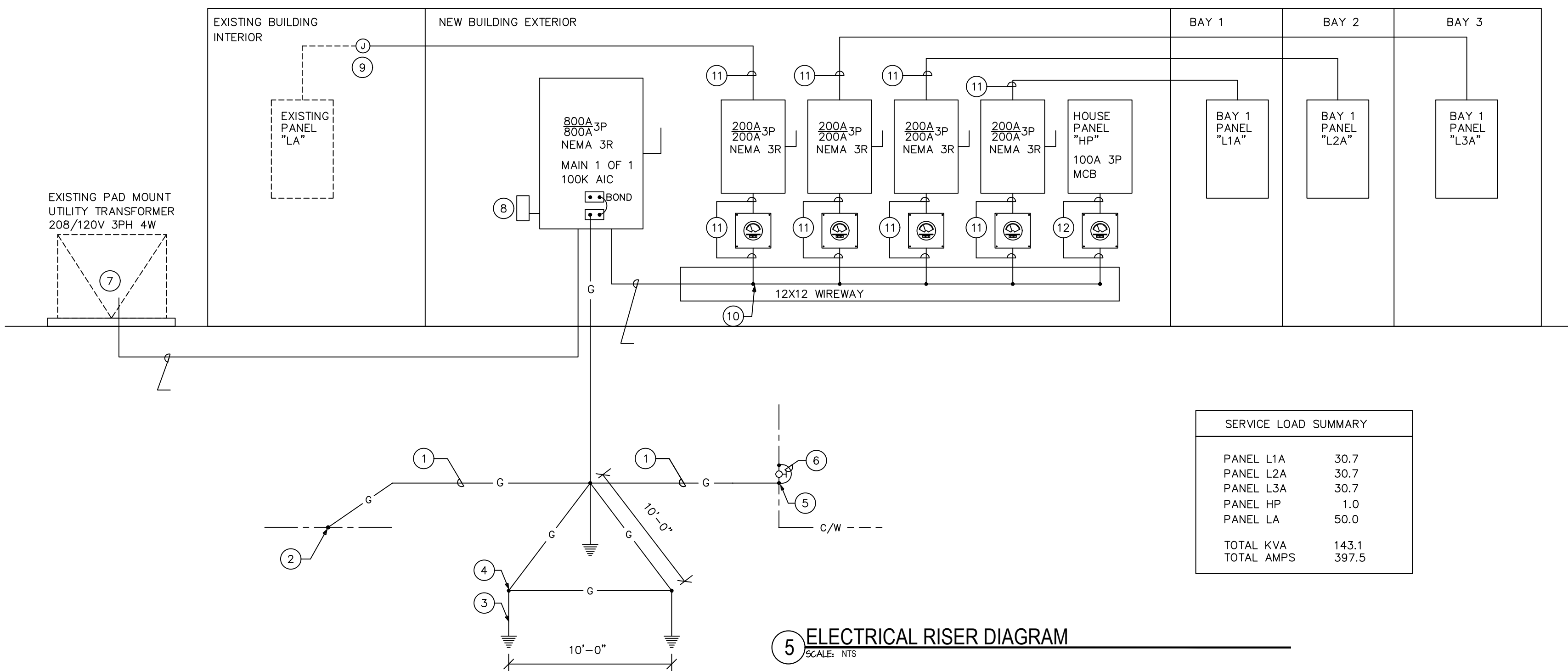


6 TELEPHONE BOARD DETAILS



5 ELECTRICAL RISER DIAGRAM
SCALE: NTS

1. NATIONAL ELECTRICAL CODE (NFPA-70, 2020 EDITION)
2. CODE FOR SAFETY TO LIFE (NFPA-101, 2018 EDITION)
3. STANDARD FOR THE INSTALLATION, MAINTENANCE AND USE OF LOCAL PROTECTIVE SIGNALING SYSTEMS (NFPA-72, 2021 EDITION)
4. UNDERWRITERS' LABORATORIES (UL)
5. NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION (NEMA)
6. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
7. FEDERAL SPECIFICATION (FED. SPEC.)
8. INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA)
9. FLORIDA BUILDING CODE, 2023 EDITION (AS AMENDED)
10. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
11. CITY OF POMPAHO BEACH BUILDING CODE. (AMENDMENTS TO FLORIDA BUILDING CODE 2023)
12. ADDITIONALLY, DESIGNS, WORK PRACTICES AND CONDITIONS MUST CONFORM WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT AND REGULATIONS THEREUNDER.

D. DO NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATION OF ALL EQUIPMENT. CONFIRM WITH OWNER'S REPRESENTATIVE.

E. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.

F. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FROM A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE.

G. CORRECTION OF SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THERE BY.

H. AS REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.

I. CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION SPECIFICATIONS SHALL MEAN THAT THE CONTRACTOR IS TO FURNISH, INSTALL AND CONNECT COMPLETE.

A. MINIMUM WIRE SIZE SHALL BE #12 A.W.G. (EXCEPT AS NOTED OTHERWISE FOR CONTROL WIRING).

B. ALL CONDUCTORS SHALL BE 98% CONDUCTIVITY, COPPER WITH "THIN-THIN" INSULATION UNLESS OTHERWISE NOTED.

C. ELECTRICAL METALLIC TUBING (EMT) SHALL BE OF BEST QUALITY STEEL, SMOOTH INSIDE AND OUT AND SHALL BE HOT-DIPPED GALVANIZED.

D. RIGID NONMETALLIC CONDUIT SHALL BE SCHEDULE 40 PVC.

E. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET OR DAMP LOCATIONS OR SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.

F. ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.

G. PANELBOARDS:

1. CURRENT CARRYING BUSES SHALL BE COPPER. GROUND BUS BARS SHALL BE COPPER.
2. ALL CIRCUIT BREAKERS SHALL BE BOLT ON. PLUG-IN BREAKERS ARE NOT ACCEPTABLE.
3. CIRCUIT BREAKERS FEEDING SWITCHES IN FLOURESCENTS OR HOT LIGHTING CIRCUITS SHALL BE LISTED AND MARKED "SWO" OR "HIO" AS REQUIRED.
4. ALL CIRCUIT BREAKERS FEEDING MECHANICAL EQUIPMENT SHALL BE HACR TYPE.
5. A.I.C. RATINGS SHALL AS BE INDICATED ON PANELBOARD SCHEDULES.
6. ALL PANELBOARDS SHALL BE FURNISHED WITH PLASTIC LAMINATE NAMEPLATES WITH 1/4" ENGRAVED LETTERS FOR PANEL IDENTIFICATION.
7. ALL PANELBOARDS SHALL BE PROVIDED WITH TYPE-WRITTEN DIRECTORY OF BRANCH CIRCUIT DESIGNATIONS, PROVIDE ELECTRICAL EQUIPMENT WITH FIELD MARKING TO WARN OF POTENTIAL ELECTRIC ARC FLASH HAZARDS AS REQUIRED BY THE NEC ARTICLE 110.16.

H. DISCONNECT SWITCHES SHALL BE H.P. RATED, HEAVY DUTY, QUICK-MAKE, QUICK-BREAK.

I. MOTOR STARTERS SHALL BE MANUAL OR MAGNETIC AS INDICATED ON THE ELECTRICAL DRAWINGS, WITH OVERLOAD PROTECTION. OVERLOAD PROTECTION SHALL BE MAGNETIC STARTERS WITH "H-O-A" SWITCH.

J. ENCLOSURES SHALL BE NEMA-1 FOR INDOOR LOCATIONS, NEMA 3R FOR OUTDOOR LOCATIONS OR AS OTHERWISE NOTED.

K. WIRING DEVICES (GENERAL PURPOSE RECEPTACLES AND WALL SWITCHES) SHALL BE WHITE COLOR UNLESS OTHERWISE NOTED.

L. ALL TRANSFORMERS AND MOTORS SHALL COMPLY WITH THE EFFICIENCY STANDARDS AS REQUIRED BY THE FLORIDA BUILDING CODE-ENERGY CONSERVATION.

A. COLOR CODING OF CONDUCTORS SHALL BE AS FOLLOWS:

1. 208/120 VOLTS, 3 PHASE, 4-WIRE SYSTEM: UNGROUNDED CONDUCTORS: 1 BLACK, 1 RED AND 1 BLUE. GROUNDING (NEUTRAL) CONDUCTOR: WHITE. GROUNDING CONDUCTORS SHALL BE GREEN.
2. BRANCH CIRCUIT WIRING (#6 AND SMALLER) SHALL BE COLOR CODED BY CONTINUOUS INSULATION COLOR AND FEEDERS AND SERVOES (#4 AND LARGER) SHALL BE CODED AT EACH JUNCTION OR JUNCTION POINTS BY TIGHT LBS OR LBD'S USING COLOR MARKERS OR PLASTIC TAPE MANUFACTURED FOR THE PURPOSE.

B. WIRING METHODS

1. ALL CONDUCTORS SHALL BE INSTALLED IN ELECTRICAL METALLIC TUBING (EMT) UNLESS OTHERWISE NOTED, SPECIFIED OR AS SPECIALLY PROHIBITED BY THE AUTHORITY HAVING JURISDICTION. ALL FITTINGS AND COUPLINGS FOR EMT CONDUIT SHALL BE ALL STEEL. MAIN TIGHT CONDUIT SHALL BE ALL STEEL OR ALL STEEL CONCRETE TIGHT SET SCREW TYPE.
2. SCHEDULE 40 PVC CONDUIT, WITH FITTINGS AND COUPLINGS APPROPRIATE FOR THE USE, SHALL BE INSTALLED UNDERGROUND OR BELOW SLABS ON GRADE.
3. TYPE MC CABLE WITH ALUMINUM ARMOR AND INTERNAL GROUND IS ACCEPTABLE FOR USE AS GENERAL BRANCH CIRCUIT WIRING FOR CIRCUITS 20 AMPERES OR LESS AND CONCEALED IN WALLS OR ABOVE SUSPENDED CEILING AND AS APPROVED BY THE AUTHORITY HAVING JURISDICTION.

C. ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE LATEST EDITION OF THE N.E.C. AND LOCAL CODES.

1. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER, THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE.
2. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
3. THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER AND TELEPHONE COMPANIES, AND SHALL BE FULLY COORDINATED WITH THEM PRIOR TO COMMENCEMENT OF WORK.
4. PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES, AND WIRING DEVICES, FOR ALL OUTLETS AS INDICATED.
5. MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SUCH AS ARE LISTED OR APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF NEC, NEMA, AND IECE.

D. SUBSTITUTIONS:

1. IF ANY PROPOSED EQUIPMENT IS OF LARGER SIZE OR THERE ARE ANY CONTINGENT DIFFERENCES WHICH REQUIRE ADDITIONAL CONTROLS, EQUIPMENT OR APPARATUS ALL ASSOCIATED CHANGES TO THE BUILDING SYSTEMS NECESSARY TO ACCOMMODATE THESE CHANGES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
2. "TO-SCALE" FLOOR PLAN DRAWINGS OR RISER/WIRING DIAGRAMS INDICATING THE PROPOSED CHANGES SHALL BE SUBMITTED ALONG WITH THE OTHER REQUIRED SHOP DRAWINGS.

E. CONTRACTOR SUBMITTALS:

1. SUBMIT AT LEAST FIVE (5) SETS OF SHOP DRAWINGS OR CUT SHEETS OF LIGHTING FIXTURES, SWITCHES, AND OTHER ELECTRICAL ITEMS FOR APPROVAL BY ENGINEER/ARCHITECT.
2. AS-BUILT ELECTRICAL DRAWINGS SHALL BE PROVIDED TO THE OWNER AS REQUIRED BY FLORIDA BUILDING CODE, ARTICLE 405.6.4.1
3. OPERATING AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE OWNER AS REQUIRED BY FLORIDA BUILDING CODE, ARTICLE 405.6.4.2

F. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED OF HIS WORK.

G. ALL LAY-IN LIGHTING FIXTURES SHALL BE SECURED TO THE SUSPENDED CEILING GRID AT EACH CORNER OR AS REQUIRED BY THE NATIONAL ELECTRIC CODE AND THE FLORIDA BUILDING CODE, SECTION 808. SEE ARCHITECTURAL DRAWINGS FOR DETAIL OF CEILING AND LUMINAIRE SUPPORT.

H. CONTRACTOR SHALL COORDINATE WITH MECHANICAL DRAWINGS AND PROVIDE ALL NECESSARY CONTROL WIRING.

I. ALL ELECTRICAL POWER WIRING FOR THE HVAC SYSTEM INCLUDING THRU LINE VOLTAGE CONTROL DEVICES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

J. VOLTAGE DROP

1. CONDUCTOR FOR ALL FEEDERS SHALL BE INCREASED FROM SIZES INDICATED ON DRAWINGS TO PREVENT VOLTAGE DROP EXCEEDING 2%.
2. CONDUCTORS FOR ALL BRANCH CIRCUITS SHALL BE INCREASED FROM SIZES INDICATED ON DRAWINGS TO PREVENT VOLTAGE DROP EXCEEDING 3% FROM THE FURTHEST DEVICE.
3. DETERMINING CONDUCTOR SIZES SHALL BE BASED ON 80% OF THE BREAKER RATING.
4. FOR DETERMINATION OF WIRE SIZE FOR BID PURPOSES:
 - * INCREASE WIRE BY 1 WIRE SIZE FOR RUNS 60 FT. TO 100 FT.
 - * INCREASE WIRE BY 2 WIRE SIZES FOR RUNS 100 FT. TO 150 FT.
 - * INCREASE WIRE BY 3 WIRE SIZES FOR RUNS FROM 150 FT. TO 230 FT.

K. PROVIDE CABLE LUGS SIZED FOR THE LINE AND/OR LOAD SIZE FEEDERS AS SCHEDULED FOR ALL SWITCHBOARDS, PANELBOARDS AND DISCONNECTS, WHERE CABLE LUGS ARE NOT AVAILABLE FOR THE SPECIFIC WIRE SIZE AND NUMBER OF SETS SCHEDULED, PROVIDE A TAP BOX ADJACENT TO THE EQUIPMENT WITH "POLARIS" TAPS TO TRANSITION TO CONDUCTORS TO MATCH THE CABLE LUGS AVAILABLE AND THE AMPERE RATING OF THE OVER-CURRENT DEVICE PROTECTING THE FEEDER.

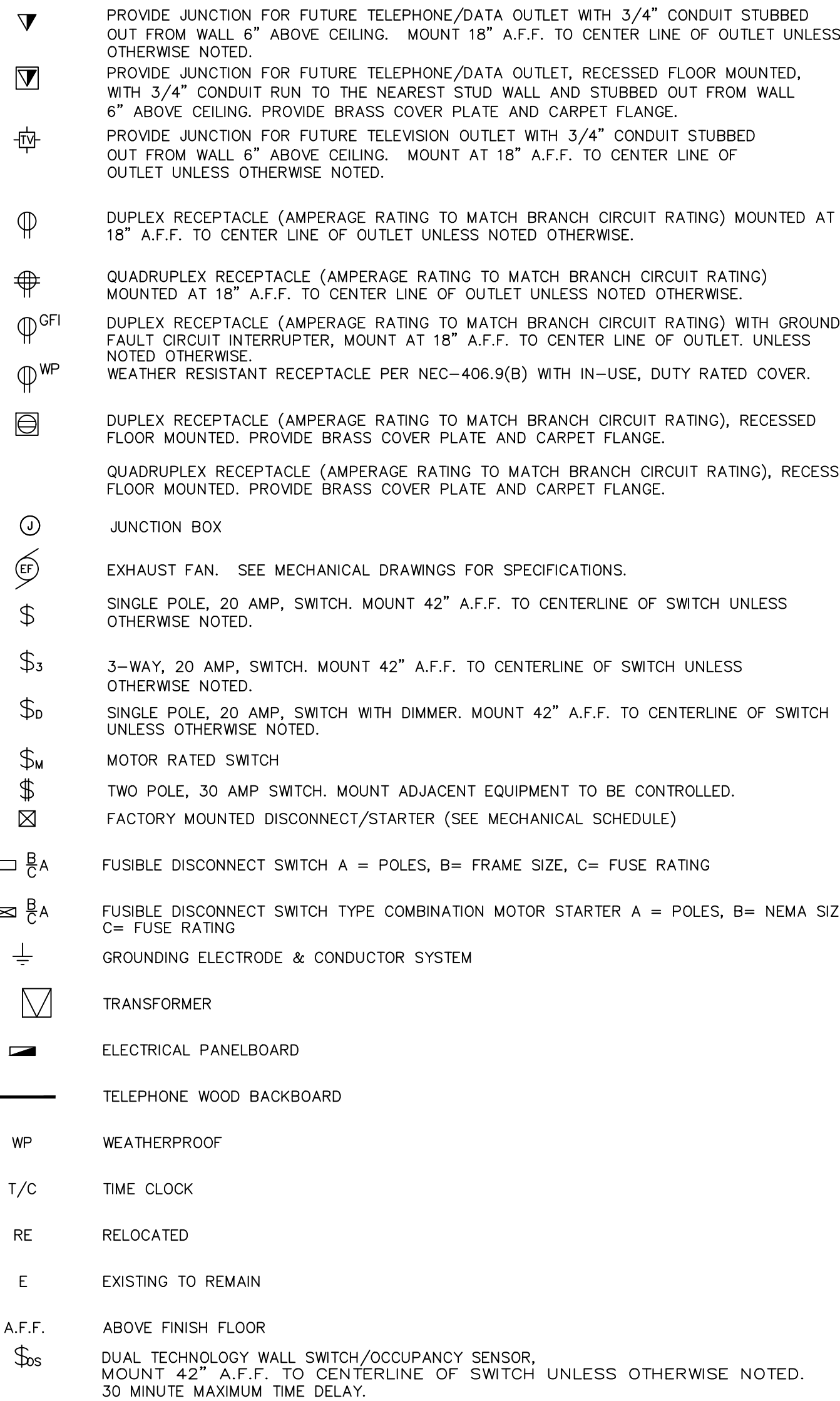
L. THE CONTRACTOR SHALL CONFIRM WITH THE ELECTRICAL UTILITY COMPANY ANY AND ALL REQUIREMENTS SUCH AS: METERING EQUIPMENT REQUIREMENTS AND METERING EQUIPMENT LOCATION, TRANSFORMER SIZE AND LOCATION OR SERVICE POINT, CONDUIT ENTRY AND LUG SIZE RESTRICTIONS.

M. THE CONTRACTOR SHALL BE REQUIRED DOWNTIME FOR THE OWNER'S CONFIRMATION.

N. ANY CONFLICTS AND DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK.

- ① 1-3/0MCM GROUNDING ELECTRODE CONDUCTOR IN 3/4" SCHEDULE 40 PVC CONDUIT.
- ② EXOTHERMIC CONNECTION OR HEAVY DUTY SOLID BRONZE BOLTED GROUND CLAMP U.L. LISTED FOR THE PURPOSE. ELECTRICALLY CONTINUOUS STEEL REINFORCING BARS (20FT MIN. LENGTH) IN BOTTOM OF BUILDING FOUNDATION IN DIRECT CONTACT WITH EARTH.
- ③ 10 FT. LONG X 3/4" DIAMETER COPPER DRIVEN GROUND ELECTRODE.
- ④ EXOTHERMIC CONNECTION OR HEAVY DUTY SOLID BRONZE BOLTED GROUND CLAMP U.L. LISTED FOR THE PURPOSE. (TYPICAL)
- ⑤ MAKE CONNECTION TO METALLIC COIL WATER ENTRANCE PIPE BEFORE FIRST VALVE WITH HEAVY DUTY BRONZE GROUND CLAMP.
- ⑥ PROVIDE (1) 3/0 BONDING JUMPER AROUND FIRST VALVE.
- ⑦ TERMINATE CONDUITS IN EXACT MANNER AND LOCATION AS REQUIRED BY UTILITY COMPANY. LEAVE 10 FT SLACK CONDUCTOR PER CONDUCTOR FOR EXTENSION AND CONNECTION FOR UTILITY COMPANY.
- ⑧ PROVIDE CLASS 2 SURGE PROTECTION DEVICE
- ⑨ PROVIDE 8X8 JUNCTION BOX, INTERCEPT, EXTEND, AND CONNECT FEEDERS DUE TO RELOCATION OF MAIN AND METER.
- ⑩ PROVIDE POLARIS TAPS. (TYPICAL)
- ⑪ PROVIDE 4#3/0 & 1#6G IN 2-1/2"
- ⑫ PROVIDE 4#3 & 1#6G IN 1-1/2"

1 ELECTRICAL SHEET INDEX



TYPICAL CONDUIT CONCEALED ABOVE SUSPENDED CEILING TO NEXT JUNCTION BOX OR HOMERUN...

EXISTING CEILING SLAB

CEILING HANGER WIRE

LIGHTING FIXTURE

SUSPENDED CEILING GRID BY OTHERS

FLEXIBLE CONDUIT ALLOW SUFFICIENT SLACK SO THAT FIXTURE CAN BE SHIFTED ONE COMPLETE TILE IN ANY DIRECTION

NOTES:

- 1 PROVIDE #12 GREEN GROUND WIRE IN FLEXIBLE CONDUIT WITH BRANCH CIRCUIT WIRING AND BOND TO OUTLET BOX AND FIXTURE HOUSING.
- 2 SECURELY FASTEN FIXTURE TO CEILING FRAMING MEMBERS WITH FOUR (4) T-BAR CLIPS PER FIXTURE. SUPPORT FROM SUSPENDED CEILING ONLY AS APPROVED BY ARCHITECT.

3. FIXTURE MOUNTING DETAIL