

GENERAL ELECTRICAL NOTES

- ALL SYMBOLS ARE NOT NECESSARILY USED IN THIS PROJECT.
- IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER RESERVES THE RIGHT TO ALLOW OTHER METHODS AND MATERIALS NOT REFLECTED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO REQUEST THE ENGINEER WAIVE THE STANDARDS TO ALLOW ALTERNATE METHODS AND MATERIALS PRIOR TO BEGINNING THE PROJECT. CONTRACT DOCUMENT REVISIONS TO ACCOMMODATE INSTALLED CONDITIONS, WITHOUT PRIOR APPROVAL, WILL RESULT IN ADDITIONAL DESIGN CHARGES TO THE CONTRACTOR.
- ELECTRICAL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE NECA INSTALLATION STANDARDS TO THE SATISFACTION OF THE OWNER AND ENGINEER.
- ALL WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE CURRENTLY ACCEPTED EDITION OF ALL APPLICABLE NATIONAL, STATE AND CITY CODES AND ORDINANCES.
- ALL ELECTRICAL SYSTEM COMPONENTS SHALL BE LISTED OR LABELED BY UL OR OTHER RECOGNIZED TESTING FACILITY AS ALLOWED BY JURISDICTION.
- WHERE AN APPARENT DISCREPANCY EXISTS BETWEEN THE REQUIREMENTS OF THE GENERAL NOTES AND INFORMATION PORTRAYED IN THE ELECTRICAL DRAWINGS, THE CONTRACTOR SHALL INCLUDE IN HIS COST OF THE GREATER QUALITY OR QUANTITY.
- ALL ELECTRICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW THAT WORK IS DEFECTIVE, CONTRACTOR SHALL MAKE ALL NECESSARY CORRECTIONS.
- CONTRACTOR SHALL GUARANTEE ALL WORK AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USE FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE. ALL DEFECTS SHALL BE PROMPTLY CORRECTED BY CONTRACTOR.
- THE ELECTRICAL CONTRACTOR SHALL MAINTAIN A SET OF DRAWINGS AT THE JOB SITE FOR THE EXCLUSIVE PURPOSE OF MAINTAINING A RECORD OF ALL WORK INSTALLED AND TO SHOW ANY DEVIATIONS FROM THE WORK INDICATED ON THE DRAWINGS
- DO NOT SCALE ELECTRICAL DRAWINGS. VERIFY EXACT LOCATION OF ALL DEVICES, JUNCTION BOXES, LIGHTING FIXTURES, ETC. WITH ARCHITECTURAL AND INTERIOR DESIGN DRAWINGS PRIOR TO INSTALLATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT AND OTHER EQUIPMENT REQUIRING ELECTRICAL CONNECTION PRIOR TO ROUGH-IN. EVERY OUTLET HEIGHT SHALL BE VERIFIED ON EACH WALL WITH THE INTERIOR PLANNING AND DESIGN DRAWINGS. COORDINATE WITH CABINET SHOP DRAWINGS TO ENSURE PROPER HEIGHT AND LOCATION WITH RESPECT TO MILLWORK, EQUIPMENT, ETC.
- THESE DRAWINGS INDICATE THE FINISHED REQUIREMENTS FOR THE ELECTRICAL SYSTEMS, EQUIPMENT, LIGHTING FIXTURES, OUTLETS AND DEVICES. DUE TO STRUCTURAL CONDITIONS, MECHANICAL CUD, PIPING CONFLICTS, OR OTHER LEGITIMATE REASONS, THE CONTRACTOR MAY DESIRE TO INSTALL THE WORK INDICATED IN A MANNER DIFFERENT FROM THAT SHOWN. SUCH CHANGES SHALL BE PRESENTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PROCEEDING. UPON APPROVAL, THE WORK SHALL BE PERFORMED AND THE AS-BUILT DRAWINGS SHALL BE REVISIONED TO ACCURATELY REFLECT THE WORK AS ACTUALLY INSTALLED.
- RACEWAY SYSTEMS ARE SHOWN DIAGRAMMATICALLY. ACTUAL LOCATION AND ROUTING OF ALL SHALL BE DETERMINED BY CONTRACTOR TO SUIT FIELD CONDITIONS.
- PROVIDE DEDICATED NEUTRAL FOR EACH NEW CIRCUIT. HOME RUN CONDUCTORS MAY BE COMBINED INTO ONE CONDUIT. NO RACEWAY OR CABLE SHALL CONTAIN MORE THAN NINE CURRENT CARRYING CONDUCTORS. WHERE MULTIPLE CONDUCTORS IN EXCESS OF THREE (3) ARE INDICATED ON THESE DRAWINGS, THEY HAVE BEEN DERATED AS REQUIRED BY NEC ARTICLE 310 JOINT REQUIREMENTS.
- WHERE ALLOWED, MC CABLE MAY BE INSTALLED PER NEC ARTICLE 330. WHERE MULTIPLE CABLES ARE ROUTED ADJACENT TO EACH OTHER (BUNDLED), A MINIMUM SEPARATION OF ONE (1) CABLE DIAMETER (LARGEST) SHALL BE REQUIRED.
- PLASTIC CABLE TIES SHALL NOT BE USED AS A MEANS OF SUPPORT FOR MC CABLE. USE ONLY APPROVED CABLE SUPPORTS TO MEET INSTALLATION REQUIREMENTS.
- RACEWAYS SHALL BE INSTALLED CONCEALED WHENEVER POSSIBLE. RACEWAYS INSTALLED EXPOSED SHALL BE ROUTED OUT OF PUBLIC VIEW. RACEWAYS WITH OR RUN PARALLEL WITH, OR AT RIGHT ANGLE TO WALLS.
- PROVIDE APPROVED EXPANSION FITTINGS WHERE RACEWAYS CROSS BUILDING EXPANSION JOINTS. PROVIDE BONDING JUMPS PER NEC CODE WHERE REQUIRED. PROVIDE ALL FITTINGS REQUIRED FOR A COMPLETE INSTALLATION. REFER TO ARCHITECTURAL DRAWINGS FOR EXPANSION JOINT LOCATIONS).
- MINIMUM RACEWAY SIZE SHALL BE 1/2" MINIMUM HOMERUN SIZE SHALL BE 3/4". MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG U.N.O. TYPICAL. ALL POWER RELATED CONDUITS SHALL HAVE A CODE SIZE GROUND WIRE INSTALLED IN EACH RUN.
- CONTRACTOR SHALL PROVIDE PULL CORDS IN ALL EMPTY CONDUITS. WHERE MORE THAN ONE CONDUIT TERMINATES IN A JUNCTION BOX, THE CONTRACTOR SHALL IDENTIFY EACH CONDUIT AND JUNCTION BOX IN A MANNER ALLOWING IDENTIFICATION AFTER ALL WALL FINISHES HAVE BEEN APPLIED.
- CONTRACTOR SHALL PROVIDE ALL RACEWAY SYSTEMS INDICATED ON THE DRAWING PER NEC REQUIREMENTS AND GENERAL NOTES. ANY DEVIATION FROM THE WIRING METHODS INDICATED SHALL BE ALLOWED ONLY BY SPECIFIC WRITTEN APPROVAL FROM THE ENGINEER OR OWNER. CONTRACTOR SHALL INCLUDE ALL COSTS FOR RACEWAY SYSTEMS AS SPECIFIED UNLESS SPECIFIC WRITTEN APPROVAL FOR AN ALTERNATIVE WIRING METHOD IS OBTAINED FROM THE ENGINEER OR OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECT SIZE AND INSTALLATION OF ALL OUTLET, PULL AND JUNCTION BOXES IN ACCORDANCE WITH NEC 314-16. ALL BOXES SHALL BE MINIMUM 4" SQUARE BY 1-1/2" DEEP OR AS INDICATED ON THE DRAWINGS. ALL BOXES SHALL BE RECESSED WITH COVER PLATE TO SUIT THE INTENDED APPLICATION.
- REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS (R) FOR EXACT LOCATION OF ALL CEILING MOUNTED LIGHTING FIXTURES. ARCHITECTURAL DRAWINGS SHALL GOVERN IN CASE OF CONFLICT WITH THESE DRAWINGS.
- PRIOR TO INSTALLATION, CONTRACTOR SHALL REVIEW THE COMPLETE SET OF CONSTRUCTION DOCUMENTS FOR CONFLICTS WITH OTHER TRADES. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL WORK WITH OTHER TRADES TO AVOID CONFLICT DURING INSTALLATION. CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS IN EQUIPMENT LOCATION AND ROUTING AS NECESSARY.
- CONTRACTOR SHALL BE RESPONSIBLE TO PROPERLY CUT AND PATCH EXISTING CONSTRUCTION AS REQUIRED TO INSTALL NEW ELECTRICAL WORK. ALL PATCHING SHALL BE OF THE SAME MATERIALS, WORKMANSHIP AND FINISH AS THE EXISTING WORK AND SHALL ACCURATELY MATCH ALL SURROUNDING WORK.
- ALL ELECTRICAL EQUIPMENT SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS TO ACCOMMODATE QUANTITY AND SIZE OF CONDUCTORS BEING WIRED. CONTRACTORS SHALL PROVIDE EQUIPMENT WITH OVERSIZED ENCLOSURES WHERE REQUIRED.
- ALL NEW PANEL BOARDS AND SWITCHBOARDS SHALL BE OF THE SAME MANUFACTURER AND HAVE LOCKING DOORS AND BE KEYS THE SAME U.O.
- PROVIDE TYPE WRITTEN UNDATED PANEL DIRECTORY WHICH IS TO BE MOUNTED ON INSIDE OF ALL PANEL DOOR COVERS. DIRECTORY SHALL REFLECT ALL ADDITIONS OR MODIFICATIONS TO EXISTING PANELS AND SHALL REFLECT ACTUAL "AS-BUILT" CONDITIONS.
- VERIFY DEVICE COLOR AND MOUNTING ORIENTATION (VERTICAL OR HORIZONTAL) WITH ARCHITECTURAL AND INTERIOR DESIGN DRAWINGS PRIOR TO ORDERING ANY EQUIPMENT AND PROVIDE DEVICE COLOR IS REQUIRED. UNLESS NOTED OTHERWISE, DEVICES AND DEVICE PLATES SHALL BE WHITE IN COLOR.
- WHERE MOTORS ARE INSTALLED IN SUSPENDED CEILINGS, CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH IN SUSPENDED CEILING WITHIN REACH FROM ACCESS POINT.
- SIZING OF MOTOR RELATED ELECTRICAL COMPONENTS, INCLUDING FEEDER AND/OR BRANCH CIRCUITS WIRE AND CONDUIT AND OVERCURRENT PROTECTION (BREAKER AND/OR FUSES) IS BASED ON RATINGS INDICATED IN THE CONTRACT DOCUMENTS AS WELL AS NEC APPROXIMATE LOADS FOR A GIVEN MOTOR HORSEPOWER, VOLTAGE AND PHASE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ACTUAL MOTOR AND APPLIANCE RATING AND LOADS. CONTRACTOR TO PROVIDE CORRECTLY SIZED MOTOR OVERLOAD ELECTRICAL COMPONENTS BASED ON NAMEPLATE RATING. REFLECT ALL CHANGES IN THE AS-BUILT DRAWINGS.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW OF THE FOLLOWING SPECIFIED NEW EQUIPMENT WHERE INDICATED ON PLANS.
 - ELECTRICAL SWITCHGEAR, SWITCHBOARDS, WITH PANELS, MOTOR CONTROL CENTERS AND SAFETY DEVICES.
 - OVERCURRENT DEVICES: CIRCUIT BREAKERS AND FUSES INCLUDING TIME/CURRENT TRIP CURVES.
 - LIGHTING FIXTURES: INDOOR/OUTDOOR AS SPECIFIED, PHOTOMETRIC PERFORMANCE DATA AND LAMPS.
 - DEVICES: SWITCHES, RECEPTACLES, MOTOR CONTROLLERS AND DEVICE PLATES.
 - LIFE SAFETY/FIRE ALARM SYSTEM: CONTROL PANEL, ANNUNCIATOR PANEL, INITIATION AND NOTIFICATION DEVICES/APPLIANCES, SYSTEM WIRING REQUIREMENTS AND DIAGRAM, SYSTEM LOAD CALCS, STANDARD BATTERY CALCULATIONS, AND AUXILIARY POWER SUPPLY.
- ALL PENETRATIONS OF FIRE RESISTIVE FLOORS OR WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DIAGRAMS THAT CONFORM TO UL LISTINGS FOR "THROUGH-PENETRATOR FIRE STOP SYSTEMS".
- CONTRACTOR SHALL ENGAGE THE SERVICES FOR A STATE LICENSED FIRE ALARM MANUFACTURER/INSTALLER TO PREPARE ALL DESIGN DRAWINGS AND CALCULATIONS REQUIRED FOR SYSTEM APPROVAL BY THE AUTHORITY HAVING JURISDICTION. SUBMIT ALL PLANS AND PROVIDE ALL PERMITS REQUIRED FOR A COMPLETE AND OPERABLE APPROVED LIFE SAFETY SYSTEM.
- FIRE ALARM DEVICE WIRING SHALL BE MINIMUM #14 AWG COPPER OR PER SYSTEM MANUFACTURER REQUIREMENTS. PROVIDE MINIMUM 3/4" SEPARATE RACEWAY SYSTEM OR AS REQUIRED FOR LIFE SAFETY SYSTEM WIRING CONFIGURATION.
- UPON COMPLETION OF THE INSTALLATION OF LIFE SAFETY SYSTEM WIRING AND DEVICES, A PERFORMANCE TEST OF THE ENTIRE LIFE SAFETY SHALL BE PERFORMED TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
- ALL EQUIPMENT ELECTRICAL TERMINATIONS TO UNDERGO A TORQUE TEST. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MANUFACTURER'S RECOMMENDED TORQUE DOCUMENTATION AND TOOLS TO PERFORM TORQUE TEST.
- ALL UNDERGROUND SERVICE CONDUITS SHALL BE SCALED PER NEC ARTICLE 230-8.
- FLOOR MOUNTED ELECTRICAL EQUIPMENT SHALL BE MOUNTED ON A 4" HIGH CONCRETE PAD.
- INSTALL TRANSFORMER FOLLOWING MANUFACTURER'S RECOMMENDATIONS FOR VENTILATION CLEARANCES.
- COORDINATE ELECTRICAL REQUIREMENTS FOR ALL PLUMBING AND MECHANICAL EQUIPMENT WITH FINAL CONTRACTOR SELECTION. THE CONTRACTOR SHALL SIZE DISCONNECTS BASED UPON CIRCUIT BREAKER RATINGS AND PROVIDE FUSING AS REQUIRED PER EQUIPMENT MANUFACTURER RECOMMENDATIONS AND U.L. LISTING REQUIREMENTS.
- PROVIDE 10 AWG CONDUCTORS FOR 20 AMPERE, 120V BRANCH CIRCUITS LONGER THAN 75' AND 8 AWG CONDUCTORS FOR 20 AMPERE, 120V BRANCH CIRCUITS LONGER THAN 120'. PROVIDE 10 AWG CONDUCTORS FOR 20 AMPERE, 277V BRANCH CIRCUITS TO LOWER CAVITY 200V.

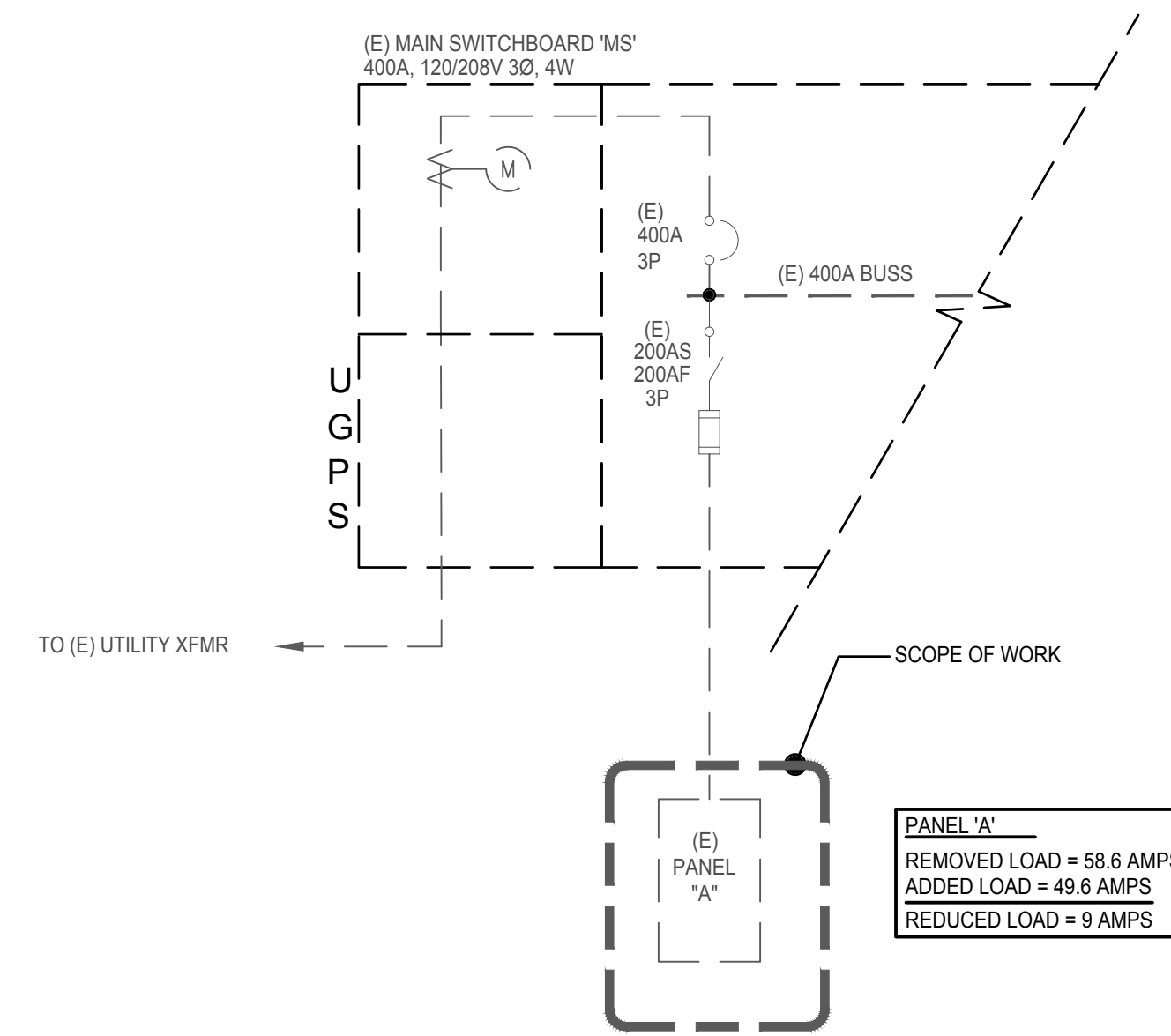
ELECTRICAL SPECIFICATIONS

- PART I - GENERAL**
- A. CONDITIONS**
- FURNISH AND INSTALL A COMPLETELY WIRED AND OPERATIONAL ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO, THESE MAJOR ITEMS:
 - LIGHTING FIXTURES AS INDICATED AND SPECIFIED ON THE PLANS.
 - ELECTRICAL PANELS, SERVICE, CONDUIT, WIRING, ETC., FOR ALL OUTLETS AND EQUIPMENT
 - TELEPHONE OUTLETS AND CONDUIT AS INDICATED.
- B. CODES, REGULATIONS, AND STANDARDS**
- THE INSTALLATION SHALL COMPLY WITH APPLICABLE LOCAL AND STATE CODES AND ORDINANCES, WITH THE REGULATIONS OF THE CURRENTLY ACCEPTED EDITION OF THE NATIONAL ELECTRIC CODE AND WITH THE REQUIREMENTS OF THE POWER, TELEPHONE, AND CATA COMPANIES FURNISHING SERVICES TO THIS INSTALLATION.
 - THE FOLLOWING INDUSTRY STANDARDS, SPECIFICATIONS, AND CODES ARE MINIMUM REQUIREMENTS:
 - THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION STANDARDS.
 - THE NATIONAL ELECTRICAL CODE, INCLUDING LOCAL AMENDMENTS.
 - UNDERWRITERS LABORATORIES INCORPORATED STANDARDS.
 - AMERICAN NATIONAL STANDARDS INSTITUTE.
- C. INSPECTION OF SITE**
- PRIOR TO SUBMITTING A BID FOR ELECTRICAL WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE PROPOSED CONSTRUCTION AND SHALL THOROUGHLY ACQUAINT HIMSELF WITH EXISTING UTILITIES, AND WORKING CONDITIONS TO BE ENCOUNTERED, ETC. ALLOWANCE WILL NOT BE MADE FOR NONCOMPLIANCE WITH THIS CONDITION AFTER BIDDING.
 - ELECTRICAL INSTALLATION SHALL MEET THE EXISTING CONDITIONS.
- D. STORAGE AND HANDLING OF MATERIAL**
- DELIVER MATERIALS AND EQUIPMENT TO THE PROJECT IN THE MANUFACTURER'S ORIGINAL, UNOPENED, LABELED CONTAINERS. PROTECT AGAINST MOISTURE, TAMPERING, OR DAMAGE FROM IMPROPER HANDLING OR STORAGE. CONTRACTOR SHALL PROTECT AND BE RESPONSIBLE FOR ANY DAMAGE TO WORK OR MATERIALS UNTIL FINAL ACCEPTANCE BY THE OWNER, AND SHALL MAKE GOOD WITHOUT COST TO THE OWNER, ANY DAMAGE OR LOSS THAT MAY OCCUR DURING THIS PERIOD.
 - ARRANGE FOR TIMELY DELIVERY OF MATERIALS AND EQUIPMENT TO THE JOB SITE IN ORDER TO MINIMIZE THE LENGTH OF TIME BETWEEN DELIVERY AND INSTALLATION.
 - COVER AND PROTECT ANY MATERIAL WHICH MAY BE AFFECTED BY THE WEATHER WHILE IN TRANSIT OR STORED AT THE PROJECT SITE. ANY MATERIAL FOUND DEFECTIVE OR NOT INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS MAY BE REJECTED BY THE ENGINEER.
- E. CLEANUP**
- KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS, OR RUBBISH CAUSED BY EMPLOYEES OR WORK UNDER THIS DIVISION OF THE SPECIFICATIONS. AT THE COMPLETION OF THE WORK REMOVE ALL SURPLUS MATERIALS, TOOLS, ETC., AND LEAVE THE PREMISES BROOM-CLEAN.
- F. DRAWINGS**
- THE DRAWINGS INDICATE THE GENERAL ARRANGEMENT AND LOCATIONS OF THE ELECTRICAL WORK DATA PRESENTED ON THESE DRAWINGS ARE AS ACCURATE AS PLANNING CAN DETERMINE, BUT FIELD VERIFICATION OF ALL DIMENSIONS, LOCATIONS, LEVELS, ETC., TO SUIT FIELD CONDITIONS IS REQUIRED. REWIND ALL ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS AND ADJUST ALL WORK TO MEET THE REQUIREMENTS OF CONDITIONS SHOWN. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. DISCREPANCIES BETWEEN DIFFERENT PLANS, OR BETWEEN DRAWINGS AND SPECIFICATIONS SHALL BE GOVERNED BY THE SPECIFICATIONS. THE INSTALLATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING BEFORE THE DATE OF BID OPENING. IF DISCREPANCIES ARE NOT REPORTED, THE CONTRACTOR SHALL BID THE GREATER QUANTITY OR BETTER QUALITY, AND APPROPRIATE ADJUSTMENTS WILL BE MADE AFTER CONTRACT AWARD. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD MEASURE AND CONFIRM DRAWINGS AND SPECIFICATIONS AS SPECIFIED UNLESS SPECIFIC WRITTEN APPROVAL FOR AN ALTERNATIVE WIRING METHOD IS OBTAINED FROM THE ENGINEER OR OWNER.
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- PART II - PRODUCTS AND EXECUTION**
- A. MATERIALS**
- ALL MATERIALS SHALL BE NEW AND OF QUALITY AS SPECIFIED ON THE PLANS OR SPECIFICATIONS AND MUST CARRY THE UNDERWRITERS LABORATORIES LABEL. THE PURPOSE FOR WHICH THE MATERIALS ARE SPECIFIED SHALL BE MET. MEETING ALL REQUIREMENTS OF THE CURRENT APPLICABLE CODES AND REGULATIONS.
- B. CONDUIT**
- ALL WIRING SHALL BE INSTALLED IN LISTED METALLIC CONDUIT EXCEPT AS PERMITTED BELOW. RGS, WITH A 20 MIL PVC COATING WILL BE USED WHEN IN CONTACT WITH EARTH. IMC MAY BE USED IN INDOOR LOCATIONS NOT IN CONTACT WITH THE EARTH. EMT MAY BE USED IN INDOOR LOCATIONS NOT IN CONTACT WITH EARTH, NOT IN CONCRETE SLABS OR WALLS AND NOT SUBJECT TO DAMAGE. PVC MAY BE USED IN OR BELOW CONCRETE AND DIRECT BURIED IN EARTH. FLEXIBLE STEEL CONDUIT SHALL BE USED FOR INDOOR FINAL CONNECTIONS TO EQUIPMENT IN LENGTHS NOT TO EXCEED 72" LIQUID-TIGHT FLEXIBLE STEEL CONDUIT SHALL BE FOR OUTDOOR FINAL CONNECTIONS TO EQUIPMENT NOT TO EXCEED 36".
 - WHERE CONDUIT ENTERS OUTLET BOXES, FIXTURES OR CABINETS, FIRMLY FASTEN WITH STEEL SET SCREW, COMPRESSION CONNECTORS, OR DOUBLE LOCKNUTS FOR GRC. ALL CONNECTIONS SHALL HAVE BUSHINGS OR INSULATED THIRD CONNECTORS. FIRMLY FASTEN CONDUIT TO THE BUILDING CONSTRUCTION. RUN EXPOSED CONDUIT PARALLEL TO THE BUILDING LINES, SUPPORTED BY APPROPRIATE HANGERS (UNISTRUT, T & B OR APPLETON, OR EQUAL).
 - COVER METALLIC CONDUIT IN CONTACT WITH EARTH WITH POLYETHYLENE TAPED SPIRAL WRAPPED, 12 LAPPED TO PROVIDE 20 MIL THICKNESS. TAPE SHALL BE SCOTCH NO. 50 TAPE. CONDUIT AND DUCTS NOT UNDER BUILDINGS AND FEEDER DUCTS SHALL BE INSTALLED PER N.E.C. 300-5. MAKE JOINTS WITH COMPOUND TO BE WATER-TIGHT.
 - FITTINGS AND CONDUIT BODIES SHALL BE STEEL. NO DIECAST FITTINGS.
 - CONDUIT SIZES SHALL BE AS REQUIRED BY CODE AND AS INDICATED OR SPECIFIED.
 - ALL EMPTY CONDUIT SYSTEMS SHALL HAVE A NYLON PULL STRING TO FACILITATE INSTALLATION OF FUTURE WIRE.
 - SCHEDULE 40 PVC CONDUIT SHALL BE PERMITTED UNDERGROUND WITH PROPER FITTINGS. ALL UL APPROVED AND CEMENTED JOINTS. PENETRATIONS THROUGH FLOOR SLABS AND BENDS GREATER THAN 22" SHALL BE WRAPPED RIGID GALVANIZED STEEL ELBOWS.
 - CONDUITS AND OUTLETS SHALL BE CONCEALED WITHIN THE BUILDING STRUCTURE, EXCEPT THAT CERTAIN MOTOR AND LIGHTING FEEDER CONDUITS MAY BE RUN EXPOSED IN CERTAIN AREAS AS INDICATED ON THE DRAWINGS. CONDUIT SHOWN TO BE INSTALLED IN CABINETS, COUNTERS, AND CASEWORK SHALL BE RUN AS DIRECTED BY THE ARCHITECT.
 - ALL CONDUIT SYSTEMS SHALL HAVE A CODE SIZED COPPER GROUND CONDUCTOR. INCREASE CONDUIT SIZE AS REQUIRED.
- C. OUTLET, PULL AND JUNCTION BOXES**
- EACH SWITCH, LIGHT, RECEPTACLE OR OTHER OUTLET SHALL BE PROVIDED WITH A CODE GAUGE, GALVANIZED STEEL OUTLET BOX. JUNCTION AND PULL BOXES SHALL BE CODE GAUGE GALVANIZED STEEL. OUTLET BOXES SHALL BE OF THE ONE PIECE, KNOCKOUT TYPE, IN GENERAL 4" SQUARE WITH PLASTER RING. PLASTER RINGS SHALL BE SET TO PROVIDE NOT MORE THAN 1/8" FROM WALL SURFACE TO RING. IN NO CASE SHALL PLASTER RING BE USED FOR 4" BOXES IN UNFINISHED BRICK NUMBER 180 BOXES MAY BE USED FOR UNFINISHED MASONRY FLUSH WALL OUTLETS. CENTER ALL OUTLET BOXES IN BLOCK COURSE.
 - BOXES INSTALLED IN POURED CEMENT FLOORS SHALL BE FLUSH TYPE CAST IRON OR STEEL WITH WATER-TIGHT GASKETED COVERS. WHERE BOXES ARE INSTALLED IN FLOORS WITH TILE OR CARPET FLOOR COVERING, COVERS SHALL BE OF THE RECESSED TYPE TO ACCOMMODATE THE FLOOR COVERING.
 - BOXES INSTALLED FOR THE ALARM, COMPUTER, AND SECURITY SYSTEM SHALL BE PROVIDED WITH APPROPRIATE COVER PLATES.
 - BOXES FOR TELEPHONE, COMPUTER, T.V., FIRE ALARM, SECURITY, AND SIMILAR SYSTEMS SHALL BE MINIMUM 4" SQUARE AND 2-1/8" DEEP.
- D. PANEL BOARDS**
- CIRCUIT BREAKER TYPE AS INDICATED ON DRAWINGS. UNLESS INDICATED OTHERWISE, ALL PANELS SHALL HAVE PANEL BOARD TYPE CONSTRUCTION WITH BOLT-ON CIRCUIT BREAKERS FOR 39 PANELS. MANUFACTURERS SHALL BE GENERAL ELECTRIC, SQUARE D, SIEMENS, CUTLER-HAMMER OR EQUAL WITH VOLTAGE, SIZES, AND RATINGS AS INDICATED ON DRAWINGS.
 - THE CIRCUIT BREAKERS SHALL BE OPERABLE IN ANY POSITION AND BE REMOVABLE FROM THE FRONT OF THE PANEL BOARD WITHOUT DISTURBING THE ADJACENT UNITS. BRANCH BREAKERS SHALL BE OF SUCH DESIGN THAT COMBINATION OF SINGLE-POLE, DOUBLE-POLE, AND THREE-POLE BREAKERS CAN BE ASSEMBLED ON THE SAME PANEL. EACH BRANCH CIRCUIT SHALL BE CLEARLY NUMBERED. BRANCH AND MAIN TERMINALS SHALL BE OF THE SOLDERLESS TYPE. HANDLE TIES TO FORM MULTI-POLE BREAKERS NOT ACCEPTABLE.
 - WIRE TERMINATION FOR PANEL BOARDS AND CIRCUIT BREAKERS SHALL BE LISTED AS SUITABLE FOR 75 DEGREES C.
 - PROVIDE A TYPEWRITTEN CIRCUIT IDENT BEHIND CLEAR PLASTIC COVER ON INSIDE OF DOOR. INFORMATION SHALL INCLUDE ROOM AND TYPE LOAD SERVED. ALL CIRCUIT BREAKERS SHALL BE IDENTIFIED, INCLUDING SPARES. INDEX CARD FRAME SHALL BE METAL, SECURED TO DOOR.
- E. WIRES**
- CONDUCTOR SIZES SHOWN ON THE DRAWINGS ARE BASED ON COPPER WIRE UNLESS OTHERWISE SPECIFIED. ALL WIRE SHALL BE TYPE XHHW FOR FEEDERS OR BRANCH CIRCUITS LARGER THAN AWG. TYPE THHN/TMVAN INSULATION FOR FEEDERS AND BRANCH CIRCUITS 4 AWG AND SMALLER. ALL BRANCH CIRCUIT WIRING SHALL BE COPPER. SERVICE AND PANEL FEEDERS #10 AND LARGER MAY BE ALUMINUM PROVIDED THAT CONDUCTOR SIZES ARE IN ACCORDANCE WITH OR GREATER AMPACITY AND EQUAL OR LESS EQUIVALENT VOLTAGE DROP. INCREASE CONDUIT SIZE AS REQUIRED. THE WIRES SHALL BE MARKED WITH COLOR TO IDENTIFY CIRCUIT IDENTIFICATION. UNLESS OTHERWISE REQUIRED BY LOCAL ORDINANCES GROUND WIRES SHALL BE GREEN, NEUTRAL WIRES SHALL BE 120V-WHITE, 277V-GRAY, AND LIVE WIRES 208Y/120V AND 120/240 SHALL BE BLACK (PHASE A), RED (PHASE B), AND BLUE (PHASE C). FOR 480Y/277V CIRCUITS, THE COLOR CODE SHALL BE BROWN (PHASE A), ORANGE (PHASE B), AND YELLOW (PHASE C). THE WIRE SHALL BE 12 AWG UNLESS OTHERWISE INDICATED. CIRCUIT SHALL BE LABELED IN EACH J-BOX.
 - ALL WIRES SHALL BE COPPER. NO ALUMINUM WIRES PERMITTED.
 - NO WIRE SHALL BE INSTALLED IN THE CONDUIT SYSTEM UNTIL THE CONDUIT SYSTEM IS COMPLETE. USE MINERALCAL NO. 100 OR EQUIVALENT AS A LUBRICANT TO FACILITATE THE INSTALLATION OF THE CONDUIT SYSTEM.
 - ALL CONDUCTORS SHALL BE STRANDED. NO SOLID WIRES PERMITTED.
- F. WIRING DEVICES**
- WALL SWITCHES SHALL BE SPECIFICATION GRADE AC SILENT TYPE SWITCHES, 20A, 120/277 VOLT.
 - RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX TYPE, NEMA 5-20R, 20 AMPERE, 120 VOLT GROUNDED TYPE. SPECIAL APPLICATION RECEPTACLES SHALL BE INDICATED ON PLANS. MOUNT WITH THE GROUND PLUG.
 - DEVICE PLATES SHALL BE EQUAL TO SIERRA SMOOTH-LINE PLASTIC WALL PLATES. COLOR SHALL BE WHITE, UNLESS OTHERWISE NOTED.
- G. LIGHTING FIXTURES**
- PROVIDE ALL LIGHTING FIXTURES, WIRED AND CONNECTED. THE DRAWINGS INDICATE THE FIXTURES FOR EACH LOCATION. PROVIDE LAMPS FOR ALL FIXTURES. THE LAMPS SHAN BE PROVIDED BY THE ARCHITECT. PROVIDE ALL FIXTURES CONSTRUCTION BEFORE ORDERING RECESSED UNITS. PROVIDE PLASTER FRAMES AND HANGERS AS REQUIRED. CEILING CONSTRUCTION, ARCHITECTURAL ACCESSORIES, VOLTAGE, AND BALLASTS TO MEET THE EXISTING CONDITION.
- H. SYSTEM GROUNDING**
- GROUNDING SHALL COMPLY WITH REQUIREMENTS OF ARTICLE 250. ALL EXPOSED NONCURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAYS SYSTEMS, METALLIC CABLE ARMOR, GROUNDING CONDUCTOR OF NONMETALLIC SHEATHED CABLES, GROUNDING CONDUCTOR IN NONMETALLIC RACEWAYS, AND GROUNDED CONDUCTORS OF THE WIRING SYSTEM SHALL BE GROUNDED.
 - GROUNDING CONDUCTOR (NEUTRAL) OF THE WIRING SYSTEM SHALL BE CONNECTED TO THE SYSTEM GROUNDING CONDUCTOR AT A SINGLE PLACE IN EACH SYSTEM BY REMOVABLE BONDING JUMPERS, SIZED ACCORDING TO THE APPLICABLE PROVISIONS OF THE NATIONAL ELECTRICAL CODE. THE GROUNDED CONDUCTOR (NEUTRAL) TO THE GROUNDING CONDUCTOR CONNECTION SHALL BE LOCATED IN THE ENCLOSURE FOR THE SYSTEM'S OVERCURRENT PROTECTION OR WHERE OTHERWISE INDICATED ON THE PLANS OR SPECIFICATIONS.
 - A GROUND BUS SEPARATE FROM THE NEUTRAL BUS SHALL BE PROVIDED IN ALL SWITCHBOARDS AND PANELBOARDS. GROUND BUS SHALL BE RETORQUED (CHECKED) PRIOR TO ENERGIZING EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
 - GROUND BUSES AND NEUTRAL BUSES IN ALL DISTRIBUTION PANELS, SWITCHBOARDS, PANELBOARDS, AND THOSE PROVIDED IN ANY EQUIPMENT SHALL BE ISOLATED EXCEPT WHERE REQUIRED TO BE CONNECTED AS SPECIFIED ABOVE FOR THE SERVICE ENTRANCE AND IN TRANSFORMER TERMINAL COMPARTMENTS.
 - WHEN INDICATED ON THE DRAWINGS, EQUIPMENT GROUNDING CONDUCTORS SHALL BE EXTENDED FROM THE GROUND BUS IN THE DISTRIBUTION EQUIPMENT TO THE RECEPTACLE, FIXTURE OR DEVICE LUGS WHERE THEY ARE PROVIDED. WHERE LUGS ARE NOT PROVIDED, EQUIPMENT GROUNDING CONDUCTORS SHALL BE CONNECTED TO EQUIPMENT ENCLOSURES. THE CONNECTIONS SHALL BE ARRANGED SUCH THAT REMOVAL OF THE RECEPTACLE, EQUIPMENT GROUND CONDUCTORS, OR GROUND JUMPERS FROM GROUND BUSING SHALL NOT AFFECT THE GROUND SYSTEM.
 - RACEWAYS MAY NOT BE USED AS A GROUNDING CONDUCTOR FOR POWER AND LIGHTING CIRCUITS. ALL CONDUIT SHALL HAVE SEPARATE CODE SIZED GREEN GROUND WIRE INSTALLED IN THE CONDUIT TO INSURE A CONTINUOUS GROUNDING PATH.
 - IN ACCESSIBLE LOCATIONS, MAKE CONNECTIONS BY EXOTHERMIC WELD PROCESS.
 - IN ACCESSIBLE LOCATIONS, CONNECTIONS SHALL BE MADE WITH BOLTED THROUGH, APPROVED SOLDERLESS BRONZE GROUNDING DEVICES.
 - BOND TOGETHER METAL SIDING NOT ATTACHED TO GROUNDED STRUCTURE BOND TO GROUND.

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	LINEAR FLUORESCENT FIXTURE
	SUSPENDED LINEAR FLUORESCENT FIXTURE
	FLUORESCENT WALL MOUNT FIXTURE
	LINEAR FLUORESCENT STRIP FIXTURE
	LIGHT FIXTURE - RECESSED OR SURFACE
	PENDANT FIXTURE
	WALL MOUNTED LIGHT FIXTURE
	ADJUSTABLE RECESSED MOUNTED LIGHT FIXTURE
	RECESSED LIGHT FIXTURE
	WALL SCONCE
	WALL WASHER
	LETTER REFERS TO FIXTURE TYPE
	MONO-POINT LIGHT FIXTURE
	TRACK LIGHT FIXTURE
	PARKING LOT POLE MOUNTED LIGHT FIXTURE
	BOLLARD LIGHT FIXTURE
	EXIT SIGN - CEILING MOUNTED
	EXIT SIGN - WALL MOUNTED
	EXIT SIGN - WARROWS INDICATE DIRECTION
	EMERGENCY BATTERY UNIT WITH HEADS
	FIXTURE w/ EMERGENCY BATTERY OR GENERATOR
	SINGLE POLE SWITCH, 20A, 120/277V
	TWO POLE SWITCH, 20A, 120/277V
	THREE-WAY SWITCH, 20A, 120/277V
	FOUR-WAY SWITCH, 20A, 120/277V
	DIMMER SWITCH, MIN. 2000W, 120/277V
	HP RATED MOTOR SWITCH WITH THERMAL OVERLOAD PROTECTION
	LOWER CASE LETTER DENOTES FIXTURES TO BE CONTROLLED BY EMERGENCY BATTERY
	KEY SWITCH, 20A, 120/277V
	PUSH BUTTON CONTROL STATION
	OCCUPANCY SENSOR - CEILING
	OCCUPANCY SENSOR - WALL MOUNTED
	OCCUPANCY SENSOR w/DIMMER - WALL MOUNTED
	LIGHTING CONTACTOR
	TIME CLOCK
	PHOTOCELL
	DUCT SMOKE DETECTOR
	ISOLATED GROUND DUPLEX RECEPTACLE
	ISOLATED GROUND DUPLEX RECEPTACLE (CEILING MOUNTED)
	SINGLE RECEPTACLE, NEMA 5-20R, 20A, 125V
	DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125V
	GFCI DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125V
	DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125V
	DUPLEX RECEPTACLE / HALF-SWITCHED
	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER - VERIFY MOUNTING HEIGHT
	GFCI RECEPTACLE, ABOVE COUNTER
	SPECIAL PURPOSE OUTLET (TYPE AS NOTED)
	CLOCK OUTLET NEMA 5-20R, 20A, 125V w/ RECESSED COVER PLATE AT 48" U.N.O.
	DUPLEX RECEPTACLE NEMA 5-20R, 20A, 125V - FLUSH MOUNT CEILING
	MULTI-OUTLET SURFACE RACEWAY w/ NEMA 5-20R, 20A, 125V AT 12" ON CENTER, U.N.O.
	PULLBOX - EXTERIOR OR INTERIOR AS INDICATED
	JUNCTION BOX - WALL MOUNT
	JUNCTION BOX - FLUSH FLOOR MOUNT
	MULTI-OUTLET SURFACE RACEWAY w/ NEMA 5-20R, 20A, 125V AT 12" ON CENTER, U.N.O.
	PULLBOX - EXTERIOR OR INTERIOR AS INDICATED
	TELEPHONE TERMINAL CABINET AT 72" TO TOP
	TELEPHONE BACKBOARD
	PANELBOARD - SURFACE MOUNT
	PANELBOARD - FLUSH MOUNT
	SWITCHBOARD OR DISTRIBUTION BOARD
	METER SERVICE PEDESTAL
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	MOTOR CONTROLLER OR STARTER
	COMBINATION CONTROLLER/DISCONNECT SWITCH
	VENDOR FURNISHED COMBINATION CONTROLLER/DISCONNECT SWITCH
	SINGLE LINE
	CIRCUIT BREAKER
	SERVICE CABLE TERMINATION
	FUSE
	FUSED DISCONNECT SWITCH
	SWITCH
	SURGE SUPPRESSOR
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	GROUNDING ELECTRODE
	POWER METER
	MOTOR
	GENERATOR
	SHUNT TRIP
	GROUND FAULT INTERRUPT
	TRANSFER SWITCH
	CONTACT (NORMALLY OPEN)
	CONTACT (NORMALLY CLOSED)



PARTIAL - EXISTING SINGLE LINE DIAGRAM NONE A

SINGLE LINE GENERAL NOTES

- ALL OVERCURRENT DEVICES IN AN INDIVIDUAL PIECE OF EQUIPMENT SHALL HAVE AN AIC RATING EQUAL TO THE OVERALL RATING OF THE EQUIPMENT - SERIES RATING OF DEVICES WITHIN A PIECE OF EQUIPMENT IS NOT ALLOWED.
- SERIES CONNECTED DEVICES SHALL HAVE BEEN INVESTIGATED BY UL IN COMBINATION WITH THE END USE EQUIPMENT, AND THE EQUIPMENT IN WHICH THESE DEVICES ARE USED SHALL BE MARKED WITH THE SERIES CONNECTED RATING. ALL EQUIPMENT SHALL BE MARKED IN ACCORDANCE WITH NEC REQUIREMENTS.
- ALL TERMINATIONS AND ENCLOSURES SHALL BE RATED FOR USE WITH 75 DEGREE CELSIUS CONDUCTORS.
- ALL SERVICE ENTRANCE EQUIPMENT, SWITCHBOARDS, DISTRIBUTION BOARDS, AND PANELBOARDS RATED AT 400 AMPS OR GREATER, SHALL BE PROVIDED WITH A MAIN OVERCURRENT DEVICE AND BUSSING RATED AT 100% CONTINUOUS OPERATION.
- ALL BRANCH OR FEEDER CIRCUIT OVER-CURRENT DEVICES RATED AT 400 AMPS OR HIGHER SHALL BE RATED FOR 100% CONTINUOUS OPERATION.
- CONTRACTOR SHALL SUBMIT SWITCHBOARD SHOP DRAWINGS TO THE SERVING UTILITY FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR SHALL SECURE CONFIRMATION THAT THE PROPOSED SWITCHBOARD COMPLIES WITH THE POWER COMPANY REGULATIONS.
- BUSSING:
 - ALL BUSSING SHALL BE COPPER OR ALUMINUM IN CONSTRUCTION. MAIN HORIZONTAL AND VERTICAL BUSSING SHALL BE FULL CAPACITY IN ALL SWITCHBOARD SECTIONS.
 - HORIZONTAL AND VERTICAL BUSSING SHALL BE FULL LENGTH. ALL BUSSING SHALL HAVE A MINIMUM WITHSTAND RATING EQUAL TO THE AVAILABLE FAULT CURRENT INDICATED, BUT IN NO CASE SHALL THE RATING BE LESS THAN 65,000 AMPS, SYMMETRICAL.
- GROUND FAULT RELAY SETTINGS:
 - TO MINIMIZE NUISANCE TRIPPING OF THE MAIN AND FEEDER BREAKER, THE CONTRACTOR SHALL ADJUST THE GROUND FAULT RELAY SETTINGS FOR ALL THE GFP DEVICES TO BE HIGHER THAN ALL DOWNSTREAM GFP AND NON-GFP DEVICES. THE GROUND FAULT CURRENT PICK-UP AND TIME DELAY SETTINGS SHALL BE ADJUSTED, PER THE MANUFACTURERS RECOMMENDATIONS, RESULTING FROM A CONTRACTOR/MANUFACTURER PREPARED COORDINATION STUDY - WHICH SHALL BE DOCUMENTED IN THE SHOP DRAWING SUBMITTAL.
 - DURING THE CONSTRUCTION PHASE OF THE PROJECT, ALL GROUND FAULT RELAYS SHALL BE SET AT THE SHORTEST AVAILABLE TIME DELAY.
 - AFTER ALL SETTINGS HAVE BEEN ADJUSTED, THE CONTRACTOR SHALL HAVE THE GROUND FAULT SYSTEM TESTED BY AN INDEPENDENT TESTING AGENCY PER NEC 230-95 (C). THIS TEST SHALL BE PERFORMED IN THE PRESENCE OF THE LOCAL AUTHORITY HAVING JURISDICTION AND THE TEST RESULTS SHALL BE DELIVERED TO THE ENGINEER OF RECORD.

EXISTING PANEL "A"													
MOUNTING SURFACE NEMA 3R NO			DOUBLE LUG NO 200% NO			Volts: 208Y/120V Phases: 3 Wires: 4			MAIN BUS MLO 200 A.I.C.				
FEED THRU MSB			IG BUS NO										
LOADS	DESCRIPTION	TRIP AMPS	POLES	A	B	C	A	B	C	POLES	TRIP AMPS	DESCRIPTION	LOADS
(E) LOADS	P 1 APPARATUS	20A	1	1500			1500			1	20A	HORE TOWER/SHOP EXIT	2 N
	P 3 APPARATUS	20A	1		1500			500		1	20A	LOCKER EXTERIOR	4 N
	P 6 APPARATUS	20A	1			1500						SPACE	6 N
	P 7 SLEEP	20A	1	500								SPACE	8 N
	P 9 CORRIDOR/STAIRS	20A	1		500							SPACE	10 N
	P 11 CRANCASE HEATER	20A	1			1200			900	1	20A	EXISTING LOAD	12 N
	P 13 BATTERY CGR	20A	1	1200			900			1	20A	EXISTING LOAD	14 N
	P 15 EF-1	20A	1		500			900		1	20A	EXISTING LOAD	16 N
	P 17 EF-2 ROOF	20A	1			500			900	1	20A	EXISTING LOAD	18 N
	P 19 CONTROL CIRCUIT EF1	20A	1	500			900			1	20A	EXISTING LOAD	20 N
	P 21 EXISTING LOAD	20A	1			800			900	2	30A	EXISTING LOAD	22 N
	P 23 EXISTING LOAD	20A	1			900			900				24 N
	N 25 AC-1	60A	3	2979			3200					AC-3	26 N
	N 27 DORM	60A	3	2979			3200			3	50A	OFFICE	28 N
	N 29			2979		2979	500		3200				30 N
	N 31 AC-2	60A	3	2979			2979		500	3	20A	EF-1	32 N
	N 33 LOUNGE	60A	3	2979			2979		500				34 N
	N 35												36 N
	N 37 SPACE						2667						38 N
	N 39 SPACE							2667		3	50	OVEN	40 N
	N 41 SPACE								2667				42 N
TOTAL LOAD DEMAND:				19125	17725	18725	93% PERCENT BALANCE						
TOTAL DEMAND AMPS:				159 A	148 A	156 A							
LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL LOADS									
CONTINUOUS LOAD = C	0	125%	0	TOTAL CONN. LOAD (VA): 46638									
KITCHEN EQUIPMENT LOAD = K	0	100%	0	TOTAL EST. DEMAND (VA): 46638									
LIGHTING LOAD = L	0	125%	0	TOTAL CONN. (AMPS): 129									
MOTOR LOAD = M	0	100%	0	TOTAL EST. DEMAND (AMPS): 129									
NON-CONTINUOUS LOAD = N	35638	100%	35638	TOTAL EST. HIGH LEG DEMAND (VA): 19125									
PANEL LOAD = P	11000	100%	11000	TOTAL EST. HIGH LEG DEMAND (AMPS): 159									
RECEPTACLE LOAD = R	0	100%	0										

- PANEL SCHEDULE NOTES:**
- PROVIDE LOCK-ON DEVICE.
 - PROVIDE LOCK-OFF DEVICE.
 - CIRCUIT BREAKER CONTROLLED BY ANSUL SYSTEM REFER TO HOOD FIRE SYSTEM INTERLOCK DIAGRAM.
 - PROVIDE GFCI TYPE DEVICE.
 - PROVIDE A RED CIRCUIT BREAKER.
 - PROVIDE A NEW BREAKER TO EXISTING TYPE AND A.I.C. RATING IN PANEL.
 - PROVIDE "HACR" TYPE CIRCUIT BREAKER FOR HVAC EQUIPMENT.
 - PROVIDE PHOTOCELL AND TIME CLOCK LIGHTING CONTROL REFER TO EXTERIOR LIGHTING CONTROL DIAGRAM.
 - EXISTING BREAKER
 - CIRCUIT MADE AVAILABLE THROUGH DEMOLITION

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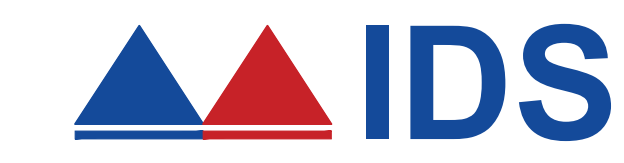


CITY OF TORRANCE
3031 TORRANCE BLVD.
TORRANCE, CA 90503

PROJECT NAME

**FIRE STATION #6
ROOF TOP UNIT
REPLACEMENT**
21401 DEL AMO CIRCLE
TORRANCE, CA 90501

CONSULTANT

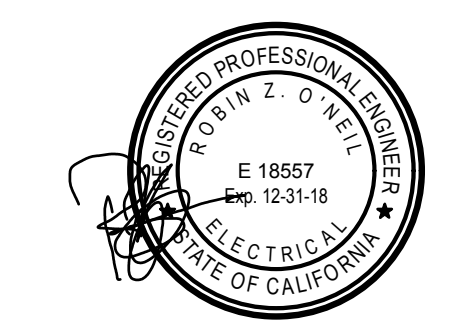


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Project # 17X036.00

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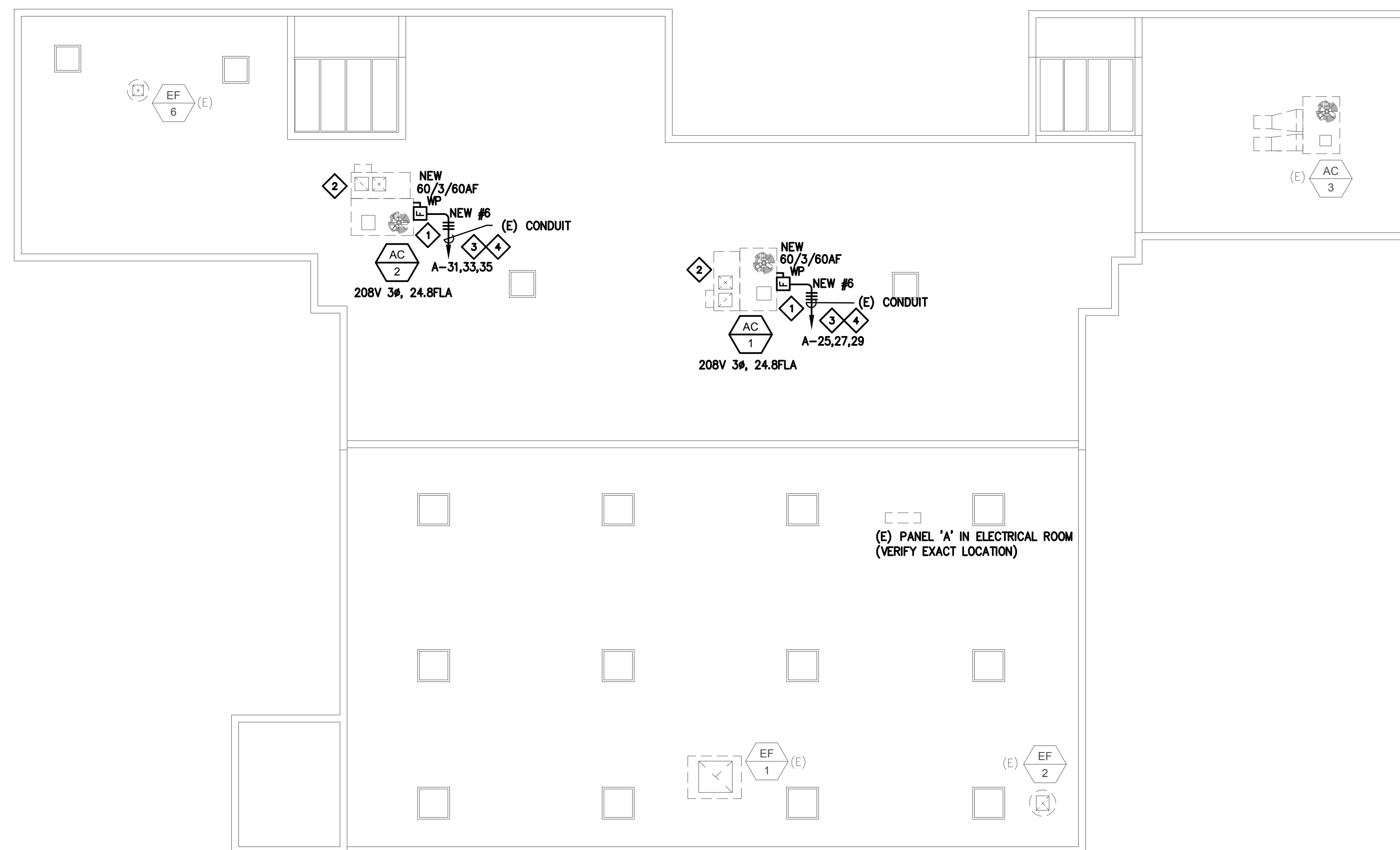
REV.	DESCRIPTION	DATE
	CITY SUBMITTAL	09/28/2017

SHEET TITLE

**ELECTRICAL SINGLE
LINE DIAGRAM
& PANEL SCHEDULE**

SHEET NUMBER

E0.2



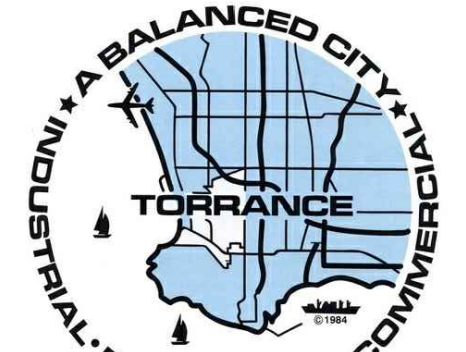
PLAN GENERAL NOTES

1. ELECTRICAL CONTRACTOR SHALL REFER TO MECHANICAL/PLUMBING AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND CHARACTERISTICS OF ALL EQUIPMENT LISTED IN SCHEDULE. ANY MODIFICATIONS AND/OR ADDITIONAL WORK NECESSARY SHALL BE INCLUDED IN THE BASE BID.
2. ALL TEMPERATURE CONTROL AND INTERLOCK CONDUIT AND WIRING SHALL BE BY ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE. SEE MECHANICAL/PLUMBING DRAWINGS FOR ALL INFORMATION.
3. ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL CONNECTION POINTS WITH THE EQUIPMENT INSTALLER PRIOR TO ROUGH-IN.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE LOCAL REMOTE DISCONNECTING MEANS FOR ALL ELECTRIC HEATING EQUIPMENT IF REQUIRED BY THE LOCAL ELECTRICAL CODE.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE THE ROUTING OF POWER WIRING TO ROOF-MOUNTED EQUIPMENT WITHIN MECHANICAL PIPE CURB ASSEMBLY. NO SEPARATE ROOF PENETRATIONS WILL BE PERMITTED. ALL WIRING SHALL BE BELOW THE ROOF IN AN ACCESSIBLE CEILING SPACE LOCATION.
6. ALL ROOF MOUNTED EQUIPMENT SHALL BE NEMA 3R RATED.
7. ALL DISCONNECT SWITCHES SHALL BE IP RATED IN ACCORDANCE WITH NEC 400-101.
8. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.

SHEET NOTES

- 1. PROVIDE NEW WEATHER PROOF FUSED DISC. SWITCH AND SEALTIE CONDUIT FOR POWER CONNECTION TO HVAC UNIT. COORDINATE WITH MECHANICAL CONTRACTOR.
- 2. PROVIDE WEATHER PROOF J-BOX AND 3/4" SEALTIE CONDUIT FOR MECHANICAL CONTROLS CONNECTION. COORDINATE WITH MECHANICAL CONTROLS CONTRACTORS.
- 3. REMOVE ALL EXISTING CONDUITORS AND DISCONNECTS.
- 4. TYPICAL ALL LINES, NEW CONDUITORS BACK IN EXISTING CONDUITS.

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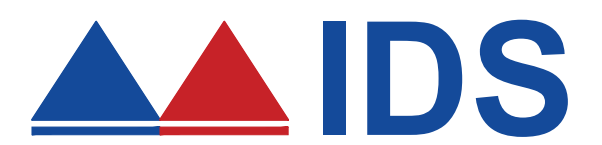


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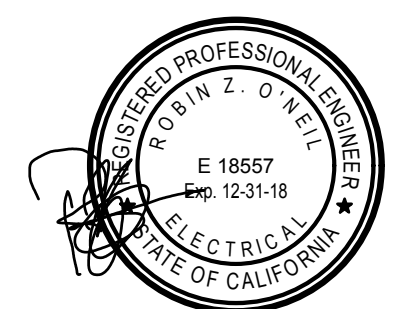
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REV.	DESCRIPTION	DATE
	CITY SUBMITTAL	09/28/2017

SHEET TITLE

ELECTRICAL ROOF
RENOVATION PLAN

SHEET NUMBER

E2.0

