### DIVISION 16

## ELECTRICAL SPECIFICATIONS

### PART 1 - GENERAL

1.01 GENERAL CONDITIONS

- THE GENERAL, SPECIAL, AND OTHER CONDITIONS OF THE ARCHITECTURAL DOCUMENTS SHALL BE CONSIDERED AN INTEGRAL PART OF THESE ELECTRICAL SPECIFICATIONS.

- THE ELECTRICAL DRAWINGS AND SPECIFICATIONS SHALL FORM A SET OF PLANS FOR THE ELECTRICAL WORK. NETHER THE DRAWINGS NOR THE SPECIFICATIONS SHALL BE COMPLETE WITHOUT THE OTHER. ANY SHALL BE COMPLETED AS SPECIFICATION SHALL BE CONSIDERED AS SHOWN AND SPECIFIED ON BOTH.
- ANY QUESTIONS REGARDING THE INTENT OF THE DRAWINGS OR ANY QUESTIONS REGARDING THE INTENT OF THE DRAWNOS OR SPECIFICATIONS SHALL BE BROUGHT TO THE ENOISEER'S ATTENTION AS SOON AS POSSIBLE. IF DIRECTION FROM THE ENOISEER CANNOT BE OBTAINED DUE TO TIME OR COMMUNICATION LIMITATIONS, THE GREATER QUANTITY, HIGHER QUALITY OR CONDITION MOST FAVORABLE TO THE OWNER SHALL BE ASSUMED. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND MISCELLANEOUS TIEMS NECESSARY FOR A COMPLETE AND OPERATIONAL ELECTRICAL INSTALLATION, AS SHOWN ON THE DRAWNOS AND CALLED FOR IN THESE SPECIFICATIONS.
- CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWNIGS AND SPECIFICATIONS. COORDINATE ALL SHAFTS, CHASES, FURRED SPACES, SUSPENDED CELLINGS, LOCATIONS OF EQUIPMENT, ETC.
- ELECTRICAL CONTRACTOR SHALL COORDINATE ROUTING OF ALL CONDUIT AND WIRE WITHIN SOFTITS PROVIDED BY THE GENERAL CONTRACTOR. THE LECTRICAL CONTRACTOR SHALL PROMDE ALL SOFTITING REQUIRED TO COVER INSTALLATIONS NOT COORDINATED OR SPECIFICALLY APPROVED BY THE ARCHITECT AND ENGINEER.
- ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW APPROXIMATE LOCATION ONLY. PLACEMENT OF ELECTRICAL EQUIPMENT AND DEVICES SHALL NOT INTERFERE WITH LOCATIONS OR CLEARANCES OF OTHER TRADES' MATERIALS OR EQUIPMENT.
- DIMENSIONS GIVEN ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS, DIMENSIONS, WHETHER GIVEN IN FIGURES OR SCALED, SHALL BE VERIFIED IN THE FIELD.
- CONTRACTOR SHALL VERIFY THAT THE EQUIPMENT TO BE FURNISHED UNDER CONTRACT WILL FIT WITHIN THE AVAILABLE SPACE.
- NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES BETWEEN ELECTRICAL, ARCHITECTURAL AND MECHANICAL DRAWINGS.
- VERIFY ITEMS SUCH AS DOOR SWINGS, WINDOW LOCATIONS, CASEWORK, ETC., BEFORE INSTALLING ANY ELECTRICAL EQUIPMENT OR DEVICES. ALL DEVICES CONFLICTING WITH AND OTHER TRADES WORK DUE TO LACK OF COORDINATION SHALL BE RELOCATED AT NO ADDITIONAL COST TO THE OWNER.

A. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND OTHER ITEMS NECESSARY FOR OR INCIDENTAL TO INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM AS REQUIRED FOR THIS PROJECT.

- A. THE COMPLETED ELECTRICAL INSTALLATION SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS WELL AS ALL APPLICABLE FEDERAL STATE, AND LOCAL CODES, REGULATIONS, AND STANDARDS, INCLUDING INTERPRETATIONS OF THESE BY APPROPRIATE AUTHORITIES HAWING JURISDICTION. WHERE THE DRAWINGS AND SPECIFICATIONS CALL FOR WORKMANSHIP OR MATERIALS IN EXCESS OF CODE OR REGULATORY REQUIREMENTS, THE DRAWINGS AND SPECIFICATIONS SHALL GOVERN.
- THE WORK SPECIFIED HEREIN SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY AUTHORIZED REPRESENTATIVES OF THE NATIONAL BOARD OF FIRE UNDERWITERS, STATE AND LOCAL AUTHORITIES HANNING JURISDICTION, AND THE ENGINEER. THE CONTRACTOR SHALL MAKE THE NCCESSARY ARRANGEMENTS TO HAVE THE LECTRICAL WORK INSPECTED BY APPROPRIATE INSPECTOR(S) AND SHALL PROVIDE TWO (2) COPIES OF EVERY FIRAL SIGNED "CERTIFICATE OF INSPECTION".
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES AND PERMITS, PAY ALL FEES AND CHARGES FOR ALL WORK INSTALLED BY THE CONTRACTOR. AND PAY ALL FEES AND CHARGES LEVED BY THE ELECTRIC UTILITY COMPANY FOR CONNECTION TO ELECTRIC SERVICES.

DIVISION 16 CONTRACTOR SHALL VISIT SITE PRIOR TO BID AND FAMILIARIZE HINSELE WITH ALL EXISTING CONDITIONS IN REGARDS TO THE RECURREMENTS OF THIS CONTRACT. ANY VISIBLE OR EASILY ATTAINABLE INFORMATION AVAILABLE AT THE SITE, EVEN IF DIFFERING FROM THESE DOCUMENTS, WILL NOT RESULT IN EXTRA COMPENSATION AFTER TIME OF BID. ANY DISCREPENCES FROM THESE DOCUMENTS, SHOULD BE REPORTED TO THE ARCHITECT/ENGINEER AS SOON AS POSSIBLE.

# 1.06 TEMPORARY ELECTRICAL SERVICE

THE CONTRACTOR SHALL PROVIDE AND MAINTAIN A TEMPORARY LIGHTING AND POWER SYSTEM AT A LOCATION SPECIFED BY THE GENERAL CONTRACTOR. THE SERWICE SHALL BE 200—AMP, 120/240—VOLT, SINGLE—PHASE, 3—MRE, WITH APPROPRATE METERING AND PROTECTIVE EQUIPMENT, COMPONENTS OF THE TEMPORARY SYSTEM SHALL BE AS REQUIRED BY THE GENERAL CONTRACTOR. THE SYSTEM SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. THE CONTRACTOR SHALL REMOVE THE TEMPORARY SYSTEM WHEN IT IS NO LONGER NEEDED.

# 1 07 MATERIALS AND FOLIPMENT

- A. UNLESS OTHERWISE SPECIFIED, ALL MATERIAL AND EQUIPMENT SHALL BE NEW AND MANUFACTURED BY RECOGNIZED MANUFACTURERS. ALL MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF GOVERNING CODES.
- ALL MATERIAL AND EQUIPMENT SHALL BE LISTED AND LABELED BY UNDERWRITERS LABORATORIES, INC. (UL), AS CONFORMING TO ITS STANDAROS IN EVERY CASE WHERE SUCH A STANDAROS HAS BEEN ESTABLISHED FOR THAT TYPE OF MATERIA. OR EQUIPMEN

A. THE INSTALLATION SPECIFIED HEREIN SHALL BE PERFORMED IN A NEAT AND WORKMANIKE MANNER BY PERSONS EXPERIENCED AND SKILLED IN THE IRADE. ONLY THE BEST QUALITY WORKMANSHIP WILL BE ACCEPTED. ALL EXPOSED COMPONENTS OF THE ELECTRICAL SYSTEMS SHALL BE SQUARE AND TRUE WITH BUILDING LINES AND SURFACES.

### 1.09 CORRELATION OF WORK

- A. THE CONTRACTOR SHALL GIVE CAREFUL CONSIDERATION TO THE WORK OF THE GENERAL, MECHANICAL, AND ALL OTHER CONTRACTORS AND SUBCONTRACTORS ON THE PROJECT AND SHALL ORGANIZE THE ELECTRICAL WORK SO THAT IT WILL NOT INTERFERE WITH THE WORK OF OTHER TRADES.
- B. DRAWINGS AND SPECIFICATIONS FOR OTHER TRADES AND GENERAL CONSTRUCTION DRAWINGS SHALL BE CONSULTED FOR CORRELATION INFORMATION, DETAILS, DIMENSIONS, ETC.
- C. THE LOCATION OF ALL OUTLETS, WIRING, AND EQUIPMENT SHALL BE VERIFIED.
- D. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR MOVING MISPLACED ELECTRICAL SYSTEM COMPONENTS.

### 1.10 SHOP DRAWINGS

- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR ALL MAJOR ITEMS OF ELECTRICAL EQUIPMENT, SIX (6) SETS OF SHOP DRAWINGS SHALL BE SUBMITTED FOR REFURE THE DRAWINGS SHALL BE REVIEWED AND APPROVED, CONDITIONALLY APPROVED, OR DISAPPROVED BY THE ENGINEER. TWO (2) SETS OF THE REVIEWED DRAWINGS WILL BE RETAINED BY THE ENGINEER. TWO (2) SETS OF THE REVIEWED DRAWINGS WILL BE RETAINED BY THE ENGINEER. THE REMAINDER WILL BE RETURNED TO THE CONTRACTOR. IN THE CASE OF DISAPPROVAL, THE CONTRACTOR SHALL SUBMIT NEW DRAWINGS, CORRECTED AS REQUIRED BY THE ENGINEER. ALL SHOP DRAWING SUBMITTALS SHALL ALLOW FOR A MINIMUM OF 7 WORKING DAYS FOR ENGINEER REVIEW.
- SHOP DRAWINGS SHALL BE DETAILED DIMENSIONED MANUFACTURERS' DRAWINGS, INCLUDING SCHEMATIC DRAWINGS WHERE APPLICABLE, DRAWINGS SHALL BE LEGIBLE, USE STANDARD ELECTRICAL NOTATIONS, AND BE PREPARED IN A PROFESSIONAL MANNER. HANDWRITTEN SCHEDULES SHALL NOT BE SUBMITTED. EACH SET OF DOCUMENTS SHALL BE BOUND IN A BINDER WITH A TITLE PAGE AND AN INDEX PAGE. THE TITLE PAGE SHALL IST THE PROJECT NAME AND ADDRESS, AND CONTRACTOR'S NAME ADDRESS, AND ELLEPHONE NUMBER, THE INDEX PAGE SHALL STANDED AND ADDRESS. AND ELLEPHONE NUMBER, THE INDEX PAGE SHAND STATE PERSONNEL OF THE PROSPRIED OF THE SHALL BE PROVIDED ON THE TITLE OR INDEX PAGE SHALL BE PROVIDED ON THE TITLE OR INDEX PAGE FOR THE GRAWING SCHEDULES. A 3"X3" CLEAR SPAGE SHALL BE PROVIDED ON THE TITLE OR INDEX PAGE FOR THE ENGINEER'S STAMP, WHERE SPACE PERMITS, TITLE AND INDEX PAGES MAY BE COMBINED.
- THE CONTRACTOR SHALL ASSURE THAT SHOP DRAWINGS ARE COMPLETE BEFORE SUBMITTAL SUBMITTAL TO THE ENGINEER SHALL BE VIA THE GENERAL CONTRACTOR AND, WHERE REQUIRED, THE ARCHITECT, SHOP DRAWINGS NOT SIGNED BY BOTH THE CONTRACTOR AND THE GENERAL CONTRACTOR SHALL BE RETURNED.
- CUNINACIUM SHALL BE RETURNED.

  THE CONTRACTOR SHALL PROVOE A LIST FOR ANY ITEM SUBMITTED IN THE SHOP DRAWINGS WHICH IS BEING SUBSTITUTED FOR, ADDED TO, OR DELETED FROM MATERIAL SPECIFIED IN THE SPECIFICATIONS. THE LIST SHALL IDENTIFY THE PROPOSED ITEM, THE SPECIFIED ITEM, DIFFERENCES BETWEEN THE TWO, WHETHER THE ITEM IS NEEDED TO COMPLETE A SYSTEM, AND OTHER RELEVANT COMMENTS TO JUSTIFY AN ADDITION, DELETION, OR SUBSTITUTION. THE LIST SHALL BE BEHIND THE TITLE PAGE OF THE SHOP DRAWING SUBMITTAL IF THE CONTRACTOR USES MATERIALS OTHER THAN THOSE SPECIFIED AND FAILS TO CALL ATTENTION TO THE DIFFERENCES BETWEEN THESE MATERIALS AND THOSE SPECIFIED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT, AT NO ADDITIONAL COST TO THE OWNER, OF ANY SUCH MATERIALS DETERMINED BY THE ENGINEER TO BE UNACCEPTABLE.
- GENERAL DESIGN AND LAYOUT IS THE ONLY APPROVAL IMPLIED BY THE ENGINEER'S SHOP DRAWING APPROVAL STAMP. CONTRACT DOCUMENT REQUIREMENTS NOT NOTED IN THE SHOP DRAWINGS REWAIN REQUIREMENTS OF THE CONTRACT. THE APPROVAL STAMP ON THE SHOP DRAWINGS DOES NOT RELEVE. THE CONTRACT ON THE SUPPLIER OF RESPONSIBILITY FOR FULL CONTRACT COMPLIANCE.

# 1.11 MAINTENANCE MANUAL

- THE CONTRACTOR SHALL FURNISH THE OWNER WITH TWO (2) COPIES OF A MANUAL COVERING THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT PROVIDED UNDER THIS CONTRACT. THE MANUALS SHALL BE 3-RING, LOOSE LEAF, HEAVY DUTY, STEEL PIANO HINGED NOTEBOOKS, HYTONE #8711 OR EQUAL, AND SUBMITTED TO THE ARCHITECT/ENGINEER FOR APPROVAL EACH MANUAL SHALL CONTAIN THE FOLLOWING:
- 1. COMPLETE MANUFACTURER CATALOG DATA, MANUFACTURER'S COMPLETE MANUFACTURER CATALOS DATA, MANUFACTURER'S LITERATURER, WRING DIAGRAMS, DETALIGE OPERATING INSTRUCTIONS, AND A COMPLETE LISTING OF SUPPLIERS AND DISTRIBUTORS WHERE REPLACEMENT PARTS AND MANTENANC SERVICES ARE AVAILABLE FOR ALL EQUIPMENT. INSPECTION CERTIFICATES, SIGNED BY THE APPROPRIA INSPECTOR, STALL BE FURNISHED IN THE MAINTENANC MAN AS WORK PROCRESSES, THE CONTRACTOR STALL MAN AS WORK PROCRESSES, THE CONTRACTOR STALL MAN

- ONTRACTOR SHALL ASSURE THAT ANY EXTENDED WARRANTIES TO WHICH MER IS ELIGIBLE ARE PASSED ON TO THE OWNER.

- 1.13 CUTTING OF PATCHING

  A. THE-CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING NECESSARY FOR THE COMPLETION OF THE ELECTRICAL WORK FOR THIS PROJECT. NO STRUCTURAL MEMBERS SHALL BE DISTURBED WITHOUT OBTAINING WRITTEN PERMISSION OF THE ENGINEER.
- ANY SURFACE WHICH IS DISTURBED IN ANY WAY BY THE CONTRACTOR SHALL BE REPAIRED AND REFINISHED TO PROVIDE A SURFACE EQUAL IN STRENGTH, DURABILITY, AND APPEARANCE TO THE ORIGINAL SURFACE.
- WHERE IT IS NECESSARY TO DRILL OR CUT CONCRETE SURFACES, THE EDGES SHALL BE SHARPLY DETINED. HOLES SHALL BE MADE WITH A ROTARY DRILL CUTS SHALL BE MADE WITH A CONCRETE SAW UNLESS SOME OTHER METHOD OF MAKING SPECIFIC CUTS IS APPROVED BY THE ENGINEER.

- PENETRATIONS THROUGH SMOKE, FIRE, HAZARDOUS AREA, OR OTHER RATED SEPARATIONS SHALL BE SEALED TO PRESERVE THE RATINGS OF THE SEPARATIONS.
- E. ALL CUTTING, DRILLING, PATCHING, REPAIRING, AND REFINISHING SHALL BE DONE BY PERSONS SKILLED IN APPROPRIATE TRADES.
- THE CONTRACTOR SHALL CLEAN AWAY ALL RUBBISH AND LITTER GENERATED DURING ELECTRICAL INSTALLATION.

### 1.14 DEMOLITION

- WHERE ELECTRICAL WORK TO REMAIN IS DAMAGED OR DISTURBED IN THE COURSE OF THE WORK, REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL CAPACITY, QUALITY, AND FUNCTIONALITY.
- ACCESSIBLE WORK INDICATED TO BE DEMOLISHED: REMOVE EXPOSED ELECTRICAL INSTALLATION IN ITS ENTIRETY.
- ABANDONED WORK: CUT AND REMOVE BURIED RACEWAY AND WRING INDICATED TO BE ABANDONED IN PLACE, 2 INCHES BELOW THE SURFACE OF ADJACENT CONSTRUCTION. CAP AND PATCH SURFACE TO MATCH EXISTING FINISH.
- D. REMOVAL: REMOVE DEMOLISHED MATERIAL FROM THE PROJECT SITE.
- TEMPORARY DISCONNECTION: REMOVE, STORE, CLEAN, REINSTALL, RECONNECT, AND MAKE OPERATIONAL COMPONENTS INDICATED FOR RELOCATION.

- A. ELECTRICAL CONDUCTORS INSTALLED UNDER THESE SPECIFICATIONS SHALL BE IN ELECTRICAL RACEWAY. ALL RACEWAYS SHALL BE INSTALLED IN ACCORDANCE WITH THESE GENERAL REQUIREMENTS. MC CABLE, WHERE ALLOWED BY CODE AND LANDLORD, MAY BE USED AS A SUBSTITUTE WHERE NOT VISIBLE TO PUBLIC.
- WRITER NOT VISIOLE TO FUBILITY.

  RACEWAY SHALL BE COMPLETE WITH NECESSARY COUPLINGS, CONNECTORS, BOXES, SUPPORTS, FITTINGS, AND ALL OTHER COMPONENTS NEEDED FOR A COMPLETE AND INTEGRAL RACEWAY SYSTEM. SYSTEM COMPONENTS SHALL BE DESIGNED FOR INTERCONNECTION AND SHALL BE INSTALLED TO PROVIDE A NEAT APPEARING, MECHANICALLY FIRM ASSEMBLY ADHERING TO CODES AND PRINCIPLES OF GODD ELECTRICAL PRACTICE, AND CONDUCTOR MANUFACTURERS.
- RACEWAY RUNS SHALL ORIGINATE AND TERMINATE AT LOCATIONS APPROXIMATELY AS SHOWN ON THE DRAWINGS, RUNS SHALL BE STRAIGHT AND TRUE WITH ELBOWS, OFFSETS AND BENDS, UNIFORM AND SYMMETRICAL. IN GENERAL, EXPOSED RUNS OF RACEWAY SHALL BE PARALLEL OR PERPENDICULAR TO SURROUNDING BULLIONG UNES AND SUFFACES, RUNS SHALL BE, INSTALLED SO THAT THEY DO NOT RITE THE WITH ASLES, PASSAGEWANS, DOCRIWARS, HATCHWAYS, WORKING AREAS, AND FLOORS.
- D. SUFFICIENT PULL AND JUNCTION BOXES OF ADEQUATE SIZE SHALL BE LOCATED AS NECESSARY TO ENSURE EASY INSTALLATION AND SPLICING OF CONDUCTORS. BOXES SHALL BE SIZED TO PROVIDE ADEQUATE FREE SPACE FOR ALL ENCLOSED CONDUCTORS. BOX SIZES SHALL NOT BE DETERMINED BY SCALING THE DRAWNORD.

### 1.16 METAL CONDUIT RACEWAY

- A. RIGID METAL CONDUIT SHALL BE INSTALLED WHERE EXPOSED TO WEATH OR WHERE MEEDDED OR PASSING THROUGH CONCRETE MINETALLIC CONDUIT MAY BE USED BELDW GRADE, INCLUDING BEFORE ASIS, FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR INAL CS. STORM FOR THE CONDUIT SHALL BE USED FOR INAL CS. STORM FOR THE CONDUIT SHALL BE USED FOR SHALL BE USED FOR THE CS. STORM FOR
- ALL COMPONENTS OF CONDUIT RACE BY SYSTEMS JUCH AS CONDUIT, TIGHT CONDUIT, BOXES, SUPPOBE THINGS SHALL MEET THE LAILS APPLICABLE STANDARD OF UNDERWAY. ABORAL SIES, INC. ALL STEEL COMPONENTS OF CONDUIT RACEWLY S SHALL BE HOT-DIPPED GALVANIZED, METALLE FERADIZED. CO. SET BY SOME OTHER APPROVED MEANS. SEAL. CONDUIT NO. CONDUIT SHALL HAVE SEPARATE GROUND CONDUIT.

# 1.17 PULLBOXES

MORE SHALL BE INSTALLED AS READ TO IN LONG RUNS OR WHEN MORE HAN TOUR QUARTER BEINDS OCCUD. IN ANY CONDUIT RUN. ALL POULIBOXES SHALL BE SIZED TO CONFORM TO THE REQUIREMENTS OF ARTIOS 370 THE NATIONAL ELECTRIC CODE. PULLBOXES SHALL BE SIZED BY THE REMOVED PORTIONS OF THE BUILDING.

# IONS & TESTING

- SHAL FURNISH INSTRUCTION IN THE CARE, ADJUSTMENT, MAINENANCE OF ALL PARTS OF THE ELECTRICAL USED SHALL BE GIVEN TO EMPLOYEES DESIGNATED BY OF DISTINANCE COST TO THE OWNER, AND AT A TIME TO WAKER, JUST PRIOR TO ACCEPTANCE OF THE
- THE CONTRADAR SHALL TEST THE EQUIPMENT INSTALLED UNDER THIS SHALL BE STATE OR OPERATION TO THE ENGINEER. NO COUPMENT SHALL BE TESTED OR OPERATION TO THE PURPOSE UNTIL IT HAS BEEN FULLY PREPARED, CONNECTED, AND READIED FOR NORMAL OPERATION. ANY EQUIPMENT DAMAGED BY MIRROPER OR ILL-TIMED, OPERATION OR TESTING SHALL BE REPAINED OR REPLACED, AT THE CONTRACTOR'S EXPENSE, BEFORE FINAL INSPECTION AND ACCEPTANCE.

# 1.19 OTHER

A. ALL CIRCUITS SPECIFIED ARE DESIGNED ON THE BASIS OF LOAD REQUIREMENTS AND CONTROL PROCEDURES AS INDICATED. THE CONTRACTOR SHALL MAKE THE RECESSARY CHANGES TO THE CIRCUITS AND CONTROL EQUIPMENT WHERE MOTIONS, APPLIANCES, AND DEWCES FURNISHED BY THE CONTRACTOR HAVE OTHER RATINGS THAN THOSE INDICATED.

# 2.01 DISCONNECT SWITCHES

- A. THE CONTRACTOR SHALL FURNISH AND INSTALL DISCONNECT SWITCHES HAVING THE NUMBER OF POLES AND AMPERE RATINGS AS SHOWN ON THE DRAWNGS AND AS SPECIFED IN THE COUPMENT SCHEDULE.
- DISCONNECT SWITCHES SHALL BE HEAVY
  DUTY, AC, SINGLE THROW SAFETY SWITCHES, BUILT IN ACCORDANCE WITH
  NEMA REQUIREMENTS WITH A VOIDABLE FULL COVER INTERLOCK AND QUICK—
  MAKE, QUICK—BREAK MECHANISM. EACH SWITCH SHALL BE FUSIBLE UNLESS
  NOFFUSIBLE (NF) IS SPECIFICALLY INDICATED. SWITCHES SHALL BE IN
  NEMA 1 ENCLOSURES IN DRY LOCATIONS AND NEMA 3 WHERE EXPOSED TO
  THE WEATHER DISCONNECT SWITCHES SHALL BE "HEAVY—DUTY" AS
  MANUFACTURED BY WESTINGHOUSE, OR SQUARE—D.
- C. DISCONNECT SWITCHES RATED AT 20A SHALL BE GENERAL USE, 20A, AC, SNAP SWITCH WIRING DEVICES.

- A. THE CONTRACTOR SHALL FURNISH AND INSTALL FUSES OF THE TYPES AND RATINGS DESIGNATED IN THE DRAWINGS AND SPECIFICATIONS IN EACH FUSIBLE DEVICE INSTALLED BY THE CONTRACTOR. IN ADDITION, THE CONTRACTOR SHALL FURNISH AND STORE, AT A LOCATION DIRECTED BY THE OWNER, THREE (3) SPARE FUSES OF EACH SIZE AND TYPE INSTALLED DURING THIS PROJECT. THE CONTRACTOR SHALL PROVIDE TWO (2) COPIES OF THE A SPARE FUSE UST TO THE OWNER FOR OWNER'S RECORDS. THE SPARE FUSE UST TO THE OWNER FOR OWNER'S RECORDS. THE SPARE FUSE UST TO THE OWNER FOR OWNER'S RECORDS.
- FUSES SHALL BE ONE—TIME CARTRIDGE FUSES MANUFACTURED BY BUSSMAN, GOULD SHAWMUT, OR LITTLE FUSE.

- A. ELECTRICAL CONDUCTORS SHALL BE BUILDING WIRE, EXCEPT WHERE SOME OTHER TYPE OF WIRE OR CABLE IS SPECIFICALLY INDICATED.
- BUILDING WIRE CONDUCTORS SHALL BE SOFT-DRAWN ANNEALED COPPER, HAVING A COMDUCTIVITY OF NOT LESS THAN 98% PURE COPPER. CONDUCTOR SIZES ARE AMERICAN WIRE GAUGE (AND) OR CIRCULAR MILS (MOM). MINIMUM CONDUCTOR SIZE SHALL BE #12 UNLESS OTHERWISE SPECIFIED. CONDUCTORS LARGER THAN #10 SHALL BE STRANDED. CONDUCTORS #10 AND SMALLER SHALL BE SOLD WIRE.
- ALL WRE SHALL BE COPPER INSULATED FOR 500 VOLTS. MINIMUM WIRE SIZE SHALL BE #12. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL AND LOCAL ELECTRICAL CODES AND LANDLOND REQUIREMENTS OR THE FOLLOWING METHODS WHICHEVER IS MORE STRINGENT:

  1. EXPOSED: EMT.
  2. CONCEALED: EMT OR MC CABLE WITH GROUND IN WALLS OR OTHER NON-ACCESSIBLE AREAS.
  3. UNDERGROUND: RNC.
  4. CONNECTION TO WIBRATING EQUIPMENT (INCLUDING TRANSFORM): AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENDID, OR MOTO PRIVEN EQUIPMENT): FNC, EXCEPT IN WET OR DAMP LOCATIONAL SELFMC.
  5. DAMP OR WET LOCATIONS: RIGID STEEL CONDUIT.
- NO CONDUIT SHALL BE RUN EXPOSED WITHOUT THE APPROVAL SUPERCUTS INC.
- NO CONDUIT SHALL BE RUN THROUGH DUM SHALL BE APPLIED TO THE THREADS OF COUPLINGS, ELECTRICAL ELOPENE SHALL BE THOUGH ON THE RECORD GROWN THROUGH LIGHTING FIXTURE WIRE SHALL BE 190 C. R

### 2.04 WIRING DEVICES

- A. WIRING DEVICES SHALL BE INSTALLED IN METAL COMME
- TION GRADE, AC QUIET TYPE, 20-AMP, LLOY CONTACTS, EQUAL TO HUBBELL #1221.
- GENERAL SEDUPLEX RESEPTACLES SHALL BE SPECIFICATION
  GRADE NEW 20-AMP, 125-VOLT, 3-WIRE GROUNDING TYPE DEVICES. GRADE NEM 2. 20-AMP, 125-VOLT, 3-WIRE GROUNDING TYPE DE EQUAL TO HUBBE #5362, WITH THE THIRD POLE GROUNDED TO THE OUTLET BOX. EACH ECCEPTACLE SHALL BE RIGIOLY POSITIONED WITHIN THE BOX SO THAT THE EXPOSED FACE OF THE RECEPTACLE PROTRUDES THE BOX SO THAT THE EXPOSED FACE OF THE RECEPTACLE PROTRODES BEYOND THE FACE OF THE COVER PLATE. ALL DUPLEX CUTLETS TO BE 18' TO CENTER OF OUTLET FROM FINISH FLOOR EXCEPT AS NOTED ON ELECTRICAL FLOOR PLAN. STOCK ROOM AS NOTED.
- GROUND FAULT CIRCUIT INTERRUPTER (GFI) DUPLEX RECEPTACLES SHALL BE SPECIFICATION GRADE, 20-AMP DEVICES, EQUAL TO HUBBELL #GF5362, WRED SO THAT EACH UNIT IS SLE! CONTAINED. GFI RECEPTACLES SHALL NOT BE CONNECTED TO FEED THROUGH UNLESS SPECIFICALLY SO NOTED ON THE DRAWNES.
- WEATHERPROOF DUPLEX RECEPTACLES SHALL BE GFCI PROTECTED WITH "WHILE-IN-USE" WEATHERPROOF COVERPLATES.

- A. THE CONTRACTOR SHALL FURNISH AND INSTALL WALL PLATES FOR ALL FLUSH MOUNTED SPECIAL SYSTEM OUTLETS. SECTIONAL WALL PLATES SHALL NOT BE USED. BLANK PLATES SHALL BE INSTALLED OVER ALL OUTLETS PROVIDED FOR FUTURE USE. WALL PLATES SHALL BE STALLED STALLED
- B. COVER PLATES FOR TELEPHONE, SHALL BE AS SPECIFIED ABOVE

A. MANUAL STARTERS SHALL BE TOGGLE SWITCH TYPE STARTERS. WHERE A RED PILOT LIGHT IS INDICATED, THE LIGHT SHALL BE A NEON BULB INTEGRAL WITH THE STARTER FLUSH MOUNTING UNITS SHALL BE IN NEWA 1 ENCLOSURES, PLATES, SURFACE MOUNTING UNITS SHALL BE IN NEWA 1 ENCLOSURES, UNLESS SOME OTHER TYPE OF ENCLOSURE IS INDICATED, MANUAL STARTERS SHALL BE CUTLER HAMMER BULLETIN 9101 OR SQUARE-D CLASS 2510.

# 2.08 PANELBOARDS

- PANELBOARDS SHALL BE SQUARE D #NQOD OR EQUAL BY CUTLER—HAMMER, GE, OR WESTINGHOUSE, PANELS TO BE SUBFACE MOUNTED WITH HINGED AND LATCHED DOOR, TYPED DIRECTORY CAROS, 10,000 AIC SYM BREAKERS AND BE EQUAL TO SQUARE 'D' TYPE MOOD. ALL 2 AND 3 POLE BREAKERS AND SHALL BE COMMON TRIP. BREAKERS TO BE BOLT—ON TYPE.
- B. CIRCUIT NUMBERS SHOWN ARE FOR REFERENCE ONLY. MAINTAIN EXISTING CIRCUITING OF EXISTING EQUIPMENT, DEVICES, FIXTURES, ETC., TO REMAIN.

# 2.11 GROUNDING SYSTEMS

- A. CIRCUITS, METAL RACEWAY SYSTEMS, AND ALL OTHER PERMANENTLY INSTALLED ELECTRICAL EQUIPMENT SHALL BE SOUDLY GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE TO FORM A CONTINUOUS, PERMANENT AND EFFECTIVE GROUNDING SYSTEM.
- GROUNDING CONDUCTOR CONNECTIONS SHALL BE MADE WITH SOLDERLESS PRESSURE TYPE FITTINGS. WHERE WELDED CONNECTIONS ARE PRACTICAL, CONNECTIONS MAY BE MADE BY THE USE OF A SUITABLE WELDING PROCESS. ALL CONNECTIONS SHALL BE MADE IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- TO MAINTAIN UNINTERRUPTED ELECTRICAL CONTINUITY, FLEXIBLE RACEWAY SECTIONS MUST HAVE CONDUCTANCE EQUAL TO THAT OF THE SYSTEMS INFLEXIBLE RACEWAY, PROEMY PITTINGS USED MUST BE SUCH AS TO ENSURE EXISTENCE OF A PERMANENT BOND. GROUNDING BUSHINGS SHALL PROMDED TO GROUND CONDUITS TO CONTROL CENTER GROUND. ALL NEW EQUIPMENT SHALL BE GROUNDED TO THE EXISTING GROUNDING SYSTEM.
- D. PROVIDE SERVICE GROUNDING AS INDICATED ON ONE-LINE DIAGRAM.
- E. INCLUDE A SEPARATE BARE GROUND CONDUCTOR IN ALL TYPE NM CABLE OF THE SAME SIZE AS PHASE CONDUCTOR.
- F. INCLUDE A SEPARATE GROUND CONDUCTOR IN ALL PVC RACEWAY

### 2.12 IDENTIFICATION AND LABELING OF ELECTRICAL EQUIPMENT

- ALL CONTROL DEVICES AND DEVICE ENCLOSURES SHALL BE LABELED WITH INDIVIDUAL NAME PLATES OR LEGEND PLATES.
- INDIVIDUAL NAME OR LEGEND PLATES SHALL BE BLACK LAMINATED PLASTIC OR MICARTA PLATES WITH WHITE CUT LETTERS. PAPER, FOIL OR TAPE

### 2.13 SERVICE TO ELECTRICALLY-POWERED EQUIPMENT

- THE CONTRACTOR SHALL FURNISH AND INSTALL OUTLETS FOR AND MAKE FINAL ELECTRICAL CONNECTIONS TO ALL MOTORS AND ELECTRICAL POWERED EQUIPMENT INDICATED ON THE EQUIPMENT SCHEDULE
- THE CONTRACTOR SHALL OBTAIN EXACT INFORMATION PERTA



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12/13/2017

SPECIFICATIONS 8 VINELAND

SUPERCUTS TENANT BUILD-OUT LAKESIDE VILLAGE 7582 WINTER GARDEN WINDERMERE, FL 3473

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TENANT REVIEW	12.08.17
LANDLORD REVIEW	12.13.17
PERMIT	12.13.17
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DRAWN BY	DW
CHECKED BY	AH
JOB NO.	17-678