ELECTRICAL SPECIFICATIONS

1. MATERIALS AND INSTALLATION, AS A MINIMUM, ARE TO CONFORM WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE, THE LATEST EDITION OF N.F.P.A., AND THE LATEST EDITIONS OF THE LOCAL CODES AND ORDINANCES, INCLUDING ALL AMENDMENTS TO THE N.E.C. EQUIPMENT, WHERE APPLICABLE, WILL BE LISTED WITH THE UNDERWRITERS LABORATORIES, INC. QUALITY AND WORKMANSHIP ESTABLISHED BY DRAWINGS AND SPECIFICATIONS ARE NOT TO BE REDUCED BY THE ABOVE MENTIONED CODES.

2. BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF WORK. THE SUBMISSION OF A BID WILL BE EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION BEEN MADE, WILL NOT BE ALLOWED.

3. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST-CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM IS TO BE FULLY OPERABLE AND ACCEPTANCE OF THIS SYSTEM BY THE ENGINEER/ARCHITECT MUST BE A CONDITION OF THE SUB CONTRACT.

4. ALL WORK TO BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.

5. CONTRACTOR TO GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF ACCEPTANCE.

6. CORRECTION OF ANY DEFECTS TO BE COMPLETED WITHOUT ADDITIONAL CHARGE AND TO INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.

7. ALL REQUIRED INSURANCE TO BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OF PROPERTY DAMAGE FOR THE DURATION OF THE WORK.

8. CONTRACTOR TO PAY FOR ALL PERMITS, FEES INSPECTIONS AND TESTINGS.

9. ELECTRICAL INSTALLATION TO MEET ALL STANDARD REQUIREMENTS OF LOCAL POWER AND TELEPHONE COMPANIES. ELECTRICAL CONTRACTOR SHALL CONTACT LOCAL POWER AND TELEPHONE COMPANIES PRIOR TO START OF CONSTRUCTION.

10. ALL WIRING SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED, MINIMUM WIRE SIZE SHALL BE #12 AWG, EXCLUDING CONTROL WIRING. ALL CONDUCTORS SHALL BE COPPER WITH THWN/THHN INSULATION. CONDUCTORS #10 AND SMALLER MAY BE SOLID; ALL THOSE #8 AND LARGER TO BE STRANDED.

11. ALL UNDERGROUND RACEWAYS SHALL BE MINIMUM 3/4", GALVANIZED RIGID STEEL CONDUIT OR SCHEDULE 40 PVC. ALL OTHER RACEWAYS TO COMPLY WITH GOVERNING CODES. WHERE RIGID STEEL IS USED, IT SHALL BE COMPLETELY COATED WITH AN ALKALI AND RUST RESISTANT BITUMASTIC PAINT, KOPPER NO. 50, AND THREADS SHALL BE COATED WITH ZINC CHROMATE. RIGID STEEL SHALL ALSO BE USED WHEN CONDUIT IS EXPOSED TO EXTERIOR ENVIRONMENT SUCH AS EXTERIOR OF BUILDING OR WHERE IT IS EXPOSED AND SUBJECT TO DAMAGE, INSIDE OF BUILDING.

11.1 ALL UNDERGROUND SERVICE CONDUITS/RACEWAYS ENTERING BUILDING OR STRUCTURE FROM OUTSIDE TO INSIDE SHALL BE SEALED, INCLUDING SPARE CONDUITS. SEALANT SHALL BE SUITABLE FOR THIS USE.

12. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS, AND BE OF SPECIAL CONSTRUCTION FOR OTHER CLASSIFIED AREAS. ALL BOXES SHALL BE RECESSED (FLUSH) IN WALLS OR CEILINGS WHENEVER POSSIBLE.

13. DISCONNECT SWITCHES SHALL BE H.P. RATED, GENERAL DUTY, QUICK-MAKE, QUICK-BREAK TYPE. ENCLOSURES SHALL BE AS REQUIRED BY N.E.C. AND LOCATION (WEATHERPROOF, EXPLOSION PROOF, ETC.). ENGRAVED LAMINATED PLASTIC IDENTIFICATION PLATES SHALL BE FURNISHED AND INSTALLED ON ALL PANELS, DISCONNECT SWITCHES, CONTACTORS AND STARTERS.

13.1. ALL FUSES FOR SAFETY SWITCHES SHALL BE DUAL ELEMENT, CARTRIDGE TYPE. FUSES SHALL BE THOSE MANUFACTURED BY EITHER BUSSMAN OR LITTLEFUSE. THE CONTRACTOR SHALL FURNISH TO THE OWNER ONE SPARE FUSE FOR EACH SIZE AND TYPE OF FUSE INSTALLED. FUSES 600 AMPS OR LESS SHALL BE CLASS RK1, TYPICAL UNLESS OTHERWISE NOTED. FUSES OVER 600 AMPS SHALL BE CLASS L.

14. IF ELECTRICAL CONTRACTOR HAS QUESTIONS, OR IN THEIR OPINION FINDS OMISSIONS OR ERRORS ON ELECTRICAL DOCUMENTS, IT IS THEIR RESPONSIBILITY TO BRING THIS TO THE ATTENTION OF THE ELECTRICAL ENGINEER/ARCHITECT/OWNER IMMEDIATELY. IF ELECTRICAL CONTRACTOR PROCEEDS WITH ANY CHANGES TO THE CONTRACT DOCUMENTS WITHOUT WRITTEN PRIOR APPROVAL FROM THE ELECTRICAL ENGINEER/ARCHITECT/OWNER WILL NOT BE COMPENSATED.

15. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM, AND PROVIDE ALL NECESSARY DEVICES AND COMPONENTS FOR EQUIPMENT BE PLACED IN PROPER WORKING ORDER.

16.1. A SEPARATE, GREEN TYPE THW COPPER GROUND CONDUCTOR SHALL BE RUN FROM GROUND LUG OF EACH GROUNDED RECEPTACLE TO AN APPROVED CONNECTION INSIDE THE ENCLOSING STEEL OUTLET BOX. DEVICE MOUNTING SCREWS SHALL NOT BE CONSIDERED AN APPROVED GROUND.

16.2. A SEPARATE GROUND CONDUCTOR SHALL BE INSTALLED IN EVERY CONDUIT AND RACEWAY AND SECURELY BONDED IN AN APPROVED GROUNDING TERMINAL AT BOTH ENDS OF THE RUN. THE GROUNDING CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH TABLE 250.122 OF THE N.E.C. CONTRACTOR SHALL SIZE CONDUIT TO ACCOMMODATE ADDITIONAL CONDUCTOR.

16.3. GROUND RODS SHALL BE 5/8" DIAMETER, TEN (10) FEET LONG COPPERCLAD STEEL. OBTAIN TWENTY FIVE (25) OHMS MAXIMUM RESISTANCE AS READ WITH A GROUNDING RESISTANCE TESTER, USING TWO REFERENCE RODS. IF TWENTY FIVE (25) OHMS CANNOT BE ACHIEVED, CONTRACTOR SHALL PROVIDE ADDITIONAL RODS, UNTIL TWENTY FIVE (25) HAS BEEN OBTAINED.

17. LOAD DATA IS BASED ON INFORMATION GIVEN TO ENGINEER AT THE TIME OF DESIGN. VERIFY ALL EQUIPMENT NAMEPLATE RATINGS BEFORE ORDERING.

18. CIRCUITS SHOWN ON PLANS ARE TO DETERMINE LOAD DATA AND PANEL SIZES. THE CONTRACTOR IS TO PROVIDE CIRCUITS AND ROUTING OF CONDUITS TO SUIT JOB CONDITIONS.

19. FURNISH AND INSTALL DISCONNECT SWITCHES, WIRING, AND CONNECTIONS ON AIR CONDITIONING SYSTEM AS SHOWN ON PLANS. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE WITH MECHANICAL CONTRACTOR REGARDING SUPPLY AND INSTALLATION OF ALL REQUIRED CONTROLS.

19.1 ELECTRICAL CONTRACTOR SHALL MAKE LINE VOLTAGE CONNECTIONS TO THE MAIN TERMINAL BLOCK OR LUGS ON ALL EQUIPMENT SHOWN. ANY ADDITIONAL LINE VOLTAGE CONNECTIONS BETWEEN VARIOUS COMPONENTS OF A MULTI-COMPONENT PIECE OF EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE EQUIPMENT INSTALLER, UNLESS THE FULL SCOPE OF THE ELECTRICAL INSTALLATION REQUIREMENTS ARE PROVIDED TO THE ENGINEER AT THE TIME OF DESIGN.

20. THE DISCONNECT SWITCH, FUSE SIZES, CONDUIT AND WIRE SHOWN FOR ALL HVAC ARE SIZED PER THE MANUFACTURER, AND MODEL NUMBER LISTED ON THE MECHANICAL PLANS. IF THERE IS AN EQUAL MANUFACTURER, OR OTHER MANUFACTURER PROVIDED, THE MECHANICAL/ GENERAL CONTRACTOR SHALL BEAR ANY ADDITIONAL COST INCURRED IF THE ELECTRICAL IS NOT EQUAL TO SPECIFICATIONS.

21. ALL SWITCHBOARDS, PANELS, STARTERS, CONTACTORS ETC., SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER, THE SYSTEM DESIGN IS BASED ON SQUARE "D"; HOWEVER, COMPARABLE EQUIPMENT BY SIEMENS, G.E. AND CUTLER HAMMER ONLY WILL BE ACCEPTABLE. ALL PANELBOARDS SHALL HAVE BOLT-ON TYPE CIRCUIT BREAKERS. TANDEM AND HALF-SPACE CIRCUIT BREAKERS SHALL NOT BE USED.

21.1. TYPEWRITTEN CIRCUIT INDEX SHALL BE AFFIXED TO INSIDE SURFACE OF EACH PANELBOARD DOOR, CLEARLY INDICATING AREA AND TYPE OF LOAD SERVED BY EACH BRANCH CIRCUIT PROTECTIVE DEVICE, INCLUDING SPARES. HAND PRINTED WILL NOT BE ACCEPTED.

21.2. ENGRAVED, LAMINATED PLASTIC IDENTIFICATION PLATES SHALL BE FURNISHED AND INSTALLED ON ALL PANELS AND SWITCHBOARDS. PLATES SHALL BE AFFIXED TO FRONT OF PANELS, INDICATING PANEL NAME, VOLTAGE AND AMPERAGE.

22. ALL UNDERGROUND PVC CONDUIT RUNS SHALL HAVE RIGID STEEL ELBOWS AND RIGID STEEL SECTIONS AT SLAB PENETRATIONS WHERE SUBJECT TO POSSIBLE DAMAGE.

23. THE ELECTRICAL CONTRACTOR SHALL MEET AND COORDINATE WITH THE LOCAL POWER COMPANY AT THE SITE PRIOR TO CONSTRUCTION. AT THAT TIME, THE CONTRACTOR SHALL COORDINATE ALL RELATED WORK WITH THE UTILITY COMPANY'S RESPONSIBILITIES TO MEET THE OWNER'S SCHEDULE.

24. ALL ELECTRICAL CONDUCTORS SHALL BE INSTALLED IN AN APPROVED RACEWAY, EMT, IMC, RIGID GALVANIZED CONDUIT OR SCHEDULE 40 P.V.C. TYPE 'MC', ELECTRICAL NON-METALLIC TUBING, & FLEXIBLE METAL CONDUIT MAY BE USED FOR BRANCH CIRCUITING AS ALLOWED BY THE N.E.C. & AHJ. MAXIMUM NUMBER OF 120V CIRCUITS ALLOWED IN A COMMON CONDUIT SHALL BE SIX (6). THE CONTRACTOR SHALL STRICTLY CONFORM TO THE N.E.C. REQUIREMENTS OF DERATING FOR CONDUCTOR AMPACITY AND CONDUIT FILL. NO CONDUITS SHALL BE INSTALLED, EXPOSED ON ROOF.

24.1. CONDUCTORS SHALL BE COLOR CODED AS FOLLOWS:

208V SYSTEM	PHASE SEQUENCE
NEUTRAL – WHITE	ABC, TOP TO BOTTOM
PHASE A – BLACK	LEFT TO RIGHT, FRONT
PHASE B – RED	TO BACK
PHASE C – BLUE	
GRD.CON – GREEN	

25. CONTRACTOR SHALL BE RESPONSIBLE FOR SEALING ALL CONDUIT PENETRATIONS MADE THROUGH FIRE RATED WALLS, CEILINGS, SLABS, ETC. PENETRATION SEALS SHALL BE PER U.L. ASSEMBLY STANDARDS.

26. CONTRACTOR SHALL PROVIDE SHOP DRAWING SUBMITTALS FOR LIGHT FIXTURES, SWITCHBOARDS, WIRING DEVICES, EMERGENCY GENERATOR/TRANSFER EQUIPMENT, AND ALL SYSTEMS (FIRE ALARM, SECURITY, ETC.). PROVIDE TWO (2) COPIES, TEN (10) DAYS PRIOR TO BID DATE FOR ENGINEER'S APPROVAL TO SUBMIT. ENGINEER'S APPROVAL OF THE PRIOR APPROVAL PACKAGE WILL BE CONSIDERED PRELIMINARY. FINAL APPROVAL WILL BE CONTINGENT UPON REVIEW OF FINAL SHOP DRAWINGS. ALL PROPOSED ALTERNATES MUST BE INDUSTRY STANDARD EQUALS TO THE ITEMS SPECIFIED AS THE BASIS OF DESIGN; HOWEVER, IF THE ITEMS ARE NOT CONSIDERED EQUAL BY THE ENGINEER, IT SHALL BE DISAPPROVED FOR FINAL SUBMITTAL. IF ELECTRICAL CONTRACTOR/ GENERAL CONTRACTOR DOES NOT SUBMIT SHOP DRAWINGS TO ELECTRICAL ENGINEER FOR ITEMS LISTED ABOVE, ELECTRICAL ENGINEER WILL NOT BE RESPONSIBLE FOR ANY OMISSIONS AND/OR ERRORS DUE TO SHOP DRAWINGS NOT SUBMITTED. SHOP DRAWINGS WILL ONLY BE REVIEWED TWICE AS PART OF THIS CONTRACT. ADDITIONAL SHOP DRAWING REVIEWS SHALL BE INVOICED AT $85.00 PER HOUR, BILLABLE TO THE SUB-CONTRACTOR, C.O.D.

27. CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF CONTRACT DRAWINGS AT JOB SITE WITH COLORED MARKINGS INDICATING PROGRESS OF WORK. THIS SET OF CONTRACT DRAWINGS IS TO BE SEPARATE FROM AND IN ADDITION TO CONTRACTOR'S CONSTRUCTION SET. EVERY UNIT OF EQUIPMENT, DEVICE, CONDUIT AND WIRE IS TO MARKED WHEN INSTALLED. USE GREEN TO INDICATE INSTALLATION AS SHOWN ON DRAWINGS AND USE RED TO INDICATE FIELD CHANGES. UPON COMPLETION OF WORK, THIS SET OF CONTRACT DRAWINGS IS TO BE TURNED OVER TO, AND BECOME PROPERTY OF THE ARCHITECT.

28. THE OWNER RESERVES THE RIGHT TO REVISE THE DRAWING FROM TIME TO TIME TO INDICATE CHANGES IN THE WORK. WHEN REVISED DRAWINGS AND/OR ANY REVISIONS ARE ISSUED, THE CONTRACTOR SHALL EVALUATE THE CHANGES PROMPTLY. BEFORE INSTALLATION OF ANY ITEM OR PERFORMANCE THE WORK INDICATED BY THE REVISED DRAWINGS OR REVISIONS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IN WRITING THAT THE REVISED DRAWINGS INVOLVE AN ADDITION OR DEDUCTION OF A SPECIFIC AMOUNT OF MONEY TO THE CONTRACT PRICE, THE CONTRACTOR SHALL NOT PROCEED WITH THE REVISED WORK WITHOUT PRIOR WRITTEN APPROVAL BY THE ARCHITECT/ENGINEER OF THE COST OF THE REVISED WORK.

ELECTRICAL LEGEND

- CEILING MOUNTED RECEPTACLE
- EXIT LIGHT (ARROW INDICATES DIRECTION, SHADING INDICATES FACE)
- BATTERY POWERED EMERGENCY LIGHT
- TRACK LIGHTING
- SINGLE POLE SWITCH, LOWER CASE LETTER INDICATES LIGHT CONTROLLED, MOUNT 48" AFF UON
- OCCUPANCY SENSOR SWITCH, MOUNT 48" AFF UON
- OCCUPANCY SENSOR SWITCH, CEILING MOUNT
- SINGLE RECEPTACLE, 125V, 20A MOUNT 18" AFF UON
- DUPLEX RECEPTACLE, MOUNT 18" AFF UON
- DUPLEX RECEPTACLE, FLUSH CEILING MOUNT
- DUPLEX RECEPTACLE, MOUNT ABOVE COUNTER HEIGHT UON
- QUADRAPLEX RECEPTACLE, MOUNT 18" AFF UON
- QUADRAPLEX RECEPTACLE, MOUNT ABOVE COUNTER HEIGHT UON
- DUPLEX RECEPTACLE, HORIZONTAL MOUNT
- 1/2 SWITCHED DUPLEX RECEPTACLE, MOUNT 18" AFF UON
- 30A 1ø, 250V. RECEPTACLE, AMPS AS NOTED, MOUNT 18" AFF UON
- SPECIAL RECEPTACLE AS NOTED
- JUNCTION BOX (FLUSH MOUNT IN FINISHED AREAS UON)
- DISCONNECT SWITCH, NEMA/SIZE/POLE/FUSES (250V., NEMA 1 UON)
- LIGHTING OR POWER PANELBOARD

- CONDUIT CONCEALED IN WALL OR ABOVE CEILING WITH 2 #12, 1 #12 EG CONDUCTORS IN 1/2" CONDUIT MIN UON
- CONDUIT CONCEALED BELOW FLOOR SLAB OR FINISHED GRADE WITH 2 #12, 1 #12 EG CONDUCTORS IN 3/4" CONDUIT MIN UON
- CONDUIT EXPOSED ON WALL OR CEILING WITH 2 #12, 1 #12 EG CONDUCTORS IN 1/2" CONDUIT MIN UON
- DRIVEN GROUND ROD
- CONDUIT UP
- CONDUIT DOWN
- THERMOSTAT. PROVIDE SINGLE GANG BOX WITH 1/2" C STUBBED INTO CEILING SPACE, MOUNT 60" AFF UON (COORDINATE WITH MECHANICAL DRAWINGS PRIOR TO ROUGH-IN)
- MOTOR PERMANENTLY CONNECTED WITH FLEXIBLE CONDUIT
- ELECTRIC DUCT HEATER
- SPEAKER
- T.V. CAMERA
- DATA OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 18" AFF UON
- REFER TO LIKE NUMBERED NOTES/EQUIPMENT DESIGNATIONS
- TELEVISION OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 18" AFF UON
- TELEPHONE WALL OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 18" AFF UON
- DATA WALL OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 48" AFF UON
- FLOOR MOUNTED TELEPHONE OUTLET
- TELEPHONE BACKBOARD (SIZE AS NOTED) #6 GROUNDING CONDUCTOR TO SERVICE GROUND.
- COMBINATION TELEPHONE/DATA WALL OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 18" AFF UON
- STUB-UP, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 18" AFF UON
- TELEPHONE/DATA-POWER POLE
- PUSHBUTTON, MOUNT 48" AFF UON
- DOOR CHIME WITH TRANSFORMER
- DEVICE AS NOTED

- CONTACTOR (AS NOTED)
- TIME CLOCK
- PHOTOCELL

ABBREVIATIONS

ACC-CU	CONDENSING UNIT	HP	HORSE POWER
AFF	ABOVE FINISH FLOOR	IG	ISOLATED GROUND
AFG	ABOVE FINISH GRADE	JB	JUNCTION BOX
AFI	ARC FAULT INTERRUPTER	LSIG	LONG, SHORT, INSTANTANEOUS GROUND FAULT SETTING
A/H-AHU	AIR HANDLING UNIT	(N)	NEW
ATS	AUTOMATIC TRANSFER SWITCH	NEUT	NEUTRAL
BFG	BELOW FINISHED GRADE	NF	NON FUSED
C	CONDUIT	NIC	NOT IN CONTRACT
CLG	CEILING MOUNTED	NL	NIGHT LIGHT
CT	CURRENT TRANSFORMER	NP	NAME PLATE
DN	DOWN	NTS	NOT TO SCALE
EX-(E)	EXISTING	PNL	PANEL
EC	ELECTRICAL CONTRACTOR	RE-(R)	RELOCATED
E/F-EF	EXHAUST FAN	RTU	ROOF TOP UNIT
EG	EQUIPMENT GROUND	TL	TWIST LOCK
EWC	ELECTRIC WATER COOLER	TTB	TELEPHONE TERMINAL BOARD
EWH	ELECTRIC WATER HEATER	TYP	TYPICAL
GEC	GROUNDING ELECTRODE CONDUCTOR	UON	UNLESS OTHERWISE NOTED
GFI	GROUND FAULT INTERRUPTER	WP	WEATHERPROOF
HID	HIGH INTENSITY DISCHARGE	WR	WEATHER RESISTANT

LEGEND NOTES:
1. MOUNTING HEIGHTS SHOWN ARE MAXIMUM/MINIMUM HANDICAPPED ACCESSIBILITY STANDARDS – THEY SHALL NOT BE ALTERED WITHOUT WRITTEN AUTHORIZATION
2. ALL MOUNTING HEIGHTS ARE TO CENTERLINE UON.
3. ALL SYMBOLS MAY NOT BE USED

SCOPE OF WORK

1. ELECTRICAL CONTRACTOR SHALL REUSE THE EXISTING ELECTRICAL SERVICE INCLUDES ELECTRICAL METER, SERVICE DISCONNECT SWITCH AND PANELS IN THE FIELD.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUITS AND CONTROL TO NEW PENDANT AND RECESSED LIGHT FIXTURES, FIVE QUAD AND FIVE DATA LINES FOR MENUBOARDS.
3. ALL EQUIPMENT OTHER THAN ABOVE MENTIONED SCOPE, SHALL REMAIN. E.C TO VERIFY OPERABLE CONDITION EQUIPMENT IN COORDINATION WITH OWNER.

DATES

RELEASE:
P.M. UPDATES: -
SUBMITTAL DATE:
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These drawings attached are intended to assist the architect in preparing site-adapt construction documents provided that such use does not conflict with rules governing architects in the state where the work is to be performed. They will need to be modified to comply with all applicable codes and site-specific conditions.

SITE INFORMATION

DRAWN BY: NYE
PROJECT #:
DATE:

ELECTRICAL LEGENDS AND SPECIFICATIONS

E0.0

LIGHTING SCHEDULE

TYPE	DESCRIPTION	QUANTITY	MANUFACTURER	PRODUCT	MOUNTING	REMARK
INTERIOR						
E01	BELLCAP ILT SMALL PENDANT MATTE WHITE	2	SATCO NUVO	60-7096	6'-0" A.F.F.	30K, 1100 LUMENS / 13 WATTS
E30	RECESSED DOWN LIGHT HOUSING/TRIM	6	CREE	RC6UNI LRX-10L-35K	RECESSED IN CEILING	35K, 1000 LUMENS /14.5 WATTS
E50	RECESSED DOWN LIGHT HOUSING/TRIM	10	COOPER	24GR-LD5-48-A-UNV-L83-5-CDI-U	RECESSED IN CEILING	35K, 4800 LUMENS /43 WATTS

LIGHTING SCHEDULE NOTES

1. ALL (NEW) LIGHTING FIXTURES SHOWN ON THE LIGHTING FIXTURES SCHEDULE ARE SUBJECT TO THE ARCHITECTS APPROVAL. E.C. SHALL COORDINATE MAKE, MODEL, FINISHES, AND OTHER CRITICAL PARAMETERS WITH THE ARCHITECT BEFORE PURCHASING.
2. ALL LIGHTING FIXTURES SHALL BE LED-TYPE OPERABLE AT 120V UNLESS OTHERWISE NOTED.
3. PROVIDE HOLD-DOWN CLIPS FOR EACH CORNER OF LED GRID TROFFERS.
4. COORDINATE AND VARIFY ALL FIXTURE INFORMATION, TYPE AND FINAL LOCATIONS WITH THE REFLECTED CEILING PLAN.
5. PROVIDE ALL REQUIRED MOUNTING OR HANGING HARDWARE.
6. THE ADDITIONAL ACCESSORIES (VIZ. DRIVERS AND CURRENT LIMITERS) REQUIRED FOR THE PROPER WORKING OF THE LIGHTING FIXTURES MIGHT NOT BE PROVIDED BY THE VENDOR. E.C. SHALL PURCHASE IT SEPARATELY.

LIGHTING PLAN GENERAL NOTES

A. E.C. TO COORDINATE WITH ARCHITECT/OWNER FOR EXISTING CONDITION IN FILED.

B. E.C. TO ENSURE THAT EXISTING LIGHTING CONTROL IS COMPLYING WITH CODE. UPDATE/PROVIDE NEW CONTROLS AS REQUIRED IF EXISTING CONTROLS NOT OPERABLE/NOT COMPLYING PER LOCAL CODE REQUIREMENT. BASE BID ACCORDINGLY.

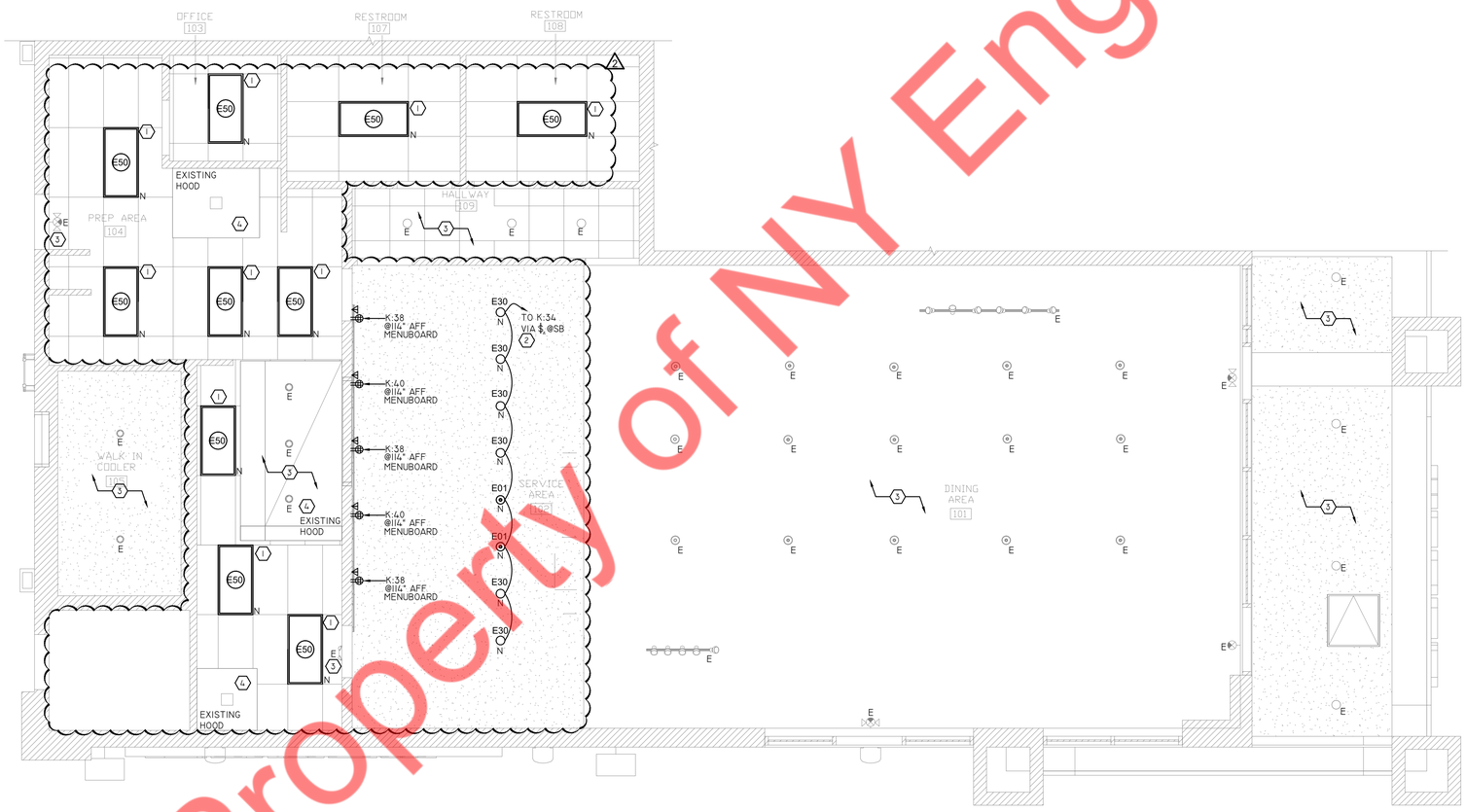
C. E.C. TO VERIFY THE CIRCUIT NUMBERS FOR NEWLY ADDED LIGHTING FIXTURE AS PER FIELD CONDITION OF PANEL BOARD. INFORM ENGINEER FOR ANY DISCREPANCY FOUND.

D. THE EXISTING LIGHT FIXTURE, LIGHTING CONTROL & ITS ELECTRICAL CONNECTION SHALL REMAIN.

E. THE NEUTRAL AND GROUNDING ARE NOT SHOWN ON THE DRAWING. E.C. TO PROVIDE AS REQUIRED.

(#) LIGHTING PLAN - KEYED WORK NOTES

1. PROPOSED LED FIXTURE TO REPLACE EXISTING. THE LIGHTING FIXTURE SHALL BE CONNECTED TO THE EXISTING LIGHTING CIRCUIT AND CONTROL. E.C. TO VERIFY OPERABLE CONDITION OF THE EXISTING CIRCUIT AND CONTROLS IN FIELD. REPLACE IF FOUND INOPERABLE.
2. E.C TO PROVIDE NEW SWITCH $, IN THE EXISTING SWITCH BANK (SB) LOCATED IN THE PROJECT SPACE AND WIRE THE INDICATED LIGHTING FIXTURE TO THE INDICATED CIRCUIT THROUGH THE SWITCH.
3. EXISTING (E) LIGHTING FIXTURES ALONG WITH THEIR CIRCUITS AND CONTROLS SHALL REMAIN.
4. EXISTING EQUIPMENT SHALL REMAIN CONNECTED TO THE EXISTING CIRCUIT IN THE FIELD.



1 ELECTRICAL LIGHTING PLAN

SCALE 1/4" = 1'-0"

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REVISIONS

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SITE INFORMATION

DRAWN BY: NYE

PROJECT #:

DATE:

ELECTRICAL LIGHTING PLAN

E1.0

POWER PLAN GENERAL NOTES

A. ALL SINGLE-PHASE RECEPTACLES RATED 50A AND 150V TO GROUND OR LESS, AND THREE PHASE RECEPTACLES RATED 100A AND 150V TO GROUND OR LESS INSTALLED IN THE BATHROOMS, KITCHEN,ROOFTOPS & OUTDOORS SHALL HAVE 'GFCI' PROTECTION FOR PERSONNEL PER NEC 210.8(B). PROVIDE WHEREVER NOT PROVIDED.

B. EXISTING ELECTRICAL CONNECTION TO ALL EXISTING MECHANICAL AND PLUMBING EQUIPMENTS SHALL REMAIN.

C. E.C. SHALL VERIFY EXACT POWER DISTRIBUTION IN FIELD. INFORM ENGINEER FOR ANY DISCREPANCY FOUND.

D. E.C. TO FIELD VERIFY THE EXACT LOCATION OF EXISTING ELECTRICAL PANELS. E.C. SHALL VERIFY THE OPERABLE CONDITION OF EXISTING ELECTRICAL PANELS IN FIELD.

E. THE ELECTRICAL EQUIPMENT UNDER THE HOOD SHALL BE PROVIDED WITH THE SHUNT TRIP BREAKERS AND FIRED EQUIPMENT SHALL HAVE A GAS SHUT-OFF (SOLENOID) VALVE TO DISCONNECT THE COOKING EQUIPMENT WHEN THE FIRE SUPPRESSION SYSTEM IS ACTIVATED.

(#) POWER PLAN - KEYED WORK NOTES

1. EXISTING ELECTRIC METER , SERVICE DISCONNECT SWITCH AND PANELS FOR THE PROJECT SPACE SHALL REMAIN. E.C TO FIELD VERIFY THE EXACT LOCATION IN FIELD. ENSURE CLEAR WORKING AND DEDICATED SPACE HAVE BEEN PROVIDED PER CODE.
2. EXISTING ELECTRICAL OUTLETS AND OTHER ELECTRICAL CONNECTION SHALL REMAIN.
3. E.C TO PROVIDE THE ELECTRICAL OUTLET FOR DRINK STATION AND COORDINATE WITH ARCHITECT/OWNER FOR EXACT MOUNTING HEIGHT. (2)

1 ELECTRICAL POWER PLAN

SCALE 1/4" = 1'-0"

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SITE INFORMATION

DRAWN BY: NYE
PROJECT #:
DATE:

ELECTRICAL POWER PLAN

E2.0

ELECTRICAL PANEL SCHEDULE

PANEL:	B	(EXISTING)									MOUNTING:	SURFACE
208Y/120	VOLTS	PHASE	3		-			DEMAND LOAD	118.52		PANEL LOCATION:	PREP AREA
400A	MCB	WIRE	4		-			DEMAND CURRENT	329.37		FED FROM:	EXISTING METER
NOTE:												

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1			H	4.20		6.44				2.24	M			2
3	45/3P	RTU-1A	H	4.20	EXISTING		6.44		EXISTING	2.24	M	EF-1 & SF-1	30/3P	4
5			H	4.20				6.44		2.24	M			6
7			H	4.10		4.30			EXISTING	0.20	M	EF-2	20	8
9	45/3P	RTU-1B	H	4.10	EXISTING		5.10		EXISTING	1.00	O	NEW FRONT	20	10
11			H	4.10				5.10	EXISTING	1.00	O	NEW FRONT	20	12
13			H	4.00		5.00			EXISTING	1.00	L	OFFICE AND KITCHEN LIGHTS	20	14
15	45/3P	RTU-1C	H	4.00	EXISTING		5.00		EXISTING	1.00	L	PENDANT LIGHTS	20	16
17			H	4.00				4.50	EXISTING	0.50	L	WALL SCONS	20	18
19	20	ROOF RECEPTACLE	R	0.80	EXISTING	1.60			EXISTING	0.80	L	TRACK LIGHTING	20	20
21	20	TELEPHONE SYSTEM	O	1.00	EXISTING		1.50		EXISTING	0.50	L	TRACK LIGHTING	20	22
23	20	DISPLAY /WINDOW LIGHTING	L	0.50	EXISTING			1.30	EXISTING	0.80	R	KDS RECEPTACLE	20	24
25	20	DISPLAY /WINDOW LIGHTING	L	0.50	EXISTING	2.10			EXISTING	1.60	L	PENDANT LIGHTS	20	26
27	20	DISPLAY /WINDOW LIGHTING	L	0.50	EXISTING		2.50		EXISTING	2.00	O	HOT WELL	30	28
29	20	DISPLAY /WINDOW LIGHTING	L	0.50	EXISTING			2.30		1.80	O			30
31	20*	SPARE				1.80			EXISTING	1.80	O	GRIDPOINT	20/3P	32
33	20	PHONE	O	1.00	EXISTING		2.80			1.80	O			34
35	20	GENRAL RECEPTACLES	R	0.50	EXISTING			0.50				SPARE	20*	36
37	20	SIGN	L	1.20	EXISTING	2.70			EXISTING	1.50	R	OFFICE RECEPTACLE	20	38
39	20	SIGN	L	1.20	EXISTING		1.80		EXISTING	0.60	L	LAV LIGHTS	20	40
41	20	EXITS	L	0.50	EXISTING			1.75	EXISTING	1.25	R	RECEPTACLES- TEA & BUBBLES	20	42
	FEED THROUGH LUG	PANEL-K	O	14.94	EXISTING									
			O	14.94										
			O	14.94										
						23.94	**25.14**	**21.89**						

PANEL:	K	(EXISTING)									MOUNTING:	SURFACE
208Y/120	VOLTS	PHASE	3		-			DEMAND LOAD	44.83		PANEL LOCATION:	PREP AREA
200A	MCB	WIRE	4		-			DEMAND CURRENT	124.57		FED FROM:	PANEL B
NOTE:												

CKT NO.	TRIP AMPS	DESCRIPTION OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	PER PHASE (KVA) A	B	C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	CKT NO.
1	20	FOOD STEAMER	E	1.80	EXISTING	3.60				1.80	H			2
3	20	FOOD STEAMER	E	1.80	EXISTING		3.60		EXISTING	1.80	H	REMOTE CONDENSER	20/3P	4
5	30/2P	HOT FOOD	E	2.29	EXISTING			4.09		1.80	H			6
7			E	2.29		3.29			EXISTING	1.00	H	COOLER EVAPORATOR	20	8
9	20	HOT BOX	E	1.00	EXISTING		2.00		EXISTING	1.00	E	DRINK DISPENSER	20	10
11	20	HOT BOX	E	1.00	EXISTING			2.20	EXISTING	1.20	E	ICE MAKER	20	12
13	20	QUESADILLA PRESS	E	1.80	EXISTING	3.60			EXISTING	1.80	E	ICE TEA BREWER	20	14
15	20	SANDWICH REFRIGERATOR	E	1.20	EXISTING		2.70		EXISTING	1.50	O	CARBONATOR	20	16
17	20	QUESADILLA PRESS	E	1.80				3.60	EXISTING	1.80	O	WATER HEATER	20	18
19	20	CHIP WARMER	E	1.50	EXISTING	3.30			EXISTING	1.80	E	QUESADILLA PRESS	20	20
21	20	CHIP WARMER	E	1.50	EXISTING		2.70		EXISTING	1.20	E	CASH REGISTER	20	22
23	20/2P	ICE MAKER	E	1.56	EXISTING			2.56	EXISTING	1.00	E	DISH MACHINE	20	24
25			E	1.56		3.56				2.00	E			26
27	20	HEAT CABINET	E	0.50	EXISTING		2.50		EXISTING	2.00	E	CONVENTIONAL STEAM	30/3P	28
29	20	RECEPTACLE	R	1.00	EXISTING			3.00		2.00	E			30
31	20	FREEZER	E	1.50	EXISTING	2.50			EXISTING	1.00	O	HEAT TAPE	20	32
33	20	QUESADILLA PRESS	E	1.80	EXISTING		2.14		2#12, #12G, 3/4"C	0.34	L	INTERNAL LIGHTING	20*	34
35	20	SP	E	0.50	EXISTING			2.40	EXISTING	1.90	L	COOLER LIGHTS	20	36
37	20/2P	KITCHEN RECEPTACLE	R	1.20	EXISTING	2.28			2#12, #12G, 3/4"C	1.08	E	MENUBOARD	20*	38
39			R	1.20			1.92		2#12, #12G, 3/4"C	0.72	E	MENUBOARD	20*	40
41	20	HOOD LIGHTS	L	0.50	EXISTING			1.30	2#12, #12G, 3/4"C	0.80	E	DRINKING STATION	20*	42
						22.13	**17.56**	**19.15**						

PANEL SCHEDULE GENERAL NOTES:

A. CIRCUITING SHOWN (FOR EXISTING EQUIPMENT) IS FOR CALCULATION PURPOSE ONLY. E.C. SHALL VERIFY CIRCUITING OF THE EXISTING DEVICES IN FIELD AND INFORM ENGINEER FOR ANY DISCREPANCIES.

B. ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.

C. ELECTRICAL CONTRACTOR SHALL VERIFY EXACT CIRCUIT NUMBER & BREAKER SIZE OF EXISTING DEVICES IN FIELD.

D. E.C. SHALL PROVIDE NEW CIRCUIT BREAKERS IN PLACE OF EXISTING CIRCUIT BREAKERS WHEREVER NECESSARY TO BE IN LINE WITH THE PANEL SCHEDULE.

E. E.C. SHALL VERIFY THE EXISTING EQUIPMENT LOAD & RATINGS IN FIELD AND ACCORDINGLY CONSIDER THE ELECTRICAL LOAD IN PANEL BOARD SCHEDULE.

F. E.C. SHALL VERIFY THE BREAKER, CABLE, ELECTRICAL LOAD AND CONDUIT REQUIREMENT/SIZES/RATINGS FOR ALL KITCHEN EQUIPMENTS WITH EQUIPMENT SUPPLIER/MANUFACTURER AND PROVIDE THE ELECTRICAL CONNECTION ACCORDINGLY. BASE BID ACCORDINGLY.

G. E.C. SHALL COORDINATE WITH OWNER FOR THE EXISTING TO REMAIN EQUIPMENTS. THE ELECTRICAL CONNECTIONS OF WHICH NEED TO BE MAINTAINED.

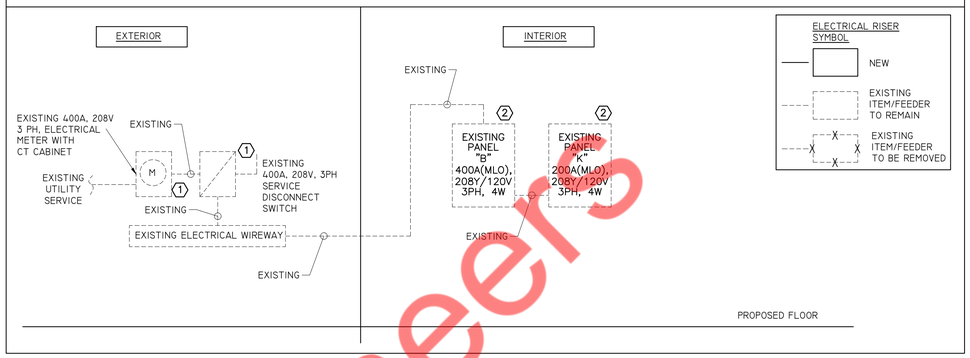
H. ALL EXISTING & RELOCATED ELECTRICAL EQUIPMENT & ITS ELECTRICAL CONNECTION SHALL REMAIN. VERIFY OPERABLE CONDITION IN FIELD. REPLACE (IN COORDINATION WITH THE OWNER) IF FOUND INOPERABLE.

ELECTRICAL PANEL SCHEDULE ABBREVIATIONS

L = LIGHTING
R = RECEPTACLE
H = HVAC
M = MOTOR
E = EQUIPMENT
O = OTHER

(*) NEW BREAKER IN EXISTING PANEL

ELECTRICAL RISER DIAGRAM



RISER DIAGRAM KEYED WORK NOTES

1. EXISTING ELECTRICAL METER AND SERVICE DISCONNECT FOR THE PROJECT SPACE SHALL REMAIN. E.C. SHALL COORDINATE WITH OWNER/BASE BUILDING FOR EXACT POWER DISTRIBUTION.
2. EXISTING PANEL SHALL REMAIN. E.C. SHALL VERIFY EXACT RATING, LOCATION AND THE OPERABLE CONDITION OF EXISTING ELECTRICAL PANEL IN FIELD. INFORM ENGINEER FOR ANY DISCREPANCY FOUND. BASE BID ACCORDINGLY.

RISER DIAGRAM GENERAL NOTES

A. E.C. SHALL COORDINATE WITH UTILITY/OWNER FOR EXISTING INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.

B. ELECTRICAL CONTRACTOR TO COORDINATE FAULT CURRENT (Isc) RATING WITH UTILITY COMPANY AND AHJ AND CALCULATE ACTUAL AIC REQUIRED PRIOR TO BID.

C. E.C. TO VERIFY EXACT POWER DISTRIBUTION IN FIELD. VERIFY SCOPE OF WORK WITH OWNER/LANDLORD PRIOR TO BID.

D. ENSURE THE COMBINED VOLTAGE DROP OF THE FEEDER AND BRANCH CIRCUIT SHALL NOT EXCEED 5% PER CODE.

E. THE PART OF RISER MARKED AS EXISTING IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY THE RISER IN THE FIELD. INFORM THE ENGINEER ON RECORD OF ANY DISCREPANCY FOUND.

F. VERIFY THE LOCATION, RATING, AND OPERABLE CONDITION OF ALL THE EXISTING DEVICES BEING REUSED. REPLACE IF FOUND INOPERABLE (WITHIN THE SCOPE OF WORK). BASE BID ACCORDINGLY.

G. ADDITION OR ALTERATION TO THE EXISTING SYSTEM SHALL NOT BE DONE WITHOUT THE WRITTEN CONSENT OF THE OWNER.

DATES

RELEASE:
P.M. UPDATES: -
SUBMITTAL DATE:
1: -
2: -
3: -
BID: -
CONSTRUCTION: -

REVISIONS

2 - CITY COMMENT 08/13/2024

These drawings attached are intended to assist the architect in preparing site-adapt construction documents provided that such use does not conflict with rules governing architects in the state where the work is to be performed. They will need to be modified to comply with all applicable codes and site-specific conditions.

SITE INFORMATION

DRAWN BY: NYE
PROJECT #:
DATE:

ELECTRICAL RISER DIAGRAM & PANEL SCHEDULE

E3.0