

FHWA REGION NO.	STATE	PROJECT NUMBER	FISCAL YEAR	SHEET NUMBER	TOTAL SHEETS
DIVISION 16 ELECTRICAL					
SECTION 16040 LIGHTING					
PART 1 - GENERAL EXTENT OF WORK					
1.01	The General Conditions, General Requirements, and Special Conditions shall be and are hereby made a part of this contract. The Electrical Contractor shall furnish all labor, materials, tools, transportation, equipment, services and facilities required for the complete, proper and substantial installation of electrical work shown on the drawings and/or outlined in these specifications. The installation shall include all materials, appliances and apparatus not otherwise specified herein or shown on the drawings, but which are necessary to make a complete working installation of all electrical systems.				
1.02	The Contractor shall consult and be guided by the General Conditions and all other divisions referred to herein and relative thereto in performing the work covered under this division of the specification.				
1.03	All of the electrical related work required for this project (unless specified otherwise) is a part of the electrical contract price and is not necessarily specified under this division of the specifications or shown on the drawings. Therefore, all work of the specification and all drawings shall be consulted.				
1.04	The drawings showing the layout of the work indicate the approximate locations of outlets, apparatus and equipment. The drawings are schematic only and are not intended to show the exact routing of conduits, etc. The final determination as to the routing shall be governed by structural conditions and other obstructions. The Contractor shall be responsible for determining the location of any outlet, apparatus or equipment to avoid possible interference and permit full coordination of all drawings. The Contractor shall be responsible for the location of apparatus, outlets and equipment up to the time of roughing-in is reserved by the Architect without incurring any additional expense to the Owner.				
1.05	The approval by the Architect or his representative of any materials, drawings, etc., submitted by the Contractor will be considered as general only and to aid the Contractor in carrying out his work. Such approval as may be given does not relieve the Contractor from the necessity of furnishing the materials and performing all the work as required by the drawings and the specifications.				
1.06	The work specified under this division of the specifications shall include the furnishing of all labor, materials, apparatus and tools necessary for the complete installation of all conduit and wiring; devices for lighting, power and control systems, and such other work and equipment as are indicated on the drawings or as noted herein.				
1.07	The entire installation shall be made in a workman like manner, left completely connected, and ready to give proper and continuous service.				
1.08	All materials and work in connection with the foregoing items shall be as specified herein, or called for on the drawings.				
1.09	The complete installation shall be in accordance with the latest rules and regulations of the National Fire Protection Association and all other Boards and Departments having jurisdiction. Any items or requirements noted herein or shown on the drawings in excess of code requirements, but permitted under the code, shall take precedence unless special permission is obtained from the Architect to the contrary.				
1.10	The light and power installation shall operate with the electrical energy obtained from outside sources. Such parts of the system as may be required by rules of the local utility company shall, insofar as method of construction, workmanship and materials are concerned, be in full accordance with the standard practice and rules and regulations of the local utility company.				
1.11	This Contractor shall coordinate his work under this division of the specifications with the work of other trades wherein it may be interested. His work shall be done in such an order that there will be no interference in installing, nor delay in completion, of any part or parts of each respective trade, thereby permitting all construction work to proceed in its natural sequence without unnecessary delay.				
1.12	Before submitting his bid, the Contractor shall familiarize himself with the rules of all governing bodies having jurisdiction and shall notify the Architect in submitting his bid, if in his opinion, any work or material specified is contrary to such rules. Otherwise, the Contractor shall be responsible for the approval of all work and materials and, in case the use of any material specified is not permitted, a substitute shall be approved by the Architect and shall be provided at no increase in cost.				
1.13	Unless noted otherwise on the Drawings, or elsewhere in these Specifications, the singular words "Provide," "Furnish," or "Install" noted on the drawings or in these Specifications shall mean to completely furnish, install, and connect each item, and if such is a part or component of a system the entire system shall be functional with all items and components provided.				
PART 2 - RULES AND REGULATIONS					
2.01	All work under this heading shall comply with the latest rules and regulations of the National Electrical Code Standard of the National Fire Protection Association and with all laws, regulations and ordinances of the utility company, City, County and State.				
2.02	Drawings and specifications indicate the minimum standards of construction. Should any work indicated be substantially in any ordinance, law, code, rule or regulation bearing on this work, the Contractor shall execute work accordingly, without increased cost to the Owner, but not until he has referred such variances to the Architect for his approval.				
2.03	This Contractor shall provide and install only the brands of materials and equipment specified herein, or equipment approved by the Architect-Engineer as equal. All material and equipment shall be listed and labeled by Underwriters Laboratories, Inc., indicating compliance with nationally recognized standards and/or tests.				
PART 3 - PERMITS, FEES AND INSPECTIONS					
3.01	Secure and pay for all necessary and useful permits, fees, inspections and certificates required for this work and deliver permits and certificates to the Architect for transmittal to the Owner before final acceptance of the project.				
PART 4 - SERVICES					
4.01	This Contractor shall pay for all expenses, deposits, reimbursements, etc., that may be required by the local rules and codes for the service to the building, complete and ready for use.				
PART 5 - OPERATING INSTRUCTIONS:					
5.01	The Contractor shall submit along with the shop drawings of the equipment, three (3) copies of operating instructions for all items. Instructions shall be prepared by the manufacturer of the equipment.				
5.02	After the operating instructions have been approved by the Engineer, the Contractor shall frame one (1) set under plastic and mount near the equipment described.				
5.03	The Contractor shall also obtain all manufacturer's instruction manuals and provide one complete set of "as built" drawings and turn these over to the Architect upon completion of the project.				
5.04	The Contractor shall keep in a safe place all keys and special wrenches furnished with equipment under this contract and shall give same to the Architect at the completion of the project.				
5.05	The Contractor shall prepare (5) complete brochures covering all systems and equipment furnished and installed under his contract. Brochures shall be submitted to the Architect-Engineer for review prior to delivery to the Owner. The Engineer will retain (1) copy. The cost of these brochures shall be included in the contract cost. Brochures shall contain the following:				
PART 5 - NOT USED					
PART 6 - MATERIALS OF APPROVED EQUAL					
6.01	Where items of equipment and/or materials are specifically identified herein by a manufacturer's name, model or catalog number, only such specific items shall be used in the base bid, except as hereinafter provided.				
6.02	Unless requests for changes in base bid specifications are received and approved and noted by written addendum prior to the opening of bids, the successful contractor will be held to furnish specified items.				
6.03	After contract is awarded, changes in specifications shall be made only as defined under "Substitution of Equipment."				
PART 7 - SUBSTITUTION OF EQUIPMENT					
7.01	After execution of the contract, substitution of equipment for that specified herein shall be permitted only if the contract documents may be approved by the Engineer only if the equipment named in the specifications cannot be delivered to the job in time to complete the work in proper sequence to work of other contractors, due to conditions beyond control of the contractor.				
7.02	Requests for substitutions must be accompanied by documentary proof of equality of difference in price and delivery, if any, in form of certified quotations from suppliers of both specified and proposed equipment.				
7.03	The Owner, shall receive all benefits of the difference in cost involved in any substitution, and the contract altered by change order to credit Owner with any savings so obtained.				
PART 8 - SUBMITTALS					
8.01	Contractor shall, within 15 days after award of contracts begin sending to the General Contractor for review submittals containing the following:				
PART 10 - COORDINATION AND BUILDING CONDITIONS					
10.01	The Contractor shall visit the site and determine all existing local conditions affecting work in his contract. He shall be held responsible for the coordination of all specifications to familiarize himself with the type of construction to be used for all work and how it will affect the installation of his work in contract.				
10.02	Failure to determine existing conditions or the nature of existing or new construction will not be considered as a basis for the granting of additional compensation.				
10.03	The drawings have been prepared to cover all electrical work under this contract. The Contractor is referred to all other contract drawings to guide him in the proper installation of his work.				
10.04	The Contractor shall fully familiarize himself with the floor drawings, elevations, details of construction, feeders, fixtures, conduit, wiring, service, etc., insofar as it may affect the installation of the work under this specification in order that all necessary materials and labor may be provided even though not specifically referred to on the drawings or called for in the specifications.				
10.05	As the drawings are generally diagrammatic, the final layout of the work shall be subject to the approval of the Architect but the Contractor shall be responsible for any increase in contract price for the coordination of all work under various divisions of the specifications.				
10.06	This Contractor shall confer with other Contractors installing work which may affect his work and must arrange his construction in relation to such other work. Any damage resulting from his neglect to do so must be paid for by the Contractor.				
PART 11 - PERFORMANCE					
11.01	Provide as part of the work of this contract, in addition to the first year guarantee on equipment and materials, the following described routine maintenance and inspection. (The one year time period will not start until each and every item is complete in accordance with drawings and specifications and accepted by the Owner). Check all emergency systems, control, fire alarm, transformers, etc.; correct and adjust same. This service to be provided during the guarantee period.				
PART 12 - SYSTEM					
12.01	System: Distribution characteristics shall be as indicated on drawings.				
PART 13 - GROUNDING					
13.01	All conductors, motor frames, etc., that require grounding shall be grounded in accordance with the requirements of the National Electrical Code, local power company and local electrical codes. All ground connections to ground rods shall be with U.L. approved ground clamps. Provide additional ground rods as required to achieve a resistance of 25 ohms or less per N.E.C. 250-84; at the request of the Engineer provide a copy of the ground test results. Multiple ground rods (when required) shall not be less than 6 feet apart.				
PART 21 - EXTENT OF WORK					
21.01	The extent of the work under this heading of the contract shall be the furnishing of all plant, labor, materials, and equipment as required to complete work shown on the drawings and as specified under this heading, and all plant, labor, materials and equipment not shown on the drawings or specified, but necessary for the complete installation in accordance with the intent of the contract, to provide first class, complete, and operative installation throughout.				
PART 22 - TAXES					
22.01	Contractor shall include all applicable local, state and federal taxes in his bid. Consult the Supplementary Conditions of these specifications relative to any and all tax exemptions permitted for this project.				
PART 23 - "AS-BUILT" DRAWINGS"					
23.01	E.C. shall prepare and submit to the Engineer, upon completion of the project, one complete set of reproducible "As Built" drawings for the electrical portion of the project.				
23.02	Drawings shall clearly indicate any and all approved changes to the original drawings (from change order data, etc.) from the Project Bid Documents.				
23.03	These drawings will become the property of the Owner and will be his future reference file, record document.				
DIVISION 16 ELECTRICAL					
SECTION 16020 BASIC MATERIALS AND METHODS					
PART 1 - CONDUIT					
1.01	Materials:				
A.	All conduits and raceways shall be as listed below. No other wiring or raceway systems will be allowed.				
B.	Rigid conduit (G.R.S.) and intermediate metal conduits (IMC) shall be standard size, hot dip galvanized steel conduit, minimum 1/2" trade size, as manufactured by Trianglo PVC, Inc., Allied, or equal. Rigid conduit and IMC shall be provided with threaded fittings and couplings. In trade sizes 2-1/2" to 4", contractor may use Allied "WickCouple" fittings in lieu of individual steel couplings. Where "Wick-Couple" fittings are used exterior for vertical steels, install fitting with taper end up. A "green" ground wire, sized per N.E.C. 250-95, shall be installed in all conduits containing phase conductors.				
C.	E.M.T. (thinwall conduit) shall be minimum 1/2" trade size, as manufactured by Trianglo PVC, Inc., Allied, or equal. Provide EMT with Thomas and Betts, or U.L. listed steel or die-cast type fittings. Indenture type fittings shall not be used. Contractor may use Allied "Wick-Fit" fittings in lieu of individual fittings. A "green" ground wire, sized per N.E.C. 250-95, shall be installed in all conduits containing phase conductors. E.M.T. conduit shall not be installed in earth or below grade.				
D.	All conduit installed in wet locations, exposed exterior to the building, or subjected to physical abuse (i.e. industrial locations), shall be rigid steel conduit (G.R.S.) or intermediate metal conduit (I.M.C.). All conduit installed in earth or below grade shall be rigid steel conduit (G.R.S.), intermediate metal conduit (I.M.C.), or U.L. approved schedule 40 P.V.C. conduit.				
E.	Thin wall conduit (E.M.T.) may be used where code permits except as outlined above.				
F.	Short runs of galvanized or liquid tight flexible conduit may be used when approved by the Engineer. (Minimum 1/2" trade size.) A separate "green" ground conductor (sized per N.E.C.) shall be installed in all flexible conduits. Type AC "Armored Cable", type MC "Metal-Clad Cable", or "BX" cable shall not be used in any manner unless specified as part of a manufactured flexible wiring system for lighting and approved by the Engineer.				
G.	U.L. approved schedule 40 P.V.C. conduit may only be used where conduits are to be run in earth or below slabs. P.V.C. conduits shall be used above grade inside or outside of the building, unless specifically noted otherwise on the drawings. Use G.R.S. also and risers, both horizontal and vertical. Use standard adapters when converting from P.V.C. to steel conduit. Branch circuit and feeder P.V.C. conduit to be 3/4" min. Concrete encase all conduit installed below grade where so noted on the drawings. U.L. approved schedule 40 P.V.C. with plastic spacers. All P.V.C. conduit shall be provided with a separate "green" ground conductor, sized per N.E.C.				
1.02 Bushings and Locknuts:					
A.	Where conduits enter boxes, they shall be rigidly clamped to the box by double locknuts and bushings. Conduit shall enter the box squarely. Bushings and locknuts shall be made of malleable iron and shall have sharp clean-cut threads.				
1.03 Conduit Installation:					
A.	Where conduit sizes are not specifically indicated, conduit sizes in accordance with the requirements of the N.E.C.				
B.	Conduit work in general shall be installed concealed in walls, floor and roof construction or concealed within furred spaces. Exposed work shall include only feeders and shall be installed in accordance with equipment room unless noted otherwise. All exposed conduits (where approved by the Engineer) shall be routed parallel and/or perpendicular to building elements.				
C.	Conduit to be installed to the requirements of the Contractor and to the requirements of all other work on the project. Conduit shall be installed to clear all openings, depressions, pipes, ducts, reinforcing steel, etc. Conduit set in forms for concrete structure shall be installed in such a manner that installation will not affect the strength of the structure. Coordinate installation with Structural Engineer for conduits rising up from slabs into bottom of pannels. Minimum distance between conduits shall be 6". Maximum size of conduit permitted in concrete slabs, if so approved by the Architect, is 1" trade size.				
D.	Conduit shall be installed continuous between connections to outlets, boxes and cabinets with a minimum possible number of bends and not more than the equivalent of a 90 degree bend between J-box connections. Bends shall be smooth and even and shall be made without flattening conduit or flaking enamel. Standard bends shall be as long as possible and never shorter than the corresponding trade elbow. Long radius elbows shall be used where necessary.				
E.	Conduits shall be securely fastened in place with approved straps, hangers, and end supports as required by the National Electrical Code. All surface mounted conduits on walls below eight foot grade shall be secured with conduit straps. No clamps. The use of wire, plumbers straps, etc. will not be permitted.				
F.	Junction and pull boxes shall be installed where shown on drawings and additional boxes shall be installed if required for pulling of wire, provided location and installation is approved by the Architect. All boxes shall be code gauge construction with screw type covers and shall be installed in accessible locations.				
G.	Conduit shall be reamed and thoroughly cleaned before installation and kept clean during construction. All conduit will be fished clear of obstructions before the pulling of wires. All conduit shall be as sized above and shall not be smaller than N.E.C. listed minimum requirements.				
PART 6 - JUNCTION, PULL AND SUPPORT BOXES					
6.01	Pull and junction boxes shall be code gauge galvanized steel boxes with hinged, hinged or screw covers. Boxes shall be flush or surface mounted as shown or required by N.E.C. and job conditions. Install in accessible locations.				
6.02	Conduits shall not be spliced within pull boxes.				
PART 7 - NOT USED					
PART 8 - NAMEPLATES AND IDENTIFICATION					
8.01	General: The following shall be equipped with nameplates:				
A.	All distribution equipment (disconnect switches (fused or nonfused), switchboards, panelboards, transformers, motor control centers, separately mounted circuit breakers, contactors, motor starters and relays etc.)				
8.02	Inscription: Nameplates shall adequately describe the function or use of the particular equipment involved. Nameplates for panelboards and switchboards shall include the panel designation, voltage, phase and A.I.C. rating required (See Schedules). For example, "Panel - A, 120/208 V, 3-Phase, 4-wire, 10,000 A.I.C." The nameplate for a machine nameplate shall be the same as the one used on the machine's motor starter, disconnect and P.B. station nameplates. Nameplates for fused switches and panels shall also indicate fuse type and size.				
8.03	Construction: Nameplates shall be laminated phenolic plastic, black front and black with white core. Nameplates for emergency system panelboards and transfer switches shall be red front and black with white core letters. Lettering shall be engraved through front layer to form 1/4" white characters (1/2" white letters for distribution panels and switchboards). Branch switch label shall be 1/4" letters. Nameplates shall be securely fastened to the equipment to be identified, with double sided adhesive backed tape. Motor nameplates may be non-ferrous metal not less than 0.03" thick, die stamped, and with color coding on electrical part of this work. Free hand lettering and adhesive type type label markers will not be accepted.				
8.04	Special Electrical Systems (fire alarm, sound system, emergency systems, etc.) shall be so identified at junction and pull boxes, terminal cabinets and equipment racks with a permanent, waterproof means of identification. (Example - FIRE ALARM). Free hand lettering or adhesive type label markers will not be accepted.				
8.05	Wall switches or other control devices controlling equipment or special lighting control configurations shall have either engraved wall plates or shall be provided with engraved nameplates.				
DIVISION 16 ELECTRICAL					
SECTION 16030 SERVICE AND DISTRIBUTION					
PART 1 - MAN SERVICE					
1.01	Primary: See the plans.				
1.02	Secondary: See the plans. Voltage will be 277/480-volt, 3-phase, 4-wire WYE, 120/208-volt, 3-phase, 4-wire WYE, 240-volt, 3-phase, 3 wire Delta, or 120/240-volt, 1-Phase, 3 wire.				
1.03	Consult power company for their requirements and for coordinating with their installation. Contractor shall submit to the Engineer for review all drawings and/or specifications and pay for costs incurred for Utility Company to install both temporary and permanent service to the project. Verify costs with Utility Company prior to bidding. Breakers shall be provided with conduit cap and labeled "To Panel Above".				
1.04	All panelboards supplied from an emergency source shall have breakers provided with handle lock-offs for each breaker. Breaker handles to be set in the "ON" position.				
1.05	Secondary: See the plans. Voltage will be 277/480-volt, 3-phase, 4-wire WYE, 120/208-volt, 3-phase, 4-wire WYE, 240-volt, 3-phase, 3 wire Delta, or 120/240-volt, 1-Phase, 3 wire.				
1.06	Consult power company for their requirements and for coordinating with their installation. Contractor shall submit to the Engineer for review all drawings and/or specifications and pay for costs incurred for Utility Company to install both temporary and permanent service to the project. Verify costs with Utility Company prior to bidding. Breakers shall be provided with conduit cap and labeled "To Panel Above".				
1.07	All panelboards supplied from an emergency source shall have breakers provided with handle lock-offs for each breaker. Breaker handles to be set in the "ON" position.				
1.08	Metal hold lamps shall be Metalux/D (coated) as manufactured by G.E., Sylvania, Philips, or equal approved by the Engineer. Refer to lighting fixture manufacturer for lamp type.				
1.09	High pressure sodium lamps shall be Lumalux/D (coated) as manufactured by G.E., Sylvania, Philips, or equal approved by the Engineer. Refer to lighting fixture manufacturer for lamp type.				
1.10	Fluorescent lamps, unless noted otherwise on the drawings, shall be Sylvania F40/B35/S35 for T-12 lamps and Sylvania F30X35 for T-8 lamps or equal by Philips, G.E. or as approved by the Engineer. Verify all lamp colors with Architect prior to ordering.				
1.11	Mercury vapor lamps shall be warm deluxe white unless otherwise noted on the drawings, lamps as manufactured by G.E., Sylvania, Philips, or equal approved by the Engineer.				
1.12	Metal hold lamps shall be Metalux/D (coated) as manufactured by G.E., Sylvania, Philips, or equal approved by the Engineer. Refer to lighting fixture manufacturer for lamp type.				
1.13	High pressure sodium lamps shall be Lumalux/D (coated) as manufactured by G.E., Sylvania, Philips, or equal approved by the Engineer. Refer to lighting fixture manufacturer for lamp type.				
PART 2 - BRANCH CIRCUIT AND DISTRIBUTION PANELBOARDS					
3.01 General:					
A.	All panels shall be provided with key locking door.				
B.	Panels shall have hinged covers with concealed trim dampers, doors shall have laser cut trim with concealed hinges, and flush lock, master keyed. Hinged cover shall have continuous pin hinge down one side with door spring by a single latch. Where multi-section panelboards are indicated on the drawings, panel enclosures and covers shall be of the same size for each section.				
C.	Key all doors alike and furnish two (2) keys for each lock. Doors over 48" high and double doors shall have 3-point latching per U.L. 50. Consult drawings for flush or surface mounting.				
D.	After wiring, label each circuit and provide under plastic in door of panel a typewritten schedule indicating load description of all circuits in panel. Mark spare breakers and provisions for future breakers in pencil on schedule for future circuit marking.				
E.	Breakers shall have individual plastic covers sized as scheduled on the plans. Two and three pole breakers shall have common trip (single pole units with tie bars are not acceptable). Main circuit breakers shall be oversize trip breakers. Back-feed main circuit breakers above 100 amps will not be acceptable. Where spaces are noted in the panel summary, provide all necessary device supports and provisions for electrical circuit breakers. Provide blank cover for all spaces.				
F.	All panelboards shall have copper ground buses installed and grounded per the requirements of the N.E.C. All panelboards serving devices having isolated ground circuits shall be provided with an additional insulated copper ground bus for connection of isolated ground conductors. All neutral and ground bars shall have a minimum number of lugs equal to 66% of number of pole spaces in panel. In computer rated or isolated ground panelboards, all neutral, ground and isolated ground bars shall have a minimum number of lugs equal to 100% of number of pole spaces in panel.				
G.	Where flush mounted panels occur on drawings Contractor shall submit to the Engineer for future use, (1) 1" empty conduit for every four spare 20A breakers or unused panel spaces. On multi-story buildings Contractor shall submit to the Engineer above panel and into ceiling void of floor below for future use, (1) 1" empty conduit for every four spare 20A breakers or unused panel spaces. Conduits stubbed into ceiling void below panel shall be provided with conduit cap and labeled "To Panel Above".				
H.	All panelboards supplied from an emergency source shall have breakers provided with handle lock-offs for each breaker. Breaker handles to be set in the "ON" position.				
I.	All phase and neutral busbar and all ground bars in branch circuit panelboards and circuit breakers and distribution panelboards shall be copper only. All lugs shall be AL/CU rated. All panelboards supplied by "K" factor transformers shall have 200% rated neutrals.				
3.02 Branch Circuit Panelboards:					
A.	Panelboards rated up to 240V (400A max) shall have a short circuit current rating tested to U.L. Standards for a minimum rating of 10,000 A.I.C. unless noted otherwise. Breaker rating with-in panel shall be equal to or greater than minimum integrated equipment rating. Series ratings will not be accepted, unless specifically noted otherwise on the drawings. All breakers shall be of the bolt-on type only.				
B.	Panelboards rated over 240V and up to 480V (400A max) shall have a short circuit current rating tested to U.L. Standards for a minimum rating of 14,000 A.I.C. unless noted otherwise. Breaker rating with-in panel shall be equal to or greater than minimum integrated equipment rating. Series ratings will not be accepted, unless specifically noted otherwise on the drawings. All breakers shall be of the bolt-on type only.				
C.	Branch Circuit Breaker Panelboards: Panel Rating - Square D Siemens G.E. Cutler-Hammer 240V (400A max) NCO2 S1/S3 AE PRL1 480V (400A max) NF S2/S3 AE PRL2				
3.03 Circuit Breaker Distribution Panelboards:					
A.	Panelboards rated up to 240V (600A and above) shall have a short circuit current rating tested to U.L. Standards for a minimum rating of 10,000 A.I.C. unless noted otherwise on the drawings. Breaker rating with-in panel shall be equal to or greater than minimum integrated equipment rating. Series ratings will not be accepted, unless specifically noted otherwise on the drawings.				
B.	Panelboards rated over 240V and up to 480V (600A and above) shall have a short circuit current rating tested to U.L. Standards for a minimum rating of 14,000 A.I.C. unless noted otherwise on the drawings. Breaker rating with-in panel shall be equal to or greater than minimum integrated equipment rating. Series ratings will not be accepted, unless specifically noted otherwise on the drawings.				
C.	Circuit Breaker Distribution Panelboards: Panel Rating - Square D Siemens G.E. Cutler-Hammer All Ratings - I-Line S4/S5 Spectra PRL4				
D.	Distribution panels located in finished rooms (other than mechanical, electrical rooms or janitor rooms) shall be provided with key locking doors.				
2.07	All items of distribution equipment required to be floor mounted shall be mounted on a minimum 3/12" concrete slab or approved insulating footer. All splices and taps having irregular surfaces shall be properly potted with Scotchlok putty before application of insulating plastic tape. Scotchlok putty or equal pre-insulated spring pressure connectors or equal may be used for up to #8 conductors.				
2.08	All phase and neutral busbar and all ground bars in panelboards and switchboards shall be copper only. All lugs shall be AL/CU rated. All panelboards supplied by "K" factor transformers shall have 200% rated neutrals.				
2.09	Panel schedules are not shown on the drawings. However, copies of these schedules are available to the Contractor after bids are in, upon request to the Engineer.				
PART 4 - NOT USED					
PART 5 - SUPPORTS AND HANGERS					
5.01	Provide supports and hangers as necessary and as required to insure a good and substantial installation. Support raceways, fixtures, cabinets, boxes, etc., on approved type of trapeze hangers or wall brackets, as manufactured by Unistrut, American Electric Footing, Globe, or approved equal. Provide steel hanger rods securely fastened to or through the building structure for all trapezes, etc. Do not suspend from mechanical piping or ductwork. Perforated plumber's straps or wire will not be permitted.				
5.02	Pull and junction boxes shall be code gauge galvanized steel boxes with hinged, hinged or screw covers. Boxes shall be flush or surface mounted as shown or required by N.E.C. and job conditions. Install in accessible locations.				
5.03	Conduits shall not be spliced within pull boxes.				



ELECTRICAL SPECIFICATIONS
I-135 NORTH BIKE PATH
WICHITA, KANSAS

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EXPIRES: 04-30-2011

DESIGN	ICE	DATE	JUN 21, 2010
DRAWN	ICE	SHEET	E-6
REVIEW		OF	6
UTILITY		PROJECT NUMBER	
DATE			