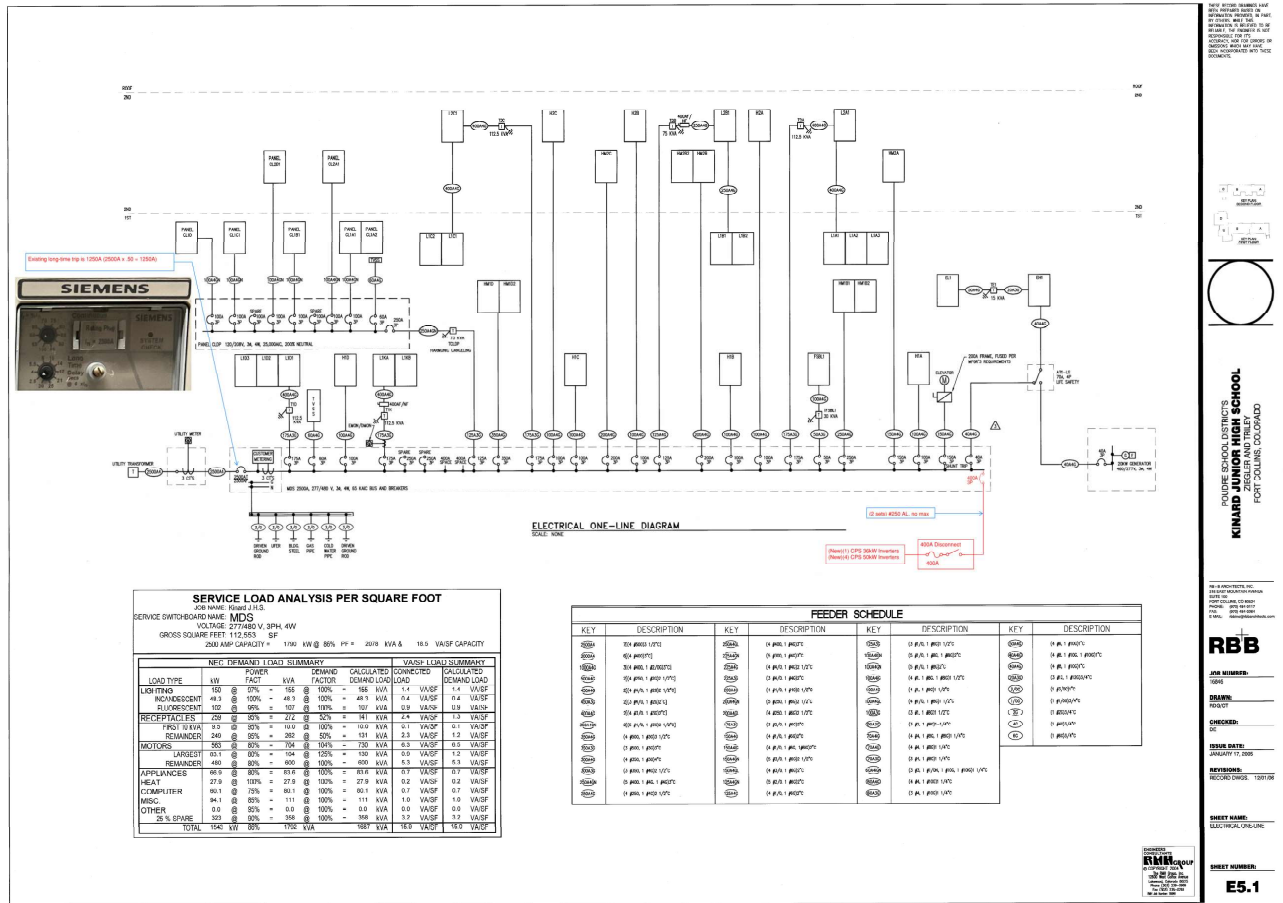
Wellington Middle School
 1000 N. 10th St.
 Wellington, CO 80550
 Phone: 970.833.3333
 Fax: 970.833.3333

Wellington Middle School Major Renovation Package

Wellington Middle School
 1000 N. 10th St.
 Wellington, CO 80550
 Phone: 970.833.3333
 Fax: 970.833.3333

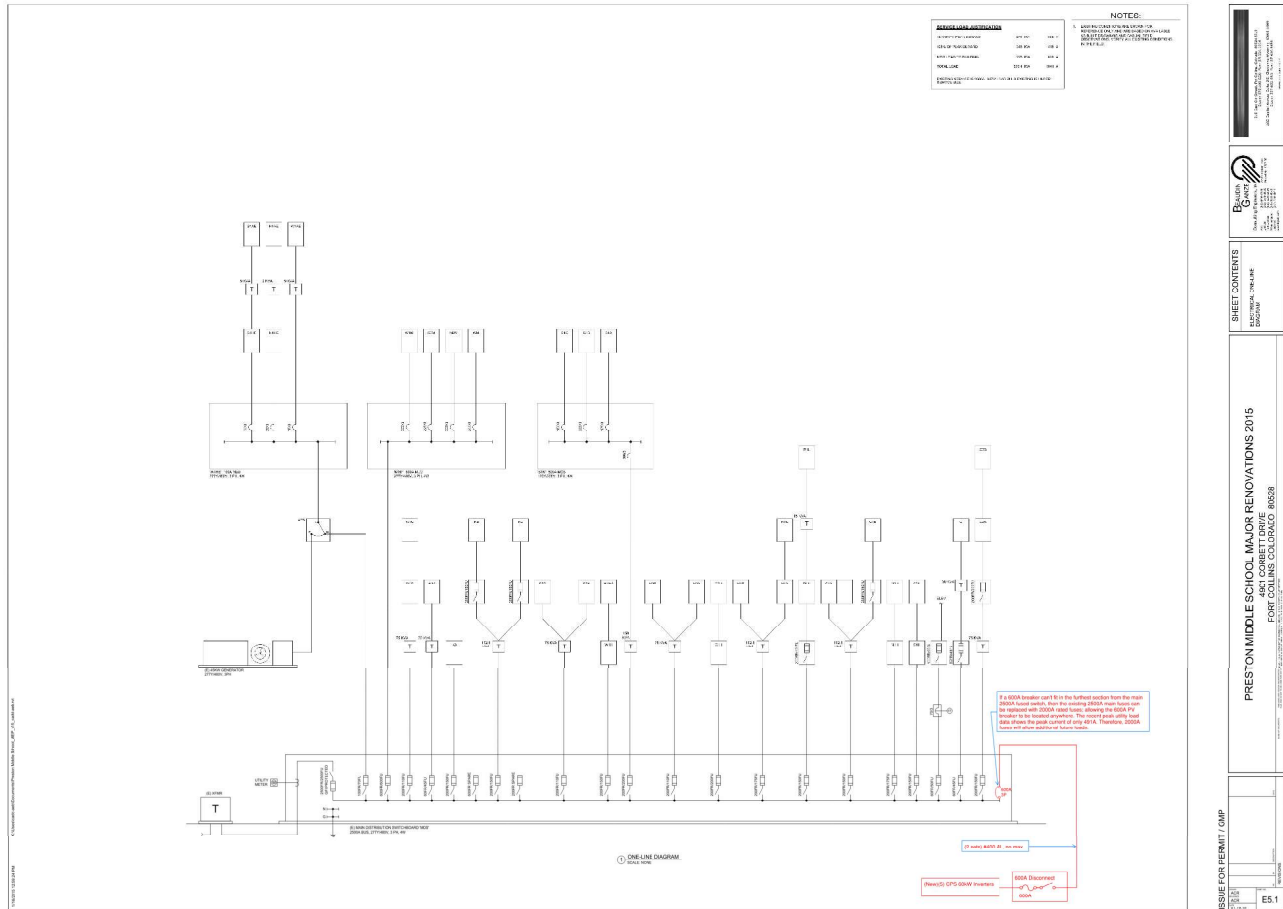
Appendix: Interconnection Assessments

KINARD CORE KNOWLEDGE MIDDLE SCHOOL



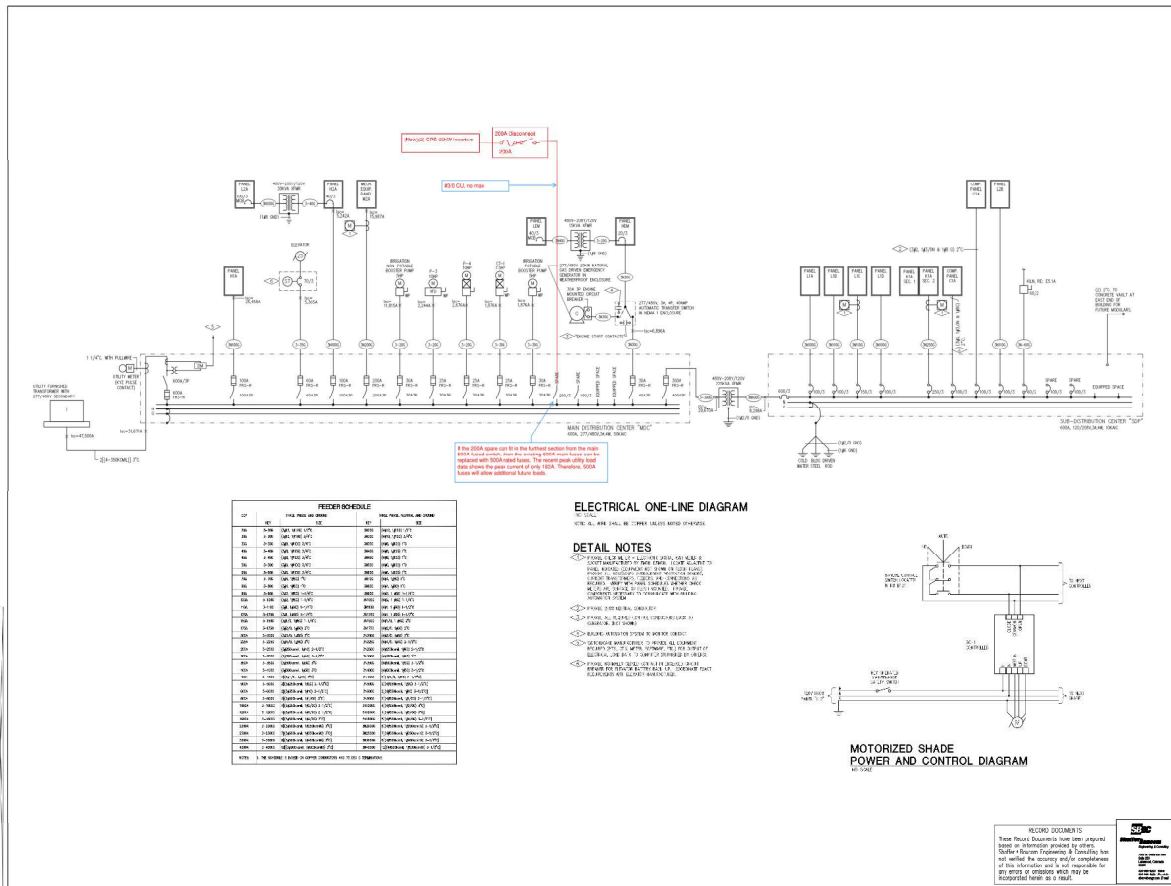
Appendix: Interconnection Assessments

PRESTON MIDDLE SCHOOL



Appendix: Interconnection Assessments

RICE ELEMENTARY SCHOOL



Appendix: Interconnection Assessments

ROCKY MOUNTAIN HIGH SCHOOL

SHORT CIRCUIT CALCULATIONS:

$X1 = \frac{1}{\frac{1}{0.04} + \frac{1}{0.046}} = 0.046$
 $X2 = \frac{1}{\frac{1}{1.73 \times 0.407 \times 0.4930} + \frac{1}{2.641}} = 2.641$
 $X3 = \frac{1}{\frac{1}{1.73 \times 0.407 \times 0.5936} + \frac{1}{3.483 \times 0.407}} = 0.407$
 $X4 = \frac{1}{\frac{1}{1.73 \times 0.407 \times 0.5936} + \frac{1}{3.483 \times 0.407}} = 0.407$
 $X5 = \frac{1}{\frac{1}{1.73 \times 0.407 \times 0.5936} + \frac{1}{3.483 \times 0.407}} = 0.407$

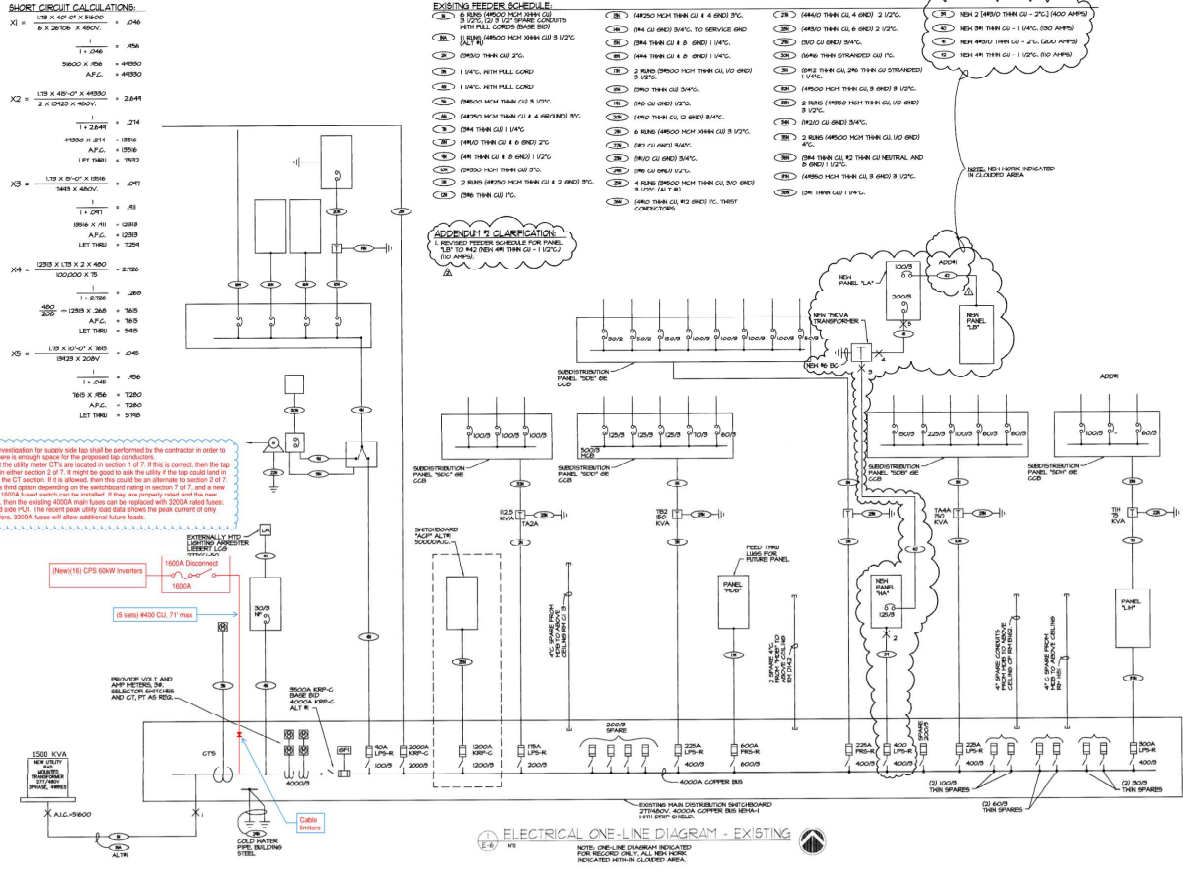
Note: A field investigation for design with the field to be performed by the contractor in order to determine if there is enough space for the proposed top conductor. It requires that the utility meter CTs are located in section 1 of 7. If not, it may be good to ask the utility if the tap could be installed in section 1 of 7. There is also a third option depending on the substation rating in section 1 of 7, and a new section with a 1000A busbar could be installed. If it is necessary to install a new section, then the existing 4000A main buses can be replaced with 3000A rated buses. However, if 1000A busbar is used, the short-circuit rating must exceed the peak current of only 1427A. Therefore, 3000A buses will allow additional future loads.

EXISTING FEEDER SCHEDULE:

- (A) 6000 AMP HORN TRAIL CU # 4 6000 2%.
- (B) 4000 AMP HORN TRAIL CU # 3 100%.
- (C) 4000 AMP HORN TRAIL CU # 2 100%.
- (D) 4000 AMP HORN TRAIL CU # 1 100%.
- (E) 4000 AMP HORN TRAIL CU # 0 100%.
- (F) 4000 AMP HORN TRAIL CU # -1 100%.
- (G) 4000 AMP HORN TRAIL CU # -2 100%.
- (H) 4000 AMP HORN TRAIL CU # -3 100%.
- (I) 4000 AMP HORN TRAIL CU # -4 100%.
- (J) 4000 AMP HORN TRAIL CU # -5 100%.
- (K) 4000 AMP HORN TRAIL CU # -6 100%.
- (L) 4000 AMP HORN TRAIL CU # -7 100%.
- (M) 4000 AMP HORN TRAIL CU # -8 100%.
- (N) 4000 AMP HORN TRAIL CU # -9 100%.
- (O) 4000 AMP HORN TRAIL CU # -10 100%.
- (P) 4000 AMP HORN TRAIL CU # -11 100%.
- (Q) 4000 AMP HORN TRAIL CU # -12 100%.
- (R) 4000 AMP HORN TRAIL CU # -13 100%.
- (S) 4000 AMP HORN TRAIL CU # -14 100%.
- (T) 4000 AMP HORN TRAIL CU # -15 100%.
- (U) 4000 AMP HORN TRAIL CU # -16 100%.
- (V) 4000 AMP HORN TRAIL CU # -17 100%.
- (W) 4000 AMP HORN TRAIL CU # -18 100%.
- (X) 4000 AMP HORN TRAIL CU # -19 100%.
- (Y) 4000 AMP HORN TRAIL CU # -20 100%.
- (Z) 4000 AMP HORN TRAIL CU # -21 100%.
- (AA) 4000 AMP HORN TRAIL CU # -22 100%.
- (AB) 4000 AMP HORN TRAIL CU # -23 100%.
- (AC) 4000 AMP HORN TRAIL CU # -24 100%.
- (AD) 4000 AMP HORN TRAIL CU # -25 100%.
- (AE) 4000 AMP HORN TRAIL CU # -26 100%.
- (AF) 4000 AMP HORN TRAIL CU # -27 100%.
- (AG) 4000 AMP HORN TRAIL CU # -28 100%.
- (AH) 4000 AMP HORN TRAIL CU # -29 100%.
- (AI) 4000 AMP HORN TRAIL CU # -30 100%.
- (AJ) 4000 AMP HORN TRAIL CU # -31 100%.
- (AK) 4000 AMP HORN TRAIL CU # -32 100%.
- (AL) 4000 AMP HORN TRAIL CU # -33 100%.
- (AM) 4000 AMP HORN TRAIL CU # -34 100%.
- (AN) 4000 AMP HORN TRAIL CU # -35 100%.
- (AO) 4000 AMP HORN TRAIL CU # -36 100%.
- (AP) 4000 AMP HORN TRAIL CU # -37 100%.
- (AQ) 4000 AMP HORN TRAIL CU # -38 100%.
- (AR) 4000 AMP HORN TRAIL CU # -39 100%.
- (AS) 4000 AMP HORN TRAIL CU # -40 100%.
- (AT) 4000 AMP HORN TRAIL CU # -41 100%.
- (AU) 4000 AMP HORN TRAIL CU # -42 100%.
- (AV) 4000 AMP HORN TRAIL CU # -43 100%.
- (AW) 4000 AMP HORN TRAIL CU # -44 100%.
- (AX) 4000 AMP HORN TRAIL CU # -45 100%.
- (AY) 4000 AMP HORN TRAIL CU # -46 100%.
- (AZ) 4000 AMP HORN TRAIL CU # -47 100%.
- (BA) 4000 AMP HORN TRAIL CU # -48 100%.
- (BB) 4000 AMP HORN TRAIL CU # -49 100%.
- (BC) 4000 AMP HORN TRAIL CU # -50 100%.
- (BD) 4000 AMP HORN TRAIL CU # -51 100%.
- (BE) 4000 AMP HORN TRAIL CU # -52 100%.
- (BF) 4000 AMP HORN TRAIL CU # -53 100%.
- (BG) 4000 AMP HORN TRAIL CU # -54 100%.
- (BH) 4000 AMP HORN TRAIL CU # -55 100%.
- (BI) 4000 AMP HORN TRAIL CU # -56 100%.
- (BJ) 4000 AMP HORN TRAIL CU # -57 100%.
- (BK) 4000 AMP HORN TRAIL CU # -58 100%.
- (BL) 4000 AMP HORN TRAIL CU # -59 100%.
- (BM) 4000 AMP HORN TRAIL CU # -60 100%.
- (BN) 4000 AMP HORN TRAIL CU # -61 100%.
- (BO) 4000 AMP HORN TRAIL CU # -62 100%.
- (BP) 4000 AMP HORN TRAIL CU # -63 100%.
- (BQ) 4000 AMP HORN TRAIL CU # -64 100%.
- (BR) 4000 AMP HORN TRAIL CU # -65 100%.
- (BS) 4000 AMP HORN TRAIL CU # -66 100%.
- (BT) 4000 AMP HORN TRAIL CU # -67 100%.
- (BU) 4000 AMP HORN TRAIL CU # -68 100%.
- (BV) 4000 AMP HORN TRAIL CU # -69 100%.
- (BW) 4000 AMP HORN TRAIL CU # -70 100%.
- (BX) 4000 AMP HORN TRAIL CU # -71 100%.
- (BY) 4000 AMP HORN TRAIL CU # -72 100%.
- (BZ) 4000 AMP HORN TRAIL CU # -73 100%.
- (CA) 4000 AMP HORN TRAIL CU # -74 100%.
- (CB) 4000 AMP HORN TRAIL CU # -75 100%.
- (CC) 4000 AMP HORN TRAIL CU # -76 100%.
- (CD) 4000 AMP HORN TRAIL CU # -77 100%.
- (CE) 4000 AMP HORN TRAIL CU # -78 100%.
- (CF) 4000 AMP HORN TRAIL CU # -79 100%.
- (CG) 4000 AMP HORN TRAIL CU # -80 100%.
- (CH) 4000 AMP HORN TRAIL CU # -81 100%.
- (CI) 4000 AMP HORN TRAIL CU # -82 100%.
- (CJ) 4000 AMP HORN TRAIL CU # -83 100%.
- (CK) 4000 AMP HORN TRAIL CU # -84 100%.
- (CL) 4000 AMP HORN TRAIL CU # -85 100%.
- (CM) 4000 AMP HORN TRAIL CU # -86 100%.
- (CN) 4000 AMP HORN TRAIL CU # -87 100%.
- (CO) 4000 AMP HORN TRAIL CU # -88 100%.
- (CP) 4000 AMP HORN TRAIL CU # -89 100%.
- (CQ) 4000 AMP HORN TRAIL CU # -90 100%.
- (CR) 4000 AMP HORN TRAIL CU # -91 100%.
- (CS) 4000 AMP HORN TRAIL CU # -92 100%.
- (CT) 4000 AMP HORN TRAIL CU # -93 100%.
- (CU) 4000 AMP HORN TRAIL CU # -94 100%.
- (CV) 4000 AMP HORN TRAIL CU # -95 100%.
- (CW) 4000 AMP HORN TRAIL CU # -96 100%.
- (CX) 4000 AMP HORN TRAIL CU # -97 100%.
- (CY) 4000 AMP HORN TRAIL CU # -98 100%.
- (CZ) 4000 AMP HORN TRAIL CU # -99 100%.
- (CA) 4000 AMP HORN TRAIL CU # -100 100%.

APPENDIX 1 CLARIFICATION:

ALL FEEDER SCHEDULES FOR PANELS 10 TO 42 ARE THE SAME (100% TO 100%) (100% TO 100%)



MELIA & ASSOCIATES ARCHITECTURAL, P.C.
 1664 West 14th Ave., Suite 200
 Lakewood, CO 80226
 (303) 988-9888
 Contact: Joe Melia, P.E.

CONSULTANTS:

ELECTRICAL ENGINEER:
 Gregor S. Melia, P.E.
 License No. 100000000
 Lakewood, CO 80226
 (303) 988-9888
 Contact: Gregor S. Melia, P.E.

Mechanical Engineer:
 Gregor S. Melia, P.E.
 License No. 100000000
 Lakewood, CO 80226
 (303) 988-9888
 Contact: Gregor S. Melia, P.E.

PROJECT TITLE:
 Gymnasium Addition to Rocky Mountain High School
 1300 West Swallow Ft Collins, Colorado 80522
 Poudre School District

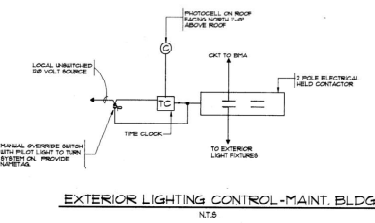
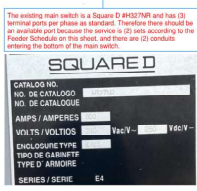
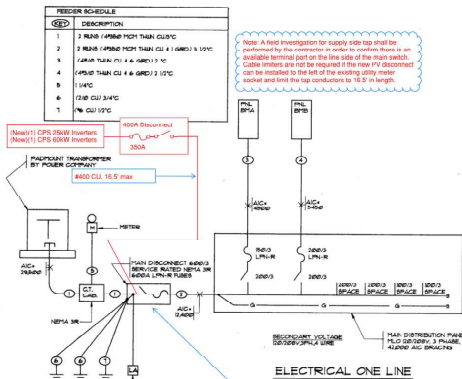
ISSUED REVISIONS:

NO.	DATE	DESCRIPTION
001	2-17-2004	ISSUE FOR PERMIT
002	3-30-2004	ISSUE FOR PERMIT
003	4-22-2004	ISSUE FOR PERMIT
004	4-22-2004	ISSUE FOR PERMIT
005	5-13-2004	ISSUE FOR PERMIT

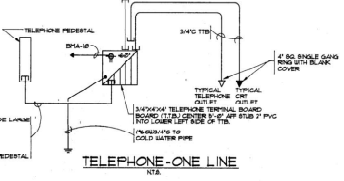
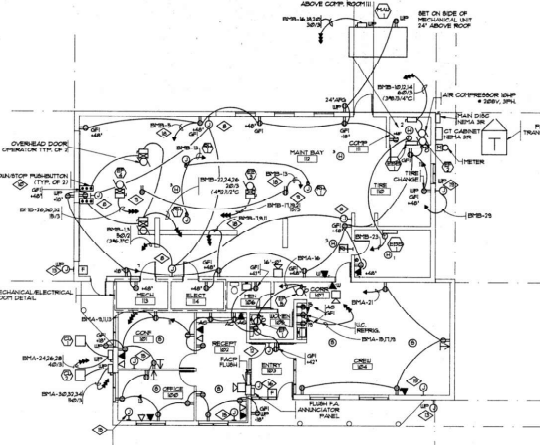
TITLE:
 ONE-LINE DIAGRAM
E-6
 SHEET OF 83

Appendix: Interconnection Assessments

SOUTH BUS TERMINAL



DESIGN-IN-PROGRESS
10-19-12



EXTENSION NUMBER
E.I. BENTLEY AND ASSOCIATES, INC.
1000 WEST 10TH AVENUE - SUITE 1000
DENVER, COLORADO 80202

**SOUTH SIDE SERVICE CENTER
PHASE III P.J.D.
SATELLITE BUS
MAINTENANCE FACILITY
POUDRE R-1 SCHOOL DISTRICT**

North, Elevation, and Section by
D.B. Linnell - Scale 1/8" = 1'-0"
Per Sheet 107 of 107

RBB

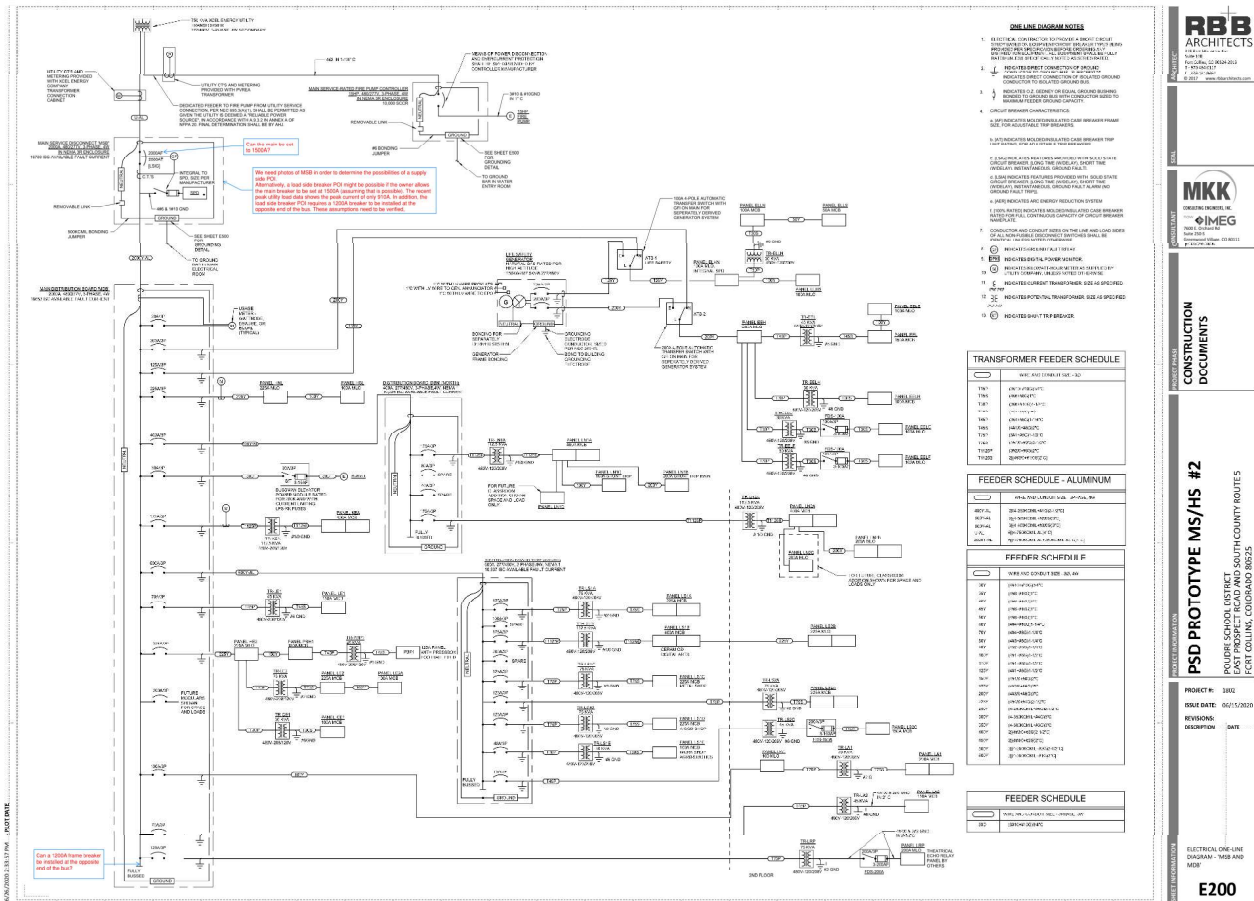
JOB NUMBER
DATE
DRAWN
CHECKED
DATE
ISSUE
REVISIONS

SHEET NUMBER
POWER PLAN

SHEET NUMBER
16.3

Appendix: Interconnection Assessments

TIMNATH MS/HS



RBB ARCHITECTS

MKK

CONSTRUCTION DOCUMENTS

PSD PROTOTYPE MS/HS #2

POUDRE SCHOOL DISTRICT
EAST PROSPECT ROAD AND SOUTH COUNTY ROUTES
EAST GULLY, COLORADO 80525

PROJECT # 1802
ISSUE DATE: 06/15/2020

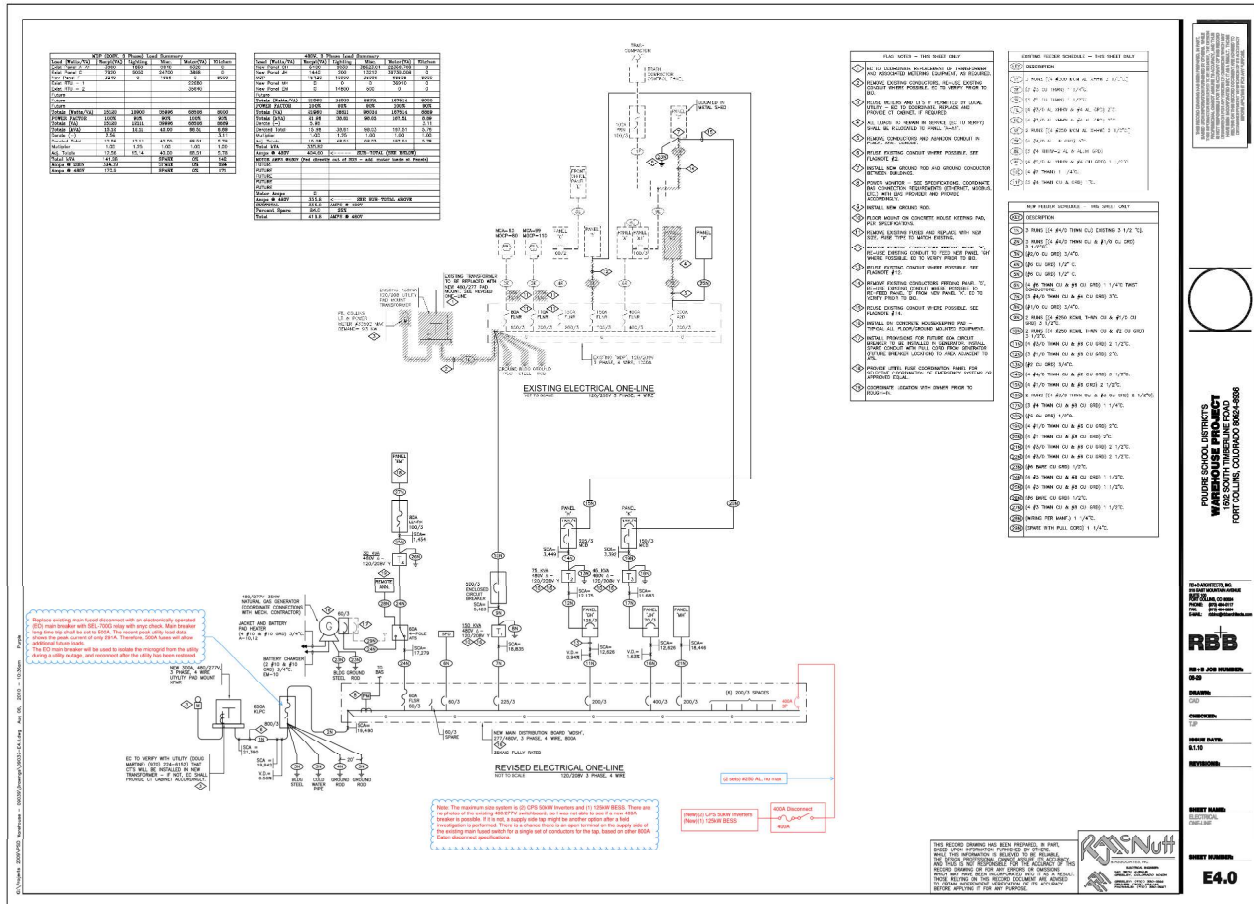
REVISIONS: _____ DATE: _____

ELECTRICAL ONE LINE DIAGRAM - MSB AND MDP

E200

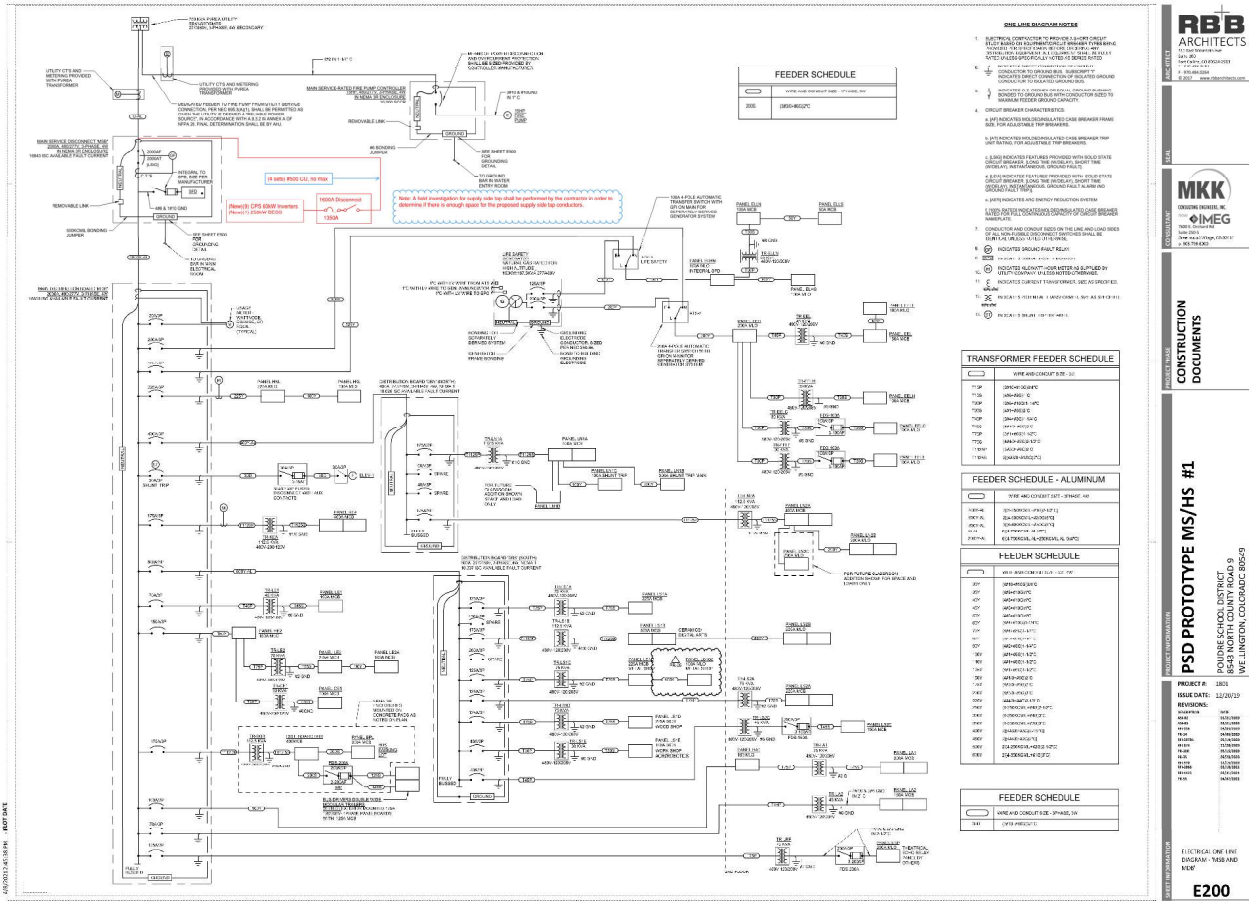
Appendix: Interconnection Assessments

WAREHOUSE 5 - PV AND BESS



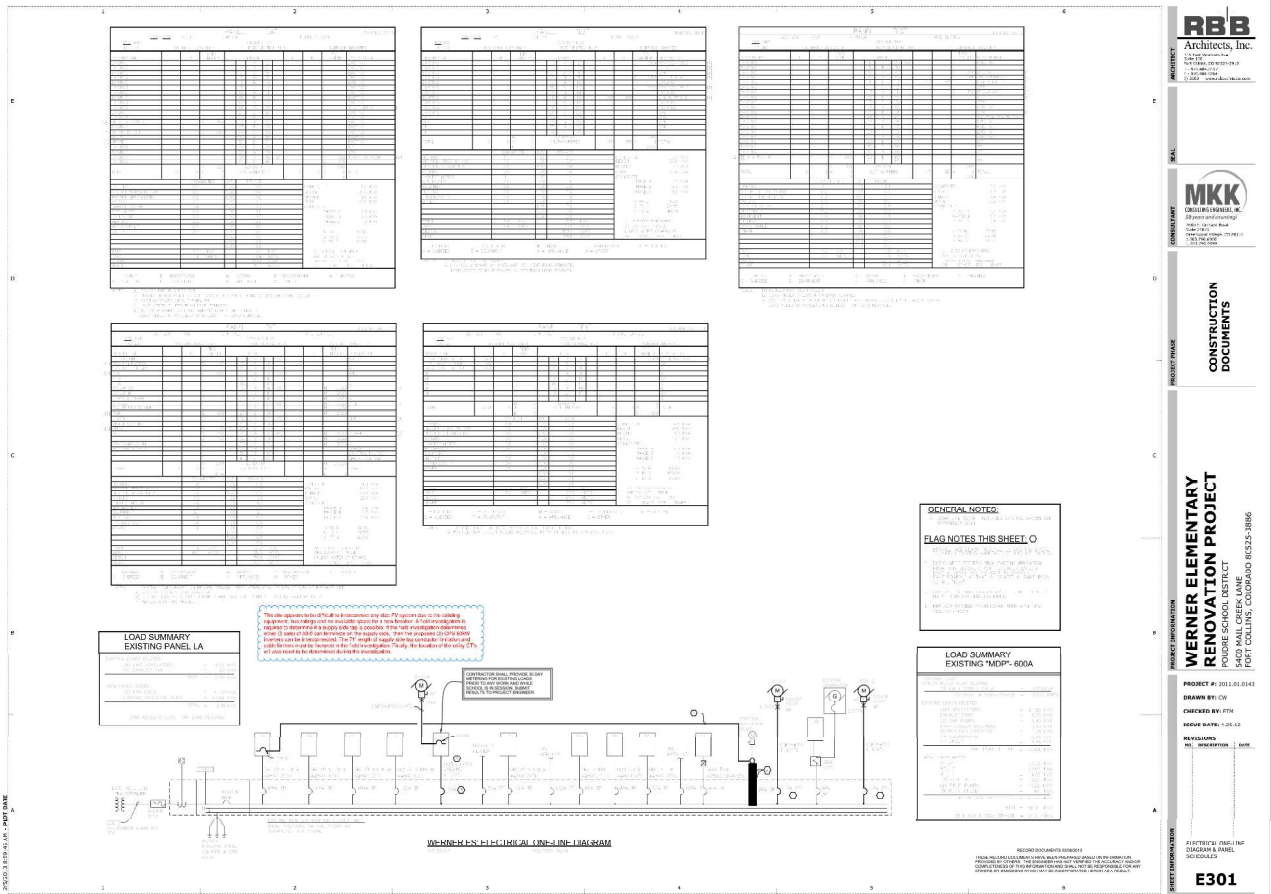
Appendix: Interconnection Assessments

WELLINGTON MS/HS - PV AND BESS



Appendix: Interconnection Assessments

WERNER ELEMENTARY SCHOOL



Addendum

1



Addendum 1

Addendum 1

ADDENDUM NARRATIVE

At the request of PSD, McKinstry has investigated the feasibility of three additional rooftop system sites that are supplied by Xcel Energy (the utility with the most economically feasible rate structures and available incentives). All three sites have roof ages which are out of alignment with a PV system lifespan, and re-roofing would need to occur prior to PV system installation to avoid a de-install/re-install event. For this reason, these sites were initially dropped from the study. This addendum outlines the feasibility of these systems assuming the roofs are replaced. If the roofs are not replaced, these sites would remain technically infeasible.

These sites were assessed based on the same direct ownership models provided in Section 3.2:

- 25-year cashflow model
- 3% utility escalator
- Inverter replacement at year 15
- 0.6% annual module degradation
- 3% inflation rate
- 30% IRA contribution

Addendum 1

Cache La Poudre Elementary School

SITE DESCRIPTION

This ballasted flat roof system was designed as an array on multiple sections of the roof where an economic system layout and azimuth were taken into consideration.

Cache la Poudre Elementary School



Addendum 1

PV SYSTEM DETAILS

System technical and performance details are outlined in the table below.

Cache la Poudre Elementary	Roof System
Utility and Current Rate	Xcel; SG
Annual Usage (kWh)	125,120
System Size (kWDC/kWAC)	82.6/ 60.0
Production, Year 1 (kWh-AC)	121,500
Solar Offset, Year 1	97.1%
GHG Reduction, Year 1 (MT CO2e)	50.2

FINANCIAL DIRECT OWNERSHIP DETAILS

Financial performance details are provided in the table below. See Section 6 for PPA/ Funding details. This site qualifies for a rate switch from SG to SPVTOU. As shown below, the rate switch has a positive impact on the financial outcome.

Cache la Poudre ES – Direct Ownership	SG Rate	SPVTOU Rate
Total Project Cost**	\$363,200	Same as SG Rate
Total Project Cost with 30% IRA Contribution	\$254,200	Same as SG Rate
Bill Savings, Year 1	\$8,400	\$14,800
REC/ Incentive, Year 1*	\$4,800	Same as SG Rate
Payback (years)	13.9	10.3
25-year Total Lifetime Savings	\$429,800	\$635,000
End of Life Decommissioning Cost	\$14,500	Same as SG Rate

*Xcel Energy Solar Rewards Commercial/Industrial pay credits at \$0.04/kWh of PV generation for systems larger than 8kW, and small than 250kW, for a period of 20 years.

**Financial summary above assumes projects are contracted as a portfolio.

Addendum 1

MAJOR PV EQUIPMENT INCLUDED IN PERFORMANCE MODELING AND COST ESTIMATES

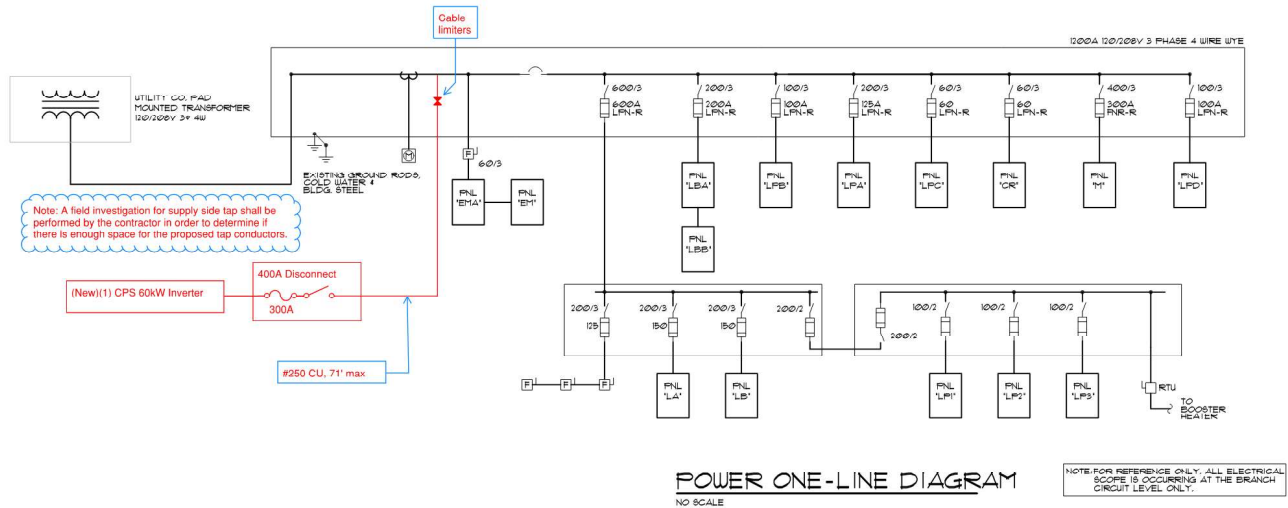
Our technical modeling and cost estimates incorporate the specifications and expected performance of the equipment outlined below. For the products listed, there are fungible alternatives with similar cost and performance characteristics available, and thus the exact specification of equipment is not expected to materially impact our estimates of capacity possible, costs, or system performance at the sites analyzed.

Equipment Type	QTY	Equipment Description
PV Modules	153	JA Solar 540-Watt Bifacial Module
Inverter	1	CPS 60kW-AC
Data Acquisition System	1	AlsoEnergy Data Acquisition System
Module Shutdown Unit	81	Tigo TS4-A-2F – Tigo PV Module Rapid Shutdown Unit

INTERCONNECTION

The SLD below illustrates the way the proposed PV system would be interconnected to the site’s electrical infrastructure. Cache la Poudre’s proposed PV system would be interconnected via a supply side tap on the Main Distribution Panel, a field investigation would be needed to ensure there is enough space for this interconnection method. See Appendix B for full SLD mark-ups.

Cache la Poudre ES PV System Proposed Interconnection Method



Addendum 1

Eyestone North Elementary School

SITE DESCRIPTION

This ballasted flat roof system was designed as an array on multiple sections of the roof where an economic system layout and azimuth were taken into consideration.

Eyestone North Elementary School



Addendum 1

PV SYSTEM DETAILS

System technical and performance details are outlined in the table below.

Eyestone North Elementary	Roof System
Utility and Current Rate	Xcel; SG
Annual Usage (kWh)	187,880
System Size (kWDC/kWAC)	124.2/ 100.0
Production, Year 1 (kWh-AC)	186,000
Solar Offset, Year 1	99.0%
GHG Reduction, Year 1 (MT CO2e)	76.8

FINANCIAL DIRECT OWNERSHIP DETAILS

Financial performance details are provided in the table below. See Section 6 for PPA/ Funding details. This site qualifies for a rate switch from SG to SPVTOU. As shown below, the rate switch has a positive impact on the financial outcome.

Eyestone North ES – Direct Ownership	SG Rate	SPVTOU Rate
Total Project Cost**	\$533,500	Same as SG Rate
Total Project Cost with 30% IRA Contribution	\$373,500	Same as SG Rate
Bill Savings, Year 1	\$12,500	\$22,100
REC/ Incentive, Year 1*	\$7,300	Same as SG Rate
Payback (years)	19.0	13.0
25-year Total Lifetime Savings	\$409,200	\$683,600
End of Life Decommissioning Cost	\$21,700	Same as SG Rate

*Xcel Energy Solar Rewards Commercial/Industrial pay credits at \$0.04/kWh of PV generation for systems larger than 8kW, and small than 250kW, for a period of 20 years.

**Financial summary above assumes projects are contracted as a portfolio.

Addendum 1

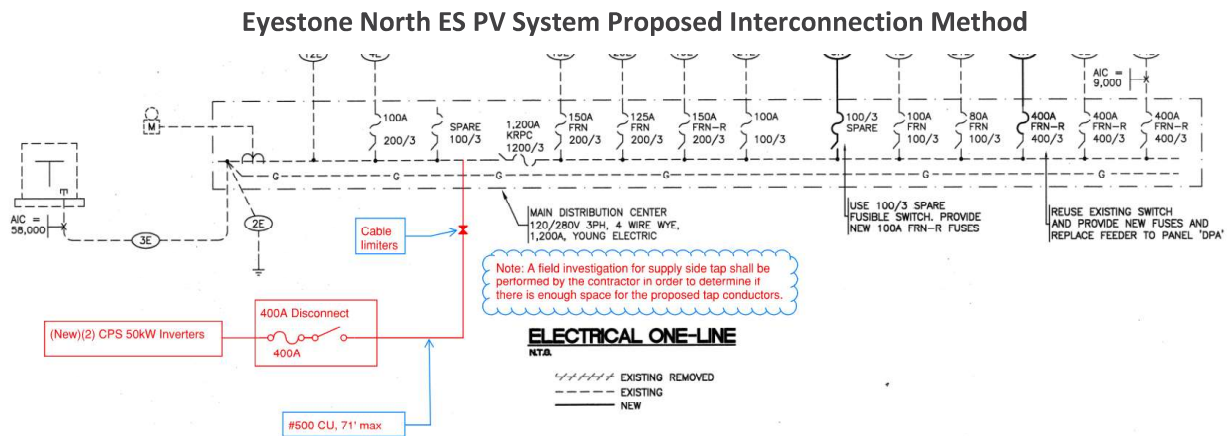
MAJOR PV EQUIPMENT INCLUDED IN PERFORMANCE MODELING AND COST ESTIMATES

Our technical modeling and cost estimates incorporate the specifications and expected performance of the equipment outlined below. For the products listed, there are fungible alternatives with similar cost and performance characteristics available, and thus the exact specification of equipment is not expected to materially impact our estimates of capacity possible, costs, or system performance at the sites analyzed.

Equipment Type	QTY	Equipment Description
PV Modules	230	JA Solar 540-Watt Bifacial Module
Inverter	2	CPS 50kW-AC
Data Acquisition System	1	AlsoEnergy Data Acquisition System
Module Shutdown Unit	122	Tigo TS4-A-2F – Tigo PV Module Rapid Shutdown Unit

INTERCONNECTION

The SLD below illustrates the way the proposed PV system would be interconnected to the site’s electrical infrastructure. Eyestone North’s proposed PV system would be interconnected via a supply side tap on the Main Distribution Panel, a field investigation would be needed to ensure there is enough space for this interconnection method. See Appendix B for full SLD mark-ups.



Addendum 1

Eyestone South Elementary School

SITE DESCRIPTION

This ballasted flat roof system was designed as an array on multiple sections of the roof where an economic system layout and azimuth were taken into consideration.

Eyestone South Elementary School



Addendum 1

PV SYSTEM DETAILS

System technical and performance details are outlined in the table below.

Eyestone South Elementary	Roof System
Utility and Current Rate	Xcel; SG
Annual Usage (kWh)	187,700
System Size (kWDC/kWAC)	124.2/ 100.0
Production, Year 1 (kWh-AC)	186,900
Solar Offset, Year 1	99.6%
GHG Reduction, Year 1 (MT CO2e)	77.2

FINANCIAL DIRECT OWNERSHIP DETAILS

Financial performance details are provided in the table below. See Section 6 for PPA/ Funding details. This site does not qualify for a rate switch from SG to SPVTOU due to load factor for the trailing 12 months being below the 30% load factor threshold.

Eyestone South ES – Direct Ownership	SG Rate
Total Project Cost**	\$533,500
Total Project Cost with 30% IRA Contribution	\$373,500
Bill Savings, Year 1	\$12,500
REC/ Incentive, Year 1*	\$7,300
Payback (years)	19.0
25-year Total Lifetime Savings	\$408,800
End of Life Decommissioning Cost	\$21,700

*Xcel Energy Solar Rewards Commercial/Industrial pay credits at \$0.04/kWh of PV generation for systems larger than 8kW, and small than 250kW, for a period of 20 years.

**Financial summary above assumes projects are contracted as a portfolio.

Addendum 1

MAJOR PV EQUIPMENT INCLUDED IN PERFORMANCE MODELING AND COST ESTIMATES

Our technical modeling and cost estimates incorporate the specifications and expected performance of the equipment outlined below. For the products listed, there are fungible alternatives with similar cost and performance characteristics available, and thus the exact specification of equipment is not expected to materially impact our estimates of capacity possible, costs, or system performance at the sites analyzed.

Equipment Type	QTY	Equipment Description
PV Modules	230	JA Solar 540-Watt Bifacial Module
Inverter	1	CPS 60kW-AC
Data Acquisition System	1	AlsoEnergy Data Acquisition System
Module Shutdown Unit	122	Tigo TS4-A-2F – Tigo PV Module Rapid Shutdown Unit

INTERCONNECTION

An electrical field investigation and working with a supplier who can provide a refurbished 400-amp breaker will be needed to verify the load side breaker can be used as the interconnection method. These findings would then be relayed to the electrical engineers for a final interconnection method determination. Alternatively, a supply side tap could be utilized. See Appendix B for full SLD mark-ups.

Eyestone South ES PV System Proposed Interconnection Method

