

GENERAL ELECTRICAL NOTES

GENERAL: UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL WORK SHOWN ON ELECTRICAL DRAWINGS IS NEW WORK TO BE PROVIDED UNDER THIS CONTRACT.

COORDINATION: COORDINATE AND COOPERATE WITH ALL TRADES ON THE PROJECT. THE CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS INCLUDING ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL COORDINATE AND ADJUST ACCORDINGLY AS DIRECTED BY THE ENGINEER.

AS-BUILT DRAWINGS: SECURE AN EXTRA SET OF ELECTRICAL DRAWINGS TO BE KEPT ON SITE AND MARK DAILY, THE DRAWINGS IN RED AS THE PROJECT PROGRESSES IN ORDER TO KEEP AN ACCURATE RECORD OF ALL DEVIATIONS BETWEEN THE WORK SHOWN ON THE DRAWINGS AND THE WORK WHICH IS ACTUALLY INSTALLED. THESE MARKED DRAWINGS SHALL REFLECT ANY AND ALL CHANGES AND REVISIONS TO THE ORIGINAL DESIGN WHICH EXISTS IN THE COMPLETED WORK. DELIVER THE MARKED DRAWINGS TO THE OWNER AT PROJECT CLOSE-OUT.

TESTS: TEST ALL WIRING FOR CONTINUITY AND GROUNDS BEFORE CONNECTING ANY FIXTURES OR DEVICES. PERFORM INSULATION RESISTANCE TESTS ON ALL WIRING #6 OR LARGER TO INSURE THAT ALL PORTIONS ARE FREE FROM SHORT-CIRCUITS AND GROUNDS.

INSPECTIONS: ARRANGE ALL NECESSARY INSPECTIONS. DELIVER ALL REQUIRED INSPECTION CERTIFICATES TO THE OWNER.

GROUNDING: PROVIDE GROUNDING IN ACCORDANCE WITH THE NEC FOR THE ENTIRE ELECTRICAL SYSTEM INCLUDING EQUIPMENT FRAMES CONDUITS, SWITCHES, CONTROLLERS, WIRE-WAYS, NEUTRAL CONDUCTORS, AND OTHER EQUIPMENT. PROVIDE A GROUNDING CONDUCTOR IN ALL POWER CONDUITS.

LABELS: PROVIDE LABELS FOR ALL PANELBOARDS, CABINETS, SAFETY SWITCHES, MOTOR-DISCONNECT SWITCHES, AND MOTOR CONTROLLERS. LABELS SHALL BE MACHINE ENGRAVED, LAMINATED PLASTIC, PERMANENTLY ATTACHED WITH SELF-TAPPING SCREWS OR RIVETS. DO NOT USE SELF-ADHESIVE LABELS. LABEL SHALL INDICATE EQUIPMENT DESIGNATION AND ASSOCIATED PANEL AND CIRCUIT THAT SERVES IT.

J-BOX LABELING: LABEL ALL JUNCTION BOXES WITH PERMANENT MARKER IDENTIFYING CIRCUIT NUMBER AND PANELBOARD OF CIRCUITS WITHIN.

PANEL DIRECTORY: PROVIDE TYPEWRITTEN PANELBOARD DIRECTORY CARD IN EACH PANELBOARD WITH CIRCUIT LOAD INFORMATION AND ROOM NUMBER CLEARLY IDENTIFIED. USE ACTUAL ROOM NUMBERS IN THE BUILDING, NOT THE ROOM NUMBERS SHOWN ON THE CONTRACT DRAWINGS, AS THEY ARE OFTEN DIFFERENT.

CONDUCTORS: IN SITUATIONS WHERE CONDUCTOR SIZES AND/OR QUANTITIES OF PARALLEL SETS HAVE BEEN INCREASED DUE TO VOLTAGE DROP OR FOR OTHER REASONS, CONTRACTOR SHALL PROVIDE THE APPROPRIATE LUG SIZES/QUANTITIES WITHIN THE EQUIPMENT CONNECTED (SWITCHBOARD, PANELBOARD, DISCONNECT SWITCH, TRANSFER SWITCH ETC.) TO PERMIT SATISFACTORY CONNECTION OF THE INDICATED CONDUCTORS. WHERE SUFFICIENT LUG SIZES AND/OR QUANTITIES CANNOT BE PROVIDED TO ACCOMMODATE THE CONDUCTORS INDICATED, THEN PROVIDE REDUCING ADAPTERS, PIN TERMINALS, OR A JUNCTION BOX TO SPLICE LARGER CONDUCTORS TO APPROPRIATELY SIZED SMALLER CONDUCTORS TO FIT INTO THE LUGS PROVIDED. ALL CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE NEC.

CONNECTION DETAILS: SECURE APPROVED SHOP DRAWINGS SHOWING WIRING DIAGRAMS, ROUGH-IN AND HOOK UP DETAILS FROM OTHER INVOLVED CONTRACTORS FOR EQUIPMENT WHICH MUST BE CONNECTED ELECTRICALLY.

WORKING CLEARANCE: COORDINATE FINAL LOCATIONS OF ELECTRICAL EQUIPMENT WITH MECHANICAL EQUIPMENT, ETC. AND ASSURE WORKING CLEARANCE REQUIRED BY NEC WILL BE MET. SUFFICIENT ACCESS AND WORKING SPACE SHALL BE PROVIDED AND MAINTAINED AROUND ELECTRICAL EQUIPMENT AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF EQUIPMENT PROVIDED AND INSTALLED BY OTHER TRADES.

LIGHTING ARRANGEMENT: ARRANGE LIGHTING FIXTURES IN ACCORDANCE WITH THE ARCHITECTURAL REFLECTED CEILING PLANS.

LIGHTING COORDINATION: COORDINATE LIGHTING FIXTURES WITH ACCESS PANELS, ETC. PROVIDE FIXTURE MOUNTING BRACKETS, ACCESSORIES, PLASTER FRAMES, ETC., SUITABLE FOR THE CEILING TYPES INDICATED ON THE ARCHITECTURAL PLANS.

MATERIAL COORDINATION: VERIFY CEILING AND WALL CONSTRUCTION AND MATERIAL PRIOR TO ORDERING LIGHT FIXTURES OR OTHER DEVICES TO INSURE PROPER FIXTURE OR DEVICE IS FURNISHED TO MATCH CONSTRUCTION.




MOUNTING HEIGHTS: MOUNTING HEIGHTS INDICATED ARE FROM THE FINISHED FLOOR TO THE CENTERLINE OF THE WIRING DEVICE UNLESS OTHERWISE NOTED. MOUNTING HEIGHTS OF LIGHTING FIXTURES ARE TO THE BOTTOM OF THE FIXTURE UNLESS OTHERWISE NOTED.

DEVICE LOCATIONS: COORDINATE LOCATIONS OF SWITCHES, AND RECEPTACLES WITH OTHER WALL MOUNTED DEVICES SUCH AS THERMOSTATS AND CONTROL STATIONS.





CLEAN UP: ON PROJECT CLOSE-OUT CLEAN ALL ELECTRICAL DEVICES, LIGHTING FIXTURES, LAMPS AND LENSES, AND REMOVE ALL PAINT SPATTERS FROM DEVICES, FIXTURES AND PLATES. REPLACE ALL INOPERATIVE LAMPS.

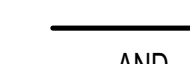
ELECTRICAL LEGEND

LIGHTING

-  FLUORESCENT LIGHTING FIXTURE
-  LIGHTING FIXTURE TYPE SYMBOL, SEE LIGHTING FIXTURE DETAIL THIS SHEET.
-  SINGLE POLE SWITCH, 20A, 120/277V, 46" AFF UON.

POWER


-  WEATHER RESISTANT GFI RECEPTACLE WITH WEATHERPROOF WHILE-IN-USE COVER, 20A, 120V, 36" AFF, UON.
-  MOTOR CONNECTION
-  ELECTRICAL PANELBOARD
-  WEATHERPROOF JUNCTION BOX


 ELECTRICAL CIRCUIT RUN IN CONDUIT AND CIRCUIT HOMERUN TO PANELBOARD (PANEL AND CIRCUIT DESIGNATION AS INDICATED). AS A MINIMUM CONDITION, EACH SINGLE PHASE CIRCUIT SHALL HAVE 1 #12 PHASE CONDUCTOR, 1 #12 NEUTRAL CONDUCTOR AND 1 #12 GROUNDING CONDUCTOR IN 3/4" CONDUIT. PROVIDE ADDITIONAL PHASE CONDUCTORS AS REQUIRED FOR "MULTIPLE PHASED" ELECTRICAL LOADS. PROVIDE NEUTRAL CONDUCTOR TO ALL WALL SWITCH OUTLET BOXES WHETHER REQUIRED OR NOT. PROVIDE ADDITIONAL "SWITCH LEG" CONDUCTORS TO PROVIDE THE LIGHT FIXTURE CONTROL INDICATED. MULTIPLE SINGLE PHASE CONDUCTORS MAY BE GROUPED TOGETHER IN A COMMON CONDUIT IN ACCORDANCE WITH THE NEC AND AT THE CONTRACTOR'S DISCRETION. GROUNDING CONDUCTORS MAY BE SHARED AS ALLOWED BY THE NEC. NEUTRAL CONDUCTORS SHALL NOT BE SHARED. CONDUIT LARGER THAN 3/4" AND CONDUCTORS LARGER THAN #12 SHALL BE AS INDICATED.

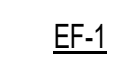
 DENOTES ELECTRICAL CIRCUIT RUN 24" BELOW FINISHED GRADE

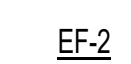
 EXISTING PULL BOX


HVAC LEGEND


 PROVIDE COOLING ONLY ADJUSTABLE LINE VOLTAGE THERMOSTAT WITH AUTO/ON/OFF CONTROL. MOUNT APPROXIMATELY 48" AFF. UPON A RISE IN SPACE TEMPERATURE ABOVE 77°F, THE FAN SHALL BE ENERGIZED. UPON A FALL IN THE SPACE TEMPERATURE BELOW 72°F, THE OPPOSITE SHALL OCCUR.


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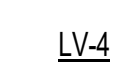
 WALL MOUNTED PROPELLER EXHAUST FAN - GREENHECK SE OR APPROVED EQUAL, 55SCFM, 0.375" WG ESP, 1/4 HP, 120V/1Ø. PROVIDE WALL MOUNTING SLEEVE, INTEGRAL DISCONNECT, GRAVITY DAMPER AND SPEED CONTROLLER. COORDINATE EF MOUNTING HEIGHT WITH LOUVER.

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 16"x24" EXTRUDED ALUMINUM STATIONARY SUPPLY LOUVER, WITH BIRDSCREEN, MIN FREE AREA = 0.9 NET SQUARE FEET. RUSKIN MODEL EZF3750DX OR APPROVED EQUAL. MOUNT BOTTOM OF LOUVER AT APPROXIMATELY 9'-4" AFF.

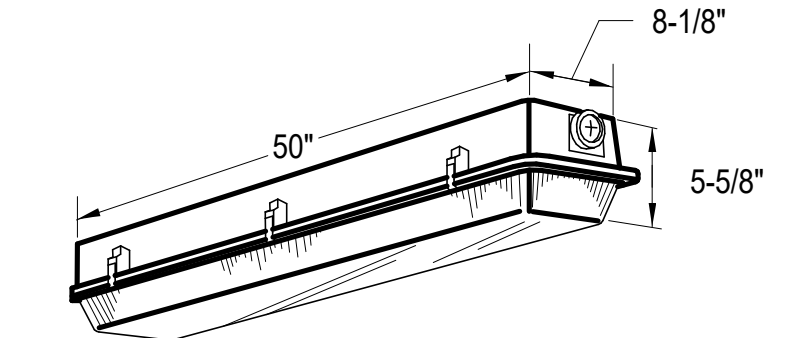
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ABBREVIATIONS


- A AMPERE
- ACCU AIR COOLED CONDENSING UNIT
- AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- AHU AIR HANDLING UNIT
- AIC AMPERE INTERRUPTING CAPACITY
- C CONDUIT
- DVP DOMINION VIRGINIA POWER
- EBU EMERGENCY BATTERY UNIT
- EC EMPTY CONDUIT
- ECB ENCLOSED CIRCUIT BREAKER
- ETR EXISTING TO REMAIN
- FHP FRACTIONAL AC HORSEPOWER
- FLA FULL LOAD AMPS
- GFI GROUND FAULT INTERRUPTER
- GND GROUND
- HP HORSE POWER/HEAT PUMP
- KAIC THOUSAND AMPERE INTERRUPTING CAPACITY
- KVA KILO-VOLT-AMPERES
- KW KILO-WATTS
- MA MINIMUM CIRCUIT AMPS
- MCB MAIN CIRCUIT BREAKER
- MFR MANUFACTURER
- MLO MAIN LUGS ONLY
- MTD MOUNTED
- NEC NATIONAL ELECTRICAL CODE
- NF NON-FUSED
- NIC NOT IN CONTRACT
- OFCI OWNER FURNISHED, CONTRACTOR INSTALLED
- P POLE
- Ø PHASE
- TBB TELEPHONE BACKBOARD
- TYP TYPICAL
- UON UNLESS OTHERWISE NOTED
- V VOLT(S)
- W WATTS/WIRE
- WP WEATHERPROOF



LUMINAIRE DESCRIPTION:

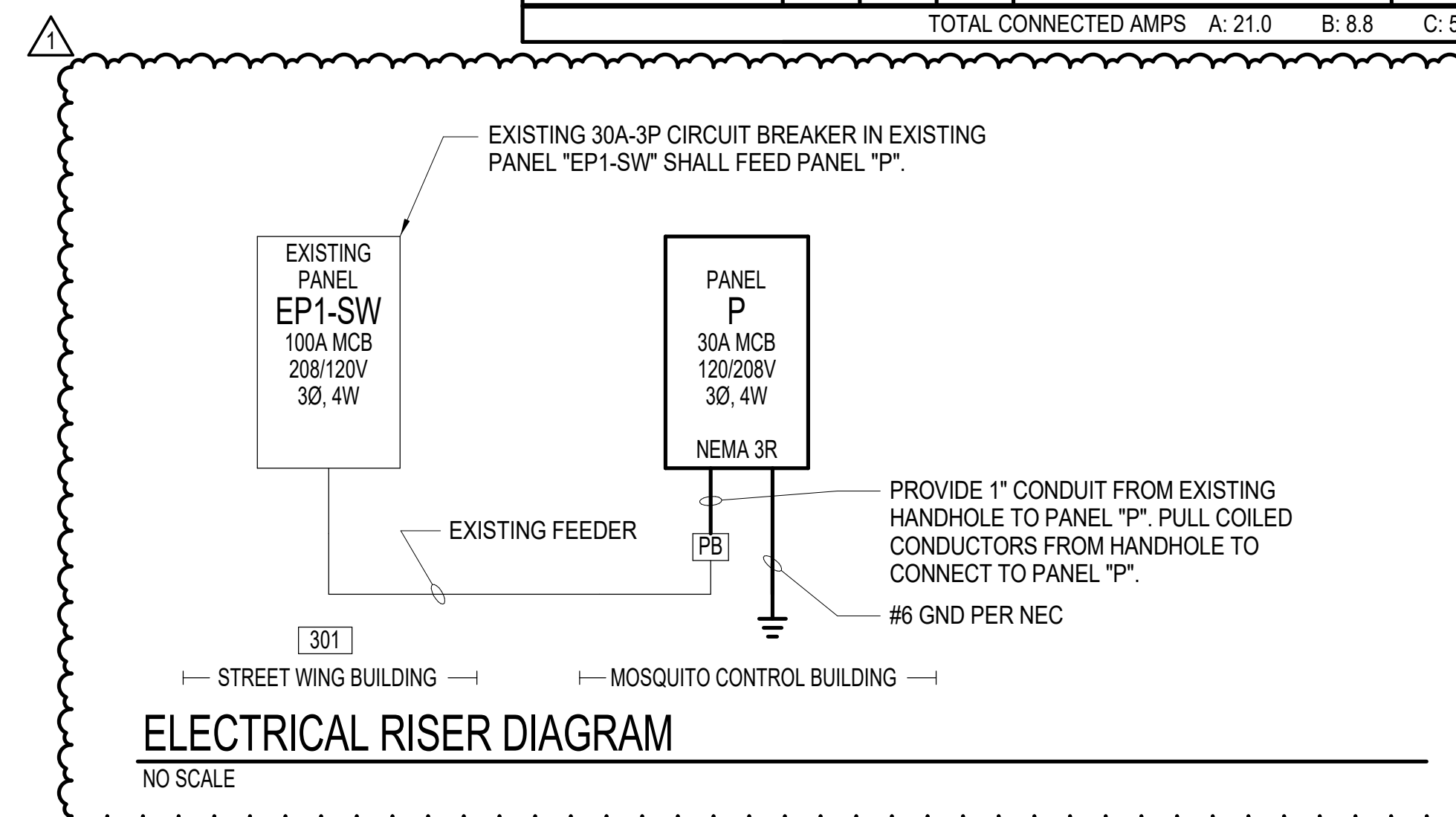
- HOUSING SHALL BE FORMED FROM HIGH IMPACT RESISTANT, UV STABILIZED REINFORCED POLYESTER FIBERGLASS. PROVIDE AN INTERNALLY MOUNTED STEEL CHANNEL TO HOUSE THE BALLAST AND TO MOUNT LAMP SOCKETS. STEEL SHALL BE 0.026" THICK (MINIMUM), CHEMICALLY TREATED FOR RUST PREVENTION, AND PAINTED WITH A BAKED WHITE ENAMEL FINISH.
- FIXTURE SHALL BE FULLY GASKETED AND UL APPROVED FOR WET LOCATIONS.
- FIXTURE SHALL BE CAPABLE OF CONTINUOUS ROW AND SINGLE UNIT PLACEMENT WITH PENDANT OR SURFACE MOUNTING.
- LENS SHALL BE A HIGH IMPACT ACRYLIC DIFFUSER WITH STAINLESS STEEL CAPTIVE LATCHES TO SECURE THE DIFFUSER TO THE HOUSING.
- BALLAST SHALL BE ELECTRONIC, HIGH POWER FACTOR (> .90), WITH A THD <20%, AND DESIGNED FOR LOW TEMPERATURE STARTING. PROVIDE BALLAST WITH "FINGER SAFE" DISCONNECTING MEANS IN ACCORDANCE WITH NEC 410.73(G).
- SURFACE, CHAIN HUNG, OR PENDANT MOUNTED WITH RIGID STEM.

DETAIL BASED ON LITHONIA LIGHTING, "DMW" SERIES

TYPE	LAMP #	LAMP TYPE	INPUT WATTS	VOLTAGE	MOUNTING
	2	F32W T8	60	120/277	SURFACE, UNDERSIDE OF TRUSS

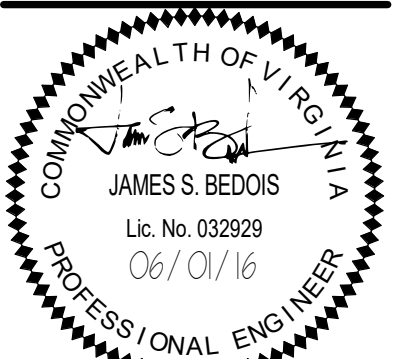
WET LOCATION FLUORESCENT

PANELBOARD P SCHEDULE													
SEE POWER RISER DIAGRAM FOR RATINGS													
LOAD SERVED	LOAD (AMPS)			BKR	CKT	PHASE	CKT	BKR	LOAD (AMPS)			LOAD SERVED	
	A	B	C						A	B	C		
RECEPTACLES	10.5			20/1P	1		2	20/1P	10.5			RECEPTACLES	
LIGHTING		3.0		20/1P	3		4	20/1P		5.8		EF-1	
SPARE				20/1P	5		6	20/1P			5.8	EF-2	
SPARE				20/1P	7		8	20/1P				SPARE	
SPARE				20/1P	9		10	20/1P				SPARE	
SPARE				20/1P	11		12	20/1P				SPARE	
TOTAL	10.5	3.0	0.0						10.5	5.8	5.8	TOTAL	
TOTAL CONNECTED AMPS A: 21.0 B: 8.8 C: 5.8													



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MOSQUITO CONTROL BUILDING
SUFFOLK PUBLIC WORKS
SUFFOLK, VA
LEGEND, NOTES AND ABBREVIATIONS



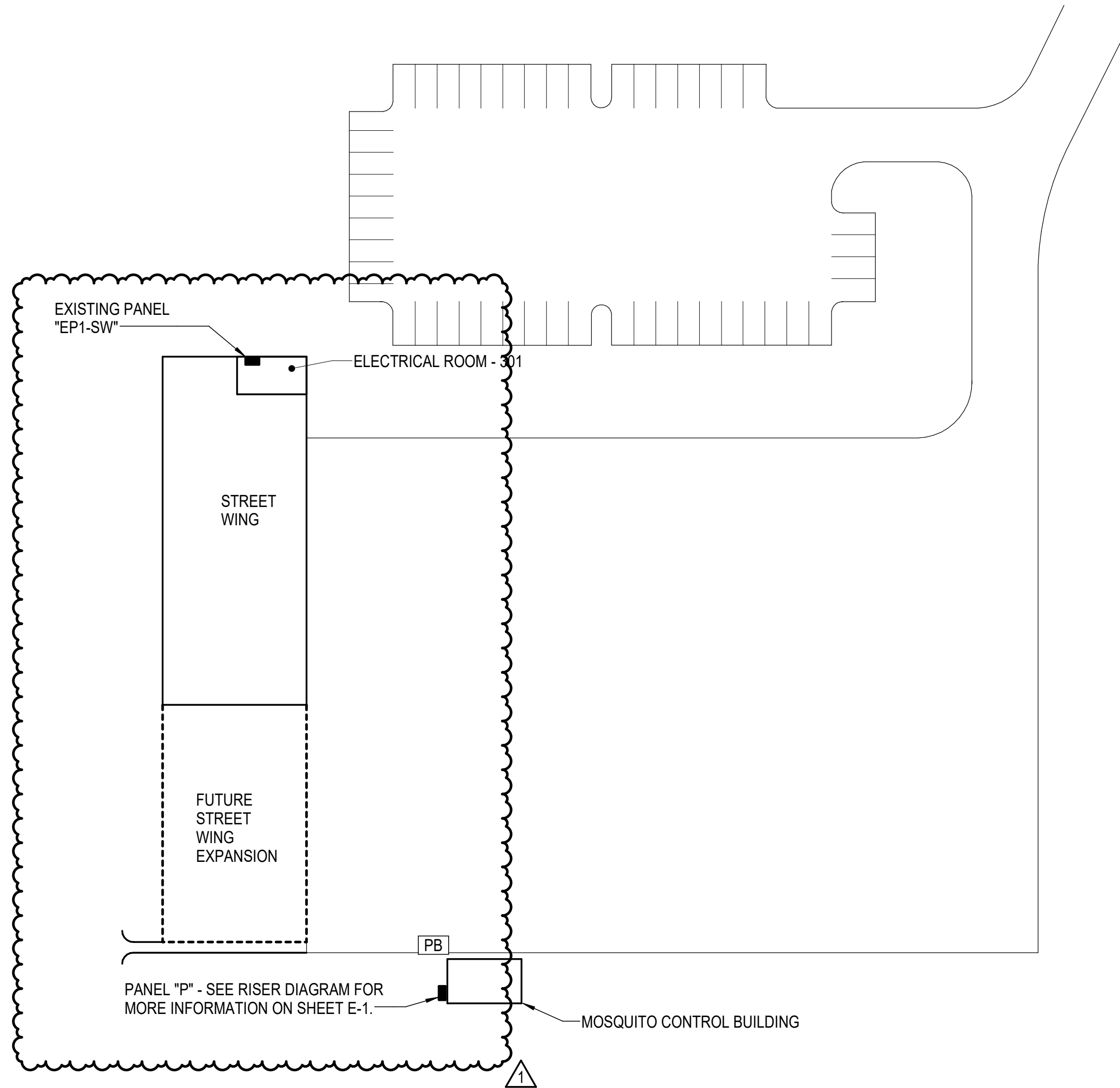
ISSUED FOR: OWNER REVIEW
MARK: 04/20/2016
DATE: 06/01/2016
PERMIT AND CONSTRUCTION
ADDENDUM #1
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07/25/2016

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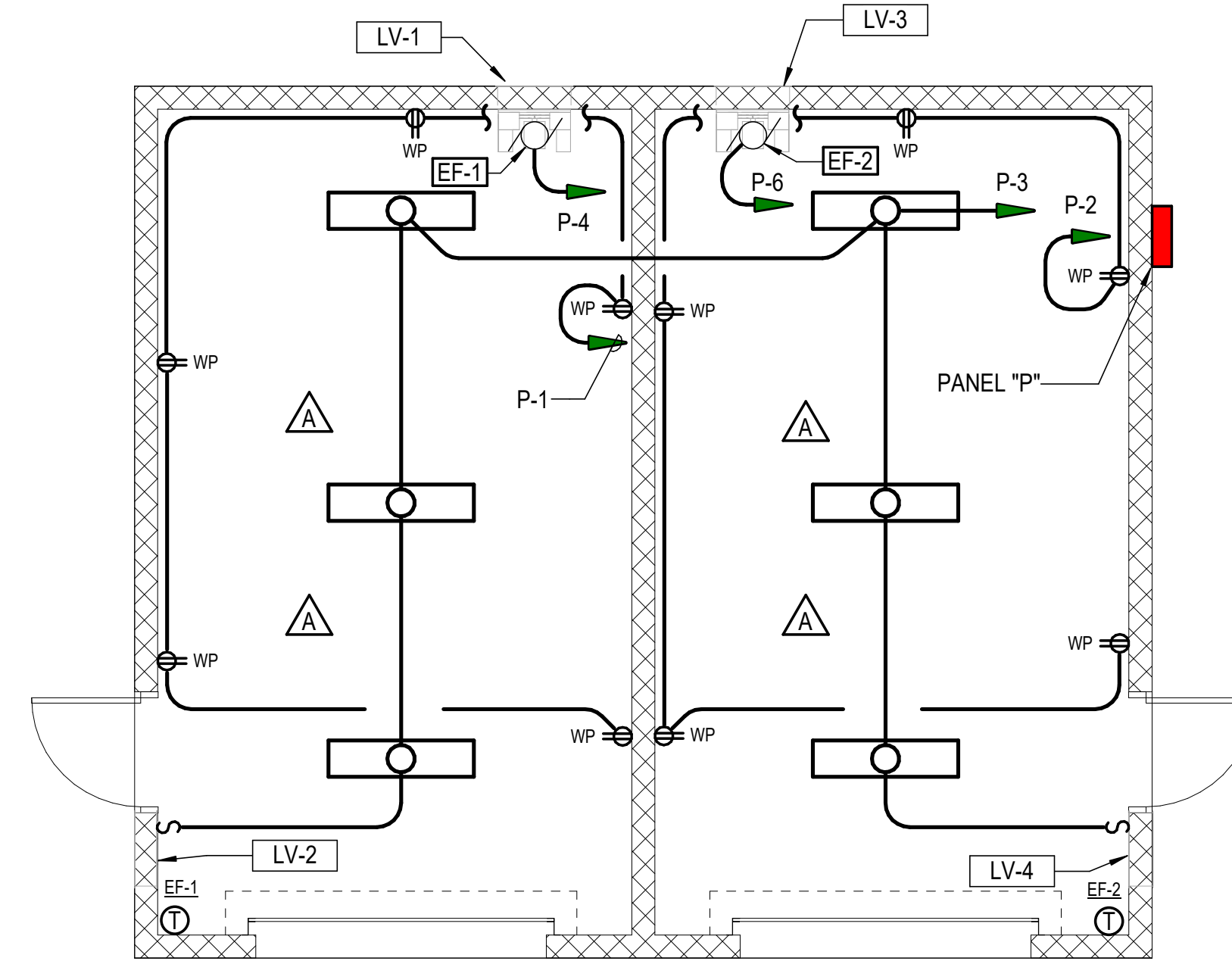
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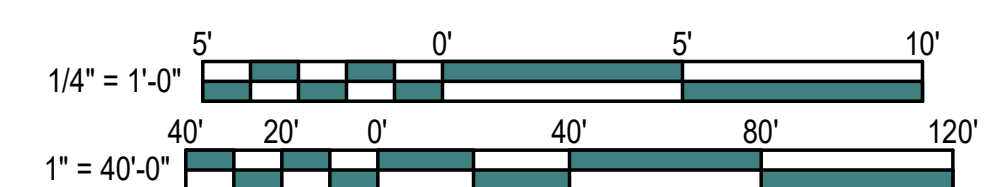


PARTIAL SITE PLAN
SCALE: 1" = 40'-0"



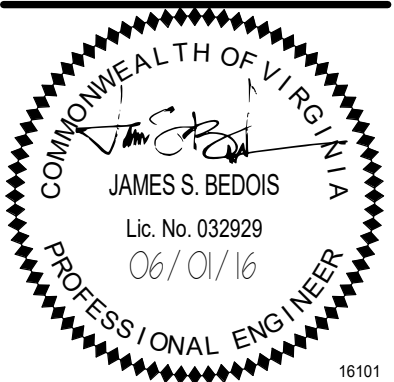
ELECTRICAL FLOOR PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE:



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MOSQUITO CONTROL BUILDING
SUFFOLK PUBLIC WORKS
SUFFOLK, VA
**ELECTRICAL FLOOR AND SITE
PLANS**



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OWNER REVIEW	04/20/2016	04/20/2016
PERMIT AND CONSTRUCTION	06/01/2016	06/01/2016
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SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

SECTION 260500 - GENERAL PROVISIONS

PART 1 - GENERAL

1.1 CODES AND STANDARDS - THE LATEST EFFECTIVE PUBLICATIONS OF ALL APPLICABLE STANDARDS, CODES, ETC., AS THEY APPLY, FORM PART OF THESE SPECIFICATIONS AS IF WERE WRITTEN FULLY HEREIN AND CONSTITUTE MINIMUM REQUIREMENTS. THE FOLLOWING WILL BE REFERRED TO THROUGHOUT IN ABBREVIATED FORMS.

- A. NATIONAL ELECTRICAL CODE, (NFPA 70) (NEC).
- B. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE).
- C. RULES AND REGULATIONS OF LOCAL ELECTRIC UTILITY COMPANY.
- D. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA).
- E. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
- F. APPLICABLE LOCAL CODES.
- G. UNDERWRITER'S LABORATORIES, INC. (UL).
- H. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).
- I. VIRGINIA UNIFORM STATEWIDE BUILDING CODE

1.2 SCOPE OF WORK - PROVIDE ALL WORK REQUIRED FOR THIS DIVISION INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, APPURTENANCES AND SERVICES TO PROVIDE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS AND SPECIFIED IN THIS DIVISION OF THE SPECIFICATIONS. THE WORD "PROVIDE" SHALL MEAN "FURNISH AND INSTALL COMPLETE AND READY FOR USE".

1.3 THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO DETERMINE THE EXTENT OF THE WORK. LACK OF KNOWLEDGE OF EXISTING CONDITIONS WILL NOT BE CONSIDERED A BASIS FOR CHANGE ORDERS. PRIOR TO ORDERING EQUIPMENT, VERIFY THAT EQUIPMENT TO BE PROVIDED UNDER THIS CONTRACT IS ACCEPTABLE AND CAN FIT INTO BLDG. AND ROOM. EXPENSE INCURRED BY THE CONTRACTOR, WHICH IN THE ENGINEER'S OPINION COULD HAVE BEEN AVOIDED BY THIS STEP, SHALL NOT BE A BASIS FOR CHANGE ORDERS.

1.4 DRAWINGS AND SPECIFICATIONS - THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT, CHARACTER AND ARRANGEMENT OF EQUIPMENT, FIXTURES AND CONDUIT AND WIRING SYSTEMS. IT IS THE INTENTION OF THESE SPECIFICATIONS AND DRAWINGS TO FULLY COVER ALL WORK AND MATERIALS FOR A COMPLETE, FIRST-CLASS ELECTRICAL INSTALLATION, AND ANY DEVICES SUCH AS PULL BOXES AND DISCONNECT SWITCHES, USUALLY EMPLOYED IN THIS CLASS OF WORK, THOUGH NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS OR IN THIS SPECIFICATION, BUT WHICH MAY BE NECESSARY FOR THE SATISFACTORY COMPLETION OF THE WORK, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS A PART OF HIS TOTAL WORK UNDER THIS DIVISION. CONSULT THE SPECIFICATIONS AND DRAWINGS OF ALL OTHER TRADES AND PERFORM ALL ELECTRICAL WORK REQUIRED THEREIN. COOPERATE WITH ALL OTHER CONTRACTORS OR SUBCONTRACTORS TO FURNISH COMPLETE WORKABLE SYSTEMS.

1.5 DURING CONSTRUCTION, KEEP AN ACCURATE RECORD OF ALL DEVIATIONS BETWEEN THE WORK AS SHOWN ON THE CONTRACT DRAWINGS AND THAT WHICH IS ACTUALLY INSTALLED ON A SET OF BLUE LINE PRINTS OF THE ELECTRICAL DRAWINGS, AND NOTE CHANGES THEREON WITH RED MARKS, IN A NEAT AND ACCURATE MANNER. WHEN ALL REVISIONS HAVE BEEN SHOWN ON THESE PRINTS TO INDICATE THE WORK AS FINALLY INSTALLED, THE PRINTS SHALL BE DELIVERED TO THE ENGINEER, BEFORE FINAL PAYMENT.

1.6 PERMITS, INSPECTION AND TESTS - THE RIGHT IS RESERVED TO INSPECT AND TEST ANY PORTION OF THE INSTALLATION/EQUIPMENT DURING THE PROGRESS OF ITS INSTALLATION. THIS CONTRACTOR SHALL TEST ALL WIRING FOR CONTINUITY AND GROUNDS BEFORE CONNECTING ANY FIXTURES OR DEVICES. THIS CONTRACTOR SHALL TEST THE ENTIRE SYSTEM WHEN THE WORK IS FINALLY COMPLETED TO INSURE THAT ALL PORTIONS ARE FREE FROM SHORT CIRCUITS AND GROUNDS.

1.7 SECURE AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS. INSPECTION CERTIFICATES FROM LOCAL AUTHORITIES HAVING JURISDICTION SHALL BE DELIVERED TO THE OWNER BEFORE FINAL PAYMENT.

1.8 SUBMITTALS - SUBMIT SHOP DRAWINGS, PRODUCT DATA AND SAMPLES WITHIN THIRTY (30) DAYS OF AWARD OF CONTRACT AND IN ACCORDANCE WITH THE GENERAL CONDITIONS AND SUPPLEMENTARY CONDITIONS. SUBMITTALS ARE REQUIRED FOR ALL ITEMS PROVIDED UNDER THIS SPECIFICATION. REVIEW OF SUBMITTALS BY THE ENGINEER AND ANY ASSOCIATED ACTION TAKEN BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF ANY REQUIREMENTS SET FORTH BY THE CONTRACT DOCUMENTS.

PART 2 - PRODUCTS

2.1 MANUFACTURING STANDARDS - MATERIALS SHALL BE NEW AND APPROVED AND LABELED BY UL WHEREVER STANDARDS HAVE BEEN ESTABLISHED BY THAT AGENCY. DEFECTIVE EQUIPMENT OR EQUIPMENT DAMAGED IN THE COURSE OF INSTALLATION OR TEST SHALL BE REPLACED OR REPAIRED IN A MANNER MEETING THE APPROVAL OF THE OWNER. ALL ITEMS OF THE SAME TYPE AND RATING SHALL BE IDENTICAL.

2.2 TRADE NAMES - UNLESS SPECIFICALLY IDENTIFIED OTHERWISE, MANUFACTURERS' NAMES AND CATALOG NUMBERS INDICATED HEREIN AND ON THE DRAWINGS ARE NOT INTENDED TO BE PROPRIETARY DESIGNATIONS. THEY ARE TO INDICATE GENERAL TYPE AND QUALITY OF MATERIALS AND EQUIPMENT REQUIRED. EQUIPMENT AND MATERIALS BY OTHER MANUFACTURERS WHICH IN THE OPINION OF THE ENGINEER ARE OF EQUAL QUALITY AND WHICH WILL PRODUCE THE SAME RESULTS WILL BE CONSIDERED ACCEPTABLE.

2.3 MOTORS - MOTORS SHALL HAVE DISCONNECTING MEANS AND CONTROLLERS. CONTROLLERS SHALL HAVE SOLID STATE OVERLOAD PROTECTION WITH PHASE OUTAGE AND PHASE REVERSAL PROTECTION.

2.4 DISCONNECT SWITCHES AND POWER WIRING UP TO AND INCLUDING MOTOR CONNECTIONS FOR ALL EQUIPMENT PROVIDED UNDER OTHER DIVISIONS OF THIS SPECIFICATION SHALL BE INCLUDED IN THIS DIVISION. WHERE MANUAL MOTOR CONTROL SWITCHES FOR SINGLE PHASE MOTORS ARE INDICATED, THEY SHALL BE PROVIDED AND WIRED COMPLETE UNDER THIS DIVISION. MOTOR CONTROLLERS AND MOTOR STARTERS FURNISHED UNDER OTHER DIVISIONS SHALL BE SET IN PLACE AND CONNECTED TO SOURCE AND LOAD UNDER THIS DIVISION. IN GENERAL, MOTORS WILL BE PROVIDED WITH THE EQUIPMENT THEY DRIVE AND ARE NOT PART OF THIS WORK UNDER THIS DIVISION, EXCEPT THAT THEY SHALL BE CONNECTED HEREUNDER.

2.5 OBTAIN APPROVED SHOP DRAWINGS SHOWING WIRING DIAGRAMS, CONNECTION DIAGRAMS, ROUGHING-IN AND HOOKUP DETAILS, FROM OTHER INVOLVED CONTRACTORS FOR ALL EQUIPMENT AND COMPLY THEREWITH.

2.6 CONTROL, INTERLOCK, AND INTERNAL EQUIPMENT WIRING REGARDLESS OF VOLTAGE WILL BE PROVIDED UNDER THE RESPECTIVE DIVISION WHERE THE EQUIPMENT IS SHOWN UNLESS SPECIFICALLY SHOWN HERE.

2.7 SHORT CIRCUIT RATING FOR ALL PANELBOARDS, ETC. SHALL BE SUITABLE TO ACCOMMODATE THE POWER COMPANY'S AVAILABLE FAULT CURRENT. CONTRACTOR SHALL PROVIDE LABEL ON SERVICE EQUIPMENT STATING AVAILABLE FAULT CURRENT AND THE DATE IT WAS CALCULATED.

2.8 GROUNDING - THE ENTIRE ELECTRICAL SYSTEM, INCLUDING EQUIPMENT FRAMES, CONDUIT, SWITCHES, CONTROLLERS, WIREWAYS, NEUTRAL CONDUCTORS, AND ALL OTHER SUCH EQUIPMENT SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED IN ACCORDANCE WITH THE NEC. GROUND RODS SHALL BE COPPER CLAD STEEL, 3/4" DIAMETER BY 10'-0" LONG. GROUNDING OF EACH TRANSFORMER SECONDARY SHALL BE PROVIDED AND EACH SHALL BE CONSIDERED AS A SEPARATE SERVICE GROUND. PROVIDE A SEPARATE GROUND CONDUCTOR IN ALL BRANCH CIRCUIT CONDUITS SIZED IN ACCORDANCE WITH THE NEC.

2.9 SCHEDULE OF WORK - THE SCHEDULE OF THE ELECTRICAL WORK SHALL BE ARRANGED TO SUIT THE PROGRESS OF WORK BY THE OTHER TRADES AND SHALL IN NO WAY RETARD PROGRESS OF CONSTRUCTION OF THE PROJECT.

2.10 WORK UNDER THIS DIVISION SHALL PROCEED IN ADVANCE OF THE WORK OF OTHERS WHENEVER POSSIBLE. ELIMINATING ALL CUTTING AND PATCHING. WHEN SUCH PROCEDURE IS IMPOSSIBLE, CUTTING AND PATCHING SHALL BE DONE IN AN APPROVED MANNER. CUTTING SHALL NOT ENDANGER STRUCTURAL INTEGRITY IN ANY WAY. PATCHING SHALL EXACTLY MATCH CONTIGUOUS WORK. ACTUAL WORK OF CUTTING AND PATCHING OF EXISTING SURFACES SHALL BE PERFORMED BY THE SUBCONTRACTOR WHO ORIGINALLY PREPARED THESE SURFACES, E.G., CUTTING AND PATCHING OF MASONRY WALL WILL BE PERFORMED BY THE MASONRY SUBCONTRACTOR. COSTS OF SUCH CUTTING AND PATCHING SHALL BE BORNE BY THE ELECTRICAL SUBCONTRACTOR. CUTTING SHALL BE CAREFULLY DONE AND DAMAGE TO BUILDING, PIPING, WIRING OR EQUIPMENT AS A RESULT OF CUTTING SHALL BE REPAIRED BY SKILLED MECHANICS OF TRADE INVOLVED.

2.11 STORAGE AND MATERIALS - SPACE WILL BE ASSIGNED TO THE CONTRACTOR BY THE OWNER FOR THE STORAGE OF MATERIALS. THIS CONTRACTOR WILL BE RESPONSIBLE FOR THE PROTECTION AND SAFEKEEPING OF MATERIALS, TOOLS, AND EQUIPMENT. ALL MATERIALS AND EQUIPMENT SHALL BE KEPT IN ITS ASSIGNED PLACE UNTIL THE TIME OF ITS INSTALLATION. EXCESS MATERIALS, DIRT AND REFUSE SHALL BE PROMPTLY REMOVED FROM THE WORK SITE.

2.12 LABELING OF EQUIPMENT

A. ALL PANELBOARDS AND MOTOR CONTROLLERS SHALL BE IDENTIFIED BY MACHINE ENGRAVED LAMINATED PLASTIC DESIGNATION PLATES PERMANENTLY ATTACHED THERETO WITH SELF-TAPPING SCREWS OR RIVETS. ALL COMPONENT PARTS OF EACH ITEM OF EQUIPMENT OR DEVICE SHALL BEAR THE MANUFACTURER'S NAMEPLATE, GIVING NAME OF MANUFACTURER, DESCRIPTION, SIZE, TYPE, SERIAL AND MODEL NUMBER AND ELECTRICAL CHARACTERISTICS IN ORDER TO FACILITATE MAINTENANCE OR REPLACEMENT.

B. ALL PANELBOARDS SHALL BE FIELD MARKED TO WARN PERSONNEL OF THE POTENTIAL FOR ARC FLASH. LABELS SHALL STATE "WARNING - ARC FLASH AND SHOCK HAZARD APPROPRIATE PPE REQUIRED".

2.13 COORDINATION - COOPERATE AND COORDINATE EFFORTS WITH ALL CONTRACTORS ON THE PROJECT. THIS IS ESPECIALLY IMPORTANT IN DETERMINING EXACT LOCATIONS OF ALL SWITCHES, RECEPTACLES AND LIGHTING FIXTURES. ARRANGE LIGHTING FIXTURES IN ACCORDANCE WITH THE ARCHITECTURAL REFLECTED CEILING PLANS UNLESS OTHERWISE INDICATED. COORDINATE LIGHTING FIXTURE LOCATIONS WITH GRILLES, DIFFUSERS, ACCESS PANELS, ETC. VERIFY CEILING AND WALL CONSTRUCTION AND MATERIAL PRIOR TO ORDERING LIGHTING FIXTURES OR OTHER DEVICES TO ENSURE PROPER FIXTURE OR DEVICE IS FURNISHED TO MATCH CONSTRUCTION. THIS VERIFICATION MUST BE EXECUTED REGARDLESS OF INFORMATION PLACED ON THE DRAWINGS. ANY COST INCURRED WHICH IN THE OPINION OF THE OWNER, COULD HAVE BEEN AVOIDED BY THIS STEP SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

2.14 GUARANTEE OF WORK - CONTRACTOR GUARANTEES BY HIS ACCEPTANCE OF THE CONTRACT THAT ALL WORK INSTALLED IS FREE FROM ANY AND ALL DEFECTS IN WORKMANSHIP AND/OR MATERIALS, AND THAT THE APPARATUS WILL DEVELOP CAPACITIES AND CHARACTERISTICS SPECIFIED, AND THAT IF, DURING THE PERIOD OF ONE YEAR OR AS OTHERWISE SPECIFIED, FROM DATE OF CERTIFICATE OF COMPLETION AND ACCEPTANCE OF THE WORK ANY SUCH DEFECTS IN WORKMANSHIP, MATERIAL OR PERFORMANCE APPEAR, HE WILL, WITHOUT COST TO THE OWNER, REMEDY SUCH DEFECTS WITHIN A REASONABLE TIME TO BE SPECIFIED IN NOTICE. IN DEFAULT THEREOF, THE OWNER MAY HAVE SUCH WORK DONE AND CHARGE COST TO CONTRACTOR. EQUIPMENT GUARANTEES FROM DATE OF "START-UP" WILL NOT BE RECOGNIZED.

PART 3 - EXECUTION

3.1 THE INSTALLATION SHALL BE COMPLETE INCLUDING BUT NOT LIMITED TO THE REQUIREMENTS INDICATED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.

3.2 CONTRACTOR SHALL THOROUGHLY COORDINATE AND COMPLY WITH THE MANUFACTURERS REQUIREMENTS. COORDINATION SHALL BE ACCOMPLISHED PRIOR TO COMMENCING WORK.

3.3 ALL WORK SHALL BE ACCOMPLISHED IN A NEAT AND WORKMANLIKE MANNER CONSISTENT WITH COMMERCIAL CONSTRUCTION PRACTICES, CODE REQUIREMENTS AND THE LOCAL AUTHORITY HAVING JURISDICTION.

SECTION 260519 - CONDUCTORS

A. CONDUCTORS AND INSULATION - WIRE AND CABLE SHALL BE SOFT DRAWN, ANNEALED COPPER WITH 600 VOLT COLOR CODED INSULATION. MINIMUM WIRE SIZE SHALL BE #12 AWG. INSULATION FOR BRANCH CIRCUITS AND FEEDERS SHALL BE TYPE THHN-2-THWN-2 OR XHHW-2. CONDUCTORS NO. 8 AWG AND LARGER DIAMETER SHALL BE STRANDED. CONDUCTORS NO. 10 AWG AND SMALLER DIAMETER SHALL BE SOLID, EXCEPT THAT CONDUCTORS FOR REMOTE-CONTROL AND SIGNAL CIRCUITS, CLASSES 1, 2, AND 3, MAY BE STRANDED.

B. PROVIDE A SEPARATE GROUND CONDUCTOR IN ALL RACEWAYS SIZED IN ACCORDANCE WITH THE NEC.

C. JOINTS AND TERMINATIONS - FOR CONDUCTORS #12 AND #10 ALL FIXTURE AND BRANCH CIRCUITS JOINTS IN JUNCTION AND OUTLET BOXES SHALL BE MADE WITH UL LISTED PRESSURE TYPE CONNECTORS RATED AT 600 VOLTS AND 105 DEGREES C. CONNECTORS SHALL BE IDEAL INDUSTRIES "WING-NUT" OR BUCHANNAN "B-CAP", 3M "SCOTCH-LOK" CONNECTORS OR EQUAL. WIRE #8 AND LARGER SHALL BE JOINED OR TERMINATED WITH SOLDERLESS PRESSURE CONNECTORS PROPERLY TAPED IN LAYERS TO FORM A MOISTURE-TIGHT JOINT.

SECTION 260533 - RACEWAY, FITTINGS AND BOXES

A. RACEWAYS - CONDUIT SHALL BE HOT-DIPPED, ZINC COATED OR SHERARDIZED RIGID STEEL (RS), INTERMEDY METAL CONDUIT (IMC), ELECTRICAL METALLIC TUBING (EMT), OR SCHEDULE 40 POLYVINYL CHLORIDE (PVC). MINIMUM SIZE RACEWAY SHALL BE 3/4".

B. FLEXIBLE CONDUIT SHALL BE GALVANIZED, CONTINUOUS SPIRAL, SINGLE STRIP TYPE. FLEXIBLE CONDUIT SHALL BE COVERED WITH PVC JACKET IN WET OR DAMP LOCATIONS. PROVIDE SUITABLE FITTINGS WITH GROUND CONNECTOR.

C. FITTINGS - ALL CONDUIT ENTERING OR LEAVING OUTLET, JUNCTION OR PULL BOXES, AND CABINETS AND ALL CONDUIT STUBS SHALL HAVE BUSHINGS. PROVIDE INSULATING BUSHINGS WHERE REQUIRED BY NEC. PROVIDE EXPANSION FITTINGS WITH BONDING JUMPER WHERE CONDUITS CROSS EXPANSION JOINTS.

1. FITTINGS FOR RS AND IMC SHALL BE THREADED TYPE.

2. FITTINGS FOR EMT SHALL BE THREADLESS, APPROVED FOR THE CONDITIONS ENCOUNTERED AND MAY BE CAST SETSCREW TYPE OR COMPRESSION TYPE.

D. OUTLET BOXES AND JUNCTION BOXES - OUTLET BOXES SHALL BE PRESSED STEEL, ELECTRO-GALVANIZED OR CADMIUM PLATED WITH CLEAN CUT, EASILY REMOVABLE KNOCKOUTS. EXCEPT AS NOTED HEREINAFTER MINIMUM SIZE OUTLET BOX SHALL BE 4" SQUARE, 1 1/2" DEEP, AND SHALL BE INCREASED IN DIMENSIONS TO ACCOMMODATE CONDUCTORS, CONDUITS, AND DEVICES AS REQUIRED BY THE NEC. SHALLOWER BOXES MAY BE USED WHERE REQUIRED BY STRUCTURAL CONDITIONS. PROVIDE SUITABLE PLASTER-RINGS TO MATCH WALL CONSTRUCTION AND DEVICE. CEILING AND BRACKET OUTLET BOXES SHALL BE NOT LESS THAN 4" OCTAGONAL, 1 1/2" DEEP EXCEPT THAT SMALLER BOXES MAY BE USED WHERE REQUIRED BY PARTICULAR FIXTURE TO BE INSTALLED.

E. NON METALLIC OUTLET BOXES MAY BE PROVIDED IN PVC RACEWAY SYSTEMS. OUTLET BOXES IN WET OR DAMP LOCATIONS SHALL BE CAST-METAL, THREADED HUB-TYPE WITH GASKETS.

F. JUNCTION OR PULL BOXES NOT OVER 100 CUBIC INCHES IN VOLUME SHALL BE STANDARD OUTLET BOXES. JUNCTION BOXES OVER 100 CUBIC INCHES IN VOLUME SHALL BE CONSTRUCTED OF CODE GAGE, GALVANIZED SHEET STEEL. JUNCTION BOXES SHALL HAVE REMOVABLE COVERS AND SHALL BE ACCESSIBLE AFTER COMPLETION OF WORK.

G. RACEWAY AND FITTING INSTALLATION - RUN CONDUITS CONCEALED WITHIN FINISHED WALLS, CEILINGS AND FLOORS. CONDUITS MAY BE RUN EXPOSED IN MECHANICAL ROOMS AND SPACES WITH EXPOSED CONSTRUCTION. CONDUIT SHALL BE SUPPORTED AT INTERVALS OF NOT MORE THAN 8'. RUN EXPOSED CONDUIT PARALLEL OR PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS, OR INTERSECTIONS OF VERTICAL PLANES AND CEILING. CONDUIT LARGER THAN 1" NOMINAL DIAMETER SHOWN IN FLOOR SLAB SHALL BE RUN UNDER THE SLAB. CONDUIT 1" AND SMALLER MAY BE RUN IN THE FLOOR SLAB WHERE PRACTICABLE.

H. SUPPORT CONDUITS BY PIPE STRAPS, WALL BRACKETS, STRAP HANGERS, OR CEILING TRAPEZE.

I. CONDUIT RUN OUTSIDE OF BUILDING SHALL BE BURIED A MINIMUM OF 24" BELOW FINISHED GRADE.

J. DO NOT INSTALL EMT OUTDOORS, OR UNDERGROUND, OR ENCASED IN CONCRETE, OR IN HAZARDOUS AREAS, OR IN AREAS SUBJECT TO SEVERE PHYSICAL DAMAGE.

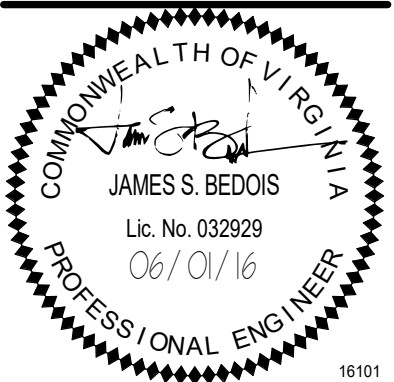
K. DO NOT INSTALL PVC IN OR THROUGH FIRE RATED ASSEMBLIES, IN OR THROUGH ANY WALLS, IN OR THROUGH ANY CEILINGS, IN HAZARDOUS AREAS, IN AREAS SUBJECT TO SEVERE PHYSICAL DAMAGE, OR EXPOSED ANYWHERE IN THE PROJECT.

L. CONDUIT RUN UNDERGROUND, UNDER SLAB, OR WITHIN CONCRETE ENCASEMENT MAY BE POLYVINYL CHLORIDE (PVC) OR RS OR IMC CONDUIT PROTECTED WITH 2 COATS OF BITUMASTIC PAINT. CONVERT PVC TO RS OR IMC BEFORE RISING THROUGH FLOOR SLAB OR RISING OUT OF SOIL. CONDUIT RUN BENEATH SLAB SHALL BE PROPERLY SUSPENDED FROM SLAB SUCH THAT SUB-SLAB SETTLEMENT WILL NOT ADVERSELY AFFECT ELECTRICAL SYSTEM.



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MOSQUITO CONTROL BUILDING
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SPECIFICATIONS

M. SLEEVES - ALL ELECTRICAL SYSTEM CONDUIT SHALL HAVE SLEEVES WHERE CONDUIT PASSES THROUGH CONCRETE SLABS EXCEPT CONCRETE SLABS IN CONTACT WITH GRADE. ALL CONDUIT 1 1/4 INCH AND LARGER RUNNING CONCEALED ABOVE CEILING SHALL HAVE SLEEVES WHERE THE CONDUIT PASSES THROUGH MASONRY, TILE AND GYPSUM WALL CONSTRUCTION. SLEEVES SHALL BE CONSTRUCTED OF GALVANIZED STEEL PIPE, SCHEDULE 40. PROVIDE ESCUTCHEON PLATES FOR ALL EXPOSED CONDUIT PASSING THROUGH WALLS, FLOORS AND CEILINGS. WHERE PLATES ARE PROVIDED FOR CONDUITS PASSING THROUGH SLEEVES, WHICH EXTEND ABOVE THE FLOOR SURFACE, PROVIDE DEEP RECESSED PLATES TO CONCEAL THE SLEEVES. TERMINATE SLEEVES FLUSH WITH WALL, PARTITIONS AND CEILINGS. IN AREAS WHERE CONDUITS ARE CONCEALED, AS IN CHASES, TERMINATE SLEEVES FLUSH WITH FLOOR. IN FINISHED AREAS, WHERE CONDUITS ARE EXPOSED, EXTEND SLEEVES 1/2 INCH ABOVE FINISHED FLOOR, EXCEPT IN ROOMS HAVING FLOOR DRAINS EXTEND SLEEVES 1 INCH ABOVE FLOOR. FASTEN SLEEVES SECURELY IN FLOORS, WALLS, SO THAT THEY WILL NOT BECOME DISPLACED WHEN CONCRETE IS POURED OR WHEN OTHER CONSTRUCTION IS BUILT AROUND THEM. WHERE SLEEVES PASS THROUGH FLOORS OR FIRE RATED WALLS PROVIDE PROPER SEALANT AROUND CONDUIT TO MAINTAIN FIRE RATING.

SECTION 262416 - PANELBOARDS

A. PANELBOARDS - PANELBOARDS SHALL BE DEAD-FRONT, CIRCUIT BREAKER EQUIPPED WITH TRIP RATINGS AND FRAME SIZES AS SHOWN ON THE DRAWINGS. ALL CURRENT-CARRYING PARTS OF THE BUS ASSEMBLY SHALL BE PLATED.

B. EACH PANELBOARD SHALL BE PROVIDED WITH A HINGED COVER WITH A FLUSH LATCH AND LOCK WITH TWO KEYS AND KEYED THE SAME AS ALL OTHER PANELBOARDS. ENTIRE FRONT TRIM SHALL BE HINGED TO BOX WITH STANDARD DOOR WITHIN HINGED TRIM COVER. EACH PANEL SHALL BE EQUIPPED WITH TYPEWRITTEN DIRECTORY CARD, CARD HOLDER, TRANSPARENT PROTECTION AND COMPLETE IDENTIFYING DATA ON INSIDE OF DOOR.

C. PANELBOARDS SHALL BE EQUAL TO SQUARE-D, TYPE NQOD, NF, OR I-LINE (HCN, HCM, HCP, HCW, HCWM, HCP-SU, HCR-U), OR EQUAL PRODUCTS BY CUTLER HAMMER, SIEMENS, OR G.E.

D. CIRCUIT BREAKERS SHALL BE PROVIDED AS INDICATED ON DRAWINGS AND BE FULLY COMPATIBLE WITH PANELBOARDS. CIRCUIT BREAKERS SHALL CONFORM TO LATEST UL AND NEMA STANDARDS AND SHALL BEAR UL LABELS.

1. CIRCUIT BREAKERS SHALL BE SINGLE, DOUBLE POLE, OR THREE POLE THERMALMAGNETIC QUICK-MAKE, QUICK-BREAK TRIP-FREE ON OVERLOAD OR SHORT CIRCUIT ALTERNATING CURRENT CIRCUIT BREAKERS WITH TRIP RATINGS AND FRAME SIZE AS SHOWN ON THE DRAWINGS. BRANCH CIRCUIT BREAKERS SHALL PROVIDE INVERSE TIME DELAYED TRIPPING ON OVERLOADS AND INSTANTANEOUS TRIPPING ON SHORT CIRCUITS. TRIP INDICATION SHALL BE CLEARLY SHOWN BY THE BREAKER HANDLE TAKING POSITION BETWEEN ON AND OFF WHEN THE BREAKER IS TRIPPED. DOUBLE AND THREE-POLE BREAKERS SHALL BE COMMON TRIP TYPE. SUB-FEED BREAKERS ARE NOT ACCEPTABLE.

2. HACR TYPE CIRCUIT BREAKERS SHALL BE PROVIDED FOR ALL CIRCUITS SERVING MECHANICAL EQUIPMENT.

3. CIRCUIT BREAKERS SHALL BE FULLY RATED FOR THE AVAILABLE FAULT CURRENT, SERIES RATINGS ARE NOT ACCEPTABLE, UNLESS STATED OTHERWISE ON DRAWINGS.

4. CIRCUIT BREAKERS SHALL BE INSTALLED IN CONFORMANCE WITH PANELBOARD MANUFACTURER'S RECOMMENDATIONS.

SECTION 262726 - WIRING DEVICES

A. WIRING DEVICES SHALL BE "SPECIFICATION GRADE" AS MANUFACTURED BY GENERAL ELECTRIC, SLATER (MEDALIST), ARROW-HART, BRYANT, HUBBELL OR PASS & SEYMOUR.

B. LOCAL SWITCHES SHALL BE SINGLE POLE, DOUBLE POLE, THREE WAY AND FOUR WAY AS SHOWN ON THE DRAWINGS, BLACK PLASTIC CUP WITH RED PLASTIC COVER AND BROWN PLASTIC HANDLE, BACK OR SIDE WIRED, 20 AMPERE, 120/277 VOLTS.

C. DUPLEX CONVENIENCE RECEPTACLES SHALL BE PLASTIC, 20 AMPERE, 125 VOLTS, 2 POLE, 3 WIRE NEMA AND ASA STANDARD, GROUNDING TYPE.

D. WEATHERPROOF RECEPTACLES SHALL BE IN CAST METAL BOX WITH GASKETED, WEATHERPROOF, CAST-METAL COVER PLATE AND GASKETED "WHILE IN USE" COVER.

E. GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLES SHALL CONFORM TO NEC, SHALL BE UL LISTED, BROWN PLASTIC, SHALL HAVE A "PUSH-TO-TEST" BUTTON AND VISIBLE INDICATION OF A TRIPPED CONDITION.

F. DEVICE PLATES ON UNFINISHED WALLS AND ON FITTINGS, SHALL BE ZINC-COATED SHEET STEEL HAVING ROUNDED OR BEVELED EDGES. ON FINISHED WALLS, PLATES SHALL BE TYPE 302 STAINLESS STEEL WITH BEVELED EDGES.

SECTION 262900 - MOTORS AND MOTOR CONTROL

A. MOTORS: MOTORS SHALL COMPLY WITH ALL APPLICABLE NEMA AND UL REQUIREMENTS. DETERMINE SPECIFIC MOTOR CHARACTERISTICS AND PROVIDE CORRECTLY SIZED STARTERS AND OVERLOAD HEATERS.

B. MOTOR SIZES: PROVIDE SIZE FOR DUTY TO BE PERFORMED, NOT EXCEEDING THE FULL-LOAD NAMEPLATE CURRENT RATING WHEN DRIVEN EQUIPMENT IS OPERATED AT SPECIFIED CAPACITY UNDER MOST SEVERE CONDITIONS LIKELY TO BE ENCOUNTERED. WHEN MOTOR SIZE PROVIDED DIFFERS FROM SIZE INDICATED OR SPECIFIED, MAKE ADJUSTMENTS TO WIRING, DISCONNECT DEVICES, AND BRANCH CIRCUIT PROTECTION TO ACCOMMODATE EQUIPMENT ACTUALLY PROVIDED.

C. MOTOR CONTROLLERS: MOTOR CONTROLLERS SHALL COMPLY WITH ALL APPLICABLE UL AND NEMA STANDARDS. CONTROLLERS SHALL HAVE SOLID STATE OVERLOAD PROTECTION IN EACH PHASE WITH PHASE OUTAGE AND PHASE REVERSAL PROTECTION. MOTOR CONTROLLERS SHALL HAVE UNDERVOLTAGE PROTECTION. CONNECTIONS TO HAND-OFF-AUTO SELECTOR SWITCH SHALL BE SUCH THAT ONLY NORMAL AUTOMATIC REGULATORY CONTROL DEVICES ARE BYPASSED WHEN SWITCH IS IN "HAND" POSITION. SAFETY CONTROL DEVICES, SUCH AS LOW AND HIGH PRESSURE CUTOUPS, HIGH TEMPERATURE CUTOUPS, AND MOTOR OVERLOAD PROTECTIVE DEVICES, SHALL BE CONNECTED IN MOTOR CONTROL CIRCUIT IN "HAND" AND "AUTOMATIC" POSITIONS. CONTROL CIRCUIT CONNECTIONS TO HAND/OFF/AUTOMATIC SELECTOR SWITCH OR TO MORE THAN ONE AUTOMATIC REGULATORY CONTROL DEVICE SHALL BE MADE IN ACCORDANCE WITH INDICATED OR MANUFACTURER'S APPROVED WIRING DIAGRAM.

D. MANUAL MOTOR STARTERS AND MOTOR RATED SWITCHES: PROVIDE NUMBER OF POLES INDICATED. PROVIDE MOTOR OVERLOAD PROTECTION WHEN SPECIFICALLY INDICATED ON THE DRAWINGS OR WHERE REQUIRED BY THE NEC AND IN CONJUNCTION WITH THE ACTUAL MOTOR TYPE PROVIDED. VOLTAGE AND AMPERAGE RATINGS SHALL BE COORDINATED WITH THE ACTUAL ELECTRICAL SYSTEMS AND MOTOR LOADS CONNECTED.

SECTION 265100 - LIGHTING FIXTURES

A. FIXTURES - FIXTURES SHALL BE AS INDICATED IN SCHEDULE.

B. LAMPS - UNLESS OTHERWISE NOTED, LAMPS SHALL BE 130 VOLTS INSIDE FROSTED FOR INCANDESCENT AND ENERGY SAVING COOL WHITE RAPID START FOR FLUORESCENT.

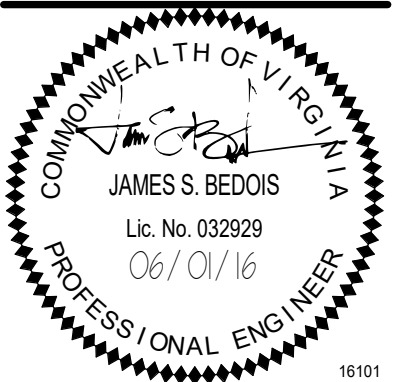
C. BALLASTS - FLUORESCENT BALLASTS SHALL BE ETL AND UL APPROVED AND SHALL BE ENERGY SAVING ELECTRONIC TYPE COMPATIBLE WITH LAMPS SPECIFIED. FIXTURES SHALL BE DESIGNED FOR USE WITH THESE ELECTRONIC BALLASTS AND SHALL HAVE THERMAL CHARACTERISTICS THAT WILL MINIMIZE OPERATION OF BALLAST OVERHEAT DEVICES UNDER ALL NORMALLY EXPECTED OPERATION CONDITIONS. BALLASTS SHALL HAVE A CLASS A SOUND RATING.



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