

NOTE: CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY, IF THERE IS ANY DISCREPANCY ON THESE PLANS.

FEDER SCHEDULE

FEDER AMPS	CONDUIT AND FEEDER	FEEDING THESE DEVICES
80	1" C, 2#4, #4N, #10G	HP
80	1-1/4" C, 2#2, #2N, #6G	UNIT 4, UNIT 5
100	1-1/4" C, 2#1, #1N, #6G	UNIT 1, UNIT 2, UNIT 3
400	3" C, 2#6000L, #60000L, #2G, #2G	MS

SEALING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C 1/0 AND ABOVE

AVAILABLE FAULT CURRENT (RMS SYMMETRICAL AMPS AT ENRANCE 120/240 VOLTS MAX)	SERVICE MODULES (MSU)	FEEDING BREAKER (15-125A)	LOAD CENTER (125-200A)	LOAD CENTER (125-200A)
22,000A	SERIES MSU, WMSU	OPPH (125-200A)	OPPH (125-200A)	OP, OT, OPF, OE

HP

ROOM GARAGE	MOUNTING SURFACE	FEED FROM MS	VOLTS 240/120V 2P 3W	BUS AMPS 125	NEUTRAL 100% LUGS STANDARD	AIC SERIES	MAIN BRK MLO	LUGS STANDARD
1 20/1	GARAGE TUB	CHAIR LIFT	0.775	1.18	0.36	1.18	0.36	1.18
3 20/2	GE-1	GE-1	1.44	1.44	1.18	1.18	1.18	1.18
5 20/2	GE-1	GE-1	1.44	1.44	1.18	1.18	1.18	1.18
7 20/1	FIRE ALARM	SPRINKLER	0.18	0.9	0.332	0	0	0
11 20/1	ROOF	ROOF	12.20/1	12.20/1	0.532	0	0	0
TOTAL CONNECTED KVA BY PHASE			44	52.8	5.03	44	52.8	5.03
TOTAL CONNECTED AMPS BY PHASE			160.87	193.04	19.3	160.87	193.04	19.3

LOAD CALCULATION

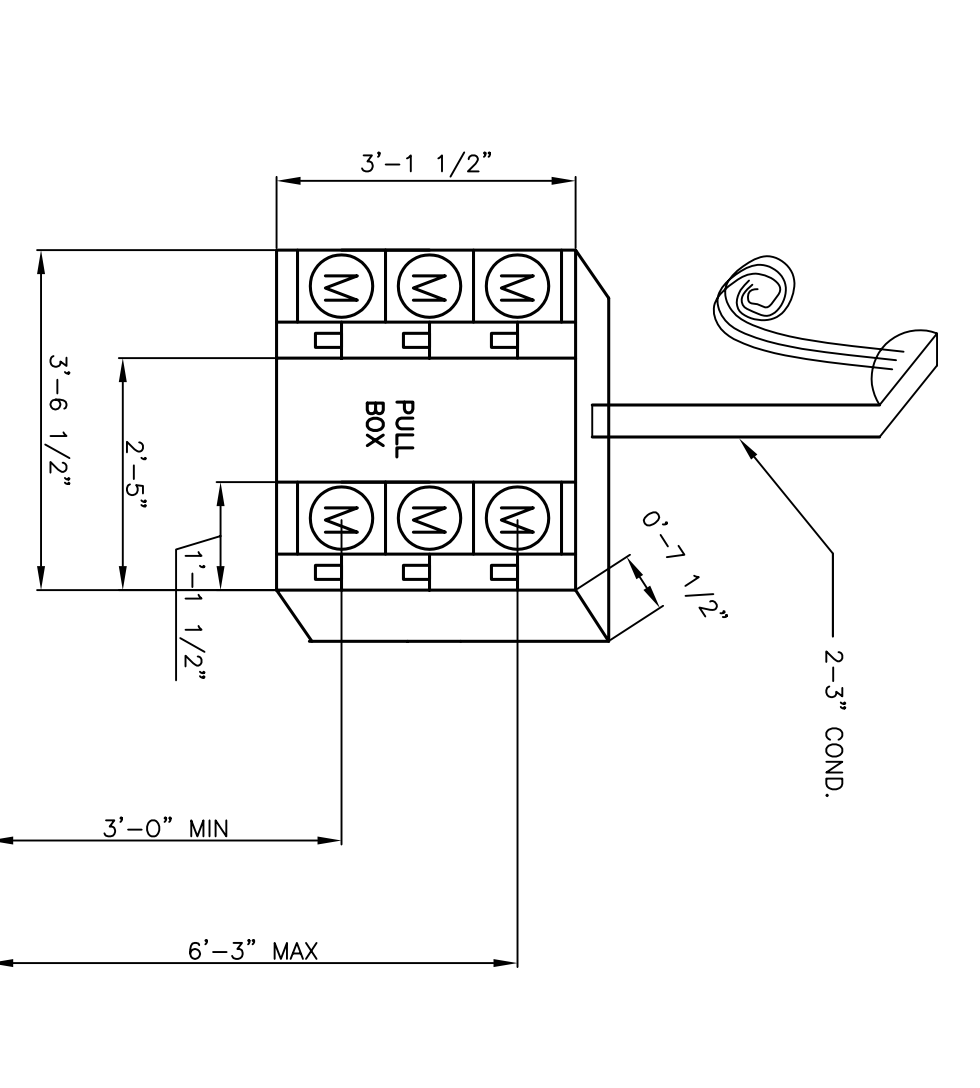
UNIT	DESCRIPTION	VA	VA	VA
Unit 1	GENERAL LIGHTING LOAD	1713		
Unit 2	SMALL APPLIANCE LOAD	1822		
Unit 3	SMALL APPLIANCE LOAD	1822		
Unit 4	SMALL APPLIANCE LOAD	1775		
Unit 5	SMALL APPLIANCE LOAD	1775		
TOTAL CONNECTED LOAD				
160.87 VA				
APPLICATION OF OPTIONAL CALC.				
NEC DEMAND FACTOR				
CURRENT @ (240V, 1 PHASE, 3 WIRE)				
72174 VA				
301 AMP				
HOUSE PANEL				
50 AMP				
TOTAL				
351 AMP				
SERVICE SIZE REQUIRED				
1400 AMP, 120/240V, SINGLE PHASE, THREE WIRE				

PANEL 'A'

CRCT	DESCRIPTION	CRCT BREAK	VOLTAGE
1	WORK AREA RECEPTACLES	20 1	1500
2	HOOD FAN RECEPTACLES	20 1	1500
3	MICROWAVE OVEN	20 1	1500
4	DISHWASHER	20 1	1500
5	DISHWASHER	20 1	1500
6	FAN COIL UNIT	20 1	1000
7	BEDROOM / BATHROOM	20 1	1000
8	BEDROOM / BATHROOM	20 1	1000
9	BEDROOM / BATHROOM	20 1	1000
10	BEDROOM / BATHROOM	20 1	1000
11	BEDROOM / BATHROOM	20 1	1000
12	GENERAL LIGHTING	20 1	1000
13	GENERAL LIGHTING	20 1	1000
14	SMOKE DETECTOR	20 1	1000
15	SMOKE DETECTOR	20 1	1000
16	BEDROOM / BATHROOM	20 1	1000
17	BEDROOM / BATHROOM	20 1	1000
18	LAUNDRY	20 1	1000
19	GARAGE DOOR OPENER	20 1	1000
20	JACOUD TUB	20 1	1000
21	JACOUD TUB	20 1	1000
22	JACOUD TUB	20 1	1000
23	JACOUD TUB	20 1	1000
24	JACOUD TUB	20 1	1000
VOLTAGE 120/240 V			
BUS AMPS 125			
MAIN AMPS LUGS ONLY			
MOUNTING RECESSED			
LOCATION HALFWAY			
AS			

PANEL 'A'

CRCT	DESCRIPTION	CRCT BREAK	VOLTAGE
1	WORK AREA RECEPTACLES	20 1	1500
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6	FAN COIL UNIT	20 1	1000
7	BEDROOM / BATHROOM	20 1	1000
8	BEDROOM / BATHROOM	20 1	1000
9	BEDROOM / BATHROOM	20 1	1000
10	BEDROOM / BATHROOM	20 1	1000
11	BEDROOM / BATHROOM	20 1	1000
12	GENERAL LIGHTING	20 1	1000
13	GENERAL LIGHTING	20 1	1000
14	SMOKE DETECTOR	20 1	1000
15	SMOKE DETECTOR	20 1	1000
16	BEDROOM / BATHROOM	20 1	1000
17	BEDROOM / BATHROOM	20 1	1000
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19	GARAGE DOOR OPENER	20 1	1000
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21	JACOUD TUB	20 1	1000
22	JACOUD TUB	20 1	1000
23	JACOUD TUB	20 1	1000
24	JACOUD TUB	20 1	1000
VOLTAGE 120/240 V			
BUS AMPS 125			
MAIN AMPS LUGS ONLY			
MOUNTING RECESSED			
LOCATION HALFWAY			
AS			



SERVICE PANEL ELEVATION

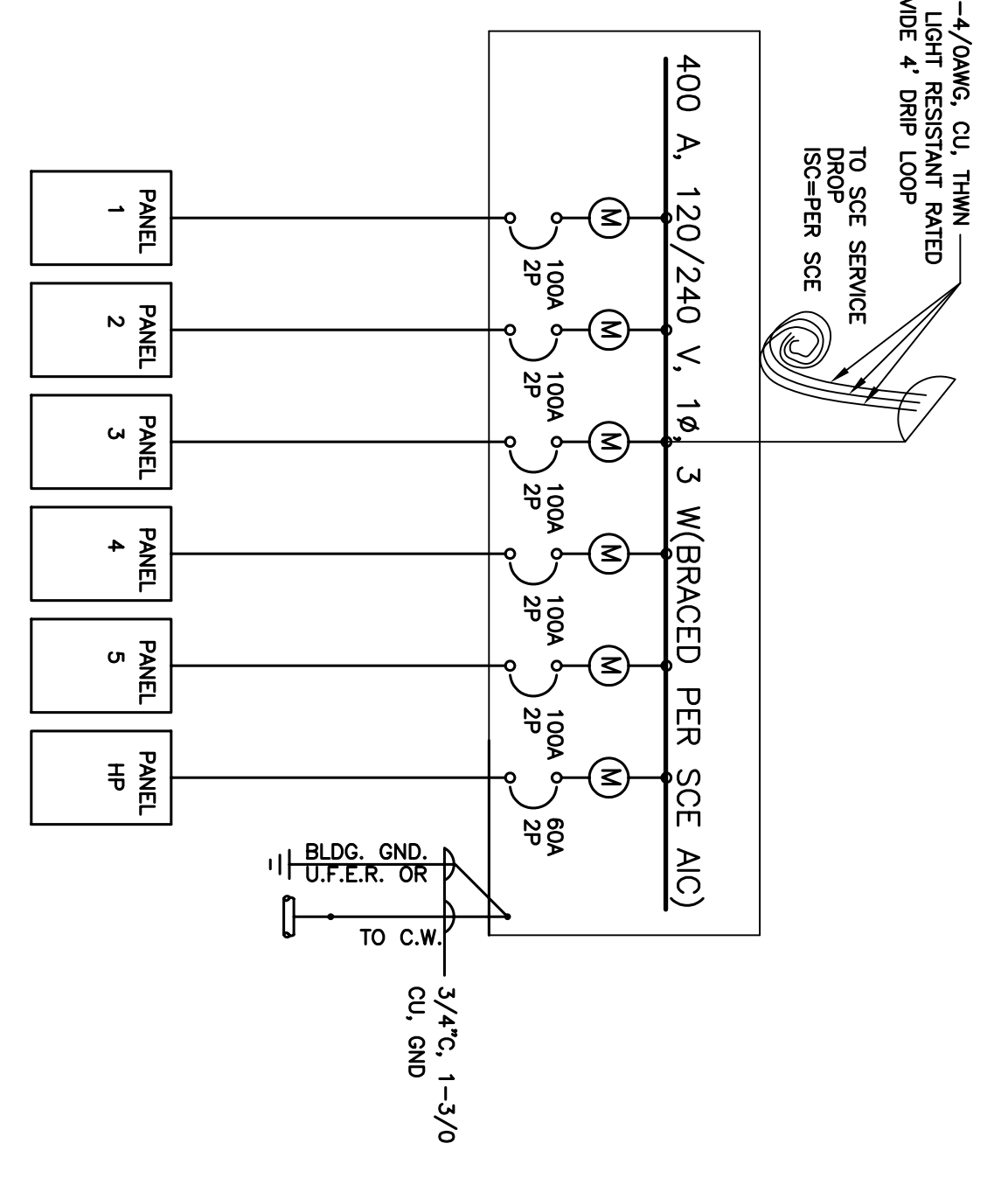
SCALE: NONE

VOLTAGE DROP SCHEDULE

LOCATION	FEDER 1	FEDER 2	MAX BRANCH CIRCUIT	TOTAL
HP	0.73%	3.72% (Ckt 8)	4.46%	5.19%
MS	0%	---	0%	0%
UNIT 1	1.37%	0.91% (Ckt 8,11)	2.28%	2.65%
UNIT 2	1.35%	1% (Ckt 9,11)	2.36%	2.71%
UNIT 3	1.05%	1% (Ckt 9,11)	2.06%	2.41%
UNIT 4	0.93%	1% (Ckt 9,11)	1.91%	2.24%
UNIT 5	0.67%	0.75% (Ckt 9,11)	1.42%	1.79%

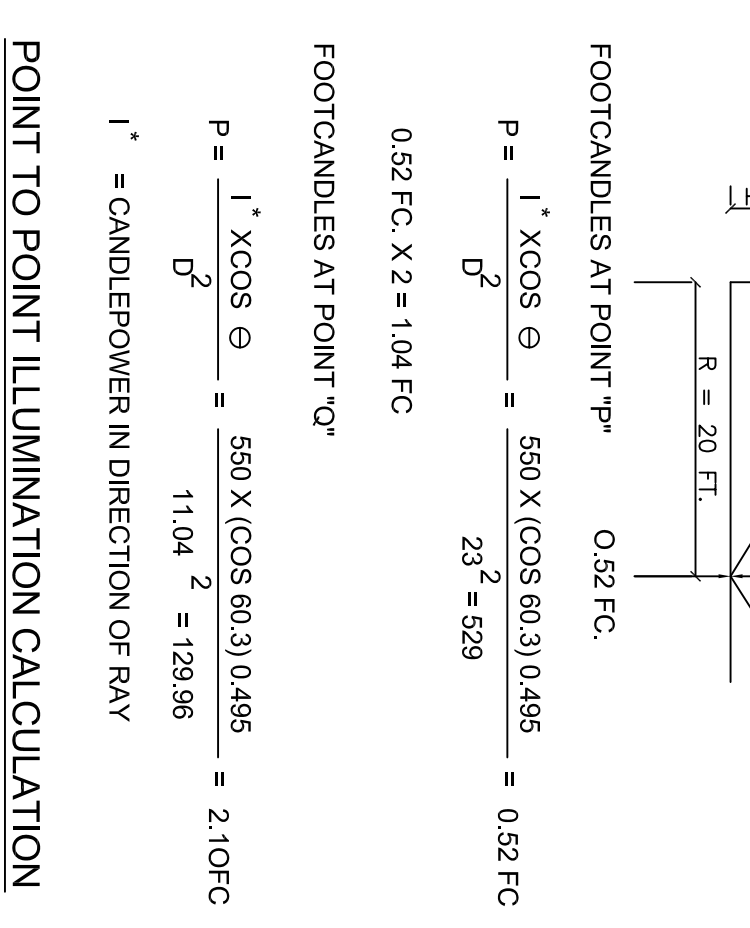
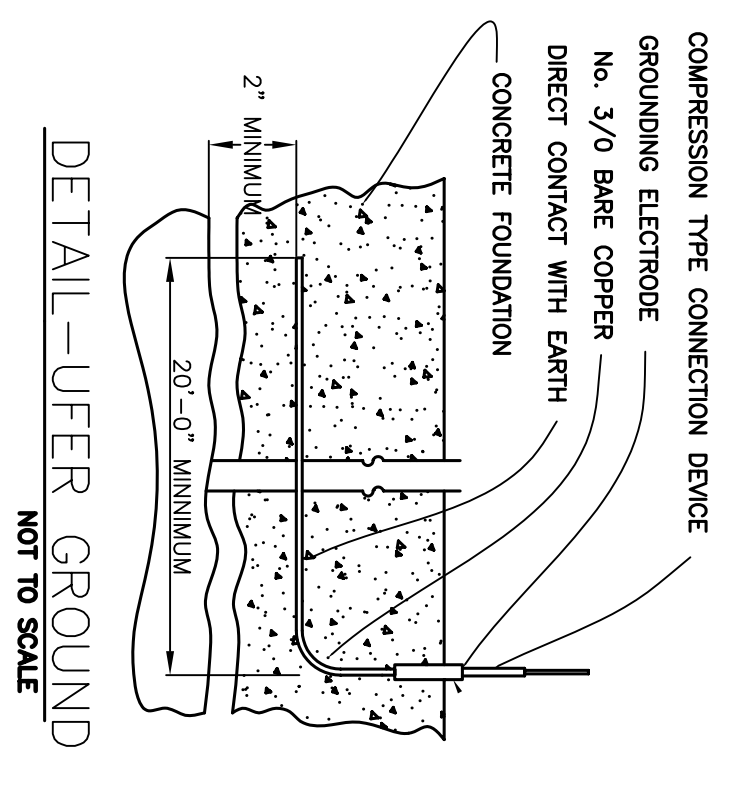
SINGLE LINE DIAGRAM

SCALE: NONE



UNITS 1, 2, 3, 4, 5 FEEDER CALCULATION

GENERAL LIGHTING LOAD	SMALL APPLIANCE LOAD	LAUNDRY	1ST 3000 @ 100%	REMAINDER @ 35%	2438.1
3 X 870 = 2610 VA	2 X 1500 = 3000 VA	1 X 1500 = 1500 VA	3000	996	3996
1 X 870 = 870 VA	1 X 1200 = 1200 VA	1 X 750 = 750 VA	1200	390	1590
4 X 70 = 280 VA	1 X 750 = 750 VA	1 X 150 = 150 VA	750	263	1013
1 X 750 = 750 VA	1 X 150 = 150 VA	1 X 150 = 150 VA	150	53	303
1 X 150 = 150 VA	1 X 150 = 150 VA	1 X 150 = 150 VA	150	53	303
3 X 150 = 450 VA	1 X 1000 = 1000 VA	1 X 1000 = 1000 VA	1000	350	1350
1 X 1000 = 1000 VA	1 X 1000 = 1000 VA	1 X 1000 = 1000 VA	1000	350	1350
1 X 1000 = 1000 VA	1 X 1000 = 1000 VA	1 X 1000 = 1000 VA	1000	350	1350
1 X 6900 = 6900 VA	1 X 6900 = 6900 VA	1 X 6900 = 6900 VA	6900	2385	9285
TOTAL LOAD					
19433					
AMP @ 240V					
81					



1. ALL WORK SHALL BE PERFORMED PER 2002 EDITIONS OF NATIONAL ELECTRICAL CODE.
2. PROVIDE SERIES RATED SHORT CIRCUIT RATING FOR ALL ELECTRICAL EQUIPMENT, SWITCHBOARDS, PANELBOARDS, ETC. TO WITHSTAND AVAILABLE FAULT CURRENT. VERIFY WITH SERVING UTILITY COMPANY.
3. PROVIDE SEISMIC BRACING FOR ALL SERVICE EQUIPMENT, SWITCHBOARDS AND OTHER FLOOR STANDING EQUIPMENT BY INSTALLING APPROVED ANCHORS TO THE BUILDING STRUCTURE FROM EACH EQUIPMENT ENCLOSURE.
4. FURNISH ELECTRICAL EQUIPMENT OF THE SAME TYPE OR CLASS FROM ONE MANUFACTURER.
5. EQUIP ALL DISTRIBUTION FUSEL SWITCHES WITH REFLECTION TYPE FUSE CLIPS FOR USE WITH CURRENT LIMITING, UL CLASS "R" FUSES.
6. PROVIDE FUSES FROM ONE MANUFACTURER OF THE FOLLOWING TYPES:
 - A. "RK-1" - UL CLASS "RK-1" CURRENT LIMITING FUSES, "BUSSMANN" LOW-PEAK TYPE LPN-RK-SP OR "B" "RK5" UL CLASS "TK5" CURRENT LIMITING, DUAL ELEMENT FUSES, "BUSSMANN" LOW-PEAK TYPE LPN-RK-SP, OR APPROVED EQUAL.
 - 8. ALL CONDUCTORS SHALL BE COPPER WITH TYPE "THHN"/"THWN" INSULATION RATED FOR 90° VOLTS.
 - 9. FEEDER LENGTHS NOTED ON DRAWINGS ARE FOR VOLTAGE DROP AND SHORT CIRCUIT CALCULATIONS ONLY AND ARE NOT TO BE USED FOR ESTIMATE OR MATERIAL TAKE-OFF.
 - 10. ELECTRICAL EQUIPMENT SHALL BE LISTED BY UL, LABORATORY.
 - 11. NO PIPING, DUCTS OR EQUIPMENT PERFORM TO ELECTRICAL DEDICATED SPACE.
 - 12. PROVIDE A CAUTIONARY LABEL TO THE SERIES RATED DEVICE COVER STATING "CAUTION: SERIES RATED SYSTEM 40200". ELEMENT IDENTIFIED REPLACEMENT COMPONENT REQUIRED.
 - 13. ALL TERMINALS SHALL BE DUAL RATED 60/75° C.

CALLOUT	SYMBOL	LAMP	DESCRIPTION	BALLAST	MOUNTING	MODEL	INLET VOLTS	NOTES	QUANTITY
D		(2) 32W 18-32	1X4 WRAPAROUND FLUORESCENT	ELECTRONIC	CEILING	LITHONIA AW-2-32-X-120-GE8	120V 1P 2W		NOT USED
D1		(2) 32W 18-32	1X4 WRAPAROUND FLUORESCENT W/ 90 MIN BATTERY BACKUP	ELECTRONIC	CEILING	LITHONIA AW-2-32-X-120-GE8	120V 1P 2W		1
E		(2) 32W 18	1X4 FLUORESCENT STRIPLIGHT	ELECTRONIC	CEILING	LITHONIA C-2-32W-120-GE8	120V 1P 2W		4
E1		(2) 32W 18	1X4 FLUORESCENT STRIPLIGHT WITH 90 MIN. BATTERY BACKUP	ELECTRONIC	CEILING	LITHONIA C-2-32W-120-GE8	120V 1P 2W		7
F		(1) 22W FLUORESCENT	SCIENCE	ELECTRONIC	WALL	BY OWNER	120V 1P 2W		12
G		(1) 22W FLUORESCENT	ROUND OR SQUARE FLUORESCENT	ELECTRONIC	CEILING	LITHONIA 10970-22W-120	120V 1P 2W		1
G1		(2) 60W INC.	SURFACE MOUNTED INCA.		SURFACE		120V 1P 2W		NOT USED
H		(2) 28W 26W F	6" FLUORESCENT DOWNLIGHT	ELECTRONIC	RECESSED	LITHONIA TYPE AFV	120V 1P 2W		NOT USED
K		(1) 1W LED	ILLUMINATED EXIT SIGN W/ 90 MIN BATTERY BACKUP	ELECTRONIC	CEILING	LITHONIA LES-1/2-G-120-ELN	120V 1P 2W		2
L1		(1) 75W HALOGEN PAR	RECESSED HALOGEN 6" CAN	ELECTRONIC	RECESSED		120V 1P 2W		NOT USED
M		(2) 12W, 12V DS	Emergency Light w/ 90 MIN BATTERY BACKUP	ELECTRONIC	CEILING	LITHONIA OR EQUIVALENT ELM4	120V 1P 2W		6
N1		(1) 60W INC	WALL WASH, LV 4" CAN		RECESSED		120V 1P 2W		NOT USED
P		(2) 60W INC	TYPE BY ARCHITECT		PENDANT		120V 1P 2W		NOT USED
SL		(1)			CEILING		120V 1P 2W		1
Y		(1) NONE	SMOKE DETECTOR		CEILING		120V 1P 2W		NOT USED

REVISION

SHEET TITLE: SINGLE LINE DIAGRAM CALCULATION

PROJECT: 5 UNIT CONDOMINIUMS

DATE: 11-01-2005

SCALE: AS SHOWN

BY: BB

CHECKED: HRA

DRAWING NO: E-2.0

DEVELOPER: MR. ALI MADANI & MR. HOSSEIN ASHTIANI

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