

BID-DESIGN-BUILD ELECTRICAL CRITERIA

1. ELECTRICAL CRITERIA - PART 1 DESCRIPTION:

- 1) This contractor shall provide the following:
 - a) Complete design, based on these criteria and documents.
 - b) Complete installed, proper functioning electrical system(s).
 - c) Related work as described herein and indicated on the plans and other documents.
 - d) Complete one-year warranty on all material and work.
 - e) Provide any manufacturer extended warranties to the owner.
- 2) The General & Supplement Conditions, Agenda & related items are included as part of this scope-of-work criteria.
- 3) The contractor shall refer to and base any quotations of the complete criteria, including but not limited to, all drawings, written criteria, / scope-of-work and related documents.

2. QUOTATION DOCUMENTATION

- 1) This contractor's quote shall be based on the criteria as require in these documents.
- 2) The quotation shall include a statement that pricing is based on & covers / includes the scope-of-work as herein described & required.
- 3) Any alternates shall be fully itemized, listing the base quote price, the add / deduction price and supported with documentation of the alternate.

3. ELECTRICAL EXISTING CONDITIONS

- 1) The contractor shall make an on-site review of any existing conditions and shall include all necessary cost involved and / or associated with the existing conditions. This shall include, but not be limited to demolition & removal, temporary power, repair & restoration including floors, walls, and ceilings.
- 2) Unless noted otherwise all removed / demolition materials shall become the property of the contractor and shall be removed from the site.

4. ELECTRICAL CONSTRUCTION DOCUMENT (DRAWINGS, SPEC, CALCULATIONS)

- 1) Provide a complete set of electrical construction documents for owner review, permitting and use as construction documents.
- 2) Documents shall be Cad based utilizing AutoCadd or MicroStation Cadd software.
- 3) The documents shall be prepared and bear the PE stamp, name, address, phone and e-mail address of the engineer responsible. The engineer shall be a trained and experienced on electrical engineering and be a licensed engineer in the project state.
- 4) Drawings shall bear the complete project name & address, the electrical contractors' name, address, telephone number, and license information.
- 5) The documents shall include "to scale" plans, risers, symbols & legends, details, notes & all necessary schedules. The document shall be fully coordinated with the works of the other trades for correct equipment locations, power characteristics & requirements.
- 6) The lighting plans shall include lighting fixture schedule(s) with fixture description(s), finishes, etc. lamps type and color, voltages, input wattage, mounting and the manufacturers name and catalog number.
- 7) The electrical shall include the location of each device requiring an electrical connection, complete with all wire sizes, conduit sizes, disconnect, breaker and other required items. Voltage drop calculation shall be performed where needed or required.
- 8) The Electrical Riser Diagram shall indicate the complete electrical distribution system layout & interconnections. Also include detailed panel schedules; complete with schedules, feeder sizes, transformers and related work shall be included. Schedules shall be complete listing each circuit number with its description, load type, connected load wattage, phase, OCP amps/poles, including a load summary and calculation indicating the load totals by phase and by load types (lg/recept/etc.), voltages/phase/wire, buss amps, main OCP, and the minimum A/C ratings required.
- 9) The contractor shall provide written copies of all coordination with the telephone company, cable TV and other utilities serving this project. The coordination shall indicate how the services are to come on-site and enter the facility. The characteristics of each service are to be spelled out or detailed. The names and telephone number of each utility contact is to be listed.

5. SUBMITTAL REQUIREMENTS

- 1) Submit six complete copies of the completed construction documents for review by the owner & designated parties. All submittals shall be fully marked to indicate the exact item(s) being submitted. The submittals shall include, but not be limited to, conduit & fittings, wire & cables, panels, boards, transformers, lighting fixtures & lamps, system equipment, etc. Submittals for panels and other build-up items shall be the manufacturers fabrication submittal; use of standard catalog data is not acceptable.
- 2) The contractor shall also provide copies of all building permits and a listing of all suppliers, sub-contractors and others who will be providing materials or services to the contractor's benefit. This listing shall include the company name, the contact(s), and phone & fax numbers and e-mail address.

6. PROJECT COMPLETION & CLOSE-OUT

- A) The contractor shall make work-in-progress and final working reviews / inspections with the owner & the owner's designated representatives. The contractors shall provide all necessary labor & tools for reviews & inspections.
- B) At project completion the contractor shall provide a complete working demonstration of all systems and components and proper surface with systems, other trades. Review and program / set all equipment operating timing & sequences as directed by owner.
- C) Provide three copies of complete and equipment data, instruction and operation manuals. Include copies of all permits & approvals, warranty certificates and contact information. Contractor shall provide two sets of as-built construction documents on reproducible mylar and two copies of "as-built" cad drawings on disk.
- D) Contractor shall return 30 days before C.O., and 180 days after C.O. to review system operation with owner and make adjustments as required.

7. GENERAL PROJECT DESCRIPTION

- A) Generally this project consists of the conversion of an existing facility into a multi-tenant office / retail facility.
- B) Refer to the architectural plans for specific building information, extent-of-work, etc.

8. ELECTRICAL BASIC CRITERIA

- A) GENERAL- provide a complete electrical system. left in proper working order. Provide herein means installed correctly, including labor and materials. This contractor shall be a properly licensed to perform the required work. Secure and pay for all fees, licenses, permits, and inspections. Coordinate with power and communication utilities. Meet and comply with all Federal, State, and County & City Codes.
- B) PROVISIONS TO BE INCLUDED- Labor, supplies and materials, tools, equipment, etc.; complete submittals & connections; coordination with other trades; material shipping, delivery, receiving, storage, & protection; excavation, backfilling, cutting, patching and cleaning; guarantee for one year, plus any extended manufacturer's warranties; as-built reproducible mylar record documents.
- C) MISC. MATERIALS- all materials shall be new, and currently manufactured. All materials shall be U.L. labeled, and meet all industry standards. Label all equipment. Provide 3000 PSI class concrete for bases and backfill. Provide 1/2" thick A/D fire retardant grade backboards. Provide all support hardware and systems for electrical work. Fire/smoke seal each penetration of any rated barrier (floor, wall, etc.)
- D) SUPPORT- All materials, equipment, devices, etc. installed by this contractor shall be provided with proper study support. All building support attachments shall be made to the building structure. No support attachments shall be made to the ceiling system, gypsum wall boards, etc. Electrical devices shall not be mounted onto other equipment panels or housings, where the panel or housing will limit access & servicing. All attachment to the building structure shall be compatible with the building materials and not cause damage. Where free-standing supports, trapeze-type supports, racks or other similar support is needed or required Unistrut (or equal) framing channel and related components shall be utilized. Where located out-doors or subject to wet environments (kitchens, areas, etc.) the support material shall have a finish equal to Unistrut "Perma-Green II" finish. Utilize steel threaded rod with lock-nuts and double-nuts for pendant supports.
- E) LABELING & MARKING- All electrical distribution equipment shall be labeled with the name or itemed served, voltage/phase/wire/fuse. Labels for distribution equipment shall be engraved bake-a-lite label attached with weather-proof adhesive. All j-boxes shall be marked with the circuit number (panel designation & ckt), or other system designation (FA/PA/etc.). Utilize a permeate type marker to label the device cover (only on concealed boxes ie-above clg.). A complete directory shall be attached to the inside of each panel or distribution board. The directory shall include the device , space served, load service and breaker rating.

9. FINISHES- Prior to ordering, the contractor shall coordinate all colors, finishes, and other material appearances with owner/tenant. This shall include all wiring devices, lighting fixtures, and other components.

10. ELECTRICAL SERVICE, METERING & DISTRIBUTIONS SYSTEM

- A) SCOPE-OF-WORK
 - 1) Provide for a complete system of the service entrance, metering & distribution to provide power from the utility source of all panels, equipment, appliances, & items requiring power and for provision for future power.

B) SERVICE, METERING & DISTRIBUTION ELECTRICAL CRITERIA

- 1) Conductors & Raceways:
 - a) All conductors shall be copper, XHHW or THHN/THWN.
 - b) Aluminum can be quoted as an add / deduct.
 - c) Raceways shall be PVC underground, EMT or IMC for above grade.
 - d) Use of prefabricated modular busway allowed as contractors option if desired.
- 2) Electrical Panel:
 - a) Labeled UL 489 and 500 NEMA 250 and PB1; NFPA 70-384 and 373.
 - b) Commercial grade (residential equipment/load centers, etc. is prohibited).
 - c) Voltage Phase & W/O. Wire is required.
 - d) SCAIC ratings to match Fault Current Calculations, but no less than 22K AIC.
 - e) Flush mounted except where mounted in utilitarian service spaces.
 - f) Dead front design with hinged & locking front cover door.
 - g) NEMA 1 cabinet for indoor, NEMA 3R for wet location.
 - h) All lugs & terminals 60/75 deg. C rated.
 - i) Factory assembled, double row construction, staggered numbering, sequenced phased.
 - j) Tin-plated copper or aluminum busing. 100% rated phase & neutral, 50% ground.
 - k) Refer to over-current protective devices. Provide main breaker were served from transformers or remotely located. Match or exceed up-stream AIC rating, but no less than 22K AIC.
- 3) Grounded
 - a) Service Grounding- Provide per code, plus not less than (1) ground rod field consisting of three 10 ft rods, spaced 10 Ft apart triangularly & loop connected; (2) Bond to concrete rebar; (3) bond to building steel; (4) bond to metal cold water main pipe (if available).
 - b) Distribution System Grounding
 - (1) Provide grounding of entire electrical system per code.
 - (2) Provide green ground conductor in each feeder, sized per code.
 - (3) Each separately derived system (i.e. transformers, generators, etc.)
- 4) Fault Current Study
 - a) Provide a complete Fault Current Study of the entire distribution system.
 - b) Indication the available fault current at each point in the distribution system, including all motor, generator and other fault current contributors.
 - c) Provide (on power company letterhead) copies of the electrical service characteristics, including transformer size & type, available fault current, secondary voltage & phase, metering arrangements and any power company requirements, etc.

ELECTRICAL SPECS

11. LIGHTING & ELECTRICAL SYSTEMS SCOPE-OF-WORK

1) GENERAL ELECTRICAL REQUIREMENTS:

- a) Provide a complete system of lighting, outlets, wiring, equipment & appliance connections for all Landlord electrical requirements.

2) EXTERIOR LIGHTING

- a) Provide all lighting complete as indicated on the documents, including but not limited to fixtures, lamps, supports, wiring & controls.
- b) Refer to the lighting fixture schedule for fixture Manuf., Models, Lamps, Etc.
- c) Provide all related mounting bases & supports (i.e. concrete pole bases, etc.).
- d) Exterior lighting control shall consist of electrically-operated/mechanically-help multi-pole lighting contractor(s), with front mounted H-O-A switch, controlled by two-channel astronomic programmable time switch(s) (Tork DZM200A or equal). Program schedule as directed by owner.

3) INTERIOR LIGHTING

- a) Provide all lighting complete as indicated on the documents, including but not limited to fixtures, lamps, supports, wiring & controls.
- b) Individual spaces (i.e. closets, equipment rooms, etc.) shall be controlled via wall mounted occupancy sensors with manual over-ride feature.
- c) Common public spaces shall be controlled via lighting contractors controlled with programmable time controls (Tork DAM200A series or equal). Program per owner.
- d) Security/Night lights, circuit approximately 1/5 of the common public space lighting fixtures on "security/night light" circuit. These fixtures shall be switched via contractor(s) controlled by key operated momentary contact switch(es) located at each public entrance.
- e) Provide a complete system of emergency egress lighting and exit signage per code requirements.
 - (1) Exit signage- LED lamp, edge-lit style (Chloride Symmetry Series or equal).
 - (2) Egress lighting Public Common Areas- Utilize emergency battery inverter automatic selected public area lighting, otherwise utilize self-contained wall/ceiling mounted units.

4) OUTLETS, WIRING DEVICES:

- a) Provide all outlets & wiring devices as indicated on the documents, complete with wiring & circuiting
- b) Provide any code required devices that may not be indicated on the documents.
- c) Where required by code, provide devices of the proper type & ratings (i.e. -GFCI, hospital grade etc.).

5) APPLIANCE & EQUIPMENT CONNECTIONS:

- a) Provide electrical power & connect to all Landlord;
 - (1) Appliances as indicated on the documents.
 - (2) All HVAC equipment per the mechanical contractor requirements.
 - (3) All plumbing equipment per the plumbing requirements.
 - (4) All architectural equipment per the general contractor requirements (i.e. door operators, appliances,, etc.)

13. VOICE/DATA (VID) TELECOMMUNICATIONS SYSTEM(S):

A) V/D GENERAL REQUIREMENTS:

- 1) Utilize PVC conduits for underground and EMT for above grade work
- 2) Provide pull-string in each empty conduits.
- 3) Label & Tag each conduit & pull string.
- 4) All conduits bends shall be long radius bends.
- 5) Backboard shall be 1/2" thick A/D grade plywood, painted light-gray with fire-retardant paint. Wall mount with bottom 18" AFF.

NOTE:
DATA CABLING, SERVER, WIFI AND ROUTERS ARE NOT IN SCOPE.

ARCHITECT'S STAMP



SIGNATURE REQUIRED

SMITH DESIGN GROUP, INC.

28 WEST HAWKSON STREET
LAGRANGE, GEORGIA 30240

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- NOTES:
1. AN EXTERIOR MAIN DISCONNECT IS REQUIRED FOR EACH SERVICE ENTRY.
 2. ALL BRANCH CIRCUIT CONDUCTORS ARE TO BE MINIMUM 12 COPPER.
 3. INSTALLATION OF NON-METALLIC (ROMEX) IS NOT ALLOWED.
 4. IF ALUMINUM SERVICE AND FEEDER CONDUCTORS ARE USED, THE CONDUCTORS MUST BE SERIES 8000, COMPACT STRAND, WITH INSULATION TO COMPLY WITH NEC AND FIELD CONDITIONS.
 5. COMPLY WITH THE REQUIREMENTS OF THE 2014 NEC, ARTICLE 517, AS IT APPLIES TO THE USE OF THIS FACILITY

REVISIONS	
DATE	DESCRIPTION

PROJECT:
VERNON ROAD FIRE STATION

VERNON ROAD
LAGRANGE GEORGIA

TITLE:

ELECTRICAL SPECS

MODIFIED DATE:	JOB NO: 1731
ISSUED DATE: FOR BID AND PERMIT 07 MAY 2018	SHEET: E-1

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