PLOT DATE: 1/26/2024 2:11 PM

MV FEEDER CALCULATIONS (34.5KV)

EQUIPMENT SUPPLIED	FED FROM	CIRCUIT ROUTING	# OF INVERTERS	APPARENT POWER [KVA]	FEEDER LENGTH [FT]	FULL LOAD AMPS 'FLA' [A]	OCPD TYPE	OCPD TRIP RATING [A]	OCPD TRIP % OF FLA	CONDUCTOR MATERIAL	CONDUCTOR SIZE	NEC TABLE REFERENCE	TEMPERATURE ADJUSTMENT	CONDUCTOR AMPACITY [A]	CHECK CONDUCTOR AMPACITY > FLA?	CHECK OCPD RATING > FLA x 1.25?	CHECK OCPD COMPLIANT WITH 240.101(A)?	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA	PVC CONDUIT SIZE	ADDITIONAL GROUND CABLE
MV DISCONNECT POLE	POI	OVERHEAD SPACED	82	22,550	25	377.4	FUSE	600	159%	AL	266.8KCMIL	310.15(B)(21)	1.00	403	PASS	PASS	PASS	0.00%	0.00%	N/A	NONE
FUSED CUTOUTS POLE	MV DISCONNECT POLE	OVERHEAD SPACED	82	22,550	25	377.4	FUSE	600	159%	AL	266.8KCMIL	310.15(B)(21)	1.00	403	PASS	PASS	PASS	0.00%	0.01%	N/A	NONE
RISER POLE 1	FUSED CUTOUTS POLE	OVERHEAD SPACED	82	22,550	25	377.4	FUSE	600	159%	AL	266.8KCMIL	310.15(B)(21)	1.00	403	PASS	PASS	PASS	0.00%	0.01%	N/A	NONE
RISER POLE 2	RISER POLE 1	UNDERGROUND IN CONDUIT	82	22,550	300	377.4	FUSE	600	159%	AL	750MCM	310.60(C)(78)	1.00	455	PASS	PASS	PASS	0.02%	0.03%	6"	CU #1
RISER POLE 3	RISER POLE 2	OVERHEAD SPACED	82	22,550	8,600	377.4	FUSE	600	159%	AL	266.8KCMIL	310.15(B)(21)	1.00	403	PASS	PASS	PASS	1.29%	1.32%	N/A	NONE
MV-SWGR	RISER POLE 3	UNDERGROUND DIRECT BURY TRIPLEXED	82	22,550	200	377.4	BREAKER	600	159%	AL	500MCM	310.60(C)(86)	1.00	445	PASS	PASS	PASS	0.02%	1.33%	6"	CU #1
PCS-01	MV-SWGR	UNDERGROUND DIRECT BURY TRIPLEXED	82	22,550	650	377.4	BREAKER	600	159%	AL	500MCM	310.60(C)(86)	1.00	445	PASS	PASS	PASS	0.06%	1.39%	6"	CU #1
MV-SECT-01	PCS-01	UNDERGROUND IN CONDUIT	70	19,250	950	322.1	BREAKER	600	186%	AL	500MCM	310.60(C)(78)	1.00	370	PASS	PASS	PASS	0.07%	1.46%	6"	CU #1
PCS-02	MV-SECT-01	UNDERGROUND DIRECT BURY TRIPLEXED	70	19,250	850	322.1	BREAKER	600	186%	AL	350MCM	310.60(C)(86)	1.00	370	PASS	PASS	PASS	0.09%	1.54%	6"	CU #1
MV-SECT-02	PCS-02	UNDERGROUND DIRECT BURY TRIPLEXED	60	16,500	250	276.1	BREAKER	600	217%	AL	350MCM	310.60(C)(86)	1.00	370	PASS	PASS	PASS	0.02%	1.57%	6"	CU #1
PCS-03	MV-SECT-02	UNDERGROUND DIRECT BURY TRIPLEXED	36	9,900	525	165.7	BREAKER	600	362%	AL	#1/0	310.60(C)(86)	1.00	190	PASS	PASS	PASS	0.09%	1.65%	5"	CU #1
MV-SECT-03	PCS-03	UNDERGROUND DIRECT BURY TRIPLEXED	24	6,600	500	110.4	BREAKER	600	543%	AL	#1/0	310.60(C)(86)	1.00	190	PASS	PASS	PASS	0.06%	1.71%	5"	CU #1
PCS-04	MV-SECT-03	UNDERGROUND DIRECT BURY TRIPLEXED	12	3,300	650	55.2	BREAKER	600	1086%	AL	#1/0	310.60(C)(86)	1.00	190	PASS	PASS	PASS	0.04%	1.74%	5"	CU #1
PCS-05	MV-SECT-03	UNDERGROUND DIRECT BURY TRIPLEXED	12	3,300	1,050	55.2	BREAKER	600	1086%	AL	#1/0	310.60(C)(86)	1.00	190	PASS	PASS	PASS	0.06%	1.77%	5"	CU #1
PCS-06	MV-SECT-02	UNDERGROUND DIRECT BURY TRIPLEXED	24	6,600	650	110.4	BREAKER	600	543%	AL	#1/0	310.60(C)(86)	1.00	190	PASS	PASS	PASS	0.07%	1.64%	5"	CU #1
PCS-07	PCS-06	UNDERGROUND DIRECT BURY TRIPLEXED	12	3,300	1,200	55.2	BREAKER	600	1086%	AL	#1/0	310.60(C)(86)	1.00	190	PASS	PASS	PASS	0.07%	1.70%	5"	CU #1

AC CIRCUIT CALCULATIONS – PCS-01

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA TO TRANSFORMER	TOTAL VOLTAGE DROP AT FLA TO POI
AC-DISC-01-01	XFMR-01	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.44%
AC-DISC-01-02	XFMR-01	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	25	0.05%	0.05%	1.44%
AC-DISC-01-03	XFMR-01	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.44%
AC-DISC-01-04	XFMR-01	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	25	0.05%	0.05%	1.44%
AC-DISC-01-05	XFMR-01	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	25	0.05%	0.05%	1.44%
AC-PNL-01-01	AC-DISC-01-01	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	390	0.78%	0.83%	2.22%
AC-PNL-01-02	AC-DISC-01-02	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	300	0.58%	0.63%	2.02%
AC-PNL-01-03	AC-DISC-01-03	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	70	0.14%	0.19%	1.58%
AC-PNL-01-04	AC-DISC-01-04	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	70	0.14%	0.18%	1.57%
AC-PNL-01-05	AC-DISC-01-05	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	350	0.68%	0.73%	2.11%
INV-01-01	AC-PNL-01-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.86%	2.24%
INV-01-02	AC-PNL-01-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.87%	2.26%
INV-01-03	AC-PNL-01-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.88%	2.27%
INV-01-04	AC-PNL-01-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.66%	2.04%
INV-01-05	AC-PNL-01-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.67%	2.06%
INV-01-06	AC-PNL-01-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.22%	1.61%
INV-01-07	AC-PNL-01-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.23%	1.62%
INV-01-08	AC-PNL-01-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.24%	1.63%
INV-01-09	AC-PNL-01-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.21%	1.60%
INV-01-10	AC-PNL-01-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.22%	1.61%
INV-01-11	AC-PNL-01-05	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.75%	2.14%
INV-01-12	AC-PNL-01-05	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.77%	2.15%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 1.94%

DRAWING NOTES:

1. DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS. CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

RULER IN INCHES:

NOT FOR CONSTRUCTION

DATE	REVISION DESCRIPTION	PM	ENG	CHK
01/26/2024	DESIGN DEVELOPMENT REV 2	RK	JT	RI
07/14/2023	FOR UTILITY REVIEW	RK	JT	RI
03/15/2023	DESIGN DEVELOPMENT REV 1	RK	JT	RI
12/14/2022	ISSUE FOR PERMIT	RK	JT	RI

ENGINEER
PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
PA LICENSE No. 079896

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9 EAST 37TH STREET, 12TH FLOOR
NEW YORK, NEW YORK 10016
WWW.US.QCELLS.COM/CIC-EPC

PAGE SIZE 36" x 24"

PROJECT # 08410

DC SYSTEM SIZE: 25,284.72 kWDC
AC SYSTEM SIZE: 20,000.00 kWAC
MODULE TYPE: (32,160) HANWHA 595W
(10,512) HANWHA 585W
ORIENTATION: ±55° TILT, 90°/270° AZI

PROJECT
25,284.72 KW GM SYSTEM AT
BLAIRS VALLEY
8691 BLUE SPRING ROAD
MERCERSBURG, PA 17236

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E310

PLOT DATE: 1/26/2024 2:11 PM

AC CIRCUIT CALCULATIONS – PCS-02

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA AT TRANSFORMER	TOTAL VOLTAGE DROP AT FLA AT POI
AC-DISC-02-01	XFMR-02	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.59%
AC-DISC-02-02	XFMR-02	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	25	0.05%	0.05%	1.59%
AC-DISC-02-03	XFMR-02	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	25	0.05%	0.05%	1.59%
AC-DISC-02-04	XFMR-02	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.59%
AC-PNL-02-01	AC-DISC-02-01	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	60	0.12%	0.17%	1.71%
AC-PNL-02-02	AC-DISC-02-02	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	80	0.15%	0.20%	1.75%
AC-PNL-02-03	AC-DISC-02-03	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	330	0.64%	0.69%	2.23%
AC-PNL-02-04	AC-DISC-02-04	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	310	0.62%	0.67%	2.21%
INV-02-01	AC-PNL-02-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.20%	1.74%
INV-02-02	AC-PNL-02-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.21%	1.75%
INV-02-03	AC-PNL-02-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.22%	1.77%
INV-02-04	AC-PNL-02-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.23%	1.77%
INV-02-05	AC-PNL-02-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.24%	1.79%
INV-02-06	AC-PNL-02-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.71%	2.26%
INV-02-07	AC-PNL-02-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.73%	2.27%
INV-02-08	AC-PNL-02-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.70%	2.24%
INV-02-09	AC-PNL-02-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.71%	2.25%
INV-02-10	AC-PNL-02-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.72%	2.27%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 2.01%

AC CIRCUIT CALCULATIONS – PCS-03

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA AT TRANSFORMER	TOTAL VOLTAGE DROP AT FLA AT POI
AC-DISC-03-01	XFMR-03	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.70%
AC-DISC-03-02	XFMR-03	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.70%
AC-DISC-03-03	XFMR-03	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.70%
AC-DISC-03-04	XFMR-03	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.70%
AC-PNL-03-01	AC-DISC-03-01	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	150	0.30%	0.35%	2.00%
AC-PNL-03-02	AC-DISC-03-02	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	150	0.30%	0.35%	2.00%
AC-PNL-03-03	AC-DISC-03-03	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	280	0.56%	0.61%	2.26%
AC-PNL-03-04	AC-DISC-03-04	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	700	1.40%	1.45%	3.10%
INV-03-01	AC-PNL-03-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.38%	2.03%
INV-03-02	AC-PNL-03-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.39%	2.04%
INV-03-03	AC-PNL-03-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.40%	2.06%
INV-03-04	AC-PNL-03-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.38%	2.03%
INV-03-05	AC-PNL-03-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.39%	2.04%
INV-03-06	AC-PNL-03-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.40%	2.06%
INV-03-07	AC-PNL-03-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.64%	2.29%
INV-03-08	AC-PNL-03-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.65%	2.30%
INV-03-09	AC-PNL-03-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.66%	2.32%
INV-03-10	AC-PNL-03-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	1.48%	3.13%
INV-03-11	AC-PNL-03-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	1.49%	3.14%
INV-03-12	AC-PNL-03-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	1.50%	3.16%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 2.38%

DRAWING NOTES:
1. DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS, CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

RULER IN INCHES:

NOT FOR CONSTRUCTION

DATE	REVISION DESCRIPTION	PM	ENG	CHK
01/26/2024	DESIGN DEVELOPMENT REV 2	RK	JT	RI
07/14/2023	FOR UTILITY REVIEW	RK	JT	RI
03/15/2023	DESIGN DEVELOPMENT REV 1	RK	JT	RI
12/14/2022	ISSUE FOR PERMIT	RK	JT	RI

ENGINEER
PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
PA LICENSE No. 079896

EPC
Q.CELLS ENABLE
9 EAST 37TH STREET, 12TH FLOOR
NEW YORK, NEW YORK 10016
WWW.US.QCELLS.COM/CIC-EPC

PAGE SIZE 36" x 24"
PROJECT # 08410

DC SYSTEM SIZE: 25,284.72 kWDC
AC SYSTEM SIZE: 20,000.00 kWAC
MODULE TYPE: (32,160) HANWHA 595W
(10,512) HANWHA 585W
ORIENTATION: ±55° TILT, 90°/270° AZI

PROJECT
25,284.72 KW GM SYSTEM AT
BLAIRS VALLEY
8691 BLUE SPRING ROAD
MERCERSBURG, PA 17236

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E311

AC CIRCUIT CALCULATIONS – PCS-04

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA AT TRANSFORMER	TOTAL VOLTAGE DROP AT FLA AT POI
AC-DISC-04-01	XFMR-04	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.79%
AC-DISC-04-02	XFMR-04	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.79%
AC-DISC-04-03	XFMR-04	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.79%
AC-DISC-04-04	XFMR-04	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.79%
AC-PNL-04-01	AC-DISC-04-01	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	60	0.12%	0.17%	1.91%
AC-PNL-04-02	AC-DISC-04-02	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	220	0.44%	0.49%	2.23%
AC-PNL-04-03	AC-DISC-04-03	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	410	0.82%	0.87%	2.61%
AC-PNL-04-04	AC-DISC-04-04	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	640	1.28%	1.33%	3.07%
INV-04-01	AC-PNL-04-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.20%	1.94%
INV-04-02	AC-PNL-04-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.21%	1.96%
INV-04-03	AC-PNL-04-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.22%	1.97%
INV-04-04	AC-PNL-04-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.52%	2.26%
INV-04-05	AC-PNL-04-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.53%	2.28%
INV-04-06	AC-PNL-04-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.54%	2.29%
INV-04-07	AC-PNL-04-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.90%	2.64%
INV-04-08	AC-PNL-04-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.91%	2.65%
INV-04-09	AC-PNL-04-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.92%	2.67%
INV-04-10	AC-PNL-04-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	1.36%	3.10%
INV-04-11	AC-PNL-04-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	1.37%	3.11%
INV-04-12	AC-PNL-04-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	1.38%	3.13%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 2.50%

AC CIRCUIT CALCULATIONS – PCS-05

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA AT TRANSFORMER	TOTAL VOLTAGE DROP AT FLA AT POI
AC-DISC-05-01	XFMR-05	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.82%
AC-DISC-05-02	XFMR-05	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	25	0.05%	0.05%	1.82%
AC-DISC-05-03	XFMR-05	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.82%
AC-DISC-05-04	XFMR-05	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	25	0.05%	0.05%	1.82%
AC-DISC-05-05	XFMR-05	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	25	0.05%	0.05%	1.82%
AC-PNL-05-01	AC-DISC-05-01	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	430	0.86%	0.91%	2.68%
AC-PNL-05-02	AC-DISC-05-02	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	60	0.12%	0.16%	1.93%
AC-PNL-05-03	AC-DISC-05-03	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	60	0.12%	0.17%	1.94%
AC-PNL-05-04	AC-DISC-05-04	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	510	0.99%	1.03%	2.80%
AC-PNL-05-05	AC-DISC-05-05	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	350	0.68%	0.73%	2.49%
INV-05-01	AC-PNL-05-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.94%	2.70%
INV-05-02	AC-PNL-05-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.95%	2.72%
INV-05-03	AC-PNL-05-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.96%	2.73%
INV-05-04	AC-PNL-05-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.19%	1.96%
INV-05-05	AC-PNL-05-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.20%	1.97%
INV-05-06	AC-PNL-05-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.20%	1.96%
INV-05-07	AC-PNL-05-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.21%	1.98%
INV-05-08	AC-PNL-05-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.22%	1.99%
INV-05-09	AC-PNL-05-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	1.06%	2.83%
INV-05-10	AC-PNL-05-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	1.08%	2.84%
INV-05-11	AC-PNL-05-05	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.75%	2.52%
INV-05-12	AC-PNL-05-05	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.77%	2.53%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 2.39%

DRAWING NOTES:

1. DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS, CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

NOT FOR CONSTRUCTION

DATE	REVISION DESCRIPTION	PM	ENG	CHK
01/26/2024	DESIGN DEVELOPMENT REV 2	RK	JT	RI
07/14/2023	FOR UTILITY REVIEW	RK	JT	RI
03/15/2023	DESIGN DEVELOPMENT REV 1	RK	JT	RI
12/14/2022	ISSUE FOR PERMIT	RK	JT	RI

ENGINEER
PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
PA LICENSE No. 079896

EPC
Q.CELLS ENABLE
9 EAST 37TH STREET, 12TH FLOOR
NEW YORK, NEW YORK 10016
WWW.US.QCELLS.COM/CIC-EPC

PAGE SIZE: 36" x 24"
PROJECT #: 08410

DC SYSTEM SIZE: 25,284.72 kWDC
AC SYSTEM SIZE: 20,000.00 kWAC
MODULE TYPE: (32,160) HANWHA 595W
(10,512) HANWHA 585W
ORIENTATION: ±55° TILT, 90°/270° AZI

PROJECT
25,284.72 KW GM SYSTEM AT
BLAIRS VALLEY
8691 BLUE SPRING ROAD
MERCERSBURG, PA 17236

DRAWING TITLE: SCHEDULES & CALCULATIONS

DRAWING #: E312

PLOT DATE: 1/26/2024 2:11 PM

RULER IN INCHES: 0 ½ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

AC CIRCUIT CALCULATIONS – PCS-06

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA AT TRANSFORMER	TOTAL VOLTAGE DROP AT FLA AT POI
AC-DISC-06-01	XFMR-06	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	25	0.05%	0.05%	1.69%
AC-DISC-06-02	XFMR-06	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.69%
AC-DISC-06-03	XFMR-06	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.69%
AC-DISC-06-04	XFMR-06	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	25	0.05%	0.05%	1.69%
AC-DISC-06-05	XFMR-06	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	25	0.05%	0.05%	1.69%
AC-PNL-06-01	AC-DISC-06-01	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	690	1.33%	1.38%	3.02%
AC-PNL-06-02	AC-DISC-06-02	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	430	0.86%	0.91%	2.55%
AC-PNL-06-03	AC-DISC-06-03	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	350	0.70%	0.75%	2.39%
AC-PNL-06-04	AC-DISC-06-04	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	110	0.21%	0.26%	1.90%
AC-PNL-06-05	AC-DISC-06-05	800	397.0	496	500	PVC	4"	CU #1/0	2	AL 500MCM	NONE	620	700	672	0.96	1.00	340	0.66%	0.71%	2.34%
INV-06-01	AC-PNL-06-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	1.41%	3.05%
INV-06-02	AC-PNL-06-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	1.42%	3.06%
INV-06-03	AC-PNL-06-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.94%	2.57%
INV-06-04	AC-PNL-06-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.95%	2.59%
INV-06-05	AC-PNL-06-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.96%	2.60%
INV-06-06	AC-PNL-06-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.78%	2.41%
INV-06-07	AC-PNL-06-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.79%	2.43%
INV-06-08	AC-PNL-06-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.80%	2.44%
INV-06-09	AC-PNL-06-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.29%	1.93%
INV-06-10	AC-PNL-06-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.30%	1.94%
INV-06-11	AC-PNL-06-05	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.73%	2.37%
INV-06-12	AC-PNL-06-05	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.75%	2.38%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 2.48%

AC CIRCUIT CALCULATIONS – PCS-07

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA AT TRANSFORMER	TOTAL VOLTAGE DROP AT FLA AT POI
AC-DISC-07-01	XFMR-07	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.75%
AC-DISC-07-02	XFMR-07	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.75%
AC-DISC-07-03	XFMR-07	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.75%
AC-DISC-07-04	XFMR-07	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	25	0.05%	0.05%	1.75%
AC-PNL-07-01	AC-DISC-07-01	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	410	0.82%	0.87%	2.57%
AC-PNL-07-02	AC-DISC-07-02	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	310	0.62%	0.67%	2.37%
AC-PNL-07-03	AC-DISC-07-03	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	60	0.12%	0.17%	1.87%
AC-PNL-07-04	AC-DISC-07-04	800	595.5	744	800	PVC	4"	CU #1/0	2	AL 750MCM	NONE	770	870	835	0.96	1.00	210	0.42%	0.47%	2.17%
INV-07-01	AC-PNL-07-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.90%	2.60%
INV-07-02	AC-PNL-07-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.91%	2.61%
INV-07-03	AC-PNL-07-01	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.92%	2.63%
INV-07-04	AC-PNL-07-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.70%	2.40%
INV-07-05	AC-PNL-07-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.71%	2.41%
INV-07-06	AC-PNL-07-02	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.72%	2.43%
INV-07-07	AC-PNL-07-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.20%	1.90%
INV-07-08	AC-PNL-07-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.21%	1.92%
INV-07-09	AC-PNL-07-03	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.22%	1.93%
INV-07-10	AC-PNL-07-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	10	0.03%	0.50%	2.20%
INV-07-11	AC-PNL-07-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	15	0.04%	0.51%	2.21%
INV-07-12	AC-PNL-07-04	800	198.5	248	250	EMT	3"	CU #4	1	AL 350MCM	NONE	250	280	269	0.96	1.00	20	0.05%	0.52%	2.23%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 2.29%

DRAWING NOTES:

1. DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS. CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

RULER IN INCHES:

NOT FOR CONSTRUCTION

DATE	REVISION DESCRIPTION	PM	ENG	CHK
01/26/2024	DESIGN DEVELOPMENT REV 2	RK	JT	RI
07/14/2023	FOR UTILITY REVIEW	RK	JT	RI
03/15/2023	DESIGN DEVELOPMENT REV 1	RK	JT	RI
12/14/2022	ISSUE FOR PERMIT	RK	JT	RI

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RICHARD A. IVINS
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ENGINEER

EPC

Q.CELLS ENABLE
9 EAST 37TH STREET, 12TH FLOOR
NEW YORK, NEW YORK 10016
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PAGE SIZE: 36" x 24"

PROJECT #: 08410

DC SYSTEM SIZE: 25,284.72 kWDC
AC SYSTEM SIZE: 20,000.00 kWAC
MODULE TYPE: (32,160) HANWHA 595W
(10,512) HANWHA 585W
ORIENTATION: ±55° TILT, 90°/270° AZI

PROJECT

25,284.72 KW GM SYSTEM AT
BLAIRS VALLEY
8691 BLUE SPRING ROAD
MERCERSBURG, PA 17236

DRAWING TITLE: SCHEDULES & CALCULATIONS

DRAWING #: E313

MODULE SPECIFICATIONS	
MAKE/MODEL	Q.PEAK DUO XL-G11S.3/BFG 595W
POWER [W]	595
ISC [A]	13.77
IMP [A]	13.17
VOC [V]	53.63
VMP [V]	45.18
β VOC [%/degC]	-0.270%
SITE CLIMATE CRITERIA	
ASHRAE HIGH [℃]	33
ASHRAE LOW [℃]	−14.1
STRING SPECIFICATIONS AT STC	
MODULES/STRING	24
POWER [W]	14280
STRING ISC [A]	13.77
STRING IMP [A]	13.17
STRING VMP [V]	1084.32
STRING MAX VOLTAGE CALCULATION	
VOC TEMP ADJUSTMENT @ −14.1 ℃	1.11
VOC @ −14.1 ℃ [V]	59.29
MAX STRING VOC [V]	1423.0

SAM SIMULATED VALUES	
MAXIMUM CURRENT [A]	16.85
MAXIMUM VOLTAGE [V]	1364.39

THE STRING MAX CURRENT IS CALCULATED BY SYSTEM ADVISOR MODEL SIMULATION PROGRAM PROVIDED BY THE NATIONAL RENEWABLE ENERGY LABORATORY, REFERENCE SAND 2004−3535, PHOTOVOLTAIC ARRAY PERFORMANCE MODEL, AS ALLOWABLE BY NEC 690.8(A)(1)(2), THE CALCULATED CURRENT IS 97.9% OF THE VALUE USING 690.8(A)(1)(1).

DC STRING WIRING CALCULATION − CONDUIT	
STRING IMAX SIMULATED [A]	16.85
MAX CONTINUOUS FAULT CURRENT FROM PARALLEL SOURCES [AMPS]	16.85
1.25x MAX CONTINUOUS FAULT CURRENT [AMPS]	21.07
MAX # OF WIRES PER CONDUIT	9
DERATE FOR # OF CONDUCTORS IN A CONDUIT	0.7
MAX AMBIENT TEMPERATURE	33
TEMPERATURE DERATE	0.96
WIRE GAUGE	CU #10
75 DEG AMPACITY WITHOUT COU ADJUSTMENT [AMPS]	35
IS 75 DEG AMPACITY WITHOUT COU ADJUSTMENT >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(1)
90DEG AMPACITY WITH COU ADJUSTMENT [AMPS]	26.88
IS 90DEG AMPACITY WITH COU ADJUSTMENT >= 1.0x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(2)
PV SOURCE CIRCUIT (SIMULATED) FUSE RATING [AMPS]	25
AVAILABLE FAULT CURRENT FROM ALL PARALLEL SOURCES [AMPS]	16.8522
IS FUSE RATING >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.9(B)

DC STRING WIRING CALCULATION − CONDUIT	
STRING IMAX SIMULATED [A]	16.85
MAX CONTINUOUS FAULT CURRENT FROM PARALLEL SOURCES [AMPS]	16.85
1.25x MAX CONTINUOUS FAULT CURRENT [AMPS]	21.07
MAX # OF WIRES PER CONDUIT	40
DERATE FOR # OF CONDUCTORS IN A CONDUIT	0.4
MAX AMBIENT TEMPERATURE	33
TEMPERATURE DERATE	0.96
WIRE GAUGE	CU #8
75 DEG AMPACITY WITHOUT COU ADJUSTMENT [AMPS]	50
IS 75 DEG AMPACITY WITHOUT COU ADJUSTMENT >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(1)
90DEG AMPACITY WITH COU ADJUSTMENT [AMPS]	21.12
IS 90DEG AMPACITY WITH COU ADJUSTMENT >= 1.0x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(2)
PV SOURCE CIRCUIT (SIMULATED) FUSE RATING [AMPS]	25
AVAILABLE FAULT CURRENT FROM ALL PARALLEL SOURCES [AMPS]	16.8522
IS FUSE RATING >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.9(B)

STRING VOLTAGE DROP CALCULATIONS SYSTEM 01		MAX TOTAL VOLTAGE DROP	2.18%
		AVERAGE TOTAL VOLTAGE DROP	0.99%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
01−01−01	#10AWG−CU	695	2.18%
01−01−02	#10AWG−CU	675	2.12%
01−01−03	#10AWG−CU	655	2.05%
01−01−04	#10AWG−CU	635	1.99%
01−01−05	#10AWG−CU	620	1.94%
01−01−06	#10AWG−CU	590	1.85%
01−01−07	#10AWG−CU	495	1.55%
01−01−08	#10AWG−CU	405	1.27%
01−01−09	#10AWG−CU	570	1.79%
01−01−10	#10AWG−CU	480	1.50%
01−01−11	#10AWG−CU	385	1.21%
01−01−12	#10AWG−CU	550	1.72%
01−01−13	#10AWG−CU	460	1.44%
01−01−14	#10AWG−CU	365	1.14%
01−01−15	#10AWG−CU	530	1.66%
01−01−16	#10AWG−CU	440	1.38%
01−01−17	#10AWG−CU	350	1.10%
01−01−18	#10AWG−CU	510	1.60%
01−01−19	#10AWG−CU	420	1.32%
01−01−20	#10AWG−CU	330	1.03%
01−01−21	#10AWG−CU	495	1.55%
01−02−01	#10AWG−CU	405	1.27%
01−02−02	#10AWG−CU	315	0.99%
01−02−03	#10AWG−CU	480	1.50%
01−02−04	#10AWG−CU	385	1.21%
01−02−05	#10AWG−CU	295	0.92%
01−02−06	#10AWG−CU	460	1.44%
01−02−07	#10AWG−CU	370	1.16%
01−02−08	#10AWG−CU	275	0.86%
01−02−09	#10AWG−CU	440	1.38%
01−02−10	#10AWG−CU	350	1.10%
01−02−11	#10AWG−CU	260	0.81%
01−02−12	#10AWG−CU	420	1.32%
01−02−13	#10AWG−CU	330	1.03%
01−02−14	#10AWG−CU	240	0.75%
01−02−15	#10AWG−CU	405	1.27%
01−02−16	#10AWG−CU	310	0.97%
01−02−17	#10AWG−CU	220	0.69%
01−02−18	#10AWG−CU	385	1.21%
01−02−19	#10AWG−CU	290	0.91%
01−02−20	#10AWG−CU	200	0.63%
01−02−21	#10AWG−CU	365	1.14%
01−03−01	#10AWG−CU	280	0.88%
01−03−02	#10AWG−CU	185	0.58%
01−03−03	#10AWG−CU	350	1.10%
01−03−04	#10AWG−CU	260	0.81%
01−03−05	#10AWG−CU	170	0.53%
01−03−06	#10AWG−CU	330	1.03%
01−03−07	#10AWG−CU	240	0.75%
01−03−08	#10AWG−CU	150	0.47%
01−03−09	#10AWG−CU	315	0.99%
01−03−10	#10AWG−CU	220	0.69%
01−03−11	#10AWG−CU	130	0.41%
01−03−12	#10AWG−CU	295	0.92%
01−03−13	#10AWG−CU	200	0.63%
01−03−14	#10AWG−CU	110	0.34%
01−03−15	#10AWG−CU	275	0.86%
01−03−16	#10AWG−CU	185	0.58%
01−03−17	#10AWG−CU	90	0.28%
01−03−18	#10AWG−CU	255	0.80%
01−03−19	#10AWG−CU	165	0.52%
01−03−20	#10AWG−CU	75	0.24%
01−03−21	#10AWG−CU	235	0.74%
01−03−22	#10AWG−CU	145	0.45%
01−04−01	#10AWG−CU	140	0.44%
01−04−02	#10AWG−CU	305	0.96%
01−04−03	#10AWG−CU	215	0.67%
01−04−04	#10AWG−CU	120	0.38%
01−04−05	#10AWG−CU	285	0.89%
01−04−06	#10AWG−CU	195	0.61%
01−04−07	#10AWG−CU	105	0.33%
01−04−08	#10AWG−CU	175	0.55%
01−04−09	#10AWG−CU	85	0.27%
01−04−10	#10AWG−CU	155	0.49%
01−04−11	#10AWG−CU	65	0.20%
01−04−12	#10AWG−CU	150	0.47%
01−04−13	#10AWG−CU	55	0.17%
01−04−14	#10AWG−CU	165	0.52%
01−04−15	#10AWG−CU	75	0.24%
01−04−16	#10AWG−CU	185	0.58%
01−04−17	#10AWG−CU	95	0.30%
01−04−18	#10AWG−CU	205	0.64%
01−04−19	#10AWG−CU	110	0.34%
01−04−20	#10AWG−CU	225	0.71%
01−04−21	#10AWG−CU	130	0.41%
01−04−22	#10AWG−CU	245	0.77%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 01		MAX TOTAL VOLTAGE DROP	2.18%
		AVERAGE TOTAL VOLTAGE DROP	0.99%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
01−05−01	#10AWG−CU	145	0.45%
01−05−02	#10AWG−CU	255	0.80%
01−05−03	#10AWG−CU	165	0.52%
01−05−04	#10AWG−CU	275	0.86%
01−05−05	#10AWG−CU	185	0.58%
01−05−06	#10AWG−CU	295	0.92%
01−05−07	#10AWG−CU	205	0.64%
01−05−08	#10AWG−CU	315	0.99%
01−05−09	#10AWG−CU	225	0.71%
01−05−10	#10AWG−CU	335	1.05%
01−05−11	#10AWG−CU	245	0.77%
01−05−12	#10AWG−CU	360	1.13%
01−05−13	#10AWG−CU	265	0.83%
01−05−14	#10AWG−CU	290	0.91%
01−05−15	#10AWG−CU	310	0.97%
01−05−16	#10AWG−CU	330	1.03%
01−05−17	#10AWG−CU	350	1.10%
01−05−18	#10AWG−CU	375	1.18%
01−05−19	#10AWG−CU	395	1.24%
01−05−20	#10AWG−CU	415	1.30%
01−05−21	#10AWG−CU	440	1.38%
01−05−22	#10AWG−CU	460	1.44%
01−06−01	#10AWG−CU	680	2.13%
01−06−02	#10AWG−CU	665	2.08%
01−06−03	#10AWG−CU	645	2.02%
01−06−04	#10AWG−CU	625	1.96%
01−06−05	#10AWG−CU	605	1.90%
01−06−06	#10AWG−CU	515	1.61%
01−06−07	#10AWG−CU	425	1.33%
01−06−08	#10AWG−CU	590	1.85%
01−06−09	#10AWG−CU	495	1.55%
01−06−10	#10AWG−CU	405	1.27%
01−06−11	#10AWG−CU	570	1.79%
01−06−12	#10AWG−CU	475	1.49%
01−06−13	#10AWG−CU	385	1.21%
01−06−14	#10AWG−CU	550	1.72%
01−06−15	#10AWG−CU	460	1.44%
01−06−16	#10AWG−CU	365	1.14%
01−06−17	#10AWG−CU	530	1.66%
01−06−18	#10AWG−CU	440	1.38%
01−06−19	#10AWG−CU	350	1.10%
01−06−20	#10AWG−CU	510	1.60%
01−06−21	#10AWG−CU	420	1.32%
01−06−22	#10AWG−CU	330	1.03%
01−06−23	#10AWG−CU	495	1.55%
01−07−01	#10AWG−CU	405	1.27%
01−07−02	#10AWG−CU	315	0.99%
01−07−03	#10AWG−CU	480	1.50%
01−07−04	#10AWG−CU	385	1.21%
01−07−05	#10AWG−CU	295	0.92%
01−07−06	#10AWG−CU	460	1.44%
01−07−07	#10AWG−CU	370	1.16%
01−07−08	#10AWG−CU	275	0.86%
01−07−09	#10AWG−CU	440	1.38%
01−07−10	#10AWG−CU	350	1.10%
01−07−11	#10AWG−CU	260	0.81%
01−07−12	#10AWG−CU	420	1.32%
01−07−13	#10AWG−CU	330	1.03%
01−07−14	#10AWG−CU	240	0.75%
01−07−15	#10AWG−CU	405	1.27%
01−07−16	#10AWG−CU	310	0.97%
01−07−17	#10AWG−CU	220	0.69%
01−07−18	#10AWG−CU	385	1.21%
01−07−19	#10AWG−CU	290	0.91%
01−07−20	#10AWG−CU	200	0.63%
01−07−21	#10AWG−CU	365	1.14%
01−07−22	#10AWG−CU	275	0.86%
01−07−23	#10AWG−CU	180	0.56%
01−08−01	#10AWG−CU	350	1.10%
01−08−02	#10AWG−CU	260	0.81%
01−08−03	#10AWG−CU	165	0.52%
01−08−04	#10AWG−CU	330	1.03%
01−08−05	#10AWG−CU	240	0.75%
01−08−06	#10AWG−CU	150	0.47%
01−08−07	#10AWG−CU	310	0.97%
01−08−08	#10AWG−CU	220	0.69%
01−08−09	#10AWG−CU	130	0.41%
01−08−10	#10AWG−CU	295	0.92%
01−08−11	#10AWG−CU	200	0.63%
01−08−12	#10AWG−CU	110	0.34%
01−08−13	#10AWG−CU	275	0.86%
01−08−14	#10AWG−CU	185	0.58%
01−08−15	#10AWG−CU	90	0.28%
01−08−16	#10AWG−CU	255	0.80%
01−08−17	#10AWG−CU	165	0.52%
01−08−18	#10AWG−CU	70	0.22%
01−08−19	#10AWG−CU	235	0.74%
01−08−20	#10AWG−CU	145	0.45%
01−08−21	#10AWG−CU	55	0.17%
01−08−22	#10AWG−CU	250	0.78%
01−08−23	#10AWG−CU	160	0.50%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 01		MAX TOTAL VOLTAGE DROP	2.18%
		AVERAGE TOTAL VOLTAGE DROP	0.99%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
01−09−01	#10AWG−CU	255	0.80%
01−09−02	#10AWG−CU	160	0.50%
01−09−03	#10AWG−CU	235	0.74%
01−09−04	#10AWG−CU	140	0.44%
01−09−05	#10AWG−CU	50	0.16%
01−09−06	#10AWG−CU	250	0.78%
01−09−07	#10AWG−CU	160	0.50%
01−09−08	#10AWG−CU	70	0.22%
01−09−09	#10AWG−CU	270	0.85%
01−09−10	#10AWG−CU	180	0.56%
01−09−11	#10AWG−CU	90	0.28%
01−09−12	#10AWG−CU	290	0.91%
01−09−13	#10AWG−CU	200	0.63%
01−09−14	#10AWG−CU	110	0.34%
01−09−15	#10AWG−CU	310	0.97%
01−09−16	#10AWG−CU	220	0.69%
01−09−17	#10AWG−CU	125	0.39%
01−09−18	#10AWG−CU	330	1.03%
01−09−19	#10AWG−CU	235	0.74%
01−09−20	#10AWG−CU	145	0.45%
01−09−21	#10AWG−CU	350	1.10%
01−09−22	#10AWG−CU	260	0.81%
01−09−23	#10AWG−CU	165	0.52%
01−10−01	#10AWG−CU	365	1.14%
01−10−02	#10AWG−CU	275	0.86%
01−10−03	#10AWG−CU	185	0.58%
01−10−04	#10AWG−CU	390	1.22%
01−10−05	#10AWG−CU	295	0.92%
01−10−06	#10AWG−CU	205	0.64%
01−10−07	#10AWG−CU	410	1.28%
01−10−08	#10AWG−CU	320	1.00%
01−10−09	#10AWG−CU	225	0.71%
01−10−10	#10AWG−CU	430	1.35%
01−10−11	#10AWG−CU	340	1.07%
01−10−12	#10AWG−CU	250	0.78%
01−10−13	#10AWG−CU	450	1.41%
01−10−14	#10AWG−CU	360	1.13%
01−10−15	#10AWG−CU	270	0.85%
01−10−16	#10AWG−CU	475	1.49%
01−10−17	#10AWG−CU	380	1.19%
01−10−18	#10AWG−CU	290	0.91%
01−10−19	#10AWG−CU	495	1.55%
01−10−20	#10AWG−CU	405	1.27%
01−10−21	#10AWG−CU	310	0.97%
01−10−22	#10AWG−CU	515	1.61%
01−10−23	#10AWG−CU	425	1.33%
01−11−01	#10AWG−CU	50	0.16%
01−11−02	#10AWG−CU	255	0.80%
01−11−03	#10AWG−CU	165	0.52%
01−11−04	#10AWG−CU	70	0.22%
01−11−05	#10AWG−CU	275	0.86%
01−11−06	#10AWG−CU	185	0.58%
01−11−07	#10AWG−CU	95	0.30%
01−11−08	#10AWG−CU	300	0.94%
01−11−09	#10AWG−CU	205	0.64%
01−11−10	#10AWG−CU	115	0.36%
01−11−11	#10AWG−CU	375	1.18%
01−11−12	#10AWG−CU	280	0.88%
01−11−13	#10AWG−CU	190	0.60%
01−11−14	#10AWG−CU	395	1.24%
01−11−15	#10AWG−CU	300	0.94%
01−11−16	#10AWG−CU	210	0.66%
01−11−17	#10AWG−CU	410	1.28%
01−11−18	#10AWG−CU	320	1.00%
01−11−19	#10AWG−CU	230	0.72%
01−11−20	#10AWG−CU	430	1.35%
01−11−21	#10AWG−CU	340	1.07%
01−11−22	#10AWG−CU	250	0.78%
01−11−23	#10AWG−CU	450	1.41%
01−12−01	#10AWG−CU	355	1.11%
01−12−02	#10AWG−CU	260	0.81%
01−12−03	#10AWG−CU	465	1.46%
01−12−04	#10AWG−CU	375	1.18%
01−12−05	#10AWG−CU	280	0.88%
01−12−06	#10AWG−CU	485	1.52%
01−12−07	#10AWG−CU	390	1.22%
01−12−08	#10AWG−CU	300	0.94%
01−12−09	#10AWG−CU	500	1.57%
01−12−10	#10AWG−CU	410	1.28%
01−12−11	#10AWG−CU	320	1.00%
01−12−12	#10AWG−CU	520	1.63%
01−12−13	#10AWG−CU	430	1.35%
01−12−14	#10AWG−CU	340	1.07%
01−12−15	#10AWG−CU	540	1.69%
01−12−16	#10AWG−CU	450	1.41%
01−12−17	#10AWG−CU	355	1.11%
01−12−18	#10AWG−CU	560	1.75%
01−12−19	#10AWG−CU	470	1.47%
01−12−20	#10AWG−CU	375	1.18%
01−12−21	#10AWG−CU	580	1.82%
01−12−22	#10AWG−CU	485	1.52%
01−12−23	#10AWG−CU	395	1.24%

DRAWING NOTES:
1. DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS, CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

NOT FOR CONSTRUCTION

DATE	REVISION DESCRIPTION	PM	ENG	CHK
01/26/2024	DESIGN DEVELOPMENT REV 2	RK	JT	RI
07/14/2023	FOR UTILITY REVIEW	RK	JT	RI
03/15/2023	DESIGN DEVELOPMENT REV 1	RK	JT	RI
12/14/2022	ISSUE FOR PERMIT	RK	JT	RI

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PAGE SIZE: 36" x 24"
PROJECT #: 08410

DC SYSTEM SIZE: 25,284.72 kWDC
AC SYSTEM SIZE: 20,000.00 kWAC
MODULE TYPE: (32,160) HANWHA 595W
(10,512) HANWHA 585W
ORIENTATION: ±55° TILT, 90°/270° AZI

PROJECT
25,284.72 KW GM SYSTEM AT
BLAIRS VALLEY
8691 BLUE SPRING ROAD
MERCERSBURG, PA 17236

DRAWING TITLE: SCHEDULES & CALCULATIONS

DRAWING #: E320

STRING VOLTAGE DROP CALCULATIONS SYSTEM 02		MAX TOTAL VOLTAGE DROP	2.71%
		AVERAGE TOTAL VOLTAGE DROP	1.41%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
02-01-01	#10AWG-CU	400	1.25%
02-01-02	#10AWG-CU	310	0.97%
02-01-03	#10AWG-CU	215	0.67%
02-01-04	#10AWG-CU	380	1.19%
02-01-05	#10AWG-CU	290	0.91%
02-01-06	#10AWG-CU	200	0.63%
02-01-07	#10AWG-CU	360	1.13%
02-01-08	#10AWG-CU	270	0.85%
02-01-09	#10AWG-CU	180	0.56%
02-01-10	#10AWG-CU	345	1.08%
02-01-11	#10AWG-CU	250	0.78%
02-01-12	#10AWG-CU	160	0.50%
02-01-13	#10AWG-CU	325	1.02%
02-01-14	#10AWG-CU	230	0.72%
02-01-15	#10AWG-CU	140	0.44%
02-01-16	#10AWG-CU	305	0.96%
02-01-17	#10AWG-CU	215	0.67%
02-01-18	#10AWG-CU	120	0.38%
02-01-19	#10AWG-CU	285	0.89%
02-01-20	#10AWG-CU	195	0.61%
02-01-21	#10AWG-CU	105	0.33%
02-02-01	#10AWG-CU	270	0.85%
02-02-02	#10AWG-CU	180	0.56%
02-02-03	#10AWG-CU	90	0.28%
02-02-04	#10AWG-CU	255	0.80%
02-02-05	#10AWG-CU	160	0.50%
02-02-06	#10AWG-CU	70	0.22%
02-02-07	#10AWG-CU	235	0.74%
02-02-08	#10AWG-CU	140	0.44%
02-02-09	#10AWG-CU	50	0.16%
02-02-10	#10AWG-CU	255	0.80%
02-02-11	#10AWG-CU	160	0.50%
02-02-12	#10AWG-CU	270	0.85%
02-02-13	#10AWG-CU	180	0.56%
02-02-14	#10AWG-CU	290	0.91%
02-02-15	#10AWG-CU	200	0.63%
02-02-16	#10AWG-CU	310	0.97%
02-02-17	#10AWG-CU	220	0.69%
02-02-18	#10AWG-CU	125	0.39%
02-02-19	#10AWG-CU	330	1.03%
02-02-20	#10AWG-CU	235	0.74%
02-03-01	#10AWG-CU	70	0.22%
02-03-02	#10AWG-CU	275	0.86%
02-03-03	#10AWG-CU	185	0.58%
02-03-04	#10AWG-CU	90	0.28%
02-03-05	#10AWG-CU	295	0.92%
02-03-06	#10AWG-CU	200	0.63%
02-03-07	#10AWG-CU	110	0.34%
02-03-08	#10AWG-CU	310	0.97%
02-03-09	#10AWG-CU	220	0.69%
02-03-10	#10AWG-CU	130	0.41%
02-03-11	#10AWG-CU	330	1.03%
02-03-12	#10AWG-CU	240	0.75%
02-03-13	#10AWG-CU	150	0.47%
02-03-14	#10AWG-CU	350	1.10%
02-03-15	#10AWG-CU	260	0.81%
02-03-16	#10AWG-CU	165	0.52%
02-03-17	#10AWG-CU	370	1.16%
02-03-18	#10AWG-CU	280	0.88%
02-03-19	#10AWG-CU	185	0.58%
02-03-20	#10AWG-CU	390	1.22%
02-04-01	#10AWG-CU	290	0.91%
02-04-02	#10AWG-CU	200	0.63%
02-04-03	#10AWG-CU	405	1.27%
02-04-04	#10AWG-CU	310	0.97%
02-04-05	#10AWG-CU	220	0.69%
02-04-06	#10AWG-CU	420	1.32%
02-04-07	#10AWG-CU	330	1.03%
02-04-08	#10AWG-CU	240	0.75%
02-04-09	#10AWG-CU	440	1.38%
02-04-10	#10AWG-CU	350	1.10%
02-04-11	#10AWG-CU	260	0.81%
02-04-12	#10AWG-CU	460	1.44%
02-04-13	#10AWG-CU	370	1.16%
02-04-14	#10AWG-CU	275	0.86%
02-04-15	#10AWG-CU	480	1.50%
02-04-16	#10AWG-CU	385	1.21%
02-04-17	#10AWG-CU	295	0.92%
02-04-18	#10AWG-CU	500	1.57%
02-04-19	#10AWG-CU	405	1.27%
02-04-20	#10AWG-CU	315	0.99%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 02		MAX TOTAL VOLTAGE DROP	2.71%
		AVERAGE TOTAL VOLTAGE DROP	1.41%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
02-05-01	#8AWG-CU	510	1.00%
02-05-02	#8AWG-CU	420	0.83%
02-05-03	#8AWG-CU	530	1.04%
02-05-04	#8AWG-CU	440	0.86%
02-05-05	#8AWG-CU	550	1.08%
02-05-06	#8AWG-CU	460	0.90%
02-05-07	#8AWG-CU	570	1.12%
02-05-08	#8AWG-CU	475	0.93%
02-05-09	#8AWG-CU	590	1.16%
02-05-10	#8AWG-CU	495	0.97%
02-05-11	#8AWG-CU	910	1.79%
02-05-12	#8AWG-CU	820	1.61%
02-05-13	#8AWG-CU	930	1.83%
02-05-14	#8AWG-CU	840	1.65%
02-05-15	#8AWG-CU	950	1.87%
02-05-16	#8AWG-CU	855	1.68%
02-05-17	#8AWG-CU	970	1.91%
02-05-18	#8AWG-CU	875	1.72%
02-05-19	#8AWG-CU	985	1.94%
02-05-20	#8AWG-CU	895	1.76%
02-06-01	#8AWG-CU	1285	2.53%
02-06-02	#8AWG-CU	1255	2.47%
02-06-03	#8AWG-CU	1350	2.65%
02-06-04	#8AWG-CU	1225	2.41%
02-06-05	#8AWG-CU	1320	2.59%
02-06-06	#8AWG-CU	1200	2.36%
02-06-07	#8AWG-CU	1290	2.54%
02-06-08	#8AWG-CU	1380	2.71%
02-06-09	#8AWG-CU	1170	2.30%
02-06-10	#8AWG-CU	1260	2.48%
02-06-11	#8AWG-CU	1350	2.65%
02-06-12	#8AWG-CU	1140	2.24%
02-06-13	#8AWG-CU	1230	2.42%
02-06-14	#8AWG-CU	1320	2.59%
02-06-15	#8AWG-CU	1110	2.18%
02-06-16	#8AWG-CU	1200	2.36%
02-06-17	#8AWG-CU	1290	2.54%
02-06-18	#8AWG-CU	1080	2.12%
02-06-19	#8AWG-CU	1170	2.30%
02-06-20	#8AWG-CU	1265	2.49%
02-06-21	#8AWG-CU	1050	2.06%
02-07-01	#8AWG-CU	1150	2.26%
02-07-02	#8AWG-CU	1240	2.44%
02-07-03	#8AWG-CU	1025	2.01%
02-07-04	#8AWG-CU	1120	2.20%
02-07-05	#8AWG-CU	1210	2.38%
02-07-06	#8AWG-CU	1000	1.97%
02-07-07	#8AWG-CU	1090	2.14%
02-07-08	#8AWG-CU	1180	2.32%
02-07-09	#8AWG-CU	970	1.91%
02-07-10	#8AWG-CU	1060	2.08%
02-07-11	#8AWG-CU	1150	2.26%
02-07-12	#8AWG-CU	940	1.85%
02-07-13	#8AWG-CU	1030	2.02%
02-07-14	#8AWG-CU	1120	2.20%
02-07-15	#8AWG-CU	910	1.79%
02-07-16	#8AWG-CU	1000	1.97%
02-07-17	#8AWG-CU	1090	2.14%
02-07-18	#8AWG-CU	880	1.73%
02-07-19	#8AWG-CU	970	1.91%
02-07-20	#8AWG-CU	1065	2.09%
02-07-21	#8AWG-CU	850	1.67%
02-07-22	#8AWG-CU	940	1.85%
02-08-01	#8AWG-CU	1050	2.06%
02-08-02	#8AWG-CU	840	1.65%
02-08-03	#8AWG-CU	930	1.83%
02-08-04	#8AWG-CU	1020	2.00%
02-08-05	#8AWG-CU	810	1.59%
02-08-06	#8AWG-CU	900	1.77%
02-08-07	#8AWG-CU	990	1.95%
02-08-08	#8AWG-CU	780	1.53%
02-08-09	#8AWG-CU	870	1.71%
02-08-10	#8AWG-CU	965	1.90%
02-08-11	#8AWG-CU	750	1.47%
02-08-12	#8AWG-CU	840	1.65%
02-08-13	#8AWG-CU	935	1.84%
02-08-14	#8AWG-CU	720	1.41%
02-08-15	#8AWG-CU	810	1.59%
02-08-16	#8AWG-CU	905	1.78%
02-08-17	#8AWG-CU	690	1.36%
02-08-18	#8AWG-CU	785	1.54%
02-08-19	#8AWG-CU	875	1.72%
02-08-20	#8AWG-CU	660	1.30%
02-08-21	#8AWG-CU	755	1.48%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 02		MAX TOTAL VOLTAGE DROP	2.71%
		AVERAGE TOTAL VOLTAGE DROP	1.41%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
02-09-01	#10AWG-CU	850	2.66%
02-09-02	#10AWG-CU	640	2.01%
02-09-03	#10AWG-CU	730	2.29%
02-09-04	#10AWG-CU	820	2.57%
02-09-05	#10AWG-CU	610	1.91%
02-09-06	#10AWG-CU	700	2.19%
02-09-07	#10AWG-CU	790	2.48%
02-09-08	#10AWG-CU	670	2.10%
02-09-09	#10AWG-CU	765	2.40%
02-09-10	#10AWG-CU	640	2.01%
02-09-11	#10AWG-CU	735	2.30%
02-09-12	#10AWG-CU	610	1.91%
02-09-13	#10AWG-CU	705	2.21%
02-09-14	#10AWG-CU	580	1.82%
02-09-15	#10AWG-CU	675	2.12%
02-09-16	#10AWG-CU	555	1.74%
02-09-17	#10AWG-CU	645	2.02%
02-09-18	#10AWG-CU	525	1.65%
02-09-19	#10AWG-CU	615	1.93%
02-09-20	#10AWG-CU	495	1.55%
02-09-21	#10AWG-CU	585	1.83%
02-10-01	#10AWG-CU	470	1.47%
02-10-02	#10AWG-CU	565	1.77%
02-10-03	#10AWG-CU	440	1.38%
02-10-04	#10AWG-CU	535	1.68%
02-10-05	#10AWG-CU	410	1.28%
02-10-06	#10AWG-CU	505	1.58%
02-10-07	#10AWG-CU	380	1.19%
02-10-08	#10AWG-CU	475	1.49%
02-10-09	#10AWG-CU	355	1.11%
02-10-10	#10AWG-CU	445	1.39%
02-10-11	#10AWG-CU	325	1.02%
02-10-12	#10AWG-CU	415	1.30%
02-10-13	#10AWG-CU	295	0.92%
02-10-14	#10AWG-CU	385	1.21%
02-10-15	#10AWG-CU	355	1.11%
02-10-16	#10AWG-CU	325	1.02%
02-10-17	#10AWG-CU	300	0.94%
02-10-18	#10AWG-CU	270	0.85%
02-10-19	#10AWG-CU	240	0.75%
02-10-20	#10AWG-CU	210	0.66%
02-10-21	#10AWG-CU	180	0.56%
02-10-22	#10AWG-CU	150	0.47%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 03		MAX TOTAL VOLTAGE DROP	2.26%
		AVERAGE TOTAL VOLTAGE DROP	1.08%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
03-01-01	#10AWG-CU	720	2.26%
03-01-02	#10AWG-CU	625	1.96%
03-01-03	#10AWG-CU	635	1.99%
03-01-04	#10AWG-CU	700	2.19%
03-01-05	#10AWG-CU	605	1.90%
03-01-06	#10AWG-CU	615	1.93%
03-01-07	#10AWG-CU	680	2.13%
03-01-08	#10AWG-CU	590	1.85%
03-01-09	#10AWG-CU	595	1.86%
03-01-10	#10AWG-CU	660	2.07%
03-01-11	#10AWG-CU	570	1.79%
03-01-12	#10AWG-CU	580	1.82%
03-01-13	#10AWG-CU	640	2.01%
03-01-14	#10AWG-CU	550	1.72%
03-01-15	#10AWG-CU	560	1.75%
03-01-16	#10AWG-CU	625	1.96%
03-01-17	#10AWG-CU	530	1.66%
03-01-18	#10AWG-CU	540	1.69%
03-01-19	#10AWG-CU	605	1.90%
03-01-20	#10AWG-CU	510	1.60%
03-01-21	#10AWG-CU	520	1.63%
03-02-01	#10AWG-CU	590	1.85%
03-02-02	#10AWG-CU	495	1.55%
03-02-03	#10AWG-CU	505	1.58%
03-02-04	#10AWG-CU	570	1.79%
03-02-05	#10AWG-CU	480	1.50%
03-02-06	#10AWG-CU	485	1.52%
03-02-07	#10AWG-CU	550	1.72%
03-02-08	#10AWG-CU	460	1.44%
03-02-09	#10AWG-CU	470	1.47%
03-02-10	#10AWG-CU	530	1.66%
03-02-11	#10AWG-CU	440	1.38%
03-02-12	#10AWG-CU	450	1.41%
03-02-13	#10AWG-CU	420	1.32%
03-02-14	#10AWG-CU	430	1.35%
03-02-15	#10AWG-CU	400	1.25%
03-02-16	#10AWG-CU	410	1.28%
03-02-17	#10AWG-CU	385	1.21%
03-02-18	#10AWG-CU	390	1.22%
03-02-19	#10AWG-CU	365	1.14%
03-02-20	#10AWG-CU	375	1.18%
03-02-21	#10AWG-CU	345	1.08%
03-02-22	#10AWG-CU	355	1.11%
03-03-01	#10AWG-CU	330	1.03%
03-03-02	#10AWG-CU	340	1.07%
03-03-03	#10AWG-CU	310	0.97%
03-03-04	#10AWG-CU	320	1.00%
03-03-05	#10AWG-CU	295	0.92%
03-03-06	#10AWG-CU	300	0.94%
03-03-07	#10AWG-CU	275	0.86%
03-03-08	#10AWG-CU	280	0.88%
03-03-09	#10AWG-CU	255	0.80%
03-03-10	#10AWG-CU	265	0.83%
03-03-11	#10AWG-CU	235	0.74%
03-03-12	#10AWG-CU	245	0.77%
03-03-13	#10AWG-CU	225	0.71%
03-03-14	#10AWG-CU	205	0.64%
03-03-15	#10AWG-CU	185	0.58%
03-03-16	#10AWG-CU	165	0.52%
03-03-17	#10AWG-CU	150	0.47%
03-03-18	#10AWG-CU	130	0.41%
03-03-19	#10AWG-CU	110	0.34%
03-03-20	#10AWG-CU	90	0.28%
03-03-21	#10AWG-CU	70	0.22%
03-03-22	#10AWG-CU	55	0.17%
03-04-01	#10AWG-CU	250	0.78%
03-04-02	#10AWG-CU	160	0.50%
03-04-03	#10AWG-CU	65	0.20%
03-04-04	#10AWG-CU	270	0.85%
03-04-05	#10AWG-CU	175	0.55%
03-04-06	#10AWG-CU	85	0.27%
03-04-07	#10AWG-CU	285	0.89%
03-04-08	#10AWG-CU	195	0.61%
03-04-09	#10AWG-CU	105	0.33%
03-04-10	#10AWG-CU	305	0.96%
03-04-11	#10AWG-CU	215	0.67%
03-04-12	#10AWG-CU	125	0.39%
03-04-13	#10AWG-CU	325	1.02%
03-04-14	#10AWG-CU	235	0.74%
03-04-15	#10AWG-CU	145	0.45%
03-04-16	#10AWG-CU	345	1.08%
03-04-17	#10AWG-CU	255	0.80%
03-04-18	#10AWG-CU	160	0.50%
03-04-19	#10AWG-CU	365	1.14%
03-04-20	#10AWG-CU	270	0.85%
03-04-21	#10AWG-CU	180	0.56%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 03		MAX TOTAL VOLTAGE DROP	2.26%
		AVERAGE TOTAL VOLTAGE DROP	1.08%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
03-05-01	#10AWG-CU	380	1.19%
03-05-02	#10AWG-CU	285	0.89%
03-05-03	#10AWG-CU	195	0.61%
03-05-04	#10AWG-CU	400	1.25%
03-05-05	#10AWG-CU	305	0.96%
03-05-06	#10AWG-CU	215	0.67%
03-05-07	#10AWG-CU	415	1.30%
03-05-08	#10AWG-CU	325	1.02%
03-05-09	#10AWG-CU	235	0.74%
03-05-10	#10AWG-CU	435	1.36%
03-05-11	#10AWG-CU	345	1.08%
03-05-12	#10AWG-CU	255	0.80%
03-05-13	#10AWG-CU	455	1.43%
03-05-14	#10AWG-CU	365	1.14%
03-05-15	#10AWG-CU	270	0.85%
03-05-16	#10AWG-CU	475	1.49%
03-05-17	#10AWG-CU	380	1.19%
03-05-18	#10AWG-CU	290	0.91%
03-05-19	#10AWG-CU	495	1.55%
03-05-20	#10AWG-CU	400	1.25%
03-05-21	#10AWG-CU	310	0.97%
03-06-01	#10AWG-CU	55	0.17%
03-06-02	#10AWG-CU	65	0.20%
03-06-03	#10AWG-CU	85	0.27%
03-06-04	#10AWG-CU	235	0.74%
03-06-05	#10AWG-CU	245	0.77%
03-06-06	#10AWG-CU	265	0.83%
03-06-07	#10AWG-CU	105	0.33%
03-06-08	#10AWG-CU	195	0.61%
03-06-09	#10AWG-CU	285	0.89%
03-06-10	#10AWG-CU	120	0.38%
03-06-11	#10AWG-CU	215	0.67%
03-06-12	#10AWG-CU	305	0.96%
03-06-13	#10AWG-CU	140	0.44%
03-06-14	#10AWG-CU	230	0.72%
03-06-15	#10AWG-CU	325	1.02%
03-06-16	#10AWG-CU	160	0.50%
03-06-17	#10AWG-CU	250	0.78%
03-06-18	#10AWG-CU	345	1.08%
03-06-19	#10AWG-CU	180	0.56%
03-06-20	#10AWG-CU	270	0.85%
03-06-21	#10AWG-CU	360	1.13%
03-07-01	#10AWG-CU	55	0.17%
03-07-02	#10AWG-CU	145	0.45%
03-07-03	#10AWG-CU	240	0.75%
03-07-04	#10AWG-CU	75	0.24%
03-07-05	#10AWG-CU	165	0.52%
03-07-06	#10AWG-CU	255	0.80%
03-07-07	#10AWG-CU	95	0.30%
03-07-08	#10AWG-CU	185	0.58%
03-07-09	#10AWG-CU	275	0.86%
03-07-10	#10AWG-CU	110	0.34%
03-07-11	#10AWG-CU	205	0.64%
03-07-12	#10AWG-CU	295	0.92%
03-07-13	#10AWG-CU	130	0.41%
03-07-14	#10AWG-CU	225	0.71%
03-07-15	#10AWG-CU	315	0.99%
03-07-16	#10AWG-CU	150	0.47%
03-07-17	#10AWG-CU	240	0.75%
03-07-18	#10AWG-CU	335	1.05%
03-07-19	#10AWG-CU	170	0.53%
03-07-20	#10AWG-CU	260	0.81%
03-07-21	#10AWG-CU	350	1.10%
03-08-01	#10AWG-CU	185	0.58%
03-08-02	#10AWG-CU	275	0.86%
03-08-03	#10AWG-CU	365	1.14%
03-08-04	#10AWG-CU	205	0.64%
03-08-05	#10AWG-CU	295	0.92%
03-08-06	#10AWG-CU	385	1.21%
03-08-07	#10AWG-CU	220	0.69%
03-08-08	#10AWG-CU	315	0.99%
03-08-09	#10AWG-CU	405	1.27%
03-08-10	#10AWG-CU	240	0.75%
03-08-11	#10AWG-CU	330	1.03%
03-08-12	#10AWG-CU	425	1.33%
03-08-13	#10AWG-CU	260	0.81%
03-08-14	#10AWG-CU	350	1.10%
03-08-15	#10AWG-CU	440	1.38%
03-08-16	#10AWG-CU	280	0.88%
03-08-17	#10AWG-CU	370	1.16%
03-08-18	#10AWG-CU	460	1.44%
03-08-19	#10AWG-CU	300	0.94%
03-08-20	#10AWG-CU	390	1.22%
03-08-21	#10AWG-CU	480	1.50%
03-08-22	#10AWG-CU	315	0.99%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 03		MAX TOTAL VOLTAGE DROP	2.26%
		AVERAGE TOTAL VOLTAGE DROP	1.08%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
03-09-01	#10AWG-CU	405	1.27%
03-09-02	#10AWG-CU	495	1.55%
03-09-03	#10AWG-CU	335	1.05%
03-09-04	#10AWG-CU	425	1.33%
03-09-05	#10AWG-CU	515	1.61%
03-09-06	#10AWG-CU	350	1.10%
03-09-07	#10AWG-CU	445	1.39%
03-09-08	#10AWG-CU	535	1.68%
03-09-09	#10AWG-CU	370	1.16%
03-09-10	#10AWG-CU	465	1.46%
03-09-11	#10AWG-CU	555	1.74%
03-09-12	#10AWG-CU	390	1.22%
03-09-13	#10AWG-CU	480	1.50%
03-09-14	#10AWG-CU	575	1.80%
03-09-15	#10AWG-CU	410	1.28%
03-09-16	#10AWG-CU	500	1.57%
03-09-17	#10AWG-CU	590	1.85%
03-09-18	#10AWG-CU	430	1.35%
03-09-19	#10AWG-CU	520	1.63%
03-09-20	#10AWG-CU	610	1.91%
03-09-21	#10AWG-CU	445	1.39%
03-09-22	#10AWG-CU	540	1.69%
03-10-01	#10AWG-CU	250	0.78%
03-10-02	#10AWG-CU	55	0.17%
03-10-03	#10AWG-CU	145	0.45%
03-10-04	#10AWG-CU	240	0.75%
03-10-05	#10AWG-CU	75	0.24%
03-10-06	#10AWG-CU	165	0.52%
03-10-07	#10AWG-CU	255	0.80%
03-10-08	#10AWG-CU	95	0.30%
03-10-09	#10AWG-CU	185	0.58%
03-10-10	#10AWG-CU	275	0.86%
03-10-11	#10AWG-CU	110	0.34%
03-10-12	#10AWG-CU	205	0.64%
03-10-13	#10AWG-CU	295	0.92%
03-10-14	#10AWG-CU	130	0.41%
03-10-15	#10AWG-CU	220	0.69%
03-10-16	#10AWG-CU	315	0.99%
03-10-17	#10AWG-CU	150	0.47%
03-10-18	#10AWG-CU	240	0.75%
03-10-19	#10AWG-CU	335	1.05%
03-10-20	#10AWG-CU	170	0.53%
03-10-21	#10AWG-CU	260	0.81%
03-10-22	#10AWG-CU	350	1.10%
03-11-01	#10AWG-CU	185	0.58%
03-11-02	#10AWG-CU	275	0.86%
03-11-03	#10AWG-CU	365	1.14%
03-11-04	#10AWG-CU	205	0.64%
03-11-05	#10AWG-CU	295	0.92%
03-11-06	#10AWG-CU	385	1.21%
03-11-07	#10AWG-CU	220	0.69%
03-11-08	#10AWG-CU	315	0.99%
03-11-09	#10AWG-CU	405	1.27%
03-11-10	#10AWG-CU	240	0.75%
03-11-11	#10AWG-CU	330	1.03%
03-11-12	#10AWG-CU	425	1.33%
03-11-13	#10AWG-CU	260	0.81%
03-11-14	#10AWG-CU	350	1.10%
03-11-15	#10AWG-CU	440	1.38%
03-11-16	#10AWG-CU	280	0.88%
03-11-17	#10AWG-CU	370	1.16%
03-11-18	#10AWG-CU	460	1.44%
03-11-19	#10AWG-CU	300	0.94%
03-11-20	#10AWG-CU	390	1.22%
03-11-21	#10AWG-CU	480	1.50%
03-11-22	#10AWG-CU	315	0.99%
03-12-01	#10AWG-CU	405	1.27%
03-12-02	#10AWG-CU	495	1.55%
03-12-03	#10AWG-CU	420	1.32%
03-12-04	#10AWG-CU	515	1.61%
03-12-05	#10AWG-CU	440	1.38%
03-12-06	#10AWG-CU	535	1.68%
03-12-07	#10AWG-CU	460	1.44%
03-12-08	#10AWG-CU	550	1.72%
03-12-09	#10AWG-CU	480	1.50%
03-12-10	#10AWG-CU	570	1.79%
03-12-11	#10AWG-CU	500	1.57%
03-12-12	#10AWG-CU	590	1.85%
03-12-13	#10AWG-CU	515	1.61%
03-12-14	#10AWG-CU	610	1.91%
03-12-15	#10AWG-CU	535	1.68%
03-12-16	#10AWG-CU	630	1.97%
03-12-17	#10AWG-CU	555	1.74%
03-12-18	#10AWG-CU	645	2.02%
03-12-19	#10AWG-CU	575	1.80%
03-12-20	#10AWG-CU	665	2.08%
03-12-21	#10AWG-CU	595	1.86%
03-12-22	#10AWG-CU	685	2.15%

DRAWING NOTES:

1. DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS. CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

DRAWING TITLE: SCHEDULES & CALCULATIONS

DRAWING #: E321

NOT FOR CONSTRUCTION

DATE	REVISION DESCRIPTION	PM	ENG	CHK
01/26/2024	DESIGN DEVELOPMENT REV 2	RK	JT	RI
07/14/2023	FOR UTILITY REVIEW	RK	JT	RI
03/15/2023	DESIGN DEVELOPMENT REV 1	RK	JT	RI
12/14/2022	ISSUE FOR PERMIT	RK	JT	RI

ENGINEER: PUREPOWER ENGINEERING, WWW.PUREPOWER.COM, PA LICENSE No. 079896

EPC: Qcells — Q.CELLS ENABLE, 9 EAST 37TH STREET, 12TH FLOOR, NEW YORK, NEW YORK 10016, WWW.US.QCELLS.COM/CIC-EPC

PAGE SIZE: 36" x 24"

PROJECT #: 08410

DC SYSTEM SIZE: 25,284.72 kWDC
AC SYSTEM SIZE: 20,000.00 kWAC
MODULE TYPE: (32,160) HANWHA 595W, (10,512) HANWHA 585W
ORIENTATION: ±55° TILT, 90°/270° AZI

PROJECT: 25,284.72 KW GM SYSTEM AT BLAIRS VALLEY, 8691 BLUE SPRING ROAD, MERCERSBURG, PA 17236

PLOT DATE: 1/26/2024 2:41 PM

RULER IN INCHES

PLOT DATE: 1/26/2024 2:41 PM

STRING VOLTAGE DROP CALCULATIONS SYSTEM 04		MAX TOTAL VOLTAGE DROP	2.49%
		AVERAGE TOTAL VOLTAGE DROP	1.18%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
04-01-01	#10AWG-CU	795	2.49%
04-01-02	#10AWG-CU	700	2.19%
04-01-03	#10AWG-CU	775	2.43%
04-01-04	#10AWG-CU	680	2.13%
04-01-05	#10AWG-CU	755	2.37%
04-01-06	#10AWG-CU	665	2.08%
04-01-07	#10AWG-CU	735	2.30%
04-01-08	#10AWG-CU	645	2.02%
04-01-09	#10AWG-CU	715	2.24%
04-01-10	#10AWG-CU	625	1.96%
04-01-11	#10AWG-CU	700	2.19%
04-01-12	#10AWG-CU	605	1.90%
04-01-13	#10AWG-CU	680	2.13%
04-01-14	#10AWG-CU	585	1.83%
04-01-15	#10AWG-CU	660	2.07%
04-01-16	#10AWG-CU	570	1.79%
04-01-17	#10AWG-CU	640	2.01%
04-01-18	#10AWG-CU	550	1.72%
04-01-19	#10AWG-CU	620	1.94%
04-01-20	#10AWG-CU	530	1.66%
04-01-21	#10AWG-CU	605	1.90%
04-01-22	#10AWG-CU	510	1.60%
04-02-01	#10AWG-CU	590	1.85%
04-02-02	#10AWG-CU	495	1.55%
04-02-03	#10AWG-CU	570	1.79%
04-02-04	#10AWG-CU	475	1.49%
04-02-05	#10AWG-CU	550	1.72%
04-02-06	#10AWG-CU	460	1.44%
04-02-07	#10AWG-CU	530	1.66%
04-02-08	#10AWG-CU	440	1.38%
04-02-09	#10AWG-CU	515	1.61%
04-02-10	#10AWG-CU	420	1.32%
04-02-11	#10AWG-CU	495	1.55%
04-02-12	#10AWG-CU	400	1.25%
04-02-13	#10AWG-CU	475	1.49%
04-02-14	#10AWG-CU	380	1.19%
04-02-15	#10AWG-CU	455	1.43%
04-02-16	#10AWG-CU	365	1.14%
04-02-17	#10AWG-CU	435	1.36%
04-02-18	#10AWG-CU	345	1.08%
04-02-19	#10AWG-CU	420	1.32%
04-02-20	#10AWG-CU	325	1.02%
04-02-21	#10AWG-CU	305	0.96%
04-02-22	#10AWG-CU	290	0.91%
04-03-01	#10AWG-CU	275	0.86%
04-03-02	#10AWG-CU	255	0.80%
04-03-03	#10AWG-CU	235	0.74%
04-03-04	#10AWG-CU	260	0.81%
04-03-05	#10AWG-CU	170	0.53%
04-03-06	#10AWG-CU	75	0.24%
04-03-07	#10AWG-CU	240	0.75%
04-03-08	#10AWG-CU	150	0.47%
04-03-09	#10AWG-CU	55	0.17%
04-03-10	#10AWG-CU	245	0.77%
04-03-11	#10AWG-CU	155	0.49%
04-03-12	#10AWG-CU	65	0.20%
04-03-13	#10AWG-CU	115	0.36%
04-03-14	#10AWG-CU	210	0.66%
04-03-15	#10AWG-CU	120	0.38%
04-03-16	#10AWG-CU	215	0.67%
04-03-17	#10AWG-CU	295	0.92%
04-03-18	#10AWG-CU	200	0.63%
04-03-19	#10AWG-CU	110	0.34%
04-03-20	#10AWG-CU	50	0.16%
04-03-21	#10AWG-CU	140	0.44%
04-03-22	#10AWG-CU	235	0.74%
04-04-01	#10AWG-CU	100	0.31%
04-04-02	#10AWG-CU	120	0.38%
04-04-03	#10AWG-CU	140	0.44%
04-04-04	#10AWG-CU	160	0.50%
04-04-05	#10AWG-CU	180	0.56%
04-04-06	#10AWG-CU	195	0.61%
04-04-07	#10AWG-CU	215	0.67%
04-04-08	#10AWG-CU	235	0.74%
04-04-09	#10AWG-CU	255	0.80%
04-04-10	#10AWG-CU	270	0.85%
04-04-11	#10AWG-CU	365	1.14%
04-04-12	#10AWG-CU	290	0.91%
04-04-13	#10AWG-CU	385	1.21%
04-04-14	#10AWG-CU	310	0.97%
04-04-15	#10AWG-CU	405	1.27%
04-04-16	#10AWG-CU	330	1.03%
04-04-17	#10AWG-CU	420	1.32%
04-04-18	#10AWG-CU	350	1.10%
04-04-19	#10AWG-CU	440	1.38%
04-04-20	#10AWG-CU	365	1.14%
04-04-21	#10AWG-CU	455	1.43%
04-04-22	#10AWG-CU	385	1.21%
04-04-23	#10AWG-CU	480	1.50%
04-04-24	#10AWG-CU	405	1.27%
04-04-25	#10AWG-CU	500	1.57%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 04		MAX TOTAL VOLTAGE DROP	2.49%
		AVERAGE TOTAL VOLTAGE DROP	1.18%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
04-05-01	#10AWG-CU	565	1.77%
04-05-02	#10AWG-CU	475	1.49%
04-05-03	#10AWG-CU	385	1.21%
04-05-04	#10AWG-CU	290	0.91%
04-05-05	#10AWG-CU	200	0.63%
04-05-06	#10AWG-CU	110	0.34%
04-05-07	#10AWG-CU	585	1.83%
04-05-08	#10AWG-CU	495	1.55%
04-05-09	#10AWG-CU	400	1.25%
04-05-10	#10AWG-CU	310	0.97%
04-05-11	#10AWG-CU	220	0.69%
04-05-12	#10AWG-CU	125	0.39%
04-05-13	#10AWG-CU	605	1.90%
04-05-14	#10AWG-CU	510	1.60%
04-05-15	#10AWG-CU	420	1.32%
04-05-16	#10AWG-CU	330	1.03%
04-05-17	#10AWG-CU	235	0.74%
04-05-18	#10AWG-CU	145	0.45%
04-05-19	#10AWG-CU	625	1.96%
04-05-20	#10AWG-CU	530	1.66%
04-05-21	#10AWG-CU	440	1.38%
04-05-22	#10AWG-CU	350	1.10%
04-06-01	#10AWG-CU	250	0.78%
04-06-02	#10AWG-CU	160	0.50%
04-06-03	#10AWG-CU	635	1.99%
04-06-04	#10AWG-CU	545	1.71%
04-06-05	#10AWG-CU	455	1.43%
04-06-06	#10AWG-CU	360	1.13%
04-06-07	#10AWG-CU	270	0.85%
04-06-08	#10AWG-CU	180	0.56%
04-06-09	#10AWG-CU	565	1.77%
04-06-10	#10AWG-CU	470	1.47%
04-06-11	#10AWG-CU	380	1.19%
04-06-12	#10AWG-CU	290	0.91%
04-06-13	#10AWG-CU	195	0.61%
04-06-14	#10AWG-CU	585	1.83%
04-06-15	#10AWG-CU	490	1.54%
04-06-16	#10AWG-CU	400	1.25%
04-06-17	#10AWG-CU	305	0.96%
04-06-18	#10AWG-CU	215	0.67%
04-06-19	#10AWG-CU	600	1.88%
04-06-20	#10AWG-CU	510	1.60%
04-06-21	#10AWG-CU	415	1.30%
04-06-22	#10AWG-CU	325	1.02%
04-07-01	#10AWG-CU	55	0.17%
04-07-02	#10AWG-CU	440	1.38%
04-07-03	#10AWG-CU	345	1.08%
04-07-04	#10AWG-CU	255	0.80%
04-07-05	#10AWG-CU	165	0.52%
04-07-06	#10AWG-CU	70	0.22%
04-07-07	#10AWG-CU	460	1.44%
04-07-08	#10AWG-CU	365	1.14%
04-07-09	#10AWG-CU	275	0.86%
04-07-10	#10AWG-CU	185	0.58%
04-07-11	#10AWG-CU	90	0.28%
04-07-12	#10AWG-CU	480	1.50%
04-07-13	#10AWG-CU	385	1.21%
04-07-14	#10AWG-CU	295	0.92%
04-07-15	#10AWG-CU	200	0.63%
04-07-16	#10AWG-CU	110	0.34%
04-07-17	#10AWG-CU	495	1.55%
04-07-18	#10AWG-CU	405	1.27%
04-07-19	#10AWG-CU	310	0.97%
04-07-20	#10AWG-CU	220	0.69%
04-07-21	#10AWG-CU	130	0.41%
04-08-01	#10AWG-CU	510	1.60%
04-08-02	#10AWG-CU	420	1.32%
04-08-03	#10AWG-CU	325	1.02%
04-08-04	#10AWG-CU	235	0.74%
04-08-05	#10AWG-CU	145	0.45%
04-08-06	#10AWG-CU	530	1.66%
04-08-07	#10AWG-CU	440	1.38%
04-08-08	#10AWG-CU	345	1.08%
04-08-09	#10AWG-CU	255	0.80%
04-08-10	#10AWG-CU	165	0.52%
04-08-11	#10AWG-CU	550	1.72%
04-08-12	#10AWG-CU	455	1.43%
04-08-13	#10AWG-CU	365	1.14%
04-08-14	#10AWG-CU	275	0.86%
04-08-15	#10AWG-CU	180	0.56%
04-08-16	#10AWG-CU	570	1.79%
04-08-17	#10AWG-CU	475	1.49%
04-08-18	#10AWG-CU	385	1.21%
04-08-19	#10AWG-CU	290	0.91%
04-08-20	#10AWG-CU	200	0.63%
04-08-21	#10AWG-CU	585	1.83%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 04		MAX TOTAL VOLTAGE DROP	2.49%
		AVERAGE TOTAL VOLTAGE DROP	1.18%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
04-09-01	#10AWG-CU	490	1.54%
04-09-02	#10AWG-CU	400	1.25%
04-09-03	#10AWG-CU	305	0.96%
04-09-04	#10AWG-CU	215	0.67%
04-09-05	#10AWG-CU	600	1.88%
04-09-06	#10AWG-CU	510	1.60%
04-09-07	#10AWG-CU	415	1.30%
04-09-08	#10AWG-CU	325	1.02%
04-09-09	#10AWG-CU	235	0.74%
04-09-10	#10AWG-CU	620	1.94%
04-09-11	#10AWG-CU	530	1.66%
04-09-12	#10AWG-CU	435	1.36%
04-09-13	#10AWG-CU	345	1.08%
04-09-14	#10AWG-CU	255	0.80%
04-09-15	#10AWG-CU	640	2.01%
04-09-16	#10AWG-CU	545	1.71%
04-09-17	#10AWG-CU	455	1.43%
04-09-18	#10AWG-CU	365	1.14%
04-09-19	#10AWG-CU	270	0.85%
04-09-20	#10AWG-CU	660	2.07%
04-09-21	#10AWG-CU	565	1.77%
04-10-01	#10AWG-CU	255	0.80%
04-10-02	#10AWG-CU	165	0.52%
04-10-03	#10AWG-CU	70	0.22%
04-10-04	#10AWG-CU	460	1.44%
04-10-05	#10AWG-CU	365	1.14%
04-10-06	#10AWG-CU	275	0.86%
04-10-07	#10AWG-CU	185	0.58%
04-10-08	#10AWG-CU	90	0.28%
04-10-09	#10AWG-CU	480	1.50%
04-10-10	#10AWG-CU	385	1.21%
04-10-11	#10AWG-CU	295	0.92%
04-10-12	#10AWG-CU	200	0.63%
04-10-13	#10AWG-CU	110	0.34%
04-10-14	#10AWG-CU	495	1.55%
04-10-15	#10AWG-CU	405	1.27%
04-10-16	#10AWG-CU	310	0.97%
04-10-17	#10AWG-CU	220	0.69%
04-10-18	#10AWG-CU	130	0.41%
04-10-19	#10AWG-CU	515	1.61%
04-10-20	#10AWG-CU	425	1.33%
04-10-21	#10AWG-CU	330	1.03%
04-11-01	#10AWG-CU	235	0.74%
04-11-02	#10AWG-CU	145	0.45%
04-11-03	#10AWG-CU	530	1.66%
04-11-04	#10AWG-CU	440	1.38%
04-11-05	#10AWG-CU	345	1.08%
04-11-06	#10AWG-CU	255	0.80%
04-11-07	#10AWG-CU	165	0.52%
04-11-08	#10AWG-CU	550	1.72%
04-11-09	#10AWG-CU	455	1.43%
04-11-10	#10AWG-CU	365	1.14%
04-11-11	#10AWG-CU	275	0.86%
04-11-12	#10AWG-CU	180	0.56%
04-11-13	#10AWG-CU	570	1.79%
04-11-14	#10AWG-CU	475	1.49%
04-11-15	#10AWG-CU	385	1.21%
04-11-16	#10AWG-CU	290	0.91%
04-11-17	#10AWG-CU	200	0.63%
04-11-18	#10AWG-CU	585	1.83%
04-11-19	#10AWG-CU	495	1.55%
04-11-20	#10AWG-CU	405	1.27%
04-11-21	#10AWG-CU	310	0.97%
04-12-01	#10AWG-CU	215	0.67%
04-12-02	#10AWG-CU	600	1.88%
04-12-03	#10AWG-CU	510	1.60%
04-12-04	#10AWG-CU	415	1.30%
04-12-05	#10AWG-CU	325	1.02%
04-12-06	#10AWG-CU	235	0.74%
04-12-07	#10AWG-CU	620	1.94%
04-12-08	#10AWG-CU	530	1.66%
04-12-09	#10AWG-CU	435	1.36%
04-12-10	#10AWG-CU	345	1.08%
04-12-11	#10AWG-CU	255	0.80%
04-12-12	#10AWG-CU	640	2.01%
04-12-13	#10AWG-CU	545	1.71%
04-12-14	#10AWG-CU	455	1.43%
04-12-15	#10AWG-CU	365	1.14%
04-12-16	#10AWG-CU	270	0.85%
04-12-17	#10AWG-CU	660	2.07%
04-12-18	#10AWG-CU	565	1.77%
04-12-19	#10AWG-CU	475	1.49%
04-12-20	#10AWG-CU	385	1.21%
04-12-21	#10AWG-CU	290	0.91%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 05		MAX TOTAL VOLTAGE DROP	2.18%
		AVERAGE TOTAL VOLTAGE DROP	0.94%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
05-01-01	#10AWG-CU	640	2.01%
05-01-02	#10AWG-CU	545	1.71%
05-01-03	#10AWG-CU	455	1.43%
05-01-04	#10AWG-CU	365	1.14%
05-01-05	#10AWG-CU	270	0.85%
05-01-06	#10AWG-CU	620	1.94%
05-01-07	#10AWG-CU	530	1.66%
05-01-08	#10AWG-CU	435	1.36%
05-01-09	#10AWG-CU	345	1.08%
05-01-10	#10AWG-CU	255	0.80%
05-01-11	#10AWG-CU	600	1.88%
05-01-12	#10AWG-CU	510	1.60%
05-01-13	#10AWG-CU	415	1.30%
05-01-14	#10AWG-CU	325	1.02%
05-01-15	#10AWG-CU	235	0.74%
05-01-16	#10AWG-CU	585	1.83%
05-01-17	#10AWG-CU	490	1.54%
05-01-18	#10AWG-CU	400	1.25%
05-01-19	#10AWG-CU	305	0.96%
05-01-20	#10AWG-CU	215	0.67%
05-01-21	#10AWG-CU	565	1.77%
05-01-22	#10AWG-CU	470	1.47%
05-01-23	#10AWG-CU	380	1.19%
05-01-24	#10AWG-CU	290	0.91%
05-02-01	#10AWG-CU	200	0.63%
05-02-02	#10AWG-CU	550	1.72%
05-02-03	#10AWG-CU	455	1.43%
05-02-04	#10AWG-CU	365	1.14%
05-02-05	#10AWG-CU	275	0.86%
05-02-06	#10AWG-CU	180	0.56%
05-02-07	#10AWG-CU	530	1.66%
05-02-08	#10AWG-CU	440	1.38%
05-02-09	#10AWG-CU	345	1.08%
05-02-10	#10AWG-CU	255	0.80%
05-02-11	#10AWG-CU	165	0.52%
05-02-12	#10AWG-CU	510	1.60%
05-02-13	#10AWG-CU	420	1.32%
05-02-14	#10AWG-CU	325	1.02%
05-02-15	#10AWG-CU	235	0.74%
05-02-16	#10AWG-CU	145	0.45%
05-02-17	#10AWG-CU	490	1.54%
05-02-18	#10AWG-CU	400	1.25%
05-02-19	#10AWG-CU	310	0.97%
05-02-20	#10AWG-CU	215	0.67%
05-02-21	#10AWG-CU	125	0.39%
05-02-22	#10AWG-CU	475	1.49%
05-02-23	#10AWG-CU	380	1.19%
05-02-24	#10AWG-CU	290	0.91%
05-03-01	#10AWG-CU	200	0.63%
05-03-02	#10AWG-CU	110	0.34%
05-03-03	#10AWG-CU	460	1.44%
05-03-04	#10AWG-CU	365	1.14%
05-03-05	#10AWG-CU	275	0.86%
05-03-06	#10AWG-CU	185	0.58%
05-03-07	#10AWG-CU	90	0.28%
05-03-08	#10AWG-CU	440	1.38%
05-03-09	#10AWG-CU	350	1.10%
05-03-10	#10AWG-CU	255	0.80%
05-03-11	#10AWG-CU	165	0.52%
05-03-12	#10AWG-CU	70	0.22%
05-03-13	#10AWG-CU	420	1.32%
05-03-14	#10AWG-CU	330	1.03%
05-03-15	#10AWG-CU	235	0.74%
05-03-16	#10AWG-CU	145	0.45%
05-03-17	#10AWG-CU	55	0.17%
05-03-18	#10AWG-CU	435	1.36%
05-03-19	#10AWG-CU	340	1.07%
05-03-20	#10AWG-CU	250	0.78%
05-03-21	#10AWG-CU	160	0.50%
05-03-22	#10AWG-CU	65	0.20%
05-04-01	#10AWG-CU	255	0.80%
05-04-02	#10AWG-CU	165	0.52%
05-04-03	#10AWG-CU	160	0.50%
05-04-04	#10AWG-CU	250	0.78%
05-04-05	#10AWG-CU	345	1.08%
05-04-06	#10AWG-CU	240	0.75%
05-04-07	#10AWG-CU	145	0.45%
05-04-08	#10AWG-CU	140	0.44%
05-04-09	#10AWG-CU	230	0.72%
05-04-10	#10AWG-CU	325	1.02%
05-04-11	#10AWG-CU	220	0.69%
05-04-12	#10AWG-CU	125	0.39%
05-04-13	#10AWG-CU	120	0.38%
05-04-14	#10AWG-CU	215	0.67%
05-04-15	#10AWG-CU	305	0.96%
05-04-16	#10AWG-CU	200	0.63%
05-04-17	#10AWG-CU	110	0.34%
05-04-18	#10AWG-CU	105	0.33%
05-04-19	#10AWG-CU	195	0.61%
05-04-20	#10AWG-CU	285	0.89%
05-04-21	#10AWG-CU	180	0.56%
05-04-22	#10AWG-CU	90	0.28%
05-04-23	#10AWG-CU	160	0.50%
05-04-24	#10AWG-CU	70	0.22%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 05		MAX TOTAL VOLTAGE DROP	2.18%
		AVERAGE TOTAL VOLTAGE DROP	0.94%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
05-05-01	#10AWG-CU	145	0.45%
05-05-02	#10AWG-CU	55	0.17%
05-05-03	#10AWG-CU	160	0.50%
05-05-04	#10AWG-CU	65	0.20%
05-05-05	#10AWG-CU	175	0.55%
05-05-06	#10AWG-CU	85	0.27%
05-05-07	#10AWG-CU	140	0.44%
05-05-08	#10AWG-CU	235	0.74%
05-05-09	#10AWG-CU	150	0.47%
05-05-10	#10AWG-CU	245	0.77%
05-05-11	#10AWG-CU	170	0.53%
05-05-12	#10AWG-CU	265	0.83%
05-05-13	#10AWG-CU	195	0.61%
05-05-14	#10AWG-CU	105	0.33%
05-05-15	#10AWG-CU	100	0.31%
05-05-16	#10AWG-CU	190	0.60%
05-05-17	#10AWG-CU	280	0.88%
05-05-18	#10AWG-CU	215	0.67%
05-05-19	#10AWG-CU	125	0.39%
05-05-20	#10AWG-CU	120	0.38%
05-05-21	#10AWG-CU	210	0.66%
05-05-22	#10AWG-CU	300	0.94%
05-05-23	#10AWG-CU	235	0.74%
05-07-01	#10AWG-CU	400	1.25%
05-07-02	#10AWG-CU	490	1.54%
05-07-03	#10AWG-CU	260	0.81%
05-07-04	#10AWG-CU	325	1.02%
05-07-05	#10AWG-CU	420	1.32%
05-07-06	#10AWG-CU	515	1.61%
05-07-07	#10AWG-CU	280	0.88%
05-07-08	#10AWG-CU	345	1.08%
05-07-09	#10AWG-CU	435	1.36%
05-07-10	#10AWG-CU	530	1.66%
05-07-11	#10AWG-CU	300	0.94%
05-07-12	#10AWG-CU	365	1.14%
05-07-13	#10AWG-CU	455	1.43%
05-07-14	#10AWG-CU	545	1.71%
05-07-15	#10AWG-CU	320	1.00%
05-07-16	#10AWG-CU	385	1.21%
05-07-17	#10AWG-CU	475	1.49%
05-07-18	#10AWG-CU	565	1.77%
05-07-19	#10AWG-CU	340	1.07%
05-07-20	#10AWG-CU	400	1.25%
05-07-21	#10AWG-CU	495	1.55%
05-07-22	#10AWG-CU	585	1.83%
05-07-23	#10AWG-CU	355	1.11%
05-08-01	#10AWG-CU	415	1.30%
05-08-02	#10AWG-CU	510	1.60%
05-08-03	#10AWG-CU	600	1.88%
05-08-04	#10AWG-CU	370	1.16%
05-08-05	#10AWG-CU	435	1.36%
05-08-06	#10AWG-CU	525	1.65%
05-08-07	#10AWG-CU	620	1.94%
05-08-08	#10AWG-CU	390	1.22%
05-08-09	#10AWG-CU	455	1.43%
05-08-10	#10AWG-CU	545	1.71%
05-08-11	#10AWG-CU	635	1.99%
05-08-12	#10AWG-CU	410	1.28%
05-08-13	#10AWG-CU	475	1.49%
05-08-14	#10AWG-CU	565	1.77%
05-08-15	#10AWG-CU	655	2.05%
05-08-16	#10AWG-CU	430	1.35%
05-08-17	#10AWG-CU	490	1.54%
05-08-18	#10AWG-CU	585	1.83%
05-08-19	#10AWG-CU	675	2.12%
05-08-20	#10AWG-CU	450	1.41%
05-08-21	#10AWG-CU	510	1.60%
05-08-22	#10AWG-CU	600	1.88%
05-08-23	#10AWG-CU	695	2.18%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 05		MAX TOTAL VOLTAGE DROP	2.18%
		AVERAGE TOTAL VOLTAGE DROP	0.94%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
05-09-01	#10AWG-CU	295	0.92%
05-09-02	#10AWG-CU	385	1.21%
05-09-03	#10AWG-CU	475	1.49%
05-09-04	#10AWG-CU	275	0.86%
05-09-05	#10AWG-CU	365	1.14%
05-09-06	#10AWG-CU	455	1.43%
05-09-07	#10AWG-CU	255	0.80%
05-09-08	#10AWG-CU	345	1.08%
05-09-09	#10AWG-CU	440	1.38%
05-09-10	#10AWG-CU	235	0.74%
05-09-11	#10AWG-CU	330	1.03%
05-09-12	#10AWG-CU	420	1.32%
05-09-13	#10AWG-CU	215	0.67%
05-09-14	#10AWG-CU	310	0.97%
05-09-15	#10AWG-CU	400	1.25%
05-09-16	#10AWG-CU	200	0.63%
05-09-17	#10AWG-CU	290	0.91%
05-09-18	#10AWG-CU	380	1.19%
05-09-19	#10AWG-CU	180	0.56%
05-09-20	#10AWG-CU	270	0.85%
05-09-21	#10AWG-CU	360	1.13%
05-10-01	#10AWG-CU	165	0.52%
05-10-02	#10AWG-CU	255	0.80%
05-10-03	#10AWG-CU	350	1.10%
05-10-04	#10AWG-CU	145	0.45%
05-10-05	#10AWG-CU	240	0.75%
05-10-06	#10AWG-CU	330	1.03%
05-10-07	#10AWG-CU	125	0.39%
05-10-08	#10AWG-CU	220	0.69%
05-10-09	#10AWG-CU	310	0.97%
05-10-10	#10AWG-CU	110	0.34%
05-10-11	#10AWG-CU	200	0.63%
05-10-12	#10AWG-CU	290	0.91%
05-10-13	#10AWG-CU	90	0.28%
05-10-14	#10AWG-CU	180	0.56%
05-10-15	#10AWG-CU	270	0.85%
05-10-16	#10AWG-CU	70	0.22%
05-10-17	#10AWG-CU	160	0.50%
05-10-18	#10AWG-CU	255	0.80%
05-10-19	#10AWG-CU	50	0.16%
05-10-20	#10AWG-CU	145	0.45%
05-10-21	#10AWG-CU	235	0.74%
05-11-01	#10AWG-CU	200	0.63%
05-11-02	#10AWG-CU	290	0.91%
05-11-03	#10AWG-CU	380	1.19%
05-11-04	#10AWG-CU	180	0.56%
05-11-05	#10AWG-CU	270	0.85%
05-11-06	#10AWG-CU	360	1.13%
05-11-07	#10AWG-CU	160	0.50%
05-11-08	#10AWG-CU	250	0.78%
05-11-09	#10AWG-CU	345	1.08%
05-11-10	#10AWG-CU	140	0.44%
05-11-11	#10AWG-CU	235	0.74%
05-11-12	#10AWG-CU	325	1.02%
05-11-13	#10AWG-CU	120	0.38%
05-11-14	#10AWG-CU	215	0.67%
05-11-15	#10AWG-CU	305	0.96%
05-11-16	#10AWG-CU	105	0.33%
05-11-17	#10AWG-CU	195	0.61%
05-11-18	#10AWG-CU	285	0.89%
05-11-19	#10AWG-CU	85	0.27%
05-11-20	#10AWG-CU	175	0.55%
05-11-21	#10AWG-CU	265	0.83%
05-12-01	#10AWG-CU	70	0.22%
05-12-02	#10AWG-CU	160	0.50%
05-12-03	#10AWG-CU	255	0.80%
05-12-04	#10AWG-CU	50	0.16%
05-12-05	#10AWG-CU	145	0.45%
05-12-06	#10AWG-CU	235	0.74%
05-12-07	#10AWG-CU	70	0.22%
05-12-08	#10AWG-CU	160	0.50%
05-12-09	#10AWG-CU	250	0.78%
05-12-10	#10AWG-CU	90	0.28%
05-12-11	#10AWG-CU	180	0.56%
05-12-12	#10AWG-CU	270	0.85%
05-12-13	#10AWG-CU	105	0.33%
05-12-14	#10AWG-CU	200	0.63%
05-12-15	#10AWG-CU	290	0.91%
05-12-16	#10AWG-CU	125	0.39%
05-12-17	#10AWG-CU	220	0.69%
05-12-18	#10AWG-CU	310	0.97%
05-12-19	#10AWG-CU	145	0.45%
05-12-20	#10AWG-CU	235	0.74%
05-12-21	#10AWG-CU	330	1.03%

DRAWING NOTES:

1. DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS. CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

NOT FOR CONSTRUCTION

DATE	REVISION DESCRIPTION	PM	ENG	CHK
01/26/2024	DESIGN DEVELOPMENT REV 2	RK	JT	RI
07/14/2023	FOR UTILITY REVIEW	RK	JT	RI
03/15/2023	DESIGN DEVELOPMENT REV 1	RK	JT	RI
12/14/2022	ISSUE FOR PERMIT	RK	JT	RI

ENGINEER
PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
PA LICENSE No. 079896

EPC
Q.CELLS ENABLE
9 EAST 37TH STREET, 12TH FLOOR
NEW YORK, NY 10016
WWW.US.QCELLS.COM/CIC-EPC

PAGE SIZE: 36" x 24"
PROJECT #: 08410

DC SYSTEM SIZE: 25,284.72 kWDC
AC SYSTEM SIZE: 20,000.00 kWAC
MODULE TYPE: (32,160) HANWHA 595W
(10,512) HANWHA 585W
ORIENTATION: ±55° TILT, 90°/270° AZI

PROJECT
25,284.72 KW GM SYSTEM AT BLAIRS VALLEY
8691 BLUE SPRING ROAD
MERCERSBURG, PA 17236

DRAWING TITLE: SCHEDULES & CALCULATIONS

DRAWING #: E322

RULER IN INCHES:

PLOT DATE: 1/26/2024 2:44 PM

NOT FOR CONSTRUCTION

STRING VOLTAGE DROP CALCULATIONS SYSTEM 06		MAX TOTAL VOLTAGE DROP	2.08%
		AVERAGE TOTAL VOLTAGE DROP	0.99%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
06-01-01	#10AWG-CU	625	1.96%
06-01-02	#10AWG-CU	535	1.68%
06-01-03	#10AWG-CU	445	1.39%
06-01-04	#10AWG-CU	605	1.90%
06-01-05	#10AWG-CU	515	1.61%
06-01-06	#10AWG-CU	425	1.33%
06-01-07	#10AWG-CU	590	1.85%
06-01-08	#10AWG-CU	495	1.55%
06-01-09	#10AWG-CU	405	1.27%
06-01-10	#10AWG-CU	570	1.79%
06-01-11	#10AWG-CU	480	1.50%
06-01-12	#10AWG-CU	385	1.21%
06-01-13	#10AWG-CU	550	1.72%
06-01-14	#10AWG-CU	460	1.44%
06-01-15	#10AWG-CU	365	1.14%
06-01-16	#10AWG-CU	530	1.66%
06-01-17	#10AWG-CU	440	1.38%
06-01-18	#10AWG-CU	350	1.10%
06-01-19	#10AWG-CU	510	1.60%
06-01-20	#10AWG-CU	420	1.32%
06-01-21	#10AWG-CU	330	1.03%
06-01-22	#10AWG-CU	495	1.55%
06-02-01	#10AWG-CU	405	1.27%
06-02-02	#10AWG-CU	315	0.99%
06-02-03	#10AWG-CU	480	1.50%
06-02-04	#10AWG-CU	385	1.21%
06-02-05	#10AWG-CU	295	0.92%
06-02-06	#10AWG-CU	460	1.44%
06-02-07	#10AWG-CU	370	1.16%
06-02-08	#10AWG-CU	275	0.86%
06-02-09	#10AWG-CU	440	1.38%
06-02-10	#10AWG-CU	350	1.10%
06-02-11	#10AWG-CU	260	0.81%
06-02-12	#10AWG-CU	420	1.32%
06-02-13	#10AWG-CU	330	1.03%
06-02-14	#10AWG-CU	240	0.75%
06-02-15	#10AWG-CU	405	1.27%
06-02-16	#10AWG-CU	310	0.97%
06-02-17	#10AWG-CU	220	0.69%
06-02-18	#10AWG-CU	385	1.21%
06-02-19	#10AWG-CU	290	0.91%
06-02-20	#10AWG-CU	200	0.63%
06-02-21	#10AWG-CU	365	1.14%
06-02-22	#10AWG-CU	275	0.86%
06-03-01	#10AWG-CU	185	0.58%
06-03-02	#10AWG-CU	350	1.10%
06-03-03	#10AWG-CU	260	0.81%
06-03-04	#10AWG-CU	165	0.52%
06-03-05	#10AWG-CU	330	1.03%
06-03-06	#10AWG-CU	240	0.75%
06-03-07	#10AWG-CU	150	0.47%
06-03-08	#10AWG-CU	310	0.97%
06-03-09	#10AWG-CU	220	0.69%
06-03-10	#10AWG-CU	130	0.41%
06-03-11	#10AWG-CU	295	0.92%
06-03-12	#10AWG-CU	200	0.63%
06-03-13	#10AWG-CU	110	0.34%
06-03-14	#10AWG-CU	275	0.86%
06-03-15	#10AWG-CU	185	0.58%
06-03-16	#10AWG-CU	90	0.28%
06-03-17	#10AWG-CU	255	0.80%
06-03-18	#10AWG-CU	165	0.52%
06-03-19	#10AWG-CU	70	0.22%
06-03-20	#10AWG-CU	235	0.74%
06-03-21	#10AWG-CU	145	0.45%
06-03-22	#10AWG-CU	55	0.17%
06-04-01	#10AWG-CU	305	0.96%
06-04-02	#10AWG-CU	210	0.66%
06-04-03	#10AWG-CU	120	0.38%
06-04-04	#10AWG-CU	285	0.89%
06-04-05	#10AWG-CU	195	0.61%
06-04-06	#10AWG-CU	100	0.31%
06-04-07	#10AWG-CU	265	0.83%
06-04-08	#10AWG-CU	175	0.55%
06-04-09	#10AWG-CU	80	0.25%
06-04-10	#10AWG-CU	245	0.77%
06-04-11	#10AWG-CU	155	0.49%
06-04-12	#10AWG-CU	65	0.20%
06-04-13	#10AWG-CU	240	0.75%
06-04-14	#10AWG-CU	150	0.47%
06-04-15	#10AWG-CU	60	0.19%
06-04-16	#10AWG-CU	260	0.81%
06-04-17	#10AWG-CU	170	0.53%
06-04-18	#10AWG-CU	75	0.24%
06-04-19	#10AWG-CU	280	0.88%
06-04-20	#10AWG-CU	190	0.60%
06-04-21	#10AWG-CU	95	0.30%
06-04-22	#10AWG-CU	300	0.94%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 06		MAX TOTAL VOLTAGE DROP	2.08%
		AVERAGE TOTAL VOLTAGE DROP	0.99%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
06-05-01	#10AWG-CU	200	0.63%
06-05-02	#10AWG-CU	110	0.34%
06-05-03	#10AWG-CU	315	0.99%
06-05-04	#10AWG-CU	220	0.69%
06-05-05	#10AWG-CU	130	0.41%
06-05-06	#10AWG-CU	335	1.05%
06-05-07	#10AWG-CU	240	0.75%
06-05-08	#10AWG-CU	150	0.47%
06-05-09	#10AWG-CU	350	1.10%
06-05-10	#10AWG-CU	260	0.81%
06-05-11	#10AWG-CU	165	0.52%
06-05-12	#10AWG-CU	370	1.16%
06-05-13	#10AWG-CU	280	0.88%
06-05-14	#10AWG-CU	185	0.58%
06-05-15	#10AWG-CU	390	1.22%
06-05-16	#10AWG-CU	295	0.92%
06-05-17	#10AWG-CU	205	0.64%
06-05-18	#10AWG-CU	410	1.28%
06-05-19	#10AWG-CU	315	0.99%
06-05-20	#10AWG-CU	225	0.71%
06-05-21	#10AWG-CU	425	1.33%
06-05-22	#10AWG-CU	335	1.05%
06-06-01	#10AWG-CU	240	0.75%
06-06-02	#10AWG-CU	440	1.38%
06-06-03	#10AWG-CU	350	1.10%
06-06-04	#10AWG-CU	255	0.80%
06-06-05	#10AWG-CU	460	1.44%
06-06-06	#10AWG-CU	370	1.16%
06-06-07	#10AWG-CU	275	0.86%
06-06-08	#10AWG-CU	385	1.21%
06-06-09	#10AWG-CU	295	0.92%
06-06-10	#10AWG-CU	405	1.27%
06-06-11	#10AWG-CU	315	0.99%
06-06-12	#10AWG-CU	425	1.33%
06-06-13	#10AWG-CU	335	1.05%
06-06-14	#10AWG-CU	445	1.39%
06-06-15	#10AWG-CU	350	1.10%
06-06-16	#10AWG-CU	465	1.46%
06-06-17	#10AWG-CU	370	1.16%
06-06-18	#10AWG-CU	390	1.22%
06-06-19	#10AWG-CU	410	1.28%
06-06-20	#10AWG-CU	430	1.35%
06-06-21	#10AWG-CU	450	1.41%
06-06-22	#10AWG-CU	465	1.46%
06-06-23	#10AWG-CU	485	1.52%
06-07-01	#10AWG-CU	665	2.08%
06-07-02	#10AWG-CU	650	2.04%
06-07-03	#10AWG-CU	630	1.97%
06-07-04	#10AWG-CU	610	1.91%
06-07-05	#10AWG-CU	590	1.85%
06-07-06	#10AWG-CU	570	1.79%
06-07-07	#10AWG-CU	555	1.74%
06-07-08	#10AWG-CU	535	1.68%
06-07-09	#10AWG-CU	515	1.61%
06-07-10	#10AWG-CU	495	1.55%
06-07-11	#10AWG-CU	480	1.50%
06-07-12	#10AWG-CU	385	1.21%
06-07-13	#10AWG-CU	460	1.44%
06-07-14	#10AWG-CU	365	1.14%
06-07-15	#10AWG-CU	440	1.38%
06-07-16	#10AWG-CU	350	1.10%
06-07-17	#10AWG-CU	420	1.32%
06-07-18	#10AWG-CU	330	1.03%
06-07-19	#10AWG-CU	400	1.25%
06-07-20	#10AWG-CU	310	0.97%
06-08-01	#10AWG-CU	385	1.21%
06-08-02	#10AWG-CU	295	0.92%
06-08-03	#10AWG-CU	370	1.16%
06-08-04	#10AWG-CU	275	0.86%
06-08-05	#10AWG-CU	350	1.10%
06-08-06	#10AWG-CU	255	0.80%
06-08-07	#10AWG-CU	330	1.03%
06-08-08	#10AWG-CU	235	0.74%
06-08-09	#10AWG-CU	310	0.97%
06-08-10	#10AWG-CU	215	0.67%
06-08-11	#10AWG-CU	290	0.91%
06-08-12	#10AWG-CU	200	0.63%
06-08-13	#10AWG-CU	275	0.86%
06-08-14	#10AWG-CU	180	0.56%
06-08-15	#10AWG-CU	255	0.80%
06-08-16	#10AWG-CU	160	0.50%
06-08-17	#10AWG-CU	235	0.74%
06-08-18	#10AWG-CU	145	0.45%
06-08-19	#10AWG-CU	55	0.17%
06-08-20	#10AWG-CU	250	0.78%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 06		MAX TOTAL VOLTAGE DROP	2.08%
		AVERAGE TOTAL VOLTAGE DROP	0.99%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
06-09-01	#10AWG-CU	155	0.49%
06-09-02	#10AWG-CU	65	0.20%
06-09-03	#10AWG-CU	265	0.83%
06-09-04	#10AWG-CU	175	0.55%
06-09-05	#10AWG-CU	80	0.25%
06-09-06	#10AWG-CU	285	0.89%
06-09-07	#10AWG-CU	195	0.61%
06-09-08	#10AWG-CU	100	0.31%
06-09-09	#10AWG-CU	305	0.96%
06-09-10	#10AWG-CU	210	0.66%
06-09-11	#10AWG-CU	120	0.38%
06-09-12	#10AWG-CU	320	1.00%
06-09-13	#10AWG-CU	230	0.72%
06-09-14	#10AWG-CU	140	0.44%
06-09-15	#10AWG-CU	340	1.07%
06-09-16	#10AWG-CU	250	0.78%
06-09-17	#10AWG-CU	160	0.50%
06-09-18	#10AWG-CU	360	1.13%
06-09-19	#10AWG-CU	270	0.85%
06-09-20	#10AWG-CU	175	0.55%
06-10-01	#10AWG-CU	235	0.74%
06-10-02	#10AWG-CU	145	0.45%
06-10-03	#10AWG-CU	55	0.17%
06-10-04	#10AWG-CU	255	0.80%
06-10-05	#10AWG-CU	165	0.52%
06-10-06	#10AWG-CU	70	0.22%
06-10-07	#10AWG-CU	275	0.86%
06-10-08	#10AWG-CU	185	0.58%
06-10-09	#10AWG-CU	90	0.28%
06-10-10	#10AWG-CU	295	0.92%
06-10-11	#10AWG-CU	200	0.63%
06-10-12	#10AWG-CU	110	0.34%
06-10-13	#10AWG-CU	310	0.97%
06-10-14	#10AWG-CU	220	0.69%
06-10-15	#10AWG-CU	130	0.41%
06-10-16	#10AWG-CU	330	1.03%
06-10-17	#10AWG-CU	240	0.75%
06-10-18	#10AWG-CU	150	0.47%
06-10-19	#10AWG-CU	350	1.10%
06-10-20	#10AWG-CU	260	0.81%
06-10-21	#10AWG-CU	165	0.52%
06-11-01	#10AWG-CU	365	1.14%
06-11-02	#10AWG-CU	275	0.86%
06-11-03	#10AWG-CU	180	0.56%
06-11-04	#10AWG-CU	385	1.21%
06-11-05	#10AWG-CU	290	0.91%
06-11-06	#10AWG-CU	200	0.63%
06-11-07	#10AWG-CU	405	1.27%
06-11-08	#10AWG-CU	310	0.97%
06-11-09	#10AWG-CU	220	0.69%
06-11-10	#10AWG-CU	420	1.32%
06-11-11	#10AWG-CU	330	1.03%
06-11-12	#10AWG-CU	240	0.75%
06-11-13	#10AWG-CU	440	1.38%
06-11-14	#10AWG-CU	350	1.10%
06-11-15	#10AWG-CU	260	0.81%
06-11-16	#10AWG-CU	460	1.44%
06-11-17	#10AWG-CU	370	1.16%
06-11-18	#10AWG-CU	275	0.86%
06-11-19	#10AWG-CU	480	1.50%
06-11-20	#10AWG-CU	385	1.21%
06-11-21	#10AWG-CU	295	0.92%
06-12-01	#10AWG-CU	495	1.55%
06-12-02	#10AWG-CU	400	1.25%
06-12-03	#10AWG-CU	310	0.97%
06-12-04	#10AWG-CU	510	1.60%
06-12-05	#10AWG-CU	420	1.32%
06-12-06	#10AWG-CU	330	1.03%
06-12-07	#10AWG-CU	530	1.66%
06-12-08	#10AWG-CU	440	1.38%
06-12-09	#10AWG-CU	350	1.10%
06-12-10	#10AWG-CU	550	1.72%
06-12-11	#10AWG-CU	460	1.44%
06-12-12	#10AWG-CU	365	1.14%
06-12-13	#10AWG-CU	480	1.50%
06-12-14	#10AWG-CU	385	1.21%
06-12-15	#10AWG-CU	495	1.55%
06-12-16	#10AWG-CU	405	1.27%
06-12-17	#10AWG-CU	515	1.61%
06-12-18	#10AWG-CU	425	1.33%
06-12-19	#10AWG-CU	515	1.61%
06-12-20	#10AWG-CU	535	1.68%
06-12-21	#10AWG-CU	555	1.74%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 07		MAX TOTAL VOLTAGE DROP	1.63%
		AVERAGE TOTAL VOLTAGE DROP	0.81%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
07-01-01	#10AWG-CU	335	1.05%
07-01-02	#10AWG-CU	240	0.75%
07-01-03	#10AWG-CU	150	0.47%
07-01-04	#10AWG-CU	315	0.99%
07-01-05	#10AWG-CU	225	0.71%
07-01-06	#10AWG-CU	130	0.41%
07-01-07	#10AWG-CU	295	0.92%
07-01-08	#10AWG-CU	205	0.64%
07-01-09	#10AWG-CU	115	0.36%
07-01-10	#10AWG-CU	275	0.86%
07-01-11	#10AWG-CU	185	0.58%
07-01-12	#10AWG-CU	95	0.30%
07-01-13	#10AWG-CU	260	0.81%
07-01-14	#10AWG-CU	165	0.52%
07-01-15	#10AWG-CU	75	0.24%
07-01-16	#10AWG-CU	245	0.77%
07-01-17	#10AWG-CU	155	0.49%
07-01-18	#10AWG-CU	65	0.20%
07-01-19	#10AWG-CU	265	0.83%
07-01-20	#10AWG-CU	175	0.55%
07-02-01	#10AWG-CU	435	1.36%
07-02-02	#10AWG-CU	125	0.39%
07-02-03	#10AWG-CU	220	0.69%
07-02-04	#10AWG-CU	310	0.97%
07-02-05	#10AWG-CU	415	1.30%
07-02-06	#10AWG-CU	110	0.34%
07-02-07	#10AWG-CU	200	0.63%
07-02-08	#10AWG-CU	290	0.91%
07-02-09	#10AWG-CU	395	1.24%
07-02-10	#10AWG-CU	90	0.28%
07-02-11	#10AWG-CU	180	0.56%
07-02-12	#10AWG-CU	270	0.85%
07-02-13	#10AWG-CU	380	1.19%
07-02-14	#10AWG-CU	70	0.22%
07-02-15	#10AWG-CU	160	0.50%
07-02-16	#10AWG-CU	255	0.80%
07-02-17	#10AWG-CU	360	1.13%
07-02-18	#10AWG-CU	50	0.16%
07-02-19	#10AWG-CU	140	0.44%
07-02-20	#10AWG-CU	235	0.74%
07-03-01	#10AWG-CU	300	0.94%
07-03-02	#10AWG-CU	465	1.46%
07-03-03	#10AWG-CU	375	1.18%
07-03-04	#10AWG-CU	280	0.88%
07-03-05	#10AWG-CU	445	1.39%
07-03-06	#10AWG-CU	355	1.11%
07-03-07	#10AWG-CU	265	0.83%
07-03-08	#10AWG-CU	425	1.33%
07-03-09	#10AWG-CU	335	1.05%
07-03-10	#10AWG-CU	245	0.77%
07-03-11	#10AWG-CU	405	1.27%
07-03-12	#10AWG-CU	315	0.99%
07-03-13	#10AWG-CU	225	0.71%
07-03-14	#10AWG-CU	390	1.22%
07-03-15	#10AWG-CU	295	0.92%
07-03-16	#10AWG-CU	205	0.64%
07-03-17	#10AWG-CU	370	1.16%
07-03-18	#10AWG-CU	280	0.88%
07-03-19	#10AWG-CU	185	0.58%
07-03-20	#10AWG-CU	350	1.10%
07-04-01	#10AWG-CU	295	0.92%
07-04-02	#10AWG-CU	385	1.21%
07-04-03	#10AWG-CU	480	1.50%
07-04-04	#10AWG-CU	275	0.86%
07-04-05	#10AWG-CU	370	1.16%
07-04-06	#10AWG-CU	460	1.44%
07-04-07	#10AWG-CU	260	0.81%
07-04-08	#10AWG-CU	350	1.10%
07-04-09	#10AWG-CU	440	1.38%
07-04-10	#10AWG-CU	240	0.75%
07-04-11	#10AWG-CU	330	1.03%
07-04-12	#10AWG-CU	420	1.32%
07-04-13	#10AWG-CU	220	0.69%
07-04-14	#10AWG-CU	310	0.97%
07-04-15	#10AWG-CU	405	1.27%
07-04-16	#10AWG-CU	200	0.63%
07-04-17	#10AWG-CU	290	0.91%
07-04-18	#10AWG-CU	385	1.21%
07-04-19	#10AWG-CU	180	0.56%
07-04-20	#10AWG-CU	275	0.86%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 07		MAX TOTAL VOLTAGE DROP	1.63%
		AVERAGE TOTAL VOLTAGE DROP	0.81%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
07-05-01	#10AWG-CU	270	0.85%
07-05-02	#10AWG-CU	175	0.55%
07-05-03	#10AWG-CU	340	1.07%
07-05-04	#10AWG-CU	250	0.78%
07-05-05	#10AWG-CU	160	0.50%
07-05-06	#10AWG-CU	320	1.00%
07-05-07	#10AWG-CU	230	0.72%
07-05-08	#10AWG-CU	140	0.44%
07-05-09	#10AWG-CU	305	0.96%
07-05-10	#10AWG-CU	210	0.66%
07-05-11	#10AWG-CU	120	0.38%
07-05-12	#10AWG-CU	285	0.89%
07-05-13	#10AWG-CU	190	0.60%
07-05-14	#10AWG-CU	100	0.31%
07-05-15	#10AWG-CU	265	0.83%
07-05-16	#10AWG-CU	175	0.55%
07-05-17	#10AWG-CU	80	0.25%
07-05-18	#10AWG-CU	245	0.77%
07-05-19	#10AWG-CU	155	0.49%
07-05-20	#10AWG-CU	65	0.20%
07-06-01	#10AWG-CU	435	1.36%
07-06-02	#10AWG-CU	235	0.74%
07-06-03	#10AWG-CU	325	1.02%
07-06-04	#10AWG-CU	415	1.30%
07-06-05	#10AWG-CU	215	0.67%
07-06-06	#10AWG-CU	305	0.96%
07-06-07	#10AWG-CU	400	1.25%
07-06-08	#10AWG-CU	195	0.61%
07-06-09	#10AWG-CU	290	0.91%
07-06-10	#10AWG-CU	380	1.19%
07-06-11	#10AWG-CU	175	0.55%
07-06-12	#10AWG-CU	270	0.85%
07-06-13	#10AWG-CU	360	1.13%
07-06-14	#10AWG-CU	160	0.50%
07-06-15	#10AWG-CU	250	0.78%
07-06-16	#10AWG-CU	340	1.07%
07-06-17	#10AWG-CU	140	0.44%
07-06-18	#10AWG-CU	230	0.72%
07-06-19	#10AWG-CU	320	1.00%
07-07-01	#10AWG-CU	300	0.94%
07-07-02	#10AWG-CU	205	0.64%
07-07-03	#10AWG-CU	115	0.36%
07-07-04	#10AWG-CU	280	0.88%
07-07-05	#10AWG-CU	190	0.60%
07-07-06	#10AWG-CU	95	0.30%
07-07-07	#10AWG-CU	260	0.81%
07-07-08	#10AWG-CU	170	0.53%
07-07-09	#10AWG-CU	75	0.24%
07-07-10	#10AWG-CU	245	0.77%
07-07-11	#10AWG-CU	155	0.49%
07-07-12	#10AWG-CU	60	0.19%
07-07-13	#10AWG-CU	265	0.83%
07-07-14	#10AWG-CU	170	0.53%
07-07-15	#10AWG-CU	80	0.25%
07-07-16	#10AWG-CU	285	0.89%
07-07-17	#10AWG-CU	190	0.60%
07-07-18	#10AWG-CU	100	0.31%
07-07-19	#10AWG-CU	300	0.94%
07-07-20	#10AWG-CU	210	0.66%
07-07-21	#10AWG-CU	120	0.38%
07-08-01	#10AWG-CU	130	0.41%
07-08-02	#10AWG-CU	220	0.69%
07-08-03	#10AWG-CU	310	0.97%
07-08-04	#10AWG-CU	110	0.34%
07-08-05	#10AWG-CU	200	0.63%
07-08-06	#10AWG-CU	295	0.92%
07-08-07	#10AWG-CU	90	0.28%
07-08-08	#10AWG-CU	185	0.58%
07-08-09	#10AWG-CU	275	0.86%
07-08-10	#10AWG-CU	75	0.24%
07-08-11	#10AWG-CU	165	0.52%
07-08-12	#10AWG-CU	55	0.17%
07-08-13	#10AWG-CU	145	0.45%
07-08-14	#10AWG-CU	110	0.34%
07-08-15	#10AWG-CU	205	0.64%
07-08-16	#10AWG-CU	130	0.41%
07-08-17	#10AWG-CU	225	0.71%
07-08-18	#10AWG-CU	150	0.47%
07-08-19	#10AWG-CU	240	0.75%

STRING VOLTAGE DROP CALCULATIONS SYSTEM 07		MAX TOTAL VOLTAGE DROP	1.63%
		AVERAGE TOTAL VOLTAGE DROP	0.81%
STRING NUMBER	STRING WIRE GAUGE	TOTAL STRING DISTANCE [FT]	STRING VOLTAGE DROP
07-09-01	#10AWG-CU	235	0.74%
07-09-02	#10AWG-CU	145	0.45%
07-09-03	#10AWG-CU	50	0.16%
07-09-04	#10AWG-CU	255	0.80%
07-09-05	#10AWG-CU	160	0.50%
07-09-06	#10AWG-CU	70	0.22%
07-09-07	#10AWG-CU	270	0.85%
07-09-08	#10AWG-CU	180	0.56%
07-09-09	#10AWG-CU	90	0.28%
07-09-10	#10AWG-CU	290	0.91%
07-09-11	#10AWG-CU	200	0.63%
07-09-12	#10AWG-CU	110	0.34%
07-09-13	#10AWG-CU	310	0.97%
07-09-14	#10AWG-CU	220	0.69%
07-09-15	#10AWG-CU	125	0.39%
07-09-16	#10AWG-CU	330	1.03%
07-09-17	#10AWG-CU	240	0.75%
07-09-18	#10AWG-CU	145	0.45%
07-09-19	#10AWG-CU	350	1.10%
07-09-20	#10AWG-CU	255	0.80%
07-09-21	#10AWG-CU	165	0.52%
07-09-22	#10AWG-CU	365	1.14%
07-09-23	#10AWG-CU	275	0.86%
07-09-24	#10AWG-CU	185	0.58%
07-10-01	#10AWG-CU	380	1.19%
07-10-02	#10AWG-CU	290	0.91%
07-10-03	#10AWG-CU	200	0.63%
07-10-04	#10AWG-CU	400	1.25%
07-10-05	#10AWG-CU	310	0.97%
07-10-06	#10AWG-CU	215	0.67%
07-10-07	#10AWG-CU	420	1.32%
07-10-08	#10AWG-CU	330	1.03%
07-10-09	#10AWG-CU	235	0.74%
07-10-10	#10AWG-CU	440	1.38%
07-10-11	#10AWG-CU	345	1.08%
07-10-12	#10AWG-CU	255	0.80%
07-10-13	#10AWG-CU	455	1.43%
07-10-14	#10AWG-CU	365	1.14%
07-10-15	#10AWG-CU	275	0.86%
07-10-16	#10AWG-CU	475	1.49%
07-10-17	#10AWG-CU	385	1.21%
07-10-18	#10AWG-CU	295	0.92%
07-10-19	#10AWG-CU	495	1.55%
07-10-20	#10AWG-CU	405	1.27%
07-10-21	#10AWG-CU	310	0.97%
07-10-22	#10AWG-CU	515	1.61%
07-10-23	#10AWG-CU	425	1.33%
07-10-24	#10AWG-CU	330	1.03%
07-11-01	#10AWG-CU	235	0.74%
07-11-02	#10AWG-CU	145	0.45%
07-11-03	#10AWG-CU	50	0.16%
07-11-04	#10AWG-CU	255	0.80%
07-11-05	#10AWG-CU	160	0.50%
07-11-06	#10AWG-CU	70	0.22%
07-11-07	#10AWG-CU	270	0.85%
07-11-08	#10AWG-CU	180	0.56%
07-11-09	#10AWG-CU	90	0.28%
07-11-10	#10AWG-CU	290	0.91%
07-11-11	#10AWG-CU	200	0.63%
07-11-12	#10AWG-CU	110	0.34%
07-11-13	#10AWG-CU	310	0.97%
07-11-14	#10AWG-CU	220	0.69%
07-11-15	#10AWG-CU	125	0.39%
07-11-16	#10AWG-CU	330	1.03%
07-11-17	#10AWG-CU	240	0.75%
07-11-18	#10AWG-CU	145	0.45%
07-11-19	#10AWG-CU	350	1.10%
07-11-20	#10AWG-CU	255	0.80%
07-11-21	#10AWG-CU	165	0.52%
07-11-22	#10AWG-CU	365	1.14%
07-11-23	#10AWG-CU	275	0.86%
07-11-24	#10AWG-CU	185	0.58%
07-12-01	#10AWG-CU	385	1.21%
07-12-02	#10AWG-CU	295	0.92%
07-12-03	#10AWG-CU	205	0.64%
07-12-04	#10AWG-CU	405	1.27%
07-12-05	#10AWG-CU	315	0.99%
07-12-06	#10AWG-CU	220	0.69%
07-12-07	#10AWG-CU	425	1.33%
07-12-08	#10AWG-CU	335	1.05%
07-12-09	#10AWG-CU	240	0.75%
07-12-10	#10AWG-CU	445	1.39%
07-12-11	#10AWG-CU	350	1.10%
07-12-12	#10AWG-CU	260	0.81%
07-12-13	#10AWG-CU	460	1.44%
07-12-14	#10AWG-CU	370	1.16%
07-12-15	#10AWG-CU	280	0.88%
07-12-16	#10AWG-CU	480	1.50%
07-12-17	#10AWG-CU	390	1.22%
07-12-18	#10AWG-CU	300	0.94%
07-12-19	#10AWG-CU	500	1.57%
07-12-20	#10AWG-CU	410	1.28%
07-12-21	#10AWG-CU	315	0.99%
07-12-22	#10AWG-CU	520	1.63%
07-12-23	#10AWG-CU	430	1.35%
07-12-24	#10AWG-CU	335	1.05%

DRAWING NOTES:

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DATE	REVISION DESCRIPTION	PM	ENG	CHK
01/26/2024	DESIGN DEVELOPMENT REV 2	RK	JT	RI
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12/14/2022	ISSUE FOR PERMIT	RK	JT	RI

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PAGE SIZE 36" x 24"
PROJECT # 08410

DC SYSTEM SIZE: 25,284.72 kWDC
AC SYSTEM SIZE: 20,000.00 kWAC
MODULE TYPE: (32,160) HANWHA 595W
(10,512) HANWHA 585W
ORIENTATION: ±55° TILT, 90°/270° AZI

PROJECT
25,284.72 KW GM SYSTEM AT
BLAIRS VALLEY
8691 BLUE SPRING ROAD
MERCERSBURG, PA 17236

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E223

RULER IN INCHES:

PLOT DATE: 1/26/2024 2:11 PM

AC CIRCUIT CALCULATIONS – PCS-01 MOTOR POWER

EQUIPMENT SUPPLIED	QTY OF MOTORS	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA
AUX-PNL-01-01	N/A	AUX-XFMR-01	240	214.0	268	300	PVC	3"	CU #2 SSBJ	1	CU 300MCM	CU 300MCM	285	320	320	1.00	1.00	30	0.24%	0.24%
AUX-PNL-01-02	N/A	AUX-PNL-01-01	240	88.0	110	150	PVC	2.5"	CU #2	1	CU #4/0	CU #4/0	230	260	260	1.00	1.00	260	1.20%	1.44%
MOTOR CIRCUIT 01-01	5	AUX-PNL-01-02	240	10.0	13	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	790	2.04%	3.48%
MOTOR CIRCUIT 01-02	6	AUX-PNL-01-02	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	570	1.77%	3.21%
MOTOR CIRCUIT 01-03	6	AUX-PNL-01-02	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	450	2.21%	3.65%
MOTOR CIRCUIT 01-04	7	AUX-PNL-01-02	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	320	1.83%	3.27%
MOTOR CIRCUIT 01-05	7	AUX-PNL-01-02	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	130	1.18%	2.62%
MOTOR CIRCUIT 01-06	7	AUX-PNL-01-02	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	130	1.18%	2.62%
MOTOR CIRCUIT 01-07	6	AUX-PNL-01-02	240	12.0	15	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	270	2.11%	3.55%
MOTOR CIRCUIT 01-08	6	AUX-PNL-01-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	430	2.11%	2.35%
MOTOR CIRCUIT 01-09	6	AUX-PNL-01-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	510	1.58%	1.82%
MOTOR CIRCUIT 01-10	6	AUX-PNL-01-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	400	1.96%	2.20%
MOTOR CIRCUIT 01-11	7	AUX-PNL-01-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	260	2.37%	2.61%
MOTOR CIRCUIT 01-12	7	AUX-PNL-01-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	170	1.55%	1.79%
MOTOR CIRCUIT 01-13	7	AUX-PNL-01-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	170	1.55%	1.79%
MOTOR CIRCUIT 01-14	6	AUX-PNL-01-01	240	12.0	15	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	260	2.03%	2.27%
MOTOR CIRCUIT 01-15	6	AUX-PNL-01-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	380	1.86%	2.10%
MOTOR CIRCUIT 01-16	6	AUX-PNL-01-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	540	1.67%	1.91%
MOTOR CIRCUIT 01-17	6	AUX-PNL-01-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	660	2.05%	2.29%

AC CIRCUIT CALCULATIONS – PCS-02 MOTOR POWER

EQUIPMENT SUPPLIED	QTY OF MOTORS	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA
AUX-PNL-02-01	N/A	AUX-XFMR-02-01	240	76.0	95	125	PVC	2"	CU #6 SSBJ	1	CU #1	CU #1	130	145	145	1.00	1.00	30	0.30%	0.30%
AUX-PNL-02-02	N/A	AUX-XFMR-02-02	240	94.0	118	125	PVC	2"	CU #6 SSBJ	1	CU #1	CU #1	130	145	145	1.00	1.00	30	0.38%	0.38%
MOTOR CIRCUIT 02-01	7	AUX-PNL-02-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	220	2.00%	2.31%
MOTOR CIRCUIT 02-02	6	AUX-PNL-02-01	240	12.0	15	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	220	1.72%	2.02%
MOTOR CIRCUIT 02-03	7	AUX-PNL-02-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	170	1.55%	1.85%
MOTOR CIRCUIT 02-04	7	AUX-PNL-02-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	310	1.77%	2.08%
MOTOR CIRCUIT 02-05	6	AUX-PNL-02-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	440	2.16%	2.46%
MOTOR CIRCUIT 02-06	5	AUX-PNL-02-01	240	10.0	13	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	1000	2.58%	2.89%
MOTOR CIRCUIT 02-07	6	AUX-PNL-02-02	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	1120	3.47%	3.85%
MOTOR CIRCUIT 02-08	6	AUX-PNL-02-02	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	990	3.07%	3.45%
MOTOR CIRCUIT 02-09	7	AUX-PNL-02-02	240	14.0	18	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	840	3.04%	3.41%
MOTOR CIRCUIT 02-10	7	AUX-PNL-02-02	240	14.0	18	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	640	2.31%	2.69%
MOTOR CIRCUIT 02-11	7	AUX-PNL-02-02	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	480	2.74%	3.12%
MOTOR CIRCUIT 02-12	7	AUX-PNL-02-02	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	280	2.55%	2.92%
MOTOR CIRCUIT 02-13	7	AUX-PNL-02-02	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	130	1.18%	1.56%

DRAWING NOTES:
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PAGE SIZE
36" x 24"
PROJECT #
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DC SYSTEM SIZE: 25,284.72 kWDC
AC SYSTEM SIZE: 20,000.00 kWAC
MODULE TYPE: (32,160) HANWHA 595W
(10,512) HANWHA 585W
ORIENTATION: ±55° TILT, 90°/270° AZI

PROJECT
25,284.72 KW GM SYSTEM AT
BLAIRS VALLEY
8691 BLUE SPRING ROAD
MERCERSBURG, PA 17236

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E330

RULER IN INCHES: 0 ½ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 1/26/2024 2:11 PM

AC CIRCUIT CALCULATIONS – PCS-03 MOTOR POWER

EQUIPMENT SUPPLIED	QTY OF MOTORS	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA
AUX-PNL-03-01	N/A	AUX-XFMR-03	240	208.0	260	300	PVC	3"	CU #2 SSBJ	1	CU 350MCM	CU 350MCM	310	350	350	1.00	1.00	30	0.20%	0.20%
AUX-PNL-03-02	N/A	AUX-PNL-03-01	240	60.0	75	150	PVC	2.5"	CU #2	1	CU #4/0	CU #4/0	230	260	260	1.00	1.00	460	1.45%	1.65%
MOTOR CIRCUIT 03-01	6	AUX-PNL-03-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	750	2.33%	2.53%
MOTOR CIRCUIT 03-02	6	AUX-PNL-03-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	590	1.83%	2.03%
MOTOR CIRCUIT 03-03	6	AUX-PNL-03-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	470	2.30%	2.51%
MOTOR CIRCUIT 03-04	7	AUX-PNL-03-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	370	2.12%	2.32%
MOTOR CIRCUIT 03-05	7	AUX-PNL-03-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	240	2.18%	2.39%
MOTOR CIRCUIT 03-06	7	AUX-PNL-03-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	350	2.00%	2.20%
MOTOR CIRCUIT 03-07	7	AUX-PNL-03-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	390	2.23%	2.43%
MOTOR CIRCUIT 03-08	7	AUX-PNL-03-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	180	1.64%	1.84%
MOTOR CIRCUIT 03-09	7	AUX-PNL-03-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	80	0.73%	0.93%
MOTOR CIRCUIT 03-10	7	AUX-PNL-03-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	210	1.91%	2.11%
MOTOR CIRCUIT 03-11	7	AUX-PNL-03-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	350	2.00%	2.20%
MOTOR CIRCUIT 03-12	6	AUX-PNL-03-02	240	12.0	15	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	40	0.31%	1.96%
MOTOR CIRCUIT 03-13	6	AUX-PNL-03-02	240	12.0	15	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	150	1.17%	2.82%
MOTOR CIRCUIT 03-14	6	AUX-PNL-03-02	240	12.0	15	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	270	2.11%	3.76%
MOTOR CIRCUIT 03-15	6	AUX-PNL-03-02	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	380	1.86%	3.51%
MOTOR CIRCUIT 03-16	6	AUX-PNL-03-02	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	540	1.67%	3.33%

AC CIRCUIT CALCULATIONS – PCS-04 MOTOR POWER

EQUIPMENT SUPPLIED	QTY OF MOTORS	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA
AUX-PNL-04-01	N/A	AUX-XFMR-04	240	232.0	290	300	PVC	3"	CU #2 SSBJ	1	CU 350MCM	CU 350MCM	310	350	350	1.00	1.00	30	0.23%	0.23%
MOTOR CIRCUIT 04-01	7	AUX-PNL-04-01	240	14.0	18	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	730	2.64%	2.87%
MOTOR CIRCUIT 04-02	7	AUX-PNL-04-01	240	14.0	18	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	600	2.17%	2.40%
MOTOR CIRCUIT 04-03	7	AUX-PNL-04-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	460	2.63%	2.86%
MOTOR CIRCUIT 04-04	7	AUX-PNL-04-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	230	2.09%	2.32%
MOTOR CIRCUIT 04-05	7	AUX-PNL-04-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	230	2.09%	2.32%
MOTOR CIRCUIT 04-06	7	AUX-PNL-04-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	350	2.00%	2.23%
MOTOR CIRCUIT 04-07	7	AUX-PNL-04-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	480	2.74%	2.97%
MOTOR CIRCUIT 04-08	7	AUX-PNL-04-01	240	14.0	18	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	610	2.21%	2.43%
MOTOR CIRCUIT 04-09	7	AUX-PNL-04-01	240	14.0	18	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	750	2.71%	2.94%
MOTOR CIRCUIT 04-10	6	AUX-PNL-04-01	240	12.0	15	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	190	1.48%	1.71%
MOTOR CIRCUIT 04-11	6	AUX-PNL-04-01	240	12.0	15	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	270	2.11%	2.33%
MOTOR CIRCUIT 04-12	6	AUX-PNL-04-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	390	1.91%	2.14%
MOTOR CIRCUIT 04-13	6	AUX-PNL-04-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	500	2.45%	2.68%
MOTOR CIRCUIT 04-14	6	AUX-PNL-04-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	620	1.92%	2.15%
MOTOR CIRCUIT 04-15	6	AUX-PNL-04-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	730	2.26%	2.49%
MOTOR CIRCUIT 04-16	6	AUX-PNL-04-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	400	1.96%	2.19%
MOTOR CIRCUIT 04-17	6	AUX-PNL-04-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	510	1.58%	1.81%
MOTOR CIRCUIT 04-18	5	AUX-PNL-04-01	240	10.0	13	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	670	1.73%	1.96%

DRAWING NOTES:
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ORIENTATION: ±55° TILT, 90°/270° AZI

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BLAIRS VALLEY
8691 BLUE SPRING ROAD
MERCERSBURG, PA 17236

DRAWING TITLE: SCHEDULES & CALCULATIONS

DRAWING #: E331

RULER IN INCHES:

AC CIRCUIT CALCULATIONS – PCS-05 MOTOR POWER

EQUIPMENT SUPPLIED	QTY OF MOTORS	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA
AUX-PNL-05-01	N/A	AUX-XFMR-05	240	220.0	275	300	PVC	3"	CU #2 SSBJ	1	CU 350MCM	CU 350MCM	310	350	350	1.00	1.00	30	0.21%	0.21%
AUX-PNL-05-02	N/A	AUX-PNL-05-01	240	56.0	70	150	PVC	2.5"	CU #2	1	CU #4/0	CU #4/0	230	260	260	1.00	1.00	410	1.21%	1.42%
MOTOR CIRCUIT 05-01	6	AUX-PNL-05-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	570	1.77%	1.98%
MOTOR CIRCUIT 05-02	6	AUX-PNL-05-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	460	2.25%	2.47%
MOTOR CIRCUIT 05-03	7	AUX-PNL-05-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	320	1.83%	2.04%
MOTOR CIRCUIT 05-04	6	AUX-PNL-05-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	480	2.35%	2.57%
MOTOR CIRCUIT 05-05	6	AUX-PNL-05-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	370	1.81%	2.03%
MOTOR CIRCUIT 05-06	6	AUX-PNL-05-01	240	12.0	15	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	250	1.95%	2.16%
MOTOR CIRCUIT 05-07	7	AUX-PNL-05-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	210	1.91%	2.13%
MOTOR CIRCUIT 05-08	6	AUX-PNL-05-01	240	12.0	15	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	260	2.03%	2.24%
MOTOR CIRCUIT 05-09	7	AUX-PNL-05-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	190	1.73%	1.94%
MOTOR CIRCUIT 05-10	7	AUX-PNL-05-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	330	1.89%	2.10%
MOTOR CIRCUIT 05-11	6	AUX-PNL-05-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	410	2.01%	2.22%
MOTOR CIRCUIT 05-12	6	AUX-PNL-05-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	490	2.40%	2.62%
MOTOR CIRCUIT 05-13	6	AUX-PNL-05-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	590	1.83%	2.04%
MOTOR CIRCUIT 05-14	7	AUX-PNL-05-02	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	490	2.80%	4.22%
MOTOR CIRCUIT 05-15	7	AUX-PNL-05-02	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	350	2.00%	3.42%
MOTOR CIRCUIT 05-16	7	AUX-PNL-05-02	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	220	2.00%	3.42%
MOTOR CIRCUIT 05-17	7	AUX-PNL-05-02	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	200	1.82%	3.24%

AC CIRCUIT CALCULATIONS – PCS-06 MOTOR POWER

EQUIPMENT SUPPLIED	QTY OF MOTORS	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA
AUX-PNL-06-01	N/A	AUX-XFMR-06	240	180.0	225	250	PVC	2.5"	CU #2 SSBJ	1	CU #4/0	CU #4/0	230	260	260	1.00	1.00	30	0.28%	0.28%
MOTOR CIRCUIT 06-01	6	AUX-PNL-06-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	910	2.82%	3.10%
MOTOR CIRCUIT 06-02	7	AUX-PNL-06-01	240	14.0	18	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	770	2.78%	3.07%
MOTOR CIRCUIT 06-03	7	AUX-PNL-06-01	240	14.0	18	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	640	2.31%	2.60%
MOTOR CIRCUIT 06-04	7	AUX-PNL-06-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	500	2.86%	3.14%
MOTOR CIRCUIT 06-05	5	AUX-PNL-06-01	240	10.0	13	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	820	2.12%	2.40%
MOTOR CIRCUIT 06-06	6	AUX-PNL-06-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	600	1.86%	2.14%
MOTOR CIRCUIT 06-07	6	AUX-PNL-06-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	480	2.35%	2.64%
MOTOR CIRCUIT 06-08	7	AUX-PNL-06-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	350	2.00%	2.28%
MOTOR CIRCUIT 06-09	7	AUX-PNL-06-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	210	1.91%	2.19%
MOTOR CIRCUIT 06-10	7	AUX-PNL-06-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	270	2.46%	2.74%
MOTOR CIRCUIT 06-11	7	AUX-PNL-06-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	270	2.46%	2.74%
MOTOR CIRCUIT 06-12	6	AUX-PNL-06-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	400	1.96%	2.24%
MOTOR CIRCUIT 06-13	6	AUX-PNL-06-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	520	1.61%	1.90%
MOTOR CIRCUIT 06-14	6	AUX-PNL-06-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	630	1.95%	2.24%

AC CIRCUIT CALCULATIONS – PCS-07 MOTOR POWER

EQUIPMENT SUPPLIED	QTY OF MOTORS	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE [A]	CONDUIT TYPE	CONDUIT SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA
AUX-PNL-07-01	N/A	AUX-XFMR-07	240	236.0	295	300	PVC	3"	CU #2 SSBJ	1	CU 350MCM	CU 350MCM	310	350	350	1.00	1.00	30	0.23%	0.23%
AUX-PNL-07-02	N/A	AUX-PNL-07-01	240	118.0	148	150	PVC	2.5"	CU #2	1	CU #4/0	CU #4/0	230	260	260	1.00	1.00	290	1.80%	2.03%
MOTOR CIRCUIT 07-01	6	AUX-PNL-07-02	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	580	1.80%	3.82%
MOTOR CIRCUIT 07-02	7	AUX-PNL-07-02	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	470	2.69%	4.71%
MOTOR CIRCUIT 07-03	7	AUX-PNL-07-02	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	310	1.77%	3.80%
MOTOR CIRCUIT 07-04	7	AUX-PNL-07-02	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	180	1.64%	3.66%
MOTOR CIRCUIT 07-05	6	AUX-PNL-07-02	240	12.0	15	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	270	2.11%	4.13%
MOTOR CIRCUIT 07-06	6	AUX-PNL-07-02	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	390	1.91%	3.94%
MOTOR CIRCUIT 07-07	7	AUX-PNL-07-02	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	130	1.18%	3.21%
MOTOR CIRCUIT 07-08	7	AUX-PNL-07-02	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	270	2.46%	4.48%
MOTOR CIRCUIT 07-09	6	AUX-PNL-07-02	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	490	2.40%	4.43%
MOTOR CIRCUIT 07-10	6	AUX-PNL-07-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	540	1.67%	1.90%
MOTOR CIRCUIT 07-11	7	AUX-PNL-07-01	240	14.0	18	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	360	2.06%	2.29%
MOTOR CIRCUIT 07-12	7	AUX-PNL-07-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	170	1.55%	1.78%
MOTOR CIRCUIT 07-13	7	AUX-PNL-07-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	190	1.73%	1.96%
MOTOR CIRCUIT 07-14	7	AUX-PNL-07-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	170	1.55%	1.78%
MOTOR CIRCUIT 07-15	7	AUX-PNL-07-01	240	14.0	18	20	PVC	1"	CU #8	1	CU #8	NONE	50	55	55	1.00	1.00	300	2.73%	2.96%
MOTOR CIRCUIT 07-16	6	AUX-PNL-07-01	240	12.0	15	20	PVC	1"	CU #6	1	CU #6	NONE	65	75	75	1.00	1.00	430	2.11%	2.34%
MOTOR CIRCUIT 07-17	6	AUX-PNL-07-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	550	1.71%	1.94%
MOTOR CIRCUIT 07-18	6	AUX-PNL-07-01	240	12.0	15	20	PVC	1"	CU #4	1	CU #4	NONE	85	95	95	1.00	1.00	700	2.17%	2.40%

DRAWING NOTES:
1. DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS, CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

NOT FOR CONSTRUCTION

DATE	REVISION DESCRIPTION	PM	ENG	CHK
01/26/2024	DESIGN DEVELOPMENT REV 2	RK	JT	RI
07/14/2023	FOR UTILITY REVIEW	RK	JT	RI
03/15/2023	DESIGN DEVELOPMENT REV 1	RK	JT	RI
12/14/2022	ISSUE FOR PERMIT	RK	JT	RI

ENGINEER
PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
PA LICENSE No. 079896

EPC
Qcells
Q.CELLS ENABLE
9 EAST 37TH STREET, 12TH FLOOR
NEW YORK, NEW YORK 10016
WWW.US.QCELLS.COM/CIC-EPC

PAGE SIZE: 36" x 24"
PROJECT #: 08410

DC SYSTEM SIZE: 25,284.72 kWDC
AC SYSTEM SIZE: 20,000.00 kWAC
MODULE TYPE: (32,160) HANWHA 595W
(10,512) HANWHA 585W
ORIENTATION: ±55° TILT, 90°/270° AZI

PROJECT
25,284.72 KW GM SYSTEM AT
BLAIRS VALLEY
8691 BLUE SPRING ROAD
MERCERSBURG, PA 17236

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E332