LOAD SUMMARY DP1 800A, 208/120V, 3PH, 4W

LOAD	PHASE	(L)	(R)	(H)	(M)	(M LRG)	(CM)	(K)	(S)	(N)	(D)	(E)
		TOTAL CONNECTED BY LOAD TYPE (KVA)										
(N) PP3	A	2.2	0.4	6.3				0.0	1.0			
/	B	0.0	0.8	10.5				0.0	1.0			
/	C	0.0	0.7	10.3				0.0	0.0			
EXISTING MEASURED PEAK (72KW, ASSUMED 0.85PF)	A											28.2
	B											28.2
/	C											29.2
	A											
	B											
	C											
	A											
	B											
	C											
	A											
	B											
	C											
CONNECTED TOTALS	PHASE	(L)	(R)	(H)	(M)	(M LRG)	(CM)	(K)	(S)	(N)	(D)	(E)
	A	2.2	0.4	6.3	0.0	0.0	0.0	0.0	1.0	0.0	0.0	28.2
	B	0.0	0.8	10.5	0.0	0.0	0.0	0.0	1.0	0.0	0.0	28.2
	C	0.0	0.7	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.2
	TOTAL	2.2	1.9	27.1	0.0	0.0	0.0	0.0	2.0	0.0	0.0	84.7

LOAD TYPE	CONNECTED (KVA) A	B	C	TOTAL	DEMAND FACTOR	DEMAND (KVA) A	B	C	TOTAL
LIGHTING (L)	2.2	0.0	0.0	2.2	1.25	2.7	0.1	0.0	2.8
RECEPTACLE (R)	0.4	0.8	0.7	1.9	1.00	0.4	0.8	0.7	1.9
REC (>10000VA) (R)					0.50	0.0	0.0	0.0	0.0
HVAC (H)	6.3	10.5	10.3	27.1	1.00	6.3	10.5	10.3	27.1
LARGEST MOTOR (M)	0.0	0.0	0.0	0.0	1.25	0.0	0.0	0.0	0.0
REMAIN MOTOR (M)	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0
CONTINUOUS MOTOR (CM)	0.0	0.0	0.0	0.0	1.25	0.0	0.0	0.0	0.0
KITCHEN LOADS (K)	0.0	0.0	0.0	0.0	0.65	0.0	0.0	0.0	0.0
SPECIFIC LOADS (S)	1.0	1.0	0.0	2.0	1.00	1.0	1.0	0.0	2.0
NONCOINCIDENTAL (N)	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0
DWELLING (D)	0.0	0.0	0.0	0.0	0.65	0.0	0.0	0.0	0.0
EXISTING(E)	28.2	28.2	28.2	84.7	1.25	35.3	35.3	35.3	105.9
					TOTAL DEMAND (KVA)	45.7	47.6	48.4	139.7
					TOTAL (A/PH)	381.1	396.8	386.3	387.8

FEED FROM: (E) DP1
VOLTAGE: 208/120
AIC: 10000
ENCLOSURE: NEMA1

PANEL: PP3
PHASE: 3
BUS AMPACITY: 125A
NEUTRAL: 100%
GROUND: STD

WIRE: 4
TERMINATION: 125A MLO
MOUNTING: FLUSH

CKT NO	DESCRIPTION	LOAD VA	TYPE	CKT BREAKER P	A	OPT	CKT BREAKER OPT	A	P	LOAD TYPE	LOAD VA	DESCRIPTION	CKT NO
1	RTU4	3120	H	3	40			20	1	L	1090	CLASSRM LTG	2
3	/	3120	H	/	/			20	1	H, L, R	385	RESTROOM	4
5	/	3120	H	/	/			20	1	R	540	CLASSRM RECPS	6
7	SPARE			1	20			20	1	R	540	ROOF RECDP	8
9	CUH-1	2000	H	2	25			20	1	S	1000	PROJECTOR RECP	10
11	/	2000	H	/	/			20	1			SPARE	12
13	SPARE			1	20			20	1			SPARE	14
15	SPARE			1	20			20	1			SPARE	16
17	SPARE			1	20			20	1			SPARE	18
19	SPACE			-	-			-	-			SPACE	20
21	SPACE			-	-			-	-			SPACE	22
23	SPACE			-	-			-	-			SPACE	24
25	SPACE			-	-			-	-			SPACE	26
27	SPACE			-	-			-	-			SPACE	28
29	SPACE			-	-			-	-			SPACE	30

LOAD SUMMARY

LOAD	PHASE	kVA L	R	H	M	MLRG	CM	K	S	N	D
FUTURE 2ND FLR CLASSRM	A	1.1	0.2	3.2	0	0	0	0	1	0	0
/	B	0	0.6	5.2	0	0	0	0	0	0	0
/	C	0	0.2	5.2	0	0	0	0	0	0	0

LOAD TYPE	CONNECTED (KVA) A	B	C	TOTAL	DEMAND FACTOR	DEMAND (KVA) A	B	C	TOTAL
LIGHTING (L)	2.2	0.0	0.0	2.2	1.25	2.7	0.1	0.0	2.8
RECEPTACLE (R)	0.7	0.8	0.7	2.3	1.00	0.7	0.8	0.7	2.3
REC (>10000VA) (R)					0.50	0.0	0.0	0.0	0.0
HVAC (H)	6.3	10.5	10.3	27.1	1.00	6.3	10.5	10.3	27.1
LARGEST MOTOR (M)	0.0	0.0	0.0	0.0	1.25	0.0	0.0	0.0	0.0
REMAIN MOTOR (M)	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0
CONTINUOUS MOTOR (CM)	0.0	0.0	0.0	0.0	1.25	0.0	0.0	0.0	0.0
KITCHEN LOADS (K)	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0
SPECIFIC LOADS (S)	1.0	1.0	0.0	2.0	1.00	1.0	1.0	0.0	2.0
NONCOINCIDENTAL (N)	0.0	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0
DWELLING (D)	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0
					TOTAL DEMAND (KVA)	10.8	12.3	11.1	34.2
					SPARE (KVA)	4.2	2.7	3.9	10.9
					TOTAL (A/PH)	90.0	102.6	92.2	
					SPARE (A/PH)	35.0	22.4	32.8	

NOTES:

Four-Wire, 3-phase Short Circuit/Voltage Drop Analysis Calculations

VOLTAGE: 208 120

FROM	INITIAL ISC (L-L)	INITIAL PRI VOLT	TO	LOAD AMPS	CABLE US ED	FT	# OF CONDS	AWG OR MCM	AL or CU	SINGLE OR MULTI	MA G	NM AG	C VALUE	CIRC MILS	XFMR US ED	KVA	IMP	SEC VOLT	FINAL F(L-L)	M(L-L)	ISC(L-L)	FAULT VALUE # (SEE ONE-LINE)	SEGMENT VD K VALUE	VD	% VD (L-N)	CUMM VD VD	%VD (L-N)
XFMR	29500	208	SERV EQUIP	397	X	25	2	500	CU	S		X	43000	1000000					0.14265	0.875157	25817	X1	11		0.1 0.1		0.1 0.1
SERVICE EQUIP	25817	208	PP3	103	X	50	1	1	CU	S	X		5880	83690					1.82593	0.353866	9136	X2	11		0.7 0.6		0.8 0.7

IF CABLE USED
FINAL F(L-L) = 1.732 X INITIAL ISC(L-L) X CABLE FT / INITIAL PRI VOLTS X CABLE C VALUE

IF XFMR USED
FINAL F(L-L) = 1.732 X INITIAL ISC(L-L) X INITIAL VOLTS X XFMR IMP / 100,000 X XFMR KVA

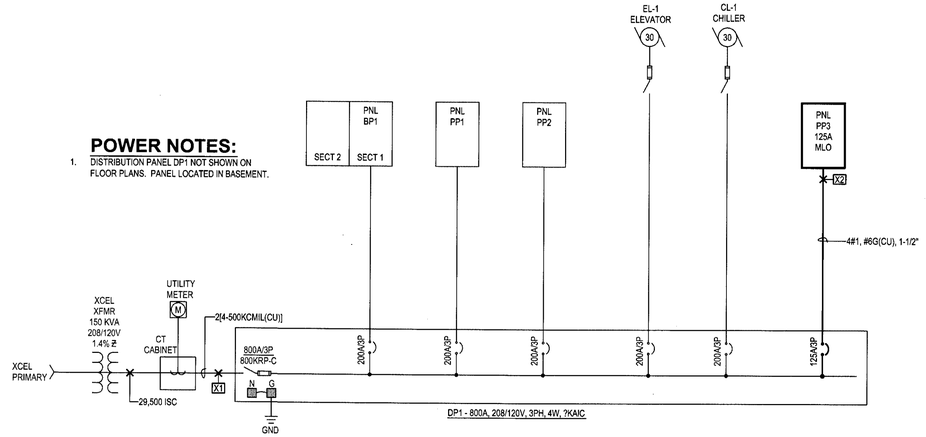
FINAL M(L-L) = 1 / (1 + F(L-L))

FINAL M(L-L) = 1 / (1 + F(L-L))

FINAL ISC(L-L) = INITIAL ISC(L-L) X FINAL M(L-L)

FINAL ISC(L-L) = INITIAL ISC(L-L) X INITIAL PRI VOLTS X FINAL M(L-L) / XFMR SEC VOLTS

K VALUE:
K=12 FOR IRCUITS LODED TO MORE THN 50%
K=11 FOR CIRCUITS LOADED LESS THAN 50%
K=18 FOR ALUMINUM CONDUCTORS AT 30C



POWER NOTES:

1. DISTRIBUTION PANEL DP1 NOT SHOWN ON FLOOR PLANS. PANEL LOCATED IN BASEMENT.

1 POWER ONE-LINE DIAGRAM

NO SCALE

ELECTRICAL LEGEND

SYMBOL	DESCTIPTION
	LIGHTING
	DOWN LIGHT.
	ADJUSTABLE DOWN LIGHT.
	WALL WASHER.
	WALL MOUNTED FIXTURE.
	WALL MOUNTED FLUORESCENT FIXTURE.
	TRACK LIGHTING.
	2x4 SURFACE FLUORESCENT FIXTURE.
	2x4 RECESSED FLUORESCENT FIXTURE.
	SHADING INDICATES UNSWITCHED NIGHT LIGHT AND/OR EMERGENCY CIRCUIT.
	2x2 SURFACE FLUORESCENT FIXTURE.
	2x2 RECESSED FLUORESCENT FIXTURE.
	SHADING INDICATES UNSWITCHED NIGHT LIGHT AND/OR EMERGENCY CIRCUIT.
	1x4 SURFACE FLUORESCENT FIXTURE.
	1x4 RECESSED FLUORESCENT FIXTURE.
	SHADING INDICATES UNSWITCHED NIGHT LIGHT AND/OR EMERGENCY CIRCUIT.
	FLUORESCENT STRIP LIGHT.
	SHADING INDICATES UNSWITCHED NIGHT LIGHT AND/OR EMERGENCY CIRCUIT.
	CEILING MOUNTED EXIT SIGNS, SHADING INDICATES FACE(S) ARROW(S) AS INDICATED.
	WALL MOUNTED EXIT SIGNS, SHADING INDICATES FACE(S) ARROW(S) AS INDICATED.
	EMERGENCY LIGHTING UNIT.
	COMBINATION EXIT SIGN / EMERGENCY LIGHTING UNIT.
	POLE MOUNTED FIXTURE.
K	PORCELAIN LAMP HOLDER, KEYLESS.
	FLOOD LIGHT.
	BOLLARD TYPE FIXTURE.
	DECORATIVE WALL SCONCE.
	DECORATIVE PENDANT.
	CHANDELIER.
	FIRE ALARM
	SMOKE DETECTOR.
	DUCT MOUNTED SMOKE DETECTOR.
	THERMAL DETECTOR.
F	MANUAL PULL STATION, MTD 46" A.F.F. UON.
F	AUDIBLE / VISIBLE NOTIFICATION APPLIANCE, MTD 80" A.F.F. OR 6" BELOW CEILING, UON.
F	VISIBLE ONLY NOTIFICATION APPLIANCE.
	CEILING MOUNTED REMOTE INDICATING LIGHT.
	WALL MOUNTED REMOTE INDICATING LIGHT.
DH	ELECTROMAGNETIC DOOR HOLD OPEN.
FS	WATER FLOW SWITCH.
TS	TAMPER SWITCH.
EOLD	END OF LINE DEVICE.
	FIREMAN PHONE.
FACP	FIRE ALARM CONTROL PANEL.
ANN	ANNUNCIATOR PANEL.
FAAP	FIRE ALARM AUXILIARY PANEL.
FFCP	FIRE FIGHTER'S CONTROL PANEL.
	FIRE/SMOKE DAMPER.
	FIRE DAMPER.
	SMOKE DAMPER.

SYMBOL	DESCTIPTION
	DEVICES
J	CEILING - JUNCTION BOX.
J	FLOOR - JUNCTION BOX.
J	WALL - JUNCTION BOX.
P B	PULL BOX.
	SURFACE METAL RACEWAY.
	MOTOR.
	NON-FUSED DISCONNECT SWITCH.
	FUSED DISCONNECT SWITCH.
	ENCLOSED CIRCUIT BREAKER.
	COMBINATION MAGNETIC MOTOR STARTER FUSED DISCONNECT SWITCH.
	MAGNETIC MOTOR STARTER WITH OVERLOADS.
	STARTER.
	WALL-DUPLEX RECEPTACLE MTD 18" AFF, UON. C = CLOCK; GFI = GROUND FAULT INTERRUPTING; ARI = ARC FAULT INTERRUPTING.
	FLOOR-DUPLEX RECEPTACLE MTD 18" AFF, UON. C = CLOCK; GFI = GROUND FAULT INTERRUPTING; ARI = ARC FAULT INTERRUPTING.
	CEILING-DUPLEX RECEPTACLE MTD 18" AFF, UON. C = CLOCK; GFI = GROUND FAULT INTERRUPTING; ARI = ARC FAULT INTERRUPTING.
	WALL-CONVENIENCE RECEPTACLE, SPLIT WIRED.
	FLOOR-CONVENIENCE RECEPTACLE, SPLIT WIRED.
	WALL-TWO DUPLEX RECEPTACLES IN TWO GANG BOX.
	FLOOR-TWO DUPLEX RECEPTACLES IN TWO GANG BOX.
	CEILING-TWO DUPLEX RECEPTACLES IN TWO GANG BOX.
	WALL-SPECIAL PURPOSE RECEPTACLE, CONFIGURATION NOTED.
	FLOOR-SPECIAL PURPOSE RECEPTACLE, CONFIGURATION NOTED.
	CEILING-SPECIAL PURPOSE RECEPTACLE, CONFIGURATION NOTED.
	WALL-FURNITURE SYSTEM POWER FEED.
	FURNITURE SYSTEM POWER FEED.
	FURNITURE SYSTEM TELE/DATA FEED.
	FLOOR MOUNTED COMBO POWER / TELE / DATA OUTLET.
	FLOOR - TELEPHONE OUTLET.
	WALL - TELEPHONE OUTLET MTD 18" AFF, UON.
	FLOOR - DATA OUTLET.
	WALL - DATA OUTLET MTD 18" AFF, UON.
	FLOOR - COMBINATION TELEPHONE DATA.
	WALL - COMBINATION TELEPHONE DATA MTD 18" AFF, UON.
	WALL-COAXIAL CABLE OUTLET MTD 18" AFF, UON.
	WALL-COMBINATION TELEPHONE DATA COAXIAL OUTLET MTD 18", UON.
	WALL-COMBINATION TELEPHONE COAXIAL OUTLET MTD 18" AFF, UON.
OS	WALL -OCCUPANCY SENSOR
OS	CEILING -OCCUPANCY SENSOR
PC	WALL - PHOTOELECTRIC SENSOR.
PC	CEILING - PHOTOELECTRIC SENSOR
VFD	VARIABLE FREQUENCY DRIVE.
ATS	AUTOMATIC TRANSFER SWITCH.
$a	SINGLE POLE SWITCH, MTD 46" AFF, UON. SUBSCRIPT INDICATES SWITCHING LEG.
$2	TWO-POLE SWITCH.
$3	THREE-WAY SWITCH.
$4	FOUR-WAY SWITCH.
$D	DIMMER SWITCH.
$P	PILOT LIGHT SWITCH.
$K	KEY OPERATED SWITCH.
$LV	LOW VOLTAGE SWITCH.
$M	MOTOR SWITCH.
$MC	MOMENTARY CONTACT SWITCH.
$OS	OCCUPANCY SENSOR SWITCH.
$TO	THERMAL OVERLOAD SWITCH.

SYMBOL	DESCTIPTION
	DISTRIBUTION / RACEWAY
	SWITCHGEAR / SWITCHBOARD.
	BRANCH CIRCUIT PANELBOARD.
T	TRANSFORMER.
C	CLOCK OUTLET.
E	ELECTRO MAGNETIC DOOR LOCK.
	COMMUNICATION / DATA BACKBOARD.
	EXPOSED CONDUIT.
	CONDUIT CONCEALED IN WALL OR CEILING.
	CONDUIT CONCEALED IN FLOOR OR UNDERGROUND.
	RACEWAY TURNED TOWARD VIEWER.
	RACEWAY TURNED AWAR FROM VIEWER.
	BRANCH CIRCUIT HOMERUN.
PH N G	INDICATES #12AWG CONDUCTORS, PH = PHASE CONDUCTOR, G = GROUND, N = NEUTRAL, NO.
	CABLE TRAY.
	ONE-LINE DIAGRAM
T 30	TRANSFORMER (# = KVA).
	TRANSFORMER WITH GROUND SECONDARY, KVA SIZE & VOLTAGE RATIO AS NOTED.
	POTENTIAL TRANSFORMER.
	CURRENT TRANSFORMER.
	DISCONNECT SWITCH.
	FUSE.
	FUSED DISCONNECT SWITCH, 3-POLE, 400 AMPERE RATED SWITCH WITH 350 AMPERE RATED FUSE.
	AMPERE FRAME.
	AUTOMATIC TRANSFER SWITCH.
M	UTILITY METER.
	GROUND.
G	GENERATOR.
	EQUIPMENT ENCLOSURE.
	SERVICE WEATHERHEAD.
	SHORT CIRCUIT CURRENT AVAILABLE AT POINT INDICATED.
PQM	POWER QUALITY METER.
TVSS	TRANSIENT VOLTAGE SURGE SUPRESSOR.
GFCI	GROUND FAULT CIRCUIT INTERRUPTER.
	FEEDER SCHEDULE.
	CONTACTS.
	OVERLOAD PROTECTION.
	LOAD CENTER.
	ABBREVIATIONS
A	AMPERES.
AC	ABOVE COUNTER.
AFCI	ARC-FAULT CIRCUIT INTERRUPTED.
AF	AMPERE FRAME, AMPERE FUSE.
AFF	ABOVE FINISHED FLOOR.
AFG	ABOVE FINISHED GRADE.
AIC	AMPERES INTERRUPTING CAPACITY.
ANN	ANNUNCIATOR.
AT	AT AMPERE TRIP.
ATS	AUTOMATIC TRANSFER SWITCH.
AWG	AMERICAN WIRE GAUGE.
C	CONDUIT.
CATV	CABLE TELEVISION.

SYMBOL	DESCTIPTION
	DISTRIBUTION / RACEWAY
CB	CIRCUIT BREAKER.
CCTV	CLOSED CIRCUIT TELEVISION.
E	EXISTING.
EC	EMPTY CONDUIT.
EM	EMERGENCY.
EMT	ELECTRIC METALLIC TUBING.
EP	EXPLOSION PROOF.
EPO	EMERGENCY POWER OFF.
EWC	ELECTRIC WATER COOLER.
FA	FIRE ALARM.
FACP	FIRE ALARM CONTROL PANEL.
G	GROUND.
GND	GROUND.
GFI	GROUND FAULT INTERRUPTOR.
HOA	HAND / OFF / AUTOMATIC.
IG	ISOLATED GROUND.
IMC	INTERMEDIATE METAL CONDUIT.
ISC	SHORT CIRCUIT CURRENT.
KAIC	KILO-AMPERES INTERRUPTING CAPACITY.
KCMIL	THOUSAND CIRCULAR MILLIMETERS.
MAX	MAXIMUM.
MCB	MAIN CIRCUIT BREAKER.
MCC	MOTOR CONTROL CENTER.
MCM	THOUSAND CIRCULAR MILLIMETERS.
MTD	MOUNTED.
MDC	MAIN DISTRIBUTION CENTER.
MIN	MINIMUM.
MLO	MAIN LUGS ONLY.
NEC	NATIONAL ELECTRIC CODE.
N	NEW.
NIC	NOT IN CONTRACT.
NL	NIGHT LIGHT.
NC	NORMALLY CLOSED.
NO	NORMALLY OPEN.
NTS	NOT TO SCALE.
OC	ON CENTER.
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED.
OFOI	OWNER FURNISHED, OWNER INSTALLED.
PC	PULLCHAIN.
RGS	RIGID STEEL.
RL	RELOCATE.
RM	REMOVE.
RMS	ROOT MEAN SQUARE.
SB	STANDBY.
SC	SPLIT CIRCUIT.
SDP	SUB-DISTRIBUTION PANEL.
ST	SHUNT TRIP.
SYM	SYMMETRICAL.
TP	TAMPER PROOF.
TVSS	TRANSIENT BOLTAGE SURGE SUPPRESSION.
TYP	TYPICAL.
UON	UNLESS OTHERWISE NOTED.
V	VOLTS.
VFD	VARIABLE FREQUENCY DRIVE.
W/	WITH.
W/O	WITH-OUT.
WP	WEATHERPROOF.
XFMR	TRANSFORMER.
1	WORK NOTE REFERENCE.
1	WORK NOTE REFERENCE.
### / ###	MECHANICAL EQUIPMENT REFERENCE.
	LINE TYPES
	BOLD LINES INDICATE NEW OR RELOCATED EQUIPMENT. RELOCATED EQUIPMENT MAY INCLUDE "RL".
	SCREENED LINES INDICATE EXISTING EQUIPMENT TO REMAIN.
	DASHED LINES INDICATE FUTURE.
	SCRENED DASHED LINES INDICATES EQUIPMENT TO BE DEMOLISHED OR REMOBED.

NOTE:
1. NOT ALL SYMBOLS ON THIS LEGEND ARE NECESSARILY USED ON THIS PROJECT.
2. ELEVATIONS INDICATED ON LEGEND ARE TO CENTER, U.O.N.

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CHECKED BY:	AWE
ISSUE DATE:	9/30/09

SHEET NO.
E1.0

JOB # 9035

9035-E1.0 LEGEND & SCHEDULES.dwg
10/8/2009 1:33 PM