PROPOSED POWER RISER: (NOT TO SCALE)

ELECTRICAL SERVICE NOTES:

1. ALL ELECTRICAL SERVICE EQUIPMENT SHALL HAVE MIN. A.I.C. RATING OF 42,000 AMPS. ALL EQUIPMENT LOCATED ON EXTERIOR OF BUILDING SHALL BE NEMA-3R RATED.

2. ALL ELECTRICAL EQUIPMENT AND WIRE SHALL BE RATED @ 75°C CONTINUOUS DUTY.

3. PRIOR TO CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL:
   a) VERIFY ALL EXISTING CONDITIONS IN FIELD
   b) COORDINATE THE ELECTRICAL SERVICE WITH FP&L REPRESENTATIVE
   c) NOTIFY THE ENGINEER OF ANY CHANGES REQUIRED TO COMPLETE NEW CONSTRUCTION.

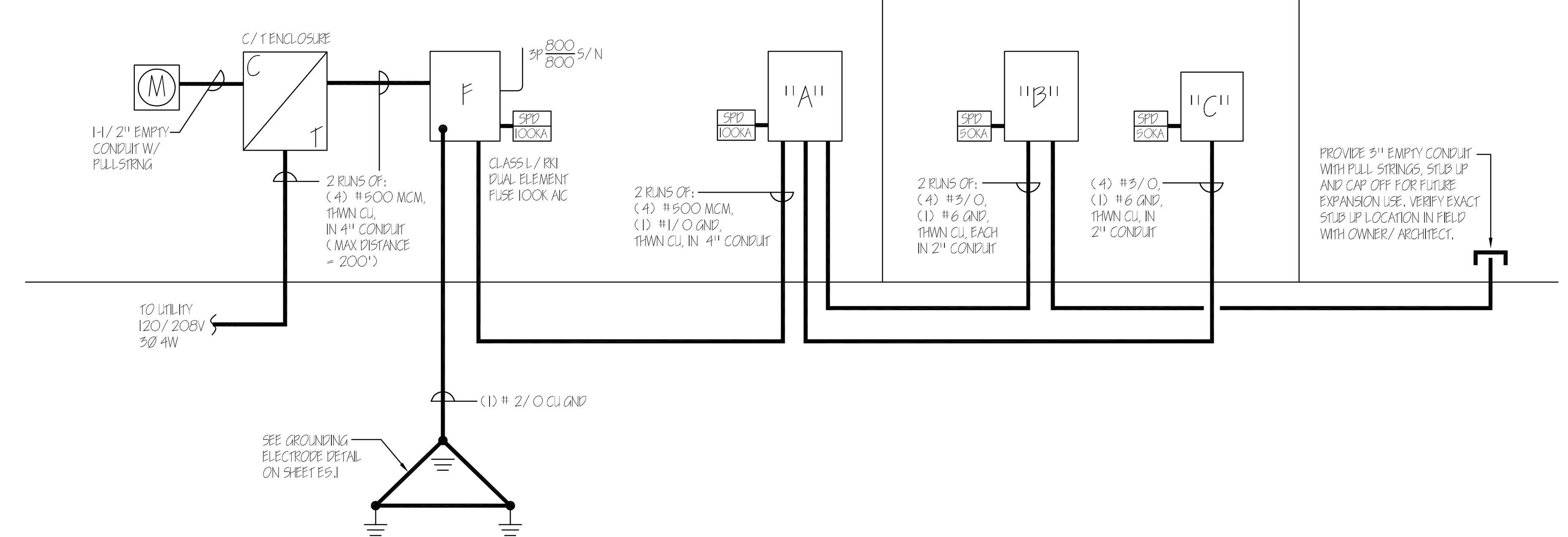
4. ALL ELECTRICAL EQUIPMENT SHALL BE FIELD MARKED TO WARN OF POTENTIAL ELECTRICAL ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE BEFORE ANY EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.

5. EACH DISCONNECT SHALL BE LEGIBLY MARKED TO INDICATE THE UNIT IT IS FEEDING. THE MARKING SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.

NEW SERVICE COORDINATION:

COORDINATE NEW ELECTRICAL SERVICE WITH UTILITY SERVICE REPRESENTATIVE. PRIOR TO BID, ELECTRICAL CONTRACTOR SHALL VERIFY WITH UTILITY COMPANY THAT THE FAULT CURRENT AVAILABLE DOES NOT EXCEED THE FAULT CURRENT RATING OF THE SPECIFIED SWITCHGEAR. NOTIFY ARCHITECT/ ENGINEER IF CHANGES TO PLANS ARE REQUIRED.

NOTE:
THE GC SHALL COORDINATE EXACT PLACEMENT OF NEW ELECTRICAL SERVICE EQUIPMENT WITH LANDSCAPING TO MAINTAIN REQUIRED CLEARANCES. FIELD VERIFY.



SHORT CIRCUIT CALCULATION:

F.P.L. TRANS.
SCI= 38,000 AMPS (APPROXIMATE)
SC_1
200 FT.
SC_2
2 RUNS OF: 4 #500 MCM CU
MAIN 1 OF 1

$$F = \frac{1.73 \times 200 \times 40{,}000}{2 \times 26{,}706 \times 208} = 1.246$$

$$M = \frac{1}{1 + 1.246} = 0.445$$

SC_2 = 38,000 X 0.445 = 16,910 AMPS
MINIMUM SERVICE A.I.C. = 42,000 AMPS

CONTRACTOR MUST CONTACT FPL AND COORDINATE ALL UTILITY REQUIREMENTS, FEES, DESIGN AND INSTALLATION CONFORMANCE.

NEW SERVICE TRANSFORMER LOADS:

PHASSE I LOAD:	ØA TOTAL KVA: 54.0	ØB TOTAL KVA: 54.4	ØC TOTAL KVA: 53.0
FUTURE PHASE II LOAD:	ØA TOTAL KVA: 20.0	ØB TOTAL KVA: 20.0	ØC TOTAL KVA: 20.0
TOTAL SERVICE LOAD:	ØA TOTAL KVA: 74.0	ØB TOTAL KVA: 74.4	ØC TOTAL KVA: 73.0
TOTAL SERVICE AMPS:	ØA TOTAL AMPS: 616.7	ØB TOTAL AMPS: 620.0	ØC TOTAL AMPS: 608.3

PANEL FEEDER NOTE:

THE ELECTRICAL CONTRACTOR SHALL VERIFY THE LENGTH OF ALL BRANCH CIRCUITS IN FIELD AND SHALL MAINTAIN LESS THAN 3% VOLTAGE DROP. INCREASE FEEDER SIZES AS REQUIRED. SEE VD CALCULATIONS ON THIS PAGE FOR ADDITIONAL INFORMATION.

PANEL "A"

PANEL MFG: SQUARE D (OR EQUAL) — PANEL TYPE: NQ
PANEL NAME: "A" — PANEL KEY NOTES: [1] [2]
PANEL RATING: 800 AMPS — VOLTAGE: 120/208V, 3Ø 4W

CKT #:	LOAD DISCRIPTION:	BREAKER SIZE (A):	WIRE SIZE:	GND SIZE:	COND. SIZE:	BUS KVA: A	B	C	BUS KVA: A	B	C	COND. SIZE:	GND SIZE:	WIRE SIZE:	BREAKER SIZE (A):	LOAD DISCRIPTION:	CKT #:
1	STORAGE/ BATH/ GREEN/ MECH LTS	20	12	12	1/2"	0.5			0.8			1/2"	12	12	20	GENERAL SANCTUARY RECEPS	2
3	MULTIPURPOSE PENDANT LIGHTS [5]	20	12	12	1/2"		0.4			0.8		1/2"	12	12	20	GENERAL SANCTUARY RECEPS	4
5	MULTIPURPOSE RECESSED LTS [5] [6]	20	10	10	3/4"			1.4			0.8	1/2"	12	12	20	CENTER PROJECTOR	6
7	STAGE/ SE EXTERIOR LIGHTS [5]	20	12	12	1/2"	0.4			0.8			1/2"	12	12	20	STAGE RECEPS	8
9	NORTH COVE LIGHTS [5]	20	12	12	1/2"		1.2			1.2		1/2"	12	12	20	STAGE RECEPS	10
11	CENTER COVE LIGHTS [5]	20	12	12	1/2"			0.9			0.8	1/2"	12	12	20	MOTORIZED SCREEN	12
13	SOUTH COVE LIGHTS [5]	20	12	12	1/2"	1.2			0.8			1/2"	12	12	20	STORAGE/ GREEN/ BATH RECEPS	14
15	SITE LIGHTING - S. PARKING [5] [6]	20/2	10	10	3/4"		0.6			1.0		1/2"	12	12	20	GREEN ROOM QUAD STATIONS	16
17								0.6			0.4	1/2"	12	12	20	TELEBOARD	18
19	SITE LIGHTING - S. PARKING [5] [6]	20/2	10	10	3/4"	0.7			1.0			1/2"	12	12	20	FUTURE STAGE LIGHTING	20
21							0.7			1.0		1/2"	12	12	20	FUTURE STAGE LIGHTING	22
23	ROOF TOP RECEP	20	12	12	1/2"			0.2			1.0	1/2"	12	12	20	FUTURE STAGE LIGHTING	24
25	AH-5 [6] [8]	60/3	4	8	1-1/4"	5.5			1.0			1/2"	12	12	20	FUTURE STAGE LIGHTING	26
27							5.5			0.8		1/2"	12	12	20	NORTH PROJECTOR	28
29								5.5			0.8	1/2"	12	12	20	SOUTH PROJECTOR	30
31	ERV-1 [8]	30/3	10	10	3/4"	2.0			-			-	-	-	-	SPACE	32
33							2.0			-		-	-	-	-	"	34
35								2.0			-	-	-	-	-	"	36
37	FACP	20	12	12	1/2"	0.5			6.2			1-1/4"	8	3	90/3	AH-6 [8]	38
39	AHU-7 [7] [8]	20/2	12	12	1/2"		1.6			6.2							40
41								1.6			6.2						42
43	SPACE	-	-	-	-	-			36.5			*	*	*	400/3	PANEL "B"	44
45	CU-7 [7] [8]	20/2	12	12	1/2"		(1.0)			35.4							46
47								(1.0)			34.1						48
49	SPD	[4]	[4]	[4]	[4]	-			16.1			*	*	*	200/3	PANEL "C"	50
51							-			16.0							52
53								-			16.7						54

ØA TOTAL KVA: 74.0 — ØB TOTAL KVA: 74.4 — ØC TOTAL KVA: 73.0

PANEL, BREAKER, AND BRANCH CIRCUIT KEY NOTES:
[1] MAIN LUGS ONLY. ELECTRICAL CONTRACTOR SHALL PROVIDE AN ACCURATE TYPED UP PANEL SCHEDULE UPON COMPLETION OF THE PROJECT.
[2] VERIFY ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PRIOR TO CONSTRUCTION; ALL EQUIPMENT'S ELECTRICAL REQUIREMENTS SHALL BE CONFIRMED WITH MFG SPECS. VERIFY VOLTAGE, AMPERAGE, AND BREAKER SIZES.
[3] PROVIDE GFCI RATED BREAKER.
[4] INSTALL SPD PER MANUFACTURER'S RECOMMENDATIONS.
[5] WIRE BRANCH CIRCUIT THRU TIMECLOCK FOR CONTROL OF LIGHTS.
[6] FEEDER SIZES INCREASED TO MAINTAIN LESS THAN 3% VOLTAGE DROP. CONTRACTOR TO VERIFY LENGTH OF ACTUAL RUN IN FIELD AND INCREASE FEEDER/ CONDUIT SIZES AS REQUIRED.
[7] NON-CONCURRENT LOAD.
[8] PROVIDE "HACR" RATED BREAKER.

PANEL LOAD CALCULATIONS (PER NEC 220):
TOTAL LIGHTING (16.0 KVA) @125% = 20.0 KVA
LARGEST MOTOR (18.6 KVA) @125% = 23.3 KVA
WATER HEATER (4.5 KVA) @125% = 5.6 KVA
REMAINDER OF LOADS @100% = 182.2 KVA
TOTAL SERVICE KVA: = 231.1 KVA
TOTAL SERVICE AMPS: 231.1 KVA/ 208 √3 V = 641.5 AMPS

MOUNT: SURFACE — MINIMUM A.I.C. RATING: 42,000 AMPS

* SEE POWER RISER FOR FEEDER AND CONDUIT SIZES.

PANEL "B"

PANEL MFG: SQUARE D (OR EQUAL) — PANEL TYPE: NQ
PANEL NAME: "B" — PANEL KEY NOTES: [1] [2]
PANEL RATING: 400 AMPS — VOLTAGE: 120/208V, 3Ø 4W

CKT #:	LOAD DISCRIPTION:	BREAKER SIZE (A):	WIRE SIZE:	GND SIZE:	COND. SIZE:	BUS KVA: A	B	C	BUS KVA: A	B	C	COND. SIZE:	GND SIZE:	WIRE SIZE:	BREAKER SIZE (A):	LOAD DISCRIPTION:	CKT #:
1	SPARE	20	12	12	1/2"	0.8			0.8			1/2"	12	12	20	LOBBY/ CLASS/ EXTERIOR RECEPS	2
3	KITCHEN/ SAELS COUNTER RECEPS	20	12	12	1/2"		1.5			0.8		1/2"	12	12	20	MAIN LOBBY QUAD STATIONS	4
5	OVEN	50/2	8	10	3/4"			4.5			1.0	1/2"	12	12	20	OPEN CLASSROOM RECEPS	6
7						4.5			0.8			1/2"	12	12	20	BABY ROOM RECEPS	8
9	DISHWASHER [9]	20/2	12	12	1/2"		1.2			1.0		1/2"	12	12	20	A/V QUAD RECEP	10
11	DISPOSAL							0.5			1.0	1/2"	12	12	20	A/V QUAD RECEP	12
13	FREEZER [3]	20	12	12	1/2"	0.8			0.8			1/2"	12	12	20	STORAGE/ EXTERIOR RECEPS	14
15	REFRIGERATOR [3]	20	12	12	1/2"		0.8			2.3		3/4"	10	10	30/2	WATER HEATER	16
17	MICROWAVE [3]	20	12	12	1/2"			1.0			2.3						18
19	EXTERIOR RECEP	20	12	12	1/2"	0.2			1.5			1/2"	12	12	20	FUTURE APPLIANCE [3]	20
21	POS RECEP	20	12	12	1/2"		0.8			1.5		1/2"	12	12	20	FUTURE APPLIANCE [3]	22
23	ASW RECEP	20	12	12	1/2"			1.2			1.5	1/2"	12	12	20	FUTURE APPLIANCE [3]	24
25	ASW RECEP	20	12	12	1/2"	1.2			4.5			3/4"	10	8	50/2	2ND OVEN	26
27	CAFE GENERAL RECEPS	20	12	12	1/2"		0.6			4.5							28
29	LOBBY/ RECEPTION/ BATH RECEPS	20	12	12	1/2"			1.0			0.1	1/2"	12	12	20	BATHROOM EXHAUST FANS	30
31	DRINKING FOUNTAIN [3]	20	12	12	1/2"	0.5			0.1			1/2"	12	12	20	UTILITY CLOSET EF	32
33	LOBBY FLOOR RECEPS	20	12	12	1/2"		0.4			-		-	-	-	-	SPACE	34
35	SPACE	-	-	-	-			-			-	-	-	-	-	"	36
37	"					-			20.0			*	*	*	225/3	FUTURE PANEL "D"	38
39	SPD	[4]	[4]	[4]	[4]		-			20.0							40
41								-			20.0						42

ØA TOTAL KVA: 36.5 — ØB TOTAL KVA: 35.4 — ØC TOTAL KVA: 34.1

PANEL, BREAKER, AND BRANCH CIRCUIT KEY NOTES:
[1] MAIN LUGS ONLY. ELECTRICAL CONTRACTOR SHALL PROVIDE AN ACCURATE TYPED UP PANEL SCHEDULE UPON COMPLETION OF THE PROJECT.
[2] VERIFY ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PRIOR TO CONSTRUCTION; ALL EQUIPMENT'S ELECTRICAL REQUIREMENTS SHALL BE CONFIRMED WITH MFG SPECS. VERIFY VOLTAGE, AMPERAGE, AND BREAKER SIZES.
[3] PROVIDE GFCI RATED BREAKER.
[4] INSTALL SPD PER MANUFACTURER'S RECOMMENDATIONS.
[5] THROUGH [8] NOT USED.
[9] BRANCH CIRCUIT IS A MULTI-WIRE BRANCH CIRCUIT. THIS BREAKER SHALL BE A TWO POLE BREAKER WHICH WILL DISCONNECT BOTH BRANCH CIRCUITS SIMULTANEOUSLY. ALL GROUNDED AND UNGROUNDED CONDUCTORS SHALL BE GROUPED BY WIRE TIES WITHIN THE PANELBOARD.

PANEL LOAD CALCULATIONS (PER NEC 220):
TOTAL LIGHTING (N/A KVA) @125% = N/A KVA
LARGEST MOTOR (N/A KVA) @125% = N/A KVA
WATER HEATER (4.5 KVA) @125% = 5.6 KVA
REMAINDER OF LOADS @100% = 101.4 KVA
TOTAL SERVICE KVA: = 107.0 KVA
TOTAL SERVICE AMPS: 107.0KVA/ 208 √3 V = 297.0 AMPS

MOUNT: RECESSED — MINIMUM A.I.C. RATING: 22,000 AMPS

* SEE POWER RISER FOR FEEDER AND CONDUIT SIZES.

PANEL "C"

PANEL MFG: SQUARE D (OR EQUAL) — PANEL TYPE: NQ
PANEL NAME: "C" — PANEL KEY NOTES: [1] [2]
PANEL RATING: 225 AMPS — VOLTAGE: 120/208V, 3Ø 4W

CKT #:	LOAD DISCRIPTION:	BREAKER SIZE (A):	WIRE SIZE:	GND SIZE:	COND. SIZE:	BUS KVA: A	B	C	BUS KVA: A	B	C	COND. SIZE:	GND SIZE:	WIRE SIZE:	BREAKER SIZE (A):	LOAD DISCRIPTION:	CKT #:
1	CAFE AREA LIGHTS [5]	20	12	12	1/2"	0.7			2.2			3/4"	10	10	25/3	AHU-1 [7] [8]	2
3	SW EXTERIOR LIGHTS [5]	20	12	12	1/2"		0.2			2.2							4
5	MAIN LOBBY PENDANTS/ COVE [5]	20	12	12	1/2"			1.2			2.2						6
7	MAIN LOBBY RECESSED LIGHTS [5]	20	12	12	1/2"	0.7			(1.7)			3/4"	10	10	30/3	CU-1 [7] [8]	8
9	CLASS/ BABY ROOM LIGHTS [5]	20	12	12	1/2"		0.8			(1.7)							10
11	BATHROOM LIGHTS [5]	20	12	12	1/2"			0.3			(1.7)						12
13	AV/ JANITOR/ UTILITY LIGHTS	20	12	12	1/2"	0.2			5.5			1"	10	6	60/3	AH-2 [8]	14
15	FUTURE SIGNAGE [5]	20	12	12	1/2"		1.2			5.5							16
17	LOBBY WEST COVE LIGHT [5]	20	12	12	1/2"			0.9			5.5						18
19	N ROOFTOP RECEP	20	12	12	1/2"	0.2			2.7			3/4"	10	8	40/3	AH-3 [8]	20
21	S ROOFTOP RECEP	20	12	12	1/2"		0.2			2.7							22
23	SITE LIGHTING - N. PARKING [5] [6]	20/2	10	10	3/4"			0.7			2.7						24
25						0.7			2.7			3/4"	10	8	40/3	AH-4 [8]	26
27	SITE LIGHTING - W. PARKING [5] [6]	20/2	10	10	3/4"		0.5			2.7							28
29								0.5			2.7						30
31	REMOTE F/ A POWER SUPPLY	20	12	12	1/2"	0.5			-			-	-	-	-	SPACE	32
33	SPACE	-	-	-	-		-			-		-	-	-	-	"	34
35	"	-	-	-	-			-			-	-	-	-	-	"	36
37						-			-			-	-	-	-	"	38
39	SPD	[4]	[4]	[4]	[4]		-			-		-	-	-	-	"	40
41								-			-	-	-	-	-	"	42

ØA TOTAL KVA: 16.1 — ØB TOTAL KVA: 16.0 — ØC TOTAL KVA: 16.7

PANEL, BREAKER, AND BRANCH CIRCUIT KEY NOTES:
[1] MAIN LUGS ONLY. ELECTRICAL CONTRACTOR SHALL PROVIDE AN ACCURATE TYPED UP PANEL SCHEDULE UPON COMPLETION OF THE PROJECT.
[2] VERIFY ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PRIOR TO CONSTRUCTION; ALL EQUIPMENT'S ELECTRICAL REQUIREMENTS SHALL BE CONFIRMED WITH MFG SPECS. VERIFY VOLTAGE, AMPERAGE, AND BREAKER SIZES.
[3] PROVIDE GFCI RATED BREAKER.
[4] INSTALL SPD PER MANUFACTURER'S RECOMMENDATIONS.
[5] WIRE BRANCH CIRCUIT THRU TIMECLOCK FOR CONTROL OF LIGHTS.
[6] FEEDER SIZES INCREASED TO MAINTAIN LESS THAN 3% VOLTAGE DROP. CONTRACTOR TO VERIFY LENGTH OF ACTUAL RUN IN FIELD AND INCREASE FEEDER/ CONDUIT SIZES AS REQUIRED.
[7] NON-CONCURRENT LOAD.
[8] PROVIDE "HACR" RATED BREAKER.

PANEL LOAD CALCULATIONS (PER NEC 220):
TOTAL LIGHTING (7.4 KVA) @125% = 9.3 KVA
LARGEST MOTOR (16.5 KVA) @125% = 20.6 KVA
WATER HEATER (N/A KVA) @125% = N/A KVA
REMAINDER OF LOADS @100% = 24.9 KVA
TOTAL SERVICE KVA: = 54.8 KVA
TOTAL SERVICE AMPS: 54.8 KVA/ 208 √3 V = 152.1 AMPS

MOUNT: RECESSED — MINIMUM A.I.C. RATING: 22,000 AMPS

PROGRESS OR CHECK SETS, BY THEIR NATURE, MAY BE INCOMPLETE AND ARE NOT TO BE USED FOR BIDDING OR CONSTRUCTION. CONTRACTOR RECOGNIZES HIS SOLE RESPONSIBILITY TO INCLUDE ALL CONTINGENCIES FOR DESIGN AND INSTALLATION TO MEET THE PROJECT REQUIREMENTS IN ANY PRICING EXERCISE. THE DESIGN OF THESE PLANS ARE NOT FINAL UNTIL PERMIT SETS ARE ISSUED.

PRIOR TO SUBMITTING THE BID, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND INFORM THE ARCHITECT AND THE ENGINEER OF ANY DISCREPANCY BETWEEN THESE DOCUMENTS AND THE EXISTING CONDITIONS AND SHALL INCLUDE IN THE BID TO CORRECT THE SAME AS DIRECTED. THE ENGINEER AND THE ARCHITECT, ARE NOT RESPONSIBLE FOR ANY ADDITIONAL COSTS RESULTING FROM VERIFIABLE EXISTING CONDITIONS DISCOVERED AFTER CONTRACT HAS BEEN AWARDED. NO CHANGES SHALL BE MADE TO THESE PLANS WITHOUT PRIOR APPROVAL FROM THE ENGINEER OF RECORD. ALL CHANGES SHALL BE SUBMITTED FOR REVIEW PRIOR TO INSTALLATION. NOT FOR BID UNTIL PERMIT HAS BEEN ISSUED.

CA. LIC. No. 31328

CHECK SET: 05/20/16

Associated Professional Design
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REVISIONS
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PROJECT # 16024
DATE 05-20-16
SHEET #

E3.1

JUAN C. LINARES

AA26000640