i							
SYMBOL	DESCRIPTION		OTES	SYMBOL	DESCRIPTION		NOTES
		ING FIXTURES	NIDIOATE ENTINE DOE		WIRING DEVIC	CES — RECE 20A/125V, 2P, 3W,	
FP 1a FP	WALL OR CEILING MOUNTED LIGHTING FIXTURE	REFER TO FIXTURE S SUBSCRIPT LOWER CA INDICATE SWITCH COM	NTROL ASSOCIATIONS		WALL DUPLEX CONVENIENCE OUTLET MTD 18" AFF	SHADING OF SYMBO	L THUS:
		FR 1a	THUS:	Ф	CEILING MOUNTED DUPLEX CONVENIENCE OUTLET	INDICATES RECEPTAC SEPARATELY WIRED. HALF SWITCH CONTR "1"— INDICATES CIRC	(HALF C ROLLED.)
		FR FP	FP FP N NIGHT/EMERGENCY CIRCUIT	⊕ _{IC}		SUBSCRIPT LOWER (SWITCH CONTROL AS SHADING OF SYMBO	SOCIATIO
Y _{1a} FP → _{1a}		OR EMERGENCY BATTE APPLICABLE, CONTRAC	TRY BACK UP BALLAST WHERE TOR SHALL CONFIRM LOCATION CY BALLAST WITH ARCHITECT	#	WALL DOUBLE DUPLEX CONVENIENCE OUTLET	INDICATES RECEPTACE COUNTER TO CENTER	
FP 1a		B30ST OR B30 WITH	SHALL BE SIMILAR TO BODINE INTEGRAL INDICATOR LIGHT TEST AMP APPLICATION WHERE	Φ^{H}	HOSPITAL GRADE DUPLEX CONVENIENCE OUTLET	UNLESS NOTED OTH 'WP' — INDICATES W 'GFI' DENOTES GROU	ERWISE VEATHER JND FAUL
		CONTRACTOR SHALL F	PROVIDE ALL MOUNTING E TO CEILING, WALL, AND FLOOR TURE IS INSTALLED	Φ	WALL MTD SINGLE CONVENIENCE OUTLET	INTERRUPTING TYPE ALL POWER OUTLET BE LABELED WITH C PANEL DESIGNATION	FACEPLA CIRCUIT N
			COORDINATE MOUNTING HEIGHT INTERIOR/EXTERIOR ELEVATIONS		JUNG	CTION BOXES	<u> </u>
		CONTRACTOR SHALL OF LAMPS PER ARCHITECT	COORDINATE AND CONFIRM TO ACHIVE COLOR AS	0	CEILING MOUNTED JUNCTION BOX	-	
•—	EXTERIOR POLE MOUNTED FIXTURE	STEP DOWN TRANSFOR VOLTAGE LIGHTING		Ю	WALL MOUNTED JUNCTION BOX	-	
S _{WP}	WIRING DE	VICES—SWITCH 20A 120–277V AC	SUBSCRIPT LOWER CASE LETTERS INDICATE	J	SURFACE MOUNTED JUNCTION BOX	_	
SP	SINGLE POLE SWITCH WITH PILOT LIGHT	"WP" — INDICATES - WEATHER PROOF	SWITCH CONTROL ASSOCIATIONS SUBSCRIPT UPPER CASE	<u> </u>	FLUSH FLOOR MOUNTED JUNCTION BOX PULL BOX	-	
S2	DOUBLE POLE SWITCH		LETTERS DENOTE SWITCH TYPE AS LISTED IN NON- STANDARD SWITCHES	РВ	JUNCTION BOX WITH	P - DENOTES F	
S 3	THREE-WAY SWITCH		UNLESS NOTED OTHERWISE SWITCHES SHALL BE MOUNTED	•	FLEXIBLE CONNECTION TO EQUIPMENT	C - DENOTES C	COMMUNI
S4	FOUR-WAY SWITCH		48" TO CENTER LINE AFF		MOTORS MOTOR	AND CONTE	
ST	SPRING WOUND INTERVAL TIME SWITCH	TORK OR EQUAL 30 MINUTE MAX		0	MOTOR	BY APPLICATION OREFERENCE TO SO	OF INDEX
D	LINEAR SLIDE BAR DIMMER SWITCH	1500W-120 VOLT RATING UNLESS NOTED OTHERWISE			MAGNETIC MOTOR STARTER COMPLETE W/ THERMAL OVERLOAD PROTECTION	SUBSCRIPT INDICATES NEMA SIZE	COMPL FOR C INDICA APPLIC
D ₃	LINEAR SLIDE BAR THREE WAY DIMMER SWITCH	1500W-120 VOLT RATING UNLESS NOTED OTHERWISE		\$	MANUAL MOTOR STARTER (THERMAL OVERLOAD SWITCH)		INDEXI REFER TO AS:
⊢⊚s a,b	WALL MOUNTED OCCUPANCY SENSOR	WATT STOPPER OR EQUAL	SUBSCRIPT LOWER CASE LETTERS INDICATE SWITCH CONTROL ASSOCIATIONS	(VFD)	VARIABLE FREQUECY DRIVE	REFER TO HVAC SCHEDULE FOR MOTOR LOAD HORSEPOWER SIZE	
(s)	CEILING MOUNTED OCCUPANCY	WATT STOPPER OR EQUAL	SUBSCRIPT LOWER CASE LETTERS INDICATE	CP	CONTROL PANEL (MECHANICAL EQUIP)	FURNISHED AND I WIRED BY THE EL	_ECTRICA
a,b	SENSOR WALL MOUNTED		SWITCH CONTROL ASSOCIATIONS		DISTRIBU SURFACE MOUNTED PANEL	TION EQUIPI	MENT
+ ▶	EMERGENCY POWER OFF BUTTON	201/700/ 01/0			FLUSH MOUNTED		
	7 DAY ASTRONOMICAL	CONTROL SYS	IEM		PANEL		
TC	TIME CLOCK WALL MOUNTED	TOTAL SIX EQUIL		TVSS	SURGE SUPPRESSION	PROVIDE PER SPI	ECIFICAT
<u>®</u>	PHOTOCELL LIGHTING CONTACTOR			Т	TRANSFORMER	SEE ELECTRICAL	PLANS F
LC				<u>•</u>	GROUNDING PER SPECIFICATION		
KS	KEY SWITCH LINE VOLTAGE			M	METER SOCKET AND METER	METER SOCKET PROVIDED BY LO	
MS	MASTER CONTROL SWITCH				OVERCURRENT AND/OR SWITCHING DEVICE "WP" - INDICATES	COMPLETE INFOR INDICATED BY AP SYMBOLS	
SYMBOL	DESCRIPTION		OTES		WEATHER PROOF		NDICATES 0 - FR
	LIGHTING AND	H CIRCUITRY ARROW HEAD INDICATE	TES HOME RUN				NDICATES
1	APPLIANCE BRANCH CIRCUITRY CONCEALED ABOVE	CIRCUITRY TO 20A-1 (UNLESS NOTED OTH NUMBER OF ARROW NUMBER OF BRANCH	P CIRCUIT BREAKER ERWISE) HEADS INDICATE			1 (대교 나	5 – FU NDICATES PIRCUIT E
Y	LIGHTING AND APPLIANCE BRANCH CIRCUITRY CONCEALED BELOW	WIRES IN 3/4" CONI ABSENCE OF CROSSI	MARKS INDICATES			$\frac{30}{15}$ \mathcal{F}	NDICATES USED SI 50 - FR 5 - FU
*	LIGHTING AND APPLIANCE BRANCH RUN EXPOSED	2#12, 1#12 GROUNE HOME RUNS ARE INI					NDICATES NCLOSEI
\	INDIVIDUAL RUN TURNING UP	"LL2" DENOTES PANI "1,3,5" DENOTES CIR	EL DESIGNATION.				NDICATES
$\overline{\ \ }$	INDIVIDUAL RUN TURNING DOWN	CONDUIT RUNS REQU	JIRING CIRCUIT		EXISTING ELE	ECTRICAL EC	UIPM
<u> </u>	INDIVIDUAL RUN TURNING UP&DOWN	BREAKER GREATER T SIZE GREATER THAN SIZE GREATER THAN NOTED THUS:	NO. 12 AND CONDUIT	ETR	EXISTING TO REMAIN	ALL EXISTING SHALL BE CLE	ANED A
b		LL2-1, 50A 3P 4 #4.		х	EXISTING EQUIPMENT TO BE REMOVED	EXISTING TO R ARE OPERATION DEVICES ARE I BE REPLACED	REMAIN E NAL & F NOT OPE WITH A
	SECOND		' CONDUIT	XR	EXISTING EQUIPMENT TO BE REMOVED AND RELOCATED	THAT TYPE. AL SHALL MATCH CONTRACTOR S	EXISTING SHALL EX
	FEEDER RUN	ARY FEEDERS ARROW HEAD INDICA	TES HOME RUN TO	RX	NEW LOCATION OF RELOCATED EXISTING EQUIPMENT	LOCATION OF I	TING WIF RELOCAT SHALL RI
<u> </u>	FEEDER RUN	PANEL BOARD FEEDER SIZING SHOW		RR	REMOVE EXISTING DEVICE AND REINSTALL NEW DEVICE IN SAME LOCATIO	WIRING BACK THE EXISTING WITH RELOCATED EQ	TO SOUF IRING DO IUIPMENT TE CONE
<u> </u>	FEEDER RUN AS PER	RISER DIAGRAM				, many AND KI	<u></u>
`\	SPECIFIC NOTATION						

SYMBOL	DESCRIPTION		NOTES		GENERAL	NOT
	WIRING DEVIC		PTACLES GNDG., NEMA 5-20R		CONDUITS AND EQUIPMENT SHALL B UND IN ACCORDANCE WITH THE LATE	
₽ ¹	WALL DUPLEX CONVENIENCE OUTLET MTD 18" AFF CEILING MOUNTED	SHADING OF SYMBOL INDICATES RECEPTACE	. Thus:	2. CONI INST/ STRU	THE APPLICABLE LOCAL AND NATIONA DUIT RUNS ARE SHOWN DIAGRAMATIC ALLED IN A MANNER TO PREVENT CO ICTURAL CONDITIONS. EXPOSED COND	ALLY OONFLICT
Φ ,	DUPLEX CONVENIENCE OUTLET	SEPARATELY WIRED. (HALF SWITCH CONTRO "1"— INDICATES CIRC	(HALF CONSTANT OLLED.) :UIT NUMBER	3. CON	BEAMS AND WALLS. EMPTY CONDUITS DUITS SHALL BE TERMINATED SO AS MOTORS AND OTHER EQUIPMENT.	TO PE
⊕ _{IG}	ISOLATED GROUND DUPLEX CONVENIENCE OUTLET	SUBSCRIPT LOWER CONTROL ASS		5. THE	CONDUIT SMALLER THAN 3/4", NOR 12 A.W.G. FOR POWER SHALL BE U WIRING DIAGRAMS, QUANTITY AND SI DUIT REPRESENT A SUGGESTED ARR	ISED UNIZE OF ANGEME
₩	WALL DOUBLE DUPLEX CONVENIENCE OUTLET	INDICATES RECEPTACL		ACCE CON' SEQU	DARD COMPONENTS OF ELECTRICAL EPTABLE TO THE CONSTRUCTION MAN TRACTOR TO ACCOMMODATE EQUIPME JENCE AND METHOD OF CONTROL MIDRAWINGS AND/OR SPECIFICATIONS.	EQUIPI NAGER ENT ACT
	HOSPITAL GRADE DUPLEX CONVENIENCE OUTLET	COUNTER TO CENTER UNLESS NOTED OTHE 'WP' — INDICATES WE 'GFI' DENOTES GROUI	CRWISE EATHER PROOF	ОТН	CHES SHALL BE MOUNTED 4'-0" AE ERWISE NOTED. RECEPTACLES SHALL SURFACE MOUNTED PANELS AND PA	BE MC
Φ	WALL MTD SINGLE CONVENIENCE OUTLET	INTERRUPTING TYPE I ALL POWER OUTLET I BE LABELED WITH CIL PANEL DESIGNATION	FACEPLATES SHALL RCUIT NUMBER AND	EXTE DAMI THE	TRIOR WALLS ABOVE GRADE OR IN O P, SHALL BE MOUNTED SO AS TO M ENCLOSURE AND THE WALL. PANELBOARDS SHALL BE MOUNTED	THER L IAINTAIN
	JUNG	CTION BOXES	3	ТОР	CIRCUIT BREAKER OPERATING HANDITING FIXTURES SHALL BE MOUNTED	LE TO
0	CEILING MOUNTED JUNCTION BOX			10. FOR	EHT GIVEN ON THE DRAWINGS, WITH BOTTOM OF THE LIGHTING FIXTURE LOCATION OF HVAC, PLUMBING, FIRE DEADLE TRADE DRAW	TO THE
Ю	WALL MOUNTED JUNCTION BOX	_		11. ALL OR E	PMENT SEE RESPECTIVE TRADE DRAV CONDUIT RUNS CROSSING EXPANSIO EXPANSION AND DEFLECTION TYPE FI ITIONS OF EXPANSION JOINTS SEE S	N JOIN
J	SURFACE MOUNTED JUNCTION BOX			12. ALL SUFF ASSO	MOTOR STARTER CONTROL TRANSFO FICIENT VOLT—AMPERE CAPACITY FOR DCIATED WITH CONTROL OF THE MOT	RMERS OPERA
O	FLUSH FLOOR MOUNTED JUNCTION BOX			13. CON	HALL INCLUDE RELAYS, TIMERS, MOT IDUIT AND WIRE (NOT SHOWN) FOR EPTACLES SHALL BE FURNISHED AND ITRACTOR AND SHALL BE:	FIXTURE
РВ	PULL BOX	D 25:::5	OWED SEED	1. E	a. 3/4" (Min.) Conduit Run Exposed in Unfinished Areas. Concealed above Hung Ceilings A	ND IN
	JUNCTION BOX WITH FLEXIBLE CONNECTION TO EQUIPMENT		OMMUNICATIONS FEED	"	N FINISHED AREAS. b. NO.12 (MIN.) Cu WIRE (MIN.) TYP NO. OF WIRES AS REQUIRED.	PE *THW
		AND CONTR			EQUIPMENT PAD CONSTRUCTION DE 120V BRANCH CIRCUITS GREATER T	
\(\)	MOTOR	BY APPLICATION O	F INDEXING SYMBOLS CHEDULE OF MECHANICAL	ROO	ELECTRICAL CONTRACTOR SHALL PRIMS BASED ON ACTUAL EQUIPMENT (REVIEW PRIOR TO INSTALLATION.	OF MAN
	MAGNETIC MOTOR STARTER COMPLETE W/ THERMAL OVERLOAD PROTECTION	SUBSCRIPT INDICATES NEMA SIZE	COMPLETE INFORMATION FOR CONTROL ITEMS IS INDICATED BY THE APPLICATION OF INDEXING SYMBOL	AND BETV 18. THE	VIDE ELECTRICAL OUTLET PLATE GAS OTHER ELECTRICAL BOXES ON EXTE WEEN CONDITIONED AND NON—CONDI- ELECTRICAL CONTRACTOR SHALL SU	ERIOR V TIONED BMIT A
\$	MANUAL MOTOR STARTER (THERMAL OVERLOAD SWITCH)	PEED TO LIVE	REFERENCE APPLIED TO ASSOCIATED EQUIP.	ALL SYST TRAD	ELECTRICAL TELEPHONE, SECURITY, I TEMS CONDUITS IN SLAB AND ABOVE DES AND BUILDING'S STRUCTURE TO TERMINATION LUGS SHALL BE SIZED	FIRE AL CEILIN AVOID
VFD	VARIABLE FREQUECY DRIVE	REFER TO HVAC SCHEDULE FOR MOTOR LOAD HORSEPOWER SIZE		20. THE	CATED CONDUCTORS. ELECTRICAL CONTRACTOR SHALL SUE MUNICATIONS EQUIPMENT AND DEVICE	BMIT PL ES THR
СР	CONTROL PANEL (MECHANICAL EQUIP)	WIRED BY THE ELE	NSTALLED BY OTHERS. ECTRICAL CONTRACTOR	SERV 21. REFE	TRICAL CONTRACTOR SHALL ALSO LA /E DIFFERNT SYSTEMS. ER TO THE ARCHITECTURAL REFLECTE EXACT LOCATIONS OF ALL LIGHT FIX	ED CEIL
	SURFACE MOUNTED	TION EQUIPM	MENT	22. COOI	RDINATE LOCATIONS OF ALL LIGHT FI MS WITH LAYOUT OF EQUIPMENT, PIF	IXTURES
	FLUSH MOUNTED			24. ALL	EXIT SIGNS SHALL BE UNSWITCHED. SWITCHED LIGHT FIXTURES CIRCUITED TO BE WIRED WITH AN EMERGENCY	
	PANEL SURGE SUPPRESSION	PROVIDE PER SPE	CIFICATIONS	FULL	20 AMPERE, SINGLE POLE CIRCUITS . SIZE NEUTRAL CONDUCTOR. FIRM EXACT POWER REQUIREMENTS A	
TVSS	TRANSFORMER		PLANS FOR KVA RATING	EQUI 27. PROV	PMENT WITH THE PLUMBING, FIRE P MDE AN SOU KIT FOR ALL MECH EQ	ROTECT OUIPMEN
Т		SEE ELECTRICAL P	TUR KVA KATING	SUCH THE 29. ELEC	TAIN SYMBOLS IN THE SYMBOL LIST H SYMBOLS ARE INCLUDED TO PERM EVENT OF DESIGN CHANGES. CTRICAL CONTRACTOR SHALL MAINTAIN	IIT INTE
<u>+</u>	GROUNDING PER SPECIFICATION	METER COOKET	DROWNER BY COURTS OF C	ARCH	ANY BUILDING STRUCTURE THAT ANY HITECTURAL PLAN FOR RATINGS.	ELECTI
M	METER SOCKET AND METER	PROVIDED BY LO]	ABBREV	/IATI
마	OVERCURRENT AND/OR SWITCHING DEVICE "WP" - INDICATES	INDICATED BY APP SYMBOLS	MATION FOR DEVICES IS PLICATION OF TAG	ABBR A/AMP AC A/C	ABBREVIATIONS AMPERE ALTERNATING CURRENT AIR CONDITIONING	L L L'
	WEATHER PROOF	□ 30	DICATES UNFUSED SWITCH O - FRAME SIZE	AFF AFG ARCH ATC	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE ARCHITECTURAL AUTOMATIC TEMPERATURE	M M
		15 🖾 30 15	DICATES FUSED SWITCH O - FRAME SIZE O - FUSE SIZE	ATS AUTO	CONTROL AUTOMATIC TRANSFER SWITCH AUTOMATIC	H M
		CII	DICATES ENCLOSED RCUIT BREAKER DICATES COMBINATION	BAT BIS C	BATTERY BYPASS ISOLATOR SWITCH CONDUIT	M M
		30 Fu 15 30	DICATES COMBINATION USED SWITCH AND STARTER OF FRAME SIZE OF FUSE SIZE	CATV CAB CB CCTV	CABLE TELEVISION CABINET CIRCUIT BREAKER CLOSED CIRCUIT TELEVISION	N N
		EN	DICATES COMBINATION NCLOSED CIRCUIT BREAKER ND STARTER	CKT CL CM CLG CCO	CIRCUIT CENTERLINE CENTIMETER CEILING COMPANY	N
	EVICTIVIO E		DICATES BY OTHERS	COL C/T CW	COLUMN COLUMN CURRENT TRANSFORMER COOL WHITE	N N O
ETR	EXISTING ELE	ALL EXISTING TO	O REMAIN LIGHTING	DET DIA DISC	DETAIL DIAMETER DISCONNECT	0
X X	EXISTING EQUIPMENT TO BE REMOVED	CONTRACTOR SI EXISTING TO RE ARE OPERATION	NED AND RELAMPED HALL VERIFY THAT ALL EMAIN ELECTRICAL DEVICES IAL & FUNCTIONAL. IF ETR	DN DP DPDT	DOWN DISTRIBUTION PANEL DOUBLE POLE DOUBLE THROW	P P P P
XR	EXISTING EQUIPMENT TO BE REMOVED	DEVICES ARE N BE REPLACED V	IOT OPERATIONAL, IT SHALL WITH A NEW DEVICE OF REPLACED DEVICES	DPST DT DWG	DOUBLE POLE SINGLE THROW DUST TIGHT DRAWING	P P P
RX	AND RELOCATED NEW LOCATION OF RELOCATED EXISTING EQUIPMENT	CONNECT EXIST LOCATION OF R CONTRACTOR SI	HALL EXTEND AND ING WIRING TO NEW ELOCATED EQUIPMENT. HALL REPLACE EXISTING O SOLIDEE IF NECESSARY	EA EC EL ELEC	EACH ELECTRICAL CONTRACTOR ELEVATION ELECTRIC	P R R R
RR	REMOVE EXISTING DEVICE AND REINSTALL NEW DEVICE IN SAME LOCATION	RELOCATED EQU SHALL EVALUATI	O SOURCE IF NECESSARY RING DOES NOT REACH JIPMENT. CONTRACTOR E CONDITION OF EXISTING PLACE IF NECESSARY.	ELEV ES FDR	ELEVATOR ENERGY SAVING FEEDER	S
ļ		WINING AND RE	2.02 II NECESSARI.	FLR FLUO	FLOOR FLUORESCENT	S

	GENERAL NOTES	BRANCH CIRCU	IITS SCHEDULE				
1.	ALL CONDUITS AND EQUIPMENT SHALL BE INSTALLED AND GROUND IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS	120 OR 277 VOLT	IØ, 2W. CIRCUITS				
	OF THE APPLICABLE LOCAL AND NATIONAL CODES.	CIRCUIT BREAKER	CONDUCTOR				
2.	CONDUIT RUNS ARE SHOWN DIAGRAMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND	30A-1P	2#10+1#10 GND - 3/4"C				
	STRUCTURAL CONDITIONS. EXPOSED CONDUITS SHALL BE INSTALLED PARRALEL	40A-1P	2#8+1#10 GND 3/4"C				
3	TO BEAMS AND WALLS. EMPTY CONDUITS SHALL HAVE NYLON PULL LINE CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS	50A-1P	2#6+1#10 GND 3/4"C				
J .	TO MOTORS AND OTHER EQUIPMENT.	60A-1P	2#6+1#10 GND 3/4°C				
	NO CONDUIT SMALLER THAN 3/4", NOR WIRE SIZE SMALLER THAN NO. 12 A.W.G. FOR POWER SHALL BE USED UNLESS OTHERWISE NOTED.	208 VOLT 1ø,	2W. CIRCUITS				
5.	THE WIRING DIAGRAMS, QUANTITY AND SIZE OF THE WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED	CIRCUIT BREAKER	CONDUCTOR				
	STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE CONSTRUCTION MANAGER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC	20A-2P	2#12+1#12 GND 3/4"C				
	SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.	30A-2P	2#10+1#10 GND 3/4"C				
6	SWITCHES SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR UNLESS	40A-2P	2#8+1#10 GND 3/4*C				
٠.	OTHERWISE NOTED. RECEPTACLES SHALL BE MOUNTED 18" AFF	50A-2P	2#6+1#10 GND 3/4*C				
7.	ALL SURFACE MOUNTED PANELS AND PANELBOARDS ON THE INSIDE OF EXTERIOR WALLS ABOVE GRADE OR IN OTHER LOCATIONS CONSIDERED AS	60A-2P	2#6+1#10 GND 3/4*C				
	DAMP, SHALL BE MOUNTED SO AS TO MAINTAIN A 1/4" AIR SPACE BETWEEN THE ENCLOSURE AND THE WALL.	208/120 VOLT, 1ø, 3W CIRCUITS					
8.	ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE TOP CIRCUIT BREAKER OPERATING HANDLE TO THE FLOOR SHALL NOT EXCEED 6'-6"	CIRCUIT BREAKER	CONDUCTOR				
9.	LIGHTING FIXTURES SHALL BE MOUNTED ACCORDING TO THE MOUNTING	20A-2P	3#12+1#12 GND 3/4"C				
	HEIGHT GIVEN ON THE DRAWINGS, WITH THE DISTANCE BEING MEASURED FROM THE BOTTOM OF THE LIGHTING FIXTURE TO THE FINISHED FLOOR.	30A-2P	3#10+1#10 GND 3/4"C				
10.	FOR LOCATION OF HVAC, PLUMBING, FIRE PROTECTION, AND MISCELLANEOUS	40A-2P	3#8+1#10 GND 3/4"C				
	EQUIPMENT SEE RESPECTIVE TRADE DRAWINGS.	50A-2P	3#6+1#10 GND 3/4"C				
11.	ALL CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION AND DEFLECTION TYPE FITTINGS AS REQUIRED. FOR EXACT		3#6+1#10 GND 3/4"C				
12.	LOCATIONS OF EXPANSION JOINTS SEE STRUCTURAL DRAWINGS. ALL MOTOR STARTER CONTROL TRANSFORMERS SHALL BE SIZED TO PROVIDE	208 OR 480 VOL	TS, 30, 3W CIRCUITS				
	SUFFICIENT VOLT—AMPERE CAPACITY FOR OPERATING ALL ELECTRICAL DEVICES ASSOCIATED WITH CONTROL OF THE MOTOR, IN ADDITION TO THE STARTER COIL.	CIRCUIT BREAKER	CONDUCTOR				
	IT SHALL INCLUDE RELAYS, TIMERS, MOTOR HEATERS, INDICATING LIGHTS, ETC.	20A-3P	3#12+1#12 GND 3/4"C				
13	. CONDUIT AND WIRE (NOT SHOWN) FOR FIXTURES, SWITCHES AND/OR RECEPTACLES SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL	30A-3P	3#10+1#10 GND 3/4"C				
	CONTRACTOR AND SHALL BE: a. 3/4" (MIN.) CONDUIT RUN	40A-3P	3#8+1#10 GND 3/4"C				
	EXPOSED IN UNFINISHED AREAS.	50A-3P	3#6+1#10 GND 3/4"C				
ACCEPTA CONTRAC SEQUENT THE DRY 6. SWITCHE OTHERW 7. ALL SUI EXTERIO DAMP, STHE END TOP CIR TOP CIR THE BOTH	CONCEALED ABOVE HUNG CEILINGS AND IN WALLS IN FINISHED AREAS.	60A-3P	3#6+1#10 GND 3/4"C				
	b. NO.12 (MIN.) Cu WIRE (MIN.) TYPE "THWN/THNN" NO. OF WIRES AS REQUIRED.	208Y/120 & 480Y/277	VOLT, 3ø,4W CIRCUITS				
14	. FOR EQUIPMENT PAD CONSTRUCTION DETAILS SEE STRUCTURAL DRAWINGS.	CIRCUIT BREAKER	CONDUCTOR				
15	6. ALL 120V BRANCH CIRCUITS GREATER THAN 100 LINEAR FEET SHALL BE #10AWG MIN.	20A-3P	4#12+1#12 GND 3/4"C				
16	5. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LAYOUTS FOR ALL ELECTRICAL ROOMS BASED ON ACTUAL EQUIPMENT OF MANUFACTURER SELECTED, SUBMIT	30A-3P	4#10+1#10 GND 3/4°C				
	FOR REVIEW PRIOR TO INSTALLATION.	40A-3P	4#8+1#10 GND 3/4*C				
17.	PROVIDE ELECTRICAL OUTLET PLATE GASKET SEALS AT RECEPTACLES, SWITCHES AND OTHER ELECTRICAL BOXES ON EXTERIOR WALLS AND ON INTERIOR WALLS	50A-3P 4#6+1#10 GND 1	4#6+1#10 GND 1"C				
	BETWEEN CONDITIONED AND NON-CONDITIONED SPACES.	60A-3P	4#6+1#10 GND. — 1"C				
18.	THE ELECTRICAL CONTRACTOR SHALL SUBMIT A PLAN FOR APPROVAL SHOWING ALL ELECTRICAL TELEPHONE, SECURITY, FIRE ALARM, COMMUNICATION AND OTHER SYSTEMS CONDUITS IN SLAB AND ABOVE CEILING ETC COORDINATE WITH OTHER TRADES AND BUILDING'S STRUCTURE TO AVOID ANY CONFLICT.		PANELBOARD S				

20. THE ELECTRICAL CONTRACTOR SHALL SUBMIT PLANS FOR APPROVAL SHOWING ALL COMMUNICATIONS EQUIPMENT AND DEVICES THROUGHOUT THE BUILDING. THE ELECTRICAL CONTRACTOR SHALL ALSO LABEL AND IDENTIFY ALL CONDUITS THAT SERVE DIFFERNT SYSTEMS.

21. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS

22. COORDINATE LOCATIONS OF ALL LIGHT FIXTURES IN MECHANICAL AND ELECTRICAL ROOMS WITH LAYOUT OF EQUIPMENT, PIPING AND DUCTWORK.

24. ALL SWITCHED LIGHT FIXTURES CIRCUITED TO A NORMAL/EMERGENCY CIRCUIT

25. ALL 20 AMPERE, SINGLE POLE CIRCUITS SHALL BE PROVIDED WITH A SEPARATE FULL SIZE NEUTRAL CONDUCTOR.

26. CONFIRM EXACT POWER REQUIREMENTS AND CONNECTION LOCATIONS FOR ALL EQUIPMENT WITH THE PLUMBING, FIRE PROTECTION, HVAC AND GENERAL CONTRACTOR 27. PROVIDE AN SOU KIT FOR ALL MECH EQUIPMENT RATED LESS THAN 1/2HP (TYP) 28. CERTAIN SYMBOLS IN THE SYMBOL LIST DO NOT APPEAR ELSEWHERE IN THE DRAWINGS. SUCH SYMBOLS ARE INCLUDED TO PERMIT INTERPRETATIONS TO BE MADE IN THE EVENT OF DESIGN CHANGES.

29. ELECTRICAL CONTRACTOR SHALL MAINTAIN RATING OF ANY CEILING, WALL, FLOOR OR ANY BUILDING STRUCTURE THAT ANY ELECTRICAL SYSTEM PENETRATES. SEE ARCHITECTURAL PLAN FOR RATINGS.

ABBREVIATIONS

LENGTH
LIGHTNING ARRESTOR
LIGHTING PANEL
LIGHTING
LOW VOLTAGE

METER
MILLIMETER
MAIN CIRCUIT BREAKER
MASS ELECTRIC COMPANY
MECHANICAL
MANUFACTURER
MAIN LUG ONLY
MISCELLANEOUS
MOUNTED

NEUTRAL
NORMALLY CLOSED
NATIONAL ELECTRIC
CODE
NATIONAL ELECTRICAL
MANUFACTURERS

ASSOCIATION
NOT IN CONTRACT
NIGHT LIGHTING CKT
NORMALLY OPEN
NUMBER

PULL BOX
PHASE
PANEL
PUMP
PRIMARY
POTENTIAL TRANSFORMER

POLYVINYL CHLORIDE POWER

SECONDARY SPARE SPECIFICATIONS SPRINKLER SWITCH

TERMINAL BOARD TELEPHONE TELEVISION TRANSIENT VOLTAGE

SURGE SUPPRESSION TYPICAL

VOLTS
VOLT AMPERAGE
VACUUM
VENTILATING
VARIABLE FREQUENCY
DRIVE
VAPOR TIGHT

WATT ON WIRE WITH WEATHERPROOF

U.N.O. UNLESS NOTED OTHERWISE

V VA VAC VENT VFD

RECEPT RECEPTACLE REC RECESSED RPA RELAY PANEL

ON CENTER OVERCURRENT OVERLOAD

NEMA

FOR EXACT LOCATIONS OF ALL LIGHT FIXTURES.

ARE TO BE WIRED WITH AN EMERGENCY BY-PASS RELAY.

GENERATOR GROUND FAULT INTERRUPTER

HUNG CEILING HEIGHT HIGH INTENSITY DISCHARGE

HIGH PRESSURE SODIUM
HEATING, VENTILATION AND
AIR CONDITIONING
HERTZ

LAMP HIGH OUTPUT HORSE POWER

HIGH VOLTAGE

JUNCTION BOX KILOVOLT KILOVOLT—AMPERES KILOWATT

IN INCHES INCAND INCANDESCENT

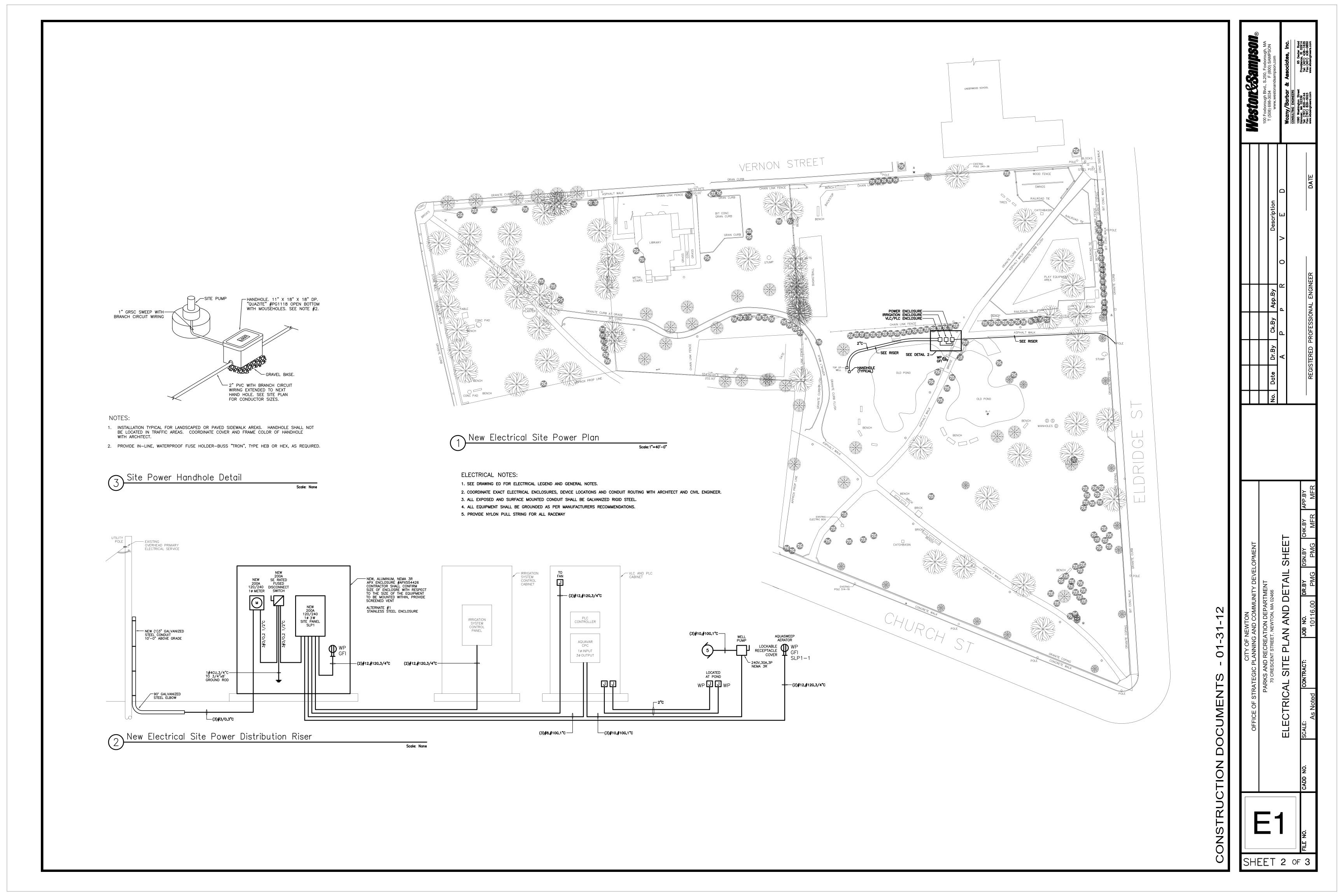
TRADES AND BUILDING'S STRUCTURE TO AVOID ANY CONFLICT. 19. ALL TERMINATION LUGS SHALL BE SIZED ACCORDINGLY TO ACCOMMODATE INDICATED CONDUCTORS.

TAG	CONDUCTORS (3 PHASE, 3 WIRE) WITH GROUND	RACEWAY SIZE	TAG	CONDUCTORS (3 PHASE, 4 WIRE) WITH GROUND	RACEWAY SIZE	NO AMF RA
30-3G	3#10 & 1#10 GND.	3/4"	30-4G	4#10 & 1#10 GND.	3/4°C.	F.3
50-3G	3#8 & 1#10 GND.	3/4"	50-4G	4#8 & 1#10 GND.	3/4°C.	
60-3G	3#6 & 1#10 GND.	3/4"	60-4G	4#6 & 1#10 GND.	1"	e
100-3G	3#3 & 1#8 GND.	1 1/4 "	100-4G	4#2 & 1#8 GND.	1 1/4 "	10
125-3G	3#1 & 1#6 GND.	1 ¹ /4 "	125-4G	4#1 & 1#6 GND.	1 1/2 "	1:
150-3G	3#1/0 & 1#6 GND.	1 1/2 "	150-4G	4#1/0 & 1#6 GND.	2"	1:
175-3G	3#2/0 & 1#6 GND.	2"	175-4G	4#2/0 & 1#6 GND.	2"	1
200-3G	3#3/0 & 1#6 GND.	2"	200-4G	4#3/0 & 1#6 GND.	2"	2
225-3G	3#4/0 & 1#4 GND.	2*	225-4G	4#4/0 & 1#4 GND.	2 1/2 "	2
250-3G	3#250 KCMIL & 1#4 GND.	2 1/2 "	250-4G	4#250 KCMIL & 1#4 GND.	2 1/2 "	2
300-3G	3#350 KCMIL & 1#4 GND.	2 1/2 "	300-4G	4#350 KCMIL & 1#4 GND.	3"	3
350-3G	3#500 KCMIL & 1#3 GND.	3"	350-4G	4#500 KCMIL & 1#3 GND.	3"	3
400-3G	3#500 KCMIL & 1#3 GND.	3*	400-4G	4#500 KCMIL & 1#3 GND.	4"	4
600-3G	6#350 KCMIL & 2#1 GND.	2-3"	600-4G	8#350 KCMIL & 2#1 GND.	2-3"	6
800-3G	6#600 KCMIL & 3#1/0 GND.	2-3"	800-4G	8#600 KCMIL & 3#1/0 GND.	2-3 ½"	8
1000-3G	9#400 KCMIL & 3#2/0 GND.	3-3"	1000-4G	12#400 KCMIL & 3#2/0 GND.	3-3"	10
1200-3G	9#600 KCMIL & 3#3/0 GND.	3-3"	1200-4G	12#600 KCMIL & 3#3/0 GND.	3-3 1/2 "	12
1600-3G	12#600 KCMIL & 4#4/0 GND.	4-3"	1600-4G	16#600 KCMIL & 4#4/0 GND.	4-3 1/2"	16

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- 1. THE GENERAL CONDITIONS AS DESCRIBED IN DIVISION 1 SHALL APPLY TO WORK OF THIS SECTION. WHERE PARAGRAPHS OF THIS SECTION CONFLICT WITH SIMILAR PARAGRAPHS OF DIVISION 1,
- REQUIREMENTS OF THIS SECTION SHALL PREVAIL. 1A. THE BASE BUILDING STANDARDS AND SPECIFICATIONS SHALL APPLY TO WORK OF THIS SECTION. WHERE PARAGRAPHS OF

THIS SECTION CONFLICT WITH SIMILAR PARAGRAPHS OF BASE

BUILDING STANDARDS AND SPECIFICATIONS, THE BASE BUILDING

2. THE SCOPE OF WORK UNDER THIS SECTION, WITHOUT LIMITING THE GENERALITY THEREOF, INCLUDES THE FURNISHING OF ALL LABOR. MATERIALS, EQUIPMENT, SERVICES, AND INCIDENTALS NECESSARY TO COMPLETE ALL ELECTRICAL WORK IN ACCORDANCE WITH THE INTENT OF THE SPECIFICATIONS AND THE DRAWINGS. THE WORK SHALL CONSIST OF BUT NOT NECESSARILY BE LIMITED TO THE

STANDARDS AND SPECIFICATIONS SHALL PREVAIL.

- SECONDARY DISTRIBUTION SYSTEM.
- b. TEMPORARY LIGHT AND POWER.
- c. GROUNDING.
- d. RACEWAY SYSTEM.
- e. WIRE AND CABLE.
- f. LIGHTING FIXTURES.
- g. WIRING DEVICES AND PLATES.
- h. TELEPHONE CONDUIT SYSTEM. FIRE ALARM SYSTEM.
- j. MOTOR CONNECTIONS AND CONTROLS.
- k. SAFETY SWITCHES.
- SLEEVES.
- m. FIRE PROOFING. n. ACCESS PANELS
- POWER WIRING FOR HVAC EQUIPMENT.
- p. SOUND SYSTEM. q. TESTING.
- r. OPERATING AND MAINTENANCE INSTRUCTION MANUALS
- RELATED WORK BY OTHERS AND INCLUDED UNDER OTHER
- SECTIONS OF THE SPECIFICATIONS:
- a. CUTTING AND PATCHING, SPECIFIED IN UNIT MASONRY b. PAINTING, SPECIFIED IN PAINTING.
- c. PLUMBING, SPECIFIED IN PLUMBING.
- d. HVAC, SPECIFIED IN HVAC

SECTION IS TO BE INSTALLED.

OPERATIONAL SYSTEMS.

4. THE DRAWINGS ARE, DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE OF WORK; INDICATE THE GENERAL ARRANGEMENT OF EQUIPMENT, CONDUIT AND THE LIKE; AND SHOW THE APPROXIMATE SIZES OF EQUIPMENT. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS PRACTICAL IN LAYING OU

WORK AND VERIFY ALL SPACES IN WHICH THE WORK UNDER THIS

- a. IT IS THE INTENT OF THE CONTRACT DOCUMENTS TO PROVIDE COMPLETE OPERATING SYSTEMS, OMISSION FROM THE SPECIFICATIONS OR DRAWINGS OF ANY DETAILS OF CONSTRUCTION, INSTALLATION, MATERIALS OR SPECIALISTS NECESSARY FOR A SAFELY OPERABLE SYSTEM SHALL NOT RELIEVE THIS CONTRACTOR OF FURNISHING AND INSTALLING THE MATERIALS, FITTINGS OR ACCESSORIES REQUIRED FOR THE FURNISHING AND INSTALLATION OF COMPLETE AND
- MODIFICATIONS OF CATALOG CUTS THAT MAY BE REQUIRED IN THE EVENT OF CONFLICTS BETWEEN THE PERFORMANCE AND DESCRIPTION OF EQUIPMENT OR MATERIAL AND THE IMPLICATION OF MANUFACTURER'S CATALOG NUMBER. THE PERFORMANCE AND DESCRIPTION SHALL GOVERN.
- c. DISCREPANCIES BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE REFERRED TO THE ARCHITECT FOR INTERPRETATION BEFORE PROCEEDING WITH THE WORK, IF THIS CONTRACTOR PROCEEDS WITH THE WORK WITHOUT REFERRING DISCREPANCIES TO THE ARCHITECT FOR INTERPRETATION, HE SHALL DO SO AT HIS OWN RISK AND MAKE ALL CHANGES TO MEET THE ARCHITECT'S INTERPRETATION OF THE BID DOCUMENTS ABOUT REQUESTING ADDITIONAL COMPENSATION.
- 5. THE INSTALLATION SHALL COMPLY WITH THE REGULATIONS OF THE NATIONAL ELECTRICAL CODE, CITY BUILDING DEPARTMENT, NATIONAL ELECTRICAL SAFETY CODE, THE REQUIREMENTS OF THE CITY FIRE DEPARTMENT, AND WIRE INSPECTOR, AND ALL LEGALL CONSTITUTED AUTHORITIES HAVING JURISDICTION. WHERE TH DRAWINGS AND/OR SPECIFICATION REQUIREMENTS EXCEED THE REQUIREMENTS OF THE APPLICABLE CODES THE REQUIREMENTS SPECIFIED IN THE CONTRACT DOCUMENTS SHALL TAKE
- MATERIALS AND EQUIPMENT SHALL BE NEW AND COMPLY WITH THE APPLICABLE STANDARDS OF THE FOLLOWING AUTHORITIES. EXCEPT WHERE THE CONTRACT DOCUMENTS PRESCRIBE MORE RIGOROUS QUALIFICATIONS, THE DOCUMENTS SHALL GOVERN: UNDERWRITERS' LABORATORIES, INC. (UL) NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA) INSTITUTE OF ELECTRIC AND ELECTRONIC ENGINEERS (IEEE) AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM) AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA) OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AMERICANS WITH DISABILITIES ACT (ADA)
- 7. THE SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT THIS CONTRACTOR HAS VISITED THE SITE AND HAS MADE A THOROUGH EXAMINATION OF THE EXISTING CONDITIONS, CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED FOR DIFFICULTIES ENCOUNTERED SHALL BE BORNE BY THE BIDDER.
- 8. SHOP DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH THE REQUIREMENTS OF DIVISION 1.
- a. LIST OF SHOP DRAWINGS REQUIRED:
- PANELBOARDS.
- MOTOR CONTROL EQUIPMENT. WIRING DEVICES
- LIGHTING FIXTURES.
- SAFETY SWITCHES.
- FIRE ALARM EQUIPMENT.
- WIRE AND CABLE.
- CERTIFIED TEST REPORTS.
- 9) ITEMS NOT SPECIFICALLY LISTED ABOVE THAT MAY BE REQUESTED BY THE ARCHITECT PRIOR TO THE FORMAL SUBMISSION OF SHOP DRAWINGS
- 9. GIVE ALL NOTICES, FILE ALL PLANS AND OBTAIN ALL NECESSARY APPROVALS FROM AUTHORITIES HAVING JURISDICTION REQUIRED FOR THE ELECTRICAL WORK AND FOR THE USE OF SAME BY THE ARCHITECT AT THE COMPLETION OF CONSTRUCTION. ALL CERTIFICATES OF INSPECTION, TEST RESULTS AND APPROVALS SHALL BE TURNED OVER TO THE OWNER AND ARCHITECT PRIOR TO THE FINAL ACCEPTANCE OF THE PROJECT BY THE ARCHITECT. SECURE AND PAY FOR ALL REQUIRED PERMITS, INSPECTIONS AND LICENSES NECESSARY FOR, AND INCIDENTAL TO THE INSTALLATION OF THE ELECTRICAL WORK AND THE USE OF SUCH WORK WHEN COMPLETED.

- 10. WHERE EQUIPMENT IS IDENTIFIED BY MANUFACTURER AND CATALOG NUMBER, IT SHALL BE CONSTRUED AS THE BARE OF REQUIREMENTS FOR QUALITY AND PERFORMANCE. WHERE MANUFACTURERS FOR EQUIPMENT ARE IDENTIFIED BY NAME, THI CONTRACTOR MAY SUBMIT FOR APPROVAL SIMILAR EQUIPMEN OF OTHER MANUFACTURERS AS SUBSTITUTION, PROVIDED HE COMPLIES WITH THE REQUIREMENTS OF DIVISION 1. THE ARCHITECT'S DECISION AS TO WHETHER THE SUBMITTED EQUIPMENT IS ACCEPTABLE SHALL BE FINAL AND BINDING. CHANGES NECESSARY TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT SHALL BE MADE AT THIS CONTRACTOR'S EXPENSE. AND SHALL BE AS APPROVED BY THE ARCHITECT. DETAILED DRAWINGS INDICATING THE REQUIRED CHANGES SHALL BE SUBMITTED FOR APPROVAL AT THE TIME THE SUBSTITUTION IS
- 11. SUBMIT SAMPLES AS REQUESTED BY THE ARCHITECT FOR HIS APPROVAL IN ACCORDANCE WITH THE PROVISIONS OF DIVISION 1

REQUESTED.

INSTALLATION.

- 12. ELECTRICAL EQUIPMENT SHALL BE MOUNTED AT THE FOLLOWING HEIGHTS UNLESS OTHERWISE NOTED OR DETAILED ON THE ELECTRICAL OR ARCHITECTURAL DRAWINGS. NOTES ON ARCHITECTURAL DRAWINGS SHALL SUPERSEDE THOSE NOTED OF OR DETAILED ON THE ELECTRICAL DRAWINGS. IF THE MOUNTING HEIGHT OF ANY ELECTRICAL COMPONENT IS QUESTIONABLE, OBTAIN CLARIFICATION FROM THE ARCHITECT BEFORE
- a. WALL MOUNTED DUPLEX CONVENIENCE OUTLETS -- 18 INCHES ABOVE FINISHED FLOOR TO CENTERLINE UNLESS NOTED OTHERWISE.
- b. LIGHT SWITCHES, PUSHBUTTON STATIONS, HOA SWITCHES, SELECTOR SWITCHES, AND ALL OTHER TOGGLE OR CONTROL SWITCHES -- 4 FEET ABOVE FINISHED FLOOR TO CENTERLINE.
- PANELBOARDS FOR LIGHTING, POWER AND OTHER AUXILIARY SYSTEMS -- 6 FEET, 6 INCHES TO TOP OF PANEL ABOVE FINISHED FLOOR.
- EQUIPMENT LOCATED IN ALL LOBBIES SHALL BE AS DETAILED ON THE ARCHITECTURAL DRAWINGS OR AS
- e. WALL BRACKETS SHALL BE AS DETAILED ON THE ARCHITECTURAL DRAWINGS OR AS DIRECTED BY THE ARCHITECT.
- f. FIRE ALARM PULL STATIONS 4 FEET, 0 INCHES ABOVE
- FINISHED FLOOR. FIRF ALARM HORN AND FLASHING LIGHT ASSEMBLY -- 6 FEET.
- 8 INCHES ABOVE FINISHED FLOOR TO THE BOTTOM SAFETY SWITCHES, SERVICE SWITCHES AND INDIVIDUALLY MOUNTED STARTERS AND CONTACTORS FOR THE CONTROL, OPERATION OR ISOLATION OF MOTORIZED EQUIPMENT -- 5
- FINISHED FLOOR UNLESS NOTED OTHERWISE ON THE DRAWINGS OR AS REQUIRED TO SUIT FIELD INSTALLATION CONDITIONS AND WITH THE PERMISSION OF THE

FEET, O INCHES MINIMUM TO CENTERLINE ABOVE THE

ARCHITECT. 13. EXCHANGE OF INFORMATION:

- a. ALL INFORMATION RELATIVE TO REQUIRED OPENINGS. EQUIPMENT SIZES. SEQUENCE OF INSTALLATION AND INTERFACING REQUIREMENTS WITH OTHER SECTIONS OF THE SPECIFICATIONS SHALL BE PROVIDED SUFFICIENTLY IN ADVANCE TO ALLOW FOR PROPER PLANNING IN THE OVERALL CONSTRUCTION SCHEDULE.
- b. THE WORK MUST BE PERFORMED SO THAT THE PROGRESS OF THE ENTIRE CONSTRUCTION PROJECT INCLUDING THE WORK UNDER OTHER SECTIONS OF THE SPECIFICATION WILL NOT BE DELAYED OR INTERFERED WITH. MATERIALS AND EQUIPMENT SHALL BE INSTALLED AS FAST AS CONSTRUCTION CONDITIONS OF THE PROJECT WILL PERMIT AND SHALL BE INSTALLED PROMPTLY.
- COORDINATE THE ROUTING AND TERMINATION POINTS OF ALL ELECTRICAL WORK WITH APPROVED SHOP DRAWINGS OF OTHER SECTIONS OF THE SPECIFICATIONS REQUIRING ELECTRICAL CONNECTIONS TO ALLOW FOR THE PROPER

INTERFACING OF SAME.

- d. THIS CONTRACTOR SHALL CONFORM AND COORDINATE THE LOCATIONS OF ALL MATERIALS AND FOUIPMENT SPECIFIED UNDER OTHER SECTIONS OF THE SPECIFICATION AS RELATED TO THE INSTALLATION OF THE ELECTRICAL SYSTEM UNDER THIS SECTION TO AVOID CONFLICTS.
- e. ASCERTAIN FROM APPROVED SHOP DRAWINGS OF OTHER SECTIONS ALL INFORMATION RELATIVE TO ELECTRICAL WORK TO BE EXECUTED UNDER THIS SECTION FOR THE INSTALLATION AND OPERATION OF APPROVED ELECTRICAL
- 14. EXAMINE THE ARCHITECTURAL DRAWINGS FOR THE LOCATIONS OF SUITABLE OPENINGS AND AISLES AVAILABLE FOR THE PASSAGE OF MATERIALS AND APPARATUS TO BE INSTALLED UNDER THIS SECTION. THIS SECTION SHALL INCLUDE THE RESPONSIBILITY FOR HAVING THE OPENINGS LEFT OPEN UNTIL THE EQUIPMENT HAS BEEN PROPERLY INSTALLED.
- 15. RECEIVE AND ACCEPT AT THE SITE, PROPERLY HANDLE, HOUSE AND PROTECT FROM INJURY AND THE WEATHER UNTIL READY FOR INSTALLATION, MATERIALS, EQUIPMENT AND APPARATUS FURNISHED UNDER THIS SECTION. ALSO, ELECTRICAL CONTROL EQUIPMENT FURNISHED UNDER OTHER SECTIONS OF THE SPECIFICATIONS AND TO BE INSTALLED UNDER THIS SECTION. EQUIPMENT DAMAGED IN THE COURSE OF HANDLING. INSTALLATION OR TEST SHALL BE REPLACED UNDER THIS SECTION OR REPAIRED TO THE SATISFACTION OF THE ARCHITECT WITHOUT ANY ADDITIONAL CHARGE.
- 16. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR FOR THE MAINTENANCE AND PROTECTION OF ALL MATERIALS AND EQUIPMENT PROVIDED DURING ALL PHASES OF CONSTRUCTION FROM LOSS DAMAGE OR DETERIORATION UNTIL FINAL ACCEPTANCE BY THE ARCHITECT
 - 17. THIS CONTRACTOR SHALL BE HELD RESPONSIBLE FOR AND SHALL PAY FOR ALL DAMAGE TO OTHER WORK CAUSED BY HIS WORK OR
 - 18. THE COMPLETION OF THE DAILY WORK, THIS CONTRACTOR SHALL REMOVE FROM THE PROPERTY ALL RUBBISH OR WASTE MATERIALS BELONGING TO HIM. KEEP THE JOB SITE FREE FROM ACCUMULATION OF WASTE MATERIALS AND RUBBISH.
 - 19. WORK SHALL NOT BE PERMANENTLY CONCEALED BEFORE INSPECTION AND APPROVAL BY THE ARCHITECT, AND ALL INSPECTORS AND AUTHORITIES HAVING JURISDICTION.
 - 20. UPON COMPLETION OF ALL WORK, FURNISH THE ARCHITECT, IN DUPLICATE, CERTIFICATES OF INSPECTION OR APPROVAL FROM STATE AND LOCAL INSPECTION AUTHORITIES HAVING
 - 21. WORK UNDER THIS SECTION SHALL BE GUARANTEED FREE FROM DEFECTS AS REQUIRED UNDER DIVISION 1.
 - 22. THE CONTRACTOR SHALL REFER TO DIVISION 1 OF THE SPECIFICATIONS FOR THE REQUIREMENTS AND PROCEDURES PERTAINING TO THE RECORD DOCUMENTS.
 - 23. SAFETY REGULATIONS ESTABLISHED BY OSHA SHALL BE MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD OF
 - 24. THE UNDERTAKING OF PERIODIC INSPECTIONS BY THE ARCHITECT OR ARCHITECT'S REPRESENTATIVE SHALL NOT BE CONSTRUED AS SUPERVISION OF ACTUAL CONSTRUCTION NOR MAKE EITHER OF THEM RESPONSIBLE FOR PROVIDING A SAFE PLACE FOR THE PERFORMANCE OF WORK BY THIS CONTRACTOR, FOR VISITORS TO THE SITE OR OCCUPANTS NOR MAKE THEM RESPONSIBLE FOR OMISSION OF ANY SAFETY DEVICE CALLED FOR BY CODES, ORDINANCES OR BY THE SPECIFICATIONS OF THE MANUFACTURERS OF THE EQUIPMENT SUPPLIED. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SAFE PROJECT ELECTRICALLY FOR ALL WORKMAN, VISITORS AND OCCUPANTS UNTIL THE PROJECT

HAS BEEN ACCEPTED BY THE OWNER.

- 25. ELECTRICAL EQUIPMENT SHALL OPERATE UNDER CONDITIONS OF LOAD WITHOUT SOUND OR VIBRATION WHICH IS ABNORMALLY OBJECTIONABLE FOR SUCH EQUIPMENT IN THE OPINION OF THE ARCHITECT. SOUND OR VIBRATION NOTICEABLE OUTSIDE OF THE ROOM IN WHICH IT IS INSTALLED, OR ANNOYINGLY NOTICEABLE INSIDE ITS OWN ROOM WILL BE CONSIDERED OBJECTIONABLE. SOUND OF VIBRATION CONDITIONS CONSIDERED OBJECTIONABLE SHALL BE CORRECTED IN APPROVED MANNER AT NO CHANGE IN
- 26. AFTER INSTALLATION, EQUIPMENT AND ACCESSORIES WITH FACTORY PRIMED OR FINISHED PAINTED SURFACES SHALL BE CLEANED AND BARE OR MARRED SPOTS TOUCHED UP UNDER THIS SECTION WITH THE SAME GRADE AND COLOR PAINT AS APPLIED AT
- 27. PROVIDE TEMPORARY LIGHT AND POWER IN CONFORMANCE WITH THE REQUIREMENTS OF DIVISION 1.
- 28. IT IS THE INTENT OF THE FLECTRICAL SECTION OF THE SPECIFICATIONS AND THE ELECTRICAL DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. ANY APPARATUS, APPLIANCE, MATERIAL OR WORK NOT SHOWN ON DRAWINGS BUT MENTIONED IN THE SPECIFICATION, OR VICE VERSA, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE ELECTRICAL INSTALLATION COMPLETE AND PERFECT IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE FURNISHED, DELIVERED AND INSTALLED UNDER THIS SECTION WITHOUT ADDITIONAL EXPENSE TO THE OWNER. DISCREPANCIES OR A QUESTION OF INTENT, SHALL BE REFERRED TO THE ARCHITECT FOR DECISION BEFORE ORDERING ANY MATERIALS OR EQUIPMENT, OR BEFORE THE START OF ANY RELATED WORK, AND THE INTERPRETATIONS OF THE ARCHITECT
- 29. PRIOR TO COMPLETION OF THE CONTRACT, PROVIDE OPERATING INSTRUCTIONS TO THE OWNER'S DESIGNATED REPRESENTATIVE WITH RESPECT TO OPERATION FUNCTIONS AND MAINTENANCE PROCEDURES FOR ALL EQUIPMENT AND SYSTEMS INSTALLED THOROUGHLY INSTRUCT THE OWNER'S REPRESENTATIVES IN THE OPERATION OF ALL ELECTRICAL SYSTEMS AND COMPONENTS TO THE COMPLETE SATISFACTION OF THE OWNER. ADVISE THE OWNER'S REPRESENTATIVES AS TO THE LOCATION OF ALL ELECTRICAL EQUIPMENT ASSOCIATED WITH THE VARIOUS

SHALL BE FINAL, CONCLUSIVE AND BINDING.

- 30. SUBMIT SIX (6) COPIES OF OPERATION AND MAINTENANCE DATA BOOKS TO THE ARCHITECT FOR APPROVAL. IF THE DATA BOOKS DO NOT MEET THE FOLLOWING REQUIREMENTS. THEY WILL BE REJECTED. DATA BOOKS THAT ARE REJECTED SHALL BE CORRECTED AND RESUBMITTED TO THE ARCHITECT.
- a. PROVIDE DATA IN BOOK FORM WITH RIGID COVERS, 8-1/2 INCHES BY 11 INCHES, OR 11 INCHES BY 17 INCHES, AND A MAXIMUM OF 2-1/2 INCHES THICK.
- b. PROVIDE DATA FOR PANELBOARDS, LIGHTING FIXTURES AND MOTOR CONTROLS AND OTHER ELECTRICAL SYSTEMS OR EQUIPMENT PROVIDED UNDER THIS CONTRACT.
- c. PROVIDE INDEX AND THUMB TABS FOR EACH ITEM OR CLASS. GROUP MATERIALS FOR ANY ONE ITEM.
- d. PROVIDE THE FOLLOWING INFORMATION AS APPLICABLE:
- IDENTIFYING NAME AND NUMBER
- COMPLETE NAMEPLATE DATA.

PERFORMANCE CURVES AND DATA.

- AS-BUILT WIRING AND CONTROL DIAGRAMS.
- 5) MANUFACTURER'S OPERATING AND MAINTENANCE 6) COMPLETE PARTS LIST WITH RECOMMENDATION FOR
- SPARE PARTS TO BE STOCKED BY THE OWNER. 7) NAME, ADDRESS AND TELEPHONE NUMBERS OF NEAREST PARTS SUPPLIER AND/OR SERVICE COMPANY.
- 8) ANY OTHER IMPORTANT INFORMATION AS PERTINENT TO THE PARTICULAR ITEM. 31. UPON COMPLETION OF ALL INSTRUCTION TO THE OWNER'S DESIGNATED REPRESENTATIVES SUBMIT TO THE ARCHITECT A COMPLETED "INSTRUCTIONS TO THE OWNER" FORM INCLUDING AL
- 32. AS USED IN THIS SECTION, THE FOLLOWING ITEMS ARE
- UNDERSTOOD TO HAVE THE FOLLOWING MEANINGS: a. THE CONTRACTOR SHALL MEAN THE ELECTRICAL TRADE

SUBMITTAL OF THIS FORM TO THE ARCHITECT IS THE

- CONTRACTOR PERFORMING THE WORK UNDER THIS SECTION. b. FURNISH SHALL MEAN PURCHASE AND DELIVER TO THE PROJECT SITE, COMPLETE WITH EVERY NECESSARY
- APPURTENANCE AND SUPPORT. INSTALL SHALL MEAN UNLOAD AT THE DELIVERY POINT AT HE SITE AND PERFORM ALL WORK NECESSARY TO ESTABLISH SECURE MOUNTING AND PROPER OPERATION AT THE PROPER LOCATION IN THE PROJECT.
- d. PROVIDE SHALL MEAN "FURNISH" AND "INSTALL".
- WORK SHALL MEAN ALL LABOR, MATERIALS, EQUIPMENT APPARATUS, CONTROLS, ACCESSORIES, AND ALL OTHER ITEMS REQUIRED FOR A PROPER AND COMPLETE
- WORK BY OTHERS MEANS WORK NOT PROVIDED UNDER THIS SECTION OF THE SPECIFICATION BUT WORK FURNISHED AND/OR INSTALLED UNDER OTHER SECTIONS OF THE SPECIFICATIONS WITHIN THIS CONTRACT. B PRODUCTS

B. PRODUCTS

- MATERIALS AND EQUIPMENT INCLUDED UNDER THIS PART AND REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE ELECTRICAL SYSTEM SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF PART A OF THIS SPECIFICATION.
- a. RIGID STEEL CONDUIT SHALL BE HOT DIPPED STEEL CONFORMING TO UL STANDARD NO. 6 AS MANUFACTURED BY REPUBLIC STEEL, ALLIED TUBE OR EQUAL.
- b. INTERMEDIATE METAL CONDUIT SHALL BE HOT DIPPED GALVANIZED STEEL CONFORMING TO UL STANDARD NO. 1242. CONDUIT SHALL BE AS MANUFACTURED BY REPUBLIC STEEL, ALLIED TUBE OR EQUAL.
- c. ELECTRIC METALLIC TUBING SHALL BE HOT DIPPED STEEL CONFORMING TO UL STANDARD NO. 797. TUBING SHALL BE AS MANUFACTURED BY REPUBLIC STEEL, ALLIED TUBE OR
- d. NON-METALLIC CONDUIT AND FITTINGS SHALL BE SCHEDULE 40 PVC 90 DEGREES C CONFORMING TO NEMA STANDARD TC2 AND UL STANDARD NO. 651. PLASTIC CONDUIT SHALL BE AS MANUFACTURED BY CARLON ELECTRICAL PRODUCTS CO., ALLIED TUBE AND CONDUIT COMPANY, TRIANGLE COMPANY
- STEEL. GALVANIZED INSIDE AND OUTSIDE. FORMING SMOOTH WIRING CHANNEL. FLEXIBLE METAL CONDUIT SHALL BE AS MANUFACTURED BY PYLE-NATIONAL. AMERICAN FLEXIBLE CONDUIT OR EQUAL. f. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE SIMILAR TO FLEXIBLE METAL CONDUIT, BUT WITH EXTRUDED MOISTURE AND OILPROOF OUTER JACKET OF POLYVINYL

CONTINUOUS, FLEXIBLE, INTERLOCKED DOUBLE WRAPPED

e. FLEXIBLE METAL CONDUIT SHALL BE SINGLE STRIP.

AMERICAN FLEXIBLE CONDUIT, INTERNATIONAL METAL HOSE g. RIGID STEEL AND INTERMEDIATE METAL CONDUIT FITTINGS, COUPLINGS, BUSHINGS, LOCKNUTS AND CONNECTORS SHALL BE THREADED AND GALVANIZED OR CADMIUM PLATED AND SHALL BE AS MANUFACTURED BY

O-Z/GEDNEY, THOMAS & BETTS OR EQUAL

CHLORIDE PLASTIC AND BE AS MANUFACTURED BY

- h. COUPLINGS AND CONNECTORS FOR ELECTRIC METALLIC TUBING SHALL BE GALVANIZED STEEL COMPRESSION TYPE AND SHALL BE AS MANUFACTURED BY O-Z/GEDNEY, THOMAS & BETTS OR EQUAL.
- FITTINGS FOR FLEXIBLE METALLIC CONDUIT SHALL BE STEEL OR MALLEABLE IRON ZINC PLATED WITH CENTER STOP AND INSULATED THROAT AS MANUFACTURED BY O-Z/GEDNEY, THOMAS & BETTS OR EQUAL.
- j. FITTINGS FOR LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE MALLEABLE IRON ZINC PLATED SUITABLE FOR GROUNDING AND BE AS MANUFACTURED BY O-Z/GEDNEY, THOMAS & BETTS OR EQUAL.
- 3. PULL, JUNCTION, OUTLET BOXES AND WIREWAYS:
- a. EACH OUTLET, JUNCTION OR PULL BOX SHALL BE OF THE PROPER TYPE, CLASS AND CONSTRUCTION TO SUIT THE SPECIFIC CONDITIONS ENCOUNTERED.
- b. PULL AND JUNCTION BOXES SHALL BE CODE GAUGE MINIMUM THICKNESS GALVANIZED STEEL WITH SCREW-ON COVERS, UNLESS OTHERWISE NOTED. PROVIDE CABLE SUPPORTS FOR THE SUPPORT OF ALL TIERS OF CABLES ANI CONDUCTORS WITHIN THE PULL OR JUNCTION BOXES. PULL AND JUNCTION BOXES SHALL BE MANUFACTURED BY KEYSTONE-COLUMBIA, LEE PRODUCTS OR MCKINSTRY METAL WORKS.
- c. INTERIOR OUTLET BOXES SHALL BE CODE GAUGE GALVANIZED STEEL AND SHALL BE OF THE SHAPES AND SIZES TO SUIT THEIR RESPECTIVE LOCATIONS AND INSTALLATIONS, AND SHALL BE PROVIDED WITH COVERS TO SUIT THEIR FUNCTION AND INSTALLATION. BOXES SHALL BE MIDLAND-ROSS, APPLETON ELECTRIC COMPANY OR RACO.
- d. EXTERIOR SURFACE MOUNTED OUTLET AND JUNCTION BOXES SHALL BE OF CAST METAL WITH THREADED HUBS, NEMA TYPE 3R. KILLARK, PYLE-NATIONAL, O-Z/GEDNEY OR CROUSE-HINDS CONDULET TYPE. COVERS SHALL BE CAST METAL AND SHALL BE GASKETED RAINTIGHT EXTERIOR
- e. WIREWAYS SHALL BE OF THE TOTALLY ENCLOSED TYPE. CONSTRUCTED OF CODE GAUGE SHEET METAL WITH HINGED COVER. PROVIDE ALL FITTINGS, TEES, ELBOWS, WIRE RETAINERS, CLOSURE PLATES, HANGERS AND COMPONENT PARTS REQUIRED FOR A COMPLETE INSTALLATION. WIREWAYS SHALL BE AS MANUFACTURED BY MCKINSTRY METAL WORKS, LEE PRODUCTS OR KEYSTONE COLUMBIA.

TRIANGLE/PWC.

- a. ALL CONDUCTORS RATED FOR 600 VOLT FOR THE WIRING OF BRANCH CIRCUITS, MOTORIZED CIRCUITS, AUXILIAR' SYSTEM WIRING AND DISTRIBUTION FEEDER CONDUCTORS SHALL BE SOFT DRAWN COPPER AND SHALL HAVE A CONDUCTIVITY OF NOT LESS THAN 98 PERCENT OF THE ANSI STANDARD ANNEALED COPPER. CONDUCTORS SHALL BEAR THE MARKINGS OF THE UNDERWRITERS' LABORATORIES, THE AWG SIZE, TYPE INSULATION, MAXIMUM PERMISSIBLE VOLTAGE. THE MANUFACTURER'S NAME AND TRADE MARK AND SHALL BE TAGGED FOR THE YEAR OF THE AWARDING OF THE CONTRACT. WIRING SHALL BE A MINIMUM OF #12 AWG SOLID. EXCEPT MOTOR CONTROL CIRCUIT WIRING AND FIRE ALARM SYSTEM WIRING MAY BE #14 AWG. WIRE SIZES #8 AWG AND LARGER SHALL BE STRANDED. WIRE OF SIZE SMALLER THAN #8 AWG SHALL BE SOLID. WIRE AND CABLE SHALL BE TYPE THWN-THHN BUILDING WIRE, 600V, RATED FOR 75 DEGREES C IN WET LOCATIONS AND 90 DEGREES C IN DRY LOCATIONS. WIRE AND CABLES SHALL BE UL LISTED, BEAR THE UL LABEL AND BE MANUFACTURED BY ROME CABLE CORPORATION, GENERAL CABLE CORPORATION OR
- b. FIRE ALARM CONDUCTORS ARE TO BE COPPER CONDUCTORS IN EMT. CONDUCTORS ARE TO BE SOLID COPPER IN SIZES #18 THROUGH #14. INSULATION IS TO BE TYPE THHN RATED FOR 105 DEGREES C FOR A POWER LIMITED FIRE PROTECTIVE SIGNALING CABLE APPLICATIONS. PROVIDE AN INSULATE
- GROUND CONDUCTOR. CABLE TO BE RATED FOR 600V. TOGGLE SWITCHES SHALL BE OF THE TOTALLY ENCLOSED, FLUSH TUMBLER TYPE AND SHALL BE SPECIFICATION GRADE RATED 20A, 120/277V. TOGGLE SWITCH FINISH SHALL BE AS SPECIFIED BY THE ARCHITECT. HOWEVER. WHEN NOT SPECIFIED BY THE ARCHITECT. BODIES SHALL BE OF THE WHITE PHENOLIC COMPOUND, QUIET SWITCHES SHALL BE AS MANUFACTURED BY ARROW-HART, BRYANT, HUBBELL OR PASS & SEYMOUR.
- 6. RECEPTACLES SHALL BE SPECIFICATION GRADE INCLUDING SPECIAL PURPOSE, GROUND FAULT AND INSULATED GROUND TYPE AND BE SUPPORTED BY MOUNTING YOKE HAVING PLASTER EARS. RECEPTACLES SHALL BE SIDE OR BACK WIRED WITH SCREW TERMINALS. ALL RECEPTACLES SHALL BE OF THE GROUNDING TYPE AND SHALL BE CONNECTED TO THE METAL MOUNTING YOKE A TERMINAL SHALL BE PROVIDED FOR GROUND WIRE ON ALL RECEPTACLES. RECEPTACLES FINISH SHALL BE SPECIFIED BY THE ARCHITECT, HOWEVER, WHEN NOT SPECIFIED BY THE ARCHITECT, BODIES SHALL BE OF THE WHITE PHENOLIC COMPOUND TYPE. RECEPTACLES SHALL BE MANUFACTURED BY ARROW-HART, BRYANT, HUBBELL OR PASS & SEYMOUR.
- PROVIDE SPECIFICATION GRADE DEVICE PLATES. FINISH OF THE DEVICE PLATES IS TO BE SPECIFIED BY THE ARCHITECT, HOWEVER WHEN NOT SPECIFIED BY THE ARCHITECT, THE DEVICE PLATES ARE TO BE .040 INCH GAUGE, TYPE 302, HIGH NICKEL CONTENT STAINLESS STEEL, BRUSHED FINISH. PROVIDE .060 INCH GAUGE WHERE INSTALLATION REQUIRES MORE THAN ONE GANG. PLATES SHALL BE OF APPROPRIATE TYPE AND SIZE FOR WIRING AND CONTROL DEVICES, SIGNAL AND TELEPHONE OUTLETS. DEVICE PLATES SHALL BE BY THE SAME MANUFACTURER AS THE DEVICES.
- WIRE AND CABLE CONNECTORS FOR #8 AWG AND SMALLER SHALL BE OF THE PRESSURE INDENT TYPE WITH AN INSULATING COVER EQUAL TO BUCHANAN ELECTRIC PRODUCTS. CONNECTIONS TO MOTOR LEADS SHALL BE MADE WITH SOLDERLESS LUGS SIMILAR TO BURNDY ENGINEERING COMPANY. WIRE AND CABLE CONNECTORS FOR #6 AWG AND LARGER SHALL BE OF THE BOLTED PRESSURE TYPE EQUAL TO 0-Z/GEDNEY MANUFACTURING COMPANY OR BURNDY ENGINEERING COMPANY. COPPER CABLES #1/0 AWG AND LARGER SHALL BE FASTENED WITH A CONNECTOR REQUIRING TWO (2) BOLTS. JOINTS. TAPS AND SPLICES SHALL BE COVERED WITH SCOTCH BRAND TYPE #33 OR APPROVED EQUAL.
- FIRE STOP SEALANTS USED TO SEAL ALL OPENINGS AROUND ELECTRICAL RACEWAY SYSTEMS PASSING THROUGH FLOORS AND FIRE RATED WALLS SHALL BE OF THE FIRE RETARDANT SILICONE FOAM TYPE. THE SEALANT SHALL BE PLIABLE IN CHARACTER CAPABLE OF ADHERING ITSELF TO THE SURROUNDING SURFACES WITHIN THE VOID BEING FILLED. THE SEALANT SHALL REMAIN IN THE PLIABLE STATE PERMITTING NORMAL BUILDING VIBRATION AND ALLOWING FOR MATERIAL EXPANSION AND CONTRACTION WITHOUT CRACKING OR CRUMBLING. FIRE STOP SEALANTS SHALI BE FLAME SAFE AS MANUFACTURED BY THOMAS & BETTS OR

APPROVED EQUAL.

INC., "WAY LOCTOR" OR EQUAL.

- FURNISH ACCESS PANELS FOR ACCESS TO ALL CONCEALED PARTS OF THE ELECTRICAL SYSTEM THAT REQUIRED ACCESSIBILITY FOR THE PROPER OPERATING AND MAINTENANCE OF THE SYSTEM. THE ACCESS PANELS WILL BE INSTALLED BY THE CONTRACTOR UNDER THE APPROPRIATE SECTION OF THE SPECIFICATIONS FOR THE SURFACE IN WHICH THE PANELS ARE LOCATED. COORDINATE LOCATION OF ALL ACCESS PANELS WITH THE ARCHITECT. MINIMUM SIZE ACCESS PANEL IS TO BE 12 INCHES BY 24 INCHES. ACCESS PANELS SHALL BE PRIME PAINTED WITH CYLINDER LOCK AND TWO KEYS AS MANUFACTURED BY INLAND STEEL PRODUCTS COMPANY, "MILCOR", MIAMI CAREY, WALSH-NANNON-GLADWIN,
- SEALING COMPOUNDS FOR RACEWAYS, DUCTS AND FITTINGS SHALL BE PUTTY-LIKE CONSISTENCY WORKABLE WITH THE HANDS AND SHALL NOT HARDEN MATERIALLY WHEN EXPOSED TO AIR. THE SEALING COMPOUNDS SHALL BE MANUFACTURED BY MINNESOTA MINING, JOHNS-MANVILLE OR DOW CORNING. -SUPPORTS REQUIRED FOR THE PROPER INSTALLATION, MOUNTING AND SUPPORT OF ALL LIGHTING FIXTURES, AND ELECTRICAL EQUIPMENT TO BE INSTALLED UNDER THIS CONTRACT SUPPLEMENTARY STEEL, CHANNELS AND SUPPORTS SHALL BE FURNISHED. INSTALLED AND SECURED WITH ALL FITTINGS. SUPPORT RODS AND APPURTENANCES REQUIRED FOR A COMPLETE SUPPORT OR MOUNTING SYSTEM AND SHALL BE UL LISTED, BE GALVANIZED STEEL, AND BE MANUFACTURED BY MIDLAND-ROSS, JNISTRUT, POWER-STRUT, T.J. COPE OR CHALFANT.

- 13. NAMEPLATES SHALL BE THREE-PLY BLACK BAKELITE WITH 1/4 INCH HIGH ENGRAVED WHITE LETTERS AND TWO (2) MOUNTING HOLES, NAMEPLATES SHALL BE SECURELY ATTACHED TO EQUIPMENT WITH GALVANIZED SCREWS OR RIVETS. WORDING OF THE NAMEPLATES SHALL BE IN CONFORMANCE WITH THE RESPECTIVE SCHEDULES AND NOTES ON THE DRAWINGS. NAMEPLATES SHALL BE PROVIDED ON THE FOLLOWING EQUIPMENT: MOTOR CONTROLS, PANELBOARDS, DISTRIBUTION BOARD, REMOTE OPERATING STATION, TIME CLOCK, SAFETY SWITCH, PILOT LIGHT AND CONTROL DEVICE IDENTIFYING THE UNITS CONTROLLED OR PROTECTED. NAMEPLATES SHALL BE PROVIDED FOR ALL AUXILIARY SYSTEM EQUIPMENT AS INDICATED AND INCLUDED
- 14. PROVIDE DISCONNECT SWITCHES FUSED OR UNFUSED AS SHOWN ON DRAWINGS. SWITCHES SHALL BE NEMA TYPE HD SAFETY SWITCHES FOR HEAVY DUTY WITH INTERLOCKING COVER, SIDE OPERATED. SWITCHES EXPOSED TO WEATHER SHALL HAV RAINTIGHT ENCLOSURES. SWITCH ENCLOSURE SHALL BE NEMA LISTED FOR LOCATION AND ATMOSPHERE IN WHICH THEY ARE MOUNTED. CURRENT CARRYING PARTS SHALL BE SILVER PLATED. DISCONNECT SWITCHES SHALL BE AS MANUFACTURED BY ONE OF THE FOLLOWING; GENERAL ELECTRIC, SQUARE D, SIEMENS OR EQUAL.

UNDER OTHER PARAGRAPHS OF THIS SECTION.

- 15. PANELBOARDS:
- a. PROVIDE DEAD FRONT PANELBOARDS. ARRANGED FOR 480/277V, 3-PHASE, 4-WIRE, SOLID NEUTRAL OR 120/208V, 3-PHASE, 4-WIRE, SOLID NEUTRAL AS SHOWN ON DRAWINGS. PANELS SHALL MEET OR EXCEED ALL REQUIREMENTS OF NEMA PB-1 AND UL 67. PANELS SHALL BE MINIMUM 20 INCHES WIDE.
- PROVIDE BOLT-ON, MOLDED CASE, CIRCUIT BREAKERS WITH THERMALMAGNETIC TRIPS. MULTIPLE POLE BREAKERS SHALL BE SINGLE HANDLES, COMMON TRIP. PROVID HANDLE LOCKS FOR EMERGENCY LIGHTING CIRCUITS, FIRE ALARM, SECURITY, OR OTHER SIMILAR FUNCTIONS. MAIN BREAKERS SHALL BE VERTICALLY MOUNTED, SEPARATE FROM BRANCH BREAKERS. CIRCUIT BREAKERS SHALL BE AS
- 1) 120/208V PANELBOARDS -- 10,000 SYMMETRICAL RMS AMPERES FOR ONE POLE BREAKERS: 10,000 SYMMETRICAL RMS AMPERES AT RATED SYSTEM VOLTAGE FOR TWO-POLE AND THREE POLE BREAKERS UNLESS OTHERWISE NOTED.
- 2) CIRCUIT BREAKERS USED IN 277/480V LIGHTING PANELBOARDS SHALL BE UL LISTED FOR SWITCHING OF SINGLE POLE LIGHTING CIRCUITS.
- c. PROVIDE COPPER BUS BARS AND FULL SIZE INSULATEI NEUTRAL BUS. PANEL BUSWORK SHALL BE RATED TO CARRY, AS MINIMUM, AMPERE RATING OF OVERCURRENT DEVICE THAT SERVES PANEL. PROVIDE ANTI-TURN, SOLDERLESS LUGS SUITABLE FOR COPPER OR ALUMINUM WIRE
- d. PROVIDE SEPARATE EQUIPMENT GROUND BUS FOR EACH PANEL. GROUND BUS SHALL BE BONDED TO ENCLOSURE PROVIDE SEPARATE ISOLATED GROUND BUS WHERE REQUIRED e. PROVIDE "DOOR-IN-DOOR" CONSTRUCTION FOR EACH PANEL

WITH HEAVY DUTY DOOR CONTINUOUSLY HINGED

VERTICALLY TO BOX SECTION OF PANEL FOR ACCESS TO WIRING GUTTERS. f. PROVIDE GALVANIZED CODE GAUGE STEEL SURFACE METAL BOXES READY FOR PAINTING. PROVIDE TWO COATS OF FACTORY APPLIED PAINT ON TRIMS OF FLUSH MOUNTED

PANELS. PROVIDE COMBINATION FLUSH CATCH AND LOCK

- WITH TWO KEYS. ALL KEYS TO BE KEYED ALIKE. 9. PANELBOARDS SHALL BE PROVIDED WITH DIRECTORIES ON INSIDE SURFACE OF DOORS. DIRECTORIES SHALL IDENTIFY PANELBOARDS AND INDICATE CLEARLY CIRCUIT NUMBER AND DESCRIPTION OF THE ASSOCIATED BRANCH CIRCUIT, ALLOW AT LEAST THREE (3) LINES FOR EACH CIRCUIT
- MANUFACTURER, GENERAL ELECTRIC.
- 16. MOTOR CONTROL EQUIPMENT: a. PROVIDE MAGNETIC ACROSS-THE-LINE MOTOR STARTERS MINIMUM SIZE 1 EXCEPT AS SPECIFIED OR SHOWN ON DRAWINGS BY GENERAL ELECTRIC. SQUARE D. SIEMENS OR

h. PANEL BOXES, COVERS AND INTERIORS SHALL BE BY ONE

- b. PROVIDE MOTOR STARTERS AND CONTROLS WITH SUITABLE METAL ENCLOSURES TO NEMA INDUSTRIAL CONTROL
- PROVIDE MOTOR STARTERS WITH INDIVIDUAL RUNNING OVERCURRENT PROTECTION IN EACH PHASE AND WITH TWO SETS OF AUXILIARY CONTACTS. ONE NORMALLY OPEN AND ONE NORMALLY CLOSED. STARTERS FOR SINGLE PHASE MOTORS SHALL BE 2 POLE; STARTERS FOR 3 PHASE MOTORS SHALL BE 3 POLE. STARTERS SHALL HAVE BUILT-IN COMBINATION DISCONNECT SWITCH, MOTOR CIRCUIT PROTECTOR, SELECTOR SWITCH, ETC., AS DESIGNATED ON
- d. PROVIDE MANUAL STARTERS WITH TOGGLE MECHANISM FOR
- FULL VOLTAGE STARTING. e. PROVIDE STANDARD DUTY PILOT LIGHTS, PUSH BUTTONS AND CONTROLS. PILOTS SHALL BE RED JEWEL, EXCEPT 2-SPEED PILOTS SHALL BE RED FOR HIGH SPEED, AMBER
- FOR LOW SPEED AND GREEN FOR "OFF". f. STARTERS AND REMOTE CONTROL STATIONS FURNISHED UNDER THIS SECTION SHALL HAVE LAMINATED PLASTIC ENGRAVED NAMEPLATES DESIGNATING EQUIPMENT
- MAGNETIC MOTOR STARTERS FURNISHED UNDER THIS SECTION CONNECTED TO CIRCUITS OPERATING AT MORE THAN 120V SHALL HAVE BUILT-IN CONTROL TRANSFORMERS WITH 120 VOLT SECONDARY CONTROL SUPPLY
- h. THERMAL TRIPS FOR MOTOR STARTERS SUPPLIED UNDER THIS SECTION SHALL BE AMBIENT TEMPERATURE COMPENSATED.

17. FURNISH NEW LAMPS FOR EACH LIGHTING FIXTURE. REFER TO

FIXTURE PLAN FOR LAMP TYPE, WATTAGE, VOLTAGE AND SIZE. LAMPS SHALL BE MANUFACTURED BY GENERAL ELECTRIC, SYLVANIA OR EQUAL.

- 18. LIGHTING FIXTURES: a. LIGHTING FIXTURES AND/OR LIGHTING EQUIPMENT SHALL CONSIST OF ALL NECESSARY PARTS, BALLASTS AND HARDWARE FACTORY ASSEMBLED TO PROVIDE A COMPLETE AND OPERABLE LUMINOUS ELEMENT TO MEET THE SPECIFICATIONS AND APPROVAL OF THE ARCHITECT.
- b. LIGHTING FIXTURES (STANDARD AND SPECIAL) SHALL BE UL LISTED. NO EXCEPTIONS SHALL BE MADE. FIXTURE MANUFACTURER SHALL FURNISH TO THE ARCHITECT VIA THIS CONTRACTOR NOTARIZED LETTERS SUBSTANTIATING THE VALIDITY OF THE UL LABEL ON THEIR FIXTURE IF REQUIRED. THE LETTER SHALL INCLUDE THE UL TEST
- NUMBER AND DATE WHEN FIXTURE WAS ACCEPTED BY UI c. THE EXTERIOR FINISH COLOR) OF ALL LIGHTING FIXTURES DESIGNATED IN DRAWINGS AS HAVING A SHALL BE SELECTED BY CONSTRUCTION PERIOD AT REVIEW. (COLOR OF ALL LIGHTING THE SPECIFICATIONS OR ON THE SPECIAL FINISH, THE COLOR THE ARCHITECT DURING THE TIME OF
- d. LIGHTING FIXTURES SHALL BE AS SHOWN ON THE LIGHTING PLAN. THE FIXTURES LISTED UNDER EACH TYPE SHALL BE BY THE SAME MANUFACTURER. IF IT IS ELECTED TO FURNISH OTHER THAN THE FIXTURES MANUFACTURED BY THOSE SPECIFIED, THEN THE FIXTURE PROPOSED SHALL BE EQUAL IN EVERY RESPECT. TO THE PRODUCT SPECIFIED, INCLUDING DIMENSIONS, FINISH, PHOTOMETRIC CURVES, MATERIAL AND OPERATING CHARACTERISTICS, PHOTOMETRIC CURVES OF LIGHTING FIXTURES SUBMITTED FOR APPROVAL SHALL BE FROM AN INDEPENDENT LABORATORY.

- 19. FIRE ALARM:
- REFER TO LANDLORD'S FIRE ALARM EQUIPMENT SPECIFICATIONS.

- 1. IT IS THE INTENT OF THE FOLLOWING SUB-SECTIONS OF THIS PART TO DESCRIBE, IN GENERAL, THE INSTALLATION REQUIREMENTS AND THE QUALITY OF WORKMANSHIP REQUIRED BY THE INTENT OF THIS SPECIFICATION.
- INTERIOR RACEWAY SYSTEMS:
- a. PROVIDE THROUGHOUT THE BUILDING A COMPLETE RACEWAY SYSTEM FOR THE INSTALLATION OF FEEDERS BRANCH CIRCUITS, AUXILIARY SYSTEM WIRING REQUIRED FOR THE FUNCTION AND OPERATION OF ALL ELECTRICAL AND AUXILIARY SYSTEMS SPECIFIED. THE RACEWAY SYSTEMS SHALL BE COMPLETE IN EVERY DETAIL AND SHALI CONSIST OF ALL CONDUIT, OUTLETS, PULL AND JUNCTION BOXES, FITTINGS, HANGERS, SUPPORTS AND ALL APPURTENANCES REQUIRED TO COMPLY WITH THE INTENT OF THIS SPECIFICATION.
- b. RACEWAYS SHALL BE THOROUGHLY GROUNDED AND BONDED IN COMMON -
- RACEWAYS CONCEALED WITHIN FINISHED WALLS, CEILINGS AND FLOORS SHALL BE KEPT 6 INCHES FROM PARALLEL RUNS OF HOT WATER PIPES. EXPOSED RACEWAYS SHALL BE SUPPORTED AT INTERVALS OF NOT MORE THAN TEN FEET, AND CONDUIT RUNS ARE TO BE INSTALLED PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS, OR INTERSECTIONS OF VERTICAL PLANES AND CEILING.
- TURNS, WHEREVER REQUIRED IN RACEWAYS, SHALL BE MADE BY THE USE OF FACTORY ELLS AND FITTINGS. HOWEVER, WHERE FIELD MADE BENDS ARE REQUIRED, DUE TO CONSTRUCTION CONDITIONS, THEY SHALL BE MADE WITH APPROVED HICKEY OR CONDUIT BENDING MACHINES. WHERE A MULTIPLICITY OF CONDUITS MAKE THE SAME TURN, A CODE GAUGE STEEL JUNCTION BOX WITH REMOVABLE COVER MAY BE USED. WHEN JUNCTION BOXES ACCOMMODATE MORE THAN TWO SEPARATE CIRCUITS, EACH CIRCUIT SHALL BE GROUPED AND BOUND WITH WIRE MANAGERS. EACH FEEDER, BRANCH CIRCUIT AND AUXILIARY SYSTEM CABLES SHALL BE TAGGED IN THE PUL AND JUNCTION BOXES. THE TAGS SHALL INDICATE THE POINT OF CABLE ORIGINATION AND TERMINATION AS WELL AS THE INTENDED PURPOSE
- EXPOSED RACEWAYS PASSING THROUGH WALLS OR CEILINGS SHALL BE FITTED WITH CHROMIUM PLATED, SPUN OR SPLIT TYPE ESCUTCHEONS. PIPE SLEEVES SHALL EXTEND 3/4 INCH ABOVE FINISHED FLOOR, AND BE FLUSH IN WALLS. ALL CONDUIT SLEEVES PASSING THROUGH FLOORS AND FIRE RATED WALLS SHALL BE RETURNED TO THE ORIGINAL FIRE RATING OF THE FLOOR OR WALL AFTER THE INSTALLATION OF RACEWAYS IN SAME BY MEANS OF FILLING THE OPENING WITH A FOAM SILICONE MATERIAL
- f. THE INCLUDED DRAWINGS ARE, FOR THE MOST PART, DIAGRAMMATIC AND, EXCEPT WHERE DEFINITELY DIMENSIONED, THE LOCATIONS OF RACEWAYS AND
- RACEWAY SYSTEMS SHALL BE DETERMINED IN THE FIELD. CRUSHED OR DEFORMED RACEWAYS SHALL NOT BE INSTALLED. CARE SHALL BE TAKEN TO PREVENT THE LODGEMENT OF PLASTER, DIRT OR TRASH IN RACEWAYS, BOXES, FITTINGS, AND EQUIPMENT DURING THE COURSE OF CONSTRUCTION. CLOGGED RACEWAYS SHALL BE ENTIRELY FREE OF OBSTRUCTION OR SHALL BE REPLACED.
- RACEWAYS SHALL BE SECURED BY PIPE STRAPS OR SHALL BE SUPPORTED BY WALL BRACKETS ON WOOD, TOGGLE BOLTS ON HOLLOW MASONRY UNITS, EXPANSION BOLTS (CONCRETE OR BRICK, AND MACHINE SCREWS OR WELDED THREADED STUDS ON STEEL WORK. SECURING OF RACEWAYS TO HOLLOW TYPE STUD WALL OR FIBERBOARD CONSTRUCTION SHALL BE AVOIDED.

SECURED TO THE PRIMARY STRUCTURAL MEMBERS, NOT TO

LATHING CHANNELS OR T-BARS, Z-BARS OR OTHER

RACEWAYS IN HUNG CEILINGS SHALL BE RUN ON AND

ELEMENTS WHICH ARE THE DIRECT SUPPORTS OF TH

CEILING SYSTEM. SECURE CONDUIT FIRMLY TO STEEL BY CLIPS AND FITTINGS DESIGNED FOR THAT PURPOSE. MAINTAIN AT LEAST 1/4 INCH AIR SPACE BETWEEN CONDUITS AND SUPPORTING WALLS EACH CONDUIT IN A BANK OF CONDUITS SHALL BE SEPARATELY CLAMPED. SUPPORTS FOR LARGE BANKS OF CONDUITS SHALL BE CHANNEL IRON WITH j. WATERPROOF MEMBRANE OF THE STRUCTURAL FLOOR

SLABS AND FOUNDATION WALLS OF THE BUILDING SHALL BE

STRUCTURAL ENGINEER AND IN A MANNER ACCEPTABLE TO

THE ARCHITECT. PROPOSED PENETRATION POINTS, SIZE

PENETRATED ONLY AT LOCATIONS APPROVED BY THE

- OPENINGS AND METHOD TO BE USED SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL PRIOR TO THE INSTALLATION OF SAME.
- k. WIRING SHALL NOT BE PULLED INTO THE RACEWAY SYSTEM UNTIL IT IS MECHANICALLY COMPLETE IN ALL DETAILS.

1. FURNISH AND INSTALL A 1/8 INCH NYLON PULL CORD IN ALL

EMPTY RACEWAYS. m. GALVANIZED, RIGID METAL RACEWAYS INSTALLED IN THE EARTH UNDER FLOOR SLABS SHALL BE GIVEN TWO COATS OF BLACK ASPHALT PAINT AFTER BEING MADE UP AND BURIED IN THE EARTH. UNDERGROUND RACEWAYS INSTALLED IN THE EARTH UNDER THE BUILDING SLAB SHALL BE COVERED

BY A MINIMUM OF 6 INCHES OF EARTH.

- n. RACEWAYS BURIED DIRECTLY IN THE EARTH -- RIGID STEEL OR INTERMEDIATE METAL CONDUIT PAINTED WITH TWO COATS OF BLACK ASPHALT PAINT. PVC SCHEDULE 40 CONDUIT MAY BE USED WHEN PROVIDED WITH A MINIMUM CONCRETE ENVELOPE OF 3" ON ALL SIDES. THIS CONTRACTOR SHALL PROVIDE AN EQUIPMENT GROUNI CONDUCTOR. GROUND CONDUCTOR SHALL BE SIZED TO
- COMPLY WITH THE REQUIREMENTS OF THE NEC. RACEWAYS INSTALLED EXPOSED IN MECHANICAL AND UNFINISHED SPACES -- RIGID STEEL, INTERMEDIATE CONDUIT
- RACEWAYS INSTALLED EXPOSED IN FINISHED AREAS --SURFACE

RACEWAYS INSTALLED IN WET OR DAMP AREAS -- RIGID

r. CONNECTIONS TO PORTABLE EQUIPMENT FROM JUNCTION

STEEL CONDUIT.

6 FEET, 0 INCHES LONG.

BOXES AND CONNECTION OF RACEWAYS TO MOTOR CONDUIT TERMINAL BOXES -- LIQUIDTIGHT FLEXIBLE METAL CONDUIT WITH A MAXIMUM LENGTH OF 6 FEET, 0 INCHES LONG AND A MINIMUM LENGTH OF 18 INCHES. s. FLEXIBLE TAPS FROM JUNCTION BOXES ABOVE HUNG CEILINGS TO RECESSED FLUORESCENT LIGHTING FIXTURES

SHALL BE IN FLEXIBLE METAL CONDUIT. LENGTH OF

FLEXIBLE METAL CONDUIT FROM THE JUNCTION BOXES TO

THE RECESSED LIGHTING FIXTURES SHALL BE A MAXIMUM OF

t. BRANCH CIRCUIT WIRING INSTALLED CONCEALED IN CEILINGS, FURRED OR STUD WALLS -- EMT OR METAL CLAD CABLE TYPE MC. u. FIRE ALARM WHICH IS TO BE IN RIGID CONDUCT SYSTEM.

TYPE OF CONDUCT SYSTEM TO BE AS REQUIRED BY

LOCATIONS. CABLE INSTALLED CONCEALED IN CEILING IN

WALLS IS TO BE TYPE MC FIRE ALARM CABLE. 3. EQUIPMENT AND SYSTEMS INSTALLED AND CONNECTED UNDER THIS CONTRACT SHALL BE BONDED AND GROUNDED IN ACCORDANCE WITH THE STANDARDS OF THE LATEST NATIONAL ELECTRICAL SAFETY CODE, THE NATIONAL ELECTRICAL CODE, AND ALL STATE AND LOCAL REGULATIONS AS A MINIMUM. GROUNDING AND BONDING REQUIREMENTS SPECIFIED OR INDICATED ON THE DRAWINGS THAT EXCEED THE REQUIREMENTS OF THE AGENCIES

INDICATED ABOVE SHALL BE ADHERED TO.

- 4. CONDUITS AND DUCTS FOR INCOMING AND OUTGOING ELECTRICAL SERVICES TO THE BUILDING THROUGH THE FOUNDATION WALLS SHALL BE CLOSED WITH SEALS SET INSIDE OF THE RACEWAY SYSTEMS AT THE FOUNDATION WALL. THE SEALS SHALL BE INSTALLED SO AS TO EXPAND AROUND THE CABLES AND THE INSIDE OF THE RACEWAYS WHEN THEY ARE TIGHTENED SO AS TO
- THIS CONTRACTOR SHALL REMOVE THE TEMPORARY LIGHTING AND POWER SERVICES AND STRINGERS WHEN SO DIRECTED BY THE ARCHITECT. TEMPORARY LIGHTING STRINGERS SHALL BE REMOVED FROM CEILING PLENUM SPACES PRIOR TO THE CLOSING
- UNLESS OTHERWISE SPECIFIED HEREIN, ALL CONDUITS PASSING THROUGH FLOORS, WALLS OR PARTITIONS SHALL BE PROVIDED WITH SLEEVES HAVING AN INTERNAL DIAMETER ONE INCH LARGER (MINIMUM) THAN THE OUTSIDE DIAMETER OF THE RACEWAYS PASSING THROUGH THEM. UNLESS OTHERWISE SPECIFIED, ALL SLEEVES SHALL BE SCHEDULE 40 BLACK STEEL PIPE, SET FLUSH WITH FINISHED WALL OR SET ONE INCH ABOVE FINISHED FLOOR SURFACES. THE SPACE BETWEEN SLEEVE AND CONDUIT SHALL BE PACKED WITH FIRE AND WATERPROOF FOAM SILICON.
- CORE DRILLING, WHEN REQUIRED, SHALL BE PERFORMED UNDER THIS SECTION AFTER RECEIPT OF APPROVAL BY THE ARCHITECT AND HIS STRUCTURAL ENGINEER.
- COLOR CODING SHALL BE MAINTAINED FOR ALL FEEDERS AND BRANCH CIRCUIT WIRING THROUGHOUT THE PROJECT. COLOR IMPREGNATE INSULATION SHALL BE USED FOR ALL CONDUCTORS UP TO AND INCLUDING NO. 6 AWG CONDUCTORS LARGER THAN NO. 6 SHALL BE IDENTIFIED BY COLOR BANDING TAPES AT ALL
- a. PHASES, NEUTRAL AND GROUND CONDUCTORS FOR THE 208Y/120V SYSTEM SHALL BE COLOR CODED AS FOLLOWS:

TERMINATION POINTS, JUNCTION PULL AND OUTLET BOXES.

- 208Y/120V PHASE A BLACK 208Y/120V PHASE B - RED 208Y/120V PHASE C - BLUE 208Y/120V GROUNDED NEUTRAL - WHITE
- EQUIPMENT GROUND CONDUCTOR GREEN PHASES, NEUTRAL AND GROUND CONDUCTORS FOR THE 480Y/277V SYSTEM SHALL BE COLOR CODED AS FOLLOWS:

480Y/277V PHASE A - BROWN

- 480Y/277V PHASE B ORANGE 480Y/277V PHASE C - YELLOW 480Y/277V GROUNDED NEUTRAL - WHITE W/ TRACER EQUIPMENT GROUND CONDUCTOR - GREEN
- PHASE ORIENTATION AND ROTATION SHALL BE VERIFIED PRIOR TO PLACING EQUIPMENT INTO OPERATION. ADJUSTMENTS SHALL BE MADE PRIOR TO THE COMPLETION OF THE WORK UNDER THIS CONTRACT. ALL MOTORS SHALL BE CHECKED FOR PROPER ROTATION WITH ADJUSTMENTS BEING MADE AS REQUIRED FOR THE PROPER OPERATION OF MOTORIZED EQUIPMENT.
- a. THIS SECTION SHALL INCLUDE THE MAKING OF THE NECESSARY TESTS REFERRED TO HEREIN IN THE PRESENCE OF THE ARCHITECT TO SHOW THAT THE PARTICULAR SYSTEM OR EQUIPMENT HAS BEEN PROPERLY INSTALLED AND IS IN GOOD OPERATING CONDITION, AS HEREINAFTER SPECIFIED. THE ARCHITECT SHALL BE NOTIFIED TWO (2) WEEKS IN

ADVANCE OF THE DATE FOR ALL TESTS SO THAT HE MAY BE

b. COMPLETE TEST AND INSPECTION RECORDS SHALL BE MADE AND INCORPORATED INTO A REPORT FOR EACH PIECE OF EQUIPMENT TESTED. READINGS TAKEN SHALL BE RECORDED. SIX (6) COPIES SHALL BE SUBMITTED TO THE ARCHITECT FOR RECORD AND COMMENTS.

PRESENT TO WITNESS THE TESTS.

c. FURNISH NECESSARY METERS, INSTRUMENTS, TEMPORARY WIRING AND LABOR TO PERFORM ALL REQUIRED TESTS AND ADJUSTMENTS OF EQUIPMENT AND WIRING INSTALLED AND/OR CONNECTED UNDER THIS CONTRACT. d. FOLLOWING ESTABLISHED PROCEDURES, EQUIPMENT SHALL

BE ENERGIZED AFTER IT HAS BEEN DETERMINED BY THIS

TRADE THAT THE INSTALLATION HAS SATISFACTORILY BEEN

1) SYSTEM AND EQUIPMENT GROUNDS WILL BE CHECKED FOR PROPER VALUE OF RESISTANCE USING THE MEGGER GROUND TESTER IN ACCORDANCE WITH

BE NO GREATER THAN 25 OHMS.

MANUFACTURER'S STANDARD INSTRUCTIONS.

2) OVERALL RESISTANCE OF THE GROUND SYSTEM SHALL

TESTED AND READY TO BE PLACED IN OPERATION.

3) GROUND RESISTANCE TESTS SHALL BE MADE AT ALL TEST POINTS AS REQUIRED BY THE ARCHITECT. 4) CORRECT OR REPLACE CURRENT-CARRYING CIRCUITS THAT ARE DEFECTIVE OR GROUNDED AND CORRECT ALL OTHER DEFECTS ENCOUNTERED DURING THE

FORM A WATERTIGHT SEAL.