ELECTRICAL LEGEND

MOUNTING HEIGHTS SHOWN ARE MAXIMUM/MINIMUM HANDICAPPED ACCESSIBILITY STANDARDS - THEY SHALL NOT BE ALTERED WITHOUT WRITTEN AUTHORIZATION.

A ▭ 1 a OR A ▫ 1 a	FLUORESCENT LIGHT FIXTURE, LETTER INDICATES TYPE. SEE LIGHT FIXTURE SCHEDULE. LOWER CASE LETTER INDICATES SWITCH (IF USED), NUMBER INDICATES CIRCUIT.
1 ├─○─┤ A a	FLUORESCENT STRIP LIGHT, LETTER INDICATES TYPE. SEE LIGHT FIXTURE SCHEDULE. LOWER CASE LETTER INDICATES SWITCH (IF USED)
▭ OR ▬	SURFACE MOUNTED LIGHT, LETTER INDICATES TYPE. SEE LIGHT FIXTURE SCHEDULE. LOWER CASE LETTER INDICATES SWITCH (IF USED)
○ B OR ✦ B	INCANDESCENT OR HID LIGHT FIXTURE, LETTER INDICATES TYPE SEE LIGHT FIXTURE SCHEDULE TO CONFIRM TYPE AND MOUNTING.
♀ C OR ⏏ C	WALL BRACKET LIGHT FIXTURE, LETTER INDICATES TYPE SEE LIGHT FIXTURE SCHEDULE TO CONFIRM TYPE AND MOUNTING.
◩ NL	NIGHT LIGHT FIXTURE (NL)
⊗ X1 ⊗ X1	EXIT LIGHT WITH EMERGENCY BATTERY. (SHADED AREA INDICATES NUMBER OF FACES, ORIENTATION AND ARROW) LETTER INDICATES TYPE SEE LIGHT FIXTURE SCHEDULE TO CONFIRM TYPE AND MOUNTING.
	BATTERY POWERED EMERGENCY LIGHT
	TRACK LIGHTING AND TRACK. FOR INFORMATION ON TRACK SEE LIGHT FIXTURE SCHEDULE TO CONFIRM TYPE AND MOUNTING.
	WALL WASHER FIXTURE. (SHADE AREA INDICATES DIRECTION) SEE LIGHT FIXTURE SCHEDULE TO CONFIRM TYPE AND MOUNTING.
$a	SINGLE POLE SWITCH, LOWER CASE LETTER INDICATES LIGHTS CONTROLLED. MOUNT 48" A.F.F. U.O.N.
$F	SINGLE POLE SWITCH. FAN CONTROLLER, MOUNT 48" A.F.F. U.O.N.
$3	3-WAY SWITCH, FOR CONTROLLING LIGHTS FROM TWO DIFFERENT POINTS.
$OS	OCCUPANCY SENSOR WALL SWITCH.
D	DIMMER SWITCH, WATTS AS NOTED, (6=600W, 10=1000W) MOUNT 48" AFF UON.
⊕ ▽	TWO GANG FLOOR OUTLET BOX. ONE QUADPLEX ISOLATED GROUND RECEPTACLE AND ONE COMPUTER OUTLET.
▽ ▼ ⏀	WIREMOLD-WALKER INFLOOR SYSTEMS. RC4 FLUSH QUAD POKE THRU SERIES WITH FOUR MULTIMEDIA COMMUNICATION LOCATIONS
▽ ▼ ⏀	WIREMOLD WALLSOURCE MULTIPLE SERVICE BOX.
⊙	STANCHION MOUNTED QUADPLEX FLOOR RECEPTACLE OUTLET.
⊙	STANCHION MOUNTED DUPLEX FLOOR RECEPTACLE OUTLET.
⊕	QUADPLEX RECEPTACLE OUTLET.
⊕	QUADPLEX RECEPTACLE OUTLET MOUNTED ABOVE COUNTER TOP U.O.N.
⏀	DUPLEX RECEPTACLE, MOUNT 18" AFF UON
◐	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER HEIGHT U.O.N.
◐ G	GROUND FAULT INTERRUPTER RECEPTACLE, LEVITON #6898-I, MOUNT ABOVE COUNTER HEIGHT U.O.N.
◐ IG	DUPLEX RECEPTACLE, ISOLATED GROUND TYPE, LEVITON #5362-IGI MOUNTED ABOVE COUNTER HEIGHT. U.O.N.
⏀ IG	DUPLEX RECEPTACLE, ISOLATED GROUND TYPE, LEVITON #5362-IGI MOUNT AT 18" AFF UON
SW ⏀	DUPLEX RECEPTACLE, MOUNTED ABOVE STOREFRONT WINDOWS
⏀	SINGLE RECEPTACLE, MOUNTED AT HEIGHT NOTED ON PLANS
▼	SPECIAL PURPOSE RECEPTACLE OUTLET
XX-88	COMBO USB CHARGER/DUPLEX RECEPTACLE, LEVITON MODEL T5632-B OR EQUIVALENT, MOUNTED 6" ABOVE TABLE TOP, UON.
⊕ WPG	GFCI TYPE QUADPLEX RECEPTACLE OUTLET. WITH WEATHERPROOF IN-USE COVER.
⏀ WPG	GFCI TYPE DUPLEX RECEPTACLE, MOUNT 18" AFF UON. WITH WEATHERPROOF IN-USE COVER.
Ⓙ	JUNCTION BOX (FLUSH MOUNT IN FINISHED AREAS U.O.N.)
▬ ▬	208/120VOLT LIGHTING, POWER, FACP PANELBOARD OR TELE. TERM. CABINET.
▨ ▨	480/277VOLT LIGHTING PANELBOARD
■	208/120VOLT MAIN SWITCHBOARD OR MAIN DISTRIBUTION PANEL
▩	480/277VOLT MAIN SWITCHBOARD OR MAIN DISTRIBUTION PANEL
⍁	DISCONNECT SWITCH
100/3/60	DISCONNECT DESIGNATION (SIZE/POLES/FUSE) "NF" INDICATES NON-FUSED; "DE" INDICATES DUAL ELEMENT FUSES.
	MOTOR PERMANENTLY CONNECTED WITH FLEXIBLE CONDUIT (HORSEPOWER OR EQUIPMENT INDICATED)

NOT ALL DEVICES SHOWN IN LEGEND ARE REQUIRED. REVIEW POWER & LIGHTING PLANS AND DETAILS FOR ITEMS WHICH APPLY TO THIS PROJECT.

⌒	CONDUIT CONCEALED IN WALL, BELOW SLAB, OR ABOVE CEILING.
─	CONDUIT EXPOSED ON WALL OR CEILING.
	FLEXIBLE CONDUIT NOT TO EXCEED 6 FEET IN LENGTH
A-1,3	CONDUIT RUN CONCEALED IN WALLS BELOW SLAB, OR CEILING SPACES. ARROWS INDICATE HOMERUN. SUBSCRIPT INDICATES PANEL AND CIRCUIT NUMBERS. GROUND CONDUCTOR REQUIRED IN ALL CONDUITS.
A-37:39:41	SUBSCRIPT INDICATES PANEL-AND NUMBERS WITH COLONS INDICATE 2 OR 3 POLE CIRCUITS.
Ⓣ	THERMOSTAT. PROVIDE SINGLE GANG BOX WITH 1/2" C. STUBBED INTO CEILING SPACE, MOUNT 60" A.F.F. U.O.N. (COORDINATE WITH MECHANICAL DRAWINGS PRIOR TO ROUGH-IN)
▼	TELEPHONE WALL OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT WITH PULL WIRE AND INSULATING BUSHING STUBBED INTO CEILING SPACE. MOUNT BOX 18" A.F.F. U.O.N.
▽	COMPUTER OUTLET. MOUNT BOX @ 18" A.F.F. U.O.N.
⧨	COMBO TELEPHONE/ DATA OUTLET. MOUNT BOX @ 18" A.F.F. U.O.N.
⩒	TELEVISION OUTLET, PROVIDE SINGLE GANG BOX WITH 3/4" CONDUIT INTO CEILING SPACE WITH PULL WIRE AND INSULATING BUSHING. MOUNT BOX 24" BELOW CEILING.
Ⓢ	CEILING SPEAKERS
(OS)	CEILING MTD. SENSOR DEVICE
⏀	PHOTOCELL (MATCH COIL VOLTAGE AS REQUIRED)
F	FIRE ALARM PULL STATION
F◀Ⓕ	HORN/STROBE
Ⓕ	FIRE ALARM LIGHT STROBE
○	SMOKE DETECTOR
Ⓗ	HEAT DETECTOR
FACP	FIRE ALARM CONTROL PANEL
EF	BATH ROOM FAN LIGHT
⊡	SHUNT TRIP PUSHBUTTON, MOUNT 48" AFF UON.
S100	FEEDER TAG, REFER TO CIRCUIT SCHEDULE
AIC AIC Feet FEET	AIC RATING TAG

ABBREVIATIONS

ACC-CU	CONDENSING UNIT	MTD	MOUNTED
AFF	ABOVE FINISH FLOOR	NF	NON-FUSED
AFG	ABOVE FINISH GRADE	NIC	NOT IN CONTRACT
A/H-AHU	AIR HANDLING UNIT	NL	NIGHT LIGHT
CLG	CEILING	NTS	NOT TO SCALE
C/T	CURRENT TRANSFORMER	OS	OCCUPANCY SENSORS
DE	DUAL ELEMENT FUSE	PC	PULL CHAIN
EC	EMPTY CONDUIT	RTU	ROOF TOP UNIT
E/F-EF	EXHAUST FAN	SW	SHOW WINDOW RECEPTACLE CLG MTD
EG	EQUIPMENT GROUND	SPD	SURGE PROTECTIVE DEVICE
EM	EMERGENCY LIGHT	TTB	TELEPHONE TERMINAL BOARD
EWC	ELECTRIC WATER COOLER	TTC	TELEPHONE TERMINAL CABINET
EWH	ELECTRIC WATER HEATER	TYP	TYPICAL
EDR	EXISTING DEVICE TO REMAIN	UON	UNLESS OTHERWISE NOTED
FACP	FIRE ALARM CONTROL PANEL	VIF	VERIFY IN FIELD
FLR	FLOOR	VTC	VIA TIME CLOCK
GFI	GROUND FAULT INTERRUPTER	WP	WEATHERPROOF
IG	ISOLATED GROUND	X	EXIT LIGHT
LB	LOCK BREAKER		

NOTE: MOUNTING HEIGHTS NOTED ARE TO BOTTOM OF DEVICE SHOWN UON

GENERAL NOTES - ELECTRICAL

APPLICABLE TO ALL SHEETS

1. ALL WORK SHALL COMPLY WITH THE LATEST ACCEPTED VERSION OF THE FOLLOWINGS:
   2014 NATIONAL ELECTRICAL CODE (NEC)
   2017 FLORIDA BUILDING CODE (FBC),
   ALL OTHER CODES AND LOCAL ORDINANCES
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND VERIFY THE EXISTING CONDITIONS TO GAIN KNOWLEDGE OF THE SCOPE OF WORK INVOLVED.
3. IN GENERAL, THESE DRAWINGS ARE SCHEMATIC IN NATURE AND SHOULD NOT BE SCALED. IT SHOULD NOT BE THE INTENT OF THESE PLANS AND/OR SPECIFICATIONS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. PROVIDE ALL ITEMS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM.
4. ELECTRICAL INSTALLATION SHALL BE CLOSELY COORDINATED WITH ALL OTHER TRADES. REVIEW THE ENTIRE SET OF DOCUMENTS FOR COORDINATION. NO COST SHALL BE ASSOCIATED WITH ILL-TIMED INSTALLATION INCLUDING ANY REPAIR OR REPLACEMENTS.
5. ALL CONDUITS AND BOXES SHALL BE CONCEALED UNLESS OTHERWISE NOTED. ALL CONDUIT RUNS ARE SCHEMATIC IN NATURE. EXACT ROUTING TO BE DETERMINED IN THE FIELD UNLESS OTHERWISE NOTED.
6. APPLY A BITUMASTIC COATING FOR ALL CONDUITS FROM PENETRATING FLOOR SLABS FROM BELOW GRADE.
7. PROVIDE ALL REQUIRED PULL BOXES, JUNCTION BOXES, ETC. FOR A COMPLETE INSTALLATION.
8. PATCH, REPAIR, AND REPAINT ALL WALLS THAT HAVE BEEN DAMAGED DUE TO ELECTRICAL ROUGH-IN. REMOVE ANY UNUSED CONDUIT AND WIRE.
9. PROVIDE FIRE-STOPPING AT ALL FIRE WALL PENETRATIONS. USE A U.L. APPROVED SYSTEM LISTED FOR THE ASSOCIATED INSTALLATION.
10. BRANCH CIRCUIT CONDUCTORS SHALL BE STRANDED COPPER, THHN/THWN, MINIMUM #12 AWG UNLESS NOTED OTHERWISE. ALL CONDUCTORS SHALL BE IN CONDUIT. FLEXIBLE CONDUIT SHALL BE LIMITED TO A MAXIMUM OF 6'-0" IN LENGTH. WHERE 20A BRANCH CIRCUITS HAVE #8 AND LARGER WIRE SPECIFIED, #10 AWG WIRE SHALL BE USED FOR THE FINAL CONNECTION (15-FT MAXIMUM).
11. MC CABLE OR OTHER REMANUFACTURED CABLING SHALL BE PERMITTED BUT SHALL BE COPPER CONDUCTORS, CONTAIN A SEPARATE GROUND CONDUCTOR AND BE INSTALLED IN ACCORDANCE WITH NEC ARTICLE 330.
12. ALL CIRCUITS SHALL CONTAIN A SEPARATE, GREEN, COPPER GROUNDING CONDUCTOR.
13. ALL RECEPTACLES SHALL HAVE A GROUND TERMINAL.
14. WHEN REUSING OR EXTENDING EXISTING CIRCUITS, VERIFY ALL CIRCUIT NUMBERS AND VERIFY ANY EXISTING LOAD. CIRCUITS MAY BE PICKED UP AT AN EXISTING JUNCTION BOX IF AVAILABLE RATHER THAN PROVIDING A SEPARATE HOMERUN TO A PANEL.
15. RECESSED LIGHTING FIXTURES SHALL BE SUPPORTED FROM THE STRUCTURE AT (4) POINTS. DO NOT SUPPORT FIXTURES FROM THE CEILING GRID, MECHANICAL PIPING, DUCTWORK, CONDUIT OR OTHER NON-STRUCTURAL BUILDING MEMBERS. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED FOR INSTALLATION.
16. THE COLOR OF ALL RECEPTACLES, TOGGLE SWITCHES, AND COVERPLATES SHALL BE VERIFIED WITH THE ARCHITECT AND OWNER PRIOR TO ORDERING.
17. PANELBOARDS SHALL BE ACCURATELY LABELED TO IDENTIFY FINAL CIRCUIT NUMBERS UTILIZED, THEIR LOAD AND LOCATION.
18. BRANCH CIRCUIT SHALL NOT BE UNDERGROUND UNLESS SPECIFIED OR APPROVED BY THE OWNER AND ENGINEER. ROUTE CONCEALED IN WALL AND ABOVE CEILINGS. DISTRIBUTION FEEDERS FROM THE MAIN SERVICE MAY BE RUN UNDERGROUND.
19. PROVIDE FIRE RETARDANT U.L. APPROVED SEALANT ON ALL PENETRATIONS OF FIRE RATED PARTITIONS, WALLS AND STRUCTURAL SLABS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY, PRIOR TO SUBMITTING BID, LOCATIONS OF ALL SUCH FIRE RATED PARTITIONS, WALL AND STRUCTURAL SLABS.
20. PROVIDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR (SIZE PER NEC) IN PVC TYPE CONDUIT, POWER CIRCUITS, ISOLATED GROUND CIRCUITS, OR AS SHOWN ON PLANS. CONDUIT SHALL BE SIZED PER NEC BASED ON THWN 600 VOLT COPPER SINGLE CONDUCTORS, PLUS THE EQUIPMENT GROUNDING CONDUCTOR.
21. WIRING SHALL INCLUDE FINAL CONNECTION TO ALL EQUIPMENT IN CONFORMANCE WITH EQUIPMENT SUPPLIER WIRING DIAGRAMS.
22. WHERE BRANCH CIRCUITS ARE GROUPED, SIZE CONDUIT AND DERATE CURRENT CARRYING CONDUCTORS PER NEC.
23. WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS OF THE ACTUAL INSTALLATION INCLUDING: SINGLE LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM, SITE PLANS AND ALL ELECTRICAL FLOOR PLANS.
24. LIGHT SWITCHES INSTALLED ADJACENT TO EACH OTHER, SHALL BE GANGED TOGETHER WITH ONE PIECE COVERPLATE.
25. ELECTRICAL CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENT, ETC.) OF THE EQUIPMENT FURNISHED UNDER OTHER DIVISIONS WITH APPROVED SHOP DRAWINGS PRIOR TO BEGINNING ROUGH-IN.

FLORIDA BUILDING CODE SIXTH EDITION (2017) ENERGY CONSERVATION COMPLIANCE

THE DESIGN COMPLIES WITH SECTION C401.2 APPLICATION ITEM 3:

THE REQUIREMENTS OF SECTION C402.5, C403.2, C404, C405.2, C405.3, C405.5, C405.6 AND C407. THE BUILDING ENERGY COST SHALL BE EQUAL TO OR LESS THAN 85 PERCENT OF THE STANDARD REFERENCE DESIGN BUILDING.

FFPC
APPROVED
06/24/2019
thomasmastroberto

CONTACT ENGINEER OF RECORD FOR LIGHTING SYSTEM FUNCTIONAL TESTING IN ACCORDANCE WITH THE FLORIDA BUILDING CODE - ENERGY CONSERVATION COMPLIANCE SECTION C408.3.

LIGHT FIXTURE SCHEDULE

MARK	LAMPS		VOLT AGE	EQUAL TO		MOUNTING	NOTES
	WATTS	TYPE		MANUFACTURER	MODEL#		
EM	3 W	LED	120 V	LITHONIA	ELM2	WALL	1,2,3
EX	4 W	LED	120 V	LITHONIA	LHQM S W R	WALL	1,2,3
Z	25 W	LED	120 V	LITHONIA	ZL1N L48 3000LM L/LENS MVOLT 30K 80CRI WH	CHAIN HUNG	1,2,3

LIGHT FIXTURE NOTES:

1. PROVIDE NECESSARY MOUNTING HARDWARE AND ACCESSORIES FOR ALL FIXTURES.
2. ALL EMERGENCY, EXIT AND NIGHT LIGHT FIXTURES SHALL BE CONNECTED AHEAD OF LOCAL SWITCHES. UNLESS OTHERWISE NOTED.
3. ALL ALTERNATE FIXTURES SHALL BE SUBMITTED FOR PRIOR APPROVAL, SEE SPECIFICATIONS.

Digitally signed by Gary Wall
Reason: This document has been electronically signed and sealed by Gary Wall using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.
Date: 2019.06.18 13:59:26-04'00'

ELECTRICAL DRAWING INDEX

SHEET #	SHEET TITLE
E001	General Notes, Legend & Light Fixture Schedule
E002	Electrical Specifications
E101	Floor Plan - Electrical
E301	Power Riser Diagram and Panel Schedules
E501	Details - Electrical

Build it! Collier County
Reviewed for Code Compliance
PRBD20190625989

1925 Prospect Ave.
Orlando, FL 32814
P (407) 661-9100

Cuhaci & Peterson
Architects Engineers Planners

CLIENT NAME
SITE Centers Corp.
801 S University Dr, Suite D105
Plantation, FL 33324

PROJECT NAME
Limited Landlord Work for Spaces 2AB & 2C
4003 & 4005 Santa Barbara Boulevard
Naples, Florida 34105

SHEET TITLE
General Notes, Legend & Light Fixture Schedule

GARY S. WALL
No. 81196
06/18/2019

Revision Schedule

No.	Description	Date

PROJECT NO.
2190294

DATE
06/18/2019

DRAWN
LL

CHECKED
GSW

6/18/2019 1:51:53 PM

E001

PERMIT SET

ELECTRICAL SPECIFICATIONS

SPECIFICATIONS HAVE BEEN WRITTEN WITH THE INTENT OF VARIOUS EQUIPMENT BEING INSTALLED. NOT ALL EQUIPMENT MAY BE REQUIRED ON THIS PROJECT. REVIEW POWER, LIGHTING PLANS AND DETAILS FOR ITEMS AND/OR EQUIPMENT THAT WILL APPLY TO THIS PROJECT.

REFERENCES

UTILIZE THE FOLLOWING ABBREVIATIONS AND DEFINITIONS FOR DISCERNMENT WITHIN THE DRAWINGS AND SPECIFICATIONS.

NEC	NATIONAL ELECTRICAL CODE
OSHA	OCCUPATIONAL SAFETY AND HEALTH ACT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
ASA	AMERICAN STANDARDS ASSOCIATION
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
UL	UNDERWRITERS' LABORATORIES, INC.
IES	ILLUMINATING ENGINEERING SOCIETY
ICEA	INSULATED CABLE ENGINEERS ASSOCIATION
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
ETL	ELECTRICAL TESTING LABORATORIES, INC.
CBM	CERTIFIED BALLAST MANUFACTURERS
EIA	ELECTRONIC INDUSTRIES ASSOCIATION

SECTION 260010
GENERAL PROVISIONS

THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO PROVIDE A COMPLETE WORKING SYSTEM READY FOR THE OWNER'S OPERATION. ANY ITEM NOT SPECIFICALLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPEC'S BUT IS NORMALLY REQUIRED TO CONFORM WITH THE INTENT, ARE TO BE CONSIDERED A PART OF THE CONTRACT.

THE INTENT OF THESE DRAWINGS IS NOT TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ELECTRICAL EQUIPMENT AND ITEMS FOR A COMPLETE ELECTRICAL SYSTEM. IF THE CONTRACTOR HAS QUESTIONS, OR IN THEIR OPINION FINDS OMISSIONS OR ERRORS ON THE ELECTRICAL DRAWINGS, IT IS THEIR RESPONSIBILITY TO BRING IT TO THE ATTENTION OF THE ELECTRICAL ENGINEER/ARCHITECT IMMEDIATELY. IF CONTRACTOR PROCEEDS WITH ANY CHANGES TO THE CONTRACT DOCUMENTS WITHOUT WRITTEN PRIOR APPROVAL FROM THE ELECTRICAL ENGINEER/ARCHITECT THE CONTRACTOR WILL NOT BE COMPENSATED.

ALL MATERIALS USED SHALL BE LISTED AND LABELED PROVIDED A STANDARD HAS BEEN ESTABLISHED FOR THE MATERIAL BEING USED. INSTALLATION OF EQUIPMENT AND MATERIALS SHALL CONFORM WITH THE LATEST EDITIONS (UON) OF THE LOCAL CODES AND ORDINANCES OF THE BUILDING DEPARTMENT, THE SERVING UTILITY COMPANIES, NFPA, NATIONAL ELECTRIC CODES AND ORDINANCES, INCLUDING ALL AMENDMENTS TO THE NEC EQUIPMENT, AND WHERE APPLICABLE, SHALL BE LISTED AND LABELED. THE WORKMANSHIP AND QUALITY ESTABLISHED BY THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE REDUCED BY THE ABOVE MENTIONED CODES.

ALL EQUIPMENT SHALL BE EQUAL TO OR EXCEED THE MINIMUM REQUIREMENTS OF NEMA, IEEE, AND UL. SHOULD ANY CHANGE TO THE DRAWINGS OR SPECIFICATIONS BE REQUIRED TO COMPLY WITH GOVERNMENTAL REGULATIONS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO ANY SUCH WORK BEING EXECUTED.

ALL LOCAL FEES, PERMITS, AND REQUIRED INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY OF PROPERTY DAMAGE OR THE DURATION OF THE WORK, AND SERVICES OF INSPECTION AND TESTING AUTHORITIES SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR. THE CONTRACTOR SHALL INCLUDE IN HIS BID ANY COSTS TO BE INCURRED RELATIVE TO POWER SERVICE (PRIMARY AND/OR SECONDARY) AND TELEPHONE SERVICE. CONTRACTOR SHALL COOPERATE FULLY WITH THE LOCAL COMPANIES WITH RESPECT TO THEIR SERVICES.

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

ALL WORK TO BE PERFORMED IN A FIRST CLASS WORKMANLIKE MANNER, AND BE INSTALLED BY A LICENSED ELECTRICAL CONTRACTOR. CERTAIN MATERIALS WILL BE PROVIDED BY OTHER TRADES. EXAMINE THE CONTRACT DOCUMENTS TO ASCERTAIN THESE REQUIREMENTS. CAREFULLY CHECK SPACE REQUIREMENTS WITH OTHER TRADES AND THE PHYSICAL CONFINES OF THE AREA TO INSURE THAT ALL MATERIAL CAN BE INSTALLED IN THE SPACES ALLOTTED THERETO INCLUDING FINISHED SUSPENDED CEILINGS. MAKE MODIFICATIONS THERETO AS REQUIRED AND APPROVED.

TRANSMIT TO OTHER TRADES ALL INFORMATION REQUIRED FOR WORK TO BE PROVIDED UNDER THEIR RESPECTIVE SECTIONS IN AMPLE TIME FOR INSTALLATION. THE CONTRACTOR SHALL ORDER THE PROGRESS OF HIS WORK TO CONFORM TO THE PROGRESS OF THE WORK OF THE OTHER TRADES AND SHALL COMPLETE THE ENTIRE INSTALLATION AS SOON AS THE CONDITIONS OF THE BUILDING WILL PERMIT. ANY COST RESULTING FROM THE DEFECTIVE OF ILL-TIMED WORK PERFORMED UNDER THIS SECTION SHALL BE BORNE BY THE CONTRACTOR.

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

THE CONTRACTOR SHALL BE TOTALLY RESPONSIBLE FOR THE SHIPPING AND STORING OF ALL PRODUCTS AND MATERIALS IN A MANNER THAT WILL PROTECT THEM FROM DAMAGE AND WEATHER. IF ITEMS ARE DAMAGED, TAKE IMMEDIATE STEPS TO OBTAIN REPLACEMENT OR REPAIR. ANY SUCH REPAIRS SHALL BE SUBJECT TO REVIEW AND ACCEPTANCE OF THE ARCHITECT/ENGINEER.

CONTRACTOR SHALL STORE MATERIALS IN SUITABLE SHELTER FROM THE ELEMENTS, BUT READILY ACCESSIBLY FOR INSPECTION BY THE ARCHITECT/ENGINEER UNTIL INSTALLED. STORE ALL ITEMS SUBJECT TO MOISTURE DAMAGE IN DRY, HEATED SPACES.

PROVIDE SUPPORTS, HANGERS AND AUXILIARY STRUCTURAL MEMBERS REQUIRED FOR SUPPORT OF THE WORK. FURNISH AND SET ALL SLEEVES FOR PASSAGE OF RACEWAYS THROUGH STRUCTURAL. MASONRY AND CONCRETE WALLS OF FLOORS AND ELSEWHERE AS WILL BE REQUIRED FOR THE PROPER PROTECTION OF EACH RACEWAY PASSING THROUGH BUILDING SURFACES.

IF WALL MOUNTED EQUIPMENT IS TO BE SECURED TO WALLS THE USE OF STEEL BOLTS ARE TO BE USED TO MAINTAIN AT LEAST 1" AIR SPACE BETWEEN EQUIPMENT AND SUPPORTING WALL. GROUPS OF EQUIPMENT MAY BE MOUNTED ON ADEQUATELY SIZED STEEL ANGLES, CHANNELS, OR BARS. PREFABRICATED STEEL CHANNELS PROVIDING A HIGH DEGREE OF MOUNTING FLEXIBILITY, SUCH AS THOSE MANUFACTURED BY GLOBE STRUT, KINDORF, AND UNI-STRUT, MAY BE USED FOR MOUNTING GROUPS OF EQUIPMENT.

AN ACCURATE RECORD OF ALL DEVIATIONS SHALL BE KEPT AS TO THE WORK SHOWN ON THE DRAWINGS AND THAT WHICH IS ACTUALLY INSTALLED SO THAT A SET OF AS BUILT DRAWINGS CAN BE MADE BY CONTRACTOR, WERE UPON COMPLETION AND ACCEPTANCE OF THE PROJECT BY THE OWNER, A NEAT AND LEGIBLE SET OF PRINTS CAN BE DELIVERED.

THE CONTRACTOR SHALL GUARANTEE ALL MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE BY THE OWNER, EXCEPT THAT WHERE GUARANTEES OR WARRANTIES FOR LONGER TERMS ARE SPECIFIED. WITHIN 24 HOURS AFTER NOTIFICATION, CORRECT ANY DEFICIENCIES THAT OCCUR DURING THE GUARANTEE PERIOD AT NO ADDITIONAL COST TO THE OWNER, ALL TO THE SATISFACTION OF THE OWNER. OBTAIN SIMILAR GUARANTEES FROM SUBCONTRACTORS, MANUFACTURERS, SUPPLIERS AND SUBTRADE SPECIALISTS.

THE ELECTRICAL CONTRACTOR SHALL COORDINATE AT THE SITE PRIOR TO CONSTRUCTION WITH THE LOCAL POWER COMPANY TO RELATE WORK WITH THE UTILITY COMPANY'S RESPONSIBILITIES TO MEET THE OWNERS SCHEDULE.

CONTRACTOR SHALL PROVIDE SUBMITTALS FOR SUBSTITUTION OF MATERIALS OR EQUIPMENT SUCH AS SITE LIGHTING, LIGHT FIXTURES, SWITCHGEAR, WIRING DEVICES, EMERGENCY GENERATOR/TRANSFER EQUIPMENT, AND ALL SYSTEMS (FIRE ALARM, SECURITY ETC.) TEN (10) DAYS PRIOR TO BID DATE (TWO COPIES) FOR ENGINEER'S APPROVAL TO SUBMIT. ENGINEER'S APPROVAL OF THE PRIOR APPROVAL PACKAGE WILL BE CONSIDERED PRELIMINARY. FINAL APPROVAL WILL BE CONTINGENT UPON REVIEW OF FINAL SHOP DRAWINGS. ALL PROPOSED ALTERNATES MUST BE INDUSTRY STANDARD EQUALS TO THE ITEMS SPECIFIED AS THE BASIS OF DESIGN; HOWEVER, IF THE ITEMS ARE NOT CONSIDERED EQUAL BY THE ENGINEER, IT SHALL BE DISAPPROVED FOR FINAL SUBMITTAL. IF ELECTRICAL CONTRACTOR/GENERAL CONTRACTOR DOES NOT SUBMIT SHOP DRAWINGS TO THE ELECTRICAL ENGINEER FOR ITEMS LISTED ABOVE, ELECTRICAL ENGINEER WILL NOT BE RESPONSIBLE FOR ANY, AND OR OMISSIONS OR ERRORS DUE TO SHOP DRAWINGS NOT SUBMITTED. ALTERNATE SITE FIXTURES SHALL INCLUDE A COMPUTER GENERATED POINT-TO-POINT PHOTOMETRIC CALCULATION BASED ON THE PLANS (FIXTURE CHARACTERISTICS AND POLE PLACEMENT SHALL NOT BE ALTERED). THIS DIAGRAM SHALL SHOW COMPOSITE VALUES OF THE ILLUMINANCE PROJECTED FROM THE ARRANGEMENT OF LIGHT SOURCES AS SHOWN ON PLAN. COMPUTER PLOT DIAGRAM SHALL ALSO SHOW THE LOCATIONS OF THE POLES, SPACING BETWEEN POLES, THE MOUNTING HEIGHT USED IN THE CALCULATIONS, AND THE FIXTURE CATALOG NUMBER BEING USED.

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

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

ALL LOAD DATA HAS BEEN BASED ON INFORMATION GIVEN ENGINEER/ARCHITECT AT THE TIME OF DESIGN. VERIFY ALL EQUIPMENT NAMEPLATE RATINGS BEFORE ORDERING.

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

SECTION 260533
RACEWAYS AND BOXES

STANDARDS

EXCEPT AS MODIFIED BY GOVERNING CODES AND BY THE CONTRACT DOCUMENTS, COMPLY WITH THE LATEST APPLICABLE PROVISIONS AND LATEST RECOMMENDATIONS OF THE FOLLOWING:

1. RIGID STEEL CONDUIT
a) U.L. STANDARD UL-6
b) A.N.S.I. C80-1
c) FEDERAL SPECIFICATION WW-C-581E
2. INTERMEDIATE METALLIC CONDUIT (IMC)
a) U.L. STANDARD UL-1242
b) FEDERAL SPECIFICATION WW-C-581E
3. ELECTRICAL METALLIC TUBING
a) U.L. STANDARD UL-797

b) A.N.S.I. C80-3
c) FEDERAL SPECIFICATION WW-C-563
4. FLEXIBLE STEEL CONDUIT
a) U.L. STANDARD UL-1
5. LIQUID TIGHT FLEXIBLE CONDUIT
a) U.L. STANDARD UL-360
6. NON-METALLIC CONDUIT (PVC)
a) U.L. STANDARD UL-651
b) A.N.S.I. STANDARD F512
c) N.E.M.A. STANDARD TC-2
d) FEDERAL SPECIFICATIONS GSA-FSS AND W-C-1094-A
7. WIREWAYS AND AUXILIARY GUTTERS
a) U.L. STANDARD UL-870

DO NOT USE ALUMINUM CONDUIT FOR ANY PURPOSES.

RACEWAY TYPES

STANDARD THREADED RIGID STEEL CONDUIT.
1. RIGID CONDUIT HEAVY WALL GALVANIZED.
2. THREADED TYPE FITTINGS: ERICKSON COUPLINGS WHERE THREADED CANNOT BE USED.

INTERMEDIATE METALLIC CONDUIT
1. LIGHT WEIGHT RIGID STEEL CONDUIT.
2. THREADED TYPE FITTINGS: ERICKSON COUPLINGS WHERE THREADED CANNOT BE USED.

ELECTRICAL METALLIC TUBING
1. CONTINUOUS, SEAMLESS TUBING, GALVANIZED OR SHERADIZED ON THE EXTERIOR, COATED ON THE INTERIOR WITH A SMOOTH HARD FINISH OF LACQUER, VARNISH, OR ENAMEL. COUPLINGS AND CONNECTORS:

a) INDOOR AND TWO (2") INCHES IN SIZE AND SMALLER, SHALL BE STEEL SET-SCREW TYPE FITTINGS.
b) 2 1/2" SIZE AND LARGER MUST EMPLOY STEEL COMPRESSION GLAND FITTINGS.
c) OUTDOOR SHALL BE RAINTIGHT STEEL COMPRESSION GLAND FITTINGS.
3. INDENT TYPE FITTINGS SHALL NOT BE USED.
4. ALL CONNECTORS SHALL HAVE INSULATED THROAT.
5. WHERE INSTALLED IN SLAB OR CONCRETE WORK, PROVIDE APPROVED CONCRETE TIGHT FITTINGS.

FLEXIBLE STEEL CONDUIT
1. SINGLE STRIP, CONTINUOUS, FLEXIBLE INTERLOCKED, DOUBLE-WRAPPED STEEL, GALVANIZED INSIDE AND OUTSIDE, FORMING SMOOTH INTERNAL WIRING CHANNEL.
2. MAXIMUM LENGTH: (SIX 6) FEET.
3. EACH SECTION OF RACEWAY MUST CONTAIN AN EQUIPMENT GROUNDING WIRE BONDED AT EACH END AND SIZED AS REQUIRED. PROVIDE CONNECTORS WITH INSULATING BUSHINGS.
4. STEEL SQUEEZE-TYPE OR STEEL SET SCREW TYPE FITTINGS.

LIQUID TIGHT FLEXIBLE ELECTRICAL CONDUIT
1. SAME AS FLEXIBLE STEEL CONDUIT EXCEPT WITH TOUGH, INSERT WATER-TIGHT PLASTIC OUTER JACKET.
2. CAST MALLEABLE IRON BODY AND GLAND NUT, CADMIUM PLATED WITH ONE-PIECE BRASS GROUNDING BUSHINGS WHICH TREAD TO INTERIOR OF CONDUIT. SPIRAL MOLDED VINYL SEALING RING BETWEEN GLAND NUT AND BUSHING AND NYLON INSULATED THROAT.

NON-METALLIC RACEWAY (PVC)
1. COMPOSED OF POLYVINYL CHLORIDE SUITABLE FOR 90 DEGREES C.
2. RACEWAY, FITTINGS, AND CEMENT MUST BE PRODUCED BY THE SAME MANUFACTURER WHO MUST HAVE HAD A MINIMUM OF TEN (10) YEARS EXPERIENCE IN MANUFACTURING THE PRODUCTS.
3. MUST HAVE A TENSILE STRENGTH OF 7,000-7,200 PSI AT 73.4 DEGREES F., FLEXURAL STRENGTH OF 12,000 PSI AND COMPRESSIVE STRENGTH OF 9,000 PSI.
4. ALL JOINTS SHALL BE SOLVENT CEMENTED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.

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

RACEWAYS IN HUNG CEILING SHALL BE RUN ON AND SECURED TO SLAB OR PRIMARY STRUCTURAL MEMBERS OF CEILING, NOT TO LATHING CHANNELS OR T-BARS, Z-BARS, OR OTHER ELEMENTS WHICH ARE THE DIRECT SUPPORTS OF THE CEILING PANELS. SECURE CONDUIT FIRMLY TO STEEL BY CLIPS AND FITTINGS DESIGNED FOR THAT PURPOSE. INSTALL AS HIGH AS POSSIBLE. BUT NOT LESS THAN 1'-0" ABOVE HUNG CEILINGS.

SUPPORT RACEWAYS AT INTERVALS NO GREATER THAN TEN (10) FEET AND WITH ONE SUPPORT WITHIN THREE (3) FEET OF EACH COUPLING, BOX, FITTING, OR OUTLET BOX. PROVIDE ONE SUPPORT WITHIN THREE (3) FEET OF EACH ELBOW OR BEND.

OUTLET, JUNCTION, AND PULL BOXES

CAST TYPE CONDUIT BOXES, OUTLET BODIES AND FITTINGS
1. PROVIDE SURFACE MOUNTED OUTLET AND JUNCTION BOXES IN INDOOR LOCATIONS WHERE EXPOSED TO MOISTURE AND IN OUTDOOR LOCATIONS.
2. USE FERROUS ALLOY BOXES AND CONDUIT BODIES WITH RIGID STEEL OR IMC.
3. COVERS: CAST OR SHEET METAL UNLESS OTHERWISE REQUIRED.
4. TAPERED THREADS FOR HUBS.
5. GALVANIZED PRESSED STEEL OUTLET BOXES

GENERAL
a) PRESSED STEEL, GALVANIZED OR CADMIUM-PLATED, MINIMUM OF FOUR (4") INCHES, OCTAGONAL OR SQUARE, WITH GALVANIZED COVER OR EXTENSION RING AS REQUIRED.
1. SWITCH AND RECEPTACLE BOX, INDOORS
a) NOMINAL FOUR (4") INCH SQUARE, 1-1/2" OR 2-1/8" DEEP AS REQUIRED, WITH RAISED COVER UNLESS OTHERWISE INDICATED ON DRAWINGS. GANGABLE BOXES SHALL NOT BE USED.
3. TELEPHONE OUTLET BOX, INDOORS
a) NOMINAL FOUR (4") INCH SQUARE, 2-1/8" DEEP, WITH RAISED COVER UNLESS OTHERWISE INDICATED ON DRAWINGS, GANGABLE BOXES SHALL NOT BE USED.
4. LIGHTING FIXTURE BOX
a) FOUR (4") INCH OCTAGON WITH 3/8" FIXTURE STUD.
b) FOR SUSPENDED CEILING WORK, FOUR (4") INCH OCTAGON WITH REMOVABLE BACKPLATE WHERE REQUIRED, AND TWO (2) PARALLEL BARS FOR SECURING TO THE CROSS-FURRING CHANNELS AND EXTEND FLEXIBLE CONDUIT TO EACH FIXTURE.
5. PLUG ANY OPEN KNOCKOUTS NOT UTILIZED.

BACK-TO-BACK OUTLETS IN THE SAME WALL, OR "THRU-WALL" TYPE BOXES ARE NOT PERMITTED. PROVIDE TWELVE (12") INCHES (MINIMUM) SPACING FOR OUTLETS SHOWN ON OPPOSITE SIDES OF A COMMON WALL TO MINIMIZE SOUND TRANSMISSION. PROVIDE TWENTY FOUR (24") INCH (MINIMUM) HORIZONTAL SPACING FOR OUTLETS SHOWN ON OPPOSITE SIDES OF A FIRE RATED WALL TO MAINTAIN FIRE RATING. COMPLY WITH FBC 2017 714.3.2. ALL ELECTRICAL CONDUCTORS SHALL BE INSTALLED IN AN APPROVED RACEWAY, EMT, IMC, RIGID GALVANIZED CONDUIT OR SCHEDULE 40 PVC. THERE SHALL BE NO TYPE NM OR FLEXIBLE METAL CONDUIT USED FOR BRANCH CIRCUITING. MAXIMUM NUMBER OF 120V CIRCUITS ALLOWED IN A COMMON CONDUIT SHALL BE SIX (6). THE CONTRACTOR SHALL STRICTLY CONFORM TO THE NEC REQUIREMENTS OF DERATING FOR CONDUCTOR AMPACITY AND CONDUIT FILL. NO CONDUITS SHALL BE INSTALLED EXPOSED ON ROOF.

SECTION 260519
WIRE AND CABLE

PRODUCTS

CONDUCTOR
1. ELECTRICAL GRADE ANNEALED COPPER, TINNED IF RUBBER INSULATED, AND FABRICATED IN ACCORDANCE WITH ASTM STANDARDS. MINIMUM SIZE #12 FOR BRANCH CIRCUITS AND #14 FOR CONTROL WIRING.
2. THE CONDUCTORS ILLUSTRATED ON THE DRAWINGS ARE COPPER.
STRANDING
1. #12 AND #10 SOLID.
2. CABLES LARGER THAN #10, STRANDED IN ACCORDANCE WITH ASTM CLASS B STRANDING DESIGNATIONS.
3. CONTROL WIRES STRANDED IN ACCORDANCE WITH ASTM CLASS B STRANDING DESIGNATIONS
INSULATED SINGLE CONDUCTORS
1. TYPE THHN/THWN - FLAME RETARDANT: HEAT-RESISTANT THERMOPLASTIC INSULATION. NYLON JACKET RATED FOR 90C DRY/75C WET OPERATION. USE FOR BRANCH CIRCUIT WIRING.
2. USE TYPE THHN/THWN OR RHW OR XHHW, RATED FOR 90 C, FOR FEEDER CIRCUITS.
COLOR CODING
1. PROVIDE CONSISTENT COLOR CODING OF ALL CIRCUITS AS FOLLOWS:
a) 120/208 VOLT CODE
b) PHASE A - BLACK
ii) PHASE B - RED
iii) PHASE C - BLUE
iv) NEUTRAL - WHITE
v) GROUND - GREEN

b) 277/480 VOLT CODE
i) PHASE A - BROWN
ii) PHASE B - ORANGE
iii) PHASE C - YELLOW
iv) NEUTRAL - WHITE
v) GROUND - GREEN

2. COLOR-CODE WIRING FOR CONTROL SYSTEMS INSTALLED IN CONJUNCTION WITH MECHANICAL AND/OR MISCELLANEOUS EQUIPMENT IN ACCORDANCE WITH THE WIRING DIAGRAMS FURNISHED WITH THE EQUIPMENT. FACTORY COLOR CODE WIRE NUMBER 6 AND SMALLER. WIRE NUMBER 4 AND LARGER MAY BE COLOR CODED BY COLOR TAPPING OF THE ENTIRE LENGTH OF THE EXPOSED ENDS.

CONNECTORS
1. MAKE CONNECTIONS, SPLICES, AND TAPS AND JOINTS WITH SOLDERLESS DEVICES, MECHANICALLY AND ELECTRICALLY SECURE. PROTECT EXPOSED WIRES AND CONNECTING DEVICES WITH ELECTRICAL TAPE OR INSULATION TO PROVIDE PROTECTION NOT LESS THAN THAT OF THE CONDUCTOR.
2. ELECTRICAL TAPE SHALL BE SPECIFICALLY DESIGNED FOR USE AS INSULATING TAPE. SUPER 33+ SCOTCH VINYL ELECTRICAL TAPE AS MANUFACTURED BY 3M SHALL BE EQUAL.
3. USE LUBRICANT WHERE THE POSSIBILITY OF DAMAGE TO CONDUCTORS EXISTS. USE ONLY A LUBRICANT APPROVED BY THE CABLE MANUFACTURER AND ONE WHICH IS COMPATIBLE WITH CABLE AND RACEWAYS.

EXECUTION

WIRE AND CABLE
1. USE #12 AWG MINIMUM FOR BRANCH CIRCUITS WHOSE LENGTH FROM THE PANEL TO FURTHEST OUTLET DOES NOT EXCEED 100 FEET (HORIZONTAL RUN) FOR 120-VOLT CIRCUITS OR 200 FEET FOR 277-VOLT CIRCUITS. USE #10 AWG OR LARGER FOR LONGER RUNS.
2. FLASHOVER OR INSULATION VALUE OF JOINTS SHALL BE EQUAL TO THAT OF THE CONDUCTOR. PROVIDE UNDERWRITERS' LABORATORIES LISTED CONNECTORS RATED TO 600 VOLTS FOR GENERAL USE AND 1,000 VOLTS FOR USE BETWEEN BALLASTS AND LAMPS OR GASEOUS DISCHARGE FIXTURES.
3. USE TERMINATING FITTINGS, CONNECTORS, ETC., OF A TYPE SUITABLE FOR THE SPECIFIED CABLE FURNISHED. MAKE BENDS IN CABLE AT TERMINATION PRIOR TO INSTALLING COMPRESSION DEVICE. MAKE FITTINGS TIGHT.
4. EXTEND WIRE SIZING FOR THE ENTIRE LENGTH OF A CIRCUIT, FEEDER, ETC. UNLESS SPECIFICALLY NOTED OTHERWISE.
5. MC/AC TYPE CABLE IS PERMITTED FOR USE AS PER NEC.

GENERAL INSTALLATION
1. PROVIDE TOOLS, EQUIPMENT, AND MATERIALS TO PULL ALL WIRE AND CABLE INTO PLACE AND TO MAKE REQUIRED SPLICES AND TERMINATION.
2. WIRE AND CABLE IN CONDUIT, DUCT OR WIREWAY.
a) UTILIZE ROLLER BEARING SWIVEL TO PREVENT TWISTING OF CABLE ENTERING CONDUIT OR DUCT.
b) TAKE PRECAUTIONS TO AVOID ENTRANCE OF DIRT AND WATER INTO CONDUIT AND DUCTS.
c) CLEAN EXISTING CONDUITS AND DUCTS TO REMOVE ANY PULLING COMPOUND PRIOR TO PULLING NEW CABLES.
d) DO NOT DAMAGE CONDUCTOR INSULATION, BRAID JACKET OR SHEATH.
e) DO NOT BEND CONDUCTOR TO LESS THAN MANUFACTURER'S RECOMMENDED RADIUS.
f) MAKE SPLICES ONLY IN PULL BOXES, JUNCTION BOXES AND OUTLET BOXES.
g) UTILIZE CABLE REELS ON JACKS FOR PULLING THROUGH PULL BOXES, DUCTS AND CONDUITS SO BENDS WILL NOT BE EXCESSIVE AND CONDUCTORS WILL NOT TOUCH SHARP EDGES; USE FEEDING TUBE WHERE REQUIRED.
h) FOR LARGE DIAMETER CABLES, UTILIZE PROPERLY SIZED PULLING GRIPS.
i) DO NOT EXCEED MAXIMUM RECOMMENDED PULLING TENSION OF WIRE AND CABLE.

FIELD QUALITY CONTROL
1. TEST SYSTEM WIRING FOR CONTINUITY, GROUNDS AND SHORT CIRCUITS PRIOR TO CONNECTION OF ANY EQUIPMENT.
2. TEST FINAL EQUIPMENT CONNECTIONS FOR CONTINUITY OF GROUNDS AND SHORT CIRCUITS.
3. INSULATION RESISTANCE OF FEEDERS AND SUBFEEDERS.
a) TEST WITH MEGGER FOR INSULATION RESISTANCE.
b) CORRECT FAULTS AND REPLACE SECTIONS WITH FAULTY INSULATION.
c) DEMONSTRATE INSTALLATION IS FREE OF GROUNDS AND SHORT CIRCUITS AND THAT INSULATION RESISTANCE COMPLIES WITH ICEA VALUES.
4. TEST DIRECT BURIAL CABLES AFTER COMPLETION OF BACKFILLING.
5. A REPORT OF THESE TEST RESULTS SHALL BE TURNED IN TO THE OWNER AT THE COMPLETION OF THE PROJECT THAT LISTS THE MANUFACTURER/MODEL OF THE TEST EQUIPMENT, THE DATE OF THE TEST, AND THE RESULTS OF THE TESTS.

SECTION 262726
WIRING DEVICES

EXECUTION
SWITCHES

1. PROVIDE SPECIFICATION GRADE, FLUSH MOUNTING, QUIET-OPERATING AC TYPE, WITH TOGGLE OPERATOR, HEAT-RESISTANT PLASTIC HOUSING AND SELF GROUNDING METAL STRAP. SILVER OR SILVER ALLOY CONTACT. DESIGN FOR SIDE OR BACK WIRING WITH UP TO NUMBER 10 WIRE. VERIFIED BY UL TO MEET OR EXCEED FEDERAL SPECIFICATION WS-896E. USE SINGLE-POLE, DOUBLE-POLE, 3-WAY, 4-WAY, LIGHTED, PILOT OR KEYED TYPE, AS INDICATED ON DRAWINGS OR REQUIRED. PROVIDE IVORY COLOR UNLESS OTHERWISE NOTED.
2. WHERE SWITCHES ARE INDICATED TO BE INSTALLED NEAR DOORS, CORNER WALLS, ETC. MOUNT SAME NOT LESS THAN 2" AND NOT MORE THAN 18" FROM TRIM. VERIFY EXACT LOCATION WITH THE ARCHITECT.
3. CAREFULLY COORDINATE THE LOCATION OF SWITCHES TO INSURE LOCATIONS AT THE STRIKE SIDE OF DOORS.
4. FURNISH AND INSTALL AN ENGRAVED LEGEND FOR EACH SWITCH THAT CONTROLS EXHAUST FANS, MOTORS, EQUIPMENT SYSTEMS, ETC., NOT LOCATED WITHIN SIGHT OF THE CONTROLLING SWITCH.

RECEPTACLES
1. UNLESS OTHERWISE NOTED, MOUNT RECEPTACLE VERTICALLY WITH U-SHAPED GROUND POSITION ON BOTTOM. ALL GENERAL PURPOSE SWITCHES AND RECEPTACLES SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER. CATALOG NUMBERS LISTED ARE LEVITON; HOWEVER, COMPARABLE DEVICES BY PASS & SEYMOUR, HUBBELL/BRYANT, OR COOPER/ARROW HART WILL BE ACCEPTED. COLOR OF DEVICES AND PLATES SHALL BE DICTATED BY ARCHITECT/OWNER.
a) SWITCHES: LEVITON #CSB1-20I
b) RECEPTACLES: LEVITON #BR20-I
c) COVER PLATES: SMOOTH PLASTIC
NOTE: ALL OTHER REQUIRED DEVICES SHALL MATCH IN COLOR AND STYLE.

GROUND FAULT INTERRUPTERS
1. SWAB ALL CONDUITS CLEAR OF MOISTURE.
2. DO NOT COMBINE G.F.I. PROTECTED CIRCUITS WITH OTHER CIRCUITS IN SAME RACEWAY.
3. LIMIT MAXIMUM NUMBER OF G.F.I. PROTECTED CIRCUITS IN ANY ONE RACEWAY TO A MAXIMUM OF ONE CIRCUIT.
4. GFCI DEVICES SHALL BE ARRANGED TO BE EASILY LOCATED AND READILY ACCESSIBLE.
d) LABEL DOWNSTREAM RECEPTACLES TO INDICATE THE GFCI LOCATION WHERE RECEPTACLES ARE MORE THAN 20' FROM THE GFCI DEVICE.
e) GFCI DEVICES LOCATED IN RESTROOMS SHALL NOT FEED THROUGH TO PROTECT DEVICES IN OTHER ROOMS.

SECTION 260553
ELECTRICAL IDENTIFICATION

PRODUCTS

NAMEPLATES
1. UNLESS OTHERWISE NOTED, NAMEPLATES SHALL BE BLACK LAMACOID PLATES WITH WHITE ENGRAVED UPPER CASE LETTERS ENCLOSED BY WHITE BORDER ON BEVELED EDGES.
2. NAMEPLATES FOR EQUIPMENT, SUPPLIED BY THE EMERGENCY SYSTEM, SHALL BE RED LAMACOID WITH WHITE LETTERING.
3. ALL NAMEPLATES SHALL BE ENGRAVED AND MUST BE SECURED WITH RIVETS, BRASS OR CADMIUM PLATED SCREWS. THE USE OF DYMO TAPE OR THE LIKE IS UNACCEPTABLE.

CABLE TAGS AND WIRE IDENTIFICATION LABELS
1. CABLE TAGS SHALL BE FLAMEPROOF SECURED WITH NYLON TIES.
2. WIRE MARKERS SHALL BE PREPRINTED CLOTH TAPE TYPE OR APPROVED EQUIVALENT.
3. LABEL DESIGNATIONS, NOMINAL SYSTEM VOLTAGES APPLIED TO THE COVERS OF ALL MEDIUM AND LOW VOLTAGE PULL, SPLICE AND JUNCTION BOXES.

EXECUTION

SWITCHBOARDS
1. FURNISH AND INSTALL A MASTER NAMEPLATE FOR EACH SWITCHBOARD, ENGRAVED WITH THE EQUIPMENT IDENTIFICATION INDICATED ON THE DRAWINGS. MOUNT AT TOP OF INCOMING SECTION.
2. PROVIDE ON EACH MAIN SWITCH AN IDENTIFYING NAMEPLATE.

PANELBOARDS
1. FURNISH AND INSTALL A NAMEPLATE FOR EACH PANELBOARD AND LOAD CENTER ENGRAVED WITH THE IDENTIFICATION INDICATED ON THE DRAWINGS. MOUNT AT TOP OF PANEL.

DISCONNECT SWITCHES
1. FURNISH AND INSTALL A NAMEPLATE FOR EACH DISCONNECT SWITCH ENGRAVED WITH EQUIPMENT DESIGNATION WHICH THE DISCONNECT SERVES.

ELECTRIC METERS
1. FURNISH AND INSTALL A NAMEPLATE FOR EACH DISCONNECT SWITCH ENGRAVED WITH EQUIPMENT DESIGNATION WHICH THE METER SERVES.

SECTION 262413
SWITCHBOARDS

PRODUCTS

APPROVED MANUFACTURERS
1. ALL SWITCHBOARDS ARE TO BE OF THE SAME MANUFACTURER AS THE PANELBOARDS.
2. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING MANUFACTURERS:
a) SQUARE D
b) EATON/CUTLER HAMMER
c) GENERAL ELECTRIC
d) SIEMENS ITE

RATINGS
1. THE ASSEMBLY SHALL BE RATED TO WITHSTAND MECHANICAL FORCES EXERTED DURING SHORT CIRCUIT CONDITIONS WHEN CONNECTED DIRECTLY TO A POWER SOURCE HAVING AVAILABLE FAULT CURRENT AS SHOWN ON THE DRAWINGS.

ENCLOSURES
1. PROVIDE NEMA 1 ENCLOSURES WHERE LOCATED INDOORS IN DRY LOCATIONS.
2. PROVIDE NEMA 3R ENCLOSURES WHERE LOCATED OUTDOORS AND LOCATIONS SUBJECT TO THE ELEMENTS.

FINISH
1. ALL EXTERIOR AND INTERIOR STEEL SURFACES OF THE SWITCHBOARD SHALL BE PROPERLY CLEANED AND PROVIDED WITH A RUST-INHIBITING PHOSPHATIZED COATING. COLOR AND FINISH OF INDOOR SWITCHBOARDS SHALL BE ANSI 61 LIGHT GRAY.
2. OUTDOOR SWITCHBOARD SHALL BE PAINTED TO MATCH THE BUILDING.

SECTION 260526
GROUNDING AND BONDING OF ELECTRICAL SYSTEMS

SUBMITTALS
1. SUBMIT TEST REPORTS CERTIFYING RESISTANCE VALUES FOR BURIED OR DRIVEN GROUNDS AND WATER PIPE GROUNDS.

PRODUCTS MATERIALS
1. GROUND CABLES: GREEN COLOR CODED, INSULATED, ANNEALED STRANDED TINNED COPPER WIRE AS INDICATED ON DRAWINGS.
2. GROUND RODS:
a) COPPER-CLAD STEEL FABRICATED BY MOLTEN WELDING PROCESS.
b) DIAMETER: 5/8 INCH. USE 3/4 INCH FOR ROCKY SOIL.
c) LENGTH: 10 FEET.

GENERAL
1. ALL GROUND WIRES AND BONDING JUMPERS SHALL BE STRANDED COPPER INSTALLED IN CONDUIT. ALL GROUND WIRES SHALL BE WITHOUT JOINTS AND SPLICES OVER ITS ENTIRE LENGTH.
2. THE SYSTEM NEUTRAL SHALL BE GROUNDED AT THE SERVICE ENTRANCE ONLY, AND KEPT ISOLATED FOR GROUNDING SYSTEMS THROUGHOUT THE BUILDING.
3. EACH SYSTEM OF CONTINUOUS METALLIC PIPING AND DUCTWORK SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
4. MECHANICAL EQUIPMENT SHALL BE BONDED TO THE BUILDING EQUIPMENT GROUNDING SYSTEM. THIS SHALL INCLUDE BUT IS NOT LIMITED TO, FANS, PUMPS, CHILLERS, ETC.
5. PVC CONDUITS AND PORTIONS OF METALLIC PIPING AND DUCT SYSTEMS WHICH ARE ISOLATED BY FLEXIBLE CONNECTIONS, INSULATED COUPLINGS, ETC., SHALL BE BONDED TO THE EQUIPMENT GROUND WITH A FLEXIBLE BONDING JUMPER, OR SEPARATE GROUNDING CONDUCTOR.

SEPARATELY DERIVED SYSTEMS
1. EQUIPMENT GROUNDING CONDUCTORS SHALL BE PROVIDED FOR SEPARATELY DERIVED SYSTEMS AND SHALL BE GROUNDED TO BUILDING STEEL, COLD WATER PIPES, ETC., OR AN ALTERNATE GROUNDING MEANS.
2. A SEPARATE, GREEN TYPE THW COPPER GROUND CONDUCTOR SHALL BE RUN FROM GROUND LUG OF EACH GROUNDED RECEPTACLE TO AN APPROVED CONNECTION INSIDE THE ENCLOSING STEEL OUTLET BOX. DEVICE MOUNTING SCREWS SHALL NOT BE CONSIDERED AN APPROVED GROUND.
3. A SEPARATE GROUND CONDUCTOR SHALL BE INSTALLED IN EVERY CONDUIT AND RACEWAY AND SECURELY BONDED IN AS APPROVED GROUNDING TERMINAL AT BOTH ENDS OF THE RUN. THE GROUNDING CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. CONTRACTOR SHALL SIZE CONDUIT TO ACCOMMODATE ADDITIONAL CONDUCTOR.

ISOLATED GROUND RECEPTACLES
1. ISOLATED GROUND RECEPTACLES GROUND LUG SHALL NOT BE CONNECTED TO THE RESPECTIVE OUTLET BOXES.
2. PROVIDE INSULATED GROUND WIRE FOR EACH ISOLATED GROUND RECEPTACLE. GROUND WIRE SHALL SERVE ONLY THOSE RECEPTACLES WHICH ARE ISOLATED. ROUTE GROUND CONDUCTOR TOGETHER WITH PHASE AND NEUTRAL CONDUCTORS IN A COMMON RACEWAY.
3. TERMINATE ISOLATED GROUND WIRE AT THE GROUND FROM THE SEPARATELY DERIVED SYSTEM SERVING THE RECEPTACLES.

GROUND CONDUCTORS
1. SIZE AS SHOWN ON DRAWINGS OR AS REQUIRED BY NATIONAL ELECTRICAL CODE.

SECTION 262416
PANELBOARDS

GENERAL
1. ALL SWITCHGEAR, PANELS, STARTERS, CONTACTORS ETC., SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER, THE SYSTEM DESIGN IS BASED ON SQUARE "D"; HOWEVER, COMPARABLE EQUIPMENT BY G.E., & SIEMENS ONLY WILL BE ACCEPTABLE ALTERNATES. TANDEM AND HALF-SPACE CIRCUIT BREAKERS SHALL NOT BE USED.
2. ALL ELECTRICAL PANELS INDICATED ON THESE DRAWINGS ARE DESIGNED AND FULLY RATED, AS PER SQUARE "D" SPECIFICATIONS. IF AN ALTERNATE MANUFACTURER IS SUBSTITUTED, IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PROPERLY FULLY RATE ALL PANELS.
3. TYPEWRITTEN CIRCUIT INDEX SHALL BE AFFIXED TO INSIDE SURFACE OF EACH PANELBOARD DOOR, CLEARLY INDICATING AREA AND TYPE OF LOAD SERVED BY EACH BRANCH CIRCUIT PROTECTIVE DEVICE, INCLUDING SPARES. HAND PRINTED WILL NOT BE ACCEPTED.
4. ENGRAVED, LAMINATED PLASTIC IDENTIFICATION PLATES SHALL BE FURNISHED AND INSTALLED ON ALL PANELS AND SWITCHGEAR. PLATES SHALL BE AFFIXED TO FRONT OF PANELS, INDICATING PANEL NAME, VOLTAGE AND AMPERAGE.

EXECUTION

INSTALLATION
1. MOUNT ALL PANELS AT A MAXIMUM HEIGHT OF 6 FEET 6 INCHES TO TOP UNLESS OTHERWISE NOTED.
2. WHERE FLUSHED MOUNTED, THE FIRE INTEGRITY OF THE WALL IN WHICH IT IS INSTALLED MUST BE MAINTAINED.
3. NEATLY ARRANGE BRANCH CIRCUIT WIRES AND TIE TOGETHER IN EACH GUTTER WITH THOMAS & BETTS NYLON "TY-RAPS", OR APPROVED EQUAL AT MINIMUM 4 INCH INTERVALS.
4. PLUG ALL KNOCKOUTS REMOVED AND NOT UTILIZED.
5. PROVIDE NAMEPLATE AND FILL OUT PANEL DIRECTORY. FOR REMODEL WORK OR CHANGES, TRACE CIRCUITS TO DETERMINE LOADS AND PROVIDE NEW UPDATED DIRECTORY.

TOUCH UP AND CLEANING
1. VACUUM ALL BACKBOXES CLEAN OF DEBRIS AFTER INSTALLATION AND PRIOR TO CONTRACT CLOSEOUT.
TOUCH UP SCRATCH MARKS, ETC. WITH MATCHING PAINT

SECTION 262813
FUSES 600V AND LESS

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

INSTALLATION
1. FUSES SHALL NOT BE INSTALLED UNTIL EQUIPMENT IS READY TO BE ENERGIZED.
2. PROVIDE AND INSTALL FUSES OF PROPER TYPE, VOLTAGE AND AMPERE RATINGS FOR ALL FUSIBLE DEVICES FURNISHED.
3. LABELS
a) APPLY APPROPRIATE LABEL WITHIN EACH SWITCH, MOTOR STARTER, OR PANEL BOARD DOOR OR AT LOCATION NEXT TO FUSE CLIPS, WHERE FUSES SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. FILL-IN WITH INK, BLANK SPACES ON LABELS FOR NON-STANDARD FUSES WITH APPROPRIATE FUSE DATA.

SECTION 260476
DISCONNECT SWITCHES

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

SECTION 265100
LUMINAIRES AND ACCESSORIES

PRODUCTS

LUMINAIRES
1. ACCEPTABLE MANUFACTURERS ARE LISTED IN THE LIGHTING FIXTURE SCHEDULE SHOWN ON THE DRAWINGS.
2. THE DESIGNATIONS INDICATED ON THE LIGHTING FIXTURE SCHEDULE ARE A DESIGN SERIES REFERENCE (NOT NECESSARILY A COMPLETE CATALOG NUMBER) AND DO NOT NECESSARILY REPRESENT THE NUMBER, SIZE, VOLTAGE, WATTAGE, TYPE OF LAMP, BALLAST, FINISH TRIM, CEILING TYPE, MOUNTING HARDWARE OF SPECIAL REQUIREMENTS AS SPECIFIED HEREINAFTER ON AS REQUIRED BY THE PARTICULAR INSTALLATION(S) AND CODE. CONTRACTOR SHALL VERIFY THESE REQUIREMENTS AND OTHER FIXTURES AS REQUIRED TO GIVE PROPER INSTALLATION PER THE CONTRACT DOCUMENTS AND PER CODES.

BALLASTS
1. IT IS PREFERRED THAT ALL BALLASTS SHALL BE OF THE SAME MANUFACTURER. EVERY EFFORT SHALL BE MADE TO ELIMINATE BALLASTS FROM MULTIPLE MANUFACTURERS. BALLASTS WITHIN LUMINAIRES OF A GIVEN TYPE MUST HOWEVER BE OF THE SAME MANUFACTURER. MULTIPLE MANUFACTURERS WILL NOT BE PERMITTED.
2. APPROVED MANUFACTURERS:
a) GENERAL ELECTRIC
b) OSRAM SYLVANIA
c) UNIVERSAL LIGHTING TECHNOLOGIES

FABRICATION
1. PROVIDE LUMINAIRES, COMPLETE FACTORY-ASSEMBLED AND WIRED AND EQUIPPED WITH NECESSARY SOCKETS, BALLASTS, WIRING, REFLECTORS, CHANNELS, LENSES, ETC., AND DELIVER TO JOB READY FOR INSTALLATION.

MATERIALS
1. PROVIDE BALLASTS WITH VOLTAGE CHARACTERISTICS TO MATCH THAT OF ALL RELATED CIRCUITRY INDICATED ON DRAWINGS. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO PROPERLY [illegible]AST VOLTAGE WITH CIRCUITRY.
2. BALLASTS FOR CONTROL OF LAMPS IN ONE HOUSING OR FIXTURE UNIT SHALL NOT CONTROL LAMPS OF AN ADJOINING UNIT.
3. GUARANTEE BALLAST FOR ONE FULL YEAR AND ONE YEAR PRORATED AS PER STANDARD MANUFACTURER'S WARRANTY AGAINST DEFECTS FOR A PERIOD OF 2 YEARS. GUARANTEE TO INCLUDE REPLACING DEFECTIVE BALLAST WITH NEW BALLAST.

LAMPS
1. PROVIDE A COMPLETE SET OF NEW LAMPS IN EACH FIXTURE.
2. UNLESS NOTED OTHERWISE LAMPS MUST CONFORM TO THE FOLLOWING:
a) FLUORESCENT: T-8, 35K COLOR.
b) INCANDESCENT: "A" LAMPS TO BE INSIDE FROSTED RATED AT 130 VOLTS.
c) LOW VOLTAGE: MR-16.
d) LIGHT EMITTING DIODE (LED) FIXTURES
A. THE MANUFACTURER SHALL WARRANTY THE FIXTURE FOR 5 YEARS AFTER SHIPMENT TO THE JOB SITE.
B. THE COMPLETE LUMINAIRE ASSEMBLY SHALL BE DESIGNED TO OPERATE THE LED LAMPS FOR A MINIMUM OF 50,000 HOURS.

EXECUTION

INSTALLATION
1. INSTALL LUMINAIRES IN MECHANICAL AND UNFINISHED AREAS AFTER DUCTWORK AND PIPING INSTALLATION. ADJUST FIXTURE LOCATIONS TO PROVIDE THE BEST LIGHTING FOR EQUIPMENT ACCESS AND SERVICE LOCATIONS. LOCATE FIXTURES 8 FEET 6 INCHES ABOVE FLOOR, OR AT SUITABLE LOCATIONS WITHIN SPACE ON WALLS BUT NOT LOWER THEN 7'-0" A.F.F.
2. THE CONTRACTOR SHALL PROTECT LUMINAIRES FROM DAMAGE DURING INSTALLATION OF SAME AND UP TO THE TIME OF ACCEPTANCE. ANY BROKEN LUMINAIRES, GLASSWARE, PLASTICS, LAMPS ETC., MUST BE REPLACED BY THE CONTRACTOR WITH NEW PARTS, WITHOUT ANY ADDITIONAL EXPENSE TO THE OWNER.
3. WHERE BALLASTS ARE FOUND TO BE PRODUCING EXCESSIVE NOISE THEY SHALL BE REPLACED.
4. INSTALL EXIT LIGHT AS INDICATED ON THE DRAWINGS BUT NOT HIGHER THAN 10 FEET A.F.F. SIZE AND COLOR OF LETTERING SHALL COMPLY WITH LOCAL CODES.
5. TRACK LUMINAIRES, ADJUSTABLE LUMINAIRES, FLOODLIGHTS AND ACCENT LIGHTS SHALL BE AIMED AS DIRECTED BY THE ARCHITECT/ENGINEER. OUTDOOR LIGHTING SHALL BE AIMED IN PERIODS OF DARKNESS.
6. PLUMB ALL OUTDOOR LIGHTING STANDARDS TO TRUE VERTICAL. FOR BOLTED POLES, PROVIDE GALVANIZED ANCHOR BOLTS AND NUTS. PLUMB USING A NUT ABOVE AND BELOW THE BASE PLATE ON THE ANCHOR BOLTS. PACK GROUT BETWEEN BASE PLATE AND CONCRETE FOOTING AND PROVIDE DRAIN HOLE BELOW BASE PLATE TO PREVENT ACCUMULATION OF MOISTURE INSIDE POLE BASE. PROVIDE TWO PIECE OR INDIVIDUAL COVERS FOR NUTS EXPOSED ABOVE THE BASEPLATE OF THE SAME COLOR AS THE POLE. GROUND ALL METAL LIGHTING STANDARDS.

SECTION 260923
FIRE ALARM SYSTEMS

SUBMITTALS
1. SUBMIT PRIOR TO ORDERING EQUIPMENT:
a) WIRING DIAGRAMS SHOWING CONNECTIONS BETWEEN ALL SYSTEM COMPONENTS.
b) DESCRIPTION OF SYSTEM OPERATION.
c) ANNUNCIATOR SCHEDULE SHOWING TITLES FOR EACH FIRE ALARM AND SUPERVISORY ZONE.
d) MANUFACTURER'S LITERATURE MARKED TO SHOW MODEL AND CATALOG NUMBER FOR ALL EQUIPMENT.
e) MANUFACTURER'S INSTALLATION INSTRUCTIONS, OPERATIONS AND MAINTENANCE INSTRUCTIONS.
f) A COMPLETE LAYOUT OF THE ENTIRE SYSTEM INCLUDING CONDUIT ROUTING, CONDUIT SIZES, WIRE SIZES AND TYPES.
g) PROVIDE A COLOR CODE SCHEDULE FOR WIRING.
h) BATTERY SIZING CALCULATIONS INDICATING CIRCUIT LOADING AND POWER SUPPLY LOADING. VOLTAGE DROP CALCULATIONS SHALL BE SUBMITTED FOR ALL NOTIFICATION APPLIANCE CIRCUITS EXCEEDING 1.5 AMPS OR 300' LENGTH.
i) SUBMITTALS SHALL BE AS A COMPLETE SET. PARTIAL SUBMITTAL WILL NOT BE ACCEPTABLE.
j) DRAWINGS SHALL NOT BE ON LESS THAN 8 1/2" BY 11 INCH SHEETS AND SHALL IDENTIFY ALL SYMBOLS USED.
2. SUBMIT PRIOR TO BUILDING OCCUPANCY
a) CONTRACTOR SHALL SUBMIT, UPON COMPLETION OF SYSTEM VERIFICATION, A POINT-BY-POINT CHECK LIST INDICATING THE DATE AND TIME OF EACH ITEM INSPECTED AND ISSUE A RECORD OF COMPLETION CONFIRMING THAT THE INSPECTION HAS BEEN COMPLETED AND THE SYSTEM IS INSTALLED AND FUNCTIONING IN ACCORDANCE WITH THE SPECIFICATIONS.

SECTION 260923

LIGHTING CONTROL DEVICES

SENSOR INSTALLATION
1. INSTALL AND AIM SENSORS IN LOCATIONS TO ACHIEVE NOT LESS THAN 90 PERCENT COVERAGE OF AREAS INDICATED. DO NOT EXCEED COVERAGE LIMITS SPECIFIED IN

MANUFACTURER'S WRITTEN INSTRUCTIONS.

CONTRACTOR INSTALLATION
1. MOUNT ELECTRICALLY HELD LIGHTING CONTRACTORS WITH ELASTOMERIC ISOLATOR PADS, TO ELIMINATE STRUCTURE-BORNE VIBRATION, UNLESS CONTACTORS ARE INSTALLED IN AN ENCLOSURE WITH FACTORY-INSTALLED VIBRATION ISOLATORS.
WIRING INSTALLATION
1. WIRING METHOD: COMPLY WITH SECTION 26010 GENERAL PROVISIONS. MINIMUM CONDUIT SIZE SHALL BE 1/2 INCH (13 MM).
2. WIRING WITHIN ENCLOSURES: COMPLY WITH NECA 1. SEPARATE POWER-LIMITED AND NONPOWER-LIMITED CONDUCTORS ACCORDING TO CONDUCTOR MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. SIZE CONDUCTORS ACCORDING TO LIGHTING CONTROL DEVICE MANUFACTURER'S WRITTEN INSTRUCTIONS, UNLESS OTHERWISE INDICATED.
4. SPLICES, TAPS, AND TERMINATIONS: MAKE CONNECTIONS ONLY ON NUMBERED TERMINAL STRIPS IN JUNCTION, PULL, AND OUTLET BOXES; TERMINAL CABINETS; AND EQUIPMENT ENCLOSURES.

SUBMITTALS
1. ANY SUBSTITUTIONS FOR LIGHTING THAT IS SUBMITTED BY THE CONTRACTOR CHANGES THE LIGHTING CONTROLS SYSTEM. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO MAKE THE LIGHTING CONTROLS WORK WITH ANY SUBSTATIONS IN THE SAME MANNER THE ORIGINAL DESIGNED CONTROLS FUNCTIONED. ELECTRICAL CONTRACTOR TO PROVIDE ANY ADDITIONAL EQUIPMENT NEEDED TO HAVE THE LIGHTING CONTROLS OPERATE PER CODE.

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CLIENT NAME
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PROJECT NAME
Limited Landlord Work for Spaces 2AB & 2C
4003 & 4005 Santa Barbara Boulevard
Naples, Florida 34105

SHEET TITLE
Electrical Specifications

GARY S. WALL
No. 81196
06/18/2019

Revision Schedule

No.	Description	Date

PROJECT NO.
2190294
DATE
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PROPOSED LOADS ON EXISTING CIRCUITS PANEL 'HOUSE'			
CIRCUIT DESCRIPTION	LOAD REMOVED FROM CIRCUIT	LOAD ADDED TO CIRCUIT	DIFFERENCE
CORRIDOR LIGHTING CIRCUIT	472 VA	251 VA	
TOTAL	472 VA	251 VA	-221 VA

SHEET HEX NOTES:

1 INCOMING SERVICE CONDUITS. REFER TO POWER RISER DIAGRAM ON SHEET E301 FOR ADDITIONAL INFORMATION.

2 UNDERGROUND SECONDARY CONDUIT FROM UTILITY TRANSFORMER. REFER TO POWER RISER DIAGRAM SHEET E301.

3 LIGHT FIXTURE SHALL BE CONNECTED TO EXISTING HOUSE PANEL LIGHTING CIRCUIT.

4 EXISTING 400A DISCONNECT TO BE REUSED FOR NEW TENANT.

5 APPROXIMATE LOCATION OF TENANT PANEL 'T2C'. COORDINATE FINAL LOCATION WITH TENANT PRIOR TO ROUGH IN.

6 FACTORY INSTALLED POWERED CONVENIENCE OUTLET. INSTALLATION SHALL BE PER 2014 NEC 210.63. COORDINATE WITH MECHANICAL.

7 EXISTING RTU.

8 EXIT AND EMERGENCY LIGHTING SHALL BE CONNECTED TO TENANT'S PANEL AHEAD OF ALL LOCAL CONTROLS. PROVIDE 2#12, 1#12 CU GND, 3/4"C.

9 EXIT AND EMERGENCY LIGHTING SHALL BE CONNECTED TO HOUSE PANEL AND CONDUIT ROUTED SUCH THAT THE TENANT CONTRACTOR CAN INTERCEPT AND RE-FEED THE LIGHTING FROM THE TENANT PANEL ONCE INSTALLED AND POWERED.

10 EXTERIOR SIGN POWER: MOUNT JUNCTION BOX(ES) TO WALL IN CEILING SPACE 6" BELOW BOTTOM CHORD OF BAR JOIST, UNLESS NOTED OTHERWISE. COORDINATE LOCATION OF ACCESS DOORS AND PROVIDE FINAL POWER TERMINATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT SIGN LOCATION(S). WHERE ELECTRICAL CONNECTIONS FOR SIGNAGE OCCUR ABOVE ROOF LINE, E.C. SHALL PROVIDE UNISTRUT TO BACK SIDE OF PARAPET FOR SIGN INSTALLER'S JUNCTION BOXES AND PROVIDE ONLY ONE PENETRATION THROUGH ROOF AND PARAPET PENETRATION. COORDINATE WITH SIGN INSTALLER AND REFER TO ARCHITECTURAL EXTERIOR WALL SECTIONS AND WHIP DETAIL FOR ROOF AND PARAPET PENETRATION REQUIREMENTS.

11 PROVIDE 2" CONDUIT WITH PULLSTRINGS FROM 'INCOMING CABLE' AREA ON THE BUILDING EXTERIOR TO APPROXIMATE LOCATION AS SHOWN COORDINATE EXACT LOCATION WITH TENANT. CAP AND LABEL BOTH ENDS. STUB-UP 2'-0" A.F.F.

12 EXTEND EXISTING FEEDERS FROM JUNCTION BOX (JB-1) TO LOCATION OF NEW TENANT PANEL 'T2C'.

13 2" CONDUITS WITH PULLSTRINGS TO TELEPHONE TERMINAL CABINET 'TTC' FROM APPROXIMATE LOCATION OF FUTURE TENANT TELEPHONE TERMINAL BOARD 'TTB'. COORDINATE EXACT LOCATION WITH TENANT. CAP AND LABEL BOTH ENDS. STUB-UP 24"AFF. REFER TO DETAIL #3 ON SHEET E501.

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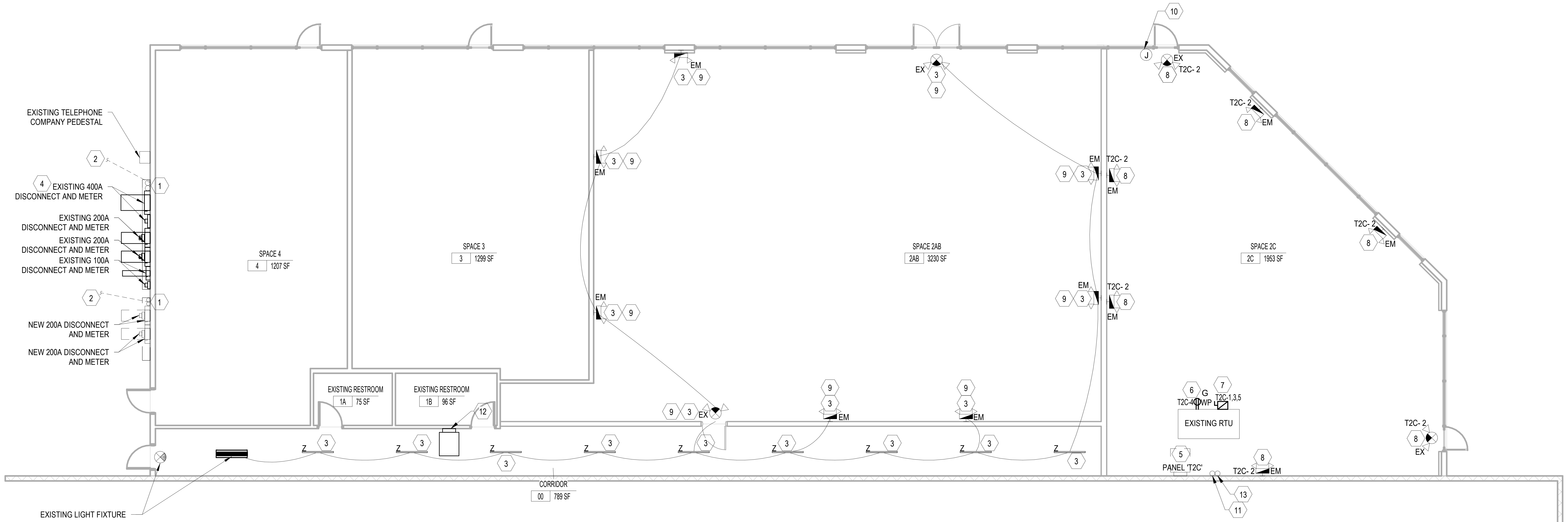
06/24/2019
thomasmastroberto



REAR
LEFT RIGHT
FRONT

1 FLOOR PLAN - ELECTRICAL

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

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PROJECT NAME
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4003 & 4005 Santa Barbara Boulevard
Naples, Florida 34105

SHEET TITLE
Floor Plan - Electrical

GARY S. WALL
No. 81196
06/18/2019

Revision Schedule		
No.	Description	Date

PROJECT NO. 2190294
DATE 06/18/2019
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Branch Panel: T2C

Location:	SPACE 2C 2C	**Volts:**	120 / 208 3 Phase	**A.I.C. Rating:**	REFER POWER RISER DIAGRAM
Supply From:		**Phases:**	3	**Mains Type:**	MCB
Mounting:	Surface	**Wires:**	4	**Rating:**	400 A
Enclosure:	NEMA 1				

NOTE	CKT	CIRCUIT DESCRIPTION	WIRE	BRKR	P	A (VA)		B (VA)		C (VA)		P	BRKR	WIRE	CIRCUIT DESCRIPTION	CKT	NOTE
8	1	EXISTING RTU	3	100 A	3	9600	24					1	20 A	12	EXIT AND EMERGENCY LIGHITNG	2	2
	3	--		--	--			9600	180			1	20 A	12	ROOFTOP RECEPTALCE	4	
	5	--		--	--					9600	0	--	--		Space	6	
	7	Space		--	--	0	0					--	--		Space	8	
	9	Space		--	--			0	0			--	--		Space	10	
	11	Space		--	--					0	0	--	--		Space	12	
	13	Space		--	--	0	0					--	--		Space	14	
	15	Space		--	--			0	0			--	--		Space	16	
	17	Space		--	--					0	0	--	--		Space	18	
	19	Space		--	--	0	0					--	--		Space	20	
	21	Space		--	--			0	0			--	--		Space	22	
	23	Space		--	--					0	0	--	--		Space	24	
	25	Space		--	--	0	0					--	--		Space	26	
	27	Space		--	--			0	0			--	--		Space	28	
	29	Space		--	--					0	0	--	--		Space	30	
	31	Space		--	--	0	0					--	--		Space	32	
	33	Space		--	--			0	0			--	--		Space	34	
	35	Space		--	--					0	0	--	--		Space	36	
	37	Space		--	--	0	0					--	--		Space	38	
	39	Space		--	--			0	0			--	--		Space	40	
	41	Space		--	--					0	0	--	--		Space	42	
					Total Load:	9624 VA		9780 VA		9600 VA							
					Total Amps:	80 A		82 A		80 A							

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	28800 VA	100.00%	28800 VA		
Lighting	24 VA	125.00%	30 VA	**Total Conn. Load:**	29004 VA
Receptacle	180 VA	100.00%	180 VA	**Total Est. Demand:**	29010 VA
				Total Conn.:	81 A
				Total Est. Demand:	81 A

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06/24/2019
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SERVICE ENTRANCE FEEDER SCHEDULE

FEEDER CODE	DESCRIPTION
S104	(4)#3, 1-1/2IN C
S204	(4)#3/0, 2IN C
S404	(2) 2IN C, EACH W/ (4)#3/0
S604	(2) 3IN C, EACH W/ (4)-350KCMIL

GROUNDING FEEDER SCHEDULE

FEEDER CODE	DESCRIPTION
G200	#4 COPPER GROUND, 3/4"C

FEEDER BRANCH CIRCUIT SCHEDULE

FEEDER CODE	DESCRIPTION
404	(2) 2IN C, EACH W/ (4) #3/0, (1)#3G

Voltage Drop Calculations:

VOLTAGE DROP CALCULATIONS HAS BEEN PERFORMED, THIS DESIGN COMPLIES WITH VOLTAGE DROP REQUIREMENTS OF FBC ENERGY CONSERVATION 405.6.3. THE CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS COMBINED SHALL BE SIZED FOR A MAXIMUM OF 5% VOLTAGE DROP TOTAL.

Metering Notes:

ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE POWER METERING IS COMPLIANT WITH THE LOCAL UTILITY PROVIDER.

POWER RISER DIAGRAM NOTES:

1 EXISTING PAD MOUNTED TRANSFORMER. ELECTRICAL CONTRACTOR SHALL CONTACT FLORIDA POWER AND LIGHT(FP&L). JOHN BENAVIDES, (239) 353-6003.

2 UTILITY COMPANY METER SOCKET, COORDINATE WITH FPL.

3 WIRE-WAY NEMA 3R RATED WITH LOCKABLE COVER, SIZED PER NEC. PROVIDE KEY TAPS. RUN CONDUCTORS FULL LENGTH OF WIRE-WAY. TAP ALL CONDUCTORS FOR EACH TENANT.

4 GROUNDING ELECTRODE, REFER TO DETAIL #1 ON SHEET E501.

5 NEMA 4, SURGE PROTECTION DEVICE.

6 200A, 208/120V, FUSIBLE, NEMA 3R DISCONNECT SWITCH WITH 200 AMP FUSES PER PHASE.

7 EXISTING 400A, 208/120V, FUSIBLE, NEMA 3R DISCONNECT SWITCH TO BE REUSED FOR NEW TENANT. E.C. TO FURNISH DISCONNECT SWITCH WITH NEW 400A FUSES PER PHASE.

8 EXTEND (2) 2" CONDUITS WITH PULL STRING INTO TENANT SPACE, STUB-UP AND CAP AT LOCATION SHOWN ON SHEET E101. COORDINATE EXACT LOCATION IN FIELD WITH OWNERS REPRESENTATIVE PRIOR TO ROUGH-IN.

9 TENANT 'T2B' PANELBOARD, NEMA 3R. REFER TO PANEL SCHEDULE ON THIS SHEET.

10 E.C. TO FIELD VERIFY INCOMING CONDUITS FROM EXISTING TRANSFORMER. IF INCOMING FEEDERS ARE GREATER THAN 2 SETS OF 350 KCMIL THEN CONTACT ENGINEER OF RECORD PRIOR TO ANY ROUGH IN OR ELECTRICAL WORK.

11 EXISTING MAIN PANEL FEEDING PREVIOUS TENANT SPACE TO BE UTILIZED AS JUNCTION BOX. PROVIDE ALL NECESSARY HARWARE AND COVER PLATES.

AIC RATING NOTE:

AIC CALCULATIONS WERE PERFORMED ASSUMING A 300KVA TRANSFORMER WITH A FAULT CURRENT OF 22,531.

ELECTRICAL SERVICE NOTE:

E.C. TO VERIFY NEW SERVICE WITH UTILITY. NEW SERVICE TO BE TAPPED FROM EXISTING TRANSFORMER.

FAULT CURRENT NOTE:

E.C. TO VERIFY FINAL UTILITY TRANSFORMER FAULT CURRENT. E.C TO SUBMIT FINAL UTILITY FAULT CURRENT TO EOR FOR FINAL AIC RATING SIZING PRIOR TO PURCHASE.

PANEL BOARD NOTES:

(1) INSTALL LOCKING DEVICE (LOCK-OFF FOR MAINTENANCE). LOCKING DEVICE SHALL BE UL LISTED. MANUFACTURER SHALL MATCH EXISTING PANELBOARD MANUFACTURER

(2) INSTALL LOCKING DEVICE (LOCK-ON FOR CRITICAL LOAD).

(3) GFI BREAKER.

(4) REFER TO ONE-LINE DIAGRAM FOR WIRE SIZES.

(5) EXISTING CIRCUIT TO REMAIN.

(6) ROUTE CIRCUIT THROUGH NEW CONTACTOR VIA TIMECLOCK

(7) PROVIDE INTERLOCK WIRING WITH EXHAUST HOOD ANSUL SYSTEM.

(8) HACR CIRCUIT BREAKER.

(9) PROVIDE HANDLE LOCK OFF DEVICE TO LOCK "SPARE" CIRCUIT BREAKER IN THE "OFF" POSITION. IF CIRCUIT BREAKER IS IDENTIFIED AS "EXISTING", FIELD VERIFY CIRCUIT BREAKER INDICATED IS NOT CONNECTED TO ANY LOAD AND UPDATE PANELBOARD CIRCUIT DIRECTORY IDENTIFYING CIRCUIT AS "SPARE".

(10) PROVIDE HANDLE-TIE BETWEEN CIRCUIT BREAKERS SHARING COMMON NEUTRAL FOR SIMULTANEOUS TRIP.

(11) DO NOT INSTALL NEUTRAL FOR THIS CIRCUITRY.

(12) REFER TO RISER DIAGRAM FOR WIRE SIZE AND CONDUIT.

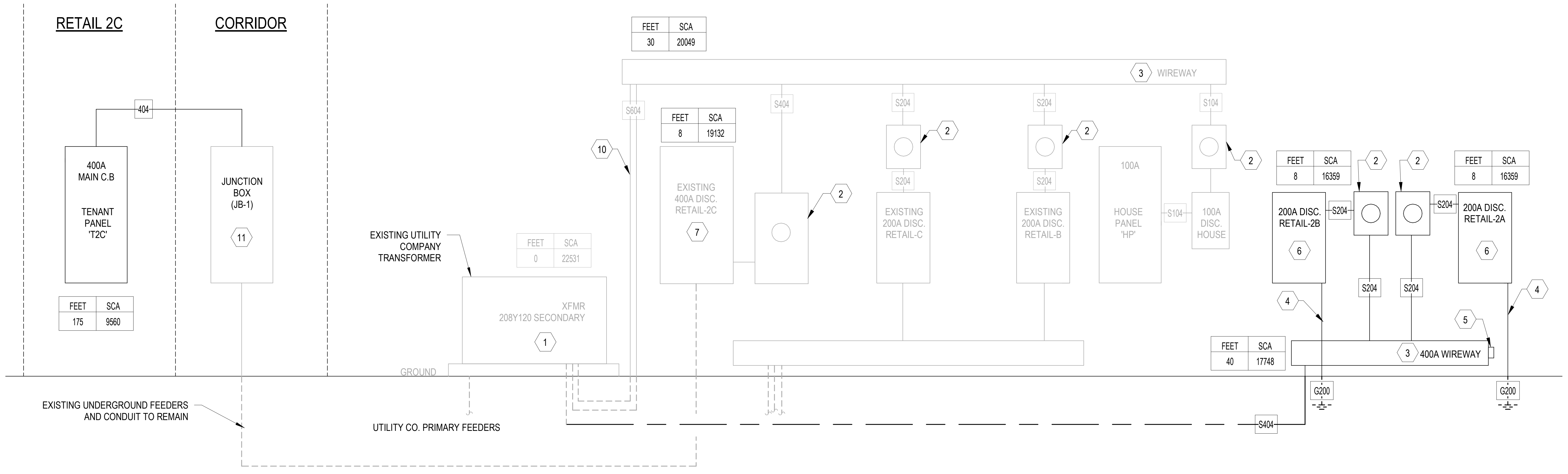
(13) CONNECT CIRCUITS VIA (8) POLE CONTACTOR WITH 110V COIL. CIRCUIT SHALL BE CONTROLLED BY A RELAY THAT IS CONTROLLED BY THE MARLIN CONTROL SYSTEM PANEL. COORDINATE WITH MARLIN SYSTEM VENDOR FOR EXACT REQUIREMENTS.

(14) CONNECT CIRCUITS VIA (4) POLE CONTACTOR WITH 110V COIL. CIRCUIT SHALL BE CONTROLLED BY A RELAY THAT IS CONTROLLED BY THE MARLIN CONTROL SYSTEM PANEL AND PHOTOCELL. COORDINATE WITH MARLIN SYSTEM VENDOR FOR EXACT REQUIREMENTS.

(15) CIRCUIT SHALL BE CONTROLLED BY A RELAY THAT IS CONTROLLED BY THE MARLIN CONTROL SYSTEM PANEL AND PHOTOCELL. COORDINATE WITH MARLIN SYSTEM VENDOR FOR EXACT REQUIREMENTS.

GENERAL NOTES:

1. PROVIDE NEUTRAL FOR ALL BRANCH CIRCUITRY UNLESS OTHERWISE CIRCUIT NOTED BY PANELBOARD NOTE (11).



1 Power Riser Diagram

SCALE: N.T.S.

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PROJECT NAME
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4003 & 4005 Santa Barbara Boulevard
Naples, Florida 34105

SHEET TITLE
Power Riser Diagram and Panel Schedules

GARY S. WALL
No. 81196
06/18/2019

Revision Schedule		
No.	Description	Date

PROJECT NO.	DATE	DRAWN	CHECKED
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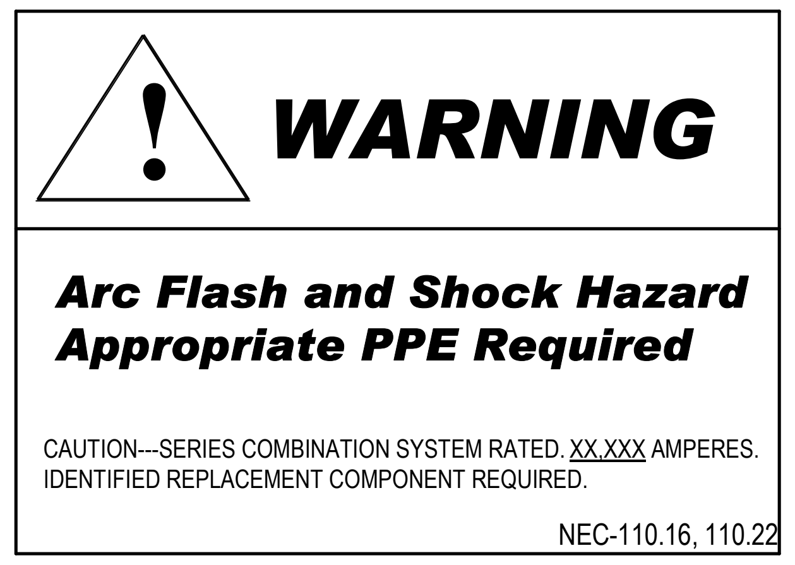


WARNING

Arc Flash and Shock Hazard
Appropriate PPE Required

CAUTION---SERIES COMBINATION SYSTEM RATED. XX,XXX AMPERES.
IDENTIFIED REPLACEMENT COMPONENT REQUIRED.

NEC-110.16, 110.22

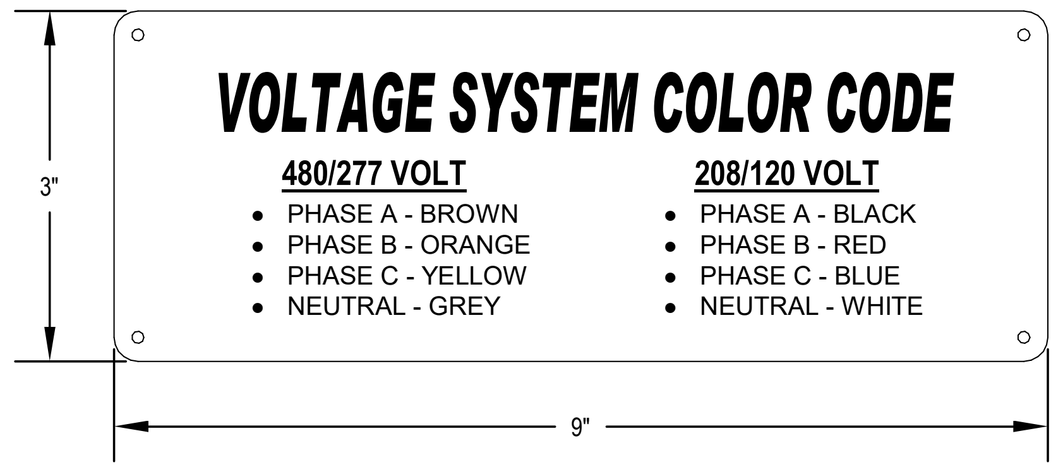
NOTES

PROVIDE/INSTALL SIGN ON ALL EQUIPMENT PER ANSI, NEC, AND OSHA.

ANSI Z535.4-1998, PRODUCT SAFETY SIGNS AND LABELS, PROVIDES GUIDELINES FOR THE DESIGN OF SAFETY SIGNS AND LABELS FOR APPLICATION TO PRODUCTS.

6 Arc Flash Warning Sign Detail

SCALE: N.T.S.



VOLTAGE SYSTEM COLOR CODE

480/277 VOLT
- PHASE A - BROWN
- PHASE B - ORANGE
- PHASE C - YELLOW
- NEUTRAL - GREY

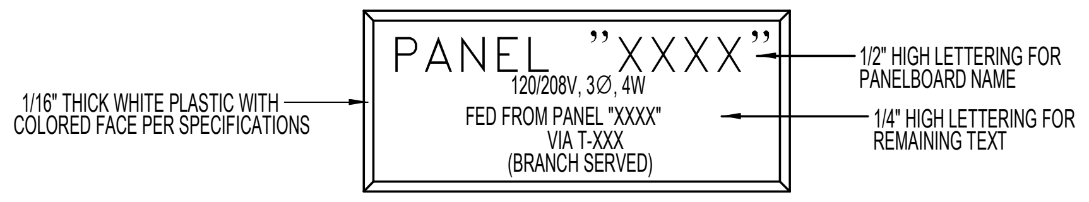
208/120 VOLT
- PHASE A - BLACK
- PHASE B - RED
- PHASE C - BLUE
- NEUTRAL - WHITE

NOTES:

1. COLOR SYSTEMS ARE TO REMAIN CONSISTENT THROUGH-OUT ENTIRE SYSTEM - SEE SPECIFICATIONS
2. PROVIDE SIGN ON ENGRAVED LAMENT WITH MINIMUM 3/16" LETTERS.
3. SIGN SHALL BE PERMANENTLY AFFIXED AT EACH BRANCH CIRCUIT PANEL-BOARD OR SIMILAR BRANCH CIRCUIT DISTRIBUTION EQUIPMENT.

5 Typical Identification for Branch Circuits Detail

SCALE: N.T.S.

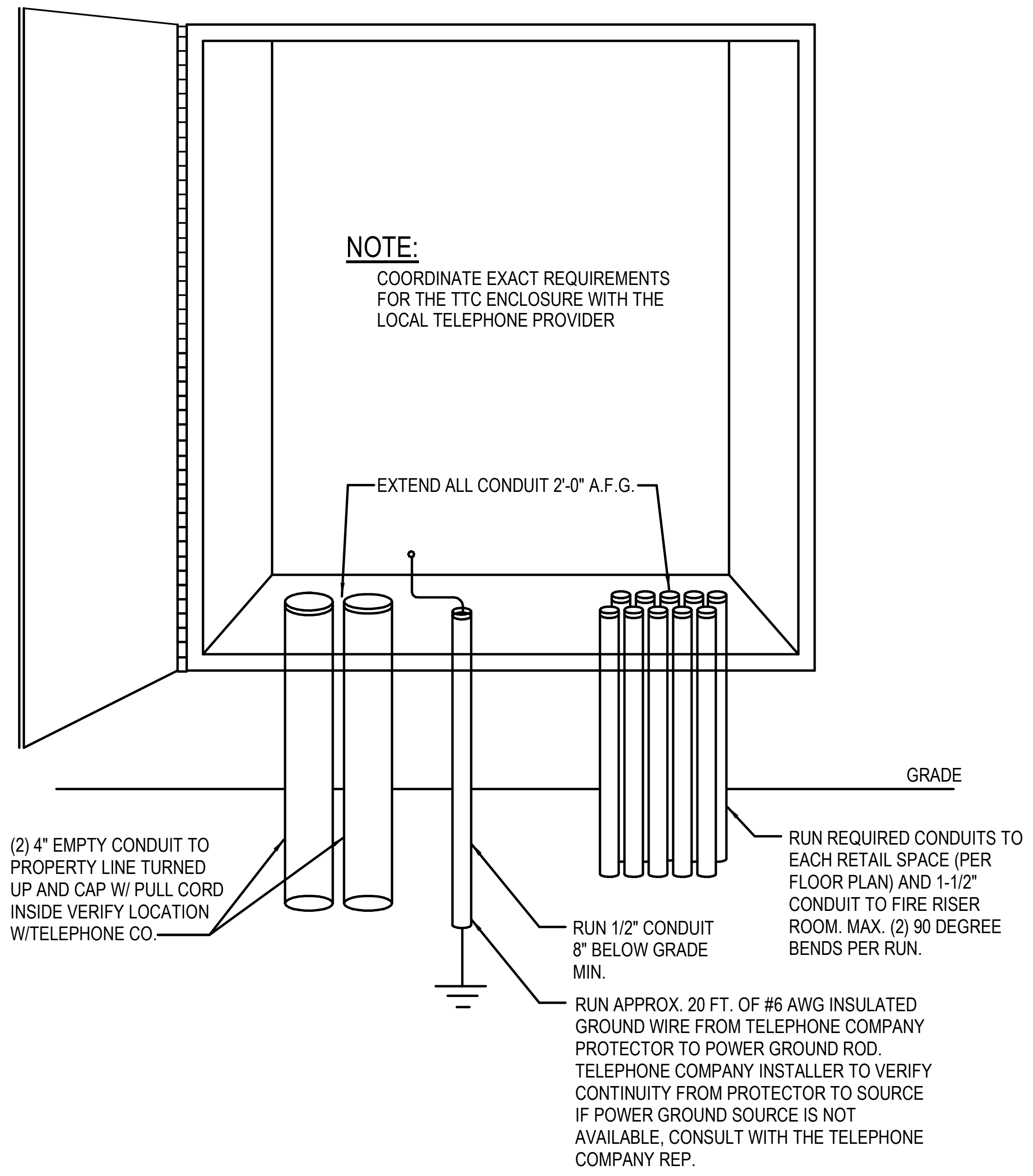


PANEL "XXXX"
120/208V, 3∅, 4W
FED FROM PANEL "XXXX"
VIA T-XXX
(BRANCH SERVED)

TYPICAL 120/208V PANELBOARD

4 Typical Panelboard Nameplate

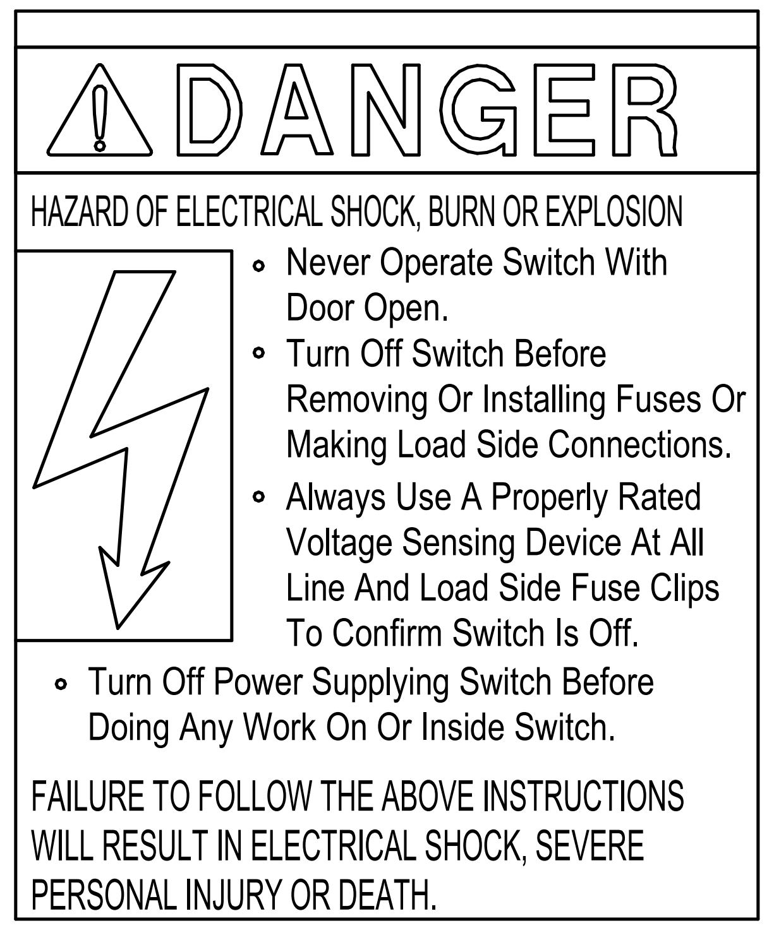
SCALE: N.T.S.



NOTE:
COORDINATE EXACT REQUIREMENTS FOR THE TTC ENCLOSURE WITH THE LOCAL TELEPHONE PROVIDER

3 Telephone Terminal Cabinet (TTC) Detail

SCALE: N.T.S.



DANGER

HAZARD OF ELECTRICAL SHOCK, BURN OR EXPLOSION

- Never Operate Switch With Door Open.
- Turn Off Switch Before Removing Or Installing Fuses Or Making Load Side Connections.
- Always Use A Properly Rated Voltage Sensing Device At All Line And Load Side Fuse Clips To Confirm Switch Is Off.
- Turn Off Power Supplying Switch Before Doing Any Work On Or Inside Switch.

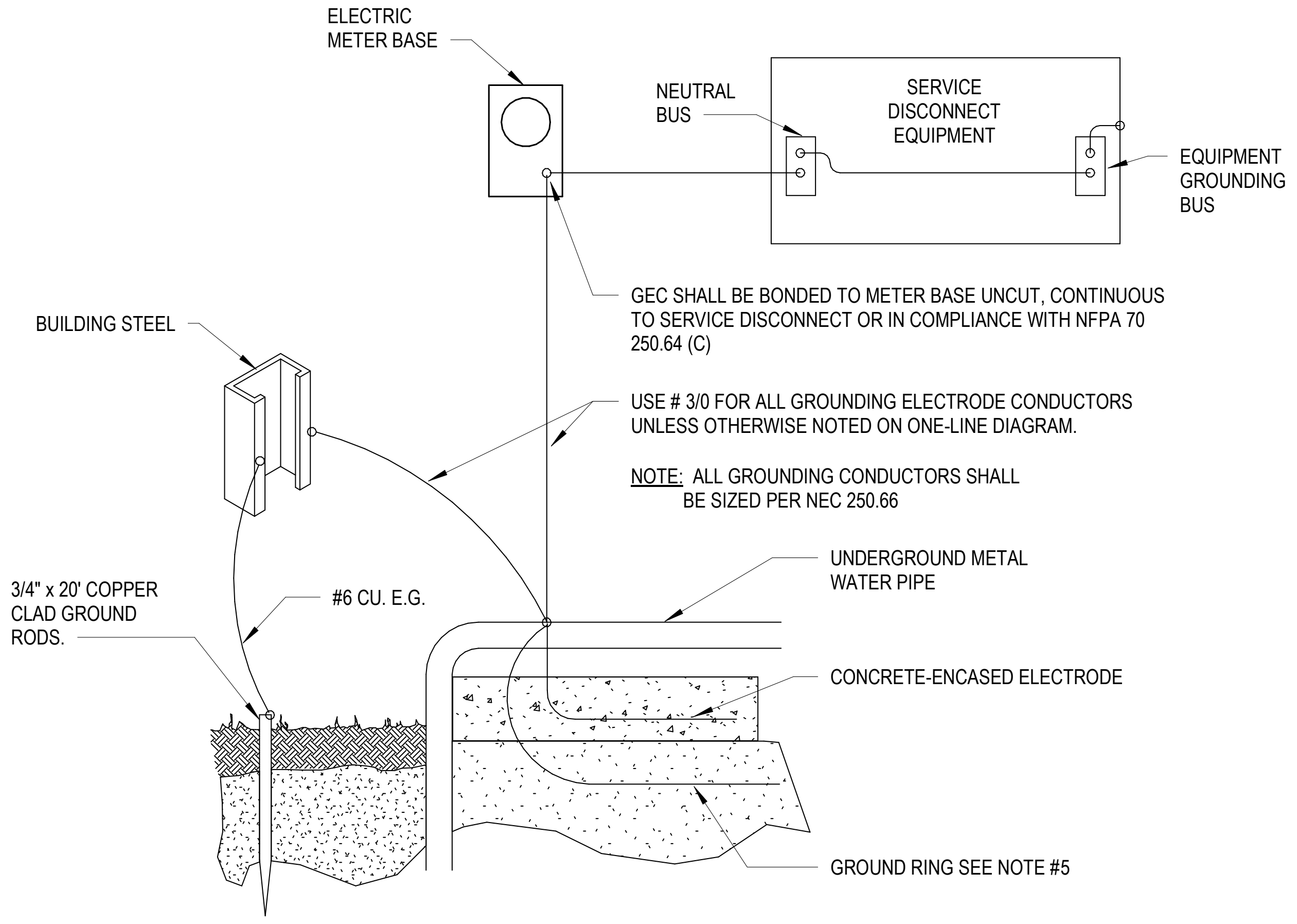
FAILURE TO FOLLOW THE ABOVE INSTRUCTIONS WILL RESULT IN ELECTRICAL SHOCK, SEVERE PERSONAL INJURY OR DEATH.

NOTE:
AFFIX THIS SELF ADHESIVE FILM LABEL TO ALL FUSIBLE DISCONNECT ELECTRICAL EQUIPMENT ON BOTH THE INSIDE AND OUTSIDE COVER OF THE DEVICE.

FFPC APPROVED
06/24/2019
thomasmastroberto

2 Typical Disconnect Label Detail

SCALE: N.T.S.



1. GROUND ELECTRODE CONDUCTOR(S) SHALL BE PROTECTED AS REQUIRED BY NFPA 70 250.64.
2. AFTER GROUNDING SYSTEM IS INSTALLED, GROUND RESISTANCE SHALL BE MEASURED, TO ASSURE THAT GROUND VALUE OF 25 OHM MAXIMUM RESISTANCE IS ACHIEVED. IF NOT, ADDITIONAL GROUNDING SHALL BE PROVIDED TO MEET THE SPECIFIED VALUE.
3. ALL CONNECTIONS TO GROUND RODS SHALL BE EXOTHERMIC WELD CONNECTIONS. IF CONNECTIONS WILL REMAIN ACCESSIBLE, ACORN STYLE GROUNDING CLAMPS MAY BE USED.
4. GROUND CONDUCTOR SHALL BE LOCATED WITHIN OR NEAR BOTTOM OF CONCRETE FOUNDATION OR FOOTING THAT IS IN DIRECT CONTACT WITH THE EARTH, AND SHALL CONSIST OF AT LEAST 20 FEET OF ONE OR MORE STEEL REINFORCING BARS OR RODS OF NOT LESS THAN 1/2 INCH DIAMETER, OR OF AT LEAST 20 FEET OF BARE COPPER CONDUCTOR.
5. OPTIONAL- IF 25 OHMS OR LESS (PER NEC 25O) CANNOT BE ACHIEVED BY THE METHODS ABOVE THEN A GROUND RING ENCIRCLING THE BUILDING OR STRUCTURE, IN DIRECT CONTACT WITH EARTH, CONSISTING OF AT LEAST (20 FT.) OF BARE COPPER CONDUCTOR NOT SMALLER THAN 2 AWG SHALL BE INSTALLED, PER NEC ARTICLE-250.52(A)(4).

1 Grounding Electrode Conductor Detail

SCALE: N.T.S.

Collier County
Build it!
Reviewed for Code Compliance
PRBD20190625989

1925 Prospect Ave.
Orlando, FL 32814
P (407) 661-9100
F (

Cuhaci & Peterson
Architects Engineers Planners

CLIENT NAME
SITE Centers Corp.
801 S University Dr, Suite D105
Plantation, FL 33324

PROJECT NAME
Limited Landlord Work for Spaces 2AB & 2C
4003 & 4005 Santa Barbara Boulevard
Naples, Florida 34105

SHEET TITLE
Details - Electrical

GARY S. WALL
LICENSE
No. 81196
06/18/2019

No.	Description	Date

PROJECT NO.
2190294

DATE
06/18/2019

DRAWN
LL

CHECKED
GSW

6/18/2019 1:52:00 PM

E501

PERMIT SET