LIGHTIN	G, POWER & SIGNAL SYMBOLS	LIGHTING, POWER & SIGN
A 1 a	2'X 4' LTG FIXTURE	WALL MOUNTED JUNCTION BOXES FOR POWER FURNITURE: PROVIDE CIRCUITRY AS INDICATED U _P U _C TO SYSTEMS FURNITURE WHIP. TELECOM PROV 2-1/8"D BOX WITH 2-GANG COVER AND 1-1/4" FM
▲ \		ACCESSIBLE CEILING WITH BUSHING, U.O.N.
	- SWITCH DESIGNATION (LOWER CASE) "a"	
	- LIGHTING FIXTORE TYPE (OPPER CASE) A	DUPLEX RECEPTACLE OUTLET
	2' X 2' FLUORESCENT LIGHTING FIXTURE TYPE.	DUPLEX RECEPTACLE OUTLET - FLOOR MOUNT
		QUADRUPLEX RECEPTACLE OUTLET - FLOOR M
	LIGHT FIXTURE ON GENERATOR BACK-UP LIFE SAFETY CIRCUIT	→G ^{GFI} DUPLEX RECEPTACLE OUTLET WITH GROUND F
	1' X 4' LIGHTING FIXTURE TYPE.	SURFACE MOUNTED RACEWAY WITH DEVICES A
	STRIP LIGHTING FIXTURE TYPE.	6 MOTOR RATING IS INDICATED ON DRAWING ALL SHALL BE INCLUDED AS NEEDED
· · ·		DISCONNECT SWITCH RATING AND TYPE AS REC
	RECESSED OR SURFACE MOUNTED LIGHT FIXTURE TYPE .	COMBINATION STARTER/DISCONNECT SWITCH
VC	CEILING MOUNTED VACANCY SENSOR W/ LOW VOLTAGE OVERRIDE	
OS	CEILING MOUNTED OCCUPANCY SENSOR	+ INDICATES MOUNTING HEIGHT OTHER THAN ST DEVICE REFER TO ARCHITECTS DWGS HP EQUIPMENT LABEL 1 DENTIFICATION NUMBER
PC	PHOTO CELL CONTROL	GROUND ROD - 3/4" COPPER ROD 10'-0" LONG
DS	DAYLIGHT SENSOR	
^x 1 ⊗ ^x 2	EXIT LIGHT - CONFIRM CHEVRON WITH ARCHITECTURAL LIFE SAFETY DRAWING	SINGLE GANG PLASTER RING AND 1-1/4 PROVIDE QUANTITY OF CAT 5 CABLES F
	LIGHT TRACK W/FIXTURES TYPE AND LENGTH AS INDICATED ON DWGS	INDICATES FLOOR INDICATES CEILING (SPECIAL FUNCTION)
S - S -	SINGLE POLE SWITCH 20A-125V MTD 48" AFF LOWER CASE	C - CEILING MOUNTED FOR CAMERA WAP - FOR WIRELESS ACCESS POINT
³ a ³ b	LETTERS INDICATE FIXTURE TO BE CONTROLLED (GANGED SWITCHES)	
s ₃	SINGLE POLE SWITCH (SUBSCRIPT INDICATES TYPE OF SWITCH	SINGLE GANG PLASTER RING AND $3/4$ "C (1) CAT 6F CABLES INSTALLED BY OTHE
	3 - THREE WAY SWITCH 4 - FOUR WAY SWITCH DMC - LOW VOLTAGE DIMMER SWITCH FOR LIGHTING CONTROLS SYSTEM	
	VC - VACANCY SENSOR SWITCH L - LOW VOLTAGE SWITCH	INDICATES FLOOR
	M - MANUAL SW (MOTOR RATED) WITH LOCKOUT DEVICE AND OVERLOADS TC - TIME CONTROL SWITCH	(SPECIAL FUNCTION)
	OR - OVERRIDE SWITCH	
	LOW VOLTAGE	
	HOME RUN TO PANEL ARROWS AND NUMBERS INDICATE CIRCUITS	HJ DOUBLE GANG BOX FOR AV EQUIPMENT. COORDINATE EXACT REQUIREMENTS WITH AV
o	CONDUIT TURNED OR STUBBED UP	
		& DATA OUTLETS
 Γ.C	120/208V 3~ 4W PANEL	PP DUAL SERVICE, BLANK ALUMINUM POWER POL FEEDS. SIMILAR TO WIREMOLD AMTC-4 SERIES
	CONTACTOR	
		FIRE ALARM SYMBOL
OR AS SHOWN ON II ELEVATIONS, "IF" SE	ON ARCHITECTURAL DETAILS)	FMANUAL PULL STATION MTD 48" AFFWP = INDICATES WEATHERPROOF MANUAL PULL S
6" ABOVE FIRE HOU	SE CABINET 🕂 BLUE SIGNAL LIGHT	F HORN/STROBE FIRE ALARM SIGNAL WP = INDICATES WEATHERPROOF HORN/STROBE I
10'-0"	BATTERY LIGHTING UNITS AND REMOTE WALL MOUNTED LIGHTHEADS (OR 1'-0" BELOW FINISHED CEILING OF TOP	F VISUAL FIRE ALARM SIGNAL ONLY
8'-6"	OF UNIT *PENDANT-HUNG INDUSTRIAL AND STRIP LIGHTING FIXTURES	SMOKE DETECTOR ("D" INDICATES DUCT DETECTOR I = INDICATES IONIZATION SMOKE DETECTOR
CENTERED ABOVF	DOOR OR 🔶 WARNING OR SIGNALING FIXTURES/SIGNS	HVAC = INDICATES LINEAR DEAM SMOKE DETECTOR
WINDOW OPENING 6'-8" -TO BOTTOM O		HEAT DETECTOR F= INDICATES FIXT TEMP HEAT DETECTOR A= INDICATES ABOVE CEILING HEAT DETECTOR
6'-6"	TOP OF LTG OR POWER PNL BOARDS	FACP FIRE ALARM CONTROL & ANNUNCIATOR PANEL
6'-3"	TOP OF TEL CABINET/BACKBOARD TOP OF BACK-MTD EXIT EIXTIS(NOT ABOVE DOOD)	FAAP FIRE ALARM ANNUNCIATOR PANFI
6'-0" MAX.	TOP OF SAFETY DISC SW TOP OF CONTACTORS	
4'-6 "		
	TOP OF INTERCOM STATION	
4'-0"	TOP OF MANUAL MOTOR STARTERS TOP OF FIRE ALARM PULL STA TOP OF LIGHT SWITCHES	FS FLOW SWITCH
2'-0"	ELECTRICAL RECEPTACLES W/N MECHANICAL SPACES	
	ELECTRICAL AND ELEVATOR *RECEPTACIES TEL OUTLETS (DESK) INTERCOM OUTLET FOR	
1'-6"	DESKS, TELEVISION OUTLETS, UNO COMPUTER OUTLETS W/S JUNCTION BOXES	
0'-0"		
	T	
* EXCEF ** IF CFI	PT AS NOTED ON DRAWINGS OR IN SPECIFICATIONS LING HEIGHT IS BELOW 6'-8", MOUNT DEVICE 6" BELOW CEILING.	

WALL MOUNTED JUNCTION BOXES FOR POWER FURNITURE: PROVIDE CIRCUITRY AS INDICATED \bigcirc_{C} TO SYSTEMS FURNITURE WHIP. TELECOM PROV 2-1/8"D BOX WITH 2-GANG COVER AND 1-1/4" EMF ACCESSIBLE CEILING WITH BUSHING, U.O.N. PO PHOTO CELL CONTROL Ð DUPLEX RECEPTACLE OUTLET QUADRUPLEX RECEPTACLE OUTLET DUPLEX RECEPTACLE OUTLET - FLOOR MOUNT Ð -QUADRUPLEX RECEPTACLE OUTLET - FLOOR M ⇒^{GFI} DUPLEX RECEPTACLE OUTLET WITH GROUND FAULT INTERRUPTER ₩²⁵⁰⁻³⁰ SPECIALTY RECEPTACLE OUTLET - NUMBERS DENOTE VOLTAGE AND AMPERE RATING. SPECIFIC MOUNTING HEIGHTS, REFER TO ARCH ELEVATIONS + SURFACE MOUNTED RACEWAY WITH DEVICES AS SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING AND SPECIFICATION. MOTOR RATING IS INDICATED ON DRAWING ALL NECESSARY DISC SHALL BE INCLUDED AS NEEDED Ъ DISCONNECT SWITCH RATING AND TYPE AS REQUIRED BY NEC Ľ FUSED DISCONNECT SWITCH COMBINATION STARTER/DISCONNECT SWITCH \boxtimes \boxtimes MAGNETIC MOTOR STARTER J JUNCTION BOX INDICATES MOUNTING HEIGHT OTHER THAN STANDARD + DEVICE REFER TO ARCHITECTS DWGS EQUIPMENT LABEL GROUND ROD - 3/4" COPPER ROD 10'-0" LONG TELEDATA - DOUBLE GANG JUNCTION BOX, W/ PULL STRING SINGLE GANG PLASTER RING AND 1-1/4"C RACEWAY. 「 🕥 🔽 PROVIDE QUANTITY OF CAT 5 CABLES FROM DATA CLOSET. — INDICATES FLOOR - INDICATES CEILING (SPECIAL FUNCTION) c - CEILING MOUNTED FOR CAMERA WAP - FOR WIRELESS ACCESS POINT TELEPHONE - DOUBLE GANG JUNCTION BOX, W/ PULL STRING SINGLE GANG PLASTER RING AND 3/4"C RACEWAY(TELEPHONE ' (**V**) 🛽 (1) CAT 6E CABLES INSTALLED BY OTHERS) - INDICATES FLOOR - INDICATES CEILING - (SPECIAL FUNCTION) WALL MOUNTED LOW VOLTAGE CLOCK AND С SPEAKER COMBINATION DOUBLE GANG BOX FOR AV EQUIPMENT. COORDINATE EXACT REQUIREMENTS WITH AV INSTALLER

FIRE ALARM SYMBOL

F	MANUAL PULL STATION MTD 48" AFF WP = INDICATES WEATHERPROOF MANUAL PULL \$
F	HORN/STROBE FIRE ALARM SIGNAL WP = INDICATES WEATHERPROOF HORN/STROBE
E	VISUAL FIRE ALARM SIGNAL ONLY
s	SMOKE DETECTOR ("D" INDICATES DUCT DETECTOR I = INDICATES IONIZATION SMOKE DETECTOR L = INDICATES LINEAR BEAM SMOKE DETECTOR HVAC = INDICATES HVAC SMOKE DETECTOR
⟨H⟩	HEAT DETECTOR F= INDICATES FIXT TEMP HEAT DETECTOR A= INDICATES ABOVE CEILING HEAT DETECTOR
FACP	FIRE ALARM CONTROL & ANNUNCIATOR PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
□	FD/SD
IAM	INDIVIDUAL ADDRESSABLE MODULE
TS	TAMPER SWITCH
FS	FLOW SWITCH
< c>	CARBON MONOXIDE DETECTOR WITH INTEGRAL S

NAL	SYMBOLS

(P) & TELECOM (C) SERVICE TO SYSTEMS AT POWER JUNCTION BOX AND CONNECT /ISIONS SHALL INCLUDE 4-11/16" SQ X PTY CONDUIT STUBBED TO ABOVE

TED	
MOUNTED	

1.0).		

Fixt Type

Description

Manufacturer

FLUSH MTD FLOOR OUTLET WITH 20A-120V RECEPTACLES

DUAL SERVICE, BLANK ALUMINUM POWER POLE FOR FURNITURE FEEDS. SIMILAR TO WIREMOLD AMTC-4 SERIES.

SHEET NOTES ELECTRICAL:

1. PROVIDE ALL DEVICES AND ACCESSORIES ETC. WHERE NOTED ON DRAWINGS OR AS DIRECTED BY

- ARCHITECT/TENANT. 2. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS AT THE BUILDING SITE
- BEFORE INSTALLATION OF HIS WORK. PROVIDE A COMPLETE INSTALLATION INCLUDING DISCONNECT SWITCHES, PULLBOXES, EQUIPMENT AND WIRING AS INDICATED ON PLANS AND SPECIFICATIONS.
- 4. ALL ELECTRICAL DEVICES INTENDED FOR OPERATION BY THE OCCUPANTS, INCLUDING THERMOSTATS SERVICING BASEBOARD HEATERS, SWITCHES (TO TOP OF SWITCH) SHALL BE ACCESSIBLE AND COMPLY WITH REACH RANGE REQUIREMENTS. THE HIGH FORWARD OR SIDE REACH SHALL BE 48-INCHES MAXIMUM ABOVE THE FLOOR. THE LOW FORWARD OR SIDE REACH SHALL BE 115 INCHES MINIMUM ABOVE FLOOR. ALL APPLICABLE CONTROLS AND EQUIPMENT MUST CONFORM TO THE IBC 1109.3.
- MATERIALS, WORKMANSHIP AND COMPLETE INSTALLATION SHALL CONFIRM TO THE 2011 NATIONAL ELECTRIC CODE, STATE, AND ALL APPLICABLE REGULATIONS. ALL EQUIPMENT SHALL BE U.L. LISTED FOR INTENDED APPLICATION. 6. THE ELECTRICAL CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS PRIOR TO BEGINNING
- WORK. AT THE COMPLETION OF THE JOB, THE ELECTRICAL CONTRACTOR SHALL FURNISH TO THE OWNER AN INSPECTION CERTIFICATE FROM A LICENSED INSPECTION AGENCY.
- TEST EQUIPMENT TO VERIFY THAT ITEMS ARE FREE FROM UNINTENDED GROUNDS, SHORT CIRCUITS, AND OPEN CIRCUITS AND THAT EQUIPMENT WILL OPERATE AS SPECIFIED. FURNISH LABOR AND MATERIAL FOR MAKING SUCH TESTS AND MAKE CORRECTIONS NECESSARY TO OBTAIN PROPER OPERATION.
- CONTRACTOR SHALL SUBMIT, TO THE OWNER FOR REVIEW, MANUFACTURERS CUT FOR ALL EQUIPMENT SPECIFIED. EQUIPMENT CUTS SHALL INDICATE MANUFACTURERS NAME AND MODEL NUMBER
- 9. ALL BRANCH CIRCUIT WIRING, JUNCTION BOXES, CONDUITS, PANELBOARDS, EQUIPMENT, DEVICES, ETC., SHALL BE GROUNDED IN ACCORDANCE WITH THE 2011 NATIONAL ELECTRIC CODE. 10. ALL WIRING SHALL ADHERE STRICTLY TO THE 2011 NATIONAL ELECTRIC CODE.
- 11. WIRING EXPOSED & SUBJECT TO DAMAGE SHALL BE EMT; ALL OTHER SHALL BE TYPE MC CABLE. 12. ALL WIRING SHALL BE SOFT DRAWN COPPER OF 98% CONDUCTIVITY, 600 VOLT RATING, THHN/THWN. 13. BUSHINGS SHALL BE PROVIDED FOR ALL TERMINATION'S AT PANELS, JUNCTION BOXES, WIRING
- TROUGHS, EQUIPMENT, ETC. 14. ALL CONDUIT AND WIRE SHALL BE SUPPORTED DIRECTLY FROM THE STRUCTURE. CONDUIT AND
- WIRE SHALL NOT BE SUPPORTED FROM PIPING. DUCTWORK. ETC. 15. PROVIDE EACH RACEWAY OR CABLE PASSING THROUGH A MASONRY OR CONCRETE WALL, FLOOR OR PARTITION WITH A SLEEVE MADE FROM STANDARD WEIGHT STEEL PIPE WITH SMOOTH EDGES.
- SECURELY AND NEATLY CEMENTED IN PLACE. 16. WHERE SLEEVES OR CONDUIT PENETRATE FIRE RATED WALLS, FLOORS, PARTITIONS OR SLABS, FILL AND SEAL WITH FIRE SEALANT CREATING A FIRE STOP EQUAL TO OR EXCEEDING FIRE RATING OF CONSTRUCTION MATERIAL BEING PENETRATED. FIRE SEALANT SHALL PREVENT SPREAD OF FLAME, SMOKE, AIR AND WATER AND SHALL PASS A 3 HOUR TEST PER ASTM E814 AND UL 1479. FIRE
- SEALANT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. 17. PULL AND JUNCTION BOXES SHALL BE CODE GAUGE ZINC COATED SHEET STEEL CONFORMING TO THE 2011 NATIONAL ELECTRIC CODE AND AS REQUIRED TO FACILITATE INSTALLATION OF WIRES WITHOUT SHARP BENDS AND CROWDING CONDUCTORS AGAINST SIDES OR COVER. USE SCREW-ON
- AND/OR HINGED COVERS. 18. SPLICING SHALL BE WITHIN OUTLET BOXES OR JUNCTION BOXES. NO SPLICING SHALL BE PERMITTED IN MAINS OR FEEDERS.
- 19. WHEN OVERSIZED CONDUCTORS ARE INSTALLED, AND CONDUCTORS DO NOT FIT PROPERLY INTO THE DISTRIBUTION OF UTILIZATION EQUIPMENT PROVIDE JUNCTION BOX ADJACENT TO EQUIPMENT FOR TAP CHANGE OF CONDUCTOR SIZE FROM THE JUNCTION BOX TO THE EQUIPMENT TAP CONDUCTOR SHALL BE AS LARGE AS POSSIBLE, AND IN NO CASE SHALL ITS CURRENT CARRYING CAPACITY BE LESS THAN THAT REQUIRED BY THE NEC.
- 20. WIRES WITHIN EQUIPMENT, SUCH AS PANEL BOARDS, SHALL BE NEATLY ARRANGED AND TIED WITH CABLE TIES. 21. ALL BRANCH CIRCUIT CONDUITS SHALL CONTAIN NOT MORE THAN ONE CONDUCTOR OF EACH PHASE
- (A, B, C) AND NEUTRAL CONDUCTOR, ONE EQUIPMENT GROUNDING CONDUCTOR, AND ASSOCIATED SWITCH OR CONTROL WIRING, UNLESS INDICATED OTHERWISE. 22. RACEWAYS INSTALLED EXPOSED OR IN ACCESSIBLE SPACES SHALL BE PLACED AT RIGHT ANGLES TO
- OR PARALLEL WITH THE BUILDING WALLS AND CEILINGS. 23. CONDUITS SHALL BE INSTALLED WITH A MINIMUM SEPARATION OF 6 INCHES BETWEEN ELECTRICAL RACEWAYS AND WATER OR STEAM LINES. WHEN INSTALLED AT CLOSER DISTANCE, PROVIDE INSULATING PIPE COVERING ON THE WATER AND STEAM LINES.
- 24. WHERE CONDUIT TERMINATES IN A CABINET, BOX OR AUXILIARY GUTTER, THE CONDUCTORS SHALL BE PROTECTED BY AN INSULATING BUSHING. LOCKNUTS SHALL BE PROVIDED BOTH INSIDE AND OUTSIDE THE ENCLOSURE.
- 25. SWAB OUT AND MAKE RACEWAYS DRY. DO NOT INSTALL WIRE UNTIL THE AREA IS PROTECTED FROM THE WEATHER AND SWABBING OF RACEWAYS HAS BEEN COMPLETED. 26. ALL RECEPTACLES, JUNCTION BOXES AND PULL BOXES SHALL BE PERMANENTLY LABELED WITH
- LABELMAKER IN WORDS WITH LETTERS AT LEAST ONE INCH HIGH IDENTIFYING PANEL NAME AND CIRCUIT NUMBER 27. CONTRACTOR TO PROVIDE CONDUIT, PULL WIRE, PULL BOXES, AND FACEPLATES FOR TENANT
- SUPPLIED TELE/DATA WIRING. 28. ALL COMMUNICATIONS & FIRE ALARM CABLE SHALL BE PLENUM RATED. PROVIDE 3/4" FROM OUTLET
- TO ABOVE CEILING FOR NEW SIGNAL DEVICES. 29. CONTRACTOR SHALL PROVIDE AN OPERATING MANUAL AND MAINTENANCE MANUAL TO THE BUILDING OWNER. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING: (A) SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. (B) OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED. (C) NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY.
- 30. REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATION/COORDINATION OF ALL FIXTURES, LIGHTS, SPRINKLER HEADS, AIR DEVICES AND ALL MPE & FP ITEMS.

Model No.

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STATION FIRE ALARM

OR)



FLAT RECESSED PANEL 2X4 LED EATON CORELITE DRI-WD-3-L35-UNV-24-X-STD LED 120 Α 40 15" HIGH BAY LED FIXTURE В HUBBELL CRN-40KLX-EDU LED 98 120 4' LED LENSED STRIP LIGHT FIXTURE HUBBELL LCL4-35LW-EU-CSHC LED 19 120 B1 4' LED BILEVEL LUMINAIRE WITH CONTROLS HUBBELL LBIL4-35LW-EU LED 120 С 31 D 5" LED SURFACE MOUNTED DOWNLIGHT PRESCOLITE LBS5LEDA6L-30K-9-WH LED 13 120 WALL MOUNTED LED WALLPACK HUBBELL PVL-30L1-4K-035-BZ-PC-BBU LED 40 120 E PHILIPS CHLORIDE WALL MOUNTED EMERGENCY LIGHT VU6L LED 120 EM 5 LED EXIT SIGN WITH BATTERY BACKUP PHILIPS CHLORIDE CXXL-3-R-W 120/277 X1 LED 3

MATCH FIXTURE TRIM AND SUPPORT TO CEILING TYPE SHOWN ON ARCHITECTURAL DRAWINGS.

LIGHT FIXTURE SCHEDULE

Lamps

Lamp Type

Watt/ Lamp

Volt

Mounting

RECESSED

PENDANT

SURFACE

SURFACE

SURFACE

SURFACE

SURFACE

WALL/ CEILING

SOUNDER BASE

		PLATO MARINAKOS, JR. ARCHITECT, LLC www.plato-studio.com
		ARCHITECT SEAL MUST BE IN RED INK OWNER
Remarks		ISSUED BY: PLATO A. MARINAKOS JR ARCHITECT, LLC FOR " APPROVAL" BY OUR CLIENT AND CUSTOMER CLIENT IS REQUIRED TO CHECK (X) ONE BOX APPROVED AS IS APPROVED AS NOTED ONLY CLIENT SIGNATURE DATE NAME (PLEASE PRINT) KINDLY RETURN ALL DRAWINGS FOR THE COMPLETE BUILDING, SIGNED AND DATED TO OUR OFFICE LOCATION.
PROVIDE CHAIN HANGER ACCESSORY IN AREAS WITH NO CEILING		716 EMERSON AVE - CHURCH
	DRAFT	ELECTRICAL COVER SHEET Project number N/A Date 05/01/2021 Drawn by Author Checked by Checker E001 1/8" = 1'-0"

ELECTRICAL SPECIFICATIONS

1.01 CODES AND STANDARDS

- A) ALL WORK SHALL BE SYSTEMATICALLY, CAREFULLY AND NEATLY PERFORMED AND SHALL CONFORM TO THE FOLLOWING STANDARDS:
- 1. 2015 IBC 2. 2014 NATIONAL ELECTRIC CODE
- 3. UNDERWRITERS LABORATORIES, INC.(UL)
- 4. OSHA AND ALL AGENCIES HAVING JURISDICTION

1.02 SUMMARY

- A) PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES REQUIRED FOR COMPLETE INSTALLATION OF ALL WORK INDICATED ON THE DRAWINGS OR SPECIFIED HEREIN.
- B) OBTAIN ALL PERMITS AND APPROVALS REQUIRED BY AUTHORITIES HAVING JURISDICTION AND PAY THE ASSOCIATED PRINTING AND FILING COSTS.
- C) VERIFY EXISTING CONDITIONS IN FIELD AND INCLUDE IN THE BID PRICE ALL WORK REQUIRED TO ACCOMMODATE THE INSTALLATION.
- D) PROVIDE TEMPORARY LIGHT AND POWER SYSTEM (AS PART OF THE CONTRACT) ADEQUATE FOR THE REQUIREMENTS OF ALL TRADES DURING CONSTRUCTION. TEMPORARY SYSTEM SHALL BE DISCONNECTED AND REMOVED WHEN PERMANENT SERVICE IS IN OPERATION.
- 1.03 AS-BUILT DRAWINGS AND MAINTENANCE MANUALS
- A) CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS INDICATING ANY DEVIATION FROM THE ORIGINAL ELECTRICAL DESIGN. THE REVISED DRAWING SHALL BE STAMPED "AS-BUILT" WITH THE DATE AND CONTRACTOR'S SIGNATURE. ONE (1) SET OF PRINTS AND A COMPACT DISK CONTAINING AUTOCAD FILES SHALL BE DELIVERED TO THE ENGINEER BEFORE FINAL PAYMENT IS MADE. AFTER REVIEW AND APPROVAL OF AS-BUILT CONTRACTOR SHALL DELIVER COMPACT DISK TO THE OWNER. CONTRACTOR SHALL PROVIDE THREE (3) PRINTS AND A COMPACT DISK OF AS-BUILT DRAWINGS TO THE OWNER UPON COMPLETION OF WORK.
- B) FURNISH TO THE ARCHITECT THREE (3) BOUND AND INDEXED COPIES OF OPERATIONS AND MAINTENANCE DATA MANUALS FOR THE INSTALLATION. THE MANUAL SHALL PROVIDE COMPREHENSIVE DETAILED INFORMATION ON THE APPROVED INSTALLATION, OPERATION AND USE, MAINTENANCE AND PARTS LIST.

1.05 QUALITY ASSURANCE

- A) MATERIALS, EQUIPMENT AND INSTALLATION SHALL CONFORM TO THE ADOPTED EDITION OF ALL APPLICABLE CODES THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION AND BUILDING MANAGEMENT. ALL UTILITY WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL UTILITY COMPANY.
- B) MATERIALS, EQUIPMENT AND INSTALLATION SHALL CONFORM TO THE LATEST EDITION OF THE APPLICABLE REFERENCE STANDARDS PUBLISHED BY UL, ANSI, IEEE AND NEMA.
- C) ALL WORK SHALL BE WARRANTED IN WRITING TO BE FREE FROM DEFECTS IN MATERIALS AND/OR WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER. WARRANTY SHALL INCLUDE ALL COSTS OF PARTS, LABOR, TRAVEL AND LIVING EXPENSES REQUIRED TO REPAIR OR REPLACE DEFECTIVE ITEMS.
- 1.06 BASIC MATERIAL AND METHODS
- A) COORDINATE ALL WORK WITH THE WORK OF OTHER TRADES PRIOR TO INSTALLATION. ASSIST IN THE PREPARATION OF COORDINATION DRAWINGS AS REQUIRED BY THE GENERAL CONDITIONS.
- B) CUT AND PATCH NON STRUCTURAL SURFACES AS REQUIRED. REPAIRS SHALL MATCH ORIGINAL FINISH, PENETRATIONS OF FIRE RATED PARTITIONS SHALL BE SEALED WITH APPROVED MATERIAL TO PROVIDE THE SAME RATING AS THE PARTITION. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE RATED PARTITIONS.
- C) PROVIDE EXPANSION FITTINGS WHERE RACEWAYS CROSS BUILDING EXPANSION JOINTS.
- D) EQUIPMENT, DEVICES AND ENCLOSURES SHALL BE RATED NEMA 1 FOR INTERIOR LOCATIONS, NEMA 3R FOR DAMP LOCATIONS AND WET LOCATIONS.
- E) PROVIDE 4" HIGH SEALED CONCRETE HOUSEKEEPING PADS BELOW ALL FLOOR MOUNTED EQUIPMENT AND AROUND ALL CONDUITS PENETRATING FLOORS OF MECHANICAL EQUIPMENT ROOMS.
- 1.07 RACEWAYS
- A) ELECTRICAL METALLIC TUBING (EMT) SHALL CONFORM TO UL 797. FITTINGS SHALL BE GLAND AND RING COMPRESSION TYPE.
- B) FLEXIBLE METALLIC CONDUIT SHALL CONFORM TO UL 1. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL CONFORM TO UL 360.
- C) ALL CONDUIT FITTINGS AND CONNECTORS SHALL BE STEEL WITH INSULATED THROATS. DIE-FORMED ZINC OR MALLEABLE IRON FITTINGS ARE NOT ACCEPTABLE. BUSHINGS SHALL BE PROVIDED AT ALL CONDUIT TERMINATIONS. BUSHINGS LARGER THAN 1" SHALL BE GROUNDING TYPE. PVC BUSHINGS MAY BE UTILIZED ONLY FOR 3/4" BRANCH CIRCUIT CONDUITS TERMINATING AT PANELBOARDS.
- D) MINIMUM RACEWAY SIZE SHALL BE 3/4". RACEWAYS SHALL BE RUN PARALLEL TO BUILDING STRUCTURAL LINES. RACEWAYS SHALL NOT BE RUN HORIZONTALLY BELOW 8'-0" AFF IN PARTITIONS. ALL EMPTY RACEWAYS SHALL BE FURNISHED WITH A 200LB TEST NYLON DRAG LINE.
- E) ALL WIRING BETWEEN JUNCTION BOXES AND FOR CIRCUIT HOMERUNS BETWEEN FIRST OUTLET SERVED BY THE BRANCH CIRCUIT AND THE PANELBOARD SHALL BE RUN IN EMT AS REQUIRED.
- F) RACEWAY UTILIZATION SHALL BE AS FOLLOWS:
- 1. ELECTRICAL METALLIC TUBING (EMT) INTERIOR CONCEALED AND EXPOSED LOCATIONS; (EXCEPT AS NOTED ABOVE) INTERIOR COMMUNICATIONS WIRING. EMT FITTINGS SHALL BE STEEL, CONNECTORS SHALL HAVE INSULATED THROATS.
- 2. FLEXIBLE METALLIC CONDUIT FINAL CONNECTIONS TO LIGHTING FIXTURES IN INTERIOR LOCATIONS (MIN. LENGTH 18", MAX. LENGTH 6'-0"); WHERE APPROVED BY THE ENGINEER.
- 3. LIQUID TIGHT FLEXIBLE CONDUIT FINAL CONNECTIONS TO MOTORS MECHANICAL EQUIPMENT
- AND SYSTEMS FURNITURE 4. ARMORED CABLE (MC OR AC WITH INSULATED GROUND CONDUCTOR) - BRANCH CIRCUITING IN
- CONCEALED LOCATIONS ONLY. 5. RIGID NONMETALLIC CONDUIT - WET LOCATIONS, INSTALLED AND EQUIPPED SO AS TO PREVENT WATER FROM ENTERING CONDUIT, ALL SUPPORTS, STRAPS, SCREWS, ETC., SHALL BE OF CORROSION RESISTANT MATERIAL OR PROTECTED BY CORROSION RESISTANT MATERIAL. DRY
- AND DAMP LOCATIONS. UNDERGROUND INSTALLATIONS.
- H) ALL CONDUIT AND TUBING SHALL BE CUT SQUARE AND REAMED AT THE ENDS.
- CONDUIT AND TUBING RUNS SHALL BE MECHANICALLY AND ELECTRICALLY CONTINUOUS FROM SERVICE STARTING TO ALL OUTLETS AND EQUIPMENT. CONDUIT SHALL ENTER AND BE SECURELY CONNECTED TO A CABINET, JUNCTION BOX, PULLBOX OR OUTLET BOX BY MEANS OF LOCKNUTS ON THE OUTSIDE AND INSIDE AND AN INSULATED BUSHING ON THE INSIDE. IN TUBING OR FLEXIBLE METAL CONDUIT THE ONE COMPRESSION LOCKNUT SHALL BE MADE WRENCH-TIGHT. ALL LOCKNUTS SHALL BE THE BONDING TYPE WITH SHARP EDGES FOR DIGGING INTO THE METAL WALL OF AN ENCLOSURE AND SHALL BE INSTALLED IN A MANNER THAT WILL ASSURE A LOCKING AND ELECTRICALLY CONTINUOUS INSTALLATION. LOCKNUTS AND BUSHINGS ARE NOT REQUIRED WHERE CONDUITS ARE SCREWED INTO TAPPED CONNECTIONS.
- J) ALL VERTICAL RUNS OF CONDUIT OR TUBING TERMINATING IN THE BOTTOMS OF WALL BOXES OR CABINETS, OR SIMILAR LOCATIONS, SHALL BE PROTECTED FROM THE ENTRANCE OF FOREIGN MATERIAL PRIOR TO THE INSTALLATION OF CONDUCTORS.
- K) UNLESS OTHERWISE SPECIFIED, ALL CONDUIT AND TUBING SHALL BE INSTALLED CONCEALED. IN GENERAL, ALL CONDUIT AND TUBING SHALL BE RUN IN HUNG CEILINGS AND FURRED SPACES WHERE THEY EXIST. WHERE CONDUIT IS RUN EXPOSED IT SHALL BE SECURELY SUPPORTED WITH ZINC COATED MALLEABLE IRON PIPE STRAPS OR OTHER APPROVED MEANS. ALL CONDUITS SHALL BE SUPPORTED FROM STRUCTURAL MEMBERS.
- L) CONDUIT SYSTEM SHALL BE INSTALLED COMPLETE BEFORE ANY CONDUCTORS ARE DRAWN IN. WIRE PULLING LUBRICANTS, WHEN UTILIZED, SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF UNDERWRITERS' LABORATORIES, INC., APPLICABLE TO THE SPECIFIC CONDUCTOR OR CABLE INSULATION AND RACEWAY MATERIAL.

M)	WHERE REQUIRED BY THE ENGINEER, EXTRA DEEF USED TO FACILITATE THE INSTALLATION OF THE CO
<u>1.08</u>	BOXES
A)	OUTLET, PULL AND JUNCTION BOXES SHALL BE FAUUL 514 AND NEMA OS1. BOXES FOR INTERIOR LOCA SHEET STEEL. BOXES FOR MECHANICAL ROOMS S
B)	BOXES SHALL CONTAIN SUITABLE KNOCKOUTS. BA CODE AND TO SEPARATE SWITCHES FOR 277 VOLT
C)	BOXES SHALL BE SIZED AS REQUIRED BY CODE FO THEREIN, EXCEPT WHERE NOTED TO BE LARGER, T DEEP. COVERS GREATER THAN 50LB SHALL BE DIV
D)	WIREWAYS AND AUXILIARY GUTTERS SHALL BE TW GRAY ENAMEL FINISH. COVERS SHALL BE COMBINA SHALL HAVE REGULARLY SPACED KNOCKOUTS FOI MANUFACTURED BY SQUARE D OR APPROVED EQU REQUIRED ACCESSORIES.
1.08	FASTENERS
A)	PROVIDE INSERTS, EXPANSION SHIELD LUGS, ANCH ANY OTHER TYPE OF FASTENING DEVICES REQUIR FLOORS, WALLS OR CEILINGS. UNLESS OTHERWISE CONTRACT DRAWINGS, ALL FASTENERS SHALL BE RECOMMENDED BY THE EQUIPMENT MANUFACTUR
1.09	WIRES, CABLES, SPLICES AND TERMINATION
A)	POWER AND CONTROL WIRING SHALL BE COPPER, THHN/THWN INSULATION RATED 600 VOLTS. MINIMU SHALL BE SOLID FOR WIRE SIZED #10 AWG AND SM AND LARGER.
B)	METAL CLAD CABLE SHALL BE 90°C RATED CODE TY GROUND CONDUCTOR IN ACCORDANCE WITH UL 4.
C)	CONDUCTORS SHALL BE COLOR CODED AS FOLLOW
	208/120V PHASE BLACK A RED B BLUE C WHITE NEUTRAL GREEN GROUND
D)	CONDUCTOR SIZES SHALL BE INCREASED WHERE I
E)	COMPENSATE FOR VOLTAGE DROF AND HIGH AMD COMMUNICATIONS CABLING RUN EXPOSED IN AIR H
F)	SPLICES FOR WIRE SIZES #10 AWG AND SMALLER S TAPE. SPLICES FOR WIRE SIZES #8 AWG AND LARG WITH PRE-MOLDED COVER AND TAPE.
G)	TERMINATIONS OF POWER AND CONTROL WIRING LUGS FOR WIRE SIZES #8 AWG AND LARGER. MECH TERMINATIONS AT BRANCH CIRCUIT PANELBOARDS
<u>1.10</u>	WIRING DEVICES
A)	WIRING DEVICES SHALL BE DECORA STYLE WITH N DRAWINGS. COLOR OF DEVICES SHALL BE AS SELE BE MANUFACTURED BY ARROW-HART, HUBBELL, LE
B)	FACEPLATES SHALL BE UNBREAKABLE NYLON UNLI SHALL BE FURNISHED FOR ALL COMMUNICATIONS SYSTEM SUPPLIERS' REQUIREMENTS.
C)	DEVICES MOUNTED ADJACENT TO EACH OTHER SH AND BE GANGED IN ONE BOX.
D)	ALL DEVICES SHALL BE MOUNTED AT LOCATIONS A DRAWINGS.
E)	WHERE NEW, EXISTING OR NEW AND EXISTING SW SWITCHES BEHIND COMMON FACEPLATE.
<u>1.11</u>	BRANCH CIRCUIT PANELBOARDS
A)	BRANCH CIRCUIT PANELBOARDS SHALL BE 208/120 BARS, NEUTRAL BUS AND SEPARATE GROUND BUS SHALL BE MECHANICAL TYPE. FEED-THROUGH LUG MULTI SECTION PANELS. PANELBOARDS SHALL BE ELECTRIC/SQUARE D, GENERAL ELECTRIC, SIEMEN
B)	CIRCUIT BREAKERS SHALL BE MOLDED CASE, BOLT ELEMENT. MINIMUM INTERRUPTING RATINGS SHALI MOUNTED SEPARATELY FROM BRANCH BREAKERS
C)	PANELBOARD ENCLOSURES SHALL BE GALVANIZED TYPE IN UNFINISHED SPACES AND FLUSH TYPE IN F FINISH. DOORS SHALL BE DOOR IN DOOR TYPE CON LOCKS SHALL BE KEYED ALIKE. FURNISH ONE KEY
D)	PANELS SHALL HAVE A MINIMUM OF 4" GUTTER SPA
E)	FURNISH AND INSTALL TYPEWRITTEN DIRECTORIES
F)	PANELS NOT MOUNTED ON STRUCTURAL WALLS SH INDEPENDENTLY OF WALL CONSTRUCTION BUT LA PANELBOARDS SHALL BE PROVIDED WITH (3) 1" EM CEILING.
G)	PANELS MOUNTED ON MASONRY WALLS SHALL BE SPACE BETWEEN PANELBOARD AND WALL.
<u>1.12</u>	DISTRIBUTION PANELBOARDS
A)	DISTRIBUTION PANELBOARDS SHALL BE 208/120V, 3 COPPER BUS BARS, NEUTRAL BUS AND SEPARATE CABLE LUGS SHALL BE MECHANICAL TYPE. PANELE ELECTRIC/SQUARE D, GENERAL ELECTRIC, SIEMEN

- B) CIRCUIT BREAKERS SHALL BE MOLDED CASE, BOLT-IN-PLACE WITH THERMAL-MAGNETIC TRIP ELEMENT. MINIMUM INTERRUPTING RATINGS SHALL BE 22,000 AIC FOR 208/120V AND 65,000 AIC FOR 480/277V. MAIN CIRCUIT BREAKERS SHALL BE MOUNTED SEPARATELY FROM BRANCH BREAKERS AT TOP OR BOTTOM.
- C) PANELBOARD ENCLOSURES SHALL BE GALVANIZED CODE GAUGE STEEL. TRIMS SHALL BE SURFACE TYPE IN UNFINISHED SPACES AND FLUSH TYPE IN FINISHED SPACES, WITH ANSI 61 GRAY ENAMEL FINISH. DOORS SHALL BE DOOR IN DOOR TYPE CONSTRUCTION AND SHALL BE LOCKABLE AND ALL LOCKS SHALL BE KEYED ALIKE. FURNISH ONE KEY FOR EACH PANEL.
- D) PANELS SHALL HAVE A MINIMUM OF 4" GUTTER SPACE ON BOTH SIDES.
- E) FURNISH AND INSTALL TYPEWRITTEN DIRECTORIES FOR EACH PANELBOARD, NEW AND EXISTING, INDICATING DEVICES SERVED.
- F) PANELS NOT MOUNTED ON MASONRY WALLS SHALL BE SUPPORTED FROM THE FLOOR INDEPENDENTLY OF WALL CONSTRUCTION BUT LATERALLY SECURED TO WALL.
- G) PANELS MOUNTED ON MASONRY WALLS SHALL BE SHIMMED WITH WASHERS TO PROVIDE A 1/2" SPACE BETWEEN PANELBOARD AND WALL.

P OR EXTRA SHALLOW OUTLET BOXES SHALL BE ONDUIT SYSTEM.

- BRICATED FROM STEEL AND CONFORM TO UL 50, ATIONS SHALL BE CODE GAUGE, GALVANIZED SHALL BE CAST STEEL WITH GASKETED COVERS.
- ARRIERS SHALL BE FURNISHED AS REQUIRED BY CIRCUITS ON DIFFERENT PHASES.
- OR NUMBER AND GAUGE OF CONDUCTORS THE MINIMUM BOX SHALL BE 4" SQUARE BY 1-1/2" IDED INTO MULTIPLE SECTIONS.
- VO-PIECE STEEL CONSTRUCTION WITH ANSI 61 ATION HINGED AND SCREW-ON TYPE. HOUSINGS R CONDUIT ENTRY. WIREWAYS SHALL BE UAL. PROVIDE ALL END PIECES, CONNECTORS AND

HORS, BOLTS WITH NUTS AND WASHERS, SHIMS OR RED TO FASTEN PANELS OR OTHER EQUIPMENT TO SPECIFIED HEREIN OR SHOWN ON THE HOT-DIPPED GALVANIZED, OF SIZES AND TYPES RER AND AS APPROVED BY THE ENGINEER.

- , MINIMUM 98% CONDUCTIVITY, WITH TYPE IUM WIRE SIZE SHALL BE #12 AWG. CONDUCTORS ALLER AND STRANDED FOR WIRE SIZES #8 AWG
- YPE ACTHH WITH A SEPARATE GREEN INSULATED JACKET SHALL BE GALVANIZED STEEL ARMOR.



- REQUIRED BY CODE AND/OR THE ENGINEER TO IENT TEMPERATURE.
- HANDLING PLENUMS SHALL BE TYPE CMP PLENUM
- SHALL BE MADE WITH SPRING CONNECTORS AND GER SHALL BE HYDRAULIC COMPRESSION TYPE
- SHALL BE COMPRESSION TYPE, WITH TWO-HOLE HANICAL LUGS MAY ONLY BE UTILIZED FOR
- NEMA CONFIGURATIONS AS INDICATED ON THE ECTED BY THE ARCHITECT. WIRING DEVICES SHALL VITON, PASS & SEYMOUR OR APPROVED EQUAL
- ESS SPECIFIED BY THE ARCHITECT. FACEPLATES OUTLETS AND SHALL BE CONFIGURED TO SUIT THE
- HALL BE FURNISHED WITH A COMMON FACEPLATE
- AND HEIGHTS AS INDICATED ON ARCHITECTURAL
- /ITCHES ARE MOUNTED AT SAME LOCATION, MOUNT
- V, 3Ø, 4-WIRE CONFIGURATION WITH COPPER BUS S BONDED TO PANEL ENCLOSURE. CABLE LUGS GS & CABLE CONNECTIONS SHALL BE PROVIDE FOR MANUFACTURED BY SCHNEIDER NS, OR CUTLER-HAMMER.
- I-IN-PLACE WITH THERMAL-MAGNETIC TRIP BE 22,000 AIC. MAIN CIRCUIT BREAKERS SHALL BE AT TOP OR BOTTOM.
- D CODE GAUGE STEEL. TRIMS SHALL BE SURFACE FINISHED SPACES, WITH ANSI 61 GRAY ENAMEL NSTRUCTION AND SHALL BE LOCKABLE AND ALL FOR EACH PANEL.
- ACE ON BOTH SIDES.
- S FOR EACH PANELBOARD, NEW AND EXISTING,
- HALL BE SUPPORTED FROM THE FLOOR TERALLY SECURED TO WALL FLUSH MOUNTED IPTY CONDUITS TERMINATED ABOVE THE FINISHED
- SHIMMED WITH WASHERS TO PROVIDE A 1/2"
- 3Ø, 4-WIRE CONFIGURATION AS SCHEDULED WITH GROUND BUS BONDED TO PANEL ENCLOSURE. BOARDS SHALL BE MANUFACTURED BY SCHNEIDER NS, OR CUTLER-HAMMER.

- 1.13 SAFETY SWITCHES
- A) SAFETY DISCONNECT SWITCHES SHALL BE 250V OR 600V AS REQUIRED, HEAVY DUTY, HORSEPOWER RATED, QUICK MAKE-QUICK BREAK DESIGN WITH HANDLES LOCKABLE IN THE OPEN (OFF) POSITION. SWITCH HOUSINGS SHALL INCLUDE COVER INTERLOCK AND LINE SIDE TERMINAL SHIELD AND GROUNDING LUG. FUSE CLIPS SHALL BE REJECTION TYPE. INTERRUPTING RATINGS SHALL BE A MINIMUM OF 100,000 AIC WHEN FUSED AND 12 TIMES THE CONTINUOUS CURRENT RATING WHEN UNFUSED AT RATED VOLTAGE.
- 1.14 LIGHTING FIXTURES AND EQUIPMENT
- A) LIGHTING FIXTURES SHALL BE SPECIFICATION GRADE AND FURNISHED COMPLETE WITH ALL REQUIRED MOUNTING HARDWARE. FIXTURES SPECIFIED IN THE LIGHTING FIXTURE SCHEDULE ESTABLISH THE PERFORMANCE REQUIREMENTS. SUBSTITUTIONS MUST MEET OR EXCEED THE PERFORMANCE OF THE SPECIFIED FIXTURE.
- B) CONTRACTOR SHALL ENSURE COMPATIBILITY BETWEEN FIXTURE TRIMS AND CEILING SYSTEMS. FIXTURES RECESSED IN ACCESSIBLE CEILINGS SHALL BE FURNISHED WITH SEISMIC RESTRAINTS. FIXTURES RECESSED IN NON-ACCESSIBLE CEILINGS SHALL BE DESIGNED FOR BALLAST OR TRANSFORMER ACCESS THROUGH THE FIXTURE OPENING.
- C) PROVIDE EMERGENCY LIGHTING INVERTERS FOR LED FIXTURES. PROVIDE FACTORY INSTALLED OR SINGLE FIXTURE EMERGENCY INVERTER FOR AREAS WITH (1) FIXTURE DENOTED AS EMERGENCY. PROVIDE EMERGENCY LIGHTING INVERTER SYSTEM FOR AREAS WITH MULTIPLE EMERGENCY FIXTURES
- D) BATTERY PACK / INVERTER SHALL HAVE UNIVERSAL INPUT CIRCUIT FOR 120/277VAC OPERATION, A TEST SWITCH AND PILOT LIGHT AND BE CAPABLE OF BEING WIRED TO OPERATE WITH SWITCHED, DIMMED OR NORMALLY OFF FIXTURE WITHOUT AFFECTING NORMAL OPERATION.
- E) LOCATIONS OF LIGHTING FIXTURES INDICATED ON THE DRAWINGS ARE APPROXIMATE. CONTRACTOR SHALL REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS, MODELS, AND TRIM TYPES OF ALL LIGHTING FIXTURES PRIOR TO INSTALLATION.
- F) FIXTURES SHALL BE ATTACHED TO CEILING SUPPORTING MEMBERS, AND SHALL NOT DEPEND UPON LATHING OR PLASTER FOR ALIGNMENT OR SUPPORT. FIXTURES IN SUSPENDED CEILINGS SHALL BE SUPPORTED BY SADDLE HANGERS OR TIE-BARS ATTACHED TO RUNNERS OR BETWEEN CROSSBARS OF CEILING SYSTEMS. MOUNTING SPLINES OR OTHER POSITIVE MEANS OF MAINTAINING ALIGNMENT AND RIGIDITY SHALL BE PROVIDED. SUPPORTING MEMBERS SHALL BE SURFACE PASSIVATED AND SHALL BE PRIMED OR PAINT DIPPED TO RESIST CORROSION. FASTENING DEVICES SHALL BE OF A POSITIVE, LOCKING TYPE, AND SHALL NOT REQUIRE THE USE OF SPECIAL TOOLS TO REMOVE. TIE WIRES SHALL NOT BE USED IN PLACE OF FASTENING DEVICES.
- G) HANGING OF LIGHTING FIXTURES IS TO BE DONE IN ACCORDANCE WITH LOCAL CODES LIGHTING FIXTURES WEIGHING UP TO AND INCLUDING 40 POUNDS MAY BE SUPPORTED FROM THE STEEL "Z" BARS. LIGHTING FIXTURES WEIGHING FROM 41 POUNDS UP TO AND INCLUDING 80 POUNDS MAY BE SUPPORTED FROM THE PURLINS. LIGHTING FIXTURES WEIGHING OVER 80 POUNDS SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE AND NOT FROM THE CEILING SUSPENSION SYSTEM.
- H) SPLICES SHALL NOT BE PERMITTED IN ANY RUN OF LIGHTING FIXTURE HOOKUP WIRE.
- SEPARATELY MOUNTED OUTLET BOXES AND FLEXIBLE CONDUIT PIGTAIL CONNECTIONS (MAXIMUM LENGTH OF 6'-0") SHALL BE PROVIDED FOR LIGHTING FIXTURES RECESSED IN HUNG CEILINGS WITH ACCESSIBLE TILES. ONE (1) OUTLET BOX MAY SERVE UP TO A MAXIMUM OF FOUR (4) RECESSED LIGHTING FIXTURES.
- 1.15 LIGHTING CONTROLS
- A) SENSORS AND SWITCH CONTROL SYSTEMS SHALL BE MANUFACTURED BY WATTSTOPPER, COOPER CONTROLS OR APPROVED EQUAL. SYSTEM SHALL CONSIST OF THE FOLLOWING:
- 1. CEILING MOUNTED OCCUPANCY/VACANCY SENSOR WATTSTOPPER MODEL #DT-300
- 2. 24VDC UNIVERSAL VOLTAGE POWER PACK WATTSTOPPER BZ-150 3. WALL MOUNTED OVERRIDE SWITCH FOR CEILING MOUNTED OCCUPANCY/VACANCY SENSORS WATTSTOPPER MODEL #DCC2.
- 4. WALL MOUNTED VACANCY SENSOR SWITCH WATTSTOPPER MODEL #DSW-301
- 5. ALL ASSOCIATED WIRING AS PER MANUFACTURERS SPECIFICATIONS.
- B) SENSORS SHALL UTILIZE A COMBINATION OF PASSIVE INFRARED AND ULTRASONIC TECHNOLOGY TO ACTIVATE AND/OR MAINTAIN LIGHTING. SENSORS SHALL INCLUDE ADJUSTMENTS FOR COVERAGE PATTERN AND SENSITIVITY, TIME DELAY TO OFF (1 MIN. - 20 MIN.) WITH LED DISPLAYS.
- C) BEFORE THE TENANT MOVE-IN DATE AND TURN OVER OF THE PROJECT, THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE SENSITIVITY, CALIBRATION AND ADJUSTMENTS OF ALL SENSORS IN THE FIELD IN CORRELATION WITH LIGHTING REQUIREMENTS, USAGE, AND THE OWNER.

1.16 GROUNDING

- A) THE DISTRIBUTION SYSTEM SHALL BE COMPLETELY AND PROPERLY GROUNDED USING APPROVED FITTINGS. SEPARATE INSULATED GROUND CONDUCTORS SHALL BE RUN WITH ALL FEEDERS WHERE INDICATED, RECEPTACLE BRANCH CIRCUITS AND FLEXIBLE CONNECTIONS TO LIGHTING FIXTURES AND EQUIPMENT.
- B) METAL RACEWAYS, METAL ENCLOSURES OF ELECTRICAL DEVICES AND OTHER EQUIPMENT SHALL BE COMPLETELY GROUNDED IN AN APPROVED MANNER. PROPER HARDWARE REQUIRED FOR A COMPLETE GROUNDING SYSTEM SHALL BE INSTALLED BY THE CONTRACTOR.
- C) GROUND RODS SHALL BE $\frac{3}{4}$ X 10'-0" COPPERWELD TYPE WITH EXOTHERMICALLY WELDED

1.17 FIRE ALARM SYSTEM

CONNECTIONS.

- A) GENERAL SYSTEM DESCRIPTION AND REQUIREMENTS:
- 1. THE SYSTEM SHALL CONSIST OF AN ADDRESSABLE MAIN FIRE ALARM CONTROL PANEL (FACP). REMOTE ANNUNCIATOR PANEL AND REMOTE DEVICES AS SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
- 2. THE FACP SHALL INCLUDE SUPERVISED MONITORING CIRCUITS AND CONTROL CIRCUITS, ALARM SIGNALING, CONTROL, AND SUPERVISION. 3. THE FACP SHALL CONTAIN ALL REQUIRED SYSTEM PROGRAMING WHICH SHALL FACILITATE THE
- PRIORITIZED SELECTIVE OPERATION OF ANY OR ALL CONTROL CIRCUITS. 4. A FOUR (4) CHANNEL DIGITAL COMMUNICATOR AND CONNECTION TO TELEPHONE LINE SHALL BE PROVIDED FOR CENTRAL STATION NOTIFICATION AS SPECIFIED BELOW.

- B) SUBMITTALS 1. IN ADDITION TO SUBMITTALS SPECIFIED ABOVE, SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR THE FIRE ALARM SYSTEM AS FOLLOWS: 1.1. DRAWINGS
 - 1.1.1. THE SYSTEM MANUFACTURER SHALL PREPARE DETAILED SHOP DRAWINGS INCLUDING WIRING DIAGRAMS, VOLTAGE DROP AND BATTERY CALCULATIONS, MANUFACTURER CUT SHEETS AND FLOOR PLANS OF THE ENTIRE FIRE ALARM
 - SYSTEM
 - 1.1.2. WIRING DIAGRAMS SHALL BE COMPLETE AND SHALL INCLUDE DEVICES, WIRING, RACEWAYS, CONNECTIONS AND TERMINAL DESIGNATIONS.
 - 1.2. SEQUENCE OF OPERATION 1.2.1. THE SYSTEM MANUFACTURER SHALL PREPARE A WRITTEN DESCRIPTION OF THE SYSTEM HARDWARE AND OPERATIONS DETAILING THOSE ITEMS THAT ARE AT VARIANCE WITH THE CONTRACT DOCUMENTS.
- C) SYSTEM OPERATION

1. THE ADDRESSABLE FIRE ALARM AND DETECTION SYSTEM SHALL PROVIDE FUNCTIONS AND OPERATING FEATURES AS REQUIRED BY CODE.

D) SYSTEM COMPONENTS

1. FIRE ALARM CONTROL PANEL (FACP) SHALL BE A MICROPROCESSOR BASED, FULLY

- ADDRESSABLE 2-LOOP (INDICATING CIRCUIT) PANEL AND SHALL INCLUDE THE FOLLOWING: 1.1. MAIN CONTROL BOARD WITH ADDITIONAL OR SUPPLEMENTARY MODULES AS REQUIRED TO ACCOMMODATE SPECIFIED FUNCTIONS, LCD ANNUNCIATOR AND KEYPAD.
- 1.2. 24V DC POWER SUPPLY WITH EXTENDER PANEL/POWER SUPPLY AS REQUIRED FOR
- SPECIFIED NOTIFICATION CIRCUITS (MIN. 1.5A PER CIRCUIT). 1.3. BATTERY BACK-UP MODULE (S).
- 1.4. ADDITIONAL MODULES AND ACCESSORIES REQUIRED FOR PROPER SYSTEM OPERATION. 1.5. 4-CHANNEL DIGITAL COMMUNICATOR FOR CENTRAL STATION NOTIFICATION. 2. INDICATION AND ANNUNCIATION DEVICES
- 2.1. AREA SMOKE DETECTORS-ADDRESSABLE PHOTOELECTRIC-LISTED FOR USE AT HIGH
- VELOCITY AIR FLOW WHEN MOUNTED AT AIR RETURNS. 2.2. DUCT SMOKE DETECTORS-ADDRESSABLE PHOTOELECTRIC WITH DUCT HOUSINGS AND
- SAMPLING TUBES.
- 2.3. MANUAL FIRE ALARM STATIONS-ADDRESSABLE, DOUBLE ACTION.

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2.4. STROBES-ADA/UL 15/75CD, FLUSH MOUNTED 2.5. GONGS-10" DIA, SURFACE MOUNTED

ALL DEVICES SHALL BE FLUSH MOUNTED (COORDINATE WITH EXISTING BACK BOXES WHERE

ANNUNCIATOR PANEL - DIGITAL DISPLAY FOR ANNUNCIATION OF FACP.

VER SUPPLY THE FIRE ALARM CONTROL PANEL AND OTHER CONTROLS WITH 120VAC POWER. TEM SHALL BE EQUIPPED WITH BATTERY STANDBY FOR SYSTEM OPERATION DURING NORMAL POWER SOURCE AND AUTOMATICALLY TRANSFER TO THE BATTERIES UPON S OF 120VAC SUPPLY. E 25% CAPACITY FOR FUTURE DEVICES.

ALL POWER AND CONTROL WIRING REQUIRED FOR A FULLY OPERATIONAL SYSTEM ILL MONITORING AND SUPERVISION IN ACCORDANCE WITH APPLICABLE STANDARDS. E ALL APPURTENANCES (I.E. END OF LINE RESISTORS) NECESSARY. ID ALL EQUIPMENT SHALL BE COMPLETELY IDENTIFIED WITH ALL ZONE DATA AND ATES AS SPECIFIED. PROVIDE COPIES OF THE PANEL AND SYSTEM WIRING DIAGRAMS IN

ET INSIDE THE FACP PANEL COVER. E CONTACTS AS REQUIRED TO CONTROL ALL HVAC EQUIPMENT. QUANTITY, LOCATION QUIREMENTS FOR ALL INTERFACES SHALL BE COORDINATED WITH EXISTING HVAC ENT AND SHALL BE IDENTIFIED ON THE FIRE ALARM SYSTEM SHOP DRAWING TALS.

ACTOR SHALL VISIT THE SITE AND CAREFULLY EXAMINE EXISTING CONDITIONS AND ORM ALL WORK REQUIRED TO ACHIEVE THE FINAL DESIGN INTENT AS REQUIRED BY THE OCUMENTS. THE EXTENT OF ALL REMOVAL WORK SHALL BE COORDINATED WITH THE

ESS OF REMOVING WIRING DEVICES, LIGHTING FIXTURES AND OTHER ELECTRICAL AND MATERIALS. THIS CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO PREVENT ARCHITECTURAL SURFACES AND MATERIALS WHICH ARE TO REMAIN, INCLUDING WALLS. LINGS, WINDOWS, DOORS, MOLDINGS, STRUCTURAL MEMBERS, ETC. THE COST TO REPLACE ANY MATERIAL DEEMED BY THE ARCHITECT TO HAVE BEEN UNDULY DAMAGED ITRACTOR DURING DEMOLITION OR CONSTRUCTION SHALL BE PAID BY THIS R AT NO ADDITIONAL COST TO THE OWNER.

UNUSED CONDUIT AND WIRING SHALL BE DROPPED TO THE FLOOR BY THE I FOR REMOVAL FROM THE BUILDING BY DEMOLITION OR GENERAL CONTRACTOR.

TION OF WORK

OARDS, EQUIPMENT AND CABINETS SPECIFIED HEREIN SHALL BE CLEARLY IDENTIFIED QUIPMENT DESIGNATION, VOLTAGE AND AMPERE RATING, FUSE RATING, EQUIPMENT ORIGIN OF THE INCOMING FEED. IDENTIFICATION SHALL BE WHITE ON BLACK PLASTIC WITH ½" MINIMUM LETTERING ATTACHED BY SCREWS.

OF SWITCHES FOR EQUIPMENT SUCH AS REMOTE FANS AND MOTORIZED SCREENS ENTIFIED WITH THE NAME OF THE DEVICE CONTROLLED. IDENTIFICATION SHALL BE BY ARKER IN CONCEALED LOCATIONS AND ADHESIVE LABELS IN EXPOSED LOCATIONS. DEVICES SHALL BE IDENTIFIED IN RED.

DUITS SHALL BE IDENTIFIED WITH TAGS AT BOTH ENDS INDICATING THE LOCATION OF N AT THE OPPOSITE END.

HALL BE IDENTIFIED BY PANEL AND CIRCUIT NUMBER AT ALL TERMINATION AND SPLICE HE USE OF BRADY B-500 VINYL CLOTH TAPE OR EQUIVALENT METHOD.

IN BOXES SHALL BE IDENTIFIED WITH PANEL AND CIRCUIT NUMBERS OF ALL CIRCUITS OR MMUNICATIONS SYSTEM CABLING CONTAINED WITHIN. JUNCTION BOXES IN EXPOSED SHALL BE CLEARLY MARKED WITH IDENTIFYING LABELS. JUNCTION BOXES IN CONCEALED SHALL BE MARKED WITH A BOLD, INDELIBLE MARKING PEN. LETTERING SHALL BE NEATLY PRINTED, JUNCTION BOXES ON EMERGENCY SERVICE SHALL BE PAINTED RED AND EMERGENCY.

NS FOR BRANCH CIRCUITING AND/OR COMMUNICATIONS CABLING SHALL BE IDENTIFIED TLET AND PULL BOX WITH CIRCUIT NUMBER OR SYSTEM NAME.

AND SUPPORTS

RODS SHALL BE FULLY GALVANIZED, MINIMUM 3/8" DIAMETER. MODULAR CHANNEL HALL BE GALVANIZED STEEL. SUPPORT CLIPS AND FASTENERS SHALL BE LISTED AND OR THE APPLICATION. STRAPS AND CLAMPS SHALL BE MALLEABLE IRON.

HALL BE SIZED TO ACCOMMODATE THE LOAD REQUIRED. ALL WORK SHALL BE INDEPENDENTLY OF THE WORK OF OTHER TRADES, INCLUDING CEILING SYSTEM

EQUIPMENT LOCATED ON OTHER THAN MASONRY WALLS SHALL BE MOUNTED WITH ANNEL SUPPORTS SECURED TO THE BUILDING STRUCTURE.

ANUP AND FIELD TESTS

PLETION OF THE ENTIRE ELECTRICAL INSTALLATION:

ITRACTOR, PRIOR TO FINAL ACCEPTANCE, SHALL CLEAN ALL PANELS, SWITCHES, IS, DEVICES PLATES, FIXTURES AND OTHER ITEMS FURNISHED UNDER THIS CONTRACT ALL ENSURE THAT ALL PANELBOARD DIRECTORIES ARE IN PLACE AND COMPLETED OR AS REQUIRED BY THE WORK, AND THAT ALL IDENTIFICATION AND MARKING OF INT. CABLES, ALL JUNCTION BOXES AND OTHER ITEMS IS COMPLETED. NTRACTOR SHALL REPAIR OR REPLACE, AS DIRECTED BY THE ENGINEER, ANY ITEM D DUE TO INSTALLATION OR RELOCATION OF EQUIPMENT OR DEVICES AT NOT NAL COST TO THE OWNER.

TO OTHER TESTS WHICH MAY BE REQUIRED BY OTHER DIVISIONS, PERFORM FIELD PRESENCE OF THE ENGINEER, TO DEMONSTRATE THE PROPER FUNCTIONING OF THE INSTALLATION. THE ENGINEER SHALL BE GIVEN A MINIMUM OF 48 HOURS ADVANCE LL TESTS. REQUIRED FIELD TESTS SHALL INCLUDE, BUT NOT BE LIMITED TO THE

ION OF ALL ELECTRICAL EQUIPMENT FOR A PERIOD FOR A PERIOD OF 24 HOURS INTERRUPTION.

LT MEGOHMMETER TEST FOR ALL WIRES AND CABLES FURNISHED. CONTRACTOR SHALL A TEST REPORT TO THE ENGINEER INDICATING TEST METHOD USED AND RESULTS.

IVE FIXTURES CABLES OR OTHER EQUIPMENT ENCOUNTERED DURING THE COURSE OF ALL BE PROMPTLY REPLACED AND RETESTED TO THE SATISFACTION OF THE ENGINEER.

<u>CLOSEOUT</u>

PLETION OF PROJECT AND PRIOR TO REQUESTING FINAL PAYMENT, THE CONTRACTOR WRITTEN NOTICE THAT THE FOLLOWING ITEMS HAVE BEEN COMPLETED:

DRAFT

ED AGENCY APPROVALS. EANING AND ADJUSTMENT OF LIGHTING FIXTURES AND EQUIPMENT. TION OF OUTSTANDING SUBMITTALS AND PUNCH LIST ITEMS. DRAWINGS

STARTUP, TESTING AND ADJUSTMENT. 6. MANUFACTURER'S CERTIFICATIONS, WARRANTIES AND O&M MANUALS.



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Scale

1/8" = 1'-0"



BASEMENT PLAN

E100 SCALE: 1/8" = 1'-0"





E102 SCALE: 1/8" = 1'-0"

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E202 SCALE: 1/8" = 1'-0"

PLENUM RATED, CAT5 CABLE PER MANUFACTURER'S SPECIFICATIONS IN 3/4"C (TYP)

PROVIDE ALL REQUIRED INITIAL PROGRAMMING, TRAINING, WARRANTY (3-YEAR) AND SETUP FROM MANUFACTURER. 3. DAYLIGHT SENSORS SHALL CONTROL ALL LIGHTING ZONES AND PROVIDE UNIFIED LIGHTING THROUGHOUT THE ROOM.

6 BOND TO ENCLOSURE

8 WATER METER WITH JUMPER

9 BRONZE CLAMP (ONE PER JUMPER CABLE)

(7) NEUTRAL BUS

NOTES:

- (1) SERVICE EQUIPMENT ENCLOSURE
- (2) GROUNDING ELECTRODE CONDUCTOR
- (U.G. METAL PIPE)
- GROUNDING ELECTRODE -3/4"x10' COPPER CLAD GROUND ROD(S)
- 5 GROUNDING ELECTRODE (BUILDING STEEL/REBAR)

WITH ELECTRICAL SERVICE (INSIDE AND ORDINATED WITH UTILITY CO. PRIOR TO SAL OR CONDUIT INSTALLATION, IFY SERVICE REQUIREMENTS WITH THE	PLATO MARINAKOS, JR. ARCHITECT, LLC www.plato-studio.com 107 S 2nd Street 4th Floor Philadephia, PA 19106 267-866-0930 OFFICE 267-866-0931 DIRECT plato@plato-studio.com
¹ MENT AND PANELBOARDS SHALL BE REMAINING AFTER DEMOLITION SHALL PANEL. NEW CIRCUIT BREAKERS IG OF EXISTING FOR ALL CIRCUITS TER DEMOLITION. CONTRACTOR SHALL CUITS AND FIELD VERIFY ALL CIRCUIT L BE LABELED ACCORDINGLY IN NEW	ARCHITECT SEAL MUST BE IN RED INK OWNER
	ISSUED BY: PLATO A. MARINAKOS JR ARCHITECT, LLC FOR " APPROVAL" BY OUR CLIENT AND CUSTOMER CLIENT IS REQUIRED TO CHECK (X) ONE BOX APPROVED AS IS APPROVED AS NOTED ONLY CLIENT SIGNATURE DATE NAME (PLEASE PRINT) KINDLY RETURN ALL DRAWINGS FOR THE COMPLETE BUILDING, SIGNED AND DATED TO OUR OFFICE LOCATION.
	716 EMERSON AVE - CHURCH
DRAFT	ELECTRICAL DIAGRAMS Project number N/A Date 05/01/2021 Drawn by Author Checked by Checker E3000 Scale 1/8" = 1'-0"

	PANEL:	PA	NEL RLP-1		208 /120	VOLTS,	3	PHASE	4 WI	RE	MAIN BU	S 125	AMPS			
LO	CATION:	STOP	RAGEROOM		MC	UNTING:	SURF	ACE	FLUS	н	MAIN BRK AMPS F			þ		
В	BUILDING: 716 EMERSON AVE - GYM		BUS		COPPER			NUM	NEUTRA	L 100%	AIC	22,0	000			
FED FROM: SEE SINGLE LINE DIAGRAM			GROUND BUS				THRU-FEED LUGS			MAIN	LUGS OF	VLY				
FEED	ER SIZE	SEE SINGI	LE LINE DIAGRA	М	ISOL.G	ND. BUS			* SHUNT TF	RIP BRKR.	FEED:	TOP		ЗТМ		
CKT	TRIP				LOAD	PE	R PHASE (VA)		LOAD				TRIP	CKT		
NO	AMPS	DEGOR	Hold of Eor		(VA)	A	B	С	(VA)						AMPS	NO
1	20/1	RECER	PTS - OFFICE		900	1900			1000		LIGHTIN	IG - GYM			*20/1	2
3	20/1	RECEPTS	S - BATHROON	/IS	12 <mark>6</mark> 0		2260		1000		LIGHTIN	IG - GYM		3	*20/1	4
5	20/1	RECEPTS	- COURT SOL	JTH	540			1740	1200		LIGHTIN	IG - GYM			*20/1	6
7	20/1	RECEPTS	- COURT NOF	RTH	5 <mark>4</mark> 0	1440			900	LIGHT	TING - LOB	BY/OFFICE	E/EXITS	3	*20/1	8
9	20/1	RECEPT	S - ACTIVITY R	M	720		1920		1200	LIGHTING -	RESTRMS	S/ACTIVITY	RMS/ST	AFF	*20/1	10
11	20/1	RECEPT	S - ACTIVITY R	M	720			1520	800	l	LIGHTING	EXTERIO	R	7	*20/1	12
13	20/1	RECEP ⁻	TS - STAFF RM	1	720	1220			500	L	LIGHTING STAIRWELLS				*20/1	14
15	20/1	RECEPT	TS - EXTERIOF	र	900		1300		400	LIGHTING - MEZZANINE					*20/1	16
17	20/2	ADA LIFT (3#10+1#10G-3/4"C)			1500			1500	0		SPARE			3	*20/1	18
<mark>19</mark>					1500	1500			0	SPARE			1	*20/1	20	
21	20/1	RECEPTS - FRONT EXTERIOR			360		360		0		SPARE			3	*20/1	22
23	20/1	RECEPTS - MEZZANINE			720			720	0	SPARE				20/1	24	
25	20/1	RECEPTS	- SHELL SPA	CE	720	720			0	SPARE				20/1	26	
27	20/1	MOTORIZI		RD	750		750		0	SPARE				20/1	28	
29	20/1	MOTORIZI	ED BACKBOA	۲D	750			750	0	SPARE			20/1	30		
31	20/1	MOTORIZI	ED BACKBOA	RD	750	750			0	SPARE				20/1	32	
33	20/1	MOTORIZI	ED BACKBOA	RD	750		750		0		SP	ARE			20/1	34
35	20/1	SCO	REBOARD		5 <mark>0</mark> 0			500	0		SP	ARE			20/1	36
37	20/1		SPARE		0	0			0		SP	ARE			20/1	38
39	20/1		SPARE		0		0		0		SP	ARE			20/1	40
41	20/1		SPARE		0			0	0		SP	ARE			20/1	42
		Ν	MULT FACTOR		,							SF	ARE FA	CTOR		
TOTAL	LTG.	7000	1.00	7000	TOTAL BY	7530	7340	6730		TOTAL	DEMAND	21600	X		1.2	25
TOTAL	MISC.	6500	1.00	6500	PHASE					TOTAL LOAD 27000 VA			75	AMPS		
TOTAL	REC.	8100	Per NEC	8100	-											
TOTAL		0	- 1.00	0		ES HACE		R								
IOIAL		U	- 1.00	U	-											

	PANEL:		MP		208 /120	VOLTS.	3	PHASE	4 WIF	RE	MAINBL	JS 400 A	MPS		
10		U	TILITY ROOM		MC	UNTING	SURF	ACE		4	MAINBE	к <u> </u>	MPS	P	
B	UII DING:	716 FM	RSONAVE - GY	М		BUS	COPP	FR		INUM	NEUTRA	100%	AIC 22	 2 000	
FED FROM: SEE SINGLE LINE DIA GRAM		GROUND BUS								JGS ONLY	,	-			
FEEDER SIZE SEE SINGLE LINE DIA GRAM			ISOL.C	ND. BUS					FEED:	TOP	Пвтм				
CKT								(VA)						TRIP	СКТ
NO	AMPS	DESCR	RIPTION OF LOA	D	(VA)	Α	В	C	(VA)	D	ESCRIPTI	ON OF LOAD		AMPS	NO
1	50/3	CU-1 (4#	46+1#10G-1-1/4	"C)	4500	7000			2500	(CU-5 (4#8+1#10G-1"C)			35/3	2
3					4500		7000		2500						4
5					4500			7000	2500						6
7	50/3	CU-2 (4#	#6+1#10G-1-1/4	1"C)	4500	7000			2500	(CU-6 (4#8+	+1#10G-1"C)		35/3	8
9					4500		7000		2500						10
11					4500			7000	2500						12
13	50/3	CU-3 (4#6+1#10G-1-1/4"C)			4500	7000			2500	(CU-7 (4#8+	+1#10G-1"C)		35/3	14
15					4500		7000		2500						16
17					4500			7000	2500						18
19	50/3	CU-4 (4#6+1#10G-1-1/4"C)			4500	7000			2500	(CU-8 (4#8+1#10G-1"C)			35/3	20
21				4500		7000		2500						22	
23					4500			7000	2500						24
25	20/1		RTU-3		1500	1850			350	EF-1			20/1	26	
27	20/1		RTU-3		1500		1850		350	EF-2			20/1	28	
29	20/1		RTU-4		1500			3100	1600	RTU-1			30/3	30	
31	20/1		RTU-4		1500	3100			1600						32
33	20/1		SPARE		0		1600		1600						34
35	20/1		SPARE		0			1600	1600		RT	-U-2		30/3	36
37			SPACE		0	1600			1600						38
39			SPACE		0		1600		1600			•			40
41			SPACE		0			0	0		SP	ACE		20/1	42
			MULT FACTOR	2			-					SPA	RE FACTO	R	
TOTAL LTG.		0	1.00	0	TOTAL BY	34550	33050	32700		TOTAL	DEMAND	100300	Х	1.	25
TOTAL	MISC.	0	1.00	0	PHASE					TOTA	AL LOAD	125375 V	A	348	AMPS
TOTAL	KEC.	U 100200		100200	-										
TOTAL	HTG	0	1.00	0	-										
		v			_										

	PANEL:		MDP		208 /120	VOLTS		
LOC	ATION:	UTI	MC	DUNTING				
BUILDING:		716 E		BUS				
FED FROM:		SEE SINGI	GROU	UND BU				
		SEE SING	ISOL.G	ND. BU				
CKT NO	TRIP	DESCRIF	TION OF LO	LOAD (VA)	F A			
1	100/3	PAN	PANEL RLP-B					
3			7580					
5		8540						
7	100/3	7530	8530					
9								
11		6730						
13	20/1				0	0		
15	20/1				0			
17	20/1				0			
19	20/1				0	0		
21	20/1				0			
23	20/1				0			
	· ·	Ν	ULT FACTOR	२				
TOTAL	LTG.	10000	1.00	10000	TOTAL BY	5042		
TOTAL	MISC.	8000	1.00	8000	PHASE	0012		
TOTAL	REC.	22060	Per NEC	16030	_			
TOTAL	HVAC	106300	1.00	106300	_			
TOTAL	HTG	0	1.00	0	-			

					208 /120		3	DHASE	4 \A/IF					
		PANEL RLP- B V: STORAGE ROOM			2007120	VULIO,						D	l	
		. 716 EMERSON AVE- GYM										_F	l	
BU	JILDING.		RSUNAVE GTI	<u>/I</u>	-			-R				2,000	-	
			GRUL		BUS						l			
FEEDE		SEE SINGLE LINE DIAGRAM			ISOL.G	ND. BUS			* SHUNI IK					
NO	AMPS	DESCRIPTION OF LOAD RECEPTS - OFFICE			(VA)			(VA)	(VA)	D	ESCRIPTION OF LOAD	AMPS	NO	
1	20/1	RECEPTS - OFFICE			900	1900			1000	LIGH	LIGHTING - BASEMENT ROOMS			
3	20/1	RECEPT - 5	SERVER ROOM	M #1	1000		2000		1000	LIGH	TING - DINING RM FRONT	*20/1	4	
5	20/1	RECEPT - 5	SERVER ROOM	M #2	1000			2000	1000	LIGH	TING - DINING RM BACK	*20/1	6	
7	20/1	RECEPT - {	SERVER ROOM	M #3	1000	1000			0		SPARE	*20/1	8	
9	20/1	RECEPT - §	SERVER ROOM	M #4	1000		1000		0		SPARE	*20/1	10	
11	20/1	RECEPT	TS - BOILER RI	М	540			2040	1500		AHU-5	30/1	12	
13	20/1	RECEPT	S - BATHROON	٨S	540	2040			1500		30/1	14		
15	20/1	RECEPTS - DINING AREA			1080		2580		1500		AHU-7			
17	20/1	RECEF	PT - STAGE #1		1500			3000	1500		AHU-8			
19	20/1	RECEF	RECEPT - STAGE #2			1500			0		SPARE	20/1	20	
21	20/1	RECEF	RECEPT - STAGE #3				1500		0		SPARE	20/1	22	
23	20/1	RECEF	PT - STAGE #4		1500			1500	0		20/1	24		
25	20/1	RECEPTS - B	ATHROOMS N	ORTH	360	360			0		SPARE	20/1	26	
27	20/1		HWH		500		500		0		SPARE	20/1	28	
29	20/1		SPARE		0			0	0		20/1	30		
31	20/1	1	SPARE		0	0			0		SPARE	20/1	32	
33	20/1	1	SPARE		0		0		0		SPARE	20/1	34	
35	20/1	/	SPARE		0			0	0		SPARE	20/1	36	
37	20/1		SPARE		0	0			0		SPARE	20/1	38	
39	20/1	1	SPARE		0		0		0		SPARE	20/1	40	
41	20/1	;	SPARE		0			0	0		SPARE	20/1	42	
		Ν	MULT FACTOR	1							SPARE FACTO	R		
TOTAL	LTG.	3000	1.00	3000	TOTAL BY	6800	7580	8540		TOTAL [DEMAND 21210 X	1.:	25	
TOTAL	MISC.	500	1.00	500	- PHASE	ا <u>ـــــــــا</u>				TOTA	LLOAD 26513 VA	74	AMPS	
TOTAL	REC.	13420	- Per NEC	11710	-									
TOTAL	HVAC	6000	1.00	6000		ES HACE	RREAKE	R						
IUIAL	HIG	U		0	- INDIOAN	LOTIAUN		1 N						

S,	3	PHASE	4WIF	Æ	MAIN BU	IS 600	AMPS		
G:	SURF/	ACE	FLUS	н	MAIN BR	к	AMPS	P	
	COPP	ER	ALUN	1INUM	NEUTRAL 100% AIC			2,000	-
JS			THRU	-FEED LUGS		MAINI	LUGS ONLY		
JS			* SHUNT TR	IP BRKR.	FEED:	TOP	BTM		
PE	R PHASE ((VA)	LOAD	D	FSCRIPTI	ON OF LOA	D	TRIP	CKT
	В	С	(VA)					AMPS	NO
90			35090		PAN	EL MP			2
	40630		330 <u>5</u> 0						4
		41240	32700						6
0			1000	FIRE	ALARMC		NEL	20/1	8
	7340		0					20/1	10
		6730	0					20/1	12
			0					20/1	14
	0		0					20/1	16
		0	0					20/1	<mark>18</mark>
			0					20/1	20
	0		0					20/1	22
		0	0					20/1	24
						SPA	ARE FACTO	R	
20	47970	47970		TOTAL	DEMAND	140330	Х	1.:	25
			l	TOTA	L LOAD	175413	VA	487	AMPS

DRAFT

BASEMENT PLAN

FA100 SCALE: 1/8" = 1'-0"

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FA102 SCALE: 1/8" = 1'-0"

