

**ELECTRICAL NOTES:**

- ALL WORK TO BE DONE ACCORDING TO 2017 F.B.C., 2013 NFPA-72, 2015 NFPA-101, 2015 NFPA-1, 2014 NFPA AND 2014 N.E.C.
- CONTRACTOR TO VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS. NOTIFY ENGINEER OF ANY DISCREPANCIES AT ONCE. FAILURE TO DO SO AND CONTRACTOR PROCEEDS AT HIS OWN RISK.
- MAINTAIN AS-BUILTS ON A DAILY BASIS. SUBMIT 3 COPIES TO ARCHITECT AND OWNER 3 DAYS PRIOR TO ANY REQUIRED INSPECTIONS.
- ALL CONDUIT TO BE METAL EMT INSIDE AND RIGID ON THE EXTERIOR. P.V.C. WILL BE ACCEPTED PROVIDED THAT THE CORRECT GROUND AS PER N.E.C. TABLE 250-66.122 IS INCLUDED WHEN ALLOWED BY CODE. NO PVC WILL BE ALLOWED IN R.A. PLENUMS OR FIRE RATED ASSEMBLIES. ALL MATERIALS IN R.A. PLENUMS TO BE PLENUM RATED.
- CONDUCTOR TO BE COPPER TH-WN OR TH-HN. MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A CONDUIT TO BE INSTALLED PER NEC 310.15(B)(3)(A)
- ALL EXTERIOR EQUIPMENT TO NEMA 3R RATED.
- ALL FUSES TO BE BUSSMAN CURRENT LIMITING AT SERVICE ENTRANCE. ALL OTHERS FUSES ACCORDING TO MANU. SPECIF.
- PROVIDE 6 SETS OF SHOP DRAWINGS FOR APPROVAL. NO EQUIPMENT TO BE ORDERED BEFORE SHOP DRAWINGS ARE APPROVED.
- VERIFY ALL NAMEPLATE DATA OF EQUIPMENT FOR PROPER PROTECTION AND LOADS PRIOR TO INSTALL OR WIRING.
- MAINTAIN A MINIMUM OF 36" IN FRONT OF ALL ELECTRICAL EQUIPMENT PRIOR TO INSTALLING ANY EQUIPMENT COORDINATE WITH OTHER TRADES TO INSURE THAT CLEARANCES ARE MAINTAINED.
- CONTRACTOR TO REMOVE ALL TRASH/UNUSED MATERIALS AT THE END OF DAY.
- ALL CONDUITS, FIXTURES, DEVICES TO HAVE GROUND EXTEND AS PER TABLE 250-122 N.E.C.
- POWER TO BE ON CONTINUOUSLY 5 WEEK PRIOR TO COMPLETING PROJECT.
- ALL LOW VOLTAGE CABLING AND SYSTEM ARE THE RESPONSIBILITY OF THE VENDOR THAT IS PROVIDING THE SYSTEM INCLUDING PERMITTING.
- CONTRACTOR TO LAMP/RELAMP ALL FIXTURES.
- CONTRACTOR TO VERIFY QUANTITIES OF EXISTING AND NEW DEVICES AND FIXTURES REQUIRED TO COMPLETE PROJECT PRIOR TO SUBMITTING BID.
- CONTRACTOR TO VERIFY EXISTING CIRCUITS AND MUST PROVIDE NEW PANEL SCHEDULES IDENTIFYING ALL CIRCUITS IN PANEL.
- NEUTRALS NOT TO BE SHARED. PROVIDE #8 NEUTRAL TO ALL FURNITURE SYSTEMS, IF APPLICABLE.
- ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ALL EQUIPMENT MENTIONED OR NOT TO POWER, DATA AND VOICE TO ALL EQUIPMENT AND SYSTEMS INSTALLED.
- ALL DEVICES TO MATCH BUILDING STANDARD OR BE DECORA SERIES.
- TYPICAL LIGHT SWITCHES TO BE 48" A.F.F. ON CENTER. TYPICAL RECEPTACLE TO BE 18" A.F.F. ON CENTER. ALL SWITCHES TO BE GANGED WITH CONTINUOUS FACEPLATES. ALL DEVICES THAT ARE ADJACENT TO BE SPACED 6" ON CENTER.
- ALL ELECTRICAL ELEMENTS TO BE THOROUGHLY PROTECTED FROM DAMAGE AFTER INSTALLATION AND SHALL HAVE TRIM INSTALLED AFTER ADJOINING FINISH MATERIALS ARE INSTALLED.
- AT THE COMPLETION OF THE PROJECT ALL EQUIPMENT, DEVICES AND FIXTURES TO BE CLEANED.
- ALL EMERGENCY AND EXIT LIGHTS ARE TO HAVE A MINIMUM 90 MINUTE BATTERY BACK-UP.
- CONTRACTOR IS TO PROVIDE STEP DOWN TRANSFORMERS FOR ALL FANS WHEN REQUIRED.
- NO ALUMINUM CONDUCTOR BUSS WILL BE ALLOWED - ALL MUST BE COPPER.
- ALL DATA, TEL., TV BOXES TO BE 4x4x2 DOUBLE GANG BOXES. STUB ALL CONDUITS WITH LAY IN CEILINGS TO 6" ABOVE CEILING. ALL CONCEALED OR EXPOSED APPLICATIONS TO BE HOME RUN TO MAIN DISTRIBUTION LOCATION.
- CONTRACTOR TO PROVIDE TEMPORARY POWER FOR ALL TRADES.
- NEW ELECTRICAL PANELS TO HAVE BOLT ON BREAKERS.
- NO ELECTRICAL CIRCUITS OR WIRING FROM ADJACENT SPACES TO BE USED IN THIS PROJECT.
- ALL INTERIOR LIGHTING TO HAVE SWITCHES WITH OCCUPANCY SENSORS IN THEM CAPABLE OF STAYING ON NO MORE THAN 30 MINUTES. CIRCUITS WHICH HAVE MOTION SENSORS ON THEM MAY USE STANDARD SWITCHES.
- CONTRACTOR TO REMOVE ALL ABANDONED OR UNUSED WIRING, CONDUIT AND BOXES.
- PROVIDE 2-2" RIGID CONDUIT FROM BUILDINGS MAIN TELEPHONE ROOM COMMUNICATION CENTER TO SITE DEMARC POINT. COORDINATE CABLE, TV, VOICE AND DATA REQUIREMENTS WITH OWNER TO MEET THEIR REQUIREMENTS.
- VERIFY EXISTING FIRE ALARM HAS SUFFICIENT ROOM FOR EXPANSION AND EQUIPMENT IS STILL READILY AVAILABLE. CONTRACTOR TO PROVIDE COMPLETE SHOP DWGS INCLUDING RISER, CUT SHEETS, BATTERY CALCULATIONS AND ALL OTHER NECESSARY INFORMATION.
- LABEL ALL OUTLETS AND JUNCTION BOXES WITH PANEL AND CIRCUIT NUMBER.
- ANY ELECTRICAL EQUIPMENT POTENTIALLY NEEDING ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED MUST BE PLACED IN ACCORDANCE WITH N.E.C. 110.16.
- ALL NIGHT LIGHTS AND EMERGENCY LIGHTS TO BE CONNECTED AHEAD OF ANY CONTROL DEVICE.
- ALL TRANSFORMERS ARE TO HAVE A MINIMUM K-RATING OF K-13. KVA SIZING OF TRANSFORMER IS SHOWN ON THE ELECTRICAL RISER DRAWING.
- ALL CIRCUIT BREAKERS SERVING FURNITURE SYSTEMS MUST BE HANDLE TIED AS PER N.E.C. 605.7
- PROVIDE 90 MIN. BATTERY BACK UP FOR NEW AND EXISTING EMERGENCY/NIGHT LIGHTS PLEASE REFER LEGEND.
- PROVIDE MEAN OF DISCONNECTION FOR ALL LIGHTING FIXTURES AS PER NEC 410.130(G)

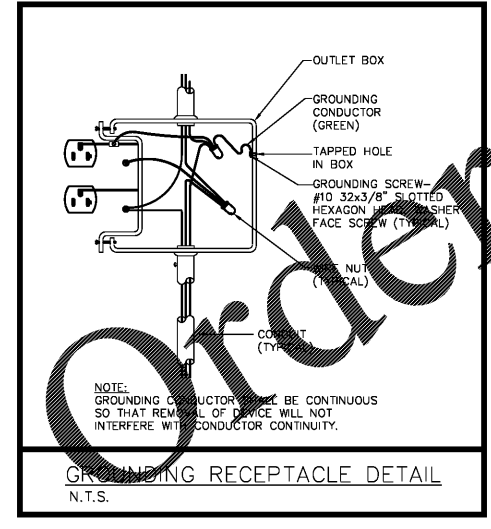
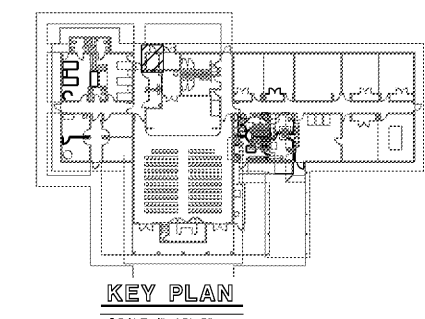
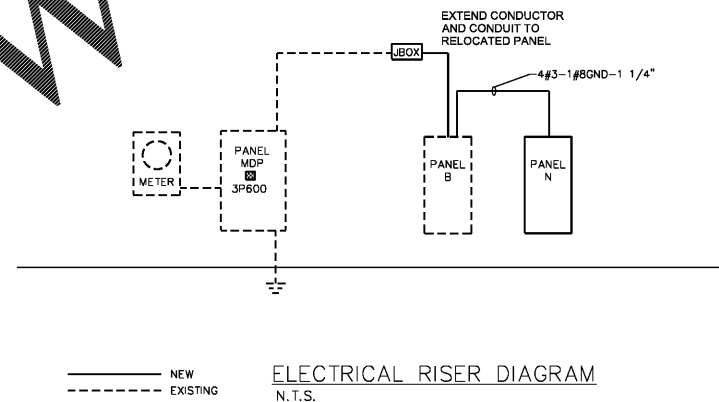
PANEL MDP				600A MCB				3ø4W 120/208V			
Wire	Ø	No. Poles	Trip	Description	Load	No. Poles	Trip	Description	Load	Ø	Wire
E A	01	3	200	PNL A	33500	02	3	200	PNL B	58388	A E
E B	03	-	-	-	-	04	-	-	-	-	B E
E C	05	-	-	-	-	06	-	-	-	-	C E
E A	07	3	60	AC	12800	08	3	100	AC	21600	A E
E B	09	-	-	-	-	10	-	-	-	-	B E
E C	11	-	-	-	-	12	-	-	-	-	C E
E A	13	3	60	AC	12900	14	3	60	AC	12900	A E
E B	15	-	-	-	-	16	-	-	-	-	B E
E C	17	-	-	-	-	18	-	-	-	-	C E
E A	19	3	70	ACB	15120	20	3	70	#3 A/C SUB/PNL	14200	A E
E B	21	-	-	-	-	22	-	-	-	-	B E
E C	23	-	-	-	-	24	-	-	-	-	C E
E A	25	3	40	AH 3 AC 3	9000	26	3	50	AC	10800	A E
E B	27	-	-	-	-	28	-	-	-	-	B E
E C	29	-	-	-	-	30	-	-	-	-	C E
E A	31	3	40	AH 2 AC 2	9000	32	-	-	-	-	A E
E B	33	-	-	-	-	34	-	-	-	-	B E
E C	35	-	-	-	-	36	-	-	-	-	C E
A	37	-	-	-	-	38	-	-	-	-	A
B	39	-	-	-	-	40	-	-	-	-	B
C	41	-	-	-	-	42	-	-	-	-	C

PANEL MDP LOAD- AS PER NEC 220-87 THAT ALLOWS THE GREATEST DEMAND OVER LAST 12 MONTHS AS PER INFORMATION PROVIDED GREATEST DEMAND TO BE 21,141KW  
21141/120V= 176A  
176A X 1.25= 220A  
AS PER NEC 220-87 LOAD IS 220A  
ADDITIONAL LOAD PANEL B 184A  
TOTAL LOAD ON MDP 404A

PANEL B				225A MLO				3ø4W 120/208V				
Wire	Ø	No. Poles	Trip	Description	Load	No. Poles	Trip	Description	Load	Ø	Wire	
12	A	01	1	20	ROLL DOWN	500	02	1	20	BOARD RM LIGHTS	500	A E
12	B	03	1	20	ROLL DOWN	500	04	1	20	CLOSED LIGHTS	400	B E
E	C	05	2	30	WATER HEATER	4500	06	1	20	FITNESS/TV RM LIGHTS	400	C E
E	A	07	-	-	-	08	1	20	REC BOARD RM	360	A E	
E	B	09	1	20	LIGHTING NINTENDO RM	400	10	1	20	FITNESS RM REC	360	B E
E	C	11	1	20	LIGHTING SNACK/OFFICE	400	12	1	20	TV RN 128 REC	300	C E
E	A	13	1	20	LIGHTING GAME/POOL RM	400	14	1	20	EXT WALL REC	360	A E
E	B	15	1	20	E10 EXISTING REF	700	16	1	20	EXT WALL REC	360	B E
12	C	17	1	20	E11 EXISTING REF	1050	18	1	20	EXT WALL REC	360	C E
12	A	19	1	20	E12 EXISTING COFFEE	1800	20	1	20	NINTENDO RM REC	360	A E
E	B	21	1	20	FIRE ALARM	200	22	1	20	GAME RM 136 REC	360	B E
12	C	23	1	20	KITCHEN LIGHTS	1000	24	1	20	E21 NEW CONV. REC	720	C E
3	A	25	3	100	NEW PNL N	27410	26	1	20	TIME CLOCK	120	A E
3	B	27	-	-	-	28	1	20	E21 NEW CONV. REC	720	B E	
3	C	29	-	-	-	30	1	20	HALLWAY LIGHTS	500	C E	
E	A	31	1	20	TREADMILL #1	1000	32	1	20	TREADMILL #2	1000	A E
E	B	33	2	60	#3 AHU	7500	34	2	20	EXISTING ICEMAKER	1200	B E
E	C	35	-	-	-	36	-	-	-	-	C E	
E	A	37	2	60	#8 AHU	7500	38	1	20	E22 EXISTING WARMER	1800	A E
E	B	39	-	-	-	40	1	20	CU	(3200)	B E	
12	C	41	1	20	E13 EXISTING TR	1700	42	-	-	-	C E	

NEW PANEL N				125A MLO				3ø4W 120/208V			
Wire	Ø	No. Poles	Trip	Description	Load	No. Poles	Trip	Description	Load	Ø	Wire
12	B	1	20	E4 NEW SNACK IN REF	700	02	1	20	E18 NEW DISHWASHER	1600	A 12
12	C	1	20	E5 NEW CONV. OVEN	1080	04	1	20	E19 NEW REACH FREEZER	850	B 12
12	C	1	20	E6 NEW RANGE/GRIDDLE	480	06	1	20	E17 EXISTING MW	1800	C 12
12	A	01	20	E15 NEW UC REF	400	08	3	20	EXH-1 SM-1	4200	A 12
12	B	03	20	E16 NEW UC REF	400	10	-	-	-	-	B 12
C	1	-	-	SHUNT TRIP	12	-	-	-	-	-	C 12
12	A	1	15	E16 NEW UC REF	1000	14	3	15	SUP-2 SM-2	2700	A 12
C	15	2	60	AHU-1	11190	16	-	-	-	-	B 12
C	17	-	-	-	-	18	-	-	-	-	C 12
A	19	2	40	CU-1	(5700)	20	1	15	HOOD CONTROL/LTG	1000	A 12
B	21	-	-	-	-	22	-	-	-	-	B
C	23	-	-	-	-	24	-	-	-	-	C
A	25	-	-	-	-	26	-	-	-	-	A
B	27	-	-	-	-	28	-	-	-	-	B
C	29	-	-	-	-	30	-	-	-	-	C

PANEL B LOAD CALCULATION  
\*KITCHEN / INTERMITTENT LOAD NEC 220-56  
21,320 @ 65% ----- 13,858 W  
OTHER LOADS ----- 44,530 W  
TOTAL LOADS ----- 58,388 W  
162 A



**locks engineering inc.**  
consulting engineers  
E. PILHUJ P.E. FL REG 49832  
ESIGN SERIAL NO: 46 AD 4A 48 84 DC 67 89 76 08  
G. INOA ALVAREZ P.E. FL REG 74056  
4520 n.e. 18th ave. ste. 400, Lauderdale, FL 33334  
TEL. (954) 938-1881 FLA. REG. #EB-0009306

RAM DESIGN, INC. - 10001 N.W. 50TH ST., SUITE 203G, SUNRISE, FLORIDA 33351 9541 748-5661 FAX: 747-0988  
BOYS & GIRLS CLUB FACILITY KITCHEN RENOVATION, FLORIDA  
BIG CYPRESS RESERVATION, FLORIDA  
REVISIONS  
DRAWN BY:  
8-22-17  
#17126/17249