PANEL "MDP" SCHEDULE

MOUNTING: SURFACE	TYPE: G.E. SPECTRA SERIES	FAULT CURRENT: 35,860 A	MAIN: MLO BUS: 400 A
VOLTS: 480Y/277 Vac BOLT-On	ENCLOSURE: NEMA 1 WITH GROUND BAR	FAULT BRACING: 65K AIC	MAIN SIZE BREAKER: NONE
PHASE: 3 WIRE: 4 Hz.: 60	ISOLATED GROUND: NONE	TVSS/SPD: YES	LOCATION: STOCK ROOM

DESCRIPTION	WIRE & CONDUIT SIZE	LOAD (kVA) A	B	C	BREAKER	CIRCUIT	CIRCUIT	BREAKER	LOAD (kVA) A	B	C	WIRE & CONDUIT SIZE	DESCRIPTION
RTU-1, ON ROOF (GAS HEAT)	(3)#6, 1 1/4"C	9.034			40/3	1	2	40/3	9.034			(3)#6, 1 1/4"C	RTU-2, ON ROOF (GAS HEAT)
"	–		9.034		–	3	4	–		9.034		–	"
"	–			9.034	–	5	6	–			9.034	–	"
RTU-3, ON ROOF (GAS HEAT)	(3)#8, 3/4"C	9.034			40/3	7	8	40/3	9.034			(3)#8, 3/4"C	RTU-4, ON ROOF (GAS HEAT)
"	–		9.034		–	9	10	–		9.034		–	"
"	–			9.034	–	11	12	–			9.034	–	"
RTU-5, ON ROOF (GAS HEAT)	(3)#10, 3/4"C	6.069			25/3	13	14	100/3	16.262			(3)#2, 1 1/4"C	75 KVA TRANSFORMER "T1"
"	–		6.069		–	15	16	–		16.262		–	"
"	–			6.069	–	17	18	–			16.262	–	"
PANEL "HA"	(4)#2, 1 1/4"C	6.481			100/3	19	20						SPACE
"	–		6.481		–	21	22						"
"	–			6.481	–	23	24						"
SPACE						25	26						"
"						27	28						"
"						29	30						"

NOTES:

1. PROVIDE AND SIZE GROUND CONDUCTORS PER 2011 NEC. FOR ALL CIRCUITS NOT SHOWN AND INDICATED ON THIS PANEL AND ON PLANS UNLESS OTHERWISE NOTED.
2. PROVIDE INTEGRAL TVSS/SPD WITH 160kA MAX. SURGE CURRENT PER PHASE

TOTAL kVA Ø A = 19.927	TOTAL kVA Ø B = 19.927	TOTAL kVA Ø C = 13.727
TOTAL CONNECTED LOAD = 194.844 kVA		
234.4 AMPS		
TOTAL DEMAND LOAD = 190.386 kVA	2011 NEC ARTICLE 215.3 ARTICLE 220 II & III ARTICLE 440.33	
229.0 AMPS		

PANEL "HA" SCHEDULE

MOUNTING: SURFACE	TYPE: G.E. A SERIES TYPE AE	FAULT CURRENT: 27,063 A	MAIN: MLO BUS: 100 A
VOLTS: 480Y/277 Vac BOLT-On	ENCLOSURE: NEMA 1 WITH GROUND BAR	FAULT BRACING: 35K AIC	MAIN SIZE BREAKER: NONE
PHASE: 3 WIRE: 4 Hz.: 60	ISOLATED GROUND: NONE	TVSS/SPD: NONE	LOCATION: STOCK ROOM

DESCRIPTION	WIRE & CONDUIT SIZE	LOAD (kVA) A	B	C	BREAKER	CIRCUIT	CIRCUIT	BREAKER	LOAD (kVA) A	B	C	WIRE & CONDUIT SIZE	DESCRIPTION
EXIT SIGNS & EMERGENCY LIGHTS	(2)#10, 3/4"C	0.386			20/1	1	2	20/1	2.321			(2)#12, 3/4"C	VALENCE LIGHTS, SALES AREA
LIGHTS, SALES AREA	(2)#10, 3/4"C		2.128		20/1	3	4	20/1		0.588		(2)#10, 3/4"C	VALENCE LIGHTS, SALES AREA
LIGHTS, SALES AREA	(2)#10, 3/4"C			2.400	20/1	5	6	20/1			2.611	(2)#10, 3/4"C	VALENCE LIGHTS, SALES AREA
LIGHTS, SALES AREA	(2)#10, 3/4"C	2.432			20/1	7	8	20/1	1.176			(2)#12, 3/4"C	LIGHTS, STOCK ROOM
LIGHTS, SALES AREA	(2)#10, 3/4"C		2.052		20/1	9	10	20/1		1.064		(2)#10, 3/4"C	LIGHTS, FIT ROOMS
NIGHT LIGHTS	(2)#10, 3/4"C			1.412	20/1	11	12	20/1			0.188	(2)#10, 3/4"C	EXTERIOR/SECURITY LIGHTS, FRONT ENTRANCE
LIGHTS, BREAK, JAN. EQUIP., CORRIDOR, MEN, WOMEN	(2)#12, 3/4"C	0.684			20/1	13	14	20/1					SPARE
SPARE					20/1	15	16	20/1					"
"					20/1	17	18	20/1					"
"					20/1	19	20	20/1					"
"					20/1	21	22	20/1					"
"					20/1	23	24	20/1					"
"						25	26						SPACE
SPACE						27	28						"
"						29	30						"
"						31	32						"
"						33	34						"
"						35	36						"
"						37	38						"
"						39	40						"
"						41	42						

NOTES:

1. PROVIDE AND SIZE GROUND CONDUCTORS PER 2011 NEC. FOR ALL CIRCUITS NOT SHOWN AND INDICATED ON THIS PANEL AND ON PLANS UNLESS OTHERWISE NOTED.

TOTAL kVA Ø A = 6.999	TOTAL KVA Ø B = 5.832	TOTAL KVA Ø C = 6.611
TOTAL CONNECTED LOAD = 19.442 KVA		
23.4 AMPS		
TOTAL DEMAND LOAD = 24.303 KVA	2011 NEC ARTICLE 215.3	
29.2 AMPS		

PANEL "LA" SCHEDULE

MOUNTING: SURFACE	TYPE: G.E. A SERIES TYPE AQ	FAULT CURRENT: 7,871 A	MAIN: MCB BUS: 125 A
VOLTS: 208Y/120 Vac BOLT-On	ENCLOSURE: NEMA 1 WITH GROUND BAR	FAULT BRACING: 10K AIC	MAIN SIZE BREAKER: 125 A
PHASE: 3 WIRE: 4 Hz.: 60	ISOLATED GROUND: YES WITH 200% RATED NEUTRAL	TVSS/SPD: NONE	LOCATION: STOCK ROOM

DESCRIPTION	WIRE & CONDUIT SIZE	LOAD (kVA) A	B	C	BREAKER	CIRCUIT	CIRCUIT	BREAKER	LOAD (kVA) A	B	C	WIRE & CONDUIT SIZE	DESCRIPTION
RECEPTACLES, CORRIDOR	(2)#12, 3/4"C	0.540			20/1	1	2	20/1	0.500			(2)#10, 3/4"C	ENTRANCE PUBLIC VIEW MONITOR, FRONT ENTRANCE
RECEPTACLES, STOCK RM.	(2)#12, 3/4"C		1.080		20/1	3	4	20/1		1.200		(2)#10, 3/4"C	ENTRANCE SECURITY PEDESTALS, ENTRANCE DOORS
RECEPTACLES, EQUIPMENT RM.	(2)#12, 3/4"C			0.360	20/1	5	6	20/1			1.000	(2)#12, 3/4"C	DIGITAL RECORDER & VIDEO MONITOR, EQUIPMENT RM.
CEILING MOUNTED RECEPTACLES, SALES AREA	(2)#12, 3/4"C	0.540			20/1	7	8	20/1	1.000			(2)#12, 3/4"C	OFFICE EQUIPMENT, EQUIPMENT RM.
DISPLAY CASES LIGHTS, SALES AREA	(2)#10, 3/4"C		0.800		20/1	9	10	20/1		1.000		(2)#12, 3/4"C	OFFICE EQUIPMENT, EQUIPMENT RM.
CASH WRAPS RECEPTACLES, SALES AREA	(2)#10, 3/4"C			1.000	20/1	11	12	20/1			1.000	(2)#12, 3/4"C	OFFICE EQUIPMENT, EQUIPMENT RM.
CASH WRAPS RECEPTACLES, SALES AREA	(2)#10, 3/4"C	1.000			20/1	13	14	20/1	1.000			(2)#12, 3/4"C	OFFICE EQUIPMENT, EQUIPMENT RM.
TEAM 1 MANAGER STATION, SALES AREA	(2)#10, 3/4"C		1.000		20/1	15	16	20/1		1.000		(2)#12, 3/4"C	OFFICE EQUIPMENT, EQUIPMENT RM.
TEAM 1 MANAGER STATION, SALES AREA	(2)#10, 3/4"C			1.000	20/1	17	18	20/1			0.500	(2)#10, 3/4"C	OFFICE EQUIPMENT, EQUIPMENT RM.
TEAM CASE LIGHTS & RECEPTACLES, SALES AREA	(2)#10, 3/4"C	1.200			20/1	19	20	20/1	0.900			(2)#12, 3/4"C	VENDING MACHINE, BREAK RM.
RECEPTACLES, COLUMN-SALES AREA	(2)#10, 3/4"C		0.540		20/1	21	22	20/1		1.200		(2)#12, 3/4"C	COFFEE MAKER, BREAK RM.
RECEPTACLES, COLUMN-SALES AREA	(2)#10, 3/4"C			0.540	20/1	23	24	20/1			0.800	(2)#12, 3/4"C	REFRIGERATOR, BREAK RM.
RECEPTACLES, COLUMN-SALES AREA	(2)#10, 3/4"C	0.540			20/1	25	26	20/1	1.080			(2)#12, 3/4"C	MICROWAVE, BREAK RM.
CEILING MOUNTED RECEPTACLES, SALES AREA	(2)#10, 3/4"C		0.540		20/1	27	28	20/1		0.720		(2)#12, 3/4"C	RECEPTACLES, BREAK RM.
FIRE ALARM CONTROL PANEL, EQUIPMENT RM.	(2)#12, 3/4"C			1.200	20/1	29	30	20/1			0.360	(2)#12, 3/4"C	RECEPTACLES, M/W RESTROOMS
SECURITY CONTROL PANEL, EQUIPMENT RM.	(2)#12, 3/4"C	1.200			20/1	31	32	20/1	0.360			(2)#12, 3/4"C	RECEPTACLE-CHRISTMAS TREE, CEILING MOUNTED
EFD-1, CORRIDOR	(2)#12, 3/4"C		1.200		20/1	33	34	20/1		0.360		(2)#12, 3/4"C	RECEPTACLE-CHRISTMAS TREE, CEILING MOUNTED
HAND DRYER, WOMEN'S RR.	(2)#10, 3/4"C			2.400	30/1	35	36	20/1			0.200	(2)#12, 3/4"C	PUSH BUTTON AND BUZZER SYSTEM
HAND DRYER, MEN'S RR.	(2)#10, 3/4"C	2.400			30/1	37	38	20/1	1.200			(2)#12, 3/4"C	SOUND SYSTEM AMPLIPIER, EQUIPMENT ROOM
EF-1 & EF-2, ON ROOF	(2)#12, 3/4"C		0.129		20/1	39	40	20/1					SPARE
WP/GFCI RECEPTACLES, ON ROOF	(2)#10, 3/4"C			0.900	20/1	41	42	20/1					"

NOTES:

1. PROVIDE AND SIZE GROUND CONDUCTORS PER 2011 NEC. FOR ALL CIRCUITS NOT SHOWN AND INDICATED ON THIS PANEL AND ON PLANS UNLESS OTHERWISE NOTED.
2. PROVIDE LOCAKABLE CIRCUIT BREAKER FOR CIRCUIT 29 & 31.

TOTAL kVA Ø A = 12.260	TOTAL kVA Ø B = 10.769	TOTAL kVA Ø C = 11.260
TOTAL CONNECTED LOAD = 34.289 kVA		
95.2 AMPS		
TOTAL DEMAND LOAD = 22.145 kVA	2011 NEC ARTICLE 220 II & III	
61.5 AMPS		

PANEL "LB" SCHEDULE

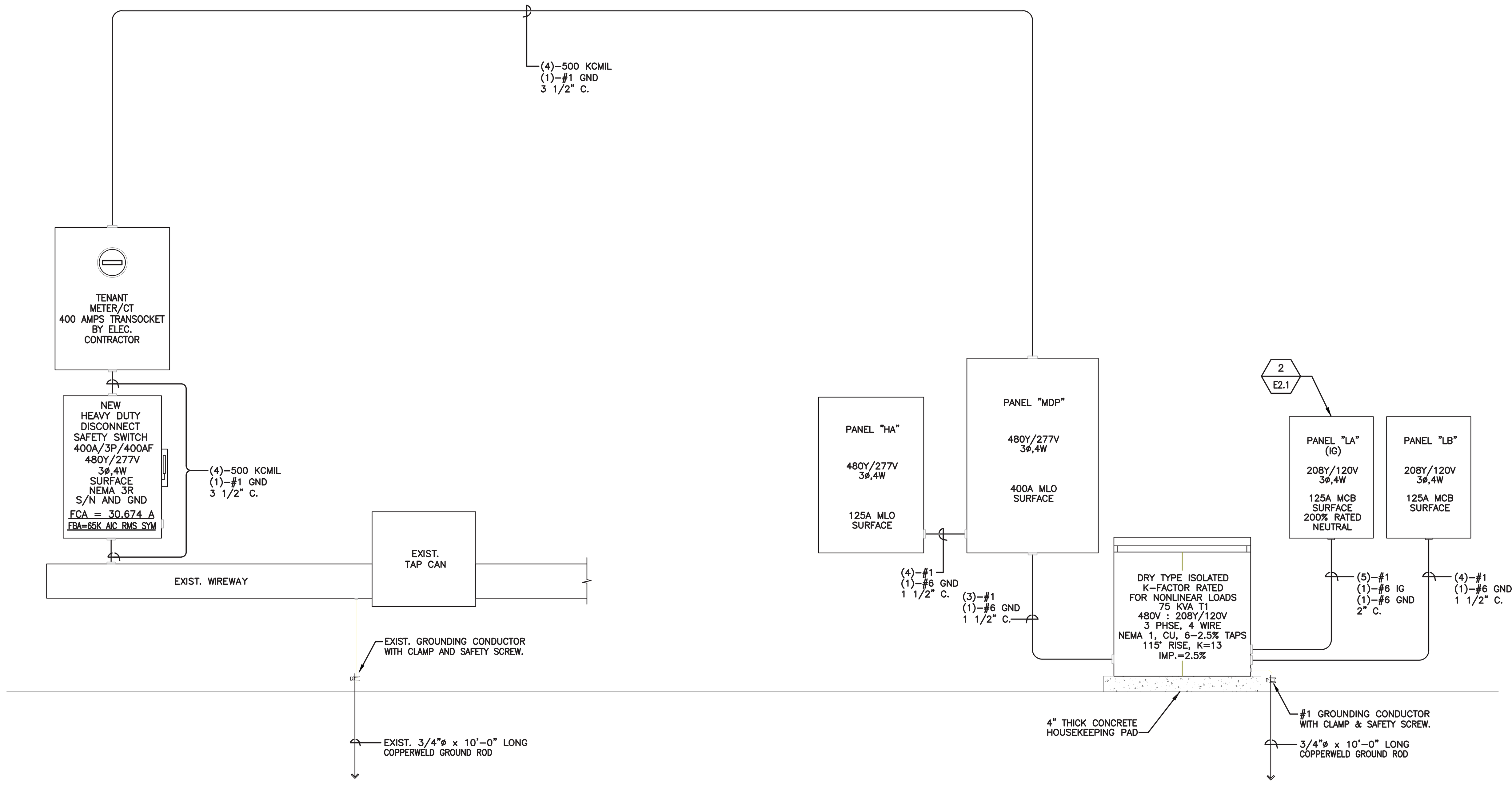
MOUNTING: SURFACE	TYPE: G.E. A SERIES TYPE AQ	FAULT CURRENT: 7,765 A	MAIN: MCB BUS: 125 A
VOLTS: 208Y/120 Vac BOLT-On	ENCLOSURE: NEMA 1 WITH GROUND BAR	FAULT BRACING: 10K AIC	MAIN SIZE BREAKER: 125 A
PHASE: 3 WIRE: 4 Hz.: 60	ISOLATED GROUND: NONE	TVSS/SPD: NONE	LOCATION: STOCK ROOM

DESCRIPTION	WIRE & CONDUIT SIZE	LOAD (kVA) A	B	C	BREAKER	CIRCUIT	CIRCUIT	BREAKER	LOAD (kVA) A	B	C	WIRE & CONDUIT SIZE	DESCRIPTION
FEATURE LIGHTS, SALES AREA	(2)#10, 3/4"C	0.510			20/1	1	2	20/1	1.800			(2)#8, 3/4"C	TENANT SIGNAGE, FRONT ENTRANCE
FEATURE LIGHTS, SALES AREA	(2)#10, 3/4"C		0.306		20/1	3	4	20/1		1.200		(2)#12, 3/4"C	LIGHTSTAT AUTOMATIC CONTROL PANEL, STOCK RM.
SHOE CASE LIGHTS, SALES AREA	(2)#10, 3/4"C			0.240	20/1	5	6	20/1			0.720	(2)#10, 3/4"C	RECEPTACLES, FITTING RMS, COLUMN-SALES AREA
SHOE CASE LIGHTS, SALES AREA	(2)#10, 3/4"C	1.200			20/1	7	8	20/1	0.900			(2)#10, 3/4"C	RECEPTACLES, FITTING RM, COLUMN-SALES AREA
RECEPTACLES, COLUMN-SALES AREA	(2)#10, 3/4"C		0.540		20/1	9	10	20/1		0.360		(2)#10, 3/4"C	RECEPTACLES, FITTING RMS.
ESTAT, STOCK ROOM	(2)#12, 3/4"C			0.180	20/1	11	12	20/1			0.720	(2)#10, 3/4"C	RECEPTACLES, COLUMN-SALES AREA
SPARE					20/1	13	14	20/1					SPARE
"					20/1	15	16	20/1					"
"					20/1	17	18	20/1					"
"					20/1	19	20	20/1					"
"					20/1	21	22	20/1					"
"					20/1	23	24	20/1					"
"					20/1	25	26	20/1					"
"					20/1	27	28	20/1					"
"					20/1	29	30	20/1					"
SPACE						31	32						SPACE
"						33	34						"
"						35	36						"
"						37	38	30/3	2.000			(3)#10, 3/4"C	EWH-1, JAN. RM.
"						39	40	–		2.000		–	"
"						41	42	–			2.000	–	"

NOTES:

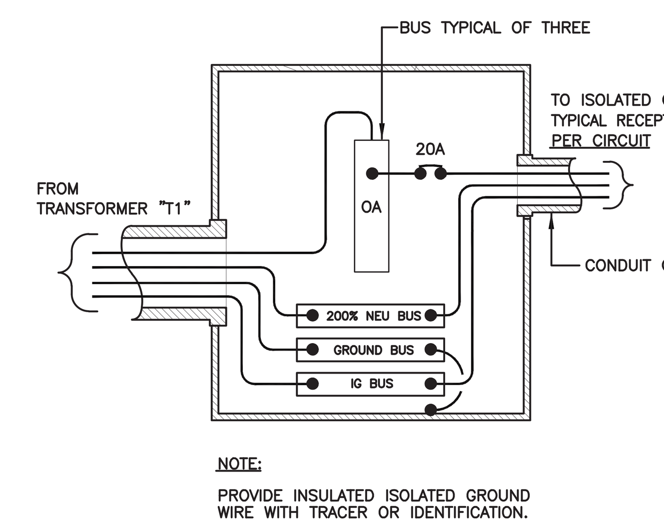
1. PROVIDE AND SIZE GROUND CONDUCTORS PER 2011 NEC. FOR ALL CIRCUITS NOT SHOWN AND INDICATED ON THIS PANEL AND ON PLANS UNLESS OTHERWISE NOTED.

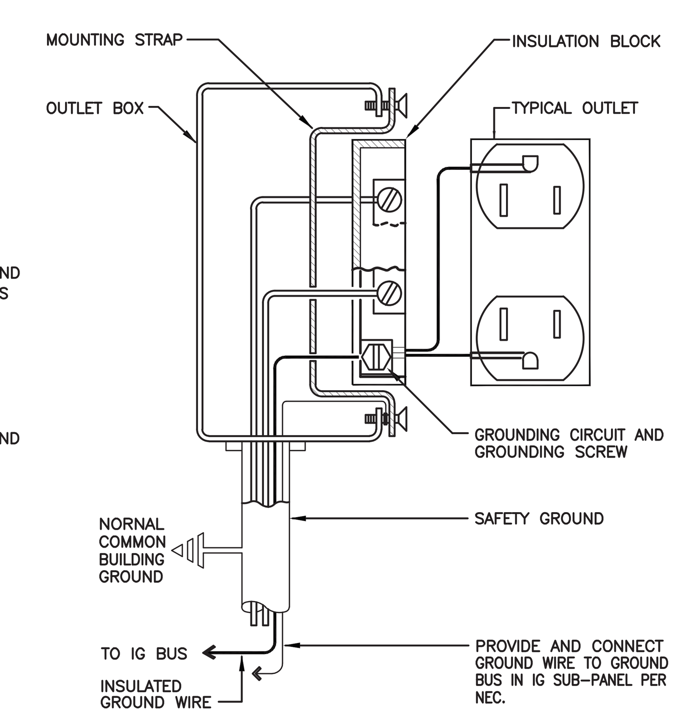
TOTAL kVA Ø A = 5.144	TOTAL kVA Ø B = 5.066	TOTAL kVA Ø C = 4.286
TOTAL CONNECTED LOAD = 14.496 kVA		
40.2 AMPS		
TOTAL DEMAND LOAD = 15.743 kVA	2011 NEC ARTICLE 215.3 ARTICLE 220 II & III	
43.7 AMPS		



1 / E2.1 ELECTRICAL RISER ONE-LINE DIAGRAM

SCALE: NOT TO SCALE





2 / E2.1 ISOLATED GROUND REQUIREMENTS

SCALE: NOT TO SCALE

LOAD ANALYSIS – BEALLS

LOADS: VOLT-AMPERES (VA)	VA
LIGHTING LOADS (NEC 2011 ARTICLE 215/220) 1.) LIGHTING LOADS: ARTICLE 220.12 A.) INTERIOR LIGHTING = 19,254 VA B.) EXTERIOR LIGHTING = 188 VA 2.) DEMAND LIGHTING LOADS: ARTICLE 215.3 TOTAL DEMAND LIGHTING LOADS = (19,254 VA + 188) x 1.25 = 24,303 VA	24,303
RECEPTACLE LOADS (NEC 2011 ARTICLE 220 II & III) A.) PANEL "LA" = 22,145 VA B.) PANEL "LB" = 15,743 VA TOTAL DEMAND RECEPTACLE LOADS = 37,888 VA	37,888
MOTOR AND HVAC LOADS (NEC 2011 ARTICLE 440.33) A.) HVAC = 126,615 VA B.) 25% OF THE HIGHEST MOTOR (5 HP-480V/3ø) = 6,318 VA x .25 = 1,580 VA TOTAL HVAC LOAD = 126,615 VA + 1,580 VA = 128,195 VA	128,195
TOTAL DEMAND LOAD	190,386

REMARKS:

TOTAL CALCULATED DEMAND LOAD IN AMPS (SERVICE VOLTAGE IS 480Y/277VAC 3P/4W) = 446,991/(480 x 1.732) = 229 AMPS. THEREFORE, 400 AMPS ELECTRICAL SERVICE IS SELECTED.

ELECTRICAL RISER NOTES

ER1 ELECTRICAL CONTRACTOR MUST CONFIRM THE ACTUAL PHYSICAL DIMENSIONS OF NEW PANELBOARDS WITH GENERAL CONTRACTOR PRIOR TO MAKE FINAL INSTALLATION. ALL ELECTRICAL PANELBOARDS, CONTACTORS, CONTROL BOXES AND/OR WIREWAYS TO BE INSTALLED PER NEC OR AT "WORKING HEIGHT".

ER2 FIELD VERIFY AND COORDINATE THE EXACT ROUTING OF ALL CONDUITS WITH ALL TRADES PRIOR TO MAKE FINAL INSTALLATION.

ER3 FIELD CONFIRM EXACT LOCATION OF NEW PANEL "MDP", PANEL "HA", PANEL "LA", PANEL "LB" AND TRANSFORMER "T1" WITH OWNER AND/OR ARCHITECT PRIOR TO MAKE FINAL INSTALLATION.

1 ADDENDUM #1 11/21/2014

ISSUED FOR CONSTRUCTION
DECEMBER 9, 2014

WINDLE + VOLPE
ARCHITECTS
7600 SAN FELIPE HOUSTON, TEXAS 77063 PH 713-255-1390

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TEXAS ID # F-5348

BEALLS WHITE BOX
CROSSROADS MALL
GREENVILLE, TEXAS

GREENVILLE PROPERTIES LTD.
GREENVILLE, TEXAS

DATE	1/4/2013
PROJECT NO.	8-12-05
DRAWN BY	AEP

ELECTRICAL
PANEL SCHEDULES,
LOAD ANALYSIS, NOTES
& RISER DIAGRAM

E1.4

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