PANEL SCHEDULE

PANEL: MS1 (EX) LOCATION: MAIN ST. NORTH VOLTS: 120 / 240 1 PH 3 W
NO. POLES: 20 100/2 MAIN BREAKER
BUS RATING: 100A 10 KA INTERRUPTING CAP. MOUNTING: SURFACE
FEATURES: EX PANEL, NEMA 3R

DESCRIPTION	NOTES	VA	TYPE	BRKR	P	CKT	PH	CKT	P	BRKR	TYPE	VA	DESCRIPTION	NOTES
EX RECEPTACLES	1	1400	R	20	1	1	A	2	1	20	R	1400	EX RECEPTACLES	1
EX RECEPTACLES	1	1400	R	20	1	3	B	4	1	20	R	1400	EX RECEPTACLES	1
EX RECEPTACLES	1	1400	R	20	1	5	A	6	1	20	R	1400	EX RECEPTACLES	1
EX RECEPTACLES	1	1400	R	20	1	7	B	8	1	20			SPARE	3
EX RECEPTACLES	1	1400	R	20	1	9	A	10	1	20			SPARE	3
FAIR BOOTH RECEP	2	1200	R	20	1	11	B	12						
FAIR BOOTH RECEP	2	1200	R	20	1	13	A	14						
						15	B	16						
						17	A	18						
						19	B	20						

LOAD SUMMARY:

LOAD TYPE	CONN.	pf	DEMAND FACTOR	DEMAND
P=PANELS		0.90	1.00	"
L=LIGHTING		0.96	1.00	"
R=RECEPTACLES	14.0	0.85	50% OF > 10k	" 12.0
A=APPLIANCES		0.80	1.00	"
M=MOTORS		0.60	1.00	"
2M=2Pole MOTORS		0.90	1.25	"
H=HEATERS		1.00	1.00	"
0=SPARE		0.85	0.50	"
TOTAL	14.0 kVA	0.85		14.0 kVA

CONNECTED PHASE LOADING
PHASE A: 8.2
PHASE B: 5.4
[LARGEST MOTO Kw]

EST. MAX. DEMAND: 14.0 kVA
MIN. FEEDER AMPACITY: 58.1 A

NOTES:
1. REPLACE EX 30/1 BREAKER WITH 20/1 BREAKER PER PLAN NOTES.
2. PROVIDE BREAKER TO SERVE EX LOADS INDICATED.
3. PROVIDE SPARE BREAKER IN EX SPACE

SEE MC6 SCHEDULE FOR TOTAL LOAD OF PNL MS1 + MS3

PANEL SCHEDULE

PANEL: MS2 LOCATION: MAIN ST. NORTH VOLTS: 120 / 240 1 PH 3 W
NO. POLES: 30 MAIN LUG ONLY
BUS RATING: 200A 10 KA INTERRUPTING CAP. MOUNTING: SURFACE
FEATURES: NEMA 3R ENCL

DESCRIPTION	NOTES	VA	TYPE	BRKR	P	CKT	PH	CKT	P	BRKR	TYPE	VA	DESCRIPTION	NOTES
EX RECEPTACLES	1	1200	R	20	1	1	A	2	1	20SWD	L	1000	EX FESTOON LIGHTING	1, 2
EX RECEPTACLES	1	1200	R	20	1	3	B	4	1	20SWD	L	1000	EX FESTOON LIGHTING	1, 2
EX RECEPTACLES	1	1200	R	20	1	5	A	6	2	50			SPARE	
EX RECEPTACLES	1	1200	R	20	1	7	B	8					"	
EX RECEPTACLES	1	1200	R	20	1	9	A	10	2	30			SPARE	
EX RECEPTACLES	1	1200	R	20	1	11	B	12					"	
EX RECEPTACLES	1	1200	R	20	1	13	A	14	1	20			SPARE	
SPARE				20	1	15	B	16	1	20			SPARE	
SPARE				20	1	17	A	18	1	20			SPARE	
						19	B	20						
						21	A	22						
						28	B	30						

LOAD SUMMARY:

LOAD TYPE	CONN.	pf	DEMAND FACTOR	DEMAND
P=PANELS		0.90	0.90	"
L=LIGHTING	2.0	0.96	1.00	" 2.0
R=RECEPTACLES	8.8	0.85	50% OF > 10k	" 8.8
A=APPLIANCES		0.80	1.00	"
M=MOTORS		0.60	1.00	
2M=2Pole MOTORS		0.90	1.25	
H=HEATERS		1.00	1.00	
0=SPARE		0.85	0.50	"
TOTAL	10.7 kVA	0.88		10.7 kVA

CONNECTED PHASE LOADING
PHASE A: 5.8
PHASE B: 4.6
[LARGEST MOTO Kw]

EST. MAX. DEMAND: 10.7 kVA
MIN. FEEDER AMPACITY: 46.6 A

NOTES:
1. RECONNECT EX CIRCUIT/LOAD TO BREAKERS AS SHOWN TO MATCH ORIG.
2. CIRCUIT FESTOON LIGHT CIRCUITS VIA EX TIME CLOCK PER DWGS.

SWD: SWITCHING DUTY BREAKER

PANEL SCHEDULE

PANEL: MS3 (EX) LOCATION: MAIN ST. NORTH VOLTS: 120 / 240 1 PH 3 W
NO. POLES: (AND SUB-PANEL) 100/2 MAIN BREAKER
BUS RATING: 100A 10 KA INTERRUPTING CAP. MOUNTING: SURFACE
FEATURES: EX PANEL, 3R

DESCRIPTION	NOTES	VA	TYPE	BRKR	P	CKT	PH	CKT	P	BRKR	TYPE	VA	DESCRIPTION	NOTES
EX RECEPTACLES	1	1400	R	20	1	1	A	2	1	20	R	1400	EX RECEPTACLES	3
EX RECEPTACLES	1	1400	R	20	1	3	B	4	1	20	R	1400	EX RECEPTACLES	3
EX RECEPTACLES	1	1400	R	20	1	5	A	6	1	20SW	L	1800	EX FESTOON LIGHTING	2
EX RECEPTACLES	1	1400	R	20	1	7	B	8	1	20SW	L	1800	EX FESTOON LIGHTING	2
					1	9	A	10						
					1	11	B	12						
					1	13	A	14						
						15	B	16						
						17	A	18						
						19	B	20						

LOAD SUMMARY:

LOAD TYPE	CONN.	pf	DEMAND FACTOR	DEMAND
P=PANELS		0.90	1.00	"
L=LIGHTING	3.6	0.96	1.00	" 3.6
R=RECEPTACLES	8.8	0.85	50% OF > 10k	" 8.8
A=APPLIANCES		0.80	1.00	"
M=MOTORS		0.60	1.00	
2M=2Pole MOTORS		0.90	1.25	
H=HEATERS		1.00	1.00	
0=SPARE		0.85	0.50	"
TOTAL	12.3 kVA	0.89		12.3 kVA

CONNECTED PHASE LOADING
PHASE A: 6.0
PHASE B: 6.0
[LARGEST MOTO Kw]

EST. MAX. DEMAND: 12.3 kVA
MIN. FEEDER AMPACITY: 54.9 A

NOTES:
1. REPLACE EX 30/1 BREAKER WITH 20/1 BREAKER PER PLAN NOTES.
2. PROVIDE BREAKER TO SERVE EX LOADS INDICATED.
3. EXISTING LOAD TO REMAIN.

SEE MC6 SCHEDULE FOR TOTAL LOAD OF PNL MS1 + MS3

PANEL SCHEDULE

PANEL: MS4 LOCATION: MAIN ST. NORTH VOLTS: 120 / 240 1 PH 3 W
NO. POLES: 30 MAIN LUG ONLY
BUS RATING: 200A 10 KA INTERRUPTING CAP. MOUNTING: SURFACE
FEATURES: NEMA 3R ENCL

DESCRIPTION	NOTES	VA	TYPE	BRKR	P	CKT	PH	CKT	P	BRKR	TYPE	VA	DESCRIPTION	NOTES
EX RECEPTACLES	1	1200	R	20	1	1	A	2	2	50	P	4200	VENDOR PNL MSVP14	1
EX RECEPTACLES	1	1200	R	20	1	3	B	4			P	4200	"	
EX RECEPTACLES	1	1200	R	20	1	5	A	6	2	30			SPARE	
EX RECEPTACLES	1	1200	R	20	1	7	B	8					"	
EX RECEPTACLES	1	1200	R	20	1	9	A	10	1	20			SPARE	
SPARE				20	1	11	B	12	1	20			SPARE	
SPARE				20	1	13	A	14	1	20			SPARE	
SPARE				20	1	15	B	16	1	20			SPARE	
						17	A	18						
						19	B	20						
						21	A	22						
						23	B	24						

LOAD SUMMARY:

LOAD TYPE	CONN.	pf	DEMAND FACTOR	DEMAND
P=PANELS	8.4	0.90	0.90	" 7.6
L=LIGHTING		0.96	1.00	"
R=RECEPTACLES	6.4	0.85	50% OF > 10k	" 6.4
A=APPLIANCES		0.80	1.00	"
M=MOTORS		0.60	1.00	
2M=2Pole MOTORS		0.90	1.25	
H=HEATERS		1.00	1.00	
0=SPARE		0.85	0.50	"
TOTAL	14.7 kVA	0.88		13.9 kVA

CONNECTED PHASE LOADING
PHASE A: 7.8
PHASE B: 6.6
[LARGEST MOTO Kw]

EST. MAX. DEMAND: 13.9 kVA
MIN. FEEDER AMPACITY: 57.9 A

NOTES:
1. CONNECT EXISTING LOAD TO REMAIN AS INDICATED.

PANEL SCHEDULE

PANEL: BL3 LOCATION: BLOCKS West VOLTS: 120 / 240 1 PH 3 W
NO. POLES: 18 200/3 MAIN BREAKER
BUS RATING: 200A 10 KA INTERRUPTING CAP. MOUNTING: SURFACE
FEATURES: NEMA 3R ENCL

DESCRIPTION	NOTES	VA	TYPE	BRKR	P	CKT	PH	CKT	P	BRKR	TYPE	VA	DESCRIPTION	NOTES
EVENT LOAD		1400	R	20	1	1	A	2	1	20	R	1400	EVENT LOAD	
EVENT LOAD		1400	R	20	1	3	B	4	1	20	R	1400	EVENT LOAD	
EVENT LOAD		1400	R	20	1	5	A	6	1	20	R	1400	EVENT LOAD	
EVENT LOAD		1400	R	20	1	7	B	8	1	20	R	1400	EVENT LOAD	
SPARE			R	50		9	A	10		30	R	2000	EVENT LOAD	
"			R		2	11	B	12	2		R	2000	"	
EX PANEL LSD		6000	P	100		13	A	14	1	20			SPARE	
"		6000	P		2	15	B	16	1	20			SPARE	
						17	A	18	1	20			SPARE	

LOAD SUMMARY:

LOAD TYPE	CONN.	pf	DEMAND FACTOR	DEMAND
P=PANELS	12.0	0.90	1.00	" 12.0
L=LIGHTING		0.96	1.00	"
R=RECEPTACLES	15.6	0.85	50% OF > 10k	" 12.8
A=APPLIANCES		0.80	1.00	"
M=MOTORS		0.60	1.00	
2M=2Pole MOTORS		0.90	1.25	
H=HEATERS		1.00	1.00	
0=SPARE		0.85	0.50	"
TOTAL	27.5 kVA	0.87		26.6 kVA

CONNECTED PHASE LOADING
PHASE A: 13.8
PHASE B: 13.6
[LARGEST MOTO Kw]
NOTES:

EST. MAX. DEMAND: 26.6 kVA
MIN. FEEDER AMPACITY: 110.8 A

METER CENTER: MC1 LOCATION: MAIN STREET South VOLTS: 120 / 240 ### 3 W
BUS RATING: 600A

CIRCUIT NO.	DESCRIPTION	LOAD	TYPE	MIN BRKR	DESCRIPTION
1	EX PANEL WP1	12.0	P	65.6	EX PANEL
2	PANEL MS4 & MS5	32.7	P	51.7	ADDED PANELS
3	MSVP9	16.8	P	26.6	VENDOR PANEL
4	MSVP10	12.0	P	19.0	VENDOR PANEL
5	MSVP11	12.0	P	19.0	VENDOR PANEL
6	MSVP12	12.0	P	19.0	VENDOR PANEL
7	MSVP13	12.0	P	19.0	VENDOR PANEL
8					
9					
10					
11					
12					
13					
14					
15					

LOAD SUMMARY	TOTAL	DF	E.M.D		
P=PANELS	109.5	0.89	97.4	EST. MAX. DEM.:	97.4 KVA
H=HEATING	0.0	0.80	0.0	10% SPARE	9.7 KVA
C=COOLING	0.0	0.00	0.0	E.M.D. + SPARE:	107.2 KVA
M=MOTORS	0.0	0.80	0.0	EST. MAX. DEM.:	448.6 AMPS
O=OTHER	0.0	0.50	0.0	MINIMUM OCPD:	558.2 AMPS
TOTAL	109.5 KVA		97.4		

METER CENTER: MC6 LOCATION: MAIN STREET North VOLTS: 120 / 240 ### 3 W
BUS RATING: 600A

CIRCUIT NO.	DESCRIPTION	LOAD	TYPE	MIN BRKR	DESCRIPTION
1	PANELS MS1 & MS3	14.7	P	80.9	EX PANELS
2	PANEL MS2	10.7	P	16.9	PANEL
3	PANEL WP2	16.8	P	26.6	EX PANEL
4	BLP1	14.4	P	22.8	STREET POWER PIT
5	BLP2	14.4	P	22.8	STREET POWER PIT
6	PANEL BL3	24.0	P	38.0	PANEL
7	MSVP1	12.0	P	19.0	VENDOR PANEL
8					
9					
10					
11					
12					
13					
14					
15					

LOAD SUMMARY	TOTAL	DF	E.M.D		
P=PANELS	107.0	0.90	96.3	EST. MAX. DEM.:	96.3 KVA
H=HEATING	0.0	0.80	0.0	18% SPARE	17.3 KVA
C=COOLING	0.0	0.00	0.0	E.M.D. + SPARE:	113.7 KVA
M=MOTORS	0.0	0.80	0.0	EST. MAX. DEM.:	473.6 AMPS
O=OTHER	0.0	0.50	0.0	MINIMUM OCPD:	592.1 AMPS
TOTAL	107.0 KVA		96.3		

LIGHT FIXTURE SCHEDULE

TYPE	MFGR	CATALOG NO.	LAMPS QUAN	LAMPS WATT	LAMPS TYPE	VOLT	MTG	DESCRIPTION	NOTES	TOTAL WATTS
A	Spaulding	CR1-*-P40-H3P-F-Q-PS-F*	1	400	MH/PS		POLE	TYPE III STREET LIGHT	1, 3	410
B	Spaulding	CR1-A-P40-H4P-F-Q-PS-F*	1	400	MH/PS		POLE	TYPE IV AREA LIGHT	2, 3, 4	820
C	Spaulding	CR1-*-P40-H2-F-Q-PS-F*	1	400	MH/PS		POLE	Type II AREA LIGHT	1, 3, 4	410

GENERAL NOTES:
1. SUBSTITUTION OF FIXTURES IS ACCEPTABLE UNO; AND SHALL MEET ALL THE RATINGS/FEATURES/AETHETICS OF THE SCHEDULED FIXTURE.
2. PROVIDE ANCHOR BOLTS AND TEMPLATE FOR INSTALLATION FOR ALL TYPE A FIXTURES. SEE DETAIL SHEET C5.1.

NOTES:
1. PROVIDE A TENON SLIPFITTER AND WITH 8FT LONG VALMONT DS32 STEEL ARM FOR EACH FIXTURE.
2. TWIN HEAD CONFIGURATION. PROVIDE WITH ARM MOUNT FOR TWO FIXTURES.
3. PROVIDE 100MPH RATED, 20FT HIGH, SQUARE STRAIGHT OR TAPERED POLES; QUANTITY AS SHOWN ON DRAWINGS.
4. MOUNT ON 3FT ABOVE GRADE / 6FT BELOW GRADE / 24-IN DIA CONCRETE POLE BASE (NO DECORA OR COLOR REQUIRED).
SEE BASE DETAIL; SHEET E3.1.

PANEL SCHEDULE

PANEL: MS5 LOCATION: MAIN ST. NORTH VOLTS: 120 / 240 1 PH 3 W
NO. POLES: 30 MAIN LUG ONLY
BUS RATING: 200A 10 KA INTERRUPTING CAP. MOUNTING: SURFACE
FEATURES: NEMA 3R ENCL, FEED-THRU LUGS

DESCRIPTION	NOTES	VA	TYPE	BRKR	P	CKT	PH	CKT	P	BRKR	TYPE	VA	DESCRIPTION	NOTES
EX RECEPTACLES	1	1200	R	20	1	1	A	2	1	20SWD	L	1000	EX FESTOON LIGHTING	1
EX RECEPTACLES	1	1200	R	20	1	3	B	4	1	20SWD	L	1000	EX FESTOON LIGHTING	1
EX RECEPTACLES	1	1200	R	20	1	5	A	6	1	20SWD	L	550	EX AREA LIGHTING	1
EX RECEPTACLES	1	1200	R	20	1	7	B	8	2	50	P	4200	VENDOR PNL MSVP15	1
EX RECEPTACLES	1	1200	R	20	1	9	A	10			P	4200	"	
EX RECEPTACLES	1	1200	R	20	1	11	B	12	2	30			SPARE	
EX RECEPTACLES	1	1200	R	20	1	13	A	14					"	
SPARE				20	1	15	B	16	1	20			SPARE	
						17	A	18						
						19	B	20						
						21	A	22						
						23	B	24						

LOAD SUMMARY:

LOAD TYPE	CONN.	pf	DEMAND FACTOR	DEMAND
P=PANELS	8.4	0.90	0.90	" 7.6
L=LIGHTING	2.6	0.96	1.00	" 2.6
R=RECEPTACLES	8.8	0.85	50% OF > 10k	" 8.8
A=APPLIANCES		0.80	1.00	"
M=MOTORS		0.60	1.00	
2M=2Pole MOTORS		0.90	1.25	
H=HEATERS		1.00	1.00	
0=SPARE		0.85	0.50	"
TOTAL	19.5 kVA	0.89		18.8 kVA

CONNECTED PHASE LOADING
PHASE A: 10.6
PHASE B: 8.8
[LARGEST MOTO Kw]
NOTES:
1. CONNECT EXISTING LOAD TO REMAIN AS INDICATED.

EST. MAX. DEMAND: 18.8 kVA
MIN. FEEDER AMPACITY: 60.9 A

MC1, MC6, MS1-4, BL3, LTG SCHED

RED ROCK CONSULTING ENGINEERS
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COLORADO REGISTERED PROFESSIONAL ENGINEER JEFFREY B. TANNER 28627

STATE OF COLORADO 1876

Colorado State Fair
Project M-09003

COLORADO STATE FAIR REPLACE SECONDARY ELECTRICAL

1001 BEULAH AVE., PUEBLO, CO

SCHEDULES

MARK	REVISION	DATE

PROJECT NO: 09050
STATE PROJ: M-09003
DRAWN: CAD
CHECKED: JBT
ISSUE DATE: 10/7/2010

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E-4.1