



## Bill of Material #30821727 CO

### Pennsylvania Convention Center Philadelphia, PA

February 24, 2009

This bill of material is based upon plans and specs received from Diversified Lighting on 11/21/08 & phone message from Jerry Davis on 11/26/08.

An order will only be accepted as per the Leviton Bill of Material.

ITEM	QTY	PART NO.	DESCRIPTION
			<b>Relay Panel RP4B</b>
18.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
18.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP4C</b>
19.0	1	CTP-R24MD-000	Configured Z-MAX 24 Relay Cabinet, Master, with:
19.1	16	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP4D</b>
20.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
20.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP4E</b>
21.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
21.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP4F</b>
22.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
22.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP4G</b>
23.0	1	CTP-R24MD-000	Configured Z-MAX 24 Relay Cabinet, Master, with:
23.1	19	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP5A</b>
24.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
24.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP5B</b>
25.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
25.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP5C</b>
26.0	1	R24MD-124	Z-MAX 24 Relay Cabinet, Master w/ 24 120/277V Relays



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### Pennsylvania Convention Center Philadelphia, PA

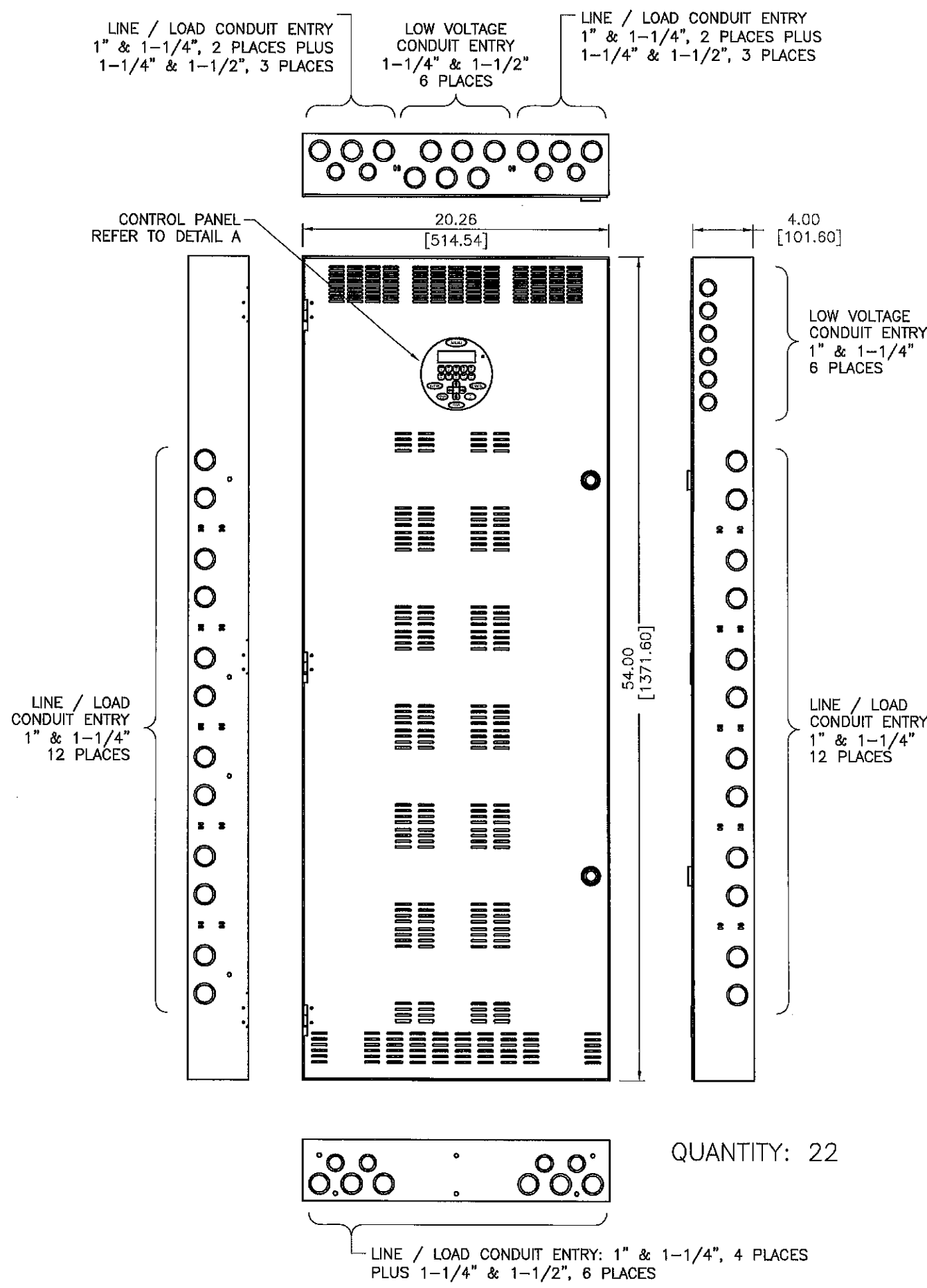
February 24, 2009

This bill of material is based upon plans and specs received from Diversified Lighting on 11/21/08 & phone message from Jerry Davis on 11/26/08.

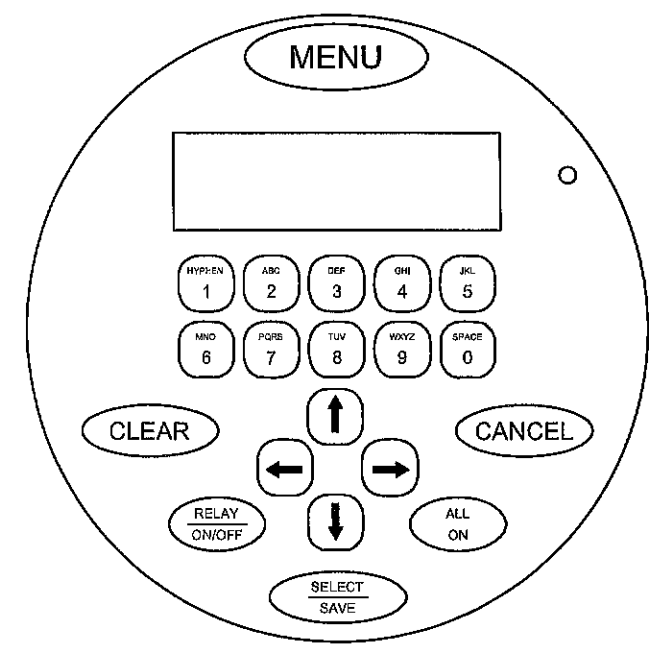
An order will only be accepted as per the Leviton Bill of Material.

ITEM	QTY	PART NO.	DESCRIPTION
			<b>Relay Panel RP2A</b>
9.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
9.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP2B</b>
10.0	1	R24MD-124	Z-MAX 24 Relay Cabinet, Master w/ 24 120/277V Relays
			<b>Relay Panel RP1J</b>
11.0	1	R24MD-124	Z-MAX 24 Relay Cabinet, Master w/ 24 120/277V Relays
			<b>Relay Panel RP2C</b>
12.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
12.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP3A</b>
13.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
13.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP3B</b>
14.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
14.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP3C</b>
15.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
15.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP3D</b>
16.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
16.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V
			<b>Relay Panel RP4A</b>
17.0	1	CTP-R48MD-000	Configured Z-MAX 48 Relay Cabinet, Master, with:
17.1	32	RELAY-ST2	Z-MAX Standard Relay 120V/277V

PLOT STAMP: Feb. 25, 2009 (8:51 AM) PLOTTED BY: dbg



QUANTITY: 22



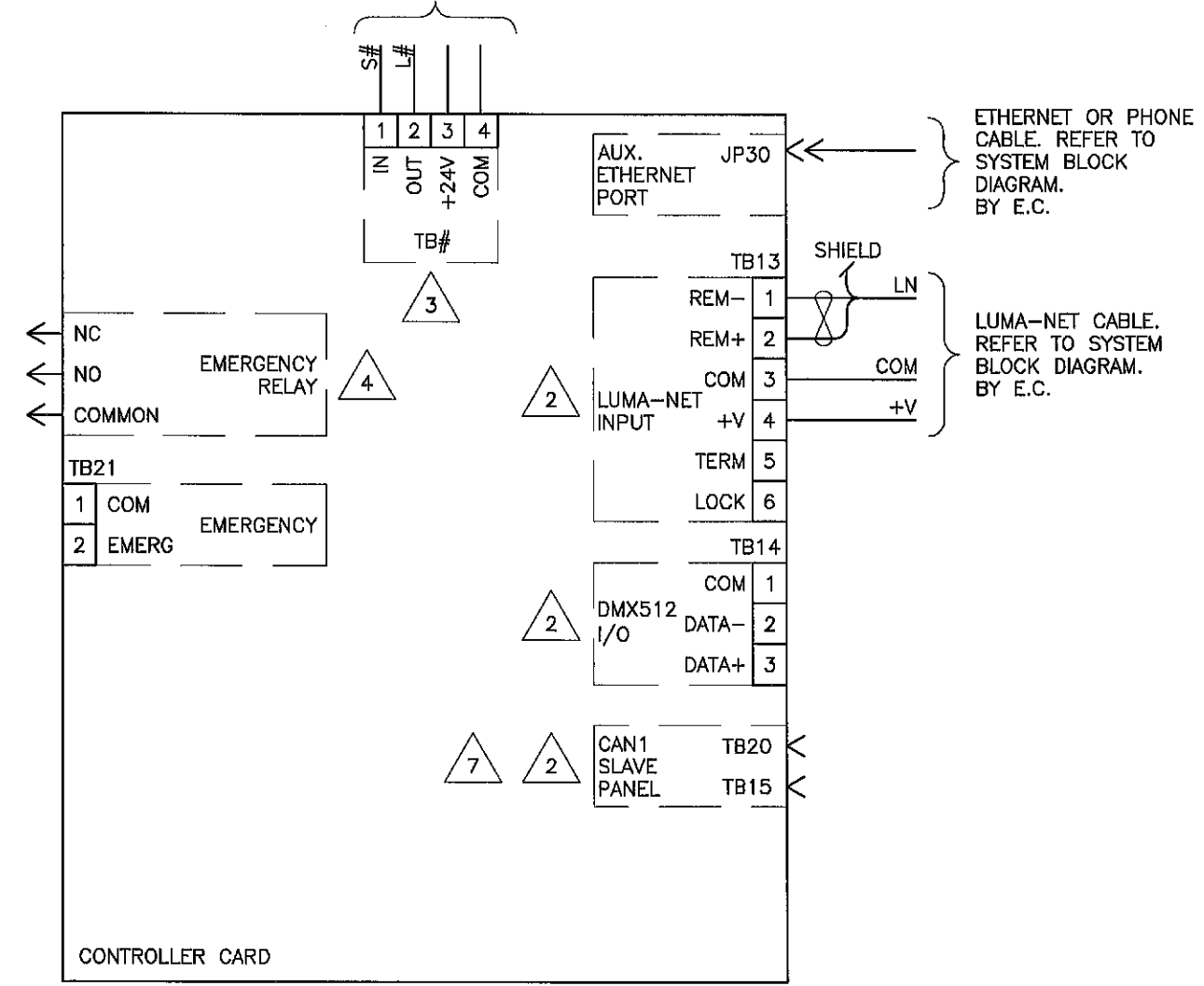
DETAIL A  
SCALE: NONE

- NOTES: UNLESS OTHERWISE SPECIFIED
1. MINIMUM CLEARANCES: 36" FROM FRONT OF RELAY RACK FOR WIRING ACCESS..
  2. MATERIAL:  
A. NEMA TYPE 1 ENCLOSURE - 16 GAUGE CRS.  
B. DOOR - 14 GAUGE CRS.
  3. FINISH: BLUE POWDER COAT.
  4. C-UL AND UL LISTED FILE E123072.
  5. UL 508 & UL 916 LISTED.

<b>LEVITON</b> LIGHTING MANAGEMENT SYSTEMS	
20497 S.W. Teton Ave. Tualatin, OR 97062 (503) 404-5500	
REGIONAL MGR.	J. BEYERT
PROJECT MGR.	JR TANNER
DESIGNED BY	A. GRANO
REVIEWED BY	V. CAGLIANONE
PROJECT PHASE	APPROVAL
DATE	02-19-09
SCALE	NONE
DIMENSION	INCH [mm]
RELEASE	1
TITLE	48 RELAY SYSTEM MASTER
MODEL #	AS NOTED
PROJECT	PENNSYLVANIA CONVENTION CENTER
	PHILADELPHIA, PA
QUOTE	-DWG
	30821727-106
SHEET	1 OF 24

APPROVAL SET - NOT FOR CONSTRUCTION

ANALOG / SWITCH CABLES.  
REFER TO ANALOG / SWITCH INPUT  
TABLE AND SYSTEM BLOCK DIAGRAM.  
BY E.C



TYPICAL ANALOG / SWITCH INPUT CONNECTION TABLE

INPUT		SWITCH CIRCUITS DESCRIPTION	FUNCTION	
TB# S#, L#	JP#		SWITCH TYPE	ACTION TYPE
1	OFF			
2	OFF			
3	OFF			
4	OFF			
5	OFF			
6	OFF			
7	OFF			
8	OFF			
9	OFF			
10	OFF			
11	OFF			
12	OFF			

NOTES:

- INSTALLER TO WIRE TO CONTROL TERMINALS LOCATED ON CONTROLLER CARD.
- TERMINATION JUMPERS; REFER TO INSTALLATION MANUAL FOR WIRING RUN TERMINATIONS. REFER TO INSTALLATION MANUAL FOR JUMPER DETAILS.
- TERMINATE AND JUMPER SWITCH / ANALOG INPUTS PER INPUT CONNECTION TABLE. REFER TO INSTALLATION DOCUMENTS FOR DETAILS.
- PCB MOUNTED SPADE LUGS.
- THIS MODEL CABINET COMES STANDARD WITH TWELVE (12) ANALOG INPUTS. INSTALLATION OF AN OPTIONAL INPUT CARD EXPANDS ANALOG INPUTS TO 48.
- Z-MAX ANALOG AND DIGITAL CONTROL STATIONS CAN BE ASSIGNED TO OPERATE ANY RELAY IN THE CONNECTED CABINET OR NETWORKED RELAY CABINETS.
- COMMUNICATIONS BUS. CONNECTORS ARE INTERCHANGEABLE.

**LEVITON**

LIGHTING MANAGEMENT SYSTEMS  
20497 S.W. Teton Ave.  
Tualatin, OR 97062  
(503) 404-5500

REGIONAL MGR. J. BEYERT
PROJECT MGR. JR TANNER
DESIGNED BY A. GRANO
REVIEWED BY V. CAGLIANONE
PROJECT PHASE APPROVAL
DATE 02-19-09
SCALE NONE
DIMENSION
RELEASE 1
TITLE  48 RELAY SYSTEM MASTER
MODEL # AS NOTED
PROJECT  PENNSYLVANIA CONVENTION CENTER  PHILADELPHIA, PA
QUOTE -DWG 30821727-106
SHEET 2 OF 24

PLOT STAMP: Feb. 25, 2009 (8:51 AM) PLOTTED BY: d8g

RP3A

CIRCUIT SCHEDULE

CTP- R48MD- 000 REFER TO RELAY TYPE QUANTITIES BELOW

**LEVITON**  
LIGHTING MANAGEMENT SYSTEMS  
20497 S.W. Teton Ave.  
Tualatin, OR 97062  
(503) 404-5500

RELAY NO.	CIRCUIT / PANEL-BREAKER	CONTROL			LOAD CIRCUITS			NOTES	(EM)
		LUMA-NET CHANNEL	DMX CHANNEL	ANALOG INPUT	RELAY TYPE	FIELD CIRCUIT	LOAD WATTS		
1	L4.3	1150	1		S	21		LEVEL 4 FLUORESCENT WALLWASH	
2	L4.3	1151	2		S	23		LEVEL 4 SPOT TRACK HEADS	
3	L4.3	1152	3		S	25		LEVEL 4 WALLWASH TRACK HEADS	
4	L4.3	1153	4		S	14		LEVEL 3 SOUTHWEST DOWNLIGHTS	
5	L4.3	1154	5		S	16		LEVEL 3 SOUTHWEST WALLWASH	
6	L4.3	1155	6		S	16		LEVEL 3 SOUTHWEST ACCENTS	
7	L4.3	1156	7		S	18		LEVEL 4 SOUTHWEST DOWNLIGHTS	
8	L4.3	1157	8		S	20		LEVEL 4 SOUTHWEST DOWNLIGHTS	
9	L4.3	1158	9		S	22		LEVEL 4 SOUTHWEST WALLWASH	
10	L4.3	1159	10		S	24		LEVEL 4 LINEAR WALLWASH	
11	L4.3	1160	11		S	26		LEVEL 4 LINEAR WALLWASH	
12	L4.3	1161	12		S	28		LEVEL 4 LINEAR WALLWASH	
13	L4.3	1162	13		S	30		LEVEL 4 LINEAR WALLWASH	
14	L4.3	1163	14		S	32		LEVEL 4 SW AND MW DOWNLIGHTS	
15		1164	15		S			SPARE	
16		1165	16		S			SPARE	
17		1166	17		S			SPARE	
18		1167	18		S			SPARE	
19		1168	19		S			SPARE	
20		1169	20		S			SPARE	
21		1170	21		S			SPARE	
22		1171	22		S			SPARE	
23		1172	23		S			SPARE	
24		1173	24		S			SPARE	
25		1174	25		S			SPARE	
26		1175	26		S			SPARE	
27		1176	27		S			SPARE	
28		1177	28		S			SPARE	
29		1178	29		S			SPARE	
30		1179	30		S			SPARE	
31		1180	31		S			SPARE	
32		1181	32		S			SPARE	
33		1182	33						
34		1183	34						
35		1184	35						
36		1185	36						
37		1186	37						
38		1187	38						
39		1188	39						
40		1189	40						
41		1190	41						
42		1191	42						
43		1192	43						
44		1193	44						
45		1194	45						
46		1195	46						
47		1196	47						
48		1197	48						

RAC00-VBR - VOLTAGE BARRIER BETWEEN RELAY CARDS - PAINTED RED, PLACED AT POSITIONS, AFTER RELAY:

1	8	
2	16	
3	24	
4	32	
5	40	

KEY: (EM) EMERGENCY CIRCUITS

RELAY TYPE: (32) S (RELAY-ST2) SINGLE POLE, 120/277V 20A ZMAX  
 (0) 2 (RELAY-2PL) 2 POLE, 208 - 480V, 240 - 480V 20A  
 (0) 3 (RELAY-347) SINGLE POLE, 347V 20A  
 (0) N (RELAY-1NC) 1-POLE NORMALLY CLOSED 120V - 347V  
 L (RELAY-LAT) 120/277V 20A, LATCHING  
 30 (RELAY-030) 1-POLE N/O OR N/C 18K AMP SCCR

REGIONAL MGR.  
J. BEYERT

PROJECT MGR.  
JR TANNER

DESIGNED BY  
A. GRANO

REVIEWED BY  
V. CAGLIANONE

PROJECT PHASE  
APPROVAL

DATE  
02-19-09

SCALE  
NONE

DIMENSION

RELEASE  
1

TITLE  
  
48 RELAY SYSTEM MASTER

MODEL #  
AS NOTED

PROJECT  
PENNSYLVANIA CONVENTION CENTER

PHILADELPHIA, PA

QUOTE -DWG  
30821727-106

SHEET  
13 OF 24

PLOT STAMP: Feb. 25, 2009 (8:52 AM) PLOTTED BY: aBg

APPROVAL SET - NOT FOR CONSTRUCTION

RP4A

CIRCUIT SCHEDULE

CTP- R48MD- 000 REFER TO RELAY TYPE QUANTITIES BELOW

**LEVITON**  
LIGHTING MANAGEMENT SYSTEMS  
20497 S.W. Teton Ave.  
Tualatin, OR 97062  
(503) 404-5500

RELAY NO.	RELAY / CIRCUIT	CONTROL			LOAD CIRCUITS			NOTES	(EM)
		PANEL-BREAKER	LUMA-NET CHANNEL	DMX CHANNEL	ANALOG INPUT	RELAY TYPE	FIELD CIRCUIT		
1	L4.1	950	1		S	1		EXHIBIT HALL D	
2	L4.1	951	2		S	1		EXHIBIT HALL D	
3	L4.1	952	3		S	1		EXHIBIT HALL D	
4	L4.1	953	4		S	3		EXHIBIT HALL D	
5	L4.1	954	5		S	3		EXHIBIT HALL D	
6	L4.1	955	6		S	3		EXHIBIT HALL D	
7	L4.1	956	7		S	5		EXHIBIT HALL D	
8	L4.1	957	8		S	5		EXHIBIT HALL D	
9	L4.1	958	9		S	5		EXHIBIT HALL D	
10	L4.1	959	10		S	7		EXHIBIT HALL D	
11	L4.1	960	11		S	7		EXHIBIT HALL D	
12	L4.1	961	12		S	7		EXHIBIT HALL D	
13	L4.1	962	13		S	9		EXHIBIT HALL D	
14	L4.1	963	14		S	9		EXHIBIT HALL D	
15	L4.1	964	15		S	9		EXHIBIT HALL D	
16	L4.1	965	16		S	11		EXHIBIT HALL D	
17	L4.1	966	17		S	11		EXHIBIT HALL D	
18	L4.1	967	18		S	11		EXHIBIT HALL D	
19	L4.1	968	19		S	13		EXHIBIT HALL D	
20	L4.1	969	20		S	13		EXHIBIT HALL D	
21	L4.1	970	21		S	13		EXHIBIT HALL D	
22	L4.1	971	22		S	15		EXHIBIT HALL D	
23	L4.1	972	23		S	15		EXHIBIT HALL D	
24	L4.1	973	24		S	15		EXHIBIT HALL D	
25	L4.1	974	25		S	17		EXHIBIT HALL D	
26	L4.1	975	26		S	17		EXHIBIT HALL D	
27	L4.1	976	27		S	17		EXHIBIT HALL D	
28	L4.1	977	28		S	19		EXHIBIT HALL D	
29	L4.1	978	29		S	19		EXHIBIT HALL D	
30	L4.1	979	30		S	19		EXHIBIT HALL D	
31	L4.1	980	31		S	21		EXHIBIT HALL D	
32	L4.1	981	32		S	21		EXHIBIT HALL D	
33		982	33						
34		983	34						
35		984	35						
36		985	36						
37		986	37						
38		987	38						
39		988	39						
40		989	40						
41		990	41						
42		991	42						
43		992	43						
44		993	44						
45		994	45						
46		995	46						
47		996	47						
48		997	48						

RAC00-VBR - VOLTAGE BARRIER BETWEEN RELAY CARDS - PAINTED RED, PLACED AT POSITIONS, AFTER RELAY:

1	8	
2	16	
3	24	
4	32	
5	40	

KEY: (EM) EMERGENCY CIRCUITS

RELAY TYPE: (32) S (RELAY-ST2) SINGLE POLE, 120/277V 20A ZMAX  
 (0) 2 (RELAY-2PL) 2 POLE, 208 - 480V, 240 - 480V 20A  
 (0) 3 (RELAY-347) SINGLE POLE, 347V 20A  
 (0) N (RELAY-1NC) 1-POLE NORMALLY CLOSED 120V - 347V  
 L (RELAY-LAT) 120/277V 20A, LATCHING  
 30 (RELAY-030) 1-POLE N/O OR N/C 18K AMP SCCR

REGIONAL MGR.  
J. BEYERT

PROJECT MGR.  
JR TANNER

DESIGNED BY  
A. GRANO

REVIEWED BY  
V. CAGLIANONE

PROJECT PHASE  
APPROVAL

DATE  
02-19-09

SCALE  
NONE

DIMENSION

RELEASE  
1

TITLE  
  
48 RELAY SYSTEM MASTER

MODEL #  
AS NOTED

PROJECT  
PENNSYLVANIA CONVENTION CENTER

PHILADELPHIA, PA

QUOTE -DWG  
30821727-106

SHEET  
17 OF 24

PLOT STAMP: Feb. 25, 2009 (8:52 AM) PLOTTED BY: aBg

APPROVAL SET - NOT FOR CONSTRUCTION

RP4B

CIRCUIT SCHEDULE

CTP- R48MD- 000 REFER TO RELAY TYPE QUANTITIES BELOW

**LEVITON**  
LIGHTING MANAGEMENT SYSTEMS  
20497 S.W. Teton Ave.  
Tualatin, OR 97062  
(503) 404-5500

RELAY / CIRCUIT NO.	CIRCUIT PANEL-BREAKER	CONTROL			LOAD CIRCUITS			NOTES	(EM)
		LUMA-NET CHANNEL	DMX CHANNEL	ANALOG INPUT	RELAY TYPE	FIELD CIRCUIT	LOAD WATTS		
1	L4.1	900	1		S	21		EXHIBIT HALL D	
2	L4.1	901	2		S	23		EXHIBIT HALL D	
3	L4.1	902	3		S	23		EXHIBIT HALL D	
4	L4.1	903	4		S	23		EXHIBIT HALL D	
5	L4.1	904	5		S	2		EXHIBIT HALL D	
6	L4.1	905	6		S	2		EXHIBIT HALL D	
7	L4.1	906	7		S	2		EXHIBIT HALL D	
8	L4.1	907	8		S	4		EXHIBIT HALL D	
9	L4.1	908	9		S	4		EXHIBIT HALL D	
10	L4.1	909	10		S	4		EXHIBIT HALL D	
11	L4.1	910	11		S	6		EXHIBIT HALL D	
12	L4.1	911	12		S	6		EXHIBIT HALL D	
13	L4.1	912	13		S	6		EXHIBIT HALL D	
14	L4.1	913	14		S	8		EXHIBIT HALL D	
15	L4.1	914	15		S	8		EXHIBIT HALL D	
16	L4.1	915	16		S	8		EXHIBIT HALL D	
17	L4.1	916	17		S	10		EXHIBIT HALL D	
18	L4.1	917	18		S	10		EXHIBIT HALL D	
19	L4.1	918	19		S	10		EXHIBIT HALL D	
20	L4.1	919	20		S	12		EXHIBIT HALL D	
21	L4.1	920	21		S	12		EXHIBIT HALL D	
22	L4.1	921	22		S	12		EXHIBIT HALL D	
23	L4.1	922	23		S	14		EXHIBIT HALL D	
24	L4.1	923	24		S	14		EXHIBIT HALL D	
25	L4.1	924	25		S	14		EXHIBIT HALL D	
26	L4.1	925	26		S	16		EXHIBIT HALL D	
27	L4.1	926	27		S	16		EXHIBIT HALL D	
28	L4.1	927	28		S	16		EXHIBIT HALL D	
29	L4.1	928	29		S	18		EXHIBIT HALL D	
30	L4.1	929	30		S	18		EXHIBIT HALL D	
31	L4.1	930	31		S	18		EXHIBIT HALL D	
32	L4.1	931	32		S			SPARE	
33		932	33						
34		933	34						
35		934	35						
36		935	36						
37		936	37						
38		937	38						
39		938	39						
40		939	40						
41		940	41						
42		941	42						
43		942	43						
44		943	44						
45		944	45						
46		945	46						
47		946	47						
48		947	48						

RAC00-VBR - VOLTAGE BARRIER BETWEEN RELAY CARDS - PAINTED RED, PLACED AT POSITIONS, AFTER RELAY:

1	8	
2	16	
3	24	
4	32	
5	40	

KEY: (EM) EMERGENCY CIRCUITS

RELAY TYPE: (32) S (RELAY-ST2) SINGLE POLE, 120/277V 20A ZMAX  
 (0) 2 (RELAY-2PL) 2 POLE, 208 - 480V, 240 - 480V 20A  
 (0) 3 (RELAY-347) SINGLE POLE, 347V 20A  
 (0) N (RELAY-1NC) 1-POLE NORMALLY CLOSED 120V - 347V  
 L (RELAY-LAT) 120/277V 20A, LATCHING  
 30 (RELAY-030) 1-POLE N/O OR N/C 18K AMP SCCR

REGIONAL MGR. J. BEYERT
PROJECT MGR. JR TANNER
DESIGNED BY A. GRANO
REVIEWED BY V. CAGLIANONE
PROJECT PHASE APPROVAL
DATE 02-19-09
SCALE NONE
DIMENSION
RELEASE 1
TITLE  48 RELAY SYSTEM MASTER
MODEL # AS NOTED
PROJECT  PENNSYLVANIA CONVENTION CENTER  PHILADELPHIA, PA
QUOTE -DWG 30821727-106
SHEET 18 OF 24

PLOT STAMP: Feb. 25, 2009 (8:52 AM) PLOTTED BY: aBg

APPROVAL SET - NOT FOR CONSTRUCTION

RP4D

CIRCUIT SCHEDULE

CTP- R48MD- 000 REFER TO RELAY TYPE QUANTITIES BELOW

**LEVITON**

LIGHTING MANAGEMENT SYSTEMS

20497 S.W. Teton Ave.  
Tualatin, OR 97062  
(503) 404-5500

REGIONAL MGR.  
J. BEYERT  
PROJECT MGR.  
JR TANNER  
DESIGNED BY  
A. GRANO  
REVIEWED BY  
V. CAGLIANONE

PROJECT PHASE  
APPROVAL  
DATE  
02-19-09  
SCALE  
NONE  
DIMENSION  
RELEASE  
1

TITLE  
48 RELAY  
SYSTEM  
MASTER

MODEL #  
AS NOTED  
PROJECT  
PENNSYLVANIA  
CONVENTION  
CENTER  
PHILADELPHIA,  
PA

QUOTE -DWG  
30821727-106  
SHEET  
19 OF 24

RELAY / CIRCUIT NO.	PANEL-BREAKER	CONTROL			LOAD CIRCUITS			NOTES	(EM)
		LUMA-NET CHANNEL	DMX CHANNEL	ANALOG INPUT	RELAY TYPE	FIELD CIRCUIT	LOAD WATTS		
1	L4.2	850	1		S	1		EXHIBIT HALL D	
2	L4.2	851	2		S	1		EXHIBIT HALL D	
3	L4.2	852	3		S	1		EXHIBIT HALL D	
4	L4.2	853	4		S	3		EXHIBIT HALL D	
5	L4.2	854	5		S	3		EXHIBIT HALL D	
6	L4.2	855	6		S	3		EXHIBIT HALL D	
7	L4.2	856	7		S	5		EXHIBIT HALL D	
8	L4.2	857	8		S	5		EXHIBIT HALL D	
9	L4.2	858	9		S	5		EXHIBIT HALL D	
10	L4.2	859	10		S	7		EXHIBIT HALL D	
11	L4.2	860	11		S	7		EXHIBIT HALL D	
12	L4.2	861	12		S	7		EXHIBIT HALL D	
13	L4.2	862	13		S	9		EXHIBIT HALL D	
14	L4.2	863	14		S	9		EXHIBIT HALL D	
15	L4.2	864	15		S	9		EXHIBIT HALL D	
16	L4.2	865	16		S	11		EXHIBIT HALL D	
17	L4.2	866	17		S	11		EXHIBIT HALL D	
18	L4.2	867	18		S	11		EXHIBIT HALL D	
19	L4.2	868	19		S	13		EXHIBIT HALL E	
20	L4.2	869	20		S	13		EXHIBIT HALL E	
21	L4.2	870	21		S	13		EXHIBIT HALL E	
22	L4.2	871	22		S	15		EXHIBIT HALL E	
23	L4.2	872	23		S	15		EXHIBIT HALL E	
24	L4.2	873	24		S	15		EXHIBIT HALL E	
25	L4.2	874	25		S	17		EXHIBIT HALL E	
26	L4.2	875	26		S	17		EXHIBIT HALL E	
27	L4.2	876	27		S	17		EXHIBIT HALL E	
28	L4.2	877	28		S	2		EXHIBIT HALL E	
29	L4.2	878	29		S	2		EXHIBIT HALL E	
30	L4.2	879	30		S	2		EXHIBIT HALL E	
31	L4.2	880	31		S	4		EXHIBIT HALL E	
32	L4.2	881	32		S	4		EXHIBIT HALL E	
33		882	33						
34		883	34						
35		884	35						
36		885	36						
37		886	37						
38		887	38						
39		888	39						
40		889	40						
41		890	41						
42		891	42						
43		892	43						
44		893	44						
45		894	45						
46		895	46						
47		896	47						
48		897	48						

RAC00-VBR - VOLTAGE BARRIER BETWEEN RELAY CARDS - PAINTED RED, PLACED AT POSITIONS, AFTER RELAY:

1	8	
2	16	
3	24	
4	32	
5	40	

KEY: (EM) EMERGENCY CIRCUITS

RELAY TYPE: (32) S (RELAY-ST2) SINGLE POLE, 120/277V 20A ZMAX  
 (0) 2 (RELAY-2PL) 2 POLE, 208 - 480V, 240 - 480V 20A  
 (0) 3 (RELAY-347) SINGLE POLE, 347V 20A  
 (0) N (RELAY-1NC) 1-POLE NORMALLY CLOSED 120V - 347V  
 L (RELAY-LAT) 120/277V 20A, LATCHING  
 30 (RELAY-030) 1-POLE N/O OR N/C 18K AMP SCCR

PLOT STAMP: Feb. 25, 2009 (8:52 AM) PLOTTED BY: aBg

APPROVAL SET - NOT FOR CONSTRUCTION



RP4E

CIRCUIT SCHEDULE

CTP- R48MD- 000 REFER TO RELAY TYPE QUANTITIES BELOW

**LEVITON**  
LIGHTING MANAGEMENT SYSTEMS

20497 S.W. Teton Ave.  
Tualatin, OR 97062  
(503) 404-5500

REGIONAL MGR.  
J. BEYERT  
PROJECT MGR.  
JR TANNER  
DESIGNED BY  
A. GRANO  
REVIEWED BY  
V. CAGLIANONE

PROJECT PHASE  
APPROVAL  
DATE  
02-19-09  
SCALE  
NONE  
DIMENSION  
RELEASE  
1

TITLE  
48 RELAY  
SYSTEM  
MASTER

MODEL #  
AS NOTED  
PROJECT  
PENNSYLVANIA  
CONVENTION  
CENTER  
PHILADELPHIA,  
PA

QUOTE -DWG  
30821727-106  
SHEET  
20 OF 24

RELAY / CIRCUIT NO.	PANEL-BREAKER	CONTROL			LOAD CIRCUITS			NOTES	(EM)
		LUMA-NET CHANNEL	DMX CHANNEL	ANALOG INPUT	RELAY TYPE	FIELD CIRCUIT	LOAD WATTS		
1	L4.2	800	1		S	1		EXHIBIT HALL E	
2	L4.2	801	2		S	1		EXHIBIT HALL E	
3	L4.2	802	3		S	1		EXHIBIT HALL E	
4	L4.2	803	4		S	3		EXHIBIT HALL E	
5	L4.2	804	5		S	3		EXHIBIT HALL E	
6	L4.2	805	6		S	3		EXHIBIT HALL E	
7	L4.2	806	7		S	5		EXHIBIT HALL E	
8	L4.2	807	8		S	5		EXHIBIT HALL E	
9	L4.2	808	9		S	5		EXHIBIT HALL E	
10	L4.2	809	10		S	7		EXHIBIT HALL E	
11	L4.2	810	11		S	7		EXHIBIT HALL E	
12	L4.2	811	12		S	7		EXHIBIT HALL E	
13	L4.2	812	13		S	9		EXHIBIT HALL E	
14	L4.2	813	14		S	9		EXHIBIT HALL E	
15	L4.2	814	15		S	9		LEVEL 3 CORRIDOR 304	
16		815	16		S	11		SPARE	
17		816	17		S	11		SPARE	
18	L4.2	817	18		S	11		LEVEL 2 DOUBLE PENDANTS	
19	L4.2	818	19		S	13		LEVEL 2 DOUBLE PENDANTS	
20	L4.2	819	20		S	13		LEVEL 2 DOUBLE PENDANTS	
21	L4.2	820	21		S	13		LEVEL 2 DOUBLE PENDANTS	
22		821	22		S	15		SPARE	
23		822	23		S	15		SPARE	
24		823	24		S	15		SPARE	
25		824	25		S	17		SPARE	
26		825	26		S	17		SPARE	
27		826	27		S	17		SPARE	
28		827	28		S	2		SPARE	
29		828	29		S	2		SPARE	
30		829	30		S	2		SPARE	
31		830	31		S	4		SPARE	
32		831	32		S	4		SPARE	
33		832	33						
34		833	34						
35		834	35						
36		835	36						
37		836	37						
38		837	38						
39		838	39						
40		839	40						
41		840	41						
42		841	42						
43		842	43						
44		843	44						
45		844	45						
46		845	46						
47		846	47						
48		847	48						

RAC00-VBR - VOLTAGE BARRIER BETWEEN RELAY CARDS - PAINTED RED, PLACED AT POSITIONS, AFTER RELAY:

1	8	
2	16	
3	24	
4	32	
5	40	

KEY: (EM) EMERGENCY CIRCUITS

RELAY TYPE: (32) S (RELAY-ST2) SINGLE POLE, 120/277V 20A ZMAX  
 (0) 2 (RELAY-2PL) 2 POLE, 208 - 480V, 240 - 480V 20A  
 (0) 3 (RELAY-347) SINGLE POLE, 347V 20A  
 (0) N (RELAY-1NC) 1-POLE NORMALLY CLOSED 120V - 347V  
 L (RELAY-LAT) 120/277V 20A, LATCHING  
 30 (RELAY-030) 1-POLE N/O OR N/C 18K AMP SCCR

PLOT STAMP: Feb. 25, 2009 (8:52 AM) PLOTTED BY: a8g

APPROVAL SET - NOT FOR CONSTRUCTION

RP4F

CIRCUIT SCHEDULE

CTP- R48MD- 000 REFER TO RELAY TYPE QUANTITIES BELOW



20497 S.W. Teton Ave.  
Tualatin, OR 97062  
(503) 404-5500

REGIONAL MGR.  
J. BEYERT

PROJECT MGR.  
JR TANNER

DESIGNED BY  
A. GRANO

REVIEWED BY  
V. CAGLIANONE

PROJECT PHASE  
APPROVAL

DATE  
02-19-09

SCALE  
NONE

DIMENSION

RELEASE  
1

TITLE  
  
48 RELAY  
SYSTEM  
MASTER

MODEL #  
AS NOTED

PROJECT  
  
PENNSYLVANIA  
CONVENTION  
CENTER

PHILADELPHIA,  
PA

QUOTE -DWG  
30821727-106

SHEET  
21 OF 24

RELAY / RELAY NO.	CIRCUIT PANEL- BREAKER	CONTROL			LOAD CIRCUITS			NOTES	(EM)
		LUMA-NET CHANNEL	DMX CHANNEL	ANALOG INPUT	RELAY TYPE	FIELD CIRCUIT	LOAD WATTS		
1	L4.3	750	1		S	1	EXHIBIT HALL E		
2	L4.3	751	2		S	1	EXHIBIT HALL E		
3	L4.3	752	3		S	1	EXHIBIT HALL E		
4	L4.3	753	4		S	3	EXHIBIT HALL E		
5	L4.3	754	5		S	3	EXHIBIT HALL E		
6	L4.3	755	6		S	3	EXHIBIT HALL E		
7	L4.3	756	7		S	5	EXHIBIT HALL E		
8	L4.3	757	8		S	5	EXHIBIT HALL E		
9	L4.3	758	9		S	5	EXHIBIT HALL E		
10	L4.3	759	10		S	7	EXHIBIT HALL E		
11	L4.3	760	11		S	7	EXHIBIT HALL E		
12	L4.3	761	12		S	7	EXHIBIT HALL E		
13	L4.3	762	13		S	9	EXHIBIT HALL E		
14	L4.3	763	14		S	9	EXHIBIT HALL E		
15	L4.3	764	15		S	9	EXHIBIT HALL E		
16	L4.3	765	16		S	11	EXHIBIT HALL E		
17	L4.3	766	17		S	11	EXHIBIT HALL E		
18	L4.3	767	18		S	11	EXHIBIT HALL E		
19	L4.3	768	19		S	13	EXHIBIT HALL E		
20	L4.3	769	20		S	13	EXHIBIT HALL E		
21	L4.3	770	21		S	13	EXHIBIT HALL E		
22	L4.3	771	22		S	15	EXHIBIT HALL E		
23	L4.3	772	23		S	15	EXHIBIT HALL E		
24	L4.3	773	24		S	15	EXHIBIT HALL E		
25	L4.3	774	25		S	17	EXHIBIT HALL E		
26	L4.3	775	26		S	17	EXHIBIT HALL E		
27	L4.3	776	27		S	17	EXHIBIT HALL E		
28	L4.3	777	28		S	2	EXHIBIT HALL E		
29	L4.3	778	29		S	2	EXHIBIT HALL E		
30	L4.3	779	30		S	2	EXHIBIT HALL E		
31	L4.3	780	31		S	4	EXHIBIT HALL E		
32	L4.3	781	32		S	4	EXHIBIT HALL E		
33		782	33						
34		783	34						
35		784	35						
36		785	36						
37		786	37						
38		787	38						
39		788	39						
40		789	40						
41		790	41						
42		791	42						
43		792	43						
44		793	44						
45		794	45						
46		795	46						
47		796	47						
48		797	48						

RAC00-VBR - VOLTAGE BARRIER BETWEEN  
RELAY CARDS - PAINTED RED, PLACED AT  
POSITIONS, AFTER RELAY:

1	8	
2	16	
3	24	
4	32	
5	40	

KEY: (EM) EMERGENCY CIRCUITS

RELAY TYPE: (32) S (RELAY-ST2) SINGLE POLE, 120/277V 20A ZMAX  
(0) 2 (RELAY-2PL) 2 POLE, 208 - 480V, 240 - 480V 20A  
(0) 3 (RELAY-347) SINGLE POLE, 347V 20A  
(0) N (RELAY-1NC) 1-POLE NORMALLY CLOSED 120V - 347V  
L (RELAY-LAT) 120/277V 20A, LATCHING  
30 (RELAY-030) 1-POLE N/O OR N/C 18K AMP SCCR

PLOT STAMP: Feb. 25, 2009 (8:52 AM) PLOTTED BY: d8g

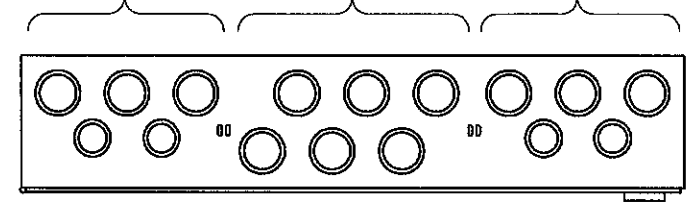
APPROVAL SET - NOT FOR CONSTRUCTION

LINE / LOAD CONDUIT ENTRY  
1" & 1-1/4", 2 PLACES PLUS  
1-1/4" & 1-1/2", 3 PLACES

LOW VOLTAGE  
CONDUIT ENTRY  
1-1/4" & 1-1/2"  
6 PLACES

LINE / LOAD CONDUIT ENTRY  
1" & 1-1/4", 2 PLACES PLUS  
1-1/4" & 1-1/2", 3 PLACES

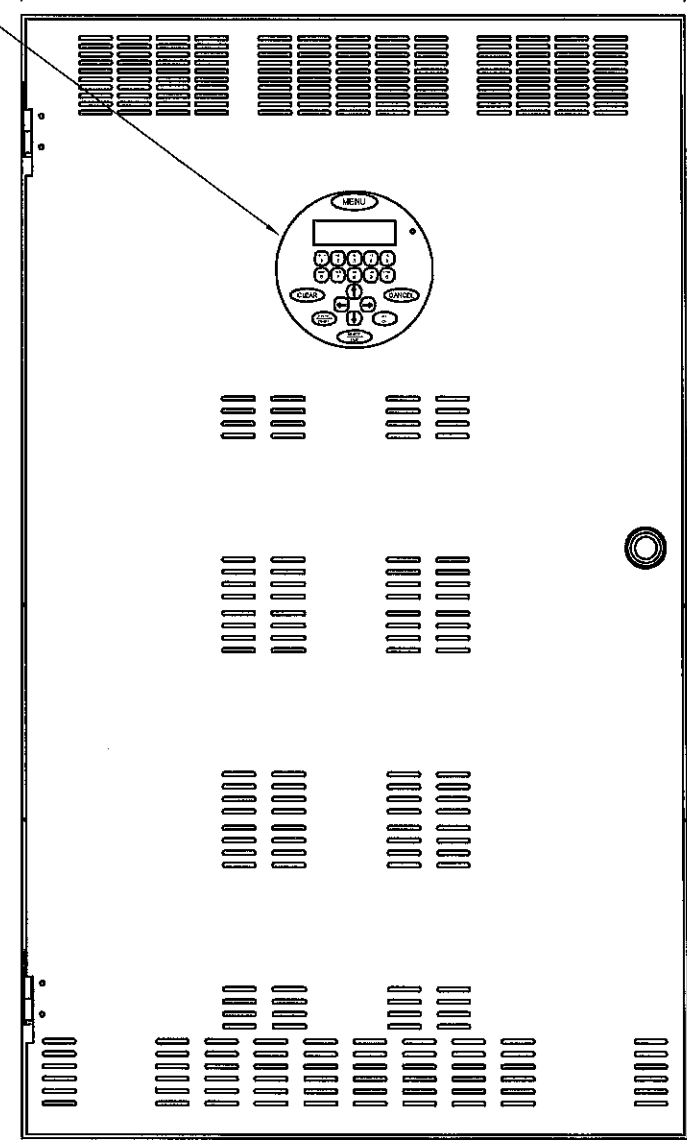
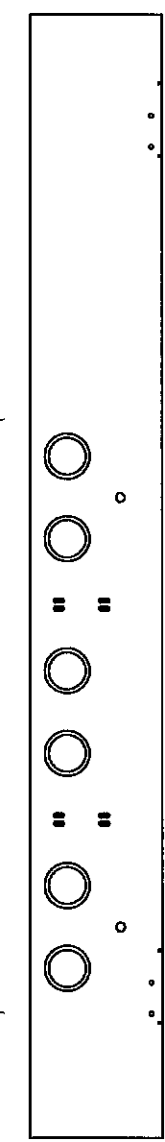
CONTROL PANEL  
REFER TO DETAIL A



20.25  
[514.33]

4.00  
[101.60]

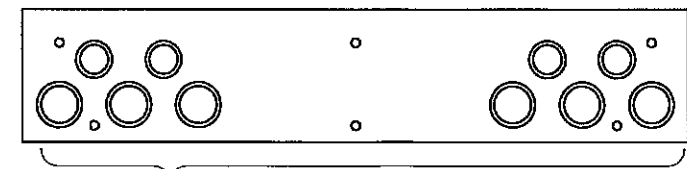
LINE / LOAD  
CONDUIT ENTRY  
1" & 1-1/4"  
6 PLACES



34.00  
[863.60]

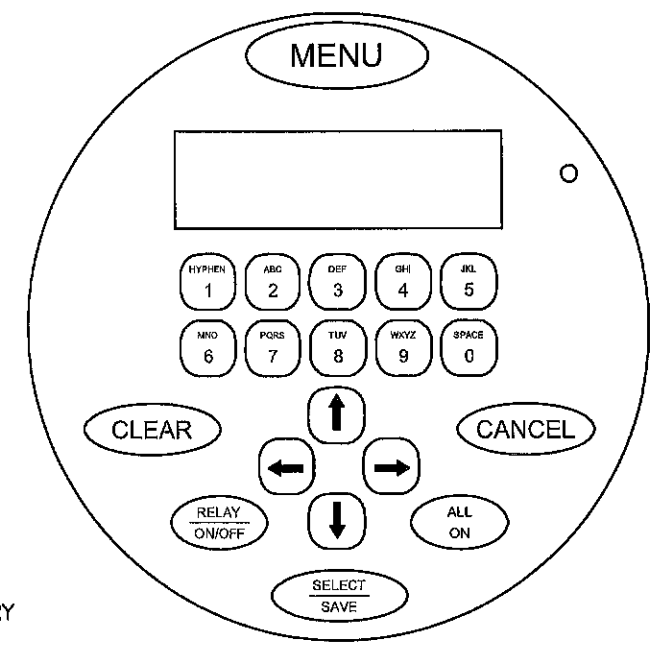
LOW VOLTAGE  
CONDUIT ENTRY  
1" & 1-1/4"  
6 PLACES

LINE / LOAD  
CONDUIT ENTRY  
1" & 1-1/4"  
6 PLACES



LINE / LOAD CONDUIT ENTRY: 1" & 1-1/4", 4 PLACES  
PLUS 1-1/4" & 1-1/2", 6 PLACES

QUANTITY: 7



DETAIL A  
SCALE: NONE

- NOTES: UNLESS OTHERWISE SPECIFIED
1. MINIMUM CLEARANCES: 36" FROM FRONT OF RELAY RACK FOR WIRING ACCESS..
  2. MATERIAL:  
A. NEMA TYPE 1 ENCLOSURE - 16 GAUGE CRS.  
B. DOOR - 14 GAUGE CRS.
  3. FINISH: BLUE POWDER COAT.
  4. C-UL AND UL LISTED FILE E123072.
  5. UL 508 & UL 916 LISTED.

**LEVITON**

LIGHTING MANAGEMENT SYSTEMS  
20497 S.W. Teton Ave.  
Tualatin, OR 97062  
(503) 404-5500

REGIONAL MGR.  
J. BEYERT

PROJECT MGR.  
JR TANNER

DESIGNED BY  
A. GRANO

REVIEWED BY  
V. CAGLIANONE

PROJECT PHASE  
APPROVAL

DATE  
02-19-09

SCALE  
NONE

DIMENSION  
INCH [mm]

RELEASE  
1

TITLE  
  
24 RELAY  
SYSTEM  
MASTER

MODEL #  
AS NOTED

PROJECT  
  
PENNSYLVANIA  
CONVENTION  
CENTER

PHILADELPHIA,  
PA

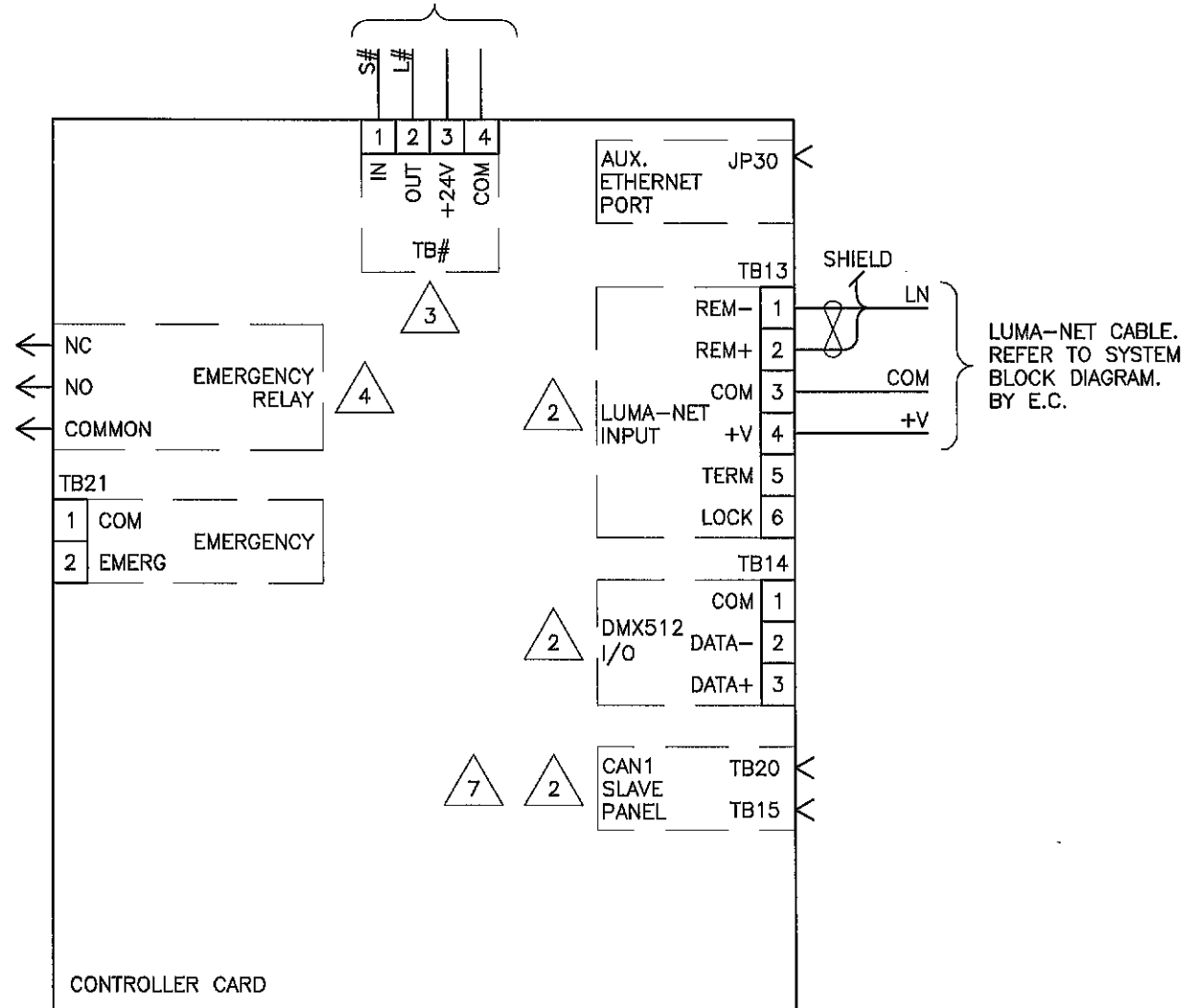
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30821727-107

SHEET  
1 OF 9

PLOT STAMP: Feb. 25, 2009 (8:52 AM) PLOTTED BY: d8g

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ANALOG / SWITCH CABLES.  
REFER TO ANALOG / SWITCH INPUT  
TABLE AND SYSTEM BLOCK DIAGRAM.  
BY E.C



**LEVITON**  
LIGHTING MANAGEMENT SYSTEMS

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(503) 404-5500

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PROJECT MGR.  
JR TANNER

DESIGNED BY  
A. GRANO

REVIEWED BY  
V. CAGLIANONE

PROJECT PHASE  
APPROVAL

DATE  
02-19-09

SCALE  
NONE

DIMENSION

RELEASE  
1

TITLE  
  
24 RELAY  
SYSTEM  
MASTER

MODEL #  
AS NOTED

PROJECT  
  
PENNSYLVANIA  
CONVENTION  
CENTER

PHILADELPHIA,  
PA

QUOTE -DWG  
30821727-107

SHEET  
2 OF 9

TYPICAL ANALOG / SWITCH INPUT CONNECTION TABLE

INPUT		SWITCH CIRCUITS	FUNCTION	
TB#	JP#	DESCRIPTION	SWITCH TYPE	ACTION TYPE
S#, L#				
1	OFF			
2	OFF			
3	OFF			
4	OFF			
5	OFF			
6	OFF			
7	OFF			
8	OFF			
9	OFF			
10	OFF			
11	OFF			
12	OFF			

NOTES:

1. INSTALLER TO WIRE TO CONTROL TERMINALS LOCATED ON CONTROLLER CARD.
2. TERMINATION JUMPERS: REFER TO INSTALLATION MANUAL FOR WIRING RUN TERMINATIONS. REFER TO INSTALLATION MANUAL FOR JUMPER DETAILS.
3. TERMINATE AND JUMPER SWITCH / ANALOG INPUTS PER INPUT CONNECTION TABLE. REFER TO INSTALLATION DOCUMENTS FOR DETAILS.
4. PCB MOUNTED SPADE LUGS.
5. THIS MODEL CABINET COMES STANDARD WITH TWELVE (12) ANALOG INPUTS. INSTALLATION OF AN OPTIONAL INPUT CARD EXPANDS ANALOG INPUTS TO 48.
6. Z-MAX ANALOG AND DIGITAL CONTROL STATIONS CAN BE ASSIGNED TO OPERATE ANY RELAY IN THE CONNECTED CABINET OR NETWORKED RELAY CABINETS.
7. COMMUNICATIONS BUS. CONNECTORS ARE INTERCHANGEABLE.

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**LEVITON**

LIGHTING MANAGEMENT SYSTEMS

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Tualatin, OR 97062  
(503) 404-5500REGIONAL MGR.  
J. BEYERTPROJECT MGR.  
JR TANNERDESIGNED BY  
A. GRANOREVIEWED BY  
V. CAGLIANONEPROJECT PHASE  
APPROVALDATE  
02-19-09SCALE  
NONE

DIMENSION

RELEASE  
1

TITLE

24 RELAY  
SYSTEM  
MASTERMODEL #  
AS NOTEDPROJECT  
PENNSYLVANIA  
CONVENTION  
CENTERPHILADELPHIA,  
PAQUOTE -DWG  
30821727-107SHEET  
5 OF 9

RP4C

CIRCUIT SCHEDULE

CTP- R24MD- 000 REFER TO RELAY TYPE QUANTITIES BELOW

RELAY / CIRCUIT		CONTROL			LOAD CIRCUITS				(EM)
RELAY NO.	PANEL-BREAKER	LUMA-NET CHANNEL	DMX CHANNEL	ANALOG INPUT	RELAY TYPE	FIELD CIRCUIT	LOAD WATTS	NOTES	
1	L4.1	1800	1		S	20		EXHIBIT HALL D	
2	L4.1	1801	2		S	24		4TH SOUTH WEST CORNER	
3		1802	3		S			SPARE	
4		1803	4		S			SPARE	
5		1804	5		S			SPARE	
6		1805	6		S			SPARE	
7		1806	7		S			SPARE	
8		1807	8		S			SPARE	
9		1808	9		S			SPARE	
10		1809	10		S			SPARE	
11		1810	11		S			SPARE	
12		1811	12		S			SPARE	
13		1812	13		S			SPARE	
14		1813	14		S			SPARE	
15		1814	15		S			SPARE	
16		1815	16		S			SPARE	
17		1816	17						
18		1817	18						
19		1818	19						
20		1819	20						
21		1820	21						
22		1821	22						
23		1822	23						
24		1823	24						

RAC00-VBR - VOLTAGE BARRIER BETWEEN  
RELAY CARDS - PAINTED RED, PLACED AT  
POSITIONS, AFTER RELAY:

1	8	
2	16	

KEY: (EM) EMERGENCY CIRCUITS

RELAY TYPE: (16) S (RELAY-ST2) SINGLE POLE, 120/277V 20A ZMAX  
 (0) 2 (RELAY-2PL) 2 POLE, 208 - 480V, 240 - 480V 20A  
 (0) 3 (RELAY-347) SINGLE POLE, 347V 20A  
 (0) N (RELAY-1NC) 1-POLE NORMALLY CLOSED 120V - 347V  
 L (RELAY-LAT) 120/277V 20A, LATCHING  
 30 (RELAY-030) 1-POLE N/O OR N/C 18K AMP SCCR

PLOT STAMP: Feb. 25, 2009 (8:53 AM) PLOTTED BY: aBg

APPROVAL SET - NOT FOR CONSTRUCTION

**LEVITON**

LIGHTING MANAGEMENT SYSTEMS

20497 S.W. Teton Ave.  
Tualatin, OR 97062  
(503) 404-5500REGIONAL MGR.  
J. BEYERTPROJECT MGR.  
JR TANNERDESIGNED BY  
A. GRANOREVIEWED BY  
V. CAGLIANONEPROJECT PHASE  
APPROVALDATE  
02-19-09SCALE  
NONE

DIMENSION

RELEASE  
1

TITLE

24 RELAY  
SYSTEM  
MASTERMODEL #  
AS NOTEDPROJECT  
PENNSYLVANIA  
CONVENTION  
CENTERPHILADELPHIA,  
PAQUOTE -DWG  
30821727-107SHEET  
6 OF 9

RP4G

CIRCUIT SCHEDULE

CTP- R24MD- 000 REFER TO RELAY TYPE QUANTITIES BELOW

RELAY / CIRCUIT		CONTROL			LOAD CIRCUITS				
RELAY NO.	PANEL-BREAKER	LUMA-NET CHANNEL	DMX CHANNEL	ANALOG INPUT	RELAY TYPE	FIELD CIRCUIT	LOAD WATTS	NOTES	(EM)
1		1775	1		S			EXHIBIT HALL E	
2		1776	2		S			EXHIBIT HALL E	
3		1777	3		S			EXHIBIT HALL E	
4		1778	4		S			EXHIBIT HALL E	
5		1779	5		S			EXHIBIT HALL E	
6		1780	6		S			EXHIBIT HALL E	
7		1781	7		S			EXHIBIT HALL E	
8		1782	8		S			EXHIBIT HALL E	
9		1783	9		S			EXHIBIT HALL E	
10		1784	10		S			EXHIBIT HALL E	
11		1785	11		S			EXHIBIT HALL E	
12		1786	12		S			EXHIBIT HALL E	
13		1787	13		S			EXHIBIT HALL E	
14		1788	14		S			4TH FLOOR ATRIUM, MDN-1	
15		1789	15		S			EXHIBIT HALL E, MA-2	
16		1790	16		S			EXHIBIT HALL E, MA-2	
17		1791	17		S			EXHIBIT HALL E, MA-2	
18		1792	18		S			SPARE	
19		1793	19		S			SPARE	
20		1794	20						
21		1795	21						
22		1796	22						
23		1797	23						
24		1798	24						

RAC00-VBR - VOLTAGE BARRIER BETWEEN  
RELAY CARDS - PAINTED RED, PLACED AT  
POSITIONS, AFTER RELAY:

1	8	
2	16	

KEY: (EM) EMERGENCY CIRCUITS

RELAY TYPE: (19) S (RELAY-ST2) SINGLE POLE, 120/277V 20A ZMAX  
(0) 2 (RELAY-2PL) 2 POLE, 208 - 480V, 240 - 480V 20A  
(0) 3 (RELAY-347) SINGLE POLE, 347V 20A  
(0) N (RELAY-1NC) 1-POLE NORMALLY CLOSED 120V - 347V  
L (RELAY-LAT) 120/277V 20A, LATCHING  
30 (RELAY-030) 1-POLE N/O OR N/C 18K AMP SCCR

PLOT STAMP: Feb. 25, 2009 (8:53 AM) PLOTTED BY: a8g

APPROVAL SET - NOT FOR CONSTRUCTION