**REQUEST FOR QUOTE**

**Solicitation Number:** MTC-RFQ-0866  
**Date Issued:** September 1, 2015  
**Procurement Officer:** Wayne McRant  
**Phone:** (803) 822-3202  
**E-Mail Address:** mcrantw@midlandstech.edu  
**URL:** www.midlandstech.edu/procurement

**DESCRIPTION:** PROVIDE LABOR AND MATERIAL TO MODIFIED ELECTRICAL.

The Term "Offer" Means Your "Bid" or "Proposal".

**SUBMIT OFFER BY (Opening Date/Time):** September 15, 2015 at 11:00 A.M.  
See provision entitled "Deadline For"  

**NUMBER OF COPIES TO BE SUBMITTED**  
One Original

**QUESTIONS MUST BE RECEIVED BY:**  
See provision entitled "Questions From Offerors"

**SUBMIT YOUR OFFER TO EITHER OF THE FOLLOWING ADDRESSES:**

<table>
<thead>
<tr>
<th>MAILING ADDRESS</th>
<th>PHYSICAL ADDRESS</th>
</tr>
</thead>
</table>
| Midlands Technical College  
Procurement Office  
P.O. Box 2408  
Columbia, SC 29202 | Midlands Technical College  
Reed Hall – Room 119  
1260 Lexington Drive  
West Columbia, SC 29170 |

**CONFERENCE TYPE:**  
**DATE & TIME:**  
**LOCATION:**  
See provision entitled "Submitting Your Offer"

**AWARD & AMENDMENTS**  
Award will be posted at the Physical Address stated above on The award, this solicitation, and any amendments will be posted at the following web address:  
http://www.midlandstech.edu/procurement

**DRUG FREE WORKPLACE CERTIFICATION (AUG 2004)**  
By submitting an Offer and initialing here, Contractor certifies that, if awarded a contract, Contractor will comply with all applicable provisions of The Drug-free Workplace Act, Title 44, Chapter 107 of the South Carolina Code of Laws, as amended. (Initial here __________)

You must submit a signed copy of this form with Your Offer. By submitting a bid or proposal, You agree to be bound by the terms of the Solicitation. You agree to hold Your Offer open for a minimum of thirty (30) calendar days after the Opening Date.

**NAME OF OFFEROR**  
(Full legal name of business submitting the offer)

**AUTHORIZED SIGNATURE**  
(Person signing must be authorized to submit binding offer to enter contract on behalf of Offeror named above.)

**TITLE**  
(Business title of person signing above)

**PRINTED NAME**  
(Printed name of person signing above)

**DATE SIGNED**  
(See provision entitled "Signing Your Offer").

Instructions regarding Offeror's name: Any award issued will be issued to, and the contract will be formed with, the entity identified as the offeror above. An offer may be submitted by only one legal entity. The entity named as the offeror must be a single and distinct legal entity. Do not use the name of a branch office or a division of a larger entity if the branch or division is not a separate legal entity, i.e., a separate corporation, partnership, sole proprietorship, etc.

**STATE OF incorporation**  
(If offeror is a corporation, identify the state of Incorporation.)

**TAX PAYER IDENTIFICATION NO.**  
(See “Taxpayer Identification Number” provision)

**OFFEROR'S TYPE OF ENTITY:**  
(Check one)

- □ Minority Business  
- □ Sole Proprietorship  
- □ Partnership  
- □ Corporation (tax-exempt)  
- □ Corporate entity (not tax-exempt)  
- □ Government entity (federal, state, or local)  
- □ Other ______________  

(See provision entitled "Signing Your Offer").

**STATE VENDOR NO.**  
(Register to Obtain S.C. Vendor No. at www.procurement.sc.gov)
### HOME OFFICE ADDRESS
(Address for offeror's home office / principal place of business)

### NOTICE ADDRESS
(Address to which all procurement and contract related notices should be sent.) (See "Notice" clause)

<table>
<thead>
<tr>
<th>Area Code</th>
<th>Number - Extension</th>
<th>Facsimile</th>
<th>E-mail Address</th>
</tr>
</thead>
</table>

### PAYMENT ADDRESS
(Address to which payments will be sent.)
(See "Payment" clause)

<table>
<thead>
<tr>
<th>Payment Address same as Home Office Address (check only one)</th>
</tr>
</thead>
</table>

### ORDER ADDRESS
(Address to which purchase orders will be sent)
(See "Purchase Orders and "Contract Documents" clauses)

<table>
<thead>
<tr>
<th>Order Address same as Home Office Address (check only one)</th>
</tr>
</thead>
</table>

## ACKNOWLEDGMENT OF AMENDMENTS
Offerors acknowledges receipt of amendments by indicating amendment number and its date of issue. (See "Amendments to Solicitation" Provision)

<table>
<thead>
<tr>
<th>Amendment No.</th>
<th>Amendment Issue Date</th>
<th>Amendment No.</th>
<th>Amendment Issue Date</th>
<th>Amendment No.</th>
<th>Amendment Issue Date</th>
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</table>

## DISCOUNT FOR PROMPT PAYMENT
(See "Discount for Prompt Payment" clause)

<table>
<thead>
<tr>
<th>Discount for Prompt Payment</th>
<th>10 Calendar Days (%)</th>
<th>20 Calendar Days (%)</th>
<th>30 Calendar Days (%)</th>
<th>____ Calendar Days (%)</th>
</tr>
</thead>
</table>

## PREFERENCES - A NOTICE TO VENDORS (SEP. 2009): On June 16, 2009, the South Carolina General Assembly rewrote the law governing preferences available to in-state vendors, vendors using in-state subcontractors, and vendors selling in-state or US end products. This law appears in Section 11-35-1524 of the South Carolina Code of Laws. A summary of the new preferences is available at www.procurement.sc.gov/preferences. **ALL THE PREFERENCES MUST BE CLAIMED AND ARE APPLIED BY LINE ITEM, REGARDLESS OF WHETHER AWARD IS MADE BY ITEM OR LOT. VENDORS ARE CAUTIONED TO CAREFULLY REVIEW THE STATUTE BEFORE CLAIMING ANY PREFERENCES. THE REQUIREMENTS TO QUALIFY HAVE CHANGED. IF YOU REQUEST A PREFERENCE, YOU ARE CERTIFYING THAT YOUR OFFER QUALIFIES FOR THE PREFERENCE YOU’VE CLAIMED. IMPROPERLY REQUESTING A PREFERENCE CAN HAVE SERIOUS CONSEQUENCES. [11-35-1524(E)(4)&(6)]**

## PREFERENCES - ADDRESS AND PHONE OF IN-STATE OFFICE: Please provide the address and phone number for your in-state office in the space provided below. An in-state office is necessary to claim either the Resident Vendor Preference (11-35-1524(C)(1)(i)&(ii)) or the Resident Contractor Preference (11-35-1524(C)(1)(iii)). Accordingly, you must provide this information to qualify for the preference. An in-state office is not required, but can be beneficial, if you are claiming the Resident Subcontractor Preference (11-35-1524(D)).

<table>
<thead>
<tr>
<th>In-State Office Address same as Home Office Address (check only one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>____ In-State Office Address same as Home Office Address (check only one)</td>
</tr>
</tbody>
</table>

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*PAGE TWO (SEP 2009)*

*End of PAGE TWO*
I. SCOPE OF SOLICITATION
II. GENERAL CONDITIONS
III. SCOPE OF WORK/SPECIFICATIONS
IV. BIDDING SCHEDULE / COST PROPOSAL
V. ATTACHMENTS TO SOLICITATION
I. SCOPE OF SOLICITATION

ACQUIRE SERVICES & SUPPLIES / EQUIPMENT (JAN 2006): The purpose of this solicitation is to acquire services and supplies or equipment complying with the enclosed description and/or specifications and conditions.

The specifications listed herein are not to be considered restrictive to one source of supply. However, items offered must be equal in quality and performance. The offeror must include with his quote, supporting product data sufficient for the College to determine equality and acceptability. The right is reserved to reject any offering in which the items offered are considered unsatisfactory in any manner. The College will determine if minor deviations from the listed features are acceptable.

GENERAL PROVISIONS
Midlands Technical College reserves the right to reject any and all quotes in whole or in part, to waive all technicalities and to cancel the solicitation.

Unit Prices: Unit prices will govern over extended prices unless otherwise stated in notice.

Offeror’s Qualifications: Offerors must, upon request of the College furnish satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these specifications. The College reserves the right to make the final determination as to the bidder’s ability to provide the products or services requested herein.

Offeror’s Responsibility: Each Offeror shall fully be acquainted with conditions relating to the scope and restrictions attending the execution of the work under the conditions of this quotation. It is expected that this will sometimes require on-site observation. The failure or omission of Offeror to acquaint himself with existing conditions shall in no way relieve him of any obligation with respect to the quote or to the contract.

Award Criteria: The contract shall be awarded to the lowest responsible and responsive Offeror(s) whose quote meets the requirements and criteria set forth in the Request for Quote.

Award will be made to one vendor for the entire quantity.

Award will be made to the lowest responsible and responsive offeror.

All materials and equipment must be new, no refurbish.
II. GENERAL CONDITIONS

AMENDMENTS TO SOLICITATION (JAN 2004): (a) The Solicitation may be amended at any time prior to opening. All actual and prospective Offerors should monitor the following web site for the issuance of Amendments: www.procurement.sc.gov(b) Offerors shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date in the space provided for this purpose on Page Two, (3) by letter, or (4) by submitting a bid that indicates in some way that the bidder received the amendment. (c) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

ASSIGNMENT: No contract may be assigned, or transferred without the written consent of the College.

CONTRACT DOCUMENTS & ORDER OF PRECEDENCE (FEB 2015): (a) Any contract resulting from this solicitation shall consist of the following documents: (1) a Record of Negotiations, if any, executed by you and the Procurement Officer, (2) the solicitation, as amended, (3) documentation of clarifications [11-35-1520(8)] or discussions [11-35-1530(6)] of an offer, if applicable, (4) your offer, (5) any statement reflecting the state's final acceptance (a/k/a "award"), and (6) purchase orders. These documents shall be read to be consistent and complimentary. Any conflict among these documents shall be resolved by giving priority to these documents in the order listed above. (b) The terms and conditions of documents (1) through (5) above shall apply notwithstanding any additional or different terms and conditions in any other document, including without limitation, (i) a purchase order or other instrument submitted by the State, (ii) any invoice or other document submitted by Contractor, or (iii) any privacy policy, terms of use, or end user agreement. Except as otherwise allowed herein, the terms and conditions of all such documents shall be void and of no effect. (c) No contract, license, or other agreement containing contractual terms and conditions will be signed by any Using Governmental Unit. Any document signed or otherwise agreed to by persons other than the Procurement Officer shall be void and of no effect.

DEADLINE FOR SUBMISSION OF OFFER (JAN 2004): Any offer received after the Procurement Officer of the governmental body or his designee has declared that the time set for opening has arrived, shall be rejected unless the offer has been delivered to the designated purchasing office or the governmental bodies’ mail room which services that purchasing office prior to the bid opening.

DEFAULT: In case of default by the Contractor, the College reserves the right to purchase any or all items in default in the open market, charging the Contractor with any additional costs. The defaulting Contractor shall not be considered a responsible bidder until the assessed charge has been satisfied.

DISCOUNT FOR PROMPT PAYMENT (JAN 2006): (a) Discounts for prompt payment will not be considered in the evaluation of offers. However, any offered discount will form a part of the award, and will be taken if payment is made within the discount period indicated in the offer by the offeror. As an alternative to offering a discount for prompt payment in conjunction with the offer, offerors awarded contracts may include discounts for prompt payment on individual invoices. (b) In connection with any discount offered for prompt payment, time shall be computed from the date of the invoice. If the Contractor has not placed a date on the invoice, the due date shall be calculated from the date the designated billing office receives a proper invoice, provided the state annotates such invoice with the date of receipt at the time of receipt. For the purpose of computing the discount earned, payment shall be considered to have been made on the date that appears on the payment check or, for an electronic funds transfer, the specified payment date. When the discount date falls on a Saturday, Sunday, or legal holiday when Federal
Government offices are closed and Government business is not expected to be conducted, payment may be made on the following business day.

**ESTIMATED QUANTITY - UNKNOWN (JAN 2006):** The total quantity of purchases of any individual item on the contract is not known. The State does not guarantee that the State will buy any specified item or total amount. The omission of an estimated purchase quantity does not indicate a lack of need but rather a lack of historical information.

**IRAN DIVESTMENT ACT - CERTIFICATION (JAN 2015):** (a) The Iran Divestment Act List is a list published by the Board pursuant to Section 11-57-310 that identifies persons engaged in investment activities in Iran. Currently, the list is available at the following URL: http://procurement.sc.gov/PS/PSiran-divestment.phtm. (b) Section 11-57-310 requires the government to provide a person ninety days written notice before he is included on the list. The following representation, which is required by Section 11-57-330(A), is a material inducement for the State to award a contract to you. (c) By signing your Offer, you certify that, as of the date you sign, you are not on the then current version of the Iran Divestment Act List. (d) You must notify the Procurement Officer immediately if, at any time before posting of a final statement of award, you are added to the Iran Divestment Act List.

**OPEN TRADE REPRESENTATION (JUN 2015):** By submitting an Offer, Offeror represents that Offeror is not currently engaged in the boycott of a person or an entity based in or doing business with a jurisdiction with whom South Carolina can enjoy open trade, as defined in SC Code Section 11-35-5300. [02-2A083-1]

**OPEN TRADE (JUN 2015):** During the contract term, including any renewals or extensions, Contractor will not engage in the boycott of a person or an entity based in or doing business with a jurisdiction with whom South Carolina can enjoy open trade, as defined in SC Code Section 11-35-5300. [07-7A053-1]

**NOTICE (JAN 2006):** (A) After award, any notices shall be in writing and shall be deemed duly given (1) upon actual delivery, if delivery is by hand, (2) upon receipt by the transmitting party of automated confirmation or answer back from the recipient's device if delivery is by telex, telegram, facsimile, or electronic mail, or (3) upon deposit into the United States mail, if postage is prepaid, a return receipt is requested, and either registered or certified mail is used. (B) Notice to contractor shall be to the address identified as the Notice Address on Page Two. Notice to the state shall be to the Procurement Officer's address on the Cover Page. Either party may designate a different address for notice by giving notice in accordance with this paragraph.

**PAYMENT & INTEREST (FEB 2015):** (a) The State shall pay the Contractor, after the submission of proper invoices or vouchers, the prices stipulated in this contract for supplies delivered and accepted or services rendered and accepted, less any deductions provided in this contract. Unless otherwise specified herein, including the purchase order, payment shall not be made on partial deliveries accepted by the Government. (b) Unless otherwise provided herein, including the purchase order, payment will be made by check mailed to the payment address on “Page Two.” (c) Notwithstanding any other provision, payment shall be made in accordance with S.C. Code Section 11-35-45, or Chapter 6 of Title 29 (real property improvements) when applicable, which provides the Contractor’s exclusive means of recovering any type of interest from the Owner. Contractor waives imposition of an interest penalty unless the invoice submitted specifies that the late penalty is applicable. Except as set forth in this paragraph, the State shall not be liable for the payment of interest on any debt or claim arising out of or related to this contract for any reason. (d) Amounts due to the State shall bear interest at the rate of interest established by the South Carolina Comptroller General pursuant to Section 11-35-45 (“an amount not to exceed fifteen percent each
TAXES (JAN 2006): Any tax the contractor may be required to collect or pay upon the sale, use or delivery of the products shall be paid by the State, and such sums shall be due and payable to the contractor upon acceptance. Any personal property taxes levied after delivery shall be paid by the State. It shall be solely the State’s obligation, after payment to contractor, to challenge the applicability of any tax by negotiation with, or action against, the taxing authority. Contractor agrees to refund any tax collected, which is subsequently determined not to be proper and for which a refund has been paid to contractor by the taxing authority. In the event that the contractor fails to pay, or delays in paying, to any taxing authorities, sums paid by the State to contractor, contractor shall be liable to the State for any loss (such as the assessment of additional interest) caused by virtue of this failure or delay. Taxes based on Contractor’s net income or assets shall be the sole responsibility of the contractor. [07-7A080-1]

PURCHASE ORDERS (JAN 2006): Contractor shall not perform any work prior to the receipt of a purchase order from the using governmental unit. The using governmental unit shall order any supplies or services to be furnished under this contract by issuing a purchase order. Purchase orders may be used to elect any options available under this contract, e.g., quantity, item, delivery date, payment method, but are subject to all terms and conditions of this contract. Purchase orders may be electronic. No particular form is required. An order placed pursuant to the purchasing card provision qualifies as a purchase order.

TAXPAYER IDENTIFICATION NUMBER (JAN 2004): (a) If Offeror is owned or controlled by a common parent as defined in paragraph (b) of this provision, Offeror shall submit with its Offer the name and TIN of common parent. Definitions: "Common parent," as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member. "Taxpayer Identification Number (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number. If Offeror does not have a TIN, Offeror shall indicate if either a TIN has been applied for or a TIN is not required. If a TIN is not required, indicate whether (i) Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States; (ii) Offeror is an agency or instrumentality of a state or local government; (iii) Offeror is an agency or instrumentality of a foreign government; or (iv) Offeror is an agency or instrumentality of the Federal Government.

QUESTIONS FROM OFFERORS (FEB 2015): (a) Any prospective offeror desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing. Questions regarding the original solicitation or any amendment must be received by the Procurement Officer no later than five (5) days prior to opening unless an earlier date is stated on the Cover Page. Label any communication regarding your questions with the name of the procurement officer, and the solicitation's title and number. Oral explanations or instructions will not be binding. [See R. 19-445.2042(B)] Any information given a prospective offeror concerning a solicitation will be furnished promptly to all other
prospective offerors as an Amendment to the solicitation, if that information is necessary for submitting offers or if the lack of it would be prejudicial to other prospective offerors. See clause entitled “Duty to Inquire.” We will not identify you in our answer to your question. (b) The State seeks to permit maximum practicable competition. Offerors are urged to advise the Procurement Officer -- as soon as possible -- regarding any aspect of this procurement, including any aspect of the Solicitation that unnecessarily or inappropriately limits full and open competition.

SIGNING YOUR OFFER (JAN 2004) Every Offer must be signed by an individual with actual authority to bind the Offeror. (a) If the Offeror is an individual, the Offer must be signed by that individual. If the Offeror is an individual doing business as a firm, the Offer must be submitted in the firm name, signed by the individual, and state that the individual is doing business as a firm. (b) If the Offeror is a partnership, the Offer must be submitted in the partnership name, followed by the words “by its Partner,” and signed by a general partner. (c) If the Offeror is a corporation, the Offer must be submitted in the corporate name, followed by the signature and title of the person authorized to sign. (d) An Offer may be submitted by a joint venturer involving any combination of individuals, partnerships, or corporations. If the Offeror is a joint venture, the Offer must be submitted in the name of the Joint Venture and signed by every participant in the joint venture in the manner prescribed in paragraphs (a) through (c) above for each type of participant. (e) If an Offer is signed by an agent, other than as stated in subparagraphs (a) through (d) above, the Offer must state that it has been signed by an Agent. Upon request, Offeror must provide proof of the agent's authorization to bind the principal.

SUBMITTING A PAPER OFFER OR MODIFICATION (MAR 2015): Unless specifically instructed otherwise in the solicitation, you should submit your offer or modification in accordance with the clause titled “ON-LINE BIDDING INSTRUCTIONS.” Paper offers are discouraged. If you must submit a paper offer or modification the following instructions apply. (a) All prices and notations should be printed in ink or typewritten. Errors should be crossed out, corrections entered and initialed by the person signing the bid. Do not modify the solicitation document itself (including bid schedule). (b) (1) All copies of the offer or modification, and any other documents required to be submitted with the offer shall be enclosed in a sealed, opaque envelope or package. (2) Submit your offer or modification to the address on the Cover Page. (3) The envelope or package must show the time and date specified for opening, the solicitation number, and the name and address of the bidder. If the offer or modification is sent by mail or special delivery service (UPS, Federal Express, etc.), the outermost envelope or wrapper must be labeled "OFFER ENCLOSED" on the face thereof. (c) If you are responding to more than one solicitation, submit each offer in a separate envelope or package. (d) Submit the number of copies indicated on the Cover Page. (e) Facsimile or e-mail offers, modifications, or withdrawals, will not be considered unless authorized by the Solicitation.

TERMINATION: Subject to the provisions below, the contractor may be terminated for any reason by the College providing a thirty-day advance notice in writing is given to the contractor.

TERMINATION FOR CONVENIENCE: In the event that this contract is terminated or cancelled upon request and for the convenience of the College may negotiate reasonable termination costs, if applicable.

TERMINATION FOR CAUSE: Termination by the College for cause, default, or negligence on the part of the Contractor shall be excluded from the foregoing provisions; termination costs, if any, shall not apply. The thirty day advance notice requirement is waived and the default provision in this bid shall apply.

WARRANTY – STANDARD (JAN 2006): Contractor must provide the manufacturer’s standard written warranty upon delivery of product. Contractor warrants that manufacturer will honor the standard written warranty provided. [07-7B280-1]
SPECIAL CONDITIONS

LICENSES AND PERMITS (JAN 2006): During the term of the contract, the Contractor shall be responsible for obtaining, and maintaining in good standing, all licenses (including professional licenses, if any), permits, inspections and related fees for each or any such licenses, permits and/or inspections required by the State, county, city or other government entity or unit to accomplish the work specified in this solicitation and the contract.

ILLEGAL IMMIGRATION (NOV. 2008) (An overview is available at www.procurement.sc.gov) By signing your offer, you certify that you will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agree to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter 14 is inapplicable to you and your subcontractors or sub-subcontractors; or (b) that you and your subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." You agree to include in any contracts with your subcontractors language requiring your subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14. [07-7B097-1] laws, regulations, rules, rulings and ordinances. These include, but are not limited to: the Occupational safety and Health Act, The Environmental Protection Act, The South Carolina Hazardous Waste Management Act.

IRAN DIVESTMENT ACT – ONGOING OBLIGATIONS – (JAN 2015): (a) You must notify the procurement officer immediately if, at any time during the contract term, you are added to the Iran Divestment Act List. (b) Consistent with Section 11-57-330(B), you shall not contract with any person to perform a part of the Work, if, at the time you enter into the subcontract, that person is on the then-current version of the Iran Divestment Act List.

CONTRACTOR'S LIABILITY INSURANCE (JANUARY 2006): (1) Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in South Carolina such insurance as will protect the contractor from the types of claims set forth below which may arise out of or result from the contractor's operations under the contract and for which the contractor may be legally liable, whether such operations be by the contractor or by a subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable: (a) claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the work to be performed; (b) claims for damages because of bodily injury, occupational sickness or disease, or death of the contractor's employees; (c) claims for damages because of bodily injury, sickness or disease, or death of any person other than the contractor's employees; (d) claims for damages insured by usual personal injury liability coverage; (e) claims for damages, other than to the work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom; (f) claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle; (g) claims for bodily injury or property damage arising out of completed operations; and (h) claims involving contractual liability insurance applicable to the Contractor's obligations under the provision entitled Indemnification – Third Party Claims. (2) Coverage shall be written on an occurrence basis and shall be maintained without interruption from date of commencement of the work until date of final payment. Coverage must include the following on a commercial basis: (i) Premises – Operations, (ii) Independent Contractor’s Protective, (iii) Products and

(3) The insurance required by this paragraph shall be written for not less than the following limits of liability or as required by law, whichever coverage is greater:

**COMMERCIAL GENERAL LIABILITY:**
- General Aggregate (per project) $1,000,000
- Products/Completed Operations $1,000,000
- Personal and Advertising Injury $1,000,000
- Each Occurrence $1,000,000
- Fire Damage (Any one fire) $50,000
- Medical Expense (Any one person) $5,000

**BUSINESS AUTO LIABILITY** (including All Owned, Nonowned, and Hired Vehicles):
- Combined Single Limit $1,000,000
- OR
- Bodily Injury & Property Damage (each) $750,000

**WORKER’S COMPENSATION:**
- State Statutory
  - Employers Liability $100,000 Per Acc.
  - $500,000 Disease, Policy Limit; $100,000 Disease, Each Employee

(4) Required Documentation. (a) Prior to commencement of the work, contractor shall provide to the state a signed, original certificate of liability insurance (ACORD 25). The certificate shall identify the types of insurance, state the limits of liability for each type of coverage, include a provision for 30 days notice prior to cancellation, name every applicable using governmental unit (as identified on the cover page) as a Certificate Holder, provide that the general aggregate limit applies per project, and provide that coverage is written on an occurrence basis. (b) Prior to commencement of the work, contractor shall provide to the state a written endorsement to the contractor’s general liability insurance policy that (i) names every applicable using governmental unit (as identified on the Cover Page) as an additional insured, (ii) provides that no material alteration, cancellation, non-renewal, or expiration of the coverage contained in such policy shall have effect unless the named governmental unit(s) has been given at least thirty (30) days prior written notice, and (iii) provides that the Contractor’s liability insurance policy shall be primary, with any liability insurance of the state as secondary and noncontributory. (c) Both the certificate and the endorsement must be received directly from either the contractor's insurance agent or the insurance company.

(5) Contractor shall provide a minimum of thirty (30) days written notice to every applicable using governmental unit of any proposed reduction of coverage limits (on account of revised limits or claims paid under the General Aggregate) or any substitution of insurance carriers.

(6) The state's failure to demand either a certificate of insurance or written endorsement required by this paragraph is not a waiver of contractor's obligations to obtain the required insurance.
MINORITY PARTICIPATION (JAN 2006)
Is the bidder a South Carolina Certified Minority Business? □ Yes □ NO
Is the bidder a Minority Business certified by another governmental entity? □ Yes □ NO
If so, please list the certifying governmental entity: _______________________
Will any of the work under this contract be performed by a SC certified Minority Business as a subcontractor? □ Yes □ NO
If so, what percentage of the total value of the contract will be performed by a SC certified Minority Business as a subcontractor?
□ Yes □ NO
Will any of the work under this contract be performed by a minority business certified by another governmental entity as a subcontractor? □ Yes □ NO
If so, what percentage of the total value of the contract will be performed by a minority business certified by another governmental entity as a subcontractor? □ Yes □ NO
If a certified Minority Business is participating in this contract, please indicate all categories for which the Business is certified:
□ Traditional minority
□ Traditional minority, but female
□ Women (Caucasian females)
□ Hispanic minorities
□ DOT referral (Traditional minority)
□ DOT referral (Caucasian female)
□ Temporary certification
□ SBA 8 (a) certification referral
□ Other minorities (Native American, Asian, etc.)
(If more than one minority contractor will be utilized in the performance of this contract, please provide the information above for each minority business.)
III. SCOPE OF WORK / SPECIFICATIONS

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide all labor, materials, equipment and supervision to construct complete and operable electrical systems as indicated on the drawings and specified herein.

B. All materials and equipment used shall be new, undamaged and free from any defects.

1.2 RELATED DOCUMENTS AND OTHER INFORMATION

A. The general provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the portions of work specified in each and every Section, individually and collectively.

1.3 PRODUCT WARRANTIES

A. Provide manufacturer's standard printed commitment in reference to a specific product and normal application, stating that certain acts of restitution will be performed for the Purchaser or Owner by the manufacturer, when and if the product fails within certain operational conditions and time limits. Where the warranty requirements of a specific specification section exceeds the manufacturer's standard warranty, the more stringent requirements will apply and modified manufacturer's warranty shall be provided. In no case shall the manufacturer's warranty be less than one (1) year.

1.4 PRODUCT SUBSTITUTIONS

A. General: Materials specified by manufacturer's name shall be used unless prior approval of an alternate is given by addenda. Requests for substitutions must be received in the office of the Architect at least 10 days prior to opening of bids.

1.5 SUBMITTAL REQUIREMENTS

A. Submit for review by the Engineer Architect a schedule with engineering data of materials and equipment to be incorporated in the work. Submittals shall be supported by descriptive materials, i.e., catalog sheets, product data sheets, diagrams, performance curves and charts published by the manufacturer, warranties, etc., to show conformance to Specifications and Plan requirements; model numbers alone shall not be acceptable. Data submitted for review shall contain all information to indicate compliance with Contract Documents. Complete electrical characteristics shall be provided for all equipment. Submittals for lighting fixtures shall include Photometric Data. The Engineer reserves the right to require samples of any equipment to be submitted for review.

B. The purpose of shop drawing review is to demonstrate to the Architect that the Contractor understands the design concept. The Architect's review of such drawings, schedules, or cuts shall not relieve the Contractor from responsibility for deviations from the drawings or specifications unless he has, in writing, called the Architect's attention to such deviation at the time of submission, and received written permission from the Architect for such deviations.
C. Where cut sheets include an entire product family, mark all specific items to be utilized for this project on equipment cut sheets. Generic cut sheets with no indication of which items on the cut sheet shall be used will be rejected.

D. Response to Submittals: Shop drawings shall be noted with the following classifications:
   1. "Reviewed": No corrections, no marks. Contractor shall submit copies for distribution.
   2. "Provide as Corrected": A few minor corrections. Items may be ordered as marked up without further resubmission. Submit shall submit copies for distribution. Formally correct prior to submitting O&M manuals.
   3. "Revise and Resubmit": Minor corrections. Items may be ordered at the Contractor's option. Contractor shall resubmit documents with corrections noted.
   4. "Rejected": Major corrections required or not in accordance with the contract documents. Contractor shall correct and resubmit documents.

1.6 ELECTRICAL DRAWINGS

A. Electrical contract drawings are diagrammatic and indicate the general arrangement of electrical equipment. Do not scale electrical plans. Obtain all dimensions from field measurements.

B. Discrepancies shown on different drawings, between drawings and specifications or between documents and field conditions shall be installed to provide the better quality or greater quantity of work; or, comply with the more stringent requirement; either or both in accordance with the A/E’s interpretation.

1.7 ELECTRICAL WORK SCHEDULE

A. All electrical work shall be performed only when scheduled with and approved by owner. Contractor shall ensure minimal interruptions for each branch circuit affected in this Data/Server Room or any area affected by the installation of panel “SP”. Refer to Electrical Plans for proper phasing of installation to avoid as many disruptions as possible.

1.8 SUBMITTALS – GENERAL ELECTRICAL

A. Firestopping Submittals shall be provided for each proposed system type prior to installation. Submittal shall include the following:
   1. Firestopping Materials
   2. Firestopping Installation Drawings for each conduit penetration, cable in metal sleeve penetration, and blank metal sleeve penetration for each type of wall / floor construction encountered.

1.9 SYSTEMS REQUIRING ROUGH-IN

A. Rough-in shall consist of all outlet boxes/raceway systems/supports and sleeves required for the installation of cables/devices by other Divisions and by the Owner. It shall be the responsibility of this Contractor to determine the requirements by reviewing the contract documents and meeting with the Superintendent of the trade involved and Owner’s representative to review submittal data, shop drawings, etc.
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B. Sealing of all sleeves, to meet the fire rating of the assembly, whether active or not, is work of this Division.

1.10 EXISTING SERVICES AND FACILITIES

A. Damage to Existing Services: Existing services and facilities damaged by the Contractor through negligence or through use of faulty materials or workmanship shall be promptly repaired, replaced, or otherwise restored to previous conditions by the Contractor without additional cost to the Owner.

B. Interruption of Services: Interruptions of services necessary for connection to or modification of existing systems or facilities shall occur only at prearranged times approved by the Owner. Interruptions shall only occur after the provision of all temporary work and the availability of adequate labor and materials will assure that the duration of the interruption will not exceed the time agreed upon with owner.

C. Removed Materials: Existing materials made unnecessary by the new installation shall be stored on site. They shall remain the property of the Owner and shall be stored at a location and in a manner as directed by the Owner. If classified by the Owner's authorized representative as unsuitable for further use, the material shall become the property of the Contractor and shall be removed from the site at no additional cost to the owner.

D. Contractor shall be responsible for coordinating with contract documents for routing of conduits and other components with existing conditions. Contractor shall be responsible for field verifying source of raceways and cabling that are in conflict regardless of whether they serve devices in the area of work or not. The relocation of these raceways to assist in avoiding these conflicts shall also be included at no additional cost to the owner.

E. Contractor shall protect all existing low-voltage cabling from damage. If conflicts arise, contact architect immediately to determine status of cabling. Existing cabling that is damaged during construction shall be replaced by the contractor.

PART 2 PRODUCT

2.1 FIRESTOPPING:

A. Refer to section 078413 for additional requirements.

B. A firestop system shall be used to seal penetrations of electrical conduits and cables through fire-rated partitions per NEC 300.21, and NEC 800.26. The firestop system shall be qualified by formal performance testing in accordance with ASTM E-814, or UL 1479.

C. The firestop system shall consist of a fire-rated caulking substance and a high temperature fiber insulation. It shall be permanently flexible, waterproof, non-toxic, smoke and gas tight and have a high adhesion to all solids so damming is not required. Only metal conduit shall be used in conjunction with this system to penetrate fire rated partitions. Install in strict compliance with manufacturer's recommendations. 3M or approved equal.
PART 3 - EXECUTION

3.1 PRODUCT INSTALLATION, GENERAL

A. Except where more stringent requirements are indicated, comply with the product manufacturer’s installation instructions and recommendations, including handling, anchorage, assembly, connections, cleaning and testing, charging, lubrication, startup, test operation and shut-down of operating equipment. Consult with manufacturer’s technical experts, for specific instructions on unique product conditions and unforeseen problems.

B. Protection and Identification: Deliver products to project properly identified with names, models numbers, types, grades, compliance labels and similar information needed for distinct identifications; adequately packaged or protected to prevent deterioration during shipment, storage and handling. Store in a dry, well ventilated, indoor space, except where prepared and protected by the manufacturer specifically for exterior storage.

C. Permits and Tests: Provide labor, material and equipment to perform all tests required by the governing agencies and submit a record of all tests to the Owner or his representative.

D. Install temporary protective covers over equipment enclosures, outlet boxes and similar items after interiors, conductors, devices, etc. are installed, to prevent the entry of construction debris and to protect the installation during finish work performed by others. Do not install device plates, equipment covers or trims until finish work is complete.

E. Clean all equipment, inside and out, upon completion of the work. Scratched or marred surfaces shall be touched-up with touch-up paint furnished by the equipment manufacturer.

F. Replace all equipment and materials that become damaged.

G. No more than three phase conductors, each of opposite phases for a three phase WYE system, shall be combined in a single raceway unless written approval is granted by the engineer or noted otherwise on the construction documents. 120 volt receptacle and lighting circuits are except from this requirement, but must meet the requirements of the NEC.

H. Shared neutrals shall not be utilized (including, but not limited to homeruns) unless written permission is obtained from the Engineer for a specific application.

3.2 EQUIPMENT PROTECTION

A. Equipment and materials shall be protected during shipment and storage against physical damage, vermin, dirt, corrosive substances, fumes, moisture, cold and rain.

B. Store equipment indoors in clean dry space with uniform temperature to prevent condensation. Equipment shall include but not be limited to switchgear, switchboards, panelboards, transformers, motor control centers, motor controllers, uninterruptible power systems, enclosures, controllers, circuit protective devices, cables, wire, light fixtures, electronic
C. During installation, equipment shall be protected against entry of foreign matter; and be vacuum-cleaned both inside and outside before testing and operating. Compressed air shall not be used to clean equipment. Remove loose packing and flammable materials from inside equipment.

D. Damaged equipment shall be, as determined by the Engineer, placed in first class operating condition or be returned to the source of supply for repair or replacement.

E. Painted surfaces shall be protected with factory installed removable heavy kraft paper, sheet vinyl or equal.

F. Damaged paint on equipment and materials shall be refinished with the same quality of paint and workmanship as used by the manufacturer so repaired areas are not obvious.

3.3 ELECTRICAL WORK:

A. Electrical work shall be accomplished with all affected circuits or equipment de-energized. When an electrical outage cannot be accomplished in this manner for the required work, the following requirements are mandatory:

1. Electricians must use full protective equipment (i.e., certified and tested insulating material to cover exposed energized electrical components, certified and tested insulated tools, etc.) while working on energized systems in accordance with NFPA 70E.

2. Electricians must wear personal protective equipment while working on energized systems in accordance with NFPA 70E.

3. Before initiating any work, a job specific work plan must be developed by the contractor with a peer review conducted and documented by the Contractor. The work plan must include procedures to be used on and near the live electrical equipment, barriers to be installed, safety equipment to be used and exit pathways.

4. Work on energized circuits or equipment cannot begin until prior written approval is obtained from the Owner.

END OF SECTION 260500
SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes building wire and cable; nonmetallic-sheathed cable; direct burial cable; service entrance cable; armored cable; metal clad cable; and wiring connectors and connections.

B. Related Sections:

1.2 REFERENCES

A. International Electrical Testing Association:

B. National Fire Protection Association:
   1. NFPA 70 - National Electrical Code.
   2. NFPA 262 - Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces.

C. Underwriters Laboratories, Inc.:
   1. UL 1277 - Standard for Safety for Electrical Power and Control Tray Cables with Optional Optical-Fiber Members.

1.3 SYSTEM DESCRIPTION

A. Product Requirements: Provide products as follows:
   1. Solid conductor for branch circuits 10 AWG and smaller.
   2. Stranded conductors for control circuits.
   3. Conductor not smaller than 12 AWG for power and lighting circuits.
   4. Conductor not smaller than 14 AWG for control circuits.
   5. Increase wire size in branch circuits to limit voltage drop to a maximum of 3 percent.

B. Wiring Methods: Provide the following wiring methods:
   1. Use only building wire, Type THWN insulation, in raceway unless specifically noted otherwise.
   2. Type MC Cable shall not be allowed without written permission from engineer.
1.4 QUALITY ASSURANCE

A. Provide wiring materials located in plenums with peak optical density not greater than 0.5, average optical density not greater than 0.15, and flame spread not greater than 5 feet (1.5 m) when tested in accordance with NFPA 262.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Conform to requirements of NFPA 70.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

1.6 FIELD MEASUREMENTS

A. Verify field measurements prior to work. Electrical Drawings are diagrammatic only and shall not be scaled.

1.7 COORDINATION

A. Division 01 Specifications - Administrative Requirements: Requirements for coordination.

B. Where wire and cable destination is indicated and routing is not shown, determine routing and lengths required.

C. Wire and cable routing indicated is approximate unless dimensioned. Include wire and cable lengths within 10 ft of length shown.

PART 2 PRODUCTS

2.1 BUILDING WIRE

A. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Southwire
2. AETNA.
3. American Insulated Wire Corp.
4. Colonial Wire
5. General Cable Co.
6. Substitutions: Section 01 60 00 - Product Requirements.

B. Product Description: Single conductor insulated wire.
C. Conductor: Copper.
D. Insulation Voltage Rating: 600 volts.

2.2 TERMINATIONS
A. Terminal Lugs for Wires 6 AWG and Smaller: Solderless, compression type copper.
B. Lugs for Wires 4 AWG and Larger: Color keyed, compression type copper, with insulating sealing collars.

PART 3 EXECUTION

3.1 EXAMINATION
A. Division 01 Specification - Administrative Requirements: Coordination and project conditions.
B. Verify interior of building has been protected from weather.
C. Verify mechanical work likely to damage wire and cable has been completed.
D. Verify raceway installation is complete and supported.

3.2 PREPARATION
A. Completely and thoroughly swab raceway before installing wire.

3.3 EXISTING WORK
A. Remove exposed abandoned wire and cable, including abandoned wire and cable above accessible ceiling finishes. Patch surfaces where removed cables pass through building finishes.
B. Disconnect abandoned circuits and remove circuit wire and cable. Remove abandoned boxes when wire and cable servicing boxes is abandoned and removed. Install blank cover for abandoned boxes not removed.
C. Provide access to existing wiring connections remaining active and requiring access. Modify installation or install access panel.
D. Extend existing circuits using materials and methods compatible with existing electrical installations, or as specified.
E. Clean and repair existing wire and cable remaining or wire and cable to be reinstalled.
3.4 INSTALLATION

A. Route wire and cable to meet Project conditions.

B. Neatly train and lace wiring inside boxes, equipment, and panelboards.

C. Identify wire and cable under provisions of Section 26 05 53. Identify each conductor with its circuit number or other designation indicated.

D. Special Techniques--Building Wire in Raceway:
   1. Pull conductors into raceway at same time.
   2. Install building wire 4 AWG and larger with pulling equipment.

E. Special Techniques - Wiring Connections:
   1. Clean conductor surfaces before installing lugs and connectors.
   2. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
   3. Tape uninsulated conductors and connectors with electrical tape to 150 percent of insulation rating of conductor.
   4. Install split bolt connectors for copper conductor splices and taps, 6 AWG and larger.
   5. Install solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.
   6. Install insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.

F. Install stranded conductors for branch circuits 10 AWG and smaller. Install crimp on fork terminals for device terminations. Do not place bare stranded conductors directly under screws.

G. Install terminal lugs on ends of 600 volt wires unless lugs are furnished on connected device, such as circuit breakers.

H. Size lugs in accordance with manufacturer’s recommendations terminating wire sizes. Install 2-hole type lugs to connect wires 4 AWG and larger to copper bus bars.

I. For terminal lugs fastened together such as on motors, transformers, and other apparatus, or when space between studs is small enough that lugs can turn and touch each other, insulate for dielectric strength of 2-1/2 times normal potential of circuit.

3.5 WIRE COLOR

A. General:
   1. For wire sizes 10 AWG and smaller, install wire with insulation colors as designated below.
   2. For wire sizes 8 AWG and larger, identify wire with colored tape at terminals, splices and boxes. Colors are as follows:
120/208-volt systems:
Phase A - Black
Phase B - Red
Phase C - Blue
Neutral - White

C. Ground Conductors:
   1. For 6 AWG and smaller: Green.
   2. For 4 AWG and larger: Identify with green tape at both ends and visible points including junction boxes.
   3. For isolated grounding conductors: Green with a yellow stripe.

3.6 FIELD QUALITY CONTROL
A. Division 01 Specification - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
B. Inspect and test in accordance with NETA ATS, except Section 4.
C. Perform inspections and tests listed in NETA ATS, Section 7.3.1.

END OF SECTION 260519
SECTION 26 05 26 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Rod electrodes.
   2. Active electrodes.
   3. Wires.
   4. Mechanical connectors.
   5. Exothermic connections.

B. Related Sections:
   1. Section 33 79 00 - Site Grounding: Site related grounding components for buildings and facilities.

1.2 REFERENCES

A. Institute of Electrical and Electronics Engineers:
   2. IEEE 1100 - Recommended Practice for Powering and Grounding Electronic Equipment.

B. International Electrical Testing Association:

C. National Fire Protection Association:
   1. NFPA 70 - National Electrical Code.

1.3 PERFORMANCE REQUIREMENTS

A. Grounding System Resistance Documentation

1.4 QUALITY ASSURANCE

A. Provide grounding materials conforming to requirements of NEC, IEEE 142, and UL labeled.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years experience.

B. Installer: Company specializing in performing work of this section with minimum three years experience.

Grounding and Bonding for Electrical Systems 26 05 26 - 1
1.6 DELIVERY, STORAGE, AND HANDLING
A. Division 01 Specifications - Product Requirements: Requirements for transporting, handling, storing, and protecting products.
B. Accept materials on site in original factory packaging, labeled with manufacturer's identification.
C. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.

1.7 COORDINATION
A. Division 01 Specifications - Administrative Requirements: Requirements for coordination.

PART 2 PRODUCTS

2.1 WIRE
A. Material: Stranded copper.
B. Foundation Electrodes: 4 AWG.
C. Grounding Electrode Conductor: Copper conductor bare.
D. Bonding Conductor: Copper conductor insulated.

2.2 EXOTHERMIC CONNECTIONS
A. Product Description: Exothermic materials, accessories, and tools for preparing and making permanent field connections between grounding system components.

PART 3 EXECUTION

3.1 EXAMINATION
A. Division 01 Specifications - Administrative: Verification of existing conditions before starting work.
B. Verify final backfill and compaction has been completed before driving rod electrodes.

3.2 PREPARATION
A. Remove paint, rust, mill oils, and other surface contaminants at connection points.
3.3 EXISTING WORK

A. Modify existing grounding system to maintain continuity to accommodate renovations.

B. Extend existing grounding system using materials and methods compatible with existing electrical installations, or as specified.

3.4 INSTALLATION

A. Install in accordance with IEEE 142

B. Install grounding and bonding conductors concealed from view.

C. Install grounding well pipe with cover at each rod location. Install well pipe top flush with finished grade.

D. Install grounding electrode conductor and connect to reinforcing steel in foundation footing. Electrically bond steel together. If it is determined that the reinforcing steel cannot be made electrically continuous, install a 4 AWG bare copper conductor in foundation footing around the perimeter of the building.

E. Equipment Grounding Conductor: Install separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.

F. Install continuous grounding using underground cold water system and building steel as grounding electrode. Where water piping is not available, install artificial station ground by means of driven rods or buried electrodes.

G. Permanently ground entire system in accordance with NEC, including service equipment, distribution panels, grounding type receptacles, and other exposed non-current carrying metal parts of electrical equipment.

H. Install branch circuits feeding isolated ground receptacles with separate insulated grounding conductor, connected only at isolated ground receptacle, ground terminals, and at ground bus of serving panel.

I. Accomplish grounding of electrical system by using insulated grounding conductor installed with feeders and branch circuit conductors in conduits. Size grounding conductors in accordance with NEC. Install from grounding bus of serving panel to ground bus of served panel, grounding screw of receptacles, lighting fixture housing, light switch outlet boxes or metal enclosures of service equipment. Ground conduits by means of grounding bushings on terminations at panelboards with installed number 12 conductor to grounding bus.

J. Grounding electrical system using continuous metal raceway system enclosing circuit conductors in accordance with NEC.

K. Permanently attach equipment and grounding conductors prior to energizing equipment.
3.5 FIELD QUALITY CONTROL

A. Division 01 Specifications - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Inspect and test in accordance with NETA ATS, except Section 4.

C. Grounding and Bonding: Perform inspections and tests listed in NETA ATS, Section 7.13.

D. Perform ground resistance testing in accordance with IEEE 142.

E. Perform continuity testing in accordance with IEEE 142.

F. When improper grounding is found on receptacles, check receptacles in entire project and correct. Perform retest.

END OF SECTION
SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Conduit and equipment supports.
   2. Anchors and fasteners.

1.2 DELIVERY, STORAGE, AND HANDLING

A. Division 01 Specifications - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Accept materials on site in original factory packaging, labeled with manufacturer's identification.

C. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.

PART 2 PRODUCTS

2.1 CONDUIT SUPPORTS

A. Hanger Rods: Threaded high tensile strength galvanized carbon steel with free running threads.

B. Beam Clamps: Malleable Iron, with tapered hole in base and back to accept either bolt or hanger rod. Set screw: hardened steel.

C. Conduit clamps for trapeze hangers: Galvanized steel, notched to fit trapeze with single bolt to tighten.

D. Conduit clamps - general purpose: One hole malleable iron for surface mounted conduits.

E. Cable Ties: High strength nylon temperature rated to 185 degrees F (85 degrees C). Self locking.

2.2 FORMED STEEL CHANNEL

A. Product Description: Galvanized 12 gage (2.8 mm) thick steel. With holes 1-1/2 inches (38 mm) on center.

2.3 SPRING STEEL CLIPS

A. Product Description: Mounting hole and screw closure.
PART 3 EXECUTION

3.1 EXAMINATION

A. Division 01 Specifications - Administrative Requirements: Verification of existing conditions before starting work.

3.2 PREPARATION

A. The use of powder-actuated anchors is not allowed.

B. Do not drill or cut structural members.

3.3 INSTALLATION - HANGERS AND SUPPORTS

A. Anchors and Fasteners:
   1. Concrete Structural Elements: Provide expansion anchors.
   2. Steel Structural Elements: Provide beam clamps, spring steel clips, and steel ramset fasteners.
   3. Concrete Surfaces: Provide self-drilling anchors and expansion anchors.
   5. Solid Masonry Walls: Provide expansion anchors and preset inserts.
   7. Wood Elements: Provide wood screws.

B. Install conduit and raceway support and spacing in accordance with NEC.

C. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.

D. Install multiple conduit runs on common hangers.

E. Supports:
   1. Fabricate supports from structural steel or formed steel channel. Install hexagon head bolts to present neat appearance with adequate strength and rigidity. Install spring lock washers under nuts.
   2. Install surface mounted cabinets and panelboards with minimum of four anchors.
   3. In wet and damp locations install steel channel supports to stand cabinets and panelboards 1 inch (25 mm) off wall.
   4. Support vertical conduit at every other floor.

3.4 INSTALLATION - EQUIPMENT BASES AND SUPPORTS

A. Using templates furnished with equipment, install anchor bolts, and accessories for mounting and anchoring equipment.

B. Construct supports of steel members. Brace and fasten with flanges bolted to structure.
3.5 FIELD QUALITY CONTROL
   A. Division 01 Specifications - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

3.6 PROTECTION OF FINISHED WORK
   A. Division 01 Specifications - Execution and Closeout Requirements: Requirements for protecting finished Work.
   B. Protect adjacent surfaces from damage by material installation.

END OF SECTION
SECTION 26 05 33 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes conduit and tubing, surface raceways, outlet boxes, pull and junction boxes.

1.2 REFERENCES

A. American National Standards Institute:
   1. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
   2. ANSI C80.3 - Specification for Electrical Metallic Tubing, Zinc Coated.

B. National Electrical Manufacturers Association:
   1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
   2. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
   3. NEMA OS 1 - Sheet Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
   4. NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers, and Box Supports.
   5. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Tubing and Conduit.
   6. NEMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing.

1.3 SYSTEM DESCRIPTION

A. Raceway and boxes located as indicated on Drawings, and at other locations required for splices, taps, wire pulling, equipment connections, and compliance with regulatory requirements. Raceway and boxes are shown in approximate locations unless dimensioned. Provide raceway to complete wiring system.


C. Exposed Dry Locations in unfinished spaces: Provide rigid steel or intermediate metal conduit where subject to damage (see below for defined locations that are subject to damage), electrical metallic tubing. Provide sheet-metal boxes. Provide flush mounting outlet box in finished areas. Provide hinged enclosure for large pull boxes.

1.4 DESIGN REQUIREMENTS

A. Minimum Raceway Size: 3/4 inch (19 mm) unless otherwise specified.
1.5 DELIVERY, STORAGE, AND HANDLING

A. Division 01 Specifications - Product Requirements: Product storage and handling requirements.

B. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

1.6 COORDINATION

A. Division 01 Specifications - Administrative Requirements: Coordination and project conditions.

B. Coordinate installation of outlet boxes for equipment connected under Section 26 05 03.

C. Coordinate mounting heights, orientation and locations of outlets.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers listed below are basis of design, or can provide products equal to basis of design.
   1. Carlon Electrical Products.
   2. Hubbell Wiring Devices.
   3. Thomas & Betts Corp.
   5. The Wiremold Co.

2.2 METAL CONDUIT

A. Rigid Steel Conduit: ANSI C80.1.

B. Intermediate Metal Conduit (IMC): Rigid steel.

C. Fittings and Conduit Bodies: NEMA FB 1; material to match conduit.

2.3 FLEXIBLE METAL CONDUIT

A. Product Description: Interlocked steel construction.

B. Fittings: NEMA FB 1.

2.4 ELECTRICAL METALLIC TUBING (EMT)

A. Product Description: ANSI C80.3; galvanized tubing.
B. Fittings and Conduit Bodies: NEMA FB 1; steel compression type.

2.5 OUTLET BOXES

A. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
   1. Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported; furnish 1/2 inch (13 mm) male fixture studs where required.
   2. Concrete Ceiling Boxes: Concrete type.

B. Wall Plates for Finished Areas: As specified in Section 26 27 26.

C. Wall Plates for Unfinished Areas: Furnish gasketed cover.

2.6 PULL AND JUNCTION BOXES

A. Sheet Metal Boxes: NEMA OS 1, galvanized steel.

B. Hinged Enclosures: As specified in Section 26 27 16.

PART 3 EXECUTION

3.1 EXAMINATION

A. Division 01 Specifications - Administrative Requirements: Coordination and project conditions.

B. Verify outlet locations and routing and termination locations of raceway prior to rough-in.

3.2 EXISTING WORK

A. Remove exposed abandoned raceway, including abandoned raceway above accessible ceiling finishes. Cut raceway flush with walls and floors, and patch surfaces.

B. Remove concealed abandoned raceway to its source.

C. Disconnect abandoned outlets and remove devices. Remove abandoned outlets when raceway is abandoned and removed. Install blank cover for abandoned outlets not removed.

D. Maintain access to existing boxes and other installations remaining active and requiring access. Modify installation or provide access panel.

E. Extend existing raceway and box installations using materials and methods compatible with existing electrical installations, or as specified.

F. Clean and repair existing raceway and boxes to remain or to be reinstalled.

Raceway and Boxes for Electrical Systems
3.3 INSTALLATION
A. Ground and bond raceway and boxes in accordance with Section 26 05 26.
B. Fasten raceway and box supports to structure and finishes in accordance with Section 26 05 29.
C. Identify raceway and boxes in accordance with Section 26 05 53.
D. Arrange raceway and boxes to maintain headroom and present neat appearance.

3.4 INSTALLATION - RACEWAY
A. Raceway routing is shown in approximate locations unless dimensioned. Route to complete wiring system.
B. Arrange raceway supports to prevent misalignment during wiring installation.
C. Support raceway using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
D. Group related raceway; support using conduit rack. Construct rack using steel channel specified in Section 26 05 29; provide space on each for 25 percent additional raceways.
E. Do not support raceway with wire or perforated pipe straps. Remove wire used for temporary supports
F. Do not attach raceway to ceiling support wires or other piping systems.
G. Construct wireway supports from steel channel specified in Section 26 05 29.
H. Route exposed raceway parallel and perpendicular to walls.
I. Route raceway installed above accessible ceilings parallel and perpendicular to walls.
J. Maintain clearance between raceway and piping for maintenance purposes.
K. Maintain 12 inch (300 mm) clearance between raceway and surfaces with temperatures exceeding 104 degrees F (40 degrees C).
L. Cut conduit square using saw or pipe cutter; de-burr cut ends.
M. Bring conduit to shoulder of fittings; fasten securely.
N. Install conduit hubs or sealing locknuts to fasten conduit to cast boxes.
O. Install no more than equivalent of three 90 degree bends between boxes for power systems. Install conduit bodies to make sharp changes in direction, as around beams. Install factory elbows for bends in metal conduit larger than 2 inch (50 mm) size.
P. Avoid moisture traps; install junction box with drain fitting at low points in conduit system.

Q. Install suitable pull string or cord in each empty raceway except sleeves and nipples.

R. Install suitable caps to protect installed conduit against entrance of dirt and moisture.

3.5 INSTALLATION - BOXES

A. Install wall mounted boxes at elevations to accommodate mounting heights as indicated on Drawings.

B. Adjust box location up to 10 feet (3 m) prior to rough-in to accommodate intended purpose.

C. Orient boxes to accommodate wiring devices oriented as specified in Section 26.27.26.

D. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.

E. In Accessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches (150 mm) from ceiling access panel or from removable recessed luminaire.

F. Do not install flush mounting box back-to-back in walls; install with minimum 6 inches (150 mm) separation. Install with minimum 24 inches (600 mm) separation in acoustically rated walls.

G. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.

H. Install stamped steel bridges to fasten flush mounting outlet box between studs.

I. Install flush mounting box without damaging wall insulation or reducing its effectiveness.

J. Install adjustable steel channel fasteners for hung ceiling outlet box.

K. Do not fasten boxes to ceiling support wires or other piping systems.

L. Support boxes independently of conduit.

M. Install gang box where more than one device is mounted together. Do not use sectional box.

N. Install gang box with plaster ring for single device outlets.

O. Do not install junction boxes or pull boxes at locations that cannot be accessed through existing ceiling with a standard ladder. Maximum height of junction boxes above accessible ceiling or through an access panel in a non-accessible is 4’ above top of ceiling frame.
3.6 INTERFACE WITH OTHER PRODUCTS
   A. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.

3.7 ADJUSTING
   A. Division 01 Specifications - Execution and Closeout Requirements: Testing, adjusting, and balancing.
   B. Adjust flush-mounting outlets to make front flush with finished wall material.
   C. Install knockout closures in unused openings in boxes.

3.8 CLEANING
   A. Division 01 Specifications - Execution and Closeout Requirements: Final cleaning.
   B. Clean interior of boxes to remove dust, debris, and other material.
   C. Clean exposed surfaces and restore finish.

END OF SECTION
SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Nameplates.
   2. Labels.

1.2 DELIVERY, STORAGE, AND HANDLING

A. Division 01 Specifications - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Accept identification products on site in original containers. Inspect for damage.

C. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

1.3 ENVIRONMENTAL REQUIREMENTS

A. Division 01 Specifications - Product Requirements: Environmental conditions affecting products on site.

B. Install nameplates and labels only when ambient temperature and humidity conditions for adhesive are within range recommended by manufacturer.

PART 2 PRODUCTS

2.1 NAMEPLATES

A. Product Description: Laminated three-layer plastic with engraved letters on contrasting background color. See specification sections for specific equipment for nameplate color schemes. If no color scheme is specified for specific equipment, provide black letters on a white background.

B. Letter Size:
   1. 1/8 inch (3 mm) high letters for identifying individual equipment and loads.

C. Minimum nameplate thickness: 1/8 inch (3 mm).

2.2 LABELS

A. Labels: Embossed adhesive tape, with 3/16 inch (5 mm) white letters on black background.
PART 3 EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

3.2 INSTALLATION

A. Install identifying devices after completion of painting.

B. Nameplate Installation:
   1. Install nameplate parallel to equipment lines.
   2. Install nameplate for each electrical distribution and control equipment enclosure with corrosive-resistant mechanical fasteners, or adhesive.
   3. Install nameplates for each control panel and major control components located outside panel with corrosive-resistant mechanical fasteners, or adhesive.
   4. Secure nameplate to equipment front using screws, or adhesive.
   5. Install nameplates for the following:
      a. Panelboards.

END OF SECTION
SECTION 26 24 16 - PANELBOARDS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes distribution and branch circuit panelboards.

1.2 REFERENCES

A. Institute of Electrical and Electronics Engineers:
   1. IEEE C62.41 - Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits.

B. National Electrical Manufacturers Association:
   1. NEMA AB 1 - Molded Case Circuit Breakers and Molded Case Switches.
   2. NEMA ICS 2 - Industrial Control and Systems: Controllers, Contactors, and Overload Relays, Rated Not More Than 2000 Volts AC or 750 Volts DC.
   3. NEMA PB 1 - Panelboards.
   4. NEMA PB 1.1 - General Instructions for Proper Installation, Operation, and Maintenance of Panelboards Rated 600 Volts or Less.

C. International Electrical Testing Association:

D. National Fire Protection Association:
   1. NFPA 70 - National Electrical Code.

E. Underwriters Laboratories Inc.:
   1. UL 67 - Safety for Panelboards.

1.3 SUBMITTALS

A. Division 01 Specifications - Submittal Procedures: Requirements for submittals.

B. Shop Drawings: Include all of the following information:
   1. Indicate outline and support point dimensions.
   2. Product data
   3. Enclosure type
   4. Circuit directory
   5. Bussing Diagrams
   6. Integrated short circuit ampere rating
   7. Device Nameplate Data

C. Product Data: Submit catalog data showing specified features of standard products.
1.4 CLOSEOUT SUBMITTALS

A. Division 01 Specifications - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of panelboards and record actual circuiting arrangements.

C. Operation and Maintenance Data: Submit spare parts listing; source and current prices of replacement parts and supplies; and recommended maintenance procedures and intervals.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

1.6 MAINTENANCE MATERIALS

A. Division 01 Specifications - Execution and Closeout Requirements: Requirements for maintenance products.

B. Furnish two of each panelboard key.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following manufacturers:

1. GE Electric
2. Square D
3. Eaton
4. Siemens
5. Substitutions: Division 01 Specifications - Product Requirements.

2.2 BRANCH CIRCUIT PANELBOARDS

A. Product Description: NEMA PB1, circuit breaker type, lighting and appliance branch circuit panelboard.

B. Panelboard Bus: Copper current carrying components, ratings as indicated on Drawings. Furnish copper ground and neutral bus in each panelboard; furnish insulated ground bus as indicated on Drawings.

C. See circuit breaker section below for information on types of circuits required.

D. Enclosure: NEMA PB 1
1. Indoor Locations - Type 1, unless noted otherwise below.

E. Cabinet Box: 6 inches (153 mm) deep, 20 inches (508 mm) wide.

F. Cabinet Front: Door-in-door type, fastened with concealed trim clamps, hinged door with flush lock all keyed alike, metal directory frame, finished in manufacturer's standard gray enamel.

G. All panelboards shall be hinged "door in door" type with:
   1. Interior hinged door with hand operated latch or latches as required to provide access to circuit breaker operating handles only, not to energized parts.
   2. Outer hinged door shall be securely mounted to the panelboard box with factory bolts, screws, clips or other fasteners requiring a tool for entry, hand operated latches are not acceptable.
   3. Both inner and outer doors shall open left to right.

H. All panelboards shall have bolt-on style breakers.

I. Provisions for future breakers shall be fully bussed complete with all necessary mounting hardware.

2.3 CIRCUIT BREAKERS

A. For all circuit breakers 200 amps and smaller: Provide Molded Case Thermal Magnetic Trip type Circuit Breakers.

2.4 SHORT CIRCUIT CURRENT RATING

A. Devices which achieve the level of fault protection indicated by means of "series" or "integrated" rating shall be acceptable unless specifically indicated on the drawings. All panelboards shall be fully rated.

B. For existing equipment, provide circuit breakers with short circuit current ratings that match ratings indicated on panel, if no markings indicate panelboard rating, then provide ratings that match highest rated circuit breaker in panelboard.

PART 3 EXECUTION

3.1 EXISTING WORK

A. Disconnect abandoned panelboards. Remove abandoned equipment unless specifically noted otherwise.

3.2 INSTALLATION

A. Install panelboards in accordance with NEMA PB 1.1.

B. Install panelboards plumb.
C. Height: 6 feet (1800 mm) to top of panelboard; install panelboards taller than 6 feet (1800 mm) with bottom no more than 4 inches (100 mm) above floor.

D. Install filler plates for unused spaces in panelboards.

E. Ground and bond panelboard enclosure according to Section 26.05.26. Connect equipment ground bars of panels in accordance with NFPA 70.

3.3 FIELD QUALITY CONTROL

A. Division 01 Specifications - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Inspect and test in accordance with NETA ATS, except Section 4.

C. Perform circuit breaker inspections and tests listed in NETA ATS, Section 7.6.

D. Perform controller inspections and tests listed in NETA ATS, Section 7.16.1.

3.4 ADJUSTING

A. Division 01 Specifications - Execution and Closeout Requirements: Requirements for starting and adjusting.

B. Measure steady state load currents at each panelboard feeder; rearrange circuits in panelboard to balance phase loads to within 20 percent of each other. Maintain proper phasing for multi-wire branch circuits.

C. Touch-up scratched or marred surfaces to match original finish.

D. Clean all debris from panel interiors.

3.5 LABELING

A. Install engraved plastic nameplates in accordance with Section 26.05.53.

B. Provide nameplates on all new electrical panelboards. Indicate the following information on the nameplate:
   1. Panel Name
   2. Voltage, Phase, Wire

C. Use the following color coding for panelboard nameplates:
   1. Normal Power: White with Black Letters,

D. Provide typed circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes to balance phase loads.
E. Identify load served and location by room names assigned by user, not by room numbers on floor plans. Note spares and spaces as such. Spare circuit breakers shall be left in the open position.

3.6 CLEARANCE AND WORKSPACE

A. Maintain workspace and clearances as required by the NEC for voltages encountered. No pipes or ducts shall pass above the outline of the panelboard. It shall be the responsibility of this Contractor to make sure that other trades do not encroach on this space.

END OF SECTION
SECTION 26 27 26 - WIRING DEVICES

PART 1 GENERAL

1.1 SUMMARY
A. Section includes wall switches; receptacles; and device plates and decorative box covers.

1.2 REFERENCES
A. National Electrical Manufacturers Association:
   1. NEMA WD 1 - General Requirements for Wiring Devices.
   2. NEMA WD 6 - Wiring Devices-Dimensional Requirements.

1.3 SUBMITTALS
A. Division 01 Specifications - Submittal Procedures: Submittal procedures.
B. Product Data: Submit manufacturer's catalog information showing dimensions, colors, and configurations.

1.4 QUALIFICATIONS
A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

1.5 EXTRA MATERIALS
A. Division 01 Specifications - Execution and Closeout Requirements: Spare parts and maintenance products.
B. Furnish two of each style, size, and finish wall plate.

PART 2 PRODUCTS

2.1 MANUFACTURERS
A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following manufacturers:
   1. Arrow Hart
   2. Eagle
   3. Hubbell
   4. Leviton
   5. Legrand

Wiring Devices 26 27 26 - 1
2.2 RECEPTACLES
   A. Product Description: NEMA WD 1, Commercial Grade receptacle.
   B. Configuration: NEMA WD 6, type as specified.
   C. All Receptacle types shall be NEMA 5-20 unless noted specifically noted otherwise.
   D. Device Body: Plastic. UPS power devices shall be blue in color.
   E. Special Purpose Receptacles: Provide heavy-duty type as indicated on the drawings.

2.3 WALL PLATES
   A. Decorative Cover Plate: Smooth stainless steel with label for branch circuit.

PART 3 EXECUTION
3.1 EXAMINATION
   A. Division 01 Specifications - Administrative Requirements: Coordination and project conditions.
   B. Verify outlet boxes are installed at proper height.
   C. Verify wall openings are neatly cut and completely covered by wall plates.
   D. Verify branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

3.2 PREPARATION
   A. Clean debris from outlet boxes.

3.3 EXISTING WORK
   A. Disconnect and remove abandoned wiring devices.
   B. Modify installation to maintain access to existing wiring devices to remain active.
   C. Clean and repair existing wiring devices to remain or to be reinstalled.

3.4 INSTALLATION
   A. Install devices plumb and level.
   B. Install receptacles with grounding pole on bottom.

Wiring Devices
C. Connect wiring device grounding terminal to outlet box with bonding jumper and branch circuit equipment grounding conductor.

D. Install decorative plates on receptacle, and blank outlets in finished areas.

E. Connect wiring devices by wrapping solid conductor around screw terminal. Install stranded conductor for branch circuits 10 AWG and smaller. When stranded conductors are used in lieu of solid, use crimp on fork terminals for device terminations. Do not place bare stranded conductors directly under device screws.

F. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.

3.5 INTERFACE WITH OTHER PRODUCTS

A. Coordinate locations of outlet boxes provided under Section 26 05 33 and as indicated on drawings.

B. Coordinate installation of wiring devices with underfloor raceway service fittings provided under Section 26 05 39.

3.6 FIELD QUALITY CONTROL

A. Division 01 Specifications - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Inspect each wiring device for defects.

C. Verify each receptacle device is energized.

D. Test each receptacle device for proper polarity.

3.7 ADJUSTING

A. Division 01 Specifications - Execution and Closeout Requirements: Testing, adjusting, and balancing.

B. Adjust devices and wall plates to be flush and level.

3.8 CLEANING

A. Division 01 Specifications - Execution and Closeout Requirements: Final cleaning.

END OF SECTION
SECTION 264300 – SURGE PROTECTIVE DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Surge Protection Devices Type 1 and Type 2 Devices

1.2 REFERENCES

A. Institute of Electrical and Electronics Engineers:
   1. IEEE 1100 - Recommended Practice for Powering and Grounding Electronic Equipment.
   2. IEEE C62.41 - Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits.

B. National Fire Protection Association:
   1. NFPA 70 - National Electrical Code.
   2. NFPA 780 - Standard for the Installation of Lightning Protection Systems.

C. Underwriters Laboratories Inc.:
   1. UL 1283 - Electromagnetic Interference Filters.

1.3 SUBMITTALS

A. Division 01 Specifications - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit the following
   1. Unit Dimensions and Weights
   2. Wiring configuration.
   3. Warranty Statement
   4. Current Ratings
   5. Clamping Voltages
   6. Response Time

C. Test Reports:
   1. Indicate Let-Through voltage test data.
   2. Submit spectrum analysis of each unit.
   3. Submit test reports from nationally recognized independent testing laboratory verifying suppressors can survive published surge current rating.

D. Manufacturer’s Installation Instructions: Submit installation instructions and connection requirements.

1.4 QUALITY ASSURANCE

A. Reference Standard: Comply with the latest edition of the applicable provisions and recommendations of the following, except as otherwise stated in this document:
   1. UL 1449 3rd Edition 2009 Revision
   2. UL 1283
   5. IEEE 1100 Emerald Book

1.5 WARRANTY

A. Provide a 5 year product warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following manufacturers:
   1. Emerson / APT
   2. Current Technologies
   3. Thor
   4. GE Electric
   5. Square D
   6. Eaton
   7. Siemens
   8. Substitutions: Division 01 Specifications - Product Requirements

2.2 ELECTRICAL REQUIREMENTS

A. Declared Maximum Continuous Operating Voltage (MCOV) shall be greater than 115 percent of the nominal system operating voltage and in compliance with test and evaluation procedures outlined in the nominal discharge surge current test of UL1449 3rd Edition, section 37.7. MCOV values claimed based on the component’s value or on the 30-minute 115% operational voltage test, section 38 in UL1449 will not be accepted.

B. Unit shall have not more than 10% deterioration or degradation of the UL1449 3rd Edition Voltage Protective Rating (VPR) due to repeated surges. Unit shall have a monitoring option available to be able to test and determine the percentage of protective available at all times.

C. Protection Modes: SVR(6kV, 500A) and UL1449 3rd Edition VPR(6kV, 3kA) for grounded WYE/delta and High Leg Delta circuits with voltages of (480Y/277), (208Y/120),

SURGE PROTECTIVE DEVICES

264300 - 2
7/31/2015
(600Y/347) 3-Phase/4 wire and (120/240) Split phase/3 wire circuits shall be as follows and comply with test procedures outlined in UL1449 3rd Edition section 37.6

<table>
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<th>System Voltage</th>
<th>Mode</th>
<th>MCOV</th>
<th>B3 Ringwave</th>
<th>C3 Comb Wave</th>
<th>UL 1449 Second Edition SVR Rating</th>
<th>UL 1449 Third Edition VPR Rating</th>
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<tr>
<td>120/240</td>
<td>L-N</td>
<td>150</td>
<td>325/375</td>
<td>650/775</td>
<td>400/400</td>
<td>700/700</td>
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<tr>
<td></td>
<td>L-G</td>
<td>150</td>
<td>400/450</td>
<td>650/825</td>
<td>500/500</td>
<td>700/700</td>
</tr>
<tr>
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<td>N-G</td>
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<td>350/350</td>
<td>500/500</td>
<td>500/500</td>
<td>900/900</td>
</tr>
<tr>
<td></td>
<td>L-L</td>
<td>300</td>
<td>400/500</td>
<td>950/1250</td>
<td>700/700</td>
<td>900/900</td>
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<tr>
<td>277/480</td>
<td>L-N</td>
<td>320</td>
<td>550/600</td>
<td>1125/1225</td>
<td>900/900</td>
<td>1000/1000</td>
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<tr>
<td></td>
<td>L-G</td>
<td>320</td>
<td>850/875</td>
<td>1075/1225</td>
<td>1000/1000</td>
<td>1200/1200</td>
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<tr>
<td></td>
<td>N-G</td>
<td>320</td>
<td>700/700</td>
<td>900/900</td>
<td>800/800</td>
<td>1200/1200</td>
</tr>
<tr>
<td></td>
<td>L-L</td>
<td>550</td>
<td>650/750</td>
<td>1950/2200</td>
<td>1500/1500</td>
<td>1800/1800</td>
</tr>
</tbody>
</table>

D. Electrical Noise Filter- each unit shall include a high performance EMI/RFI noise rejection filter. Noise attenuation for electric noise shall be as follows using the MIL-STD-220B insertion loss test method.
   1. 100 kHz at 44 dB or better.
   2. All other frequencies should be 32 dB or better.

E. Each fuse shall be individually sealed in a manner that eliminates the potential for cross arcing.

F. Each unit shall provide the following features:
   1. Phase Indicator lights, Form C dry contacts, surge counter and audible alarm.
   2. Field testable while installed.
   3. Measuring capability to indicate the percent protective available in SPD.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

A. Each unit shall be installed per Manufacturer’s recommended installation and wiring practices.

B. The UL 1449 Voltage Protective Rating (VPR) shall be permanently affixed to the SPD unit.

C. The UL 1449 Nominal Discharge Surge Current Rating shall be a minimum of 20kA.

D. The SCCR rating of the SPD shall be 200kAIC without requiring an upstream protective device for safe operation.
E. The SPD manufacturer’s technician shall perform a system checkout and start-up in the field to assure proper installation, operation and to initiate the warranty of the system. The technician will be required to do the following:

1. Verify voltage clamping levels using the DTS-2 test equipment.
2. Verify N-G connection when applicable.
3. Record information to product signature card for each product installed.

END OF SECTION
See attachment: #1 E001 SALUDA HALL COMM HUB and
#2 E101 SALUDA HALL COMM HUB drawing and other specifications.
IV. BIDDING SCHEDULE / PRICE-BUSINESS PROPOSAL

The College is requesting Quotations to provide materials and labor to modified Saluda Hall Electrical, Airport Campus. Contact: Wayne McRant (803) 822-3202 mcrantw@midlandlands.edu or Tim McEllan (803) 822-3626 mcellant@midlandstech.edu for site visit, drawings, specification and other information.

Unit price shall be shown.

<table>
<thead>
<tr>
<th>Item</th>
<th>Commodity / Service</th>
<th>Quantity</th>
<th>Unit Of Measure</th>
<th>Unit Price</th>
<th>Extended Price</th>
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<td>914-38</td>
<td>1</td>
<td>Job</td>
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</tbody>
</table>

Description: Materials
See Drawing and Specifications.

<table>
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<th>Item</th>
<th>Commodity / Service</th>
<th>Quantity</th>
<th>Unit Of Measure</th>
<th>Unit Price</th>
<th>Extended Price</th>
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<tbody>
<tr>
<td>2</td>
<td>914-38</td>
<td>1</td>
<td>Job</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Description: Labor / Installations
See Drawing and Specifications.

TOTAL BID PRICE_______________________
Withholding Requirements for Payments to Nonresidents: Section 12-8-550 of the South Carolina Code of Laws requires persons hiring or contracting with a nonresident conducting a business or performing personal services of a temporary nature within South Carolina to withhold 2% of each payment made to the nonresident. The withholding requirement does not apply to (1) payments on purchase orders for tangible personal property when the payments are not accompanied by services to be performed in South Carolina, (2) nonresidents who are not conducting business in South Carolina, (3) nonresidents for contracts that do not exceed $10,000 in a calendar year, or (4) payments to a nonresident who (a) registers with either the S.C. Department of Revenue or the S.C. Secretary of State and (b) submits a Nonresident Taxpayer Registration Affidavit - Income Tax Withholding, Form I-312 to the person letting the contract.

The withholding requirement applies to every governmental entity that uses a contract ("Using Entity"). Nonresidents should submit a separate copy of the Nonresident Taxpayer Registration Affidavit - Income Tax Withholding, Form I-312 to every Using Entity that makes payment to the nonresident pursuant to this solicitation. Once submitted, an affidavit is valid for all contracts between the nonresident and the Using Entity, unless the Using Entity receives notice from the Department of Revenue that the exemption from withholding has been revoked.

Section 12-8-540 requires persons making payment to a nonresident taxpayer of rentals or royalties at a rate of $1,200.00 or more a year for the use of or for the privilege of using property in South Carolina to withhold 7% of the total of each payment made to a nonresident taxpayer who is not a corporation and 5% if the payment is made to a corporation. Contact the Department of Revenue for any applicable exceptions.

For information about other withholding requirements (e.g., employee withholding), contact the Withholding Section at the South Carolina Department of Revenue at 803-898-1450 or visit the Department’s website at www.sctax.org.

This notice is for informational purposes only. This agency does not administer and has no authority over tax issues. All registration questions should be directed to the License and Registration Section at 803-898-1350 or to the South Carolina Department of Revenue, Registration Unit, Columbia, S.C. 29214-0140. All withholding questions should be directed to the Withholding Section at 803-898-1450.
Mail to: The company or individual you are contracting with.
The undersigned nonresident taxpayer, on oath, being first duly sworn, hereby certifies as follows:

1. Name of Nonresident Taxpayer: ____________________________

2. Trade Name, if applicable (Doing Business As):

3. Mailing Address: _______________________________________

4. Federal Identification Number: ____________________________

5. __________ Hiring or Contracting with:
   Name: ___________________________________________________
   Address: ________________________________________________

   __________ Receiving Rentals or Royalties From:
   Name: ___________________________________________________
   Address: ________________________________________________

   __________ Beneficiary of Trusts and Estates:
   Name: ___________________________________________________
   Address: ________________________________________________

6. I hereby certify that the above named nonresident taxpayer is currently registered with (check the appropriate box):
   □ The South Carolina Secretary of State or
   □ The South Carolina Department of Revenue
   Date of Registration: ________________________________

7. I understand that by this registration, the above named nonresident taxpayer has agreed to be subject to the jurisdiction of the South Carolina Department of Revenue and the courts of South Carolina to determine its South Carolina tax liability, including estimated taxes, together with any related interest and penalties.

8. I understand the South Carolina Department of Revenue may revoke the withholding exemption granted under Code Sections 12-8-540 (rentals), 12-8-550 (temporarily doing business or professional services in South Carolina), and 12-6-570 (distributions to nonresident beneficiary by trusts or estates) at any time it determines that the above named nonresident taxpayer is not cooperating with the Department in the determination of its correct South Carolina tax liability.

The undersigned understands that any false statement contained herein could be punished by fine, imprisonment or both.

Recognizing that I am subject to the criminal penalties under Code Section 12-54-44 (B) (8) (a) (), I declare that I have examined this affidavit and to the best of my knowledge and belief, it is true, correct and complete.

______________________________ (Seal)  ____________________________
Signature of Nonresident Taxpayer (Owner, Partner or Corporate Officer, when relevant)  Date

If Corporate officer state title: _______________________________________________________

(Name - Please Print)  33231010
Form W-9
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

1. Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2. Business name/disregarded entity name, if different from above

3. Check appropriate box for federal tax classification; check only one of the following seven boxes:
   - Individual/sole proprietor
   - C Corporation
   - S Corporation
   - Partnership
   - Trust/estate
   - Single-member LLC
   - Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership)
   - Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.

4. Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):
   - Exempt payee code (if any)
   - Exemption from FATCA reporting code (if any)

5. Address (number, street, and apt. or suite no.)

Requestor's name and address (optional)
Midlands Technical College
Procurement Department
P.O. Box 2408, Columbia, SC 29202

6. City, state, and ZIP code

7. List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see how to get a TIN on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest and dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here

Signature of U.S. person

Date

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.

By signing the filled-out form, you:
1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form if any indicating that you are exempt from the FATCA reporting, is correct. See What is FATCA reporting? on page 2 for further information.
IRAN DIVESTMENT ACT OF 2014  
(S.C. Code Ann. §§ 11-57-10, et seq.)

The Iran Divestment Act List is a list published by the South Carolina Budget and Control Board pursuant to Section 11-57-310 that identifies persons engaged in investment activities in Iran. Currently, the list is available at the following URL: http://procurement.sc.gov/PS/PS-iran-divestment.phtm. Section 11-57-310 requires the government to provide a person ninety days written notice before he is included on the list. The following representation, which is required by Section 11-57-330(A), is a material inducement for the State to award a contract to you.

I, the official named below, certify I am duly authorized to execute this certification on behalf of the vendor identified below, and, as of the date of my signature, the vendor identified below is not on the current Iran Divestment Act List. I further certify that I will notify the Procurement Officer immediately if, at any time before award of a contract, the vendor identified below is added to the Iran Divestment Act List.

<table>
<thead>
<tr>
<th>Vendor Name (Printed)</th>
<th>Taxpayer Identification No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>By (Authorized Signature)</td>
<td>State Vendor No.</td>
</tr>
<tr>
<td>Printed Name and Title of Person Signing</td>
<td>Date Executed</td>
</tr>
</tbody>
</table>
OPEN TRADE REPRESENTATION
(S.C. Code Ann. §§ 11-35-5300)

The following representation, which is required by Section 11-35-5300(A), is a material inducement for the State to award a contract to you.

I, the official named below, certify I am duly authorized to execute this certification on behalf of the vendor identified below, and, as of the date of my signature, the vendor identified below is not currently engaged in the boycott of a person or an entity based in or doing business with a jurisdiction with whom South Carolina can enjoy open trade, as defined in SC Code Section 11-35-5300.

<table>
<thead>
<tr>
<th>Vendor Name (Printed)</th>
<th>State Vendor No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>By (Authorized Signature)</th>
<th>Date Executed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Printed Name and Title of Person Signing</th>
<th>[Not used]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
OFFEROR'S CHECKLIST (JUN 2007)

OFFEROR'S CHECKLIST -- AVOID COMMON BID/PROPOSAL MISTAKES

Review this checklist prior to submitting your bid/proposal.
If you fail to follow this checklist, you risk having your bid/proposal rejected.

- Do not include any of your standard contract forms!

- Unless expressly required, do not include any additional boilerplate contract clauses.

- Reread your entire bid/proposal to make sure your bid/proposal does not take exception to any of the state's mandatory requirements.

- Make sure you have properly marked all protected, confidential, or trade secret information in accordance with the instructions entitled: SUBMITTING CONFIDENTIAL INFORMATION.

  DO NOT mark your entire bid/proposal as confidential, trade secret, or protected!

  DO NOT include a legend on the cover stating that your entire response is not to be released!

- Have you properly acknowledged all amendments?

  Instructions regarding how to acknowledge an amendment should appear in all amendments issued.

- Make sure your bid/proposal includes a copy of the solicitation cover page.
  Make sure the cover page is signed by a person that is authorized to contractually bind your business.

- Make sure your Bid/proposal includes the number of copies requested.

- Check to ensure your Bid/proposal includes everything requested!

- If you have concerns about the solicitation, do not raise those concerns in your response!

  After opening, it is too late! If this solicitation includes a pre-bid/proposal conference or a question & answer period, raise your questions as a part of that process!

Please see instructions under the heading "submission of questions" and any provisions regarding pre-bid/proposal conferences.

[09-9010-1]