



**CUMBERLAND**  
**COUNTY**

NORTH CAROLINA

**CUMBERLAND COUNTY**

**RECOVERY SHELTER GENERATORS**

Fayetteville, NC 28301

**Construction Documents**  
**February 1, 2026**

TWC Project #: 2877-N

**Wooten**

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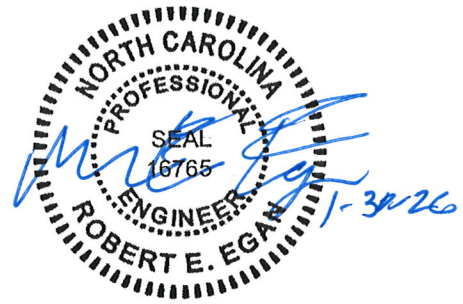
CERTIFICATION PAGE

A.

Electrical Engineering Design

I, Robert E. Egan, P.E., hereby certify that Division 26 of the Cumberland County Recovery Shelter Generators Project Manual was prepared by me or under my direct supervision.

SEAL



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SECTION 00 11 13

ADVERTISEMENT FOR BIDS

INVITATION FOR PROPOSALS

FOR

CUMBERLAND COUNTY ENGINEERING & INFRASTRUCTURE DEPARTMENT

Cumberland Co. - Recovery Shelter Generators, Fayetteville, North Carolina

The project will entail installation of stand-by power generators at four existing Cumberland County school facilities. Proposals will be accepted to the Work at any of the school facilities individually or for all school facilities. The County may elect to award the construction Contracts for individual facilities or in any combination of facilities. The generators and automatic transfer switches to be installed have been pre-purchased by the County and will be delivered to site at a date directed by the Contactor.

A pre-bid conference will be held at 1:00 PM on February 16, 2026, at Pre-Bid Address.

Pursuant to Section 143-131 of the General Statutes of North Carolina, informal bids are solicited and will be received in the office of the Cumberland County Engineering & Infrastructure Department, Room 214, in the Historic Courthouse located at 130 Gillespie Street, Fayetteville, North Carolina at any time before **1:30 PM on 03-02-2026**, and then publicly opened in the office of the Cumberland County Engineering & Infrastructure Department in the Historic Courthouse and read for construction of the proposed:

Proposals must be enclosed in a sealed envelope addressed to Mr. Donna Griffin Rice, Engineering and Infrastructure Department, 130 Gillespie Street, Room 214, Fayetteville, NC 28301. The outside of the envelope must be marked "PROPOSAL FOR Cumberland Co. - Recovery Shelter Generators" and shall indicate the name, address, telephone number and state license number of the bidder. Proposals must be submitted on the printed form, or exact copies thereof, contained in the Contract Documents.

A bid bond is required for this project.

**Minority bidders are strongly encouraged to participate.**

**Cumberland County MWBE goal is 15%.**

Performance and Payment Bonds are required.

All Contractors are notified that North Carolina Statutory provisions as to licensing for Contractors will be observed in receiving, reading and awarding of contracts.

To submit a Bid for the Project, Prospective Bidders are required to register at The Wooten Plan Room as a plan holder. (<https://planroom.thewootencompany.com>)

If Bidding Documents are obtained from a source other than the designated website in either electronic or paper format, Bidder must still be registered at the Bid Website. Neither Owner nor Engineer will be responsible for Bidding Documents, including addenda, if any, obtained from sources other than the designated website. Partial sets of Bidding Documents will not be available from the Issuing Office.

With a request for Bidding Documents supply the following information: Company name, contact person with email, street address, phone numbers; N.C. contractor's license with limitation and classification; indicate if the firm will be a Bidder, Supplier or Sub-Contractor.

Prospective Bidders may download Bidding Documents as PDF files by accessing The Wooten Plan Room.

Registration and a payment of \$50.00 provides access to the Wooten Plan Room.

Registration and payment of \$300 provides access to the Wooten Plan Room and includes one (1) full size Drawing set and one (1) Project Manual. Documents will be shipped via UPS ground.

The County reserves the right to reject any or all proposals. The bidder to whom the contract may be awarded must comply with the requirements of G.S. Section 143-131, as amended.

No bids may be withdrawn after the scheduled closing time for the receipt of proposals for a period of forty-five (45) days.

END OF SECTION

**NOTICE TO BIDDERS**

Sealed proposals will be received until **1:30 p.m. March 2, 2026** in the Cumberland County Engineering Department located in the Historic Courthouse: 130 Gillespie Street, Suite 214, Fayetteville, NC 28301 at which time they will be publicly opened and read aloud for the **Cumberland County Recovery Shelter Generators**. The project will be completed in 2026.

**A Pre-Bid Conference** (for those who did not attend the prior pre-bid conference) will be held at **1:00 p.m. on October 16, 2025**. Contractors interested in bidding shall attend at **Historic Courthouse**, 130 Gillespie Street, Suite 214, Fayetteville, NC 28301.

Question may be submitted to the designer Robert Egan P.E., [BEgan@TheWootenCompany.com](mailto:BEgan@TheWootenCompany.com) at The Wooten Company up until **5:00pm on February 18, 2026**. Responses will be provided via addendum.

Contractors are hereby notified that they must have proper license under the State laws governing their respective trades and that North Carolina General Statutes 87 will be observed in receiving and awarding contracts.

Bids submitted electronically in response to this Invitation for Bids will not be acceptable. Bids are subject to rejection unless submitted on the provided form.

In an effort to support the sustainability efforts of the State of North Carolina we solicit your cooperation in this effort. **It is desirable that all responses meet the following requirements:**

- All copies are printed **double sided**.
- All submittals and copies are printed on **recycled paper with a minimum post-consumer content of 30%** and indicate this information accordingly on the response.
- Unless absolutely necessary, all bids and copies should **minimize or eliminate use of non-recyclable or non re-usable materials** such as plastic report covers, plastic dividers, vinyl sleeves, and GBC binding. Three-ringed binders, glued materials, paper clips, and staples are acceptable.
- Materials should be submitted in a format which allows for **easy removal and recycling** of paper materials.

**MAILING INSTRUCTIONS:** Mail only one fully executed bid document, unless otherwise instructed, and only one bid per envelope. Address envelope and insert bid as shown below: It is the responsibility of the bidder to have the bid in this office by the specified time and date of opening.

**Cut along the outer border and affix this label to your sealed bid envelope to identify it as a “Sealed Bid”. Neither faxed nor electronically submitted bids will be accepted. Be sure to include the name of the company submitting the bid where requested. Submit 1 bid Copy.**

**DELIVER TO:**

**Ms. Donna Griffin Rice,  
Cumberland County Engineering  
Cumberland County  
130 Gillespie Street, Suite 214  
Fayetteville, NC 28301**

***SEALED BID DO NOT OPEN***

BID TITLE: Cumberland County

Recovery Shelter Generators

DUE DATE/TIME: 1:30 p.m. March 2, 2026

SUBMITTED BY:

Name of Company \_\_\_\_\_

**FIRM QUOTE:** Prices and any other entry made hereon by the bidder shall be considered firm and not subject to change or withdrawal.

**TABULATIONS:** Tabulations are posted on the Cumberland County website.

**DESCRIPTIVE LITERATURE:** All bids must be accompanied by complete descriptive literature, specifications and other pertinent data necessary for their evaluation as required by the attached General Contract Terms & Conditions; otherwise, they will be subject to rejection.

**INDEMNITY AND INSURANCE REQUIREMENTS:** The Contractor shall indemnify and hold harmless CUMBERLAND COUNTY, its officers, agents, employees and assigns from and against all claims, losses, costs, damages, expenses, attorneys' fees and liability that any of them may sustain (a) arising out of the Contractor's failure to comply with any applicable law, ordinance, regulation, or industry standard or (b) arising directly or indirectly out of the Contractor's performance or lack of performance of the terms and conditions of this Contract. The Contractor certifies that it currently has and agrees to purchase and maintain during its performance under this Contract the following insurance from one or more insurance companies acceptable to CUMBERLAND COUNTY and authorized to do business in the State of North Carolina:

- |    |  |                                   |
|----|--|-----------------------------------|
| A. | Workman's Compensation                           | Statutory                         |
|    | Employers Liability                              | \$1,000,000                       |
| B. | General Liability (per person/per occurrence):   |                                   |
|    | 1. Bodily and Personal Liability                 | \$1,000,000/\$2,000,000 Aggregate |
|    | 2. Property Damage                               | \$1,000,000/\$2,000,000 Aggregate |
| C. | Automobile Liability (per person/per occurrence) |                                   |
|    | 1. Bodily Injury                                 | \$1,000,000/\$2,000,000 Aggregate |
|    | 2. Property Damage:                              | \$1,000,000/\$2,000,000 Aggregate |
| D. | Excess Liability                                 | \$5,000,000                       |
| E. | Builder's Risk/Installation Floater              | Contract Amount                   |

Certificates of Insurance shall be filed with the Owner. During construction of the work, the Contractor shall provide updated records whenever any of these coverages become outdated.

Each Certificate of Insurance shall bear the provision that the policy cannot be canceled, or coverage reduced or eliminated in less than thirty (30) days after mailing notice to the insured and/or the Owner of such alteration or cancellation. The certificate holder shall be named Attn: Jermaine Walker, Cumberland County Engineering, 130 Gillespie Street, Fayetteville, 28301.

## INSTRUCTIONS TO BIDDERS

1. **READ, REVIEW AND COMPLY:** It shall be the contractor's responsibility to read this entire document, review all enclosures and attachments, and any addenda thereto, and comply with all requirements specified herein, regardless of whether appearing in these Instructions to Bidders or elsewhere in this document.
2. **LATE PROPOSALS:** Late proposals, regardless of cause, will not be opened or considered, and will automatically be disqualified from further consideration. It shall be the contractor's sole responsibility to ensure delivery at the designated office by the designated time.
3. **ACCEPTANCE AND REJECTION:** The County reserves the right to reject any and all proposals, to waive minor informality in proposals and to reject proposal with non-minor informalities, based on the sole discretion of the County.
4. **EXECUTION:** Failure to sign EXECUTION PAGE in the indicated space will render proposal non-responsive, and it shall be rejected.
5. **GIFTS:** Gifts and favors to the County of any kind in any amount are prohibited.
6. **SUSTAINABILITY:** To support the sustainability efforts of the County of Cumberland we solicit your cooperation in this effort. All copies of the proposal are printed double sided.
7. **HISTORICALLY UNDERUTILIZED BUSINESSES:** Pursuant to General Statute 143-48 and Executive Order #150 (1999), the County invites and encourages participation in this procurement process by businesses owned by minorities, women, disabled, disabled business enterprises and non-profit work centers for the blind and severely disabled.
8. **INFORMAL COMMENTS:** The County shall not be bound by informal explanations, instructions or information given at any time by anyone on behalf of the County during the competitive process or after award. The County is bound only by information provided in this RFP and in formal Addenda issued through the State's IPS and the County's Vendor Self Service website.
9. **COST FOR PROPOSAL PREPARATION:** Any costs incurred by contractor in preparing or submitting offers are the Contractor's sole responsibility; the County of Cumberland will not reimburse any vendor for any costs incurred.
10. **VENDOR'S REPRESENTATIVE:** Each contractor shall submit with its proposal the name, address, and telephone number of the person(s) with authority to bind the firm and answer questions or provide clarification concerning the firm's proposal.
11. **SUBCONTRACTING:** The Contractor shall not assign or subcontract the work, or any part thereof, without the previous consent of Cumberland County, nor shall it assign, by power of attorney, operation of law, or otherwise, any moneys payable under the Contract without prior written consent of the County.

If the vendor proposes to subcontract work in this project, the subcontractor and the activity in this project are to be identified in the proposal.

All subcontractors must be approved by the County and must conform to and comply with the same terms, standards and specifications applicable to the contracting firm.

The contractor shall be fully responsible and accountable to the County for the acts and omissions of its subcontractors, and of persons directly or indirectly employed by him.

12. **INSPECTION AT VENDOR'S SITE**: The County reserves the right to inspect, at a reasonable time, the equipment/item, plant or other facilities of a prospective vendor prior to Contract award, and during the Contract term as necessary for the County determination that such equipment/item, plant or other facilities conform with the specifications/requirements and are adequate and suitable for the proper and effective performance of the Contract.
13. **AFFIRMATIVE ACTION**: The contractor will take affirmative action in complying with all Federal and County requirements concerning fair employment and employment of people with disabilities, and concerning the treatment of all employees without regard to discrimination by reason of race, color, religion, sex, national origin or disability.
14. **VENDOR REGISTRATION**: Vendor's are not required to register as a vendor in our system in order to submit a bid; however, registration is recommended so that vendor information is available for future opportunities. New vendors can register by visiting the following URL: <https://ccmunis.co.cumberland.nc.us/MSS/Vendors/Registration/Default.aspx>.

## **BONDING REQUIREMENT**

### **1. Bid Bond**

Each proposal must be accompanied with an amount equal to not less than a five percent (5%) of the proposal at the time of submission. The bidder may submit the 5% deposit by certified check or bid bond. Bid bond executed by a corporate surety licensed under the laws of North Carolina to execute such bonds.

### **2. Performance Bond and Payment Bond**

After awarding and accepting the Contract, the Contractor shall submit to the County within 10 days the Performance Bond and Payment Bond. Each bond shall be in the amount of One Hundred Percent (100%) of the contract sum and shall be in the form supplied by the County or such form approved by the County. The bond shall make reference to the Contract, and may be drawn against in an appropriate amount as determined by the County in its sole discretion, when any damages to the County result from the Contractor's services pursuant to this Contract, or Contractor's malfeasance, misfeasance, or breach in the performance hereof.

The purpose of the performance bond is for the protection of the contracting body that is constructing the project. The purpose of the payment bond is for the protection of the persons furnishing materials or performing labor for the which a contractor or subcontractor is liable.

Each bond shall comply with G.S.143-129; 2 CFR 200.325

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## LOBBYING CERTIFICATION

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
  
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
  
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, \_\_\_\_\_, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Name and Title of Contractor's Authorized Official

\_\_\_\_\_  
Date

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## FEDERAL REQUIRED CONTRACT CLAUSES

### Federal Contracting Requirements

This *Attachment D* is incorporated into the Construction Contract between the County and the Contractor. Capitalized terms not defined in this Attachment shall have the meanings assigned to such terms in the Contract. All references to the “Contractor” or “Company” or “Vendor” or “Provider” shall be deemed to mean the Contractor.

This Contract may be funded in whole or in part with federal funding. As such, federal laws, regulations, policies and related administrative practices apply to this Contract. The most recent of such federal requirements, including any amendments made after the execution of this Contract shall govern the Contract, unless the federal government determines otherwise. The Contractor is responsible for complying with all applicable provisions, updates or modifications that occur in the future relating to these clauses.

To the extent possible, the federal requirements contained in the most recent version of the Uniform Administrative Requirements for federal awards (Uniform Rules) codified at 2.CFR Part 200, including any certifications and contractual provisions required by any federal statutes or regulation referenced therein to be included in this contract are deemed incorporated into this contract by reference and shall be incorporated into any sub-agreement or subcontract executed by the Contractor pursuant to its obligations under this Contract. The Contractor and its sub-contractors, if any, hereby represent and covenant that they have complied and shall comply in the future with the applicable provisions of the original contract then in effect and with all applicable federal, state, and local laws, regulations, and rules and local policies and procedures, as amended from time to time, relating to Work to be performed under this contract.

#### **1. Drug Free Workplace Requirements**

Drug-free workplace requirements in accordance with Drug Free Workplace Act of 1988 (Pub 100-690, Title V, Subtitle D). All contractors entering into federal funded contracts over \$100,000 must comply with Federal Drug Free workplace requirements as Drug Free Workplace Act of 1988.

#### **2. Contractor Compliance**

The Contractor shall comply with all uniform administrative requirements, cost principles, and audit requirement for federal awards.

#### **3. Conflict of Interest**

The Contractor must disclose in writing any potential conflict of interest to the County of Cumberland or pass through entity in accordance with federal policy.

#### **4. Mandatory Disclosures**

The Contractor must disclose in writing all violations of federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the federal award. **Energy Conservation** The Contractor and Subcontractors agrees to comply with the mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act, 42 U.S.C. § 6321, et seq.

#### **5. Clean Air Act and The Federal Water Pollution Control Act**

**Clean Air Act:**

- (1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
- (2) The contractor agrees to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

**Federal Water Pollution Control Act:**

- (1) The contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- (2) The contractor agrees to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- (3) The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

**6. Access to Records and Reports**

The following access to records requirements apply to this contract:

- (1) The Contractor agrees to provide the County, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
- (2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- (3) The Contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.
- (4) In compliance with the Disaster Recovery Act of 2018, the County and the Contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

**7. No Obligation by Federal Government**

The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

**8. Program Fraud and False or Fraudulent Statements or Related Acts**

The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to this contract.

**9. Changes**

Any change in the contract cost, modification, change order, or constructive change must be allowable, allocable, within the scope of its funding, grant or cooperative agreement, and reasonable for the completion

of project scope. All changes and/or amendments to the contract will be outlined in detail, formalized in writing, and signed by the authorized representative of each party. Contractor's failure to do so shall constitute a material breach of the contract.

#### **10. Termination**

**(1) *Termination Without Cause.*** The County may immediately terminate this Agreement at any time without cause by giving 30 days' written notice to the Contractor.

**(2) *Termination for Default by Either Party.*** By giving written notice to the other party, either party may terminate this Agreement upon the occurrence of one or more of the following events:

The other party violates or fails to perform any covenant, provision, obligation, term or condition contained in this Agreement, provided that, unless otherwise stated in this Agreement, such failure or violation shall not be cause for termination if both of the following conditions are satisfied: (i) such default is reasonably susceptible to cure; and (ii) the other party cures such default within thirty (30) days of receipt of written notice of default from the non-defaulting party; or

The other party attempts to assign, terminate or cancel this Agreement contrary to the terms hereof; or

The other party ceases to do business as a going concern, makes an assignment for the benefit of creditors, admits in writing its inability to pay debts as they become due, files a petition in bankruptcy or has an involuntary bankruptcy petition filed against it (except in connection with a reorganization under which the business of such party is continued and performance of all its obligations under this Agreement shall continue), or if a receiver, trustee or liquidator is appointed for it or any substantial part of other party's assets or properties.

Any notice of default pursuant to this Section shall identify and state the party's intent to terminate this Agreement if the default is not cured within the specified period.

**(3) *Additional Grounds for Default Termination by the County.*** By giving written notice to the Contractor, the County may also terminate this Agreement upon the occurrence of one or more of the following events (which shall each constitute grounds for termination without a cure period and without the occurrence of any of the other events of default previously listed):

The Contractor makes or allows to be made any material written misrepresentation or provides any materially misleading written information in connection with this Agreement, Contractor's Proposal, or any covenant, agreement, obligation, term or condition contained in this Agreement; or

The Contractor takes or fails to take any action which constitutes grounds for immediate termination under the terms of this Agreement, including but not limited to failure to obtain or maintain the insurance policies and endorsements as required by this Agreement, or failure to provide the proof of insurance as required by this Agreement.

**(4) *Cancellation of Orders and Subcontracts.*** In the event this Agreement is terminated by the County for any reason prior to the end of the term, the Contractor shall upon termination immediately discontinue all service in connection with this Agreement and promptly cancel all existing orders and subcontracts, which are chargeable to this Agreement. As soon as practicable after receipt of notice of termination, the

Contractor shall submit a statement to the County showing in detail the services performed under this Agreement to the date of termination.

**(5) *No Effect on Taxes, Fees, Charges, or Reports.*** Any termination of the Agreement shall not relieve the Contractor of the obligation to pay any fees, taxes or other charges then due to the County, nor relieve the Contractor of the obligation to file any daily, monthly, quarterly or annual reports covering the period to termination nor relieve the Contractor from any claim for damages previously accrued or then accruing against the Contractor.

**(6) *Obligations Upon Expiration or Termination.*** Upon expiration or termination of this Agreement, the Contractor shall promptly (a) return to the County all computer programs, files, documentation, data, media, related material and any other recording devices, information, or compact discs that are owned by the County; (b) deliver to the County all Work Product; (c) allow the County or a new vendor access to the systems, software, infrastructure, or processes of the Contractor that are necessary to migrate the Services to a new vendor; and (d) refund to the County all pre-paid sums for Products or Services that have been cancelled and will not be delivered.

**(7) *No Suspension.*** In the event that the County disputes in good faith an allegation of default by the Contractor, notwithstanding anything to the contrary in this Agreement, the Contractor agrees that it will not terminate this Agreement or suspend or limit the delivery of Products or Services or any warranties or repossess, disable or render unusable any Software supplied by the Contractor, unless (i) the parties agree in writing, or (ii) an order of a court of competent jurisdiction determines otherwise.

**(8) *Authority to Terminate.*** The County Manager or their designee is authorized to terminate this Agreement on behalf of the County.

**(9) *Audit.*** During the term of the Agreement and for a period of one (1) year after termination or expiration of this Agreement for any reason, the County shall have the right to audit, either itself or through a third party, all books and records (including but not limited to the technical records) and facilities of the Contractor necessary to evaluate Contractor's compliance with the terms and conditions of the Agreement or the County's payment obligations. The County shall pay its own expenses, relating to such audits, but shall not have to pay any expenses or additional costs of the Contractor. However, if non-compliance is found that would have cost the County in excess of \$5,000 but for the audit, then the Contractor shall be required to reimburse the County for the cost of the audit.

## **11. Remedies**

**(1) *Liquidated Damages:*** The County and the Contractor acknowledge and agree that the County may incur costs if the Contractor fails to meet the delivery times set forth in the Request for Proposal for the Products and Services. The parties further acknowledge and agree that: (a) the County may be damaged by such failures, including loss of goodwill and administrative costs; but that (b) the costs that the County might reasonably be anticipated to accrue as a result of such failures are difficult to ascertain due to their indefiniteness and uncertainty. Accordingly, the Contractor agrees to pay liquidated damages at the rates set forth in the Request for Proposal (if applicable). The parties agree that the liquidated damages set forth in the Request for Proposal shall be the County's exclusive remedy for loss of goodwill and administrative costs, attributable to a failure by the Contractor to meet such delivery times, but shall not be the remedy for the cost to cover or other direct damages.

**(2) Right to Cover:** If the Contractor fails to meet any completion date or resolution time set forth in this Agreement (including the Exhibits), and it fails to cure such default within one (1) business day after receiving written notice from the County of such failure, the County may take any of the following actions with or without terminating this Agreement, and in addition to and without limiting any other remedies it may have:

Employ such means as it may reasonably deem advisable and appropriate to perform itself or obtain the Services from a third party until the matter is resolved and the Contractor is again able to resume performance under this Agreement; and

Deduct any and all reasonable expenses incurred by the County in obtaining or performing the Services from any money then due or to become due the Contractor and, should the County's reasonable cost of obtaining or performing the services exceed the amount due the Contractor, collect the difference from the Contractor.

**(3) Right to Withhold Payment.** If the Contractor materially breaches any provision of this Agreement, the County shall have a right to withhold all payments due to the Contractor with respect to the services that are the subject of such breach until such breach has been fully cured.

**(4) Specific Performance and Injunctive Relief.** The Contractor agrees that due to the potential impact on public health, monetary damages may not be an adequate remedy for the Contractor's failure to provide the Services required by this Agreement, and monetary damages may not be the equivalent of the performance of such obligation. Accordingly, the Contractor hereby agrees that the County may seek an order granting specific performance of such obligations of the Contractor in a court of competent jurisdiction in Cumberland County, North Carolina. The Contractor further consents to the County seeking injunctive relief (including a temporary restraining order) to assure performance in the event the Contractor breaches the Agreement in any material respect.

**(5) Setoff.** Each party shall be entitled to setoff and deduct from any amounts owed to the other party pursuant to this Agreement all damages and expenses incurred as a result of the other party's breach of this Agreement, following any applicable cure periods, and provided such party has given notice of its intention to apply a setoff prior to making the payment deduction, together with documentary evidence demonstrating that such party has actually incurred the damages and/or expenses being setoff.

**(6) Other Remedies.** Except as specifically set forth in the main body of this Agreement, the remedies set forth above shall be deemed cumulative and not exclusive and may be exercised successively or concurrently, in addition to any other available remedy

## **12. Debarment and Suspension**

**(1)** This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

**(2)** The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

(3) This certification is a material representation of fact relied upon by the County. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to County, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

(4) The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

### **13. Equal Employment Opportunity**

During the performance of this contract, the Contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit

access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided*, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

#### **14. Davis-Bacon Requirements**

(1) All transactions regarding this contract shall be done in compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) and the requirements of 29 C.F.R. pt. 5 as may be applicable. The contractor shall comply with 40 U.S.C. 3141-3144, and 3146-3148 and the requirements of 29 C.F.R. pt. 5 as applicable.

(2) Contractors are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor.

(3) Additionally, contractors are required to pay wages not less than once a week.

#### **15. Copeland "Anti-Kickback" Act**

(1) **Contractor.** The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.

(2) **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.

(3) **Breach.** A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12."

#### **16. Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708)**

Where applicable, all contracts awarded in excess of \$100,000 that involve the employment of mechanics or laborers must be in compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5).

(1) **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (b) (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b) (1) of this section, in the sum of \$26 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b) (1) of this section.

(3) **Withholding for unpaid wages and liquidated damages.** The Owner shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under

any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

**(4) Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

## **17. Rights to Inventions Made Under a Contract or Agreement**

### ***Patent and Rights in Data***

Contracts involving experimental, developmental, or research work.

The term "subject data" used in this clause means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under the contract. The term includes graphic or pictorial delineation in media such as drawings or photographs; text in specifications or related performance or design-type documents; machine forms such as punched cards, magnetic tape, or computer memory printouts; and information retained in computer memory. Examples include, but are not limited to, computer software, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to contract administration.

**Rights in Data** - The following requirements apply to each contract involving experimental, developmental or research work:

The following restrictions apply to all subject data first produced in the performance of the contract to which this Attachment has been added:

**(1)** Except for its own internal use, the Purchaser or Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may the Purchaser or Contractor authorize others to do so, without the written consent of the Federal Government, until such time as the Federal Government may have either released or approved the release of such data to the public; this restriction on publication, however, does not apply to any contract with an academic institution. In accordance with 49 CFR § 18.34 and 49 CFR § 19.36, the Federal Government reserves a royalty-free, non-exclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use, for "Federal Government purposes," any subject data or copyright described in subsections (2)(b)(i) and (2)(b)(ii) of this clause below. As used in the previous sentence, "for Federal Government purposes," means use only for the direct purposes of the Federal Government. Without the copyright owner's consent, the Federal Government may not extend its Federal license to any other party.

**(2)** Any subject data developed under that contract, whether or not a copyright has been obtained; and

**(3)** Any rights of copyright purchased by the Purchaser or Contractor using Federal assistance in whole or in part.

**(4)** When federal assistance is awarded for experimental, developmental, or research work, it is the general intention to increase knowledge available to the public rather than to restrict the benefits resulting from the work to participants in that work. Therefore, unless determined otherwise, the Purchaser and the Contractor performing experimental, developmental, or research work required by the underlying contract to which this Attachment is added agree to make available to the public, either the license in the copyright to any subject data developed in the course of that contract or a copy of the subject data first produced under the contract for which a copyright has not been obtained. If the experimental, developmental, or research work, which is the subject of the underlying contract, is not completed for any reason whatsoever, all data developed under that contract shall become subject data as defined in subsection (a) of this clause and shall be delivered as the Federal Government may direct. This subsection (c), however, does not apply to adaptations of automatic data processing equipment or programs for the Purchaser or Contractor's use whose costs are financed in whole or in part with Federal assistance.

**(5)** Unless prohibited by state law, upon request by the Federal Government, the Purchaser and the Contractor agree to indemnify, save, and hold harmless the Federal Government, its officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by the Purchaser or Contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under that contract. Neither the Purchaser nor the Contractor shall be required to indemnify the Federal Government for any such liability arising out of the wrongful act of any employee, official, or agents of the Federal Government.

**(6)** Nothing contained in this clause regarding rights in data shall imply a license to the Federal Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Federal Government under any patent.

**(7)** Data developed by the Purchaser or Contractor and financed entirely without the use of Federal assistance that has been incorporated into work required by the underlying contract to which this Attachment has been added is exempt from the requirements of subsections (b), (c), and (d) of this clause, provided that the Purchaser or Contractor identifies that data in writing at the time of delivery of the contract work.

**(8)** Unless determined otherwise, the Contractor agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance.

**(9)** Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor's status (i.e., a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual, etc.), the Purchaser and the Contractor agree to take the necessary actions to provide those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 CFR Part 401.

**(10)** The Contractor also agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance.

**Patent Rights** - The following requirements apply to each contract involving experimental, developmental, or research work:

(1) General - If any invention, improvement, or discovery is conceived or first actually reduced to practice in the course of or under the contract to which this Attachment has been added, and that invention, improvement, or discovery is patentable under the laws of the United States of America or any foreign country, the Purchaser and Contractor agree to take actions necessary to provide immediate notice and a detailed report to the party at a higher tier.

(2) Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor 's status (a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual), the Purchaser and the Contractor agree to take the necessary actions to provide those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 CFR Part 401.

(3) The Contractor also agrees to include the requirements of this clause in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance.

#### **18. Procurement of Recovered Materials**

(1) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:

- Competitively within a timeframe providing for compliance with the contract performance schedule.
- Meeting contract performance requirements.
- At a reasonable price.

(2) Information about this requirement, along with the list of EPA-designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.

(3) The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act."

#### **19. Safeguarding Personal Identifiable Information:**

Contractor will take reasonable measures to safeguard protected personally identifiable information and other information designated as sensitive by the awarding agency or is considered sensitive consistent with applicable federal, state, and/or local laws regarding privacy and obligations of confidentiality.

#### **20. DHS Seal, Logo, and Flags**

The Contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without pre-approval by the specific federal agency.

#### **21. Byrd Anti-Lobbying Amendment**

Contractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member

of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

## **22. Compliance with Federal Law, Regulations, and Executive Orders**

This is an acknowledgement that FEMA financial assistance will be used to fund all or a portion of the contract. The contractor will comply with all applicable Federal law, regulations, executive orders, FEMA policies, procedures, and directives.

## **23. Section 3 Clause**

Compliance with the provisions of Section 3 of the HUD Act of 1968, as amended, and as implemented by the regulations set forth in 24 CFR 135, and all applicable rules and orders issued hereunder prior to the execution of any contract, shall be a condition of the Federal financial assistance provided under this contract and bidding upon Contractor, and any of its subcontractors, their successors and assigns, to those sanctions specified by the contract through which Federal assistance is provided. Contractor certifies and agrees that no contractual or other disability exists that would prevent compliance with these requirements.

Contractor further agrees to comply with these “Section 3” requirements and to include the following language in all subcontracts executed under a contract resulting from this RFP:

“The work to be performed under this Agreement is a project assisted under a program providing direct Federal financial assistance from HUD and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended (12 U.S.C. 1701). Section 3 requires that to the greatest extent feasible opportunities for training and employment be given to low-and very low-income residents of the project area, and that contracts for work in connection with the project be awarded to business concerns that provide economic opportunities for low- and very low-income persons residing in the metropolitan area in which the project is located.”

**NONCOLLUSION AFFIDAVIT**

**NON-COLLUSION AFFIDAVIT**

State of North Carolina County of Cumberland

\_\_\_\_\_, being first duly sworn, deposes and says that:

- 1. He/She is the \_\_\_\_\_ of \_\_\_\_\_, the proposer that has submitted the attached proposal.
- 2. He/She is fully informed respecting the preparation and contents of the attached proposal and of all pertinent circumstances respecting such proposal.
- 3. Such proposal is genuine and is not a collusive or sham proposal.
- 4. Neither the said proposer nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other proposer firm or person to submit a collusive or sham proposal in connection with the contract for which the attached proposal has been submitted or to refrain from proposing in connection with such contract, or has in any manner, directly or indirectly sought by agreement or collusion of communication or conference with any other proposer, firm or person to fix the price or prices in the attached proposal or of any other proposers, or to fix any overhead, profit or cost element of the proposal price of the proposal of any other proposer or to secure through collusion, conspiracy, connivance or unlawful agreement any advantage against the County of Cumberland or any person interested in the proposed contract; and
- 5. The price or prices quoted in the attached proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the proposer or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Signature \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Subscribed and Sworn to Before Me,

This \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

Notary Public \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

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## BID FORM

**Project:** Cumberland Co. - Recovery Shelter Generators

**Bid From:** \_\_\_\_\_

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

### ARTICLE 1 -- OWNER AND BIDDER

- 1.01 This Bid is submitted to:  
Cumberland County  
130 Gillespie Street, Suite 214  
Fayetteville, NC 28301
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.
- 1.03 Further, the undersigned hereby signifies that have the intention and purpose to enter into a contract to furnish labor, materials, equipment, apparatus, etc., as required and to do all the work necessary for the:as described in the specifications and shown on the plans in accordance with the terms of the Advertisement, Instructions to Bidders, the foregoing Specifications, and the following form of Contract, and this Proposal and the Plans; and pursuant with the requirements of the Advertisement and Instructions to bidders which are as follows:
- A. THAT: The undersigned carefully examined the Instructions to Bidders, the Specifications, Plans, this form of Proposal, and the Contract and Fully understands them.
  - B. THAT: The undersigned carefully examined the site or sites of the project or projects and is familiar with the conditions under which the work, or any part of it, is to be done and the conditions which must be fulfilled in furnishing and/or erection or construction of any or all items of the project, and the furnishing only of any materials, equipment, or apparatus specified in connection therewith.
  - C. THAT: The undersigned will provide all necessary tools, machinery apparatus, and all means necessary to complete such Contract as may be entered into, and in the manner prescribed in the Contract and Specifications and according to the Plans and requirements under the of the Engineer, in the first class manner.
  - D. THAT: The right of Cumberland County and the recommendations of the Engineer are not to be questioned in the award of the Contract.
  - E. THAT: It is the intention of Cumberland County, North Carolina, subject to the conditions set forth, to award contracts for the project on the basis of bids received at this letting and in such manner as they may decide as being in the best interests of the County.
  - F. THAT: The County reserves the right to reject any of all proposals.
  - G. THAT: A proposal made by a corporation must be signed by its proper officers in a legal manner and its official address stated herein.

- H. THAT: A proposal made by a firm shall be signed with the name of each member of said firm and the firm name added, with the official address of said firm.
- I. THAT: The undersigned will complete such contract as is hereby proposed to enter into within the time stated in the notice to proceed and stipulated in the Contract.

**ARTICLE 2 -- ATTACHMENTS TO THIS BID**

- 2.01 The following documents are submitted with and made a condition of this Bid:
  - A. Required Bid security;
  - B. Evidence of authority to do business in the state of the Project;
  - C. Contractor’s license number as evidence of Bidder’s State Contractor’s License;
  - D. Required Bidder Qualification Statement with supporting data; and
  - E. In accordance with GS 64-26(a), Bidders shall submit the E-Verify Affidavit to document that the work authorization of their employees has been verified through E-Verify. The Affidavit shall also document that the Bidders subcontractors comply with E-Verify.
  - F. In accordance with GS 143-128.2(c), Bidder shall identify on its bid the minority businesses that it will use on the project and the total dollar value of the bid that will be performed by the minority businesses and list the good faith efforts (Affidavit A) made to solicit participation. A Bidder that will perform all of the work with its own workforce may submit an Affidavit (B) to that effect in lieu of the affidavit (A) required above.
  - G. Identification of Minority Business Participation.
  - H. Affidavit A, Listing of Good Faith Efforts; or Affidavit B, Intent to Perform Contract with Own Workforce.
  
- 2.02 After the bid opening the Owner will consider all bids and alternates and determine the lowest responsible, responsive bidder. Upon notification of being the apparent low Bidder, the Bidder shall then file within 72 hours of the notification of being the apparent lowest bidder, the following:
  - A. An Affidavit (C) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the goal established by the Owner and indicated in the Instruction to Bidders, paragraph Minority Participation Goals. This affidavit shall give rise to the presumption that the bidder has made the required good faith effort; or
  - B. Affidavit (D) of its good faith effort to meet the goal. The document must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations and other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract.

**ARTICLE 3 -- BASIS OF BID—LUMP SUM BID PRICE**

- 3.01 Lump Sum Bids
  - A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price for each of the following schools:
    - 1. Mac Williams Middle School  
For all Work, a Lump Sum Price of \$ \_\_\_\_\_
    - 2. Pine Forest High School  
For all Work , a Lump Sum Price of \$ \_\_\_\_\_
    - 3. South View High School  
For all Work, a Lump Sum Price of \$ \_\_\_\_\_

- 4. WT Brown Elementary School  
For all Work, a Lump Sum Price of \$ \_\_\_\_\_
- 5. Work at all four Schools  
For all Work, a Lump Sum Price of \$ \_\_\_\_\_

3.02 Alternates: Provide a Lump Sum price For the following Alternates. as selected by the Owner for inclusion in the Project.

Add Alternate: Install load bank disconnect at Mac Williams	\$ _____
Add Alternate: Install load bank disconnect at Pine Forest	\$ _____
Add Alternate: Install load bank disconnect at South View	\$ _____
Add Alternate: Install load bank disconnect WT Brown	\$ _____
Add Alternate: Install load bank disconnects at all sites	\$ _____

3.03 Evaluation of the Low Bidder will be determined as indicated in Instruction for Bidders paragraph 18.05 Evaluation of Bids.

**ARTICLE 4 -- TIME OF COMPLETION**

4.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with the General and Supplemental Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

4.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 5 -- BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA**

5.01 Bid Acceptance Period

- A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

5.02 Instructions to Bidders

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

5.03 Receipt of Addenda

- A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

## ARTICLE 6 -- BIDDER'S REPRESENTATION AND CERTIFICATIONS

### 6.01 Bidder's Representations

- A. In submitting this Bid, Bidder represents the following:
1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
  2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work, including all Domestic Preference requirements.
  4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
  5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
  6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
  7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
  8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
  9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
  10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
  11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

### 6.02 Bidder's Certifications

- A. The Bidder certifies the following:
1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 6.02.A:
  - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
  - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
  - c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
  - d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

**ARTICLE 7 - BID SUBMITTAL**

7.01 Contractor's License

Number: \_\_\_\_\_

Classification: \_\_\_\_\_

Limitation: \_\_\_\_\_

Employer's Tax ID No: \_\_\_\_\_

7.02 BIDDER hereby submits this Bid as set forth above:

Bidder:

\_\_\_\_\_

*(typed or printed name of organization)*

By: \_\_\_\_\_

*(individual's signature)*

Name: \_\_\_\_\_

*(typed or printed)*

Title: \_\_\_\_\_

*(typed or printed)*

Date: \_\_\_\_\_

*(typed or printed)*

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: \_\_\_\_\_

*(individual's signature)*

Name: \_\_\_\_\_

*(typed or printed)*

Title: \_\_\_\_\_

*(typed or printed)*

Date: \_\_\_\_\_

*(typed or printed)*

Address for giving notices:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Bidder's Contact:

Name: \_\_\_\_\_

*(typed or printed)*

Title: \_\_\_\_\_

*(typed or printed)*

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Address:

\_\_\_\_\_  
\_\_\_\_\_

Bidder's Contractor License No. (if applicable): \_\_\_\_\_

END OF SECTION



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# State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of \_\_\_\_\_

(Name of Bidder)

Affidavit of \_\_\_\_\_

I have made a good faith effort to comply under the following areas checked:

**Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive.** (1 NC Administrative Code 30 I.0101)

- 1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- 2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- 3 – (15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- 4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- 5 – (10 pts)** Attended prebid meetings scheduled by the public owner.
- 6 – (20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- 7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- 8 – (25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- 9 – (20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- 10 - (20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

Signature: \_\_\_\_\_

(SEAL)

Title: \_\_\_\_\_

State of \_\_\_\_\_, County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

Notary Public \_\_\_\_\_

My commission expires \_\_\_\_\_

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# State of North Carolina --AFFIDAVIT B-- Intent to Perform Contract with Own Workforce.

County of \_\_\_\_\_

Affidavit of \_\_\_\_\_  
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the \_\_\_\_\_ contract.  
\_\_\_\_\_  
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

(SEAL)

State of \_\_\_\_\_, County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_

Notary Public \_\_\_\_\_

My commission expires \_\_\_\_\_

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# State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

County of \_\_\_\_\_

**(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)**

If the portion of the work to be executed by HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit.

This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of \_\_\_\_\_ I do hereby certify that on the \_\_\_\_\_  
(Name of Bidder)

Project ID# \_\_\_\_\_ (Project Name) Amount of Bid \$ \_\_\_\_\_

I will expend a minimum of \_\_\_\_\_% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below.

Attach additional sheets if required

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

\*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**\*\* HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

(SEAL)

State of \_\_\_\_\_, County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

Notary Public \_\_\_\_\_

My commission expires \_\_\_\_\_

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Do not submit with bid Do not submit with bid Do not submit with bid Do not submit with bid Do not submit with bid Do not submit with bid

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: \_\_\_\_\_ Name of Authorized Officer: \_\_\_\_\_

Signature: \_\_\_\_\_

(SEAL)

Title: \_\_\_\_\_

State of \_\_\_\_\_, County of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

Notary Public \_\_\_\_\_

My commission expires \_\_\_\_\_

SECTION 00 43 39 - MINORITY BUSINESS ENTERPRISE STATEMENT OF INTENT FORM

STATEMENT OF INTENT

PROJECT IDENTIFICATION

Project Location Address 1.

Fayetteville, North Carolina, Project Location ZIP.

The Owner, referred to as Owner: Cumberland County.

PROJECT GOALS

Participation Goal: 15 percent, minimum.

BIDDER INFORMATION

SUBMITTED BY:

Bidder's Full Name:

---

Address 1:

---

Address 2:

---

City, State, Zip:

---

END OF SECTION

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SECTION 00 52 00

CONTRACT

THIS CONTRACT, made the \_\_\_\_ day of \_\_\_\_\_, [20 ] between the County of Cumberland, a body politic and a subdivision of the State of North Carolina, hereinafter referred to as COUNTY, and \_\_\_\_\_, a business located at \_\_\_\_\_ hereinafter referred to as CONTRACTOR.

WITNESSETH:

THAT WHEREAS, a contract for the Cumberland Co. - Recovery Shelter Generators has recently been awarded to CONTRACTOR by the COUNTY, at and for a sum of:

(\$ ) as shown in the Proposal attached hereto:

AND WHEREAS, it is provided in said award that a formal contract would be executed by and between CONTRACTOR and the COUNTY, evidencing the terms of said award, and that CONTRACTOR would commence the work to be performed under this agreement on a date to be specified in a written order by the COUNTY, and would fully complete all work within Days to Completion calendar days from the date the Notice to Proceed is issued.

NOW, THEREFORE, CONTRACTOR doth hereby covenant and agree with the COUNTY that it will well and faithfully perform and execute such work and furnish such labor, materials, equipment, apparatus, and supplies, in accordance with each and every one of the conditions, covenants, stipulations, terms, and provisions contained in said Specifications and in accordance with the Plans, at and for a sum named therefore in the Proposal attached hereto, and will well and faithfully comply with and perform each and every obligation imposed upon it by said Plans and Specifications and the terms of said award.

CONTRACTOR shall promptly make payments to all persons supplying materials in the prosecution of the work, and to all laborers and others employed thereon.

CONTRACTOR shall be responsible for all damages to the property of Cumberland County and other utilities that may be consequent upon the normal procedure of its work or that may be caused by or result from the negligence of the CONTRACTOR, its employees or agents, during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. CONTRACTOR must restore all property so injured to a condition as good as it was when CONTRACTOR entered upon the work.

CONTRACTOR shall furthermore be responsible for and required to make good at its expense any and all damages of whatever nature to persons or property, arising during the period of the Contract, caused by carelessness, neglect, or want of due precaution on the part of the CONTRACTOR, its agents, employees or workmen. CONTRACTOR shall also indemnify and save harmless the COUNTY, and the officers and agents thereof from all claims, suits, and proceedings of every name and description which may be brought against the COUNTY, or the officers and agents thereof, for or on account of any injuries or damages to persons or property received or sustained by any person or persons, firm or corporation, or by or in consequence of any materials used in said work or by or on account of any improper material or workmanship in its construction, or by or on account of any accident, or any other act or omission of CONTRACTOR, its agents, employees, servants, or workmen.

THIS CONTRACT, made the \_\_\_\_ day of \_\_\_\_\_, [20 ] between the County of Cumberland, a body politic and a subdivision of the State of North Carolina, hereinafter referred to as COUNTY, and \_\_\_\_\_, a business located at \_\_\_\_\_ hereinafter referred to as CONTRACTOR.

WITNESSETH:

THAT WHEREAS, a contract for the Cumberland Co. - Recovery Shelter Generators has recently been awarded to CONTRACTOR by the COUNTY, at and for a sum of:

(\$ ) as shown in the Proposal attached hereto:

AND WHEREAS, it is provided in said award that a formal contract would be executed by and between CONTRACTOR and the COUNTY, evidencing the terms of said award, and that CONTRACTOR would commence the work to be performed under this agreement on a date to be specified in a written order by the COUNTY, and would fully complete all work within Days to Completion calendar days from the date the Notice to Proceed is issued.

NOW, THEREFORE, CONTRACTOR doth hereby covenant and agree with the COUNTY that it will well and faithfully perform and execute such work and furnish such labor, materials, equipment, apparatus, and supplies, in accordance with each and every one of the conditions, covenants, stipulations, terms, and provisions contained in said Specifications and in accordance with the Plans, at and for a sum named therefore in the Proposal attached hereto, and will well and faithfully comply with and perform each and every obligation imposed upon it by said Plans and Specifications and the terms of said award.

CONTRACTOR shall promptly make payments to all persons supplying materials in the prosecution of the work, and to all laborers and others employed thereon.

CONTRACTOR shall be responsible for all damages to the property of Cumberland County and other utilities that may be consequent upon the normal procedure of its work or that may be caused by or result from the negligence of the CONTRACTOR, its employees or agents, during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. CONTRACTOR must restore all property so injured to a condition as good as it was when CONTRACTOR entered upon the work.

CONTRACTOR shall furthermore be responsible for and required to make good at its expense any and all damages of whatever nature to persons or property, arising during the period of the Contract, caused by carelessness, neglect, or want of due precaution on the part of the CONTRACTOR, its agents, employees or workmen. CONTRACTOR shall also indemnify and save harmless the COUNTY, and the officers and agents thereof from all claims, suits, and proceedings of every name and description which may be brought against the COUNTY, or the officers and agents thereof, for or on account of any injuries or damages to persons or property received or sustained by any person or persons, firm or corporation, or by or in consequence of any materials used in said work or by or on account of any improper material or workmanship in its construction, or by or on account of any accident, or any other act or omission of CONTRACTOR, its agents, employees, servants, or workmen.

It is agreed and understood that the Advertisement for Bids, Instructions To Bidders, the General Conditions, the Specifications, the accepted Proposal, and the enumerated addenda and drawings are parts and parcels of this Contract, to the same extent as if incorporated herein in full.

It is further mutually agreed that, if at any time after the execution of this agreement and the surety bond hereto attached for its faithful performance, the COUNTY shall deem the surety or sureties upon such bond to be unsatisfactory, or if, for any reason, such bond ceases to be adequate to cover the performance of the work, CONTRACTOR shall at its expense, within five days after the receipt of notice from the COUNTY so to do, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the COUNTY. In such event no further payment to CONTRACTOR shall be deemed to be due under this agreement until new or additional security for the performance of the work shall be furnished in manner and form satisfactory to the COUNTY.

And the COUNTY doth hereby covenant and agree with CONTRACTOR that it will pay to CONTRACTOR, when due and payable under the terms of said Specifications and said award, the above mentioned sum, and that it will well and faithfully comply with and perform each and every obligation imposed upon it by said Specifications and the terms of said award.

NON-APPROPRIATION CLAUSE: This agreement is subject to and contingent upon appropriation of funds for fiscal years subsequent to FY23.

E-VERIFY. CONTRACTOR shall comply with the requirements of Article 2 of Chapter 64 of the General Statutes. Further, if CONTRACTOR utilizes a subcontractor, CONTRACTOR shall require the subcontractor to comply with the requirements of Article 2 of Chapter 64 of the General Statutes.

Iran Divestment Act Certification. Contractor hereby certifies that Contractor, and all subcontractors, are not on the Iran Final Divestment List ("List") created by the North Carolina State Treasurer pursuant to N.C.G.S. 147-86.55-69. Contractor shall not utilize any subcontractor that is identified on the List.

Whenever used herein, the singular shall include the plural, the plural the singular, and the use of any gender shall be applicable to all genders as the context may require.

IN TESTIMONY WHEREOF, CONTRACTOR and the COUNTY have duly signed and sealed this Contract.

(Imprint corporate seal below this line)

ATTEST: \_\_\_\_\_ By: \_\_\_\_\_  
\_\_\_\_\_ Title: \_\_\_\_\_

ATTEST:

For the COUNTY OF  
CUMBERLAND COUNTY, NC

\_\_\_\_\_

By: \_\_\_\_\_

This instrument has been Pre-audited in the manner  
Required by the local Government Budget and  
Fiscal Control Act.

Marshall Faircloth, Chairman  
Approved for Legal Sufficiency  
upon formal execution by all parties  
COUNTY ATTORNEYS OFFICE

\_\_\_\_\_  
County Finance Office

\_\_\_\_\_  
( ) Renewable ( ) Nonrenewable  
Expiration Date: \_\_\_\_\_

INSTRUCTIONS ON PROPER SIGNING

If Contractor is an individual, sign on first line only and designate trade name below first line, thus:

\_\_\_\_\_ John Jones \_\_\_\_\_ (Seal)

Trading as [Type Company Name Here]

If Contractor is a partnership, sign partnership name on first line; have at least one general (not limited) partner sign on second line, and put his designation as partner on third line, thus:

\_\_\_\_\_ JONES PAVING COMPANY \_\_\_\_\_ (Seal)

By: \_\_\_\_\_ John Jones \_\_\_\_\_ (Seal)

Title: \_\_\_\_\_ General Contractor \_\_\_\_\_

If Contractor is a corporation, sign corporate name on first line (exactly as such name appears on the corporate seal); have the President or Vice-President sign on second line, put his title on third line, have the Secretary or Assistant Secretary sign on the left "ATTEST" line (adding the word "Assistant before the word "Secretary", if the Assistant Secretary is signing), and imprint corporate seal above the word "Attest", thus:

(Corporate Seal)

\_\_\_\_\_ JONES PAVING COMPANY \_\_\_\_\_ (Seal)

\_\_\_\_\_ John Jones \_\_\_\_\_

Title: \_\_\_\_\_ President \_\_\_\_\_

ATTEST:

\_\_\_\_\_ Thomas Jones \_\_\_\_\_

Assistant Secretary

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PERFORMANCE BOND

<p><b>Contractor</b>                  Name: Contractor's Legal Name                  Address (<i>principal place of business</i>)                  Contractor's Address                  Contractor's City, State, Zip Code</p>	<p><b>Surety</b>                  Name:                  Address (<i>principal place of business</i>):</p>
<p><b>Owner</b>                  Name: Cumberland County                  Address (<i>principal place of business</i>):                  130 Gillespie Street, Suite 214                  Fayetteville, NC 28301</p>	<p><b>Contract</b>                  Description (<i>name and location</i>)                  Cumberland Co. - Recovery Shelter Generators                  Project Location Address 1                  Project Location Address 2                  Contract Price: Contract Price                  Effective Date of Contract: Date of Contract</p>
<p><b>Bond</b>                  Bond Amount:                  Date of Bond:  <i>(date of Bond cannot be earlier than Effective Date of Contract)</i>                  Modifications to this Bond Form                  ___ None ___ See Paragraph 16</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.</p>	
<p>Contractor as Principal</p> <p>_____</p> <p style="text-align: center;"><small>(Full formal name of Contractor)</small></p> <p>By: _____</p> <p style="text-align: center;"><small>(Signature)</small></p> <p>Name: _____</p> <p style="text-align: center;"><small>(Printed or typed)</small></p> <p>Title: _____</p> <p>Attest: _____</p> <p style="text-align: center;"><small>(Signature)</small></p> <p>Name: _____</p> <p style="text-align: center;"><small>(Printed or typed)</small></p> <p>Title: _____</p>	<p>Surety</p> <p>_____</p> <p style="text-align: center;"><small>(Full formal name of Surety) (corporate seal)</small></p> <p>By: _____</p> <p style="text-align: center;"><small>(Signature) (Attach Power of Attorney)</small></p> <p>Name: _____</p> <p style="text-align: center;"><small>(Printed or typed)</small></p> <p>Title: _____</p> <p>Attest: _____</p> <p style="text-align: center;"><small>(Signature)</small></p> <p>Name: _____</p> <p style="text-align: center;"><small>(Printed or typed)</small></p> <p>Title: _____</p>
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
  - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
  - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
  - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
  - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
  - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
  - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
  - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
    - 5.4.1. After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
    - 5.4.2. Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in

whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
  - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
  - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
  - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
14. Definitions
  - 14.1. Balance of the Contract Price—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
  - 14.2. Construction Contract—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

- 14.3. Contractor Default—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
- 14.4. Owner Default—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 14.5. Contract Documents—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows : None

PAYMENT BOND

<p><b>Contractor</b>                  Name: Contractor's Legal Name                  Address (<i>principal place of business</i>)                  Contractor's Address                  Contractor's City, State, Zip Code</p>	<p><b>Surety</b>                  Name:                  Address (<i>principal place of business</i>):</p>
<p><b>Owner</b>                  Name: Cumberland County                  Address (<i>principal place of business</i>):                  130 Gillespie Street, Suite 214                  Fayetteville, NC 28301</p>	<p><b>Contract</b>                  Description (<i>name and location</i>):                  Cumberland Co. - Recovery Shelter Generators                  Project Location Address 1                  Project Location Address 2                  Contract Price: Contract Price                  Effective Date of Contract: Date of Contract</p>
<p><b>Bond</b>                  Bond Amount:                  Date of Bond:                  (<i>date of Bond cannot be earlier than Effective Date of Contract</i>)                  Modifications to this Bond Form                  ___ None ___ See Paragraph 18</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.</p>	
<p>Contractor as Principal</p> <p>_____</p> <p style="text-align: center;">(Full formal name of Contractor)</p> <p>By: _____</p> <p style="text-align: center;">(Signature)</p> <p>Name: _____</p> <p style="text-align: center;">(Printed or typed)</p> <p>Title: _____</p> <p>Attest: _____</p> <p style="text-align: center;">(Signature)</p> <p>Name: _____</p> <p style="text-align: center;">(Printed or typed)</p> <p>Title: _____</p>	<p>Surety</p> <p>_____</p> <p style="text-align: center;">(Full formal name of Surety) (corporate seal)</p> <p>By: _____</p> <p style="text-align: center;">(Signature) (Attach Power of Attorney)</p> <p>Name: _____</p> <p style="text-align: center;">(Printed or typed)</p> <p>Title: _____</p> <p>Attest: _____</p> <p style="text-align: center;">(Signature)</p> <p>Name: _____</p> <p style="text-align: center;">(Printed or typed)</p> <p>Title: _____</p>
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
  - 5.1. Claimants who do not have a direct contract with the Contractor
    - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
    - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
  - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
  - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
  - 7.2. Pay or arrange for payment of any undisputed amounts.
  - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety

shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
  - 16.1. Claim—A written statement by the Claimant including at a minimum:
    - 16.1.1. The name of the Claimant;
    - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
    - 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;

- 16.1.4. A brief description of the labor, materials, or equipment furnished;
  - 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
  - 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
  - 16.1.7. The total amount of previous payments received by the Claimant; and
  - 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. Claimant—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of “labor, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3. Construction Contract—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4. Owner Default—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5. Contract Documents—All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
18. Modifications to this Bond are as follows: None

**INSTRUCTIONS TO BIDDERS  
AND  
GENERAL CONDITIONS OF THE CONTRACT**

**STANDARD FORM FOR CONSTRUCTION PROJECTS**

**THE WOOTEN COMPANY  
RALEIGH, NORTH CAROLINA**

## INSTRUCTIONS TO BIDDERS

**For a proposal to be considered it must be in accordance with the following instructions:**

### 1. PROPOSALS

Proposals must be made in strict accordance with the Form of Proposal provided therefor, and all blank spaces for bids, alternates, and unit prices applicable to bidder's work shall be properly filled in. When requested alternates are not bid, the proposer shall so indicate by the words "No Bid". Any blanks shall also be interpreted as "No Bid". The bidder agrees that bid on Form of Proposal detached from specifications will be considered and will have the same force and effect as if attached thereto. Photocopied or faxed proposals will not be considered. Numbers shall be stated both in writing and in figures for the base bids and alternates. If figures and writing differ, the written number will supersede the figures.

Any modifications to the Form of Proposal (including alternates and/or unit prices) will disqualify the bid and may cause the bid to be rejected.

The bidder shall fill in the Form of Proposal as follows:

- a. If the documents are executed by a sole owner, that fact shall be evidenced by the word "Owner" appearing after the name of the person executing them.
- b. If the documents are executed by a partnership, that fact shall be evidenced by the word "Co-Partner" appearing after the name of the partner executing them.
- c. If the documents are executed on the part of a corporation, they shall be executed by either the president or the vice president and attested by the secretary or assistant secretary in either case, and the title of the office of such persons shall appear after their signatures. The seal of the corporation shall be impressed on each signature page of the documents.
- d. If the proposal is made by a joint venture, it shall be executed by each member of the joint venture in the above form for sole owner, partnership or corporation, whichever form is applicable.
- e. All signatures shall be properly witnessed.
- f. If the Contractor's license of a bidder is held by a person other than an owner, partner or officer of a firm, then the licensee shall also sign and be a party to the proposal. The title "Licensee" shall appear under his/her signature.

Proposals should be addressed as indicated in the Advertisement for Bids and be delivered, enclosed in an opaque sealed envelope, marked "Proposal" and bearing the title of the work, name of the bidder, and the Contractor's license number of the bidder. Bidders should clearly mark on the outside of the bid envelope which contract(s) they are bidding.

Bidder shall identify on the bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts or an affidavit indicating work under contract will be self-performed, as required by G.S. 143-128.2(c) and G.S. 143-128.2(f). Failure to comply with these requirements is grounds for rejection of the bid.

For projects bid in the single-prime alternative, the names and license numbers of major subcontractors shall be listed on the proposal form.

It shall be the specific responsibility of the bidder to deliver his bid to the proper official at the selected place and prior to the announced time for the opening of bids. Later delivery of a bid for any reason, including delivery by any delivery service, shall disqualify the bid.

Unit prices quoted in the proposal shall include overhead and profit and shall be the full compensation for the Contractor's cost involved in the work. See General Conditions, Article 19c-1.

## **2. EXAMINATION OF CONDITIONS**

It is understood and mutually agreed that by submitting a bid the bidder acknowledges that he has carefully examined all documents pertaining to the work, the location, accessibility and general character of the site of the work and all existing buildings and structures within and adjacent to the site, and has satisfied himself as to the nature of the work, the condition of existing buildings and structures, the conformation of the ground, the character, quality and quantity of the material to be encountered, the character of the equipment, machinery, plant and any other facilities needed preliminary to and during prosecution of the work, the general and local conditions, the construction hazards, and all other matters, including, but not limited to, the labor situation which can in any way affect the work under the contract, and including all safety measures required by the Occupational Safety and Health Act of 1970 and all rules and regulations issued pursuant thereto. It is further mutually agreed that by submitting a proposal the bidder acknowledges that he has satisfied himself as to the feasibility and meaning of the plans, drawings, specifications and other contract documents for the construction of the work and that he accepts all the terms, conditions and stipulations contained therein; and that he is prepared to work in cooperation with other contractors performing work on the site.

Reference is made to contract documents for the identification of those surveys and investigation reports of subsurface or latent physical conditions at the site or otherwise affecting performance of the work which have been relied upon by the Designer in preparing the documents. The Owner will make copies of all such surveys and reports available to the bidder upon request.

Each bidder may, at his own expense, make such additional surveys and investigations as he may deem necessary to determine his bid price for the performance of the work. Any on-site investigation shall be done at the convenience of the Owner. Any reasonable request for access to the site will be honored by the Owner.

## **3. BULLETINS AND ADDENDA**

Any addenda to specifications issued during the time of bidding are to be considered covered in the proposal and in closing a contract they will become a part thereof. It shall be the bidder's responsibility to ascertain prior to bid time the addenda issued and to see that his bid includes any changes thereby required.

Should the bidder find discrepancies in, or omission from, the drawings or documents or should he be in doubt as to their meaning, he shall at once notify the Designer who will send written instructions in the form of addenda to all bidders. Notification should be no later than seven (7) days prior to the date set for receipt of bids. Neither the Owner nor the Designer will be responsible for any oral instructions.

All addenda should be acknowledged by the bidder(s) on the Form of Proposal. However, even if not acknowledged, by submitting a bid, the bidder has certified that he has reviewed all issued addenda and has included all costs associated within his bid.

#### **4. BID SECURITY**

Each proposal shall be accompanied by a cash deposit or a certified check drawn on some bank or trust company insured by the Federal Deposit Insurance Corporation, or a bid bond in an amount equal to not less than five percent (5%) of the proposal, said deposit to be retained by the Owner as liquidated damages in event of failure of the successful bidder to execute the contract within ten (10) days after the award or to give satisfactory surety as required by law (G.S. 143-129).

Bid bond shall be conditioned that the surety will, upon demand, forthwith make payment to the obligee upon said bond if the bidder fails to execute the contract. The Owner may retain bid securities of any bidder(s) who may have a reasonable chance of award of contract for the full duration of time stated in the Notice to Bidders. Other bid securities may be released sooner, at the discretion of the Owner. All bid securities (cash or certified checks) shall be returned to the bidders promptly after award of contracts, and no later than seven (7) days after expiration of the holding period stated in the Notice to Bidders. Standard Form of Bid Bond is included in these specifications and shall be used.

#### **5. RECEIPT OF BIDS**

Bids shall be received in strict accordance with requirements of the General Statutes of North Carolina. Bid security shall be required as prescribed by statute. Prior to the closing of the bid, the bidder will be permitted to change or withdraw his bid. Guidelines for opening of public construction bids are available from the State Construction Office.

#### **6. OPENING OF BIDS**

Upon opening, all bids shall be read aloud. Once bidding is closed, there shall not be any withdrawal of bids by any bidder and no bids may be returned by the Designer to any bidder. After the opening of bids, no bid may be withdrawn, except under the provisions of General Statute 143-129.1, for a period of thirty days unless otherwise specified. Should the successful bidder default and fail to execute a contract, the contract may be awarded to the next lowest and responsible bidder. The Owner reserves the unqualified right to reject any and all bids. Reasons for rejection may include, but shall not be limited to, the following:

- a. If the Form of Proposal furnished to the bidder is not used or is altered.
- b. If the bidder fails to insert a price for all bid items, alternate and unit prices requested.
- c. If the bidder adds any provisions reserving the right to accept or reject any award.
- d. If there are unauthorized additions or conditional bids, or irregularities of any kind which tend to make the proposal incomplete, indefinite or ambiguous as to its meaning.
- e. If the bidder fails to complete the proposal form where information is requested so the bid may be properly evaluated by the Owner.
- f. If the unit prices contained in the bid schedule are unacceptable to the Owner.
- g. If the bidder fails to comply with other instructions stated herein.

## **7. BID EVALUATION**

The award of the contract will be made to the lowest responsible bidder as soon as practical. The Owner may award on the basis of the base bid and any alternates the Owner chooses.

Before awarding a contract, the Owner may require the apparent low bidder to qualify himself to be a responsible bidder by furnishing any or all of the following data:

- a. The latest financial statement showing assets and liabilities of the company or other information satisfactory to the Owner.
- b. A listing of completed projects of similar size.
- c. Permanent name and address of place of business.
- d. The number of regular employees of the organization and length of time the organization has been in business under present name.
- e. The name and home office address of the surety proposed and the name and address of the responsible local claim agent.
- f. The names of members of the firms who hold appropriate trade licenses, together with license numbers.
- g. If prequalified, Contractor info will be reviewed and evaluated comparatively to submitted prequalification package.

Failure or refusal to furnish any of the above information, if requested, shall constitute a basis for disqualification of any bidder.

In determining the lowest responsible, responsive bidder, the Owner shall take into consideration the bidder's compliance with the requirements of G.S. 143-128.2(c), the past performance of the bidder on construction contracts for Cumberland County with particular concern given to completion times, quality of work, cooperation with other contractors, and cooperation with the Designer and Owner. Failure of the low bidder to furnish affidavit and/or documentation as required by G.S. 143-128.2(c) shall constitute a basis for disqualification of the bid.

Should the Owner adjudge that the apparent low bidder is not the lowest responsible, responsive bidder by virtue of the above information, said apparent low bidder will be so notified and his bid security shall be returned to him.

## **8. PERFORMANCE BOND**

The successful bidder, upon award of contract, shall furnish a performance bond in an amount equal to 100 percent of the contract price. See Article 35, General Conditions.

## **9. PAYMENT BOND**

The successful bidder, upon award of contract, shall furnish a payment bond in an amount equal to 100 percent of the contract price. See Article 35, General Conditions.

## 10. PAYMENTS

Payments to the successful bidders (contractors) will be made on the basis of monthly estimates. See Article 31, General Conditions.

## 11. PRE-BID CONFERENCE

Prior to the date set for receiving bids, the Designer may arrange and conduct a Pre-Bid Conference for all prospective bidders. The purpose of this conference is to review project requirements and to respond to questions from prospective bidders and their subcontractors or material suppliers related to the intent of bid documents. Attendance by prospective bidders shall be as required by the "Notice to Bidders".

## 12. SUBSTITUTIONS

In accordance with the provisions of G.S. 133-3, material, product, or equipment substitutions proposed by the bidders to those specified herein can only be considered during the bidding phase until ten (10) days prior to the receipt of bids when submitted to the Designer with sufficient data to confirm material, product, or equipment equality. Proposed substitutions submitted after this time will be considered only as potential change order.

Submittals for proposed substitutions shall include the following information: \_

- a. Name, address, and telephone number of manufacturer and supplier as appropriate. \_
- b. Trade name, model or catalog designation.
- c. Product data including performance and test data, reference standards, and technical descriptions of material, product, or equipment. Include color samples and samples of available finishes as appropriate.
- d. Detailed comparison with specified products including performance capabilities, warranties, and test results.
- e. Other pertinent data including data requested by the Designer to confirm product equality.

If a proposed material, product, or equipment substitution is deemed equal by the Designer to those specified, all bidders of record will be notified by Addendum.

# GENERAL CONDITIONS OF THE CONTRACT

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## ARTICLE 1 - DEFINITIONS

- a. The **contract documents** consist of the Notice to Bidders; Instructions to Bidders; General Conditions of the Contract; special conditions if applicable; Supplementary General Conditions; the drawing and specifications, including all bulletins, addenda or other modifications of the drawings and specifications incorporated into the documents prior to their execution; the proposal; the contract; the performance bond; the payment bond; insurance certificates. All of these items together form the contract.
- b. The **Owner** is Cumberland County through the agency named in the contract.
- c. The **Designer(s)** are those referred to within this contract, or their authorized representatives. The Designer(s), as referred to herein, shall mean architect and/or engineer. They will be referred to hereinafter as if each were of the singular number, masculine gender.
- d. The **Contractor**, as referred to hereinafter, shall be deemed to be either of the several contracting parties called the "Party of the First Part" in either of the several contracts in connection with the total project. Where, in special instances hereinafter, a particular Contractor is intended, an adjective precedes the word "Contractor," as "general," "heating," etc. For the purposes of a single prime contract, the term Contractor shall be deemed to be the single contracting entity identified as the "Party of the First Part" in the single Construction Contract. Any references or adjectives that name or infer multiple prime contractors shall be interpreted to mean the single prime Contractor.
- e. A **subcontractor**, as the term is used herein, shall be understood to be one who has entered into a direct contract with a Contractor, and includes one who furnishes materials worked to a special design in accordance with plans and specifications covered by the contract, but does not include one who only sells or furnishes materials not requiring work so described or detailed.
- f. **Written notice** shall be defined as notice in writing delivered in person to the Contractor, or to a partner of the firm in the case of a partnership, or to a member of the contracting organization, or to an officer of the organization in the case of a corporation, or sent to the last known business address of the contracting organization by registered mail.
- g. **Work**, as used herein as a noun, is intended to include materials, labor, and workmanship of the appropriate Contractor.
- h. The **project** is the total construction work to be performed under the contract documents by the several contractors.
- i. **Project Expediter**, as used herein, is an entity stated in the contract documents, designated to effectively facilitate scheduling and coordination of work activities. See Article 14(f) for responsibilities of a Project Expediter. **For the purposes of a single prime contract, the single prime Contractor shall be designated as the Project Expediter.**
- j. **Change order**, as used herein, shall mean a written order to the Contractor subsequent to the signing of the contract authorizing a change in the contract. The change order shall be signed by the Contractor, Designer and the Owner, in that order (Article 19).

- k. **Field Order**, as used herein, shall mean a written approval for the Contractor to proceed with the work requested by Owner prior to issuance of a formal Change Order. The field order shall be signed by the Contractor, Designer and Owner.
- l. **Time of completion**, as stated in the contract documents, is to be interpreted as consecutive calendar days measured from the date established in the written Notice to Proceed, or such other date as may be established herein (Article 23).
- m. **Liquidated damages**, as stated in the contract documents, is an amount reasonably estimated in advance to cover the consequential damages associated with the Owner's economic loss in not being able to use the Project for its intended purposes at the end of the contract's completion date as amended by change order, if any, by reason of failure of the Contractor(s) to complete the work within the time specified. Liquidated damages does not include the Owner's extended contract administration costs (including but not limited to additional fees for architectural and engineering services, testing services, inspection services, commissioning services, etc.), such other damages directly resulting from delays caused solely by the Contractor, or consequential damages that the Owner identified in the bid documents that may be impacted by any delay caused solely by the Contractor (e.g., if a multi-phased project-subsequent phases, delays in start other projects that are dependent on the completion of this Project, extension of leases and/or maintenance agreements for other facilities).
- n. **Surety**, as used herein, shall mean the bonding company or corporate body which is bound with and for the Contractor, and which engages to be responsible for the Contractor and his acceptable performance of the work.
- o. **Routine written communications between the Designer and the Contractor** are any communication other than a "request for information" provided in letter, memo, or transmittal format, sent by mail, courier, electronic mail, or facsimile. Such communications cannot be identified as "request for information".
- p. **Clarification or Request for information (RFI)** is a request from the Contractor seeking an interpretation or clarification by the Designer relative to the contract documents. The RFI, which shall be labeled (RFI), shall clearly and concisely set forth the issue or item requiring clarification or interpretation and why the response is needed. The RFI must set forth the Contractor's interpretation or understanding of the contract documents requirements in question, along with reasons for such an understanding.
- q. **Approval** means written or imprinted acknowledgement that materials, equipment or methods of construction are acceptable for use in the work.
- r. **Inspection** shall mean examination or observation of work completed or in progress to determine its compliance with contract documents.
- s. **"Equal to" or "approved equal"** shall mean materials, products, equipment, assemblies, or installation methods considered equal by the bidder in all characteristics (physical, functional, and aesthetic) to those specified in the contract documents. Acceptance of equal is subject to approval of Designer and Owner.
- t. **"Substitution" or "substitute"** shall mean materials, products, equipment, assemblies, or installation methods deviating in at least one characteristic (physical, functional, or aesthetic) from those specified, but which in the opinion of the bidder would improve competition and/or enhance the finished installation. Acceptance of substitution is subject to the approval of the Designer and Owner.

- u. **Provide** shall mean furnish and install complete in place, new, clean, operational, and ready for use.
- v. **Indicated and shown** shall mean provide as detailed, or called for, and reasonably implied in the contract documents.
- w. **Special inspector** is one who inspects materials, installation, fabrication, erection or placement of components and connections requiring special expertise to ensure compliance with the approved construction documents and referenced standards.
- x. **Commissioning** is a quality assurance process that verifies and documents that building components and systems operate in accordance to the Owner's project requirements and the project design documents.
- y. **Designer Final Inspection** is the inspection performed by the design team to determine the completeness of the project in accordance with approved plans and specifications. This inspection occurs prior to final inspection.
- z. **Beneficial Occupancy** is requested by the Owner and is occupancy or partial occupancy of the building after all life safety items have been completed as determined by the Building Inspector. Life safety items include but not limited to fire alarm, sprinkler, egress and exit lighting, fire rated walls, egress paths and security.
- aa. **Final Acceptance** is the date in which the Owner accepts the construction as totally complete. This includes the final inspection and certification by the Designer that all punch lists are completed.

## ARTICLE 2 - INTENT AND EXECUTION OF DOCUMENTS

- a. The drawings and specifications are complementary, one to the other, and that which is shown on the drawings or called for in the specifications shall be as binding as if it were both called for and shown. The intent of the drawings and specifications is to establish the scope of all labor, materials, transportation, equipment, and any and all other things necessary to provide a bid for a complete job. In case of discrepancy or disagreement in the contract documents, the order of precedence shall be: Form of Contract, specifications, large-scale detail drawings, small-scale drawings.
- b. The wording of the specifications shall be interpreted in accordance with common usage of the language except that words having a commonly used technical or trade meaning shall be so interpreted in preference to other meanings.
- c. The Contractor shall execute each copy of the proposal, contract, performance bond and payment bond as follows:
  - 1. If the documents are executed by a sole owner, that fact shall be evidenced by the word "Owner" appearing after the name of the person executing them.
  - 2. If the documents are executed by a partnership, that fact shall be evidenced by the word "Co-Partner" appearing after the name of the partner executing them.

3. If the documents are executed on the part of a corporation, they shall be executed by either the president or the vice president and attested by the secretary or assistant secretary in either case, and the title of the office of such persons shall appear after their signatures. The seal of the corporation shall be impressed on each signature page of the documents.
4. If the documents are made by a joint venture, they shall be executed by each member of the joint venture in the above form for sole owner, partnership or corporation, whichever form is applicable to each particular member.
5. All signatures shall be properly witnessed.
6. If the Contractor's license is held by a person other than an owner, partner or officer of a firm, then the licensee shall also sign and be a party to the contract. The title "Licensee" shall appear under his/her signature.
7. The bonds shall be executed by an attorney-in-fact. There shall be attached to each copy of the bond a certified copy of power of attorney properly executed and dated.
8. Each copy of the bonds shall be countersigned by an authorized individual agent of the bonding company licensed to do business in North Carolina. The title "Licensed Resident Agent" shall appear after the signature.
9. The seal of the bonding company shall be impressed on each signature page of the bonds.
10. The Contractor's signature on the performance bond and the payment bond shall correspond with that on the contract. The date of performance and payment bond shall not be prior to the date of the contract.

### **ARTICLE 3 - CLARIFICATIONS AND DETAIL DRAWINGS**

- a. In such cases where the nature of the work requires clarification by the Designer, such clarification shall be furnished by the Designer with reasonable promptness by means of written instructions or detail drawings, or both. Clarifications and drawings shall be consistent with the intent of contract documents, and shall become a part thereof.
- b. The Contractor(s) and the Designer shall prepare, if deemed necessary, a schedule fixing dates upon which foreseeable clarifications will be required. The schedule will be subject to addition or change in accordance with progress of the work. The Designer shall furnish drawings or clarifications in accordance with that schedule. The Contractor shall not proceed with the work without such detail drawings and/or written clarifications.

### **ARTICLE 4 - COPIES OF DRAWINGS AND SPECIFICATIONS**

The Designer or Owner shall furnish free of charge to the contractors electronic copies of plans and specifications. If requested by the Contractor, paper copies of plans and specifications shall be furnished free of charge as follows:

- a. For the purposes of a single-prime contract, the Contractor shall receive up to 15 sets of drawings and specifications, plus a clean set of black line prints on white paper of all appropriate drawings, upon which the Contractor shall clearly and legibly record all work-in-place that is at variance with the contract documents.

## **ARTICLE 5 - SHOP DRAWINGS, SUBMITTALS, SAMPLES, DATA**

- a. Within 15 consecutive calendar days after the notice to proceed, each prime Contractor shall submit a schedule for submission of all shop drawings, product data, samples, and similar submittals through the Project Expediter to the Designer. This schedule shall indicate the items, relevant specification sections, other related submittal, data, and the date when these items will be furnished to the Designer.
- b. The Contractor(s) shall review, approve and submit to the Designer all Shop Drawings, Coordination Drawings, Product Data, Samples, Color Charts, and similar submittal data required or reasonably implied by the Contract Documents. Required Submittals shall bear the Contractor's stamp of approval, any exceptions to the Contract Documents shall be noted on the submittals, and copies of all submittals shall be of sufficient quantity for the Designer to retain up to three (3) copies of each submittal for his own use plus additional copies as may be required by the Contractor. Submittals shall be presented to the Designer in accordance with the schedule submitted in paragraph (a). so as to cause no delay in the activities of the Owner or of separate Contractors.
- c. The Designer shall review required submittals promptly, noting desired corrections if any, and retaining two (2) copies (1 for the Designer, 1 for the Owner) for his use. The remaining copies of each submittal shall be returned to the Contractor not later than twenty (20) days from the date of receipt by the Designer, for the Contractor's use or for corrections and resubmittal as noted by the Designer. When resubmittals are required, the submittal procedure shall be the same as for the original submittals.
- d. Approval of shop drawings/submittals by the Designer shall not be construed as relieving the Contractor from responsibility for compliance with the design or terms of the contract documents nor from responsibility of errors of any sort in the shop drawings, unless such lack of compliance or errors first have been called in writing to the attention of the Designer by the Contractor.

## **ARTICLE 6 - WORKING DRAWINGS AND SPECIFICATIONS AT THE JOB SITE**

- a. The Contractor shall maintain, in readable condition at his job office, one complete set of working drawings and specifications for his work including all shop drawings. Such drawings and specifications shall be available for use by the Designer, his authorized representative, or Owner.

- b. The Contractor shall maintain at the job office, a day-to-day record of work-in-place that is at variance with the contract documents. Such variations shall be fully noted on project drawings by the Contractor and submitted to the Designer upon project completion and no later than 30 days after final acceptance of the project.
- c. The Contractor shall maintain at the job office a record of all required tests that have been performed, clearly indicating the scope of work inspected and the date of approval or rejection.

## **ARTICLE 7 - OWNERSHIP OF DRAWINGS AND SPECIFICATIONS**

All drawings and specifications are instruments of service and remain the property of the Owner. The use of these instruments on work other than this contract without permission of the Owner is prohibited. All copies of drawings and specifications other than contract copies shall be returned to the Owner upon request after completion of the work.

## **ARTICLE 8 - MATERIALS, EQUIPMENT, EMPLOYEES**

- a. The Contractor shall, unless otherwise specified, supply and pay for all labor, transportation, materials, tools, apparatus, lights, power, heat, sanitary facilities, water, scaffolding and incidentals necessary for the completion of his work, and shall install, maintain and remove all equipment of the construction, other utensils or things, and be responsible for the safe, proper and lawful construction, maintenance and use of same, and shall construct in the best and most workmanlike manner, a complete job and everything incidental thereto, as shown on the plans, stated in the specifications, or reasonably implied therefrom, all in accordance with the contract documents.
- b. All materials shall be new and of quality specified, except where reclaimed material is authorized herein and approved for use. Workmanship shall at all times be of a grade accepted as the best practice of the particular trade involved, and as stipulated in written standards of recognized organizations or institutes of the respective trades except as exceeded or qualified by the specifications.
- c. Upon notice, the Contractor shall furnish evidence as to quality of materials.
- d. Products are generally specified by ASTM or other reference standard and/or by manufacturer's name and model number or trade name. When specified only by reference standard, the Contractor may select any product meeting this standard, by any manufacturer. When several products or manufacturers are specified as being equally acceptable, the Contractor has the option of using any product and manufacturer combination listed. However, the Contractor shall be aware that the cited examples are used only to denote the quality standard of product desired and that they do not restrict bidders to a specific brand, make, manufacturer or specific name; that they are used only to set forth and convey to bidders the general style, type, character and quality of product desired; and that equivalent products will be acceptable. Request for substitution of materials, items, or equipment shall be submitted to the Designer for approval or disapproval; such approval or disapproval shall be made by the Designer prior to the opening of bids. Alternate materials may be requested after the award if it can clearly be demonstrated that it is an added benefit to the Owner and the Designer and Owner approves.
- e. The Designer is the judge of equality for proposed substitution of products, materials or equipment.

- g. If at any time during the construction and completion of the work covered by these contract documents, the language, conduct, or attire of any workman of the various crafts be adjudged a nuisance to the Owner or Designer, or if any workman be considered detrimental to the work, the Contractor shall order such parties removed immediately from grounds.

#### **ARTICLE 9 - ROYALTIES, LICENSES AND PATENTS**

It is the intention of the contract documents that the work covered herein will not constitute in any way infringement of any patent whatsoever unless the fact of such patent is clearly evidenced herein. The Contractor shall protect and save harmless the Owner against suit on account of alleged or actual infringement. The Contractor shall pay all royalties and/or license fees required on account of patented articles or processes, whether the patent rights are evidenced hereinafter.

#### **ARTICLE 10 - PERMITS, INSPECTIONS, FEES, REGULATIONS**

- a. The Contractor shall give all notices and comply with all laws, ordinances, codes, rules and regulations bearing on the conduct of the work under this contract. If the Contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the Designer in writing. See Instructions to Bidders, Paragraph 3, Bulletins and Addenda. Any necessary changes required after contract award shall be made by change order in accordance with Article 19. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, codes, rules and regulations, and without such notice to the Designer, he shall bear all cost arising therefrom. Additional requirements implemented after bidding will be subject to equitable negotiations.
- b. All work under this contract shall conform to the North Carolina State Building Code and other State, local and national codes as are applicable. The cost of all required inspections and permits shall be the responsibility of the Contractor and included within the bid proposal. All water taps, meter barrels, vaults and impact fees shall be paid by the Contractor unless otherwise noted.
- d. The Contractor shall cooperate with the county or municipal authorities by obtaining building permits.
- e. The Contractor shall pay the cost of these permits and inspections.

## ARTICLE 11 - PROTECTION OF WORK, PROPERTY AND THE PUBLIC

- a. The contractors shall be jointly responsible for the entire site and the building or construction of the same and provide all the necessary protections, as required by the Owner or Designer, and by laws or ordinances governing such conditions. They shall be responsible for any damage to the Owner's property or of that of others on the job, by them, their personnel, or their subcontractors, and shall make good such damages. They shall be responsible for and pay for any damages caused to the Owner. All contractors shall have access to the project at all times.
- b. The Contractor shall provide cover and protect all portions of the structure when the work is not in progress, provide and set all temporary roofs, covers for doorways, sash and windows, and all other materials necessary to protect all the work on the building, whether set by him, or any of the subcontractors. Any work damaged through the lack of proper protection or from any other cause, shall be repaired or replaced without extra cost to the Owner.
- c. No fires of any kind will be allowed inside or around the operations during the course of construction without special permission from the Designer and Owner.
- d. The Contractor shall protect all trees and shrubs designated to remain in the vicinity of the operations by building substantial boxes around same. He shall barricade all walks, roads, etc., as directed by the Designer to keep the public away from the construction. All trenches, excavations or other hazards in the vicinity of the work shall be well barricaded and properly lighted at night.
- e. The Contractor shall provide all necessary safety measures for the protection of all persons on the job, including the requirements of the A.G.C. *Accident Prevention Manual in Construction*, as amended, and shall fully comply with all state laws or regulations and North Carolina State Building Code requirements to prevent accident or injury to persons on or about the location of the work. He shall clearly mark or post signs warning of hazards existing, and shall barricade excavations, elevator shafts, stairwells and similar hazards. He shall protect against damage or injury resulting from falling materials and he shall maintain all protective devices and signs throughout the progress of the work.
- f. The Contractor shall adhere to the rules, regulations and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry (Title 29, Code of Federal Regulations, Part 1926, published in Volume 39, Number 122, Part II, June 24, 1974, *Federal Register*), and revisions thereto as adopted by General Statutes of North Carolina 95-126 through 155.
- g. The Contractor shall designate a responsible person of his organization as safety officer/inspector to inspect the project site for unsafe health and safety hazards, to report these hazards to the Contractor for correction, and whose duties also include accident prevention on the project, and to provide other safety and health measures on the project site as required by the terms and conditions of the contract. The name of the safety inspector shall be made known to the Designer and Owner at the time of the preconstruction conference and in all cases prior to any work starting on the project.
- h. In the event of emergency affecting the safety of life, the protection of work, or the safety of adjoining properties, the Contractor is hereby authorized to act at his own discretion, without further authorization from anyone, to prevent such threatened injury or damage.

Any compensation claimed by the Contractor on account of such action shall be determined as provided for under Article 19(b).

- i. Any and all costs associated with correcting damage caused to adjacent properties of the construction site or staging area shall be borne by the Contractor. These costs shall include but not be limited to flooding, mud, sand, stone, debris, and discharging of waste products.

## **ARTICLE 12 - SEDIMENTATION POLLUTION CONTROL ACT OF 1973**

- a. Any land-disturbing activity performed by the Contractor(s) in connection with the project shall comply with all erosion control measures set forth in the contract documents and any additional measures which may be required in order to ensure that the project is in full compliance with the Sedimentation Pollution Control Act of 1973, as implemented by Title 15, North Carolina Administrative Code, Chapter 4, Sedimentation Control, Subchapters 4A, 4B and 4C, as amended (15 N.C.A.C. 4A, 4B and 4C).
- b. Upon receipt of notice that a land-disturbing activity is in violation of said act, the Contractor(s) shall be responsible for ensuring that all steps or actions necessary to bring the project in compliance with said act are promptly taken.
- c. The Contractor(s) shall be responsible for defending any legal actions instituted pursuant to N.C.G.S. 113A-64 against any party or persons described in this article.
- d. To the fullest extent permitted by law, the Contractor(s) shall indemnify and hold harmless the Owner, the Designer and the agents, consultants and employees of the Owner and Designer, from and against all claims, damages, civil penalties, losses and expenses, including, but not limited to, attorneys' fees, arising out of or resulting from the performance of work or failure of performance of work, provided that any such claim, damage, civil penalty, loss or expense is attributable to a violation of the Sedimentation Pollution Control Act. Such obligation shall not be construed to negate, abridge or otherwise reduced any other right or obligation of indemnity which would otherwise exist as to any party or persons described in this article.

## **ARTICLE 13 - INSPECTION OF THE WORK**

- a. It is a condition of this contract that the work shall be subject to inspection during normal working hours and during any time work is in preparation and progress by the Designer, designated official representatives of the Owner, and those persons required by state law to test special work for official approval. The Contractor shall therefore provide safe access to the work at all times for such inspections.
- b. All instructions to the Contractor will be made only by or through the Designer or his designated project representative. Observations made by official representatives of the Owner shall be conveyed to the Designer for review and coordination prior to issuance to the Contractor.
- c. All work shall be inspected by Designer, special inspector and/or the Building Inspector prior to being covered by the Contractor. Contractor shall give a minimum two weeks notice unless otherwise agreed to by all parties. If inspection fails, after the first reinspection all costs associated with additional reinspections shall be borne by the Contractor.

- d. Where special inspection or testing is required by virtue of any state laws, instructions of the Designer, specifications or codes, the Contractor shall give adequate notice to the Designer of the time set for such inspection or test, if the inspection or test will be conducted by a party other than the Designer. Such special tests or inspections will be made in the presence of the Designer, or his authorized representative, and it shall be the Contractor's responsibility to serve ample notice of such tests.
- e. All laboratory tests shall be paid by the Owner unless provided otherwise in the contract documents except the general Contractor shall pay for laboratory tests to establish design mix for concrete, and for additional tests to prove compliance with contract documents where materials have tested deficient except when the testing laboratory did not follow the appropriate ASTM testing procedures.
- f. Should any work be covered up or concealed prior to inspection and approval by the Designer, special inspector, and/or Building Inspector such work shall be uncovered or exposed for inspection, if so requested by the Designer in writing. Inspection of the work will be made upon notice from the Contractor. All cost involved in uncovering, repairing, replacing, recovering and restoring to design condition, the work that has been covered or concealed will be paid by the Contractor involved.

#### **ARTICLE 14 - CONSTRUCTION SUPERVISION AND SCHEDULE**

- a. Throughout the progress of the work, each Contractor shall keep at the job site, a competent superintendent and supervisory staff satisfactory to the Designer and the Owner. The superintendent and supervisory staff shall not be changed without the consent of the Designer and Owner unless said superintendent ceases to be employed by the Contractor or ceases to be competent as determined by the Contractor, Designer or Owner. The superintendent and other staff designated by the Contractor in writing shall have authority to act on behalf of the Contractor, and instructions, directions or notices given to him shall be as binding as if given to the Contractor. However, directions, instructions, and notices shall be confirmed in writing.
- b. The Contractor shall examine and study the drawings and specifications and fully understand the project design, and shall provide constant and efficient supervision to the work. Should he discover any discrepancies of any sort in the drawings or specifications, he shall report them to the Designer without delay. He will not be held responsible for discrepancies in the drawings and/or specifications, but shall be held responsible to report them should they become known to him.
- c. All contractors shall be required to cooperate and consult with each other during the construction of this project. Prior to installation of work, all contractors shall jointly prepare coordination drawings, showing locations of various ductworks, piping, motors, pumps, and other mechanical or electrical equipment, in relation to the structure, walls and ceilings. These drawings shall be submitted to the Designer through the Project Expediter for information only. Each Contractor shall lay out and execute his work to cause the least delay to other contractors. Each Contractor shall be financially responsible for any damage to other Contractor's work and for undue delay caused to other contractors on the project.
- d. The Contractor is required to attend job site progress conferences as called by the Designer. The Contractor shall be represented at these job progress conferences by both home office and project personnel. These representatives shall have authority to act on behalf of the Contractor. These meetings shall be open to subcontractors, material

suppliers and any others who can contribute toward maintaining required job progress. It shall be the principal purpose of these meetings, or conferences, to effect coordination, cooperation and assistance in every practical way toward the end of maintaining progress of the project on schedule and to complete the project within the specified contract time. Each Contractor shall be prepared to assess progress of the work as required in his particular contract and to recommend remedial measures for correction of progress as may be appropriate. The Designer or his authorized representative shall be the coordinator of the conferences and shall preside as chairman. The Contractor shall turn over a copy of his daily reports to the Designer and Owner at the job site progress conference. Owner will determine daily report format.

- e. The Contractor(s) shall, employ an engineer or a land surveyor licensed in the State of North Carolina to lay out the work and to establish a bench mark in a location where same will not be disturbed and where direct instruments sights may be taken.
- f. The Designer shall designate a Project Expediter on projects involving two or more prime contracts. The Project Expediter shall be designated in the Supplementary General Conditions. The Project Expediter shall have at a minimum the following responsibilities.
  - 1. Prepare the project construction schedule and shall allow all prime contractors (multi-prime contract) and subcontractors (single-prime contract) performing general, plumbing, HVAC, and electrical work equal input into the preparation of the initial construction schedule.
  - 2. Maintain a project progress schedule for all contractors.
  - 3. Give adequate notice to all contractors to ensure efficient continuity of all phases of the work.
  - 4. Notify the Designer of any changes in the project schedule.
  - 5. Recommend to the Owner whether payment to a Contractor shall be approved.
- g. It shall be the responsibility of the Project Expediter to cooperate with and obtain from several prime contractors and subcontractors on the job, their respective work activities and integrate these activities into a project construction schedule in form of a detailed bar chart or Critical Path Method (CPM), schedule. Each prime Contractor shall provide work activities within fourteen (14) days of request by the Project Expediter. A “work activity”, for scheduling purposes, shall be any component or contractual requirement of the project requiring at least one (1) day, but not more than fourteen (14) days, to complete or fulfill. The project construction schedule shall graphically show all salient features of the work required to construct the project from start to finish and within the allotted time established in the contract. The time (in days) between the Contractor’s early completion and contractual completion dates is part of the project total float time; and shall be used as such, unless amended by a change order. On a multi-prime project, each prime Contractor shall review the proposed construction schedule and approve same in writing. The Project Expediter shall submit the proposed construction schedule to the Designer for comments. The complete Project construction schedule shall be of the type set forth in the Supplementary General Condition or subparagraph (1) or (2) below, as appropriate:

1. For a project with total contracts of \$500,000 or less, a bar chart schedule will satisfy the above requirement. The schedule shall indicate the estimated starting and completion dates for each major element of the work.
2. For a project with total contracts over \$500,000, a Critical Path Method (CPM) schedule shall be utilized to control the planning and scheduling of the Work. The CPM schedule shall be the responsibility of the Project Expediter and shall be paid for by the Project Expediter.

**Bar Chart Schedule:** Where a bar chart schedule is required, it shall be time-scaled in weekly increments, shall indicate the estimated starting and completion dates for each major element of the work by trade and by area, level, or zone, and shall schedule dates for all salient features, including but not limited to the placing of orders for materials, submission of shop drawings and other Submittals for approval, approval of shop drawings by designers, the manufacture and delivery of material, the testing and the installation of materials, supplies and equipment, and all Work activities to be performed by the Contractor. The Contractor shall allow sufficient time in his schedule for all commissioning, required inspections and completion of final punchlist(s). Each Work activity will be assigned a time estimate by the Contractor. One day shall be the smallest time unit used.

**CPM Schedule:** Where a CPM schedule is required, it shall be in time-scaled precedence format using the Project Expediter's logic and time estimates. The CPM schedule shall be drawn or plotted with activities grouped or zoned by Work area or subcontract as opposed to a random (or scattered) format. The CPM schedule shall be time-scaled on a weekly basis and shall be drawn or plotted at a level of detail and logic which will schedule all salient features of the work to be performed by the Contractor. The Contractor shall allow sufficient time in his schedule for all commissioning, required inspections and completion of final punchlist(s).. Each Work activity will be assigned a time estimate by the Contractor. One day shall be the smallest time unit used.

The CPM schedule will identify and describe each activity, state the duration of each activity, the calendar dates for the early and late start and the early and late finish of each activity, and clearly highlight all activities on the critical path. "Total float" and "free float" shall be indicated for all activities. Float time shall not be considered for the exclusive use or benefit of either the Owner or the Contractor, but must be allocated in the best interest of completing the Work within the Contract time. Extensions to the Contract time, when granted by Change Order, will be granted only when equitable time adjustment exceeds the Total Float in the activity or path of activities affected by the change. On contracts with a price over \$2,500,000, the CPM schedule shall also show what part of the Contract Price is attributable to each activity on the schedule, the sum of which for all activities shall equal the total Contract Price.

**Early Completion of Project:** The Contractor may attempt to complete the project prior to the Contract Completion Date. However, such planned early completion shall be for the Contractor's convenience only and shall not create any additional rights of the Contractor or obligations of the Owner under this Contract, nor shall it change the Time

for Completion or the Contract Completion Date. The Contractor shall not be required to pay liquidated damages to the Owner because of its failure to complete by its planned earlier date. Likewise, the Owner shall not pay the Contractor any additional compensation for early completion nor will the Owner owe the Contractor any compensation should the Owner, its officers, employees, or agents cause the Contractor not to complete earlier than the date required by the Contract Documents.

- h. The proposed project construction schedule shall be presented to the Designer no later than fifteen (15) days after written notice to proceed. No application for payment will be processed until this schedule is accepted by the Designer and Owner.
- i. The approved project construction schedule shall be distributed to all contractors and displayed at the job site by the Project Expediter.
- j. The several contractors shall be responsible for their work activities and shall notify the Project Expediter of any necessary changes or adjustments to their work. The Project Expediter shall maintain the project construction schedule, making biweekly adjustments, updates, corrections, etc., that are necessary to finish the project within the Contract time, keeping all contractors and the Designer fully informed. Copy of a bar chart schedule annotated to show the current progress shall be submitted by the Contractor(s) to the Designer, along with monthly request for payment. For project requiring CPM schedule, the Contractor shall submit a biweekly report of the status of all activities. The bar chart schedule or status report shall show the actual Work completed to date in comparison with the original Work scheduled for all activities. If any activities of the work of several contractors are behind schedule, the Contractor must indicate in writing, what measures will be taken to bring each such activity back on schedule and to ensure that the Contract Completion Date is not exceeded. A plan of action and recovery schedule shall be developed and submitted to the Designer by the Project Expediter, when (1) the Contractor's report indicates delays, that are in the opinion of the Designer or the Owner, of sufficient magnitude that the Contractor's ability to complete the work by the scheduled completion is brought into question; (2) the updated construction schedule is thirty (30) days behind the planned or baseline schedule and no legitimate time extensions, as determined by the Designer, are in process; and (3) the Contractor desires to make changes in the logic (sequencing of work) or the planned duration of future activities of the CPM schedule which, in the opinion of the Designer or the Owner, are of a major nature. The plan of action, when required shall be submitted to the Owner for review within two (2) business days of the Contractor receiving the Owner's written demand. The recovery schedule, when required, shall be submitted to the Owner within five (5) calendar days of the Contractor's receiving the Owner's written demand. Failure to provide an updated construction schedule or a recovery schedule may be grounds for rejection of payment applications or withholding of funds as set forth in Article 33.
- k. The Project Expediter shall notify each Contractor of such events or time frames that are critical to the progress of the job. Such notice shall be timely and reasonable. Should the progress be delayed due to the work of any of the several contractors, it shall be the duty of the Project Expediter to immediately notify the Contractor(s) responsible for such delay, the Designer, and other prime contractors. The Designer shall determine the Contractor(s) who caused the delays and notify the bonding company of the responsible Contractor(s) of the delays; and shall make a recommendation to the Owner regarding further action.

Designation as Project Expediter entails an additional project control responsibility and does not alter in any way the responsibility of the Contractor so designated, nor the responsibility of the other contractors involved in the project. The project expediter's Superintendent(s) shall be in attendance at the Project site at all times

when work is in progress unless conditions are beyond the control of the Contractor or until termination of the Contract in accordance with the Contract Documents. It is understood that such Superintendent shall be acceptable to the Owner and Designer and shall be the one who will be continued in that capacity for the duration of the project unless he ceases to be on the Contractor's payroll or the Owner otherwise agrees. The Superintendent shall not be employed on any other project for or by the Contractor or by any other entity during the course of the Work. If the Superintendent is employed by the Contractor on another project without the Owner's approval, then the Owner may deduct from the Contractor's monthly general condition costs and amount representing the Superintendent's cost and shall deduct that amount for each month thereafter until the Contractor has the Superintendent back on the Owner's Project full-time.

## **ARTICLE 15 - SEPARATE CONTRACTS AND CONTRACTOR RELATIONSHIPS**

- a. Effective from January 1, 2002, Chapter 143, Article 8, was amended, to allow public contracts to be delivered by the following delivery methods: single-prime, dual (single-prime and separate-prime), construction manager at risk, and alternative contracting method as approved by the State Building Commission. The Owner reserves the right to prepare separate specifications, receive separate bids, and award separate contracts for such other major items of work as may be in the best interest of the public. For the purposes of a single prime contract, refer to Article 1 – Definitions.
- b. All contractors shall cooperate with each other in the execution of their work, and shall plan their work in such manner as to avoid conflicting schedules or delay of the work. See Article 14, Construction Supervision.
- c. If any part of Contractor's work depends upon the work of another Contractor, defects which may affect that work shall be reported to the Designer in order that prompt inspection may be made and the defects corrected. Commencement of work by a Contractor where such condition exists will constitute acceptance of the other Contractor's work as being satisfactory in all respects to receive the work commenced, except as to defects which may later develop. The Designer shall be the judge as to the quality of work and shall settle all disputes on the matter between contractors.
- d. Any mechanical or electrical work such as sleeves, inserts, chases, openings, penetrations, etc., which is located in the work of the general Contractor shall be built in by the general Contractor. The respective mechanical and electrical contractors shall set all sleeves, inserts and other devices that are to be incorporated into the structure in cooperation and under the supervision of the general Contractor. The responsibility for the exact location of such items shall be that of the mechanical and/or electrical Contractor.
- e. The Designer and the Owner shall have access to the work whenever it is in preparation and progress and during normal working hours. The Contractor shall provide facilities for such access so the Designer may perform his functions under the contract documents.
- f. Should a Contractor cause damage to the work or property of another Contractor, he shall be directly responsible, and upon notice, shall promptly settle the claim or otherwise resolve the dispute.

## **ARTICLE 16 - SUBCONTRACTS AND SUBCONTRACTORS**

- a. Within thirty (30) days after award of the contract, the Contractor shall submit to the Designer, and to the Owner a list giving the names and addresses of subcontractors and equipment and material suppliers he proposes to use, together with the scope of their respective parts of the work. Should any subcontractor be disapproved by the Designer or Owner, the Designer or Owner shall submit his reasons for disapproval in writing to the Contractor. The Contractor shall submit a substitute for approval. The Designer and Owner shall act promptly in the approval of subcontractors, and when approval of the list is given, no changes of subcontractors will be permitted except for cause or reason considered justifiable by the Designer or Owner.
- b. The Designer will furnish to any subcontractor, upon request, evidence regarding amounts of money paid to the Contractor on account of the subcontractor's work.
- c. The Contractor is and remains fully responsible for his own acts or omissions as well as those of any subcontractor or of any employee of either. The Contractor agrees that no contractual relationship exists between the subcontractor and the Owner in regard to the contract, and that the subcontractor acts on this work as an agent or employee of the Contractor.
- d. The Owner reserves the right to limit the amount of portions of work to be subcontracted as hereinafter specified.

## **ARTICLE 17 - CONTRACTOR AND SUBCONTRACTOR RELATIONSHIPS**

The Contractor agrees that the terms of these contract documents shall apply equally to each subcontractor as to the Contractor, and the Contractor agrees to take such action as may be necessary to bind each subcontractor to these terms. The Contractor further agrees to conform to the Code of Ethical Conduct as adopted by the Associated General Contractors of America, Inc., with respect to Contractor-subcontractor relationships, and that payments to subcontractors shall be made in accordance with the provisions of G.S. 143-134.1 titled Interest on final payments due to prime contractors: payments to subcontractors.

- a. On all public construction contracts which are let by a board or governing body of the state government or any political subdivision thereof, except contracts let by the Department of Transportation pursuant to G.S. 136-28.1, the balance due prime contractors shall be paid in full within 45 days after respective prime contracts of the project have been accepted by the Owner, certified by the architect, engineer or Designer to be completed in accordance with terms of the plans and specifications, or occupied by the Owner and used for the purpose for which the project was constructed, whichever occurs first. Provided, however, that whenever the architect or consulting engineer in charge of the project determines that delay in completion of the project in accordance with terms of the plans and specifications is the fault of the Contractor, the project may be occupied and used for the purposes for which it was constructed without payment of any interest on amounts withheld past the 45 day limit. No payment shall be delayed because of the failure of another prime Contractor on such project to complete his contract. Should final payment to any prime Contractor beyond the date such contracts have been certified to be completed by the Designer or architect, accepted by the Owner, or occupied by the Owner and used for the purposes for which the project was constructed, be delayed by more than 45 days, said prime Contractor shall be paid interest, beginning on the 46th day, at the rate of one percent (1%) per month or fraction thereof unless a lower rate is

agreed upon on such unpaid balance as may be due. In addition to the above final payment provisions, periodic payments due a prime Contractor during construction shall be paid in accordance with the payment provisions of the contract documents or said prime Contractor shall be paid interest on any such unpaid amount at the rate stipulated above for delayed final payments. Such interest shall begin on the date the payment is due and continue until the date on which payment is made. Such due date may be established by the terms of the contract. Funds for payment of such interest on state-owned projects shall be obtained from the current budget of the owning department, institution or agency. Where a conditional acceptance of a contract exists, and where the Owner is retaining a reasonable sum pending correction of such conditions, interest on such reasonable sum shall not apply.

- b. Within seven days of receipt by the prime Contractor of each periodic or final payment, the prime Contractor shall pay the subcontractor based on work completed or service provided under the subcontract. Should any periodic or final payment to the subcontractor be delayed by more than seven days after receipt of periodic or final payment by the prime Contractor, the prime Contractor shall pay the subcontractor interest, beginning on the eighth day, at the rate of one percent (1%) per month or fraction thereof on such unpaid balance as may be due.
- c. The percentage of retainage on payments made by the prime Contractor to the subcontractor shall not exceed the percentage of retainage on payments made by the Owner to the prime Contractor. Any percentage of retainage on payments made by the prime Contractor to the subcontractor that exceeds the percentage of retainage on payments made by the Owner to the prime Contractor shall be subject to interest to be paid by the prime Contractor to the subcontractor at the rate of one percent (1%) per month or fraction thereof.
- d. Nothing in this section shall prevent the prime Contractor at the time of application and certification to the Owner from withholding application and certification to the Owner for payment to the subcontractor for unsatisfactory job progress; defective construction not remedied; disputed work; third-party claims filed or reasonable evidence that claim will be filed; failure of subcontractor to make timely payments for labor, equipment and materials; damage to prime Contractor or another subcontractor; reasonable evidence that subcontract cannot be completed for the unpaid balance of the subcontract sum; or a reasonable amount for retainage not to exceed the initial percentage retained by Owner.

## **ARTICLE 18 - DESIGNER'S STATUS**

- a. The Designer shall provide general administration of the performance of construction contracts, including liaison and necessary inspection of the work to ensure compliance with plans and specifications. He is the agent of the Owner only for the purpose of constructing this work and to the extent stipulated in the contract documents. He has authority to direct work to be performed, to stop work, to order work removed, or to order corrections of faulty work, where any such action by the Designer may be necessary to assure successful completion of the work.
- b. The Designer is the impartial interpreter of the contract documents, and, as such, he shall exercise his powers under the contract to enforce faithful performance by both the Owner and the Contractor, taking sides with neither.
- c. Should the Designer cease to be employed on the work for any reason whatsoever, then the Owner shall employ a competent replacement who shall assume the status of the former Designer.

- d. The Designer and his consultants will make inspections of the project. He will inspect the progress, the quality and the quantity of the work.
- e. The Designer and the Owner shall have access to the work whenever it is in preparation and progress during normal working hours. The Contractor shall provide facilities for such access so the Designer and Owner may perform their functions under the contract documents.
- f. Based on the Designer's inspections and evaluations of the project, the Designer shall issue interpretations, directives and decisions as may be necessary to administer the project. His decisions relating to artistic effect and technical matters shall be final, provided such decisions are within the limitations of the contract.

## **ARTICLE 19 - CHANGES IN THE WORK**

- a. The Owner may have changes made in the work covered by the contract. These changes will not invalidate and will not relieve or release the Contractor from any guarantee given by him pertinent to the contract provisions. These changes will not affect the validity of the guarantee bond and will not relieve the surety or sureties of said bond. All extra work shall be executed under conditions of the original contract.
- b. Except in an emergency endangering life or property, no change shall be made by the Contractor except upon receipt of approved change order or written field order from the Designer, countersigned by the Owner authorizing such change. No claim for adjustments of the contract price shall be valid unless this procedure is followed.

A field order, transmitted by fax, electronically, or hand delivered, may be used where the change involved impacts the critical path of the work. A formal change order shall be issued as expeditiously as possible.

In the event of emergency endangering life or property, the Contractor may be directed to proceed on a time and material basis whereupon the Contractor shall proceed and keep accurately on such form as specified by the Designer or Owner, a correct account of costs together with all proper invoices, payrolls and supporting data. Upon completion of the work the change order will be prepared as outlined under either Method "c(1)" or Method "c(2)" or both.

- c. In determining the values of changes, either additive or deductive, contractors are restricted to the use of the following methods:
  - 1. Where the extra work involved is covered by unit prices quoted in the proposal, or subsequently agreed to by the Contractor, Designer, and Owner the value of the change shall be computed by application of unit prices based on quantities, estimated or actual as agreed of the items involved, except in such cases where a quantity exceeds the estimated quantity allowance in the contract by one hundred percent (100%) or more. In such cases, either party may elect to proceed under subparagraph c2 herein. If neither party elects to proceed under c2, then unit prices shall apply.
  - 2. The contracting parties shall negotiate and agree upon the equitable value of the change prior to issuance of the change order, and the change order shall stipulate the corresponding lump sum adjustment to the contract price.

- d. Under Paragraph "b" and Methods "c(2)" above, the allowances for overhead and profit combined shall be as follows: all contractors (the single contracting entity (prime), his subcontractors(1<sup>st</sup> tier subs), or their sub-subcontractors (2<sup>nd</sup> tier subs, 3<sup>rd</sup> tier subs, etc)) shall be allowed a maximum of 10% on work they each self-perform; the prime Contractor shall be allowed a maximum of 5% on contracted work of his 1<sup>st</sup> tier sub; 1<sup>st</sup> tier, 2<sup>nd</sup> tier, 3<sup>rd</sup> tier, etc contractors shall be allowed a maximum of 2.5% on the contracted work of their subs. ; Under Method "c(1)", no additional allowances shall be made for overhead and profit. In the case of deductible change orders, under Method "c(2)" and Paragraph (b) above, the Contractor shall include no less than five percent (5%) profit, but no allowances for overhead.
- e. The term "net cost" as used herein shall mean the difference between all proper cost additions and deductions. The "cost" as used herein shall be limited to the following:
1. The actual costs of materials and supplies incorporated or consumed as part of the work;
  2. The actual costs of labor expended on the project site; labor expended in coordination, change order negotiation, record document maintenance, shop drawing revision or other tasks necessary to the administration of the project are considered overhead whether they take place in an office or on the project site.
  3. The actual costs of labor burden, limited to the costs of social security (FICA) and Medicare/Medicaid taxes; unemployment insurance costs; health/dental/vision insurance premiums; paid employee leave for holidays, vacation, sick leave, and/or petty leave, not to exceed a total of 30 days per year; retirement contributions; worker's compensation insurance premiums; and the costs of general liability insurance when premiums are computed based on payroll amounts; the total of which shall not exceed thirty percent (30%) of the actual costs of labor;
  4. The actual costs of rental for tools, excluding hand tools; equipment; machinery; and temporary facilities required for the work;
  5. The actual costs of premiums for bonds, insurance, permit fees, and sales or use taxes related to the work.

Overtime and extra pay for holidays and weekends may be a cost item only to the extent approved by the Owner.

- f. Should concealed conditions be encountered in the performance of the work below grade, or should concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the contract documents, the contract sum and time for completion may be equitably adjusted by change order upon claim by either party made within thirty (30) days after the condition has been identified. The cost of such change shall be arrived at by one of the foregoing methods. All change orders shall be supported by a unit cost breakdown showing method of arriving at net cost as defined above.
- g. In all change orders, the procedure will be for the Designer to request proposals for the change order work in writing. The Contractor will provide such proposal and supporting data in suitable format. The Designer shall verify correctness. Delay in the processing of the change order due to lack of proper submittal by the Contractor of all required supporting data shall not constitute grounds for a time extension or basis of a claim. Within fourteen (14) days after receipt of the Contractor's accepted proposal including all supporting documentation required by the Designer, the Designer shall prepare the change order and forward to the Contractor for his signature or otherwise respond, in writing, to

the Contractor's proposal. Within seven (7) days after receipt of the change order executed by the Contractor, the Designer shall, certify the change order by his signature, and forward the change order and all supporting data to the Owner for the Owner's signature. The Owner shall execute the change order and forward to the within seven (7) days of receipt. In case of emergency or extenuating circumstances, approval of changes may be obtained verbally by telephone or field orders approved by all parties, then shall be substantiated in writing as outlined under normal procedure.

- h. At the time of signing a change order, the Contractor shall be required to certify as follows:

"I certify that my bonding company will be notified forthwith that my contract has been changed by the amount of this change order, and that a copy of the approved change order will be mailed upon receipt by me to my surety."

- i. A change order, when issued, shall be full compensation, or credit, for the work included, omitted or substituted. It shall show on its face the adjustment in time for completion of the project as a result of the change in the work.
- j. If, during the progress of the work, the Owner requests a change order and the Contractor's terms are unacceptable, the Owner, may require the Contractor to perform such work on a time and material basis whereupon the Contractor shall proceed and keep accurately on such form as specified by the Designer or Owner, a correct account of cost together with all proper invoices, payrolls and supporting data. Upon completion of the work a change order will be prepared with allowances for overhead and profit per paragraph d. above and "net cost" and "cost" per paragraph e. above. Without prejudice, nothing in this paragraph shall preclude the Owner from performing or to have performed that portion of the work requested in the change order.

## **ARTICLE 20 - CLAIMS FOR EXTRA COST**

- a. Should the Contractor consider that as a result of instructions given by the Designer, he is entitled to extra cost above that stated in the contract, he shall give written notice thereof to the Designer within seven (7) days without delay. The written notice shall clearly state that a claim for extra cost is being made and shall provide a detailed justification for the extra cost. The Contractor shall not proceed with the work affected until further advised, except in emergency involving the safety of life or property, which condition is covered in Article 19(b) and Article 11(h). No claims for extra compensation shall be considered unless the claim is so made. The Designer shall render a written decision within seven (7) days of receipt of claim.
- b. The Contractor shall not act on instructions received by him from persons other than the Designer, and any claims for extra compensation or extension of time on account of such instruction will not be honored. The Designer shall not be responsible for misunderstandings claimed by the Contractor of verbal instructions which have not been confirmed in writing, and in no case shall instructions be interpreted as permitting a departure from the contract documents unless such instruction is confirmed in writing and supported by a properly authorized change order.
- c. Should a claim for extra compensation that complies with the requirements of (a) above by the Contractor and is denied by the Designer or Owner, the Contractor may request a mediation in connection with GS 143-128(f1) in the dispute resolution rules adopted by the State Building Commission (1 N.C.A.C. 30H .0101 through .1001).
  - 1. As to any portion of a claim that is denied by the mediator, the Contractor may, within six (6) months of receipt of the mediator's final decision, institute a civil

action for the sum he claims to be entitled to under the contract by filing a verified complaint and the issuance of a summons in the Superior Court of Wake County or in the superior court of any county where the work under the contract was performed. The procedure shall be the same as in all civil actions except that all issues shall be tried by the judge, without a jury.

## **ARTICLE 21 - MINOR CHANGES IN THE WORK**

The Designer will have the authority to order minor changes in the work not involving an adjustment in the contract sum or time for completion, and not inconsistent with the intent of the contract documents. Such changes shall be effected by written order, and shall be binding on the Owner and the Contractor.

## **ARTICLE 22 - UNCORRECTED FAULTY WORK**

Should the correction of faulty or damaged work be considered inadvisable or inexpedient by the Owner and the Designer, the Owner shall be reimbursed by the Contractor. A change order will be issued to reflect a reduction in the contract sum.

## **ARTICLE 23 - TIME OF COMPLETION, DELAYS, EXTENSION OF TIME**

- a. The time of completion is stated in the Supplementary General Conditions and in the Form of Construction Contract. The Project Expediter, upon notice of award of contract, shall prepare a construction schedule to complete the project within the time of completion as required by Article 14.
- b. The contractors shall commence work to be performed under this agreement on a date to be specified in a written Notice to Proceed from the Designer and shall fully complete all work hereunder within the time of completion stated. Time is of the essence and the Contractor acknowledges the Owner will likely suffer financial damage for failure to complete the work within the time of completion. For each day in excess of the above number of days, the Contractor(s) shall pay the Owner the sum stated as liquidated damages reasonably estimated in advance to cover the losses to be incurred by the Owner by reason of failure of said Contractor(s) to complete the work within the time specified, such time being in the essence of this contract and a material consideration thereof.
- c. In the event of multiple prime contractors, the Designer shall be the judge as to the division of responsibility between the Contractor(s), based on the construction schedule, weekly reports and job records, and shall apportion the amount of liquidated damages to be paid by each of them, according to delay caused by any or all of them.
- d. If the Contractor is delayed at any time in the progress of his work solely by any act or negligence of the Owner, the Designer, or by any employee of either; by any separate Contractor employed by the Owner; by changes ordered in the work; by labor disputes at the project site; by abnormal weather conditions not reasonably anticipated for the locality where the work is performed; by unavoidable casualties; by any causes beyond the Contractor's control; or by any other causes which the Designer and Owner determine may justify the delay, then the contract time may be extended by change order only for the time which the Designer and Owner may determine is reasonable.

Time extensions will not be granted for rain, wind, snow or other natural phenomena of normal intensity for the locality where work is performed. For purpose of determining extent of delay attributable to unusual weather phenomena, a determination shall be made by comparing the weather for the contract period involved with the average of the preceding five (5) year climatic range during the same time interval based on the National Oceanic and Atmospheric Administration National Weather Service statistics for the

locality where work is performed and on daily weather logs kept on the job site by the Contractor reflecting the effect of the weather on progress of the work and initialed by the Designer's representative. No weather delays shall be considered after the building is dried in unless work claimed to be delayed is on the critical path of the baseline schedule or approved updated schedule. Time extensions for weather delays, acts of God, labor disputes, fire, delays in transportation, unavoidable casualties or other delays which are beyond the control of the Owner do not entitle the Contractor to compensable damages for delays. Any Contractor claim for compensable damages for delays is limited to delays caused solely by the Owner or its agents. Contractor caused delays shall be accounted for before Owner or Designer caused delays in the case of concurrent delays.

- e. Request for extension of time shall be made in writing to the Designer, and copies to the Owner, within twenty (20) days following cause of delay. In case of continuing cause for delay, the Contractor shall notify the Designer to the Designer, and copies to the Owner, of the delay within 20 days of the beginning of the delay and only one claim is necessary.
- f. The Contractor shall notify his surety in writing of extension of time granted.
- g. No claim for time extension shall be allowed on account of failure of the Designer to furnish drawings or instructions until twenty (20) days after demand for such drawings and/or instructions. See Article 5c. Demand must be in written form clearly stating the potential for delay unless the drawings or instructions are provided. Any delay granted will begin after the twenty (20) day demand period is concluded.

#### **ARTICLE 24 - PARTIAL UTILIZATION/BENEFICIAL OCCUPANCY**

- a. The Owner may desire to occupy or utilize all or a portion of the project prior to the completion of the project.
- b. Should the Owner request a utilization of a building or portion thereof, the Designer shall perform a Designer final inspection of area after being notified by the Contractor that the area is ready for such. After the Contractor has completed Designer final inspection punch list and the Designer has verified, then the Designer shall schedule a beneficial occupancy inspection at a time and date acceptable to the Owner, Contractor(s) and Building Inspector. If beneficial occupancy is granted by the Owner, in such areas the following will be established:
  - 1. The beginning of guarantees and warranties period for the equipment necessary to support. in the area.
  - 2. The Owner assumes all responsibilities for utility costs for entire building.
  - 2. Contractor will obtain consent of surety.
  - 3. Contractor will obtain endorsement from insurance company permitting beneficial occupancy.
- c. The Owner shall have the right to exclude the Contractor from any part of the project which the Designer has so certified to be substantially complete, but the Owner will allow the Contractor reasonable access to complete or correct work to bring it into compliance with the contract.
- d. Occupancy by the Owner under this article will in no way relieve the Contractor from his contractual requirement to complete the project within the specified time. The Contractor will not be relieved of liquidated damages because of beneficial occupancy. The Designer may prorate liquidated damages based on the percentage of project

occupied.

## **ARTICLE 25 - FINAL INSPECTION, ACCEPTANCE, AND PROJECT CLOSEOUT**

- a. Upon notification from the Contractor(s) that the project is complete and ready for inspection, the Designer shall make a Designer initial inspection to verify that the project is complete and ready for final inspection. Prior to final inspection, the Contractor(s) shall complete all items requiring corrective measures noted at the Designer initial inspection. The Designer shall schedule a final inspection at a time and date acceptable to the Owner, Contractor.
- b. At the final inspection, the Designer and his consultants shall, if job conditions warrant, record a list of items that are found to be incomplete or not in accordance with the contract documents. At the conclusion of the final inspection, the Designer shall make one of the following determinations:
  1. That the project is completed and accepted.
  2. That the project will be accepted subject to the correction of the list of discrepancies (punch list). All punch list items must be completed within thirty (30) days of final inspection or the Owner may invoke Article 28, Owner's Right to Do Work.
  4. That the project is not complete and another date for a final inspection will be established.
- c. Within fourteen (14) days of final acceptance per Paragraph b1 or within fourteen (14) days after completion of punch list per Paragraph b2 above, the Designer shall certify the work and issue applicable certificate(s) of compliance.
- d. Any discrepancies listed or discovered after the date of final inspection and acceptance under Paragraphs b1 or b2 above shall be handled in accordance with Article 42, Guarantee.
- f. The final acceptance date will establish the following:
  1. The beginning of guarantees and warranties period.
  2. The date on which the Contractor's insurance coverage for public liability, property damage and builder's risk may be terminated.
  3. That no liquidated damages (if applicable) shall be assessed after this date.
  4. The termination date of utility cost to the Contractor.
- g. Prior to issuance of final acceptance date, the Contractor shall have his authorized representatives visit the project and give full instructions to the designated personnel regarding operating, maintenance, care, and adjustment of all equipment and special construction elements. In addition, the Contractor shall provide to the Owner a complete instructional video (media format acceptable to the Owner) on the operation, maintenance, care and adjustment of all equipment and special construction elements.

## **ARTICLE 26 - CORRECTION OF WORK BEFORE FINAL PAYMENT**

- a. Any work, materials, fabricated items or other parts of the work which have been

condemned or declared not in accordance with the contract by the Designer shall be promptly removed from the work site by the Contractor, and shall be immediately replaced by new work in accordance with the contract at no additional cost to the Owner. Work or property of other contractors or the Owner, damaged or destroyed by virtue of such faulty work, shall be made good at the expense of the Contractor whose work is faulty.

- b. Correction of condemned work described above shall commence within twenty-four (24) hours after receipt of notice from the Designer, and shall make satisfactory progress, as determined by the Designer, until completed.
- c. Should the Contractor fail to proceed with the required corrections, then the Owner may complete the work in accordance with the provisions of Article 28.

#### **ARTICLE 27 - CORRECTION OF WORK AFTER FINAL PAYMENT**

See Article 35, Performance Bond and Payment Bond, and Article 42, Guarantee. Neither the final certificate, final payment, occupancy of the premises by the Owner, nor any provision of the contract, nor any other act or instrument of the Owner, nor the Designer, shall relieve the Contractor from responsibility for negligence, or faulty material or workmanship, or failure to comply with the drawings and specifications. Contractor shall correct or make good any defects due thereto and repair any damage resulting there from, which may appear during the guarantee period following final acceptance of the work except as stated otherwise under Article 42, Guarantee. The Owner will report any defects as they may appear to the Contractor and establish a time limit for completion of corrections by the Contractor. The Owner will be the judge as to the responsibility for correction of defects.

#### **ARTICLE 28 - OWNER'S RIGHT TO DO WORK**

If, during the progress of the work or during the period of guarantee, the Contractor fails to prosecute the work properly or to perform any provision of the contract, the Owner, after seven (7) days' written notice sent by certified mail, return receipt requested, to the Contractor from the Designer, may perform or have performed that portion of the work. The cost of the work may be deducted from any amounts due or to become due to the Contractor, such action and cost of same having been first approved by the Designer. Should the cost of such action of the Owner exceed the amount due or to become due the Contractor, then the Contractor or his surety, or both, shall be liable for and shall pay to the Owner the amount of said excess.

#### **ARTICLE 29 - ANNULMENT OF CONTRACT**

If the Contractor fails to begin the work under the contract within the time specified, or the progress of the work is not maintained on schedule, or the work is not completed within the time above specified, or fails to perform the work with sufficient workmen and equipment or with sufficient materials to ensure the prompt completion of said work, or shall perform the work unsuitably or shall discontinue the prosecution of the work, or if the Contractor shall become insolvent or be declared bankrupt or commit any act of bankruptcy or insolvency, or allow any final judgment to stand against him unsatisfied for a period of forty-eight (48) hours, or shall make an assignment for the benefit of creditors, or for any other cause whatsoever shall not carry on the work in an acceptable manner, the Owner may give notice in writing, sent by certified mail, return receipt requested, to the Contractor and his surety of such delay, neglect or default, specifying the same, and if the Contractor within a period of seven (7) days after such notice shall not proceed in accordance therewith, then the Owner shall, declare this contract in default, and, thereupon, the surety shall promptly take over the work and complete the performance of this contract in the manner and within the time frame specified. In the event the surety shall fail to take over the work to be done under this contract within seven (7) days after being so notified and notify the Owner in writing, sent by certified mail, return receipt requested, that he is taking the same over and

stating that he will diligently pursue and complete the same, the Owner shall have full power and authority, without violating the contract, to take the prosecution of the work out of the hands of said Contractor, to appropriate or use any or all contract materials and equipment on the grounds as may be suitable and acceptable and may enter into an agreement, either by public letting or negotiation, for the completion of said contract according to the terms and provisions thereof

or use such other methods as in his opinion shall be required for the completion of said contract in an acceptable manner. All costs and charges incurred by the Owner, together with the costs of completing the work under contract, shall be deducted from any monies due or which may become due said Contractor and surety. In case the expense so incurred by the Owner shall be less than the sum which would have been payable under the contract, if it had been completed by said Contractor, then the said Contractor and surety shall be entitled to receive the difference, but in case such expense shall exceed the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of said excess.

### **ARTICLE 30 - CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE THE CONTRACT**

- a. Should the work be stopped by order of a court having jurisdiction, or by order of any other public authority for a period of three months, due to cause beyond the fault or control of the Contractor, or if the Owner should fail or refuse to make payment on account of a certificate issued by the Designer within forty-five (45) days after receipt of same, then the Contractor, after fifteen (15) days' written notice sent by certified mail, return receipt requested, to the Owner and the Designer, may suspend operations on the work or terminate the contract.
- b. The Owner shall be liable to the Contractor for the cost of all materials delivered and work performed on this contract plus 10 percent overhead and profit and shall make such payment. The Designer shall be the judge as to the correctness of such payment.

### **ARTICLE 31 - REQUEST FOR PAYMENT**

- a. Not later than the fifth day of the month, the Contractor shall submit to the Designer a request for payment for work done during the previous month. The request shall follow the format of AIA Document G702 (1992) standard form for Application and Certificate for Payment supplemented by the Continuation sheet, AIA Document G703 (1992), and shall show substantially the value of work done and materials delivered to the site during the period since the last payment, and shall sum up the financial status of the contract with the following information:
  1. Total of contract including change orders.
  2. Value of work completed to date.
  3. Less five percent (5%) retainage, provided however, that after fifty percent (50%) of the Contractor's work has been satisfactorily completed on schedule, with approval of the Owner and written consent of the surety, further requirements for retainage will be waived only so long as work continues to be completed satisfactorily and on schedule.
  4. Less previous payments.
  5. Current amount due.
- b. The Contractor, upon request of the Designer, shall substantiate the request with invoices of vouchers or payrolls or other evidence.

- c. Prior to submitting the first request, the Contractor shall prepare for the Designer a schedule in the format of the Continuation sheet, AIA G703, showing a breakdown of the contract price into values of the various parts of the work, so arranged as to facilitate payments to subcontractors in accordance with Article 17, Contractor and Subcontractor Relationships. The Contractor(s) shall list the value of each subcontractor and supplier, identifying each minority business subcontractor and supplier as listed in Affidavit C, if applicable.
- d. When payment is made on account of stored materials and equipment, such materials must be stored on the Owner's property, and the requests for payments shall be accompanied by invoices or bills of sale or other evidence to establish the Owner's title to such materials and equipment. Such payments will be made only for materials that have been customized or fabricated specifically for this project. Raw materials or commodity products including but not limited to piping, conduit, CMU, metal studs and gypsum board may not be submitted. Responsibility for such stored materials and equipment shall remain with the Contractor regardless of ownership title. Such stored materials and equipment shall not be removed from the Owner's property. Should the space for storage on-site be limited, the Contractor, at his option, shall be permitted to store such materials and/or equipment in a suitable space off-site. Should the Contractor desire to include any such materials or equipment in his application for payment, they must be stored in the name of the Owner in an independent, licensed, bonded warehouse approved by the Designer, and Owner and located as close to the site as possible. The warehouse selected must be approved by the Contractor's bonding and insurance companies; the material to be paid for shall be assigned to the Owner and shall be inspected by the Designer. Upon approval by the Designer and Owner of the storage facilities and materials and equipment, payment therefore will be certified. Responsibility for such stored materials and equipment shall remain with the Contractor. Such stored materials and equipment shall not be moved except for transportation to the project site. Under certain conditions, the Designer may approve storage of materials at the point of manufacture, which conditions shall be approved by the Designer, and the Owner prior to approval for the storage and shall include an agreement by the storing party which unconditionally gives the Owner absolute right to possession of the materials at anytime. Bond, security and insurance protection shall continue to be the responsibility of the Contractor(s).
- e. In the event of beneficial occupancy, retainage of funds due the Contractor(s) may be reduced with the approval of the Designer to an equitable amount to cover the list of items to be completed or corrected. Retainage may not be reduced to less than two and one-half (2 1/2) times the estimated value of the work to be completed or corrected. Reduction of retainage must be with the consent and approval of the Contractor's bonding company.

## **ARTICLE 32 - CERTIFICATES OF PAYMENT AND FINAL PAYMENT**

- a. Within five (5) days from receipt of request for payment from the Contractor, the Designer shall issue and forward to the Owner a certificate for payment. This certificate shall indicate the amount requested or as approved by the Designer. If the certificate is not approved by the Designer, he shall state in writing to the Contractor and the Owner his reasons for withholding payment.
- b. No certificate issued or payment made shall constitute an acceptance of the work or any part thereof. The making and acceptance of final payment shall constitute a waiver of all claims by the Owner except:
  - 1. Claims arising from unsettled liens or claims against the Contractor.

2. Faulty work or materials appearing after final payment.
  3. Failure of the Contractor to perform the work in accordance with drawings and specifications, such failure appearing after payment.
  4. As conditioned in the performance bond and payment bond.
- c. The making and acceptance of final payment shall constitute a waiver of all claims by the Contractor except those claims previously made and remaining unsettled (Article 20(c)).
  - d. Prior to submitting request for final payment to the Designer for approval, the Contractor shall fully comply with all requirements specified in the "project closeout" section of the specifications. These requirements include but not limited to the following:
    1. Submittal of Product and Operating Manuals, Warranties and Bonds, Guarantees, Maintenance Agreements, As-Built Drawings, Certificates of Inspection or Approval from agencies having jurisdiction. (The Designer must approve the Manuals prior to delivery to the Owner).
    2. Transfer of Required attic stock material and all keys in an organized manner.
    3. Record of Owner's training.
    4. Resolution of any final inspection discrepancies.
    5. Granting access to Contractor's records, if Owner's internal auditors have made a request for such access pursuant to Article 52.
  - e. The Contractor shall forward to the Designer, the final application for payment along with the following documents:
    1. List of minority business subcontractors and material suppliers showing breakdown of contract amounts and total actual payments to subs and material suppliers.
    2. Affidavit of Release of Liens.
    3. Affidavit of contractors of payment to material suppliers and subcontractors. (See Article 36).
    4. Consent of Surety to Final Payment.
    5. Certificates of state agencies required by state law.
  - f. The Designer will not authorize final payment until the work under contract has been certified by Designer, certificates of compliance issued, and the Contractor has complied with the closeout requirements. The Designer shall forward the Contractor's final application for payment to the Owner along with respective certificate(s) of compliance required by law.

### **ARTICLE 33 - PAYMENTS WITHHELD**

- a. The Designer may withhold payment for the following reasons:
  1. Faulty work not corrected.
  2. The unpaid balance on the contract is insufficient to complete the work in the

judgment of the Designer.

3. To provide for sufficient contract balance to cover liquidated damages that will be assessed.
- b. The secretary of the Designer may authorize the withholding of payment for the following reasons:
    1. Claims filed against the Contractor or evidence that a claim will be filed.
    2. Evidence that subcontractors have not been paid.
  - c. The Owner may withhold all or a portion of Contractor's general conditions costs set forth in the approved schedule of values, if Contractor has failed to comply with: (1) a request to access its records by Owner's internal auditors pursuant to Article 52; (2) a request for a plan of action and/or recovery schedule under Article 14.j or provide The Owner; (3) a request to provide an electronic copies of Contractor's baseline schedule, updates with all logic used to create the schedules in the original format of the scheduling software; and (4) Contractor's failure to have its Superintendent on the Project full-time; (
  - d. When grounds for withholding payments have been removed, payment will be released. Delay of payment due the Contractor without cause will make Owner liable for payment of interest to the Contractor in accordance with G.S. 143-134.1. As provided in G.S.143- 134.1(e) the Owner shall not be liable for interest on payments withheld by the Owner for unsatisfactory job progress, defective construction not remedied, disputed work, or third- party claims filed against the Owner or reasonable evidence that a third-party claim will be filed.

#### **ARTICLE 34 - MINIMUM INSURANCE REQUIREMENTS**

The work under this contract shall not commence until the Contractor has obtained all required insurance and verifying certificates of insurance have been approved in writing by the Owner. These certificates shall document that coverages afforded under the policies will not be cancelled, reduced in amount or coverages eliminated until at least thirty (30) days after mailing written notice, by certified mail, return receipt requested, to the insured and the Owner of such alteration or cancellation. If endorsements are needed to comply with the notification or other requirements of this article copies of the endorsements shall be submitted with the certificates.

##### **a. Worker's Compensation and Employer's Liability**

The Contractor shall provide and maintain, until final acceptance, workmen's compensation insurance, as required by law, as well as employer's liability coverage with minimum limits of \$1,000,000.

##### **b. Public Liability and Property Damage**

The Contractor shall provide and maintain, until final acceptance, comprehensive general liability insurance, including coverage for premises operations, independent contractors, completed operations, products and contractual exposures, as shall protect such contractors from claims arising out of any bodily injury, including accidental death, as well as from claims for property damages which may arise from operations under this contract, whether such operations be by the Contractor or by any subcontractor, or by

anyone directly or indirectly employed by either of them and the minimum limits of such insurance shall be as follows:

Bodily Injury: \$1,000,000 per occurrence  
Property Damage: \$1,000,000 per occurrence / \$2,000,000 aggregate

In lieu of limits listed above, a \$5,000,000 combined single limit shall satisfy both conditions.

Such coverage for completed operations must be maintained for at least two (2) years following final acceptance of the work performed under the contract.

**c. Property Insurance (Builder's Risk/Installation Floater)**

The Contractor shall purchase and maintain property insurance until final acceptance, upon the entire work at the site to the full insurable value thereof. This insurance shall include the interests of the Owner, the Contractor, the subcontractors and sub-subcontractors in the work and shall insure against the perils of fire, wind, rain, flood, extended coverage, and vandalism and malicious mischief. If the Owner is damaged by failure of the Contractor to purchase or maintain such insurance, then the Contractor shall bear all reasonable costs properly attributable thereto; the Contractor shall effect and maintain similar property insurance on portions of the work stored off the site when request for payment per articles so includes such portions.

**d. Deductible**

Any deductible, if applicable to loss covered by insurance provided, is to be borne by the Contractor.

**e. Other Insurance**

The Contractor shall obtain such additional insurance as may be required by the Owner or by the General Statutes of North Carolina including motor vehicle insurance, in amounts not less than the statutory limits.

**f. Proof of Carriage**

The Contractor shall furnish the Owner with satisfactory proof of carriage of the insurance required before written approval is granted by the Owner.

**ARTICLE 35 - PERFORMANCE BOND AND PAYMENT BOND**

- a. Each Contractor shall furnish a performance bond and payment bond executed by a surety company authorized to do business in North Carolina. The bonds shall be in the full contract amount. Bonds shall be executed in the form bound with these specifications.
- b. All bonds shall be countersigned by an authorized agent of the bonding company who is licensed to do business in North Carolina.

**ARTICLE 36 - CONTRACTOR'S AFFIDAVIT**

The final payment of retained amount due the Contractor on account of the contract shall not become due until the Contractor has furnished to the Owner through the Designer an affidavit signed, sworn and notarized to the effect that all payments for materials, services or subcontracted work in connection with his contract have been satisfied, and that no claims or

liens exist against the Contractor in connection with this contract. In the event that the Contractor cannot obtain similar affidavits from subcontractors to protect the Contractor and the Owner from possible liens or claims against the subcontractor, the Contractor shall state in his affidavit that no claims or liens exist against any subcontractor to the best of his (the Contractor's) knowledge, and if any appear afterward, the Contractor shall save the Owner harmless.

#### **ARTICLE 37 - ASSIGNMENTS**

The Contractor shall not assign any portion of this contract nor subcontract in its entirety. Except as may be required under terms of the performance bond or payment bond, no funds or sums of money due or become due the Contractor under the contract may be assigned.

#### **ARTICLE 38 - USE OF PREMISES**

- a. The Contractor(s) shall confine his apparatus, the storage of materials and the operations of his workmen to limits indicated by law, ordinances, permits or directions of the Designer and Owner and shall not exceed those established limits in his operations.
- b. The Contractor(s) shall not load or permit any part of the structure to be loaded with a weight that will endanger its safety.
- c. The Contractor(s) shall enforce the Designer's and Owner's instructions regarding signs, advertisements, fires and smoking.
- d. No firearms, any type of alcoholic beverages, or drugs (other than those prescribed by a physician) will be permitted at the job site.

#### **ARTICLE 39 - CUTTING, PATCHING AND DIGGING**

- a. The Contractor shall do all cutting, fitting or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors shown upon or reasonably implied by the drawings and specifications for the completed structure, as the Designer may direct.
- b. Any cost brought about by defective or ill-timed work shall be borne by the party responsible therefor.
- c. No Contractor shall endanger any work of another Contractor by cutting, digging or other means. No Contractor shall cut or alter the work of any other Contractor without the consent of the Designer and the affected Contractor(s).

#### **ARTICLE 40 - UTILITIES, STRUCTURES, SIGNS**

- a. The Contractor shall provide necessary and adequate facilities for water, electricity, gas, oil, sewer and other utility services which maybe necessary and required for completion of the project including all utilities required for testing, cleaning, balancing, and sterilization of designated plumbing, mechanical and electrical systems. Any permanent meters installed shall be listed in the Contractor's name until work has a final acceptance. The Contractor will be solely responsible for all utility costs prior to final acceptance. Contractor shall contact all affected utility companies prior to bid to determine their requirements to provide temporary and permanent service and include all costs associated with providing those services in their bid. Coordination of the work of the utility companies during construction is the sole responsibility of the Contractor.

- b. Meters shall be relisted in the Owner's name on the day following final acceptance of the Project Expediter's work, and the Owner shall pay for services used after that date.
- c. The Owner shall be reimbursed for all metered utility charges after the meter is relisted in the Owner's name and prior to completion and acceptance of the work of **all** contractors. Reimbursement shall be made by the Contractor whose work has not been completed and accepted. If the work of two or more contractors has not been completed and accepted, reimbursement to the Owner shall be paid by the contractors involved on the basis of assessments by the Designer.
- d. Prior to the operation of permanent systems, the Project Expediter will provide temporary power, lighting, water, and heat to maintain space temperature above freezing, as required for construction operations.
- e. All contractors shall have the permanent building systems in sufficient readiness for furnishing temporary climatic control at the time a building is enclosed and secured. The HVAC systems shall maintain climatic control throughout the enclosed portion of the building sufficient to allow completion of the interior finishes of the building. A building shall be considered enclosed and secured when windows, doorways (exterior, mechanical, and electrical equipment rooms), and hardware are installed; and other openings have protection which will provide reasonable climatic control. The appropriate time to start the mechanical systems and climatic condition shall be jointly determined by the Contractor(s), the Designer and Owner. Use of the equipment in this manner shall be subject to the approval of the Designer and Owner and shall in no way affect the warranty requirements of the Contractor(s).
- f. The electrical Contractor shall have the building's permanent power wiring distribution system in sufficient readiness to provide power as required by the HVAC Contractor for temporary climatic control.
- g. The electrical Contractor shall have the building's permanent lighting system ready at the time the general Contractor begins interior painting and shall provide adequate lighting in those areas where interior painting and finishing is being performed.
- h. Each prime Contractor shall be responsible for his permanently fixed service facilities and systems in use during progress of the work. The following procedures shall be strictly adhered to:
  - 1. Prior to final acceptance of work by the Owner, each Contractor shall remove and replace any parts of the permanent building systems damaged through use during construction.
  - 2. Temporary filters as recommended by the equipment manufacturer in order to keep the equipment and ductwork clean and free of dust and debris shall be installed in each of the heating and air conditioning units and at each return grille during construction. New filters shall be installed in each unit prior to the Owner's acceptance of the work.
  - 3. Extra effort shall be maintained to keep the building and the site adjacent to the building clean and under no circumstances shall air systems be operated if finishing and site work operations are creating dust in excess of what would be considered normal if the building were occupied.
  - 4. It shall be understood that any warranty on equipment presented to the Owner shall extend from the day of final acceptance by the Owner. The cost of warranting the

equipment during operation in the finishing stages of construction shall be borne by the Contractor whose system is utilized.

5. The electrical Contractor shall have all lamps in proper working condition at the time of final project acceptance.
  - i. The Project Expediter shall provide, if required and where directed, a shed for toilet facilities and shall furnish and install in this shed all water closets required for a complete and adequate sanitary arrangement. These facilities will be available to other contractors on the job and shall be kept in a neat and sanitary condition at all times. Chemical toilets are acceptable.
  - j. The Project Expediter shall, if required by the Supplementary General Conditions and where directed, erect a temporary field office, complete with lights, telephone, heat and air conditioning. A portion of this office shall be partitioned off, of sufficient size, for the use of a resident inspector, should the Designer so direct.
  - k. On multi-story construction projects, the Project Expediter shall provide temporary elevators, lifts, or other special equipment for the general use of all contractors. The cost for such elevators, lifts or other special equipment and the operation thereof shall be included in the Project Expediter's bid.
  - l. The Project Expediter will erect one sign on the project if required. The sign shall be of sound construction, and shall be neatly lettered with black letters on white background. The sign shall bear the name of the project, and the names of prime contractors on the project, and the name of the Designer and consultants. Directional signs may be erected on the Owner's property subject to approval of the Owner with respect to size, style and location of such directional signs. Such signs may bear the name of the Contractor and a directional symbol. No other signs will be permitted except by permission of the Owner.

#### **ARTICLE 41 - CLEANING UP**

- a. The contractors shall keep the building and surrounding area reasonably free from rubbish at all times, and shall remove debris from the site on a timely basis or when directed to do so by the Designer or Project Expediter. The Project Expediter shall provide an on site refuse container(s) for the use of all contractors. Each Contractor shall remove their rubbish and debris from the building on a daily basis. The Project Expediter shall broom clean the building as required to minimize dust and dirt accumulation.
- b. The Project Expediter shall provide and maintain suitable all-weather access to the building.
- c. Before final inspection and acceptance of the building, each Contractor shall clean his portion of the work, including glass, hardware, fixtures, masonry, tile and marble (using no acid), clean and wax all floors as specified, and completely prepare the building for use by the Owner, with no cleaning required by the Owner.

#### **ARTICLE 42 - GUARANTEE**

- a. The Contractor shall unconditionally guarantee materials and workmanship against patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve (12) months following the date of final acceptance of the work or beneficial occupancy and shall replace such defective materials or workmanship without cost to the Owner.

- b. Where items of equipment or material carry a manufacturer's warranty for any period in excess of twelve (12) months, then the manufacturer's warranty shall apply for that particular piece of equipment or material. The Contractor shall replace such defective equipment or materials, without cost to the Owner, within the manufacturer's warranty period.
- c. Additionally, the Owner may bring an action for latent defects caused by the negligence of the Contractor which is hidden or not readily apparent to the Owner at the time of beneficial occupancy or final acceptance, whichever occurred first, in accordance with applicable law.
- d. Guarantees for roof, equipment, materials, and supplies shall be stipulated in the specifications sections governing such roof, equipment, materials, or supplies.

### **ARTICLE 43 - CODES AND STANDARDS**

Wherever reference is given to codes, standard specifications or other data published by regulating agencies including, but not limited to, national electrical codes, North Carolina state building codes, federal specifications, ASTM specifications, various institute specifications, etc., it shall be understood that such reference is to the latest edition including addenda published prior to the date of the contract documents.

### **ARTICLE 44 - INDEMNIFICATION**

To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, the Designer and the agents, consultants and employees of the Owner and Designer, from and against all claims, damages, losses and expenses, including, but not limited to, attorneys' fees, arising out of or resulting from the performance or failure of performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting there from, and (2) is caused in whole or in part by any negligent act or omission of the Contractor, the Contractor's subcontractor, or the agents of either the Contractor or the Contractor's subcontractor. Such obligation shall not be construed to negate, abridge or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this article.

### **ARTICLE 45 - TAXES**

- a. Federal excise taxes do not apply to materials entering into state work (Internal Revenue Code, Section 3442(3)).
- b. Federal transportation taxes do not apply to materials entering into state work (Internal Revenue Code, Section 3475(b) as amended).
- c. North Carolina sales tax and use tax, as required by law, do apply to materials entering into state work and such costs shall be included in the bid proposal and contract sum.
- d. Local option sales and use taxes, as required by law, do apply to materials entering into state work as applicable and such costs shall be included in the bid proposal and contract sum.
- e. **Accounting Procedures for Refund of County Sales & Use Tax**

Amount of county sales and use tax paid per Contractor's statements:

Contractors performing contracts for state agencies shall give the state agency for whose project the property was purchased a signed statement containing the information listed in G.S. 105-164.14(e).

The Department of Revenue has agreed that in lieu of obtaining copies of sales receipts from contractors, an agency may obtain a certified statement as of April 1, 1991 from the Contractor setting forth the date, the type of property and the cost of the property purchased from each vendor, the county in which the vendor made the sale and the amount of local sales and use taxes paid thereon. If the property was purchased out-of-state, the county in which the property was delivered should be listed. The Contractor should also be notified that the certified statement may be subject to audit.

In the event the contractors make several purchases from the same vendor, such certified statement must indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices, the counties, and the county sales and use taxes paid thereon.

Name of taxing county: The position of a sale is the retailer's place of business located within a taxing county where the vendor becomes contractually obligated to make the sale. Therefore, it is important that the county tax be reported for the county of sale rather than the county of use.

When property is purchased from out-of-state vendors and the county tax is charged, the county should be identified where delivery is made when reporting the county tax.

Such statement must also include the cost of any tangible personal property withdrawn from the Contractor's warehouse stock and the amount of county sales or use tax paid thereon by the Contractor.

Similar certified statements by his subcontractors must be obtained by the general Contractor and furnished to the claimant.

Contractors are not to include any tax paid on supplies, tools and equipment which they use to perform their contracts and should include only those building materials, supplies, fixtures and equipment which actually become a part of or annexed to the building or structure.

#### **ARTICLE 46 - EQUAL OPPORTUNITY CLAUSE**

The non-discrimination clause contained in Section 202 (Federal) Executive Order 11246, as amended by Executive Order 11375, relative to equal employment opportunity for all persons without regard to race, color, religion, sex or national origin, and the implementing rules and regulations prescribed by the secretary of Labor, are incorporated herein.

#### **ARTICLE 47 - EMPLOYMENT OF INDIVIDUALS WITH DISABILITIES**

The Contractor(s) agree not to discriminate against any employee or applicant for employment because of physical or mental disabilities in regard to any position for which the employee or applicant is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals with such disabilities without discrimination based upon their physical or mental disability in all employment practices.

#### **ARTICLE 48 - ASBESTOS-CONTAINING MATERIALS (ACM)**

The Owner has attempted to address all asbestos-containing materials that are to be disturbed in the project. However, there may be other asbestos-containing materials in the work areas that are not to be disturbed and do not create an exposure hazard.

Contractors are reminded of the requirements of instructions under Instructions to Bidders and General Conditions of the Contract, titled Examination of Conditions. Statute 130A, Article 19, amended August 3, 1989, established the Asbestos Hazard Management Program that controls asbestos abatement in North Carolina. The latest edition of *Guideline Criteria for Asbestos Abatement* from the State Construction Office is to be incorporated in all asbestos abatement projects for this contract.

#### **ARTICLE 49 - MINORITY BUSINESS PARTICIPATION**

Pursuant to General Statute 143-48 and Executive Order #150 (1999), Cumberland County invites and encourages participation in this procurement process by businesses owned by minorities, women, disabled, disabled business enterprises and non-profit work centers for the blind and severely disabled. The document, Appendix E is hereby incorporated into and made a part of this contract.

#### **ARTICLE 50 – CONTRACTOR EVALUATION**

The Contractor's overall work performance on the project shall be fairly evaluated in accordance with the Owner's policy and procedures, for determining qualifications to bid on future Cumberland County capital improvement projects. In addition to final evaluation, interim evaluation may be prepared during the progress of project. The Owner may request the Contractor's comments to evaluate the Designer.

#### **ARTICLE 51 – GIFTS**

It is prohibited for any vendor or Contractor ( i.e. architect, bidder, Contractor, construction manager, design professional, engineer, subcontractor, supplier, vendor, etc.), to make gifts or to give favors to any Cumberland County employee. This prohibition covers those vendors and contractors who: (1) have a contract with a governmental agency; or (2) have performed under such a contract within the past year; or (3) anticipate bidding on such a contract in the future.

During the construction of the Project, the Contractor is prohibited from making gifts to any of the Owner's employees, Owner's project representatives (architect, engineers, construction manager and their employees), or any other employee that may have any involvement, influence, responsibilities, oversight, management and/or duties that pertain to and/or relate to the contract administration, financial administration and/or disposition of claims arising from and/or relating to the Contract and/or Project.

#### **ARTICLE 52 – AUDITING-ACCESS TO PERSONS AND RECORDS**

The Owner's internal auditors shall have the right to access and copy the Contractor's records relating to the Contract and Project during the term of the Contract and within two years following the completion of the Project/close-out of the Contract to verify accounts, accuracy, information, calculations and/or data affecting and/or

relating to Contractor's requests for payment, requests for change orders, change orders, claims for extra work, requests for time extensions and related claims for delay/extended general conditions costs, claims for lost productivity, claims for loss efficiency, claims for idle equipment or labor, claims for price/cost escalation, pass-through claims of subcontractors and/or suppliers, and/or any other type of claim for payment or damages from Owner and/or its project representatives.

#### **ARTICLE 53 – TERMINATION FOR CONVENIENCE**

Owner may at any time and for any reason terminate Contractor's services and work at Owner's convenience. Upon receipt of such notice, Contractor shall, unless the notice directs otherwise, immediately discontinue the work and placing of orders for materials, facilities and supplies in connection with the performance of this Agreement.

Upon such termination, Contractor shall be entitled to payment only as follows: (1) the actual cost of the work completed in conformity with this Agreement; plus, (2) such other costs actually incurred by Contractor as are permitted by the prime contract and approved by Owner; (3) plus ten percent (10%) of the cost of the work referred to in subparagraph (1) above for overhead and profit. There shall be deducted from such sums as provided in this subparagraph the amount of any payments made to Contractor prior to the date of the termination of this Agreement. Contractor shall not be entitled to any claim or claim of lien against Owner for any additional compensation or damages in the event of such termination and payment.

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**SUPPLEMENTARY GENERAL CONDITIONS****PART 1 - GENERAL**

## 1.1 INSTRUCTIONS

- A. Intent: The Contract Documents are intended to provide for all work entering the construction, as indicated, and/or described in several parts of the said Documents.
- B. Complete Work: Mention in any division of these Specifications or in the Drawings of materials, articles, operations, or methods of demolition or installation, shall require that the Contractor furnish and install each and every item mentioned, indicated, or required, as necessary to provide a finished project, complete in every respect and fashion.

## 1.2 DEFINITIONS: The following nouns, or pronouns in lieu thereof, shall be held to refer as follows:

- A. "Owner" Cumberland County, North Carolina
- B. "Architect/Engineer" The Wooten Company
- C. "Contractor" The party or parties defined in the Construction Contract as "Contractor", or official representative thereof.
- D. "Contract Documents" The work indicated on the Drawings and specified herein.

TS1- COVER SHEET

E-100 - MAC WILLIAMS POWER PLAN

E-101 - PINE FOREST HIGH SCHOOL POWER PLAN

E-102 - SOUTH VIEW HIGH SCHOOL POWER PLAN

E-103 - WT BROWN POWER PLAN

E-600 - DETAILS

E-601 - DETAILS

E-602 - DETAILS

- E. "City" Fayetteville, North Carolina
- F. "Project Expediter" The Electrical Contractor shall act as "Project Expediter" for all contracts. It shall be the responsibility of the Project Expediter to schedule the work of all Contractors, to maintain a progress schedule for all Contractors for this project, and to notify the Engineer/Owner of any changes in the progress schedule.

### 1.3 TIME OF COMPLETION, DELAYS, AND EXTENSION OF TIME

- A. The Contractor shall commence work to be performed under this agreement on a date to be specified in a written Notice to Proceed from the Designer and shall fully complete all work in **180** consecutive calendar days from said date. If the Contractor fails to complete the work within the contract time, or extension of time granted by the Owner, then the Contractor will pay to the Owner **\$500.00** for each calendar day beyond the contractual completion date.

END OF SECTION 00800

**FORM OF CONSTRUCTION CONTRACT**

THIS AGREEMENT, made the \_\_\_\_\_ day of \_\_\_\_\_ in the year of 20\_\_ by and between \_\_\_\_\_

hereinafter called the Contractor and the County of Cumberland, North Carolina, hereinafter called the Owner.

**WITNESSETH:**

That the Contractor and the Owner for the consideration herein named agree as follows:

1. Scope of Work: The Contractor shall furnish and deliver all of the materials, and perform all of the work in the manner and form as provided by the following enumerated plans, specifications and documents, which are attached hereto and made a part thereof as if fully contained herein: advertisement; Instructions to Bidders; General Conditions; Supplementary General Conditions; specifications; accepted proposal; contract; performance bond; payment bond; power of attorney; workmen's compensation; public liability; property damage and builder's risk insurance certificates; and drawings, titled:

\_\_\_\_\_ Cumberland County - Recovery Shelter Generators \_\_\_\_\_

Consisting of the following sheets: \_\_\_\_\_

Dated: \_\_\_\_\_ and the following addenda:

Addendum No \_\_\_\_\_ Dated: \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_

Addendum No \_\_\_\_\_ Dated: \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_

Addendum No \_\_\_\_\_ Dated: \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_

Addendum No \_\_\_\_\_ Dated: \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated: \_\_\_\_\_

2. That the Contractor shall commence work to be performed under this agreement on a date to be specified in a written order of the Owner and shall fully complete all work hereunder within 180 consecutive calendar days from said date. For each day in excess thereof, liquidated damages shall be as stated in Supplementary General Conditions. The Contractor, as one of the considerations for the awarding of this contract, shall furnish to the Owner a construction schedule setting forth planned progress of the project broken down by the various divisions or part of the work and by calendar days as outlined in Article 14 of the General Conditions of the Contract.

3. The Owner hereby agrees to pay to the Contractor for the faithful performance of this agreement, subject to additions and deductions as provided in the specifications or proposal, in lawful money of the United States as follows:

\_\_\_\_\_ (\$ \_\_\_\_\_ )

4. Alternate Bid Items

Alternate #1,

Add/Deduct \_\_\_\_\_ (\$ \_\_\_\_\_ )

Alternate #2,

Add/Deduct \_\_\_\_\_ (\$ \_\_\_\_\_ )

Alternate #3,

Add/Deduct \_\_\_\_\_ (\$ \_\_\_\_\_ )

Alternate #4,

Add/Deduct \_\_\_\_\_ (\$ \_\_\_\_\_ )

Alternate #5,

Add/Deduct \_\_\_\_\_ (\$ \_\_\_\_\_ )

Summary of Contract Award:

5. In accordance with Article 31 and Article 32 of the General Conditions of the Contract, the Owner shall review, and if approved, process the Contractor's pay request within 30 days upon receipt from the Designer. The Owner, after reviewing and approving said pay request, shall make payments to the Contractor on the basis of a duly certified and approved estimate of work performed during the preceding calendar month by the First Party, less five percent (5%) of the amount of such estimate which is to be retained by the Second Party until all work has been performed strictly in accordance with this agreement and until such work has been accepted by the Second Party. The Second Party may elect to waive retainage requirements after 50 percent of the work has been satisfactorily completed on schedule as referred to in Article 31 of the General Conditions.

6. Upon submission by the First Party of evidence satisfactory to the Second Party that all payrolls, material bills and other costs incurred by the First Party in connection with the construction of the work have been paid in full, final payment on account of this agreement shall be made within thirty (30) days after the completion by the First Party of all work covered by this agreement and the acceptance of such work by the Second Party.

7. It is further mutually agreed between the parties hereto that if at any time after the execution of this agreement and the surety bonds hereto attached for its faithful performance, the Second Party shall deem the surety or sureties upon such bonds to be unsatisfactory, or if, for any reason, such bonds cease to be adequate to cover the performance of the work, the First Party shall, at its expense, within five (5) days after the receipt of notice from the Second Party so to do, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the Second Party. In such event no further payment to the First Party shall be deemed to be due under this agreement until such new or additional security for the faithful performance of the work shall be furnished in manner and form satisfactory to the Second Party.

8. The Contractor attest that it and all of its subcontractors have fully complied with all requirements of NCGS 64 Article 2 in regards to E-Verification as required by Section 2.(c) of Session Law 2013-418, codified as N.C. Gen. Stat. § 143-129(j).

IN WITNESS WHEREOF, the Parties hereto have executed this agreement on the day and date first above written in \_\_\_\_\_ counterparts, each of which shall without proof or accounting for other counterparts, be deemed an original contract.

Witness:

\_\_\_\_\_  
Contractor: (Trade or Corporate Name)

\_\_\_\_\_  
(Proprietorship or Partnership)

By: \_\_\_\_\_

Title: \_\_\_\_\_  
(Owner, Partner, or Corp. Pres. or Vice Pres. only)

Attest: (Corporation)

By: \_\_\_\_\_

Title: \_\_\_\_\_  
(Corp. Sec. or Asst. Sec. only)

The State of North Carolina through\*

(CORPORATE SEAL)

\_\_\_\_\_  
(Agency, Department or Institution)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

**FORM OF PERFORMANCE BOND**

Date of Contract: \_\_\_\_\_

Date of Execution: \_\_\_\_\_

Name of Principal  
(Contractor) \_\_\_\_\_

Name of Surety: \_\_\_\_\_

Name of Contracting  
Body: \_\_\_\_\_

Amount of Bond: \_\_\_\_\_

Project

KNOW ALL MEN BY THESE PRESENTS, that we, the principal and surety above named, are held and firmly bound unto the above named contracting body, hereinafter called the contracting body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind, ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the contracting body, identified as shown above and hereto attached:

NOW, THEREFORE, if the principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the contracting body, with or without notice to the surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in \_\_\_\_\_ counterparts.

Witness:

\_\_\_\_\_  
Contractor: (Trade or Corporate Name)

By: \_\_\_\_\_

\_\_\_\_\_

(Proprietorship or Partnership)

Attest: (Corporation)

Title: \_\_\_\_\_  
(Owner, Partner, or Corp. Pres. or Vice Pres. only)

By: \_\_\_\_\_

Title: \_\_\_\_\_  
(Corp. Sec. or Asst. Sec. only)

(Corporate Seal)

\_\_\_\_\_  
(Surety Company)

Witness:

\_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_  
(Attorney in Fact)

Countersigned:

\_\_\_\_\_

(Surety Corporate Seal)

\_\_\_\_\_  
(N.C. Licensed Resident Agent)

\_\_\_\_\_

\_\_\_\_\_  
Name and Address-Surety Agency

\_\_\_\_\_

\_\_\_\_\_  
Surety Company Name and N.C.  
Regional or Branch Office Address

**FORM OF PAYMENT BOND**

Date of Contract: \_\_\_\_\_  
Date of Execution: \_\_\_\_\_  
Name of Principal  
(Contractor) \_\_\_\_\_  
Name of Surety: \_\_\_\_\_  
Name of Contracting  
Body: \_\_\_\_\_  
Amount of Bond: \_\_\_\_\_  
Project \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS, that we, the principal and surety above named, are held and firmly bound unto the above named contracting body, hereinafter called the contracting body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the contracting body identified as shown above and hereto attached:

NOW, THEREFORE, if the principal shall promptly make payment to all persons supplying labor/material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in \_\_\_\_\_ counterparts.

Witness:

\_\_\_\_\_  
(Proprietorship or Partnership)

Attest: (Corporation)

By: \_\_\_\_\_

Title: \_\_\_\_\_  
(Corp. Sec. or Asst. Sec.. only)

(Corporate Seal)

Witness:

\_\_\_\_\_

Countersigned:

\_\_\_\_\_

\_\_\_\_\_  
(N.C. Licensed Resident Agent)

\_\_\_\_\_

\_\_\_\_\_  
Name and Address-Surety Agency

\_\_\_\_\_

\_\_\_\_\_  
Surety Company Name and N.C.  
Regional or Branch Office Address

\_\_\_\_\_  
Contractor: (Trade or Corporate Name)

By: \_\_\_\_\_

Title \_\_\_\_\_  
(Owner, Partner, or Corp. Pres. or Vice  
Pres. only)

\_\_\_\_\_  
(Surety Company)

By: \_\_\_\_\_

Title: \_\_\_\_\_  
(Attorney in Fact)

(Surety Corporate Seal)

# Sheet for Attaching Power of Attorney

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# Sheet for Attaching Insurance Certificates

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Construction Contract Document Checklist

See Section 616 of "North Carolina Construction Manual".

Use this checklist to check contracts before submitting to the Architect for approval.

If you have questions call (919) 828-0531.

General:

Contracts must be properly collated per Section 616 of the Construction Manual.

Construction Contract:

Page one:

Date at top should be on or after date of award letter.

Name of contractor (Party of the First Part) must be the same in all places on contract and bonds.

Owner's name (Party of the Second Part) must be correct and the same in all places on contract and bond forms.

Project description must be accurate.

Page two:

Amount must be correct and match award letter.

Words and numbers must match.

"Summary of Contract award:" must be filled in correctly.

For Example:	Base Bid	\$650,000
	Alternate 1	\$9,500
	Negotiations	-\$8,000
	Total	\$651,500

Page three:

Number of counterparts must be filled in (at least four - coordinate with Owner).

Name of Contractor must match first page.

Signatures:

Corporation:

MUST be signed by PRESIDENT or VICE PRESIDENT and attested by corporate secretary or assistant secretary. These two signatures must be by two different people.

The two signatures must be by two different people.

Must have corporate seal.

Name on corporate seal must match name on contract.

Same person must sign contracts and bonds.

Non-corporation (including but not limited to any type of partnership, limited liability company, sole proprietorships, etc.):

Must be signed by Owner or Partner.

Must be witnessed.

Same person must sign contracts and bonds.

Contracts must be sealed, if a manufactured seal is not available the contractor may emboss a quarter, write seal across the image and the company name around the image.

Name of Owner must match first page.

Owner must sign contract and have signature witnessed.

Any Negotiations or attachments must be attached.

Performance and Payment Bonds:

MUST USE PROVIDED BOND FORMS No Exceptions - No Additions - No Riders..

If the Surety adds a bond number there must be different numbers on the bonds or the word "Performance" after the number on the Performance Bond and the word "Payment" after the number on the Payment Bond.

AIA Bond Form is NOT Acceptable. See Article 35, "General Conditions of the Contract"

Page one:

"Date of Contract" must match date on page one of the contract.

"Date of Execution" must be on or after "Date of Contract".

"Name of Principal" (Contractor) must match name on contract.

"Name of Surety" must be the same on page one and two and must match the Power of Attorney.

Address of Surety must be shown

"Name of Contracting Body" (owner) must match name of owner on contract.

"Amount of Bond" must be 100% of the construction contract amount.

Words and numbers must match.

"Project" must match project name on contract.

Page two:

Number of counterparts must match page three of the contract.

Name of Contractor must match page one.

Signatures:

Corporation:

MUST be signed by PRESIDENT or VICE PRESIDENT and attested by corporate secretary or assistant secretary. These two signatures must be by two different people.

Must have corporate seal.

Same person must sign contracts and bonds.

Non-corporation:

Must be signed by Owner or Partner.

Must be witnessed.

Same person must sign contracts and bonds.

Name of Surety must match page one.

Attorney-in-Fact must sign and have signature witnessed.

Must have Surety's corporate seal.

Must show Bonding Company address.

If the Attorney-in-Fact is not a resident of North Carolina, then the bonds must be countersigned by a North Carolina RESIDENT agent of the bonding company and his address must be shown on the form.

Power of Attorney sheet:

This is the sheet that comes from the Bonding Agent and is attached behind the bonds.

Attorney-in-Fact must appear on this sheet.

Monetary limit of the Attorney-in-fact must be at least as much as the bond amount.

The bottom of most Power of Attorney sheets has a place for a date and seal - these must be filled in.

The certification date (usually at the bottom of the page) of the Power of Attorney must be on or after the "Date of Execution" on page one of the bonds.

Insurance Certificate:

See Article 34, "General Conditions of the Contract".

Must show General Liability, Automobile Liability and Worker's Compensation insurance.

Must show Builder's Risk or Installation Floater insurance at 100% of the construction contract amount.

Cancellation clause required by Article 34 of the "General Conditions" must be in the "Description of Operations" box or on a referenced continuation sheet.

Insurance endorsements must be provided for each required policy. The endorsements must indicate the following.

- a) The insurance company will provide a minimum 30-day notice, by certified mail return receipt requested, to the insured and owner prior to any cancellation, reduction or elimination of coverage.
- b) The endorsement must indicate the policy number being modified, which must match the policy number on the certificate.
- c) If the endorsement has a provision for a signature a signature must be provided.

"Certificate Holder" must be The Owner and project description must be correct.

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## **MISCELLANEOUS SPECIALTY ITEMS**

### **PART 1 – ALLOWANCE**

#### 1.00 MISCELLANEOUS ALLOWANCE:

- A. General: The Contractor shall provide in the base bid a miscellaneous allowance. Contractor's profit and overhead shall be included in bid and is not included in this allowance. Unused portion of allowance will be returned to the Owner at the end of the job by change order.
- B. Scope: To be used for miscellaneous items as directed by the Engineer on the Owner's behalf.
- C. Amount of Allowance: \$10,000.00 per site.

**END OF SECTION**

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**NOTICE OF AWARD**

To: (Contractor)  
(Address)  
(City, State, ZIP)

Date: \_\_\_\_\_  
Project: Cumberland County  
Recovery Shelter Generators

PROJECT Description: Cumberland County Recovery Shelter Generators.

The OWNER has considered the BID submitted by you for the above described WORK in response to its Invitation to Bid dated \_\_\_\_\_, and information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of \$\_\_\_\_\_.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance Bond, Payment BOND and certificate of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this \_\_\_\_\_, 20\_\_.

OWNER: Cumberland County

BY \_\_\_\_\_

TITLE \_\_\_\_\_

**ACCEPTANCE OF NOTICE**

Receipt of the above **NOTICE OF**

**AWARD** is hereby acknowledged by

\_\_\_\_\_

this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

This page intentionally left blank

**NOTICE TO PROCEED**

To: (Contractor)  
(Address)  
(City, State, ZIP)

Date: Month #, 2025  
Project: Cumberland County  
Recovery Shelter Generators

You are hereby notified to commence work in accordance with the Agreement dated Month #, 2026, on or before Month #, 2026, and you are to complete the WORK within **(180)** consecutive days thereafter. The date of completion of all WORK is therefore Month #, 2026.

**Contract Times:**

The Work will be substantially completed within **180 days** after the date when the Contract Period commences to run as provided in Clause 25 of the General Conditions and completed and ready for final payment in accordance with Clause 20 of the General Conditions within **194 days** after the date when the Contract Times commence to run.

You are required to return an acknowledged copy of this NOTICE TO PROCEED to the OWNER.

Dated this Month #, 2026.

OWNER: Cumberland County

BY \_\_\_\_\_

TITLE \_\_\_\_\_

**ACCEPTANCE OF NOTICE**

Receipt of the above **NOTICE TO**

**PROCEED** is hereby acknowledged by

\_\_\_\_\_

this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

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## SECTION 01 10 00 - SUMMARY

### PART 1 GENERAL

#### 1.01 PROJECT

- A. Project Name: Cumberland Co. - Recovery Shelter Generators
- B. Owner's Name: Cumberland County.
- C. Engineer's Name: The Wooten Company.

#### 1.02 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 52 00 - Agreement Form.

#### 1.03 DESCRIPTION OF ALTERATIONS WORK

- A. Scope of demolition and removal work is indicated on drawings.
- B. Electrical Power and Lighting: Alter existing system and add new construction, keeping existing in operation.

#### 1.04 OWNER OCCUPANCY

- A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.
- B. Owner intends to occupy the Project upon Substantial Completion.
- C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- D. Schedule the Work to accommodate Owner occupancy.

#### 1.05 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
  - 1. Locate and conduct construction activities in ways that will limit disturbance to site.
- B. Arrange use of site and premises to allow:
  - 1. Owner occupancy.
- C. Provide access to and from site as required by law and by Owner:
  - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
  - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- D. Utility Outages and Shutdown:
  - 1. Limit disruption of utility services to hours the building is unoccupied.
  - 2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days notice to Owner and authorities having jurisdiction.
  - 3. Prevent accidental disruption of utility services to other facilities.

1.06 WORK SEQUENCE

A. Coordinate construction schedule and operations with Owner.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

## SECTION 01 20 00 - PRICE AND PAYMENT PROCEDURES

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Procedures for preparation and submittal of application for final payment.

#### 1.02 RELATED REQUIREMENTS

#### 1.03 SCHEDULE OF VALUES

- A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Submit Schedule of Values in duplicate within 20 days after date of Owner-Contractor Agreement.
- E. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section. Identify site mobilization and bonds and insurance.
- F. Include in each line item, the amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.
- G. Revise schedule to list approved Change Orders, with each Application For Payment.

#### 1.04 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the General and Supplementary Conditions..
- B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.
- C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- D. Forms filled out by hand will not be accepted.
- E. Execute certification by signature of authorized officer.
- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- H. Submit one electronic and three hard-copies of each Application for Payment.

- I. Include the following with the application:
  - 1. Transmittal letter as specified for submittals in Section 01 30 00.
  - 2. Construction progress schedule, revised and current as specified in Section 01 30 00.
  - 3. State Tax Form if required.

#### 1.05 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
  - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
  - 2. Promptly execute the change.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 7 days.
- D. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
- E. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

#### 1.06 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
  - 1. All closeout procedures specified in Section 01 70 00.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION - NOT USED

END OF SECTION

## SECTION 01 21 00 - ALLOWANCES

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Contingency allowance.

#### 1.02 RELATED REQUIREMENTS

- A. Section 01 20 00 - Price and Payment Procedures: Additional payment and modification procedures.

#### 1.03 CONTINGENCY ALLOWANCE

- A. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.
- B. Funds will be drawn from the Contingency Allowance only by Change Order.
- C. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

#### 1.04 ALLOWANCES SCHEDULE

- A. Contingency Allowance: Include the stipulated sum/price of \$\$15,000 for use upon Owner's instructions.

### PART 2 PRODUCTS - NOT USED

### PART 3 EXECUTION - NOT USED

END OF SECTION

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## SECTION 01 25 00 - SUBSTITUTION PROCEDURES

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Procedural requirements for proposed substitutions.

### PART 2 PRODUCTS - NOT USED

### PART 3 EXECUTION

#### 3.01 GENERAL REQUIREMENTS

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
  - 2. Agrees to provide the same warranty for the substitution as for the specified product.
  - 3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
- C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
  - 1. Forms indicated in the Project Manual are adequate for this purpose, and must be used.
- D. Limit each request to a single proposed substitution item.
  - 1. Submit an electronic document, combining the request form with supporting data into single document.

#### 3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

- A. Submittal Time Restrictions:
  - 1. Instructions to Bidders specifies time restrictions and the documents required for submitting substitution requests during the bidding period.
- B. Submittal Form (before award of contract):
  - 1. Submit substitution requests by completing the form attached to this section. See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

#### 3.03 RESOLUTION

- A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

### 3.04 ACCEPTANCE

- A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

END OF SECTION

## SECTION 01 30 00 - ADMINISTRATIVE REQUIREMENTS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. General administrative requirements.
- B. Electronic document submittal service.
- C. Preconstruction meeting.
- D. Site mobilization meeting.
- E. Progress meetings.
- F. Construction progress schedule.
- G. Contractor's daily reports.
- H. Progress photographs.
- I. Coordination drawings.
- J. Submittals for review, information, and project closeout.
- K. Number of copies of submittals.
- L. Requests for Interpretation (RFI) procedures.
- M. Submittal procedures.

#### 1.02 GENERAL ADMINISTRATIVE REQUIREMENTS

- A. Comply with requirements of Section 01 70 00 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- B. Make the following types of submittals to Architect:
  - 1. Requests for Interpretation (RFI).
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Design data.
  - 6. Manufacturer's instructions and field reports.
  - 7. Applications for payment and change order requests.
  - 8. Progress schedules.
  - 9. Coordination drawings.
  - 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
  - 11. Closeout submittals.

## PART 2 PRODUCTS - NOT USED

## PART 3 EXECUTION

### 3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

- A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Interpretation (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
  2. Contractor and Architect are required to use this service.
  3. It is Contractor's responsibility to submit documents in allowable format.
  4. Subcontractors, suppliers, and Architect's consultants will be permitted to use the service at no extra charge.
  5. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, [www.adobe.com](http://www.adobe.com), or Bluebeam PDF Revu, [www.bluebeam.com](http://www.bluebeam.com)), unless such software capability is provided by the service provider.
  6. Paper document transmittals will not be reviewed; emailed electronic documents will not be reviewed.
  7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.
- B. Submittal Service: The selected service is:
- C. Training: One, one-hour, web-based training session will be arranged for all participants, with representatives of Architect and Contractor participating; further training is the responsibility of the user of the service.
- D. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

### 3.02 PRECONSTRUCTION MEETING

- A. Architect will schedule a meeting after Notice of Award.
- B. Attendance Required:
1. Owner.
  2. Architect.
  3. Contractor.
- C. Agenda:
1. Execution of Owner-Contractor Agreement.
  2. Submission of executed bonds and insurance certificates.
  3. Distribution of Contract Documents.

4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
  5. Submission of initial Submittal schedule.
  6. Designation of personnel representing the parties to Contract, Owner and Architect.
  7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  8. Scheduling.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### 3.03 SITE MOBILIZATION MEETING

- A. Attendance Required:
1. Contractor.
  2. Owner.
  3. Architect.
  4. Contractor's superintendent.
  5. Major subcontractors.
- B. Agenda:
1. Use of premises by Owner and Contractor.
  2. Owner's requirements.
  3. Construction facilities and controls provided by Owner.
  4. Temporary utilities provided by Owner.
  5. Survey and building layout.
  6. Security and housekeeping procedures.
  7. Schedules.
  8. Application for payment procedures.
  9. Procedures for testing.
  10. Procedures for maintaining record documents.
  11. Requirements for start-up of equipment.
  12. Inspection and acceptance of equipment put into service during construction period.
- C. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### 3.04 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the work at maximum bi-monthly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required:
1. Contractor.
  2. Owner.
  3. Architect.
  4. Contractor's superintendent.

5. Major subcontractors.
- D. Agenda:
1. Review minutes of previous meetings.
  2. Review of work progress.
  3. Field observations, problems, and decisions.
  4. Identification of problems that impede, or will impede, planned progress.
  5. Review of submittals schedule and status of submittals.
  6. Review of RFIs log and status of responses.
  7. Review of off-site fabrication and delivery schedules.
  8. Maintenance of progress schedule.
  9. Corrective measures to regain projected schedules.
  10. Planned progress during succeeding work period.
  11. Coordination of projected progress.
  12. Maintenance of quality and work standards.
  13. Effect of proposed changes on progress schedule and coordination.
  14. Other business relating to work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.
- 3.05 CONSTRUCTION PROGRESS SCHEDULE - SEE SECTION 01 32 16
- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.
- 3.06 PROGRESS PHOTOGRAPHS
- A. Submit photographs with each application for payment, taken not more than 3 days prior to submission of application for payment.
- B. Maintain one set of all photographs at project site for reference; same copies as submitted, identified as such.
- C. Photography Type: Digital; electronic files.
- D. Provide photographs of site and construction throughout progress of work produced by an experienced photographer, acceptable to Architect.
- E. In addition to periodic, recurring views, take photographs of each of the following events:
- F. Views:
1. Provide non-aerial photographs from four cardinal views at each specified time, until date of Substantial Completion.
  2. Consult with Architect for instructions on views required.
  3. Provide factual presentation.
  4. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.
- G. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format; provide files unaltered by photo editing software.
1. Delivery Medium: Via email.

2. File Naming: Include project identification, date and time of view, and view identification.
3. PDF File: Assemble all photos into printable pages in PDF format, with 2 to 3 photos per page, each photo labeled with file name; one PDF file per submittal.
4. Hard Copy: Printed hardcopy (grayscale) of PDF file and point of view sketch.

### 3.07 REQUESTS FOR INTERPRETATION (RFI)

- A. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- B. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
  1. Prepare a separate RFI for each specific item.
  2. Prepare using software provided by the Electronic Document Submittal Service.
  3. Combine RFI and its attachments into a single electronic file. PDF format is preferred.
- C. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
  1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

### 3.08 SUBMITTAL SCHEDULE

- A. Submit to Architect for review a schedule for submittals in tabular format.
  1. Submit at the same time as the preliminary schedule specified in Section - 01 32 16 - Construction Progress Schedule.
  2. Coordinate with Contractor's construction schedule and schedule of values.
  3. Format schedule to allow tracking of status of submittals throughout duration of construction.

### 3.09 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
  1. Product data.
  2. Design data.
  3. Shop drawings.
  4. Samples for selection.
  5. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 - Closeout Submittals.

### 3.10 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:

1. Certificates.
2. Test reports.
3. Inspection reports.
4. Manufacturer's instructions.
5. Manufacturer's field reports.
6. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner.

### 3.11 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 78 00 - Closeout Submittals:

1. Project record documents.
2. Operation and maintenance data.
3. Warranties.
4. Bonds.
5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

### 3.12 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.

1. After review, produce duplicates.
2. Retained samples will not be returned to Contractor unless specifically so stated.

### 3.13 SUBMITTAL PROCEDURES

A. General Requirements:

1. Use a single transmittal for related items.
2. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
3. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
4. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
  - a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
5. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
  - a. Send submittals in electronic format via email to Architect.
6. Schedule submittals to expedite the Project, and coordinate submission of related items.

- a. For each submittal for review, allow 10 business days excluding delivery time to and from the Contractor.
  - b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
  - 7. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
  - 8. Provide space for Contractor and Architect review stamps.
  - 9. When revised for resubmission, identify all changes made since previous submission.
  - 10. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
- B. Shop Drawing Procedures:
- 1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
  - 2. Do not reproduce Contract Documents to create shop drawings.
  - 3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

### 3.14 SUBMITTAL REVIEW

- A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.
- B. Submittals for Information: Architect will acknowledge receipt, but will take no other action.
- C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
- D. Architect's and consultants' actions on items submitted for review:
  - 1. Authorizing purchasing, fabrication, delivery, and installation:
    - a. "Approved", or language with same legal meaning.
    - b. "Approved as Noted, Resubmission not required", or language with same legal meaning.
      - 1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
    - c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
      - 1) Resubmit corrected item, with review notations acknowledged and incorporated. Resubmit separately, or as part of project record documents.
  - 2. Not Authorizing fabrication, delivery, and installation:
    - a. "Rejected".
      - 1) Submit item complying with requirements of Contract Documents.
- E. Architect's and consultants' actions on items submitted for information:
  - 1. Items for which no action was taken:
    - a. "Received" - to notify the Contractor that the submittal has been received for record only.
  - 2. Items for which action was taken:
    - a. "Reviewed" - no further action is required from Contractor.

END OF SECTION

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## SECTION 01 31 19 - PROJECT MEETINGS

### PART 1 GENERAL

#### 1.01 MEETINGS

- A. Pre-construction conference shall be held prior to the beginning of the Work.
- B. Construction progress meetings shall be held monthly.
- C. Project close-out conference shall be held during the final phases of the Work.
- D. Engineer may schedule additional meetings.
- E. Contractor's project superintendent shall attend meetings.
- F. Notify suppliers and subcontractors to attend meetings as appropriate or as required by Engineer.
- G. Contractor shall schedule pre-installation conferences as required in the individual specification sections.
- H. Notify Engineer of project meetings scheduled by the Contractor.
- I. Engineer will schedule and administer meetings throughout the progress of the Work, except for meetings held by the Contractor for normal coordination of the Work.
- J. Meeting agenda shall include, but not be limited to, the following: Project Administration, Submittals, Construction Schedules and Methods, Safety and Health Regulations, Project Coordination, Payment Application, Change Orders, and Site Inspections.
- K. Engineer will prepare agenda with copies to participants, preside at meetings, prepare minutes and distribute to participants for meetings scheduled by the Engineer.

### PART 2 PRODUCTS - NOT USED

### PART 3 EXECUTION - NOT USED

END OF SECTION

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## SECTION 01 32 16 - CONSTRUCTION PROGRESS SCHEDULE

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, bar chart type.

#### 1.02 SUBMITTALS

- A. Within 10 days after date of Agreement, submit preliminary schedule.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
- D. Submit updated schedule with each Application for Payment.
- E. Submit in PDF format.

#### 1.03 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

### PART 2 PRODUCTS - NOT USED

### PART 3 EXECUTION

#### 3.01 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a horizontal bar chart.

#### 3.02 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Identify work of separate stages and other logically grouped activities.
- D. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- E. Provide legend for symbols and abbreviations used.

#### 3.03 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

### 3.04 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.

### 3.05 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Architect, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION

## SECTION 01 40 00 - QUALITY REQUIREMENTS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. References and standards.
- B. Testing and inspection agencies and services.
- C. Control of installation.
- D. Defect Assessment.

#### 1.02 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

#### 1.03 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ services of an independent testing agency to perform certain specified testing; payment for cost of services will be derived from allowance specified in Section 01 21 00; see Section 01 21 00 and applicable sections for description of services included in allowance.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

### PART 2 PRODUCTS - NOT USED

### PART 3 EXECUTION

#### 3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.

- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

### 3.02 TESTING AND INSPECTION

- A. Testing Agency Duties:
  - 1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
  - 2. Perform specified sampling and testing of products in accordance with specified standards.
  - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  - 4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
  - 5. Perform additional tests and inspections required by Architect.
  - 6. Submit reports of all tests/inspections specified.
- B. Limits on Testing/Inspection Agency Authority:
  - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  - 2. Agency may not approve or accept any portion of the Work.
  - 3. Agency may not assume any duties of Contractor.
  - 4. Agency has no authority to stop the Work.
- C. Contractor Responsibilities:
  - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
  - 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
  - 3. Provide incidental labor and facilities:
    - a. To provide access to Work to be tested/inspected.
    - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
    - c. To facilitate tests/inspections.
    - d. To provide storage and curing of test samples.
  - 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
  - 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
  - 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

- D. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
- E. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.03 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.

END OF SECTION

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## SECTION 01 60 00 - PRODUCT REQUIREMENTS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Transportation, handling, storage and protection.
- B. Product option requirements.
- C. Substitution limitations.
- D. Maintenance materials, including extra materials, spare parts, tools, and software.

#### 1.02 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

#### 1.03 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
  - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

### PART 2 PRODUCTS

#### 2.01 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. Use of products having any of the following characteristics is not permitted:
  - 1. Containing lead, cadmium, or asbestos.
- C. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Size terminal lugs to NFPA 70, include lugs for terminal box.

#### 2.02 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

### 2.03 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

## PART 3 EXECUTION

### 3.01 SUBSTITUTION LIMITATIONS

- A. See Section 01 25 00 - Substitution Procedures.

### 3.02 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

### 3.03 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 74 19.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

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## SECTION 01 70 00 - EXECUTION AND CLOSEOUT REQUIREMENTS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition.
- C. Cutting and patching.
- D. Cleaning and protection.
- E. Starting of systems and equipment.
- F. Demonstration and instruction of Owner personnel.
- G. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- H. General requirements for maintenance service.

#### 1.02 REFERENCE STANDARDS

#### 1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
  - 1. Structural integrity of any element of Project.
  - 2. Integrity of weather exposed or moisture resistant element.
  - 3. Efficiency, maintenance, or safety of any operational element.
  - 4. Visual qualities of sight exposed elements.
  - 5. Work of Owner or separate Contractor.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities.

#### 1.04 PROJECT CONDITIONS

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
  - 1. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.

#### 1.05 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.

- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

## PART 2 PRODUCTS

### 2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00 - Product Requirements.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

### 3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

### 3.03 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

### 3.04 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  - 1. Verify that construction and utility arrangements are as indicated.
  - 2. Report discrepancies to Architect before disturbing existing installation.
  - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Remove existing work as indicated and as required to accomplish new work.
  - 1. Remove items indicated on drawings.
  - 2. Relocate items indicated on drawings.
  - 3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
  - 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- C. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, Telecommunications, and \_\_\_\_\_): Remove, relocate, and extend existing systems to accommodate new construction.
  - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
  - 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
  - 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.

- a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
  - b. Provide temporary connections as required to maintain existing systems in service.
- 4. Verify that abandoned services serve only abandoned facilities.
- 5. Remove abandoned pipe, ducts, conduits, and equipment , including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- D. Protect existing work to remain.
  - 1. Prevent movement of structure; provide shoring and bracing if necessary.
  - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  - 3. Repair adjacent construction and finishes damaged during removal work.
- E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- F. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- G. Refinish existing surfaces as indicated:
  - 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
  - 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- H. Clean existing systems and equipment.
- I. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- J. Do not begin new construction in alterations areas before demolition is complete.
- K. Comply with all other applicable requirements of this section.

### 3.05 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
  - 1. Complete the work.
  - 2. Fit products together to integrate with other work.
  - 3. Provide openings for penetration of mechanical, electrical, and other services.
  - 4. Match work that has been cut to adjacent work.
  - 5. Repair areas adjacent to cuts to required condition.
  - 6. Repair new work damaged by subsequent work.
  - 7. Remove samples of installed work for testing when requested.
  - 8. Remove and replace defective and non-complying work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

- E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 84 00, to full thickness of the penetrated element.
- J. Patching:
  1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
  2. Match color, texture, and appearance.
  3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

### 3.06 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

### 3.07 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

### 3.08 SYSTEM STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect and Owner seven days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

### 3.09 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.

### 3.10 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

### 3.11 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, drainage systems, and \_\_\_\_\_.
- G. Clean site; sweep paved areas, rake clean landscaped surfaces.
- H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

### 3.12 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
  - 1. Provide copies to Architect and Owner.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

### 3.13 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

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## SECTION 01 78 00 - CLOSEOUT SUBMITTALS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Project record documents.
- B. Operation and maintenance data.
- C. Warranties and bonds.

#### 1.02 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
  - 1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
  - 2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
  - 3. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
  - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

### PART 2 PRODUCTS - NOT USED

### PART 3 EXECUTION

#### 3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.

- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. Changes made by Addenda and modifications.
- F. Record Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - 2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  - 3. Field changes of dimension and detail.
  - 4. Details not on original Contract drawings.

### 3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

### 3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
  - 1. Product data, with catalog number, size, composition, and color and texture designations.
  - 2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

### 3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
  - 1. Description of unit or system, and component parts.
  - 2. Identify function, normal operating characteristics, and limiting conditions.
  - 3. Include performance curves, with engineering data and tests.

4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- E. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- F. Provide servicing and lubrication schedule, and list of lubricants required.
- G. Include manufacturer's printed operation and maintenance instructions.
- H. Include sequence of operation by controls manufacturer.
- I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Provide control diagrams by controls manufacturer as installed.
- K. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- N. Include test and balancing reports.

### 3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Provide a PDF copy, properly bookmarked as well.

### 3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.

END OF SECTION

## SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Concrete formwork.
- B. Concrete reinforcement.
- C. Miscellaneous concrete elements, including equipment pads.
- D. Concrete curing.

#### 1.02 REFERENCE STANDARDS

- A. ACI PRC-304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).
- B. ACI PRC-308 - Guide to External Curing of Concrete; 2016.
- C. ACI SPEC-301 - Specifications for Concrete Construction; 2020.
- D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.
- E. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2021.
- F. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.
- G. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.

### PART 2 PRODUCTS

#### 2.01 FORMWORK

- A. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
  - 1. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

#### 2.02 REINFORCEMENT MATERIALS

- A. Comply with requirements of Section 03 20 00.
- B. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
- C. Reinforcement Accessories:
  - 1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
  - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

#### 2.03 CONCRETE MATERIALS

- A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
  - 1. Acquire cement for entire project from same source.

- B. Fly Ash: ASTM C618, Class C or F.
- C. Calcined Pozzolan: ASTM C618, Class N.
- D. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

## 2.04 CONCRETE MIX DESIGN

- A. Normal Weight Concrete:
  - 1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,000 pounds per square inch.
  - 2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
  - 3. Calcined Pozzolan Content: Maximum 10 percent of cementitious materials by weight.
  - 4. Silica Fume Content: Maximum 5 percent of cementitious materials by weight.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

### 3.02 PREPARATION

- A. Formwork: Comply with requirements of ACI SPEC-301. Design and fabricate forms to support all applied loads until concrete is cured and for easy removal without damage to concrete.

### 3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

- A. Comply with requirements of ACI SPEC-301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

### 3.04 PLACING CONCRETE

- A. Place concrete in accordance with ACI PRC-304.

### 3.05 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.

### 3.06 CURING AND PROTECTION

- A. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

### 3.07 DEFECTIVE CONCRETE

END OF SECTION

## SECTION 26 05 00.01 - GENERAL ELECTRICAL REQUIREMENTS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. General provisions specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements.
- B. The electrical work includes the furnishing of all labor, materials, accessories, and equipment required to install a complete and fully operational electrical system as shown, specified and/or reasonably implied for a complete project.

#### 1.02 RELATED DOCUMENTS

- A. General provisions specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements.
- B. ANSI/NFPA 70.

#### 1.03 COORDINATION

- A. The Electrical Contractor shall coordinate his work with the other contractors in accordance with the provisions of Division 1.

#### 1.04 QUALITY ASSURANCE

- A. Perform work in accordance with NECA Standard of Installation.

#### 1.05 FEES, PERMITS, AND INSPECTIONS

- A. Electrical Contractor shall obtain permits and arrange all inspections necessary for the installation of his work in accordance with General Conditions and furnish the Architect with certificates of inspection from all authorities having jurisdiction.
- B. Inspections and tests shall be made upon formal written notice to the Architect from the Contractor sufficiently in advance to allow representatives of the Architect and Owner to be present for each test.
- C. No construction shall be covered up or concealed until it has been inspected or approved. The Contractor shall furnish all material, labor, fuel, equipment, and apparatus, and bear all expenses of such tests as are hereinafter specified for the work.
- D. Final inspection and tests shall be made in the presence of the Architect and representatives of the Owner. The tests shall be made under conditions simulating as nearly as practicable those which will be obtained in operation and shall show conclusively that the requirements of the specifications have been fulfilled. Prior to receiving final payment, the Contractor shall, in accordance with Division 1, furnish to the Architect a certificate of inspection signed by the Electrical Inspector having jurisdiction.

#### 1.06 REGULATORY REQUIREMENTS

- A. Conform to the North Carolina State Building Code.
- B. Conform to requirements of ANSI/NFPA 70.

- C. Conform to requirements of ANSI/IEEE C2 where applicable.
- D. Furnish products listed and classified by Underwriters Laboratories, Inc. or other North Carolina recognized third party testing agency.

#### 1.07 QUALIFICATIONS

- A. Manufacturer: Furnish products of manufactures listed or, where substitutions are allowed, furnish products of a company specializing in manufacturing products specified with minimum of three years experience.
- B. Installation: Equipment and systems installers shall have a minimum of 5 years experience in installation of systems similar to those on this project unless indicated otherwise.

#### 1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site under provisions of Division 1.

#### 1.09 ALLOWANCES

- A. Refer to provisions of Section 012100 - Allowances.

#### 1.10 UNIT PRICES

- A. Refer to provisions of Section 012200– Unit Prices.

#### 1.11 ALTERNATES

- A. Refer to provisions of Section 012300 - Alternates.

#### 1.12 SEQUENCING AND SCHEDULING

- A. Construct work in sequence under provisions of Division 1.

#### 1.13 OPERATION AND MAINTENANCE MANUALS

- A. Three (3) complete sets of operating and maintenance manuals shall be submitted to the Owner through the Architect/Engineer two (2) weeks prior to the pre-final inspection date.
- B. The O&M manuals shall be installed in a 3-ring heavy back note book with the name of the building and the words "Operation and Maintenance Manuals" on the cover and spine. The manuals shall contain the following items as a minimum:
  1. Index and page numbers.
  2. Certificate of substantial completion.
  3. All warranties.
  4. List of all subcontractors and suppliers with names, addresses and phone numbers.
  5. Certified testing and balancing report.
  6. Complete start-up operation, and shut-down procedures for each system including sequence of events, locations of switches, emergency procedures and any other critical items.
  7. Complete set of current shop drawings and equipment description showing all capacities and other operation conditions.
  8. Equipment summary showing all capacities and ratings. (HP, Tons, KW, Filter size, etc.)
  9. All submittal data and shop drawings.

10. Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of replacement parts.
11. Manufacturer's printed operating procedures to include start-up, break-in, and routine and normal operating instructions; regulation, control, stopping, shutdown, and emergency instruction.
12. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly; aligning and adjusting instructions.
13. Wiring and control diagrams.
14. Manufacturer's cuts, part numbers, and serial numbers.

## PART 2 PRODUCTS

### 2.01 EQUIPMENT AND MATERIAL

- A. Equipment and material of the same general type shall be of the same make throughout the work to provide uniform appearance, operation and maintenance.
- B. Equipment and material shall be new and shall bear the manufacturer's name or trade name.

### 2.02 DIMENSIONS

- A. The Contractor shall be responsible for insuring that items of equipment furnished fit the space available. He shall make necessary field measurements to ascertain space requirements, including those of connections, and shall furnish and install such sizes and shapes of equipment that the final installation shall suit the true intent and meaning of the drawings and specifications.

### 2.03 MANUFACTURER'S DIRECTIONS

- A. The Contractor shall promptly notify the Architect in writing of any conflict between the requirements of the contract documents and manufacturer's directions and shall obtain the Architect's written instructions before proceeding with the work. Should the Contractor perform any work that does not comply with the manufacturer's directions or such written instructions from the Architect, he shall bear all costs arising in correcting the deficiencies.

### 2.04 EQUIPMENT ACCESSORIES

- A. The Contractor shall provide all equipment, accessories, connections, and incidental items necessary to fully complete the work, ready for use, occupancy and operation by the Owner.

## PART 3 EXECUTION

### 3.01 MATERIALS AND WORKMANSHIP

- A. All materials and workmanship shall comply with all applicable codes, specifications, state and local ordinances, industry standards, and utility company regulations. At the completion of the work, fixtures, equipment and materials shall be cleaned and polished thoroughly and turned over to the Owner in a condition satisfactory to the Architect. Damage or defects developing before acceptance of the work shall be made good at the Contractor's expense.

### 3.02 LOCATION OF CONDUIT, FIXTURES, EQUIPMENT AND APPURTENANCES

- A. These locations shall be adjusted to accommodate the work to ductwork and equipment installed by other Contractors in mechanical equipment rooms and similar areas.

### 3.03 BUILDING AND FINISHES

- A. Building and finishes shall be protected. The Contractor will be held responsible for damage incurred and shall repair all damage done.

### 3.04 SUPPORTS

- A. The Contractor shall support plumb, rigid, and true to line all work and equipment installed under this contract. The Contractor shall thoroughly study project construction drawings, shop drawings, and catalog data to determine how equipment, accessories, fixtures, and related items are to be supported, mounted, or suspended. He shall provide all bolts, inserts, brackets, structural supports, and accessories for proper support whether or not shown on the drawings.
- B. Sleeves, inserts and supports that may be required for the electrical work shall be furnished by the Electrical Contractor, and they shall be installed, except as otherwise specified, by the trade furnishing and installing the material in which they are to be located. Location of sleeves, inserts, and supports shall be directed by the Electrical Contractor who shall also insure that they are properly installed. Sleeves shall be neatly sawed, sheared, or cut with wheeled cutters. No flame cutting will be permitted.
- C. Slots, chases, openings and recesses through floors, walls, ceilings, and roofs as specified will be provided by the various trades in their respective materials, but the Electrical Contractor shall see that they are properly located and shall do any cutting and patching caused by the neglect to do so.
- D. Where sleeves are omitted or not provided in proper location through a concrete floor, the new holes at the proper location shall be drilled with a diamond core drill after obtaining permission from the Architect. No chiseling or other rough cutting will be permitted. No part of the building may be broken out, cut, burned out, or permanently removed.

### 3.05 FIRESTOPPING

- A. Firestopping of penetrations for electrical work shall be installed by Electrical Contractor.
- B. The Electrical Contractor shall be responsible for firestopping all partitions, walls and floor penetration resulting from his work. Penetrations shall be firestopped to meet or exceed rating of wall or floor systems as required by code.

### 3.06 SERVICE DISCONNECT MARKING

- A. Each service disconnecting means shall be marked "SERVICE DISCONNECT" with engraved plastic plates.

### 3.07 PAINTING

- A. All field painting of electrical work, with the exception of touch-up paint on factory finished equipment, shall be by the Electrical Contractor in accordance with the

"Painting" section of these specifications. Any equipment which has its factory paint coat scratched or otherwise damaged shall be retouched with paint to match the finish coat by the Electrical Contractor, and shall be repainted if necessary. Cut ends of steel framing channel used for equipment support shall be painted with a compound providing equivalent protection to the factory provided finish.

### 3.08 TESTING

- A. All test reports shall be typewritten and submitted in triplicate. Reports shall include: Item(s) tested, date of each test, name and signature of person(s) conducting test, and complete test results.
- B. Provide testing on each product or system as hereinafter specified in individual sections, and/or as recommended by product manufacturer.
- C. All test reports shall be submitted, reviewed, and approved prior to substantial completion.

### 3.09 CLEAN-UP

- A. The Contractor shall clean equipment, fixtures, and wiring device covers with cleaning materials appropriate to the surface and material being cleaned. Bottoms of equipment enclosures shall be cleaned to remove metal filings and other debris. All debris and excess materials shall be removed from the work area. The Contractor shall remove from the site all debris, crating, temporary facilities, waste, tools, construction equipment, machinery, and surplus materials resulting from his work.

### 3.10 THERMAL SCANNING

- A. The Contractor shall provide infrared scanning on operational switchboard, transformers, and transfer switches, as well as feeder terminations over with ratings over 60 amps. Tests to be conducted after equipment start-up and prior to substantial completion.
- B. A report of the results shall be submitted to the Owner and Commissioning agent as well as included in O&M manual submittals.

END OF SECTION

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## SECTION 26 05 05 - SELECTIVE DEMOLITION FOR ELECTRICAL

### PART 3 EXECUTION

#### 1.01 EXAMINATION

- A. Verify that abandoned wiring and equipment serve only abandoned facilities.
- B. Beginning of demolition means installer accepts existing conditions.

#### 1.02 PREPARATION

- A. Disconnect electrical systems in walls, floors, and ceilings to be removed.
- B. Coordinate utility service outages with utility company.
- C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- D. Existing Electrical Service: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration.

#### 1.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Remove, relocate, and extend existing installations to accommodate new construction.
- B. Remove abandoned wiring to source of supply.
- C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
- D. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.
- E. Repair adjacent construction and finishes damaged during demolition and extension work.
- F. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.

END OF SECTION

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## SECTION 26 05 19.01 - BUILDING WIRE AND CABLE

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Building wire and cable.
- B. Wiring connectors and connections.

#### 1.02 RELATED SECTIONS

- A. General provisions specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements.
- B. Section 260532 - Conduit.
- C. Section 260533 - Boxes.
- D. Section 260553 - Identification.

#### 1.03 REFERENCES

- A. ANSI/NFPA 70

#### 1.04 SUBMITTALS

- A. Submit under provisions of Division 1.
- B. Product Data: Provide for each wire and cable type.
- C. Insulation Resistance Test Report.
- D. Bolted Connections Torque Measurements.

#### 1.05 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1.
- B. Accurately record feeder sizes.

#### 1.06 PROJECT CONDITIONS

- A. Verify that field measurements are as shown on Drawings.
- B. Conductor sizes are based on copper, expressed in American Wire Gage (AWG) and Thousand Circular Mills (kcmil).
- C. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet Project Conditions.
- D. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

#### 1.07 COORDINATION

- A. Determine required separation between cable and other work.
- B. Determine routing to avoid interference with other work.

## PART 2 PRODUCTS

### 2.01 BUILDING WIRE AND CABLE

- A. Description: Single conductor insulated wire.
- B. Conductor:
  - 1. Branch circuits: Copper.
  - 2. Feeders: Copper.
- C. Insulation Voltage Rating: 600 volts.
- D. Insulation: ANSI/NFPA 70, Type THHN2/THWN.

### 2.02 CLASS 2 CONTROL CIRCUIT CONDUCTORS

- A. Description: Solid or stranded, per system manufacturer's recommendations.
- B. Conductor: Copper.
- C. Insulation: Min. 150 volt 60°C.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that mechanical work likely to damage wire and cable has been completed.

### 3.02 PREPARATION

- A. Completely and thoroughly swab raceway before installing wire.

### 3.03 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Use solid conductor for feeders and branch circuits 10 AWG and smaller, unless otherwise indicated
- C. Use stranded conductors for control circuits.
- D. Use stranded conductors in liquid tight flex for final connection to motors.
- E. Use conductor not smaller than 12 AWG for power and lighting circuits.
- F. Use conductor not smaller than 22 AWG for control circuits.
- G. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 100 feet.
- H. Use 10 AWG conductors for 20 ampere, 277 volt branch circuits longer than 230 feet.
- I. Pull all conductors into raceway at same time.
- J. Use suitable wire pulling lubricant for building wire 4 AWG and larger.
- K. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- L. Clean conductor surfaces before installing lugs and connectors.

- M. Make splices, taps, and terminations to carry full capacity of conductors with no perceptible temperature rise.
- N. Use split bolt connectors for copper conductor splices and taps, 8 AWG and larger. Tape uninsulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor.
- O. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.
- P. Home runs may be combined in one conduit when all connections are in accordance with NFPA 70 requirements and the maximum unbalance current in the neutral does not exceed the capacity of the conductor. When circuits serving electronic loads are combined, the neutral shall be sized to accommodate harmonic currents.
- Q. All feeders and subfeeders shall be completely phased out as to sequence and rotation. Phase sequence shall be A-B-C from front to rear, top to bottom, or left to right when facing equipment.

#### 3.04 INTERFACE WITH OTHER PRODUCTS

- A. Identify wire and cable under provisions of Section 260553.
- B. Identify each conductor with its circuit number or other designation indicated on Drawings.

#### 3.05 FIELD QUALITY CONTROL

- A. Perform field inspection and testing under provisions of Division 1.
- B. Inspect wire for physical damage and proper connection.
- C. Measure tightness of bolted connections and compare torque measurements with manufacturer's recommended values. Record torque measurements.
- D. Verify continuity of each branch circuit conductor.
- E. Perform insulation resistance test on wiring No. 6 AWG and larger using instrument which applies voltage of approximately 500 volts to provide direct reading of resistance. Minimum resistance shall be 250,000 ohms. Record test data and include in O&M Manuals.

END OF SECTION

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## SECTION 26 05 26 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.
- D. Ground bars.
- E. Ground rod electrodes.
- F. Ground access wells.

#### 1.02 RELATED REQUIREMENTS

- A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
- B. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.
- C. Section 33 79 00 - Site Grounding.

#### 1.03 REFERENCE STANDARDS

- A. IEEE 81 - IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System; 2025.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.
- C. NEMA GR 1 - Grounding Rod Electrodes and Grounding Rod Electrode Couplings; 2022.
- D. NETA ATS - Standard for Acceptance Testing Specifications for Electrical Power Equipment And Systems; 2025.
- E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 467 - Grounding and Bonding Equipment; Current Edition, Including All Revisions.

#### 1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Verify exact locations of underground metal water service pipe entrances to building.
  - 2. Coordinate the work with other trades to provide steel reinforcement complying with specified requirements for concrete-encased electrode.
  - 3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:

1. Do not install ground rod electrodes until final backfill and compaction is complete.

#### 1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittals procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for grounding and bonding system components.
- C. Shop Drawings:
  1. Indicate proposed arrangement for signal reference grids. Include locations of items to be bonded and methods of connection.
- D. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- E. Field quality control test reports.
- F. Project Record Documents: Record actual locations of grounding electrode system components and connections.

#### 1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

### PART 2 PRODUCTS

#### 2.01 GROUNDING AND BONDING REQUIREMENTS

- A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.
- B. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- E. Grounding System Resistance:

1. Grounding Electrode System: Not greater than 5 ohms to ground, when tested according to IEEE 81 using "fall-of-potential" method.
- F. Grounding Electrode System:
1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
    - a. Provide continuous grounding electrode conductors without splice or joint.
    - b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.
  2. Metal Underground Water Pipe(s):
    - a. Provide connection to underground metal domestic and fire protection (where present) water service pipe(s) that are in direct contact with earth for at least 10 feet at an accessible location not more than 5 feet from the point of entrance to the building.
    - b. Provide bonding jumper(s) around insulating joints/pipes as required to make pipe electrically continuous.
    - c. Provide bonding jumper around water meter of sufficient length to permit removal of meter without disconnecting jumper.
  3. Metal In-Ground Support Structure:
    - a. Provide connection to metal in-ground support structure that is in direct contact with earth in accordance with NFPA 70.
  4. Concrete-Encased Electrode:
    - a. Provide connection to concrete-encased electrode consisting of not less than 20 feet of either steel reinforcing bars or bare copper conductor not smaller than 4 AWG embedded within concrete foundation or footing that is in direct contact with earth in accordance with NFPA 70.
  5. Ground Ring:
    - a. Provide a ground ring encircling the building or structure consisting of bare copper conductor not less than 2 AWG in direct contact with earth, installed at a depth of not less than 30 inches.
  6. Ground Rod Electrode(s):
    - a. Provide single electrode unless otherwise indicated or required.
    - b. Space electrodes not less than 10 feet from each other and any other ground electrode.
  7. Provide additional ground electrode(s) as required to achieve specified grounding electrode system resistance.
- G. Service-Supplied System Grounding:
1. For each service disconnect, provide grounding electrode conductor to connect neutral (grounded) service conductor to grounding electrode system. Unless otherwise indicated, make connection at neutral (grounded) bus in service disconnect enclosure.
  2. For each service disconnect, provide main bonding jumper to connect neutral (grounded) bus to equipment ground bus where not factory-installed. Do not make any other connections between neutral (grounded) conductors and ground on load side of service disconnect.
- H. Separately Derived System Grounding:
1. Separately derived systems include, but are not limited to:
    - a. Transformers (except autotransformers such as buck-boost transformers).
    - b. Generators, when neutral is switched in the transfer switch.

2. Provide grounding electrode conductor to connect derived system grounded conductor to nearest effectively grounded metal building frame. Unless otherwise indicated, make connection at neutral (grounded) bus in source enclosure.
  3. Provide bonding jumper to connect derived system grounded conductor to nearest metal building frame and nearest metal water piping in the area served by the derived system, where not already used as a grounding electrode for the derived system. Make connection at same location as grounding electrode conductor connection.
  4. Provide system bonding jumper to connect system grounded conductor to equipment ground bus. Make connection at same location as grounding electrode conductor connection. Do not make any other connections between neutral (grounded) conductors and ground on load side of separately derived system disconnect.
  5. Where the source and first disconnecting means are in separate enclosures, provide supply-side bonding jumper between source and first disconnecting means.
- I. Bonding and Equipment Grounding:
1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
  2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
  3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
  4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
  5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
  6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.
  7. Provide bonding for interior metal piping systems in accordance with NFPA 70. This includes, but is not limited to:
    - a. Metal water piping where not already effectively bonded to metal underground water pipe used as grounding electrode.
  8. Provide bonding for metal building frame.
- J. Isolated Ground System:
1. Where isolated ground receptacles or other isolated ground connections are indicated, provide separate isolated/insulated equipment grounding conductors.
  2. Connect isolated/insulated equipment grounding conductors only to separate isolated/insulated equipment ground busses.
  3. Connect the isolated/insulated equipment grounding conductors to the solidly bonded equipment ground bus only at the service disconnect or separately derived system disconnect. Do not make any other connections between isolated ground system and normal equipment ground system on the load side of this connection.

## 2.02 GROUNDING AND BONDING COMPONENTS

- A. General Requirements:
  - 1. Provide products listed, classified, and labeled as suitable for the purpose intended.
  - 2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 05 26:
  - 1. Use insulated copper conductors unless otherwise indicated.
- C. Connectors for Grounding and Bonding:
  - 1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
  - 2. Manufacturers - Mechanical and Compression Connectors:
    - a. Burndy LLC
    - b. Harger Lightning & Grounding
    - c. nVent ERICO
    - d. Thomas & Betts Corporation
  - 3. Manufacturers - Exothermic Welded Connections:
    - a. Burndy LLC
    - b. nVent ERICO; Cadweld
    - c. thermOweld, subsidiary of Continental Industries; division of Burndy LLC
- D. Ground Rod Electrodes:
  - 1. Comply with NEMA GR 1.
  - 2. Material: Copper-bonded (copper-clad) steel.
  - 3. Size: 3/4 inch diameter by 10 feet length, unless otherwise indicated.
  - 4. Manufacturers:
    - a. Galvan Industries, Inc
    - b. Harger Lightning & Grounding
    - c. nVent ERICO
- E. Ground Access Wells:
  - 1. Description: Open bottom round or rectangular well with access cover for testing and inspection; suitable for the expected load at the installed location.
  - 2. Size: As required to provide adequate access for testing and inspection, but not less than minimum size requirements specified.
  - 3. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 10 inches.
  - 4. Cover: Factory-identified by permanent means with word "GROUND".
  - 5. Manufacturers:
    - a. Harger Lightning & Grounding
    - b. Hubbell Incorporated; Quazite Products
    - c. Oldcastle Enclosure Solutions

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.

- B. Verify that field measurements are as indicated.
- C. Verify that conditions are satisfactory for installation prior to starting work.
- D. Verify that final backfill and compaction has been completed before driving rod electrodes.

### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Ground Rod Electrodes: Unless otherwise indicated, install ground rod electrodes vertically. Where encountered rock prohibits vertical installation, install at 45 degree angle or bury horizontally in trench at least 30 inches (750 mm) deep in accordance with NFPA 70 or provide ground plates.
- D. Make grounding and bonding connections using specified connectors.
  - 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
  - 2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
  - 3. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
  - 4. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- E. Identify grounding and bonding system components in accordance with Section 26 05 53.

### 3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.13.
- D. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.
- E. Submit detailed reports indicating inspection and testing results and corrective actions taken.

END OF SECTION

## SECTION 26 05 26.01 - GROUNDING AND BONDING

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Grounding electrodes and conductors.
- B. Equipment grounding conductors.
- C. Bonding.

#### 1.02 REFERENCES

- A. General provisions specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements.
- B. ANSI/NFPA 70.

#### 1.03 GROUNDING ELECTRODE SYSTEM

- A. Metal underground water pipe.
- B. Rod electrode.
- C. Metal frame of the building.

#### 1.04 PERFORMANCE REQUIREMENTS

- A. Grounding System Resistance: 5 ohms.

#### 1.05 SUBMITTALS

- A. Submit under provisions of Division 1.
- B. Product Data: Provide data for grounding electrodes and connections.
- C. Test Reports: Indicate overall resistance to ground.
- D. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation and installation of exothermic connectors.

#### 1.06 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1.
- B. Accurately record actual locations of grounding electrodes and ground rings.

### PART 2 PRODUCTS

#### 2.01 ROD ELECTRODE

- A. Manufacturers:
  - 1. Carolina Galvanizing Corp.
  - 2. Blackburn
  - 3. Copperweld
- B. Material: Copper-clad steel.
- C. Diameter: 3/4 inch.

D. Length: 10 feet.

## 2.02 MECHANICAL CONNECTORS

A. Manufacturers:

1. IlSCO
2. O. Z. Gedney
3. Thomas & Betts

B. Material: Bronze.

## 2.03 WIRE

A. Material: Copper.

1. Wire #10 (AWG) and smaller shall be solid.
2. Wire #8 (AWG) and larger shall be stranded.

B. Grounding Electrode Conductor: Size to meet NFPA 70 requirements.

C. Insulation (Where applicable): Green THWN.

## PART 3 EXECUTION

### 3.01 EXAMINATION

A. Verify that final backfill and compaction has been completed before driving rod electrodes.

### 3.02 INSTALLATION

A. Install Products in accordance with manufacturer's instructions.

B. Bond together the metal underground water pipe, metal frame of the building, and rod electrode with an unspliced copper grounding electrode conductor, bare or insulated (as indicated), of the size indicated.

C. Install rod electrodes at locations indicated. Install additional rod electrodes as required to achieve specified resistance to ground.

D. Provide bonding to meet Regulatory Requirements.

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

F. Isolated ground: Provide a separate insulated grounding conductor connected to the grounding terminal of an isolated ground receptacle and insulate from the receptacle mounting means. This grounding conductor may be installed through one or more panelboards without connection to the panelboard grounding terminal so as to terminate in the same building or structure directly at an equipment grounding conductor terminal of the applicable derived system or service.

### 3.03 EQUIPMENT AND CIRCUITS

A. Conduit Systems:

1. Ground all metallic conduit systems.

2. Conduit provided for mechanical protection and containing only a grounding conductor shall be bonded to that conductor at the entrance and exit from the conduit.
- B. Boxes, Cabinets, Enclosures, and Panelboards:
1. Bond the grounding wires to each pullbox, junction box, outlet box, cabinets, and other enclosures through which the ground wires pass.
  2. Provide lugs in each box and enclosure for ground wire termination.
  3. Provide ground bars in panelboards, bolted to the housing, with sufficient lugs for terminating the ground wires.
  4. Isolated ground bars for isolated ground system.
- C. Motors and Starters:
1. Provide lugs in motor terminal box and starter housing for ground wire termination.
  2. Make ground wire connections to ground bus in motor starters.
- D. Lighting Fixtures:
1. Shall be grounded.
  2. Fixtures connected with flexible conduit shall have a green ground wire included with the power wires from the fixture through the flexible conduit.
- E. Electrical Appliance and Equipment:
1. Fixed electrical appliances and equipment shall have a ground lug installed for termination of the green ground conductor.
- 3.04 CONDUCTIVE PIPING
- A. Bond all conductive piping systems in the building to the building system ground.
- 3.05 BUILDING STEEL
- A. Bond structural steel framing system with #3/0 bare copper conductor when structure is not electrically continuous at rate walls and expansion joints.
- 3.06 FIELD QUALITY CONTROL
- A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.
- B. Use suitable test instrument to measure resistance to ground of system. Perform and document testing in accordance with test instrument manufacturer's recommendations using the fall- of-potential method. Submit report with close out documents.

END OF SECTION

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## SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.
- B. Equipment racks.

#### 1.02 RELATED REQUIREMENTS

- A. Section 26 05 33.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.
- B. Section 26 05 33.16 - Boxes for Electrical Systems: Additional support and attachment requirements for boxes.

#### 1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.
- B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

#### 1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Coordinate sizes and arrangement of supports and bases with actual equipment and components to be installed.
  - 2. Coordinate work to provide additional framing and materials required for installation.
  - 3. Coordinate compatibility of support and attachment components with mounting surfaces at installed locations.
  - 4. Coordinate arrangement of supports with ductwork, piping, equipment and other potential conflicts.
  - 5. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
  - 1. Do not install products on or provide attachment to concrete surfaces until concrete has cured; see Section 03 30 00.

#### 1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for channel/strut framing systems, nonpenetrating rooftop supports, and post-installed concrete/masonry anchors.
- C. Shop Drawings: Include details for fabricated hangers and supports for equipment racks to include the following.

1. Indicate assembly dimensions, locations of support posts, and general construction details.
  2. Indicate welded connections.
  3. Provide a Bill of Materials to include all components of the assembly.
  4. Indicate location and type of insulating materials.
- D. Evaluation Reports: For products specified as requiring evaluation and recognition by ICC Evaluation Service, LLC (ICC-ES), provide current ICC-ES evaluation reports upon request.
- E. Installer's qualification statement.
- F. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

## PART 2 PRODUCTS

### 2.01 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
1. Comply with the following. Where requirements differ, comply with most stringent.
    - a. NFPA 70.
    - b. Applicable building code.
    - c. Requirements of authorities having jurisdiction.
  2. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of electrical work.
  3. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
  4. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
  5. Do not use products for applications other than as permitted by NFPA 70 and product listing.
  6. Steel Components: Use corrosion-resistant materials suitable for environment where installed.
    - a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
    - b. Outdoor and Damp or Wet Indoor Locations: Use stainless steel unless otherwise indicated.
    - c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
    - d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Cable Ties:
1. Manufacturer
    - a. Burndy
    - b. Gardner Bender
    - c. Panduit
  2. In corrosive environments: Provide grade 304 stainless steel cable ties with a low-profile clamping bearing head and fully adjustable strap accommodating many bundle diameters. Temperature range: -112°F to 1000°F.

3. In non-corrosive environments: Provide Nylon 6/6 UV stabilized, weather resistant grade cable ties. Temperature range: -40°F to 185°F.
- C. Conduit and Cable Supports: Straps and clamps suitable for conduit or cable to be supported.
1. Manufacturers:
    - a. ABB; Thomas and Betts
    - b. Eaton Corporation; B-Line
    - c. Emerson Electric Co; O-Z/Gedney
    - d. nVent; Caddy
    - e. Panduit
  2. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
  3. Conduit Clamps: Bolted type unless otherwise indicated.
- D. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.
1. Manufacturers:
    - a. ABB; Thomas and Betts
    - b. Eaton Corporation; B-Line
    - c. Emerson Electric Co; O-Z/Gedney
    - d. nVent; Caddy
    - e. Panduit
- E. Metal Channel/Strut Framing Systems:
1. Manufacturers:
    - a. ABB; Kindorf/Superstrut/Steel City
    - b. Atkore International Inc; Unistrut
    - c. Eaton Corporation; B-Line
  2. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.
  3. Comply with MFMA-4.
  4. Channel Material:
    - a. Indoor Dry Locations: Use painted steel, zinc-plated steel, or galvanized steel.
    - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, PVC coated steel, or other material as indicated.
- F. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.
- G. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.
  2. Concrete: Use preset concrete inserts or expansion anchors.
  3. Solid or Grout-Filled Masonry: Use expansion anchors.
  4. Hollow Masonry: Use toggle bolts or hollow wall fasteners.
  5. Hollow Stud Walls: Use toggle bolts or hollow wall fasteners.
  6. Structural Steel: Use beam clamps. Use stainless steel bolts, nuts, and washers.
  7. Sheet Metal: Use sheet metal screws.
  8. Wood: Use wood screws.
  9. Powder-actuated fasteners are permitted only as follows:
    - a. Where approved by Architect.
  10. Preset Concrete Inserts: Continuous metal channel/strut and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.

- a. Manufacturer: Same as manufacturer of metal channel/strut framing system.
  - b. Comply with MFMA-4.
  - c. Channel Material: Use galvanized steel.
- H. Equipment Racks
- 1. All exterior electrical equipment shall be protected from the weather by means of a weather shield fabricated of 3/16" aluminum sheet. Panels shall be of one-piece construction; butt welds will not be accepted. Corner welds will be continuous. The weather shield shall be of adequate size to accommodate all equipment shown. The structure shall consist of galvanized pipe supports tied together with PVC coated steel channel for attachment of the weather shield. A suitable barrier of nylon or similar material shall be placed between dissimilar metals to prevent galvanic corrosion.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive support and attachment components.
- C. Verify that conditions are satisfactory for installation prior to starting work.

### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install hangers and supports in accordance with NECA 1.
- C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- D. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
- E. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
- F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- G. Obtain permission from Engineer before using power-actuated anchors.
- H. Equipment Support and Attachment:
  - 1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
  - 2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
  - 3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
  - 4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.

- I. Preset Concrete Inserts: Use manufacturer provided closure strips to inhibit concrete seepage during concrete pour.
- J. Secure fasteners in accordance with manufacturer's recommended torque settings.
- K. Remove temporary supports.
- L. Aluminum and galvanized steel surfaces in contact with concrete or grout shall have a bituminous coating.

### 3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements for additional requirements.
- B. Inspect support and attachment components for damage and defects.
- C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- D. Correct deficiencies and replace damaged or defective support and attachment components.

END OF SECTION

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## SECTION 26 05 29.01 - SUPPORTING DEVICES

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Conduit and equipment supports.
- B. Anchors and fasteners.
- C. Bridle rings.

#### 1.02 REFERENCES

- A. General provisions specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements.
- B. ANSI/NFPA 70.

### PART 2 PRODUCTS

#### 2.01 PRODUCT REQUIREMENTS

- A. Materials and Finishes: Provide adequate corrosion resistance. Steel materials used outside shall be galvanized or cadmium plated. Where materials are cut, welded, or scratched leaving an unprotected area, area shall be painted with cold galvanizing compound. If required, entire item shall be painted to avoid a "touched up" appearance.
- B. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products.
- C. Anchors and Fasteners:
  - 1. Concrete Structural Elements: Use expansion anchors, powder actuated anchors, or preset inserts.
  - 2. Steel Structural Elements: Use beam clamps, spring steel clamps, or steel ramset fasteners.
  - 3. Concrete Surfaces: Use self-drilling anchors or expansion anchors.
  - 4. Hollow Masonry and Gypsum Board Partitions: Use toggle bolts or hollow wall fasteners.
  - 5. Solid Masonry Walls: Use expansion anchors or preset inserts.
  - 6. Sheet Metal: Use sheet metal screws. Do not fasten any materials to sheet metal which the metal does not have the strength to support.
  - 7. Wood: Use wood screws.

#### 2.02 BRIDLE RINGS

- A. 4" steel threaded bridle rings. Caddy #4BRT64 or equal with matching fasteners.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".
- C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.
- D. Obtain permission from Architect/Engineer before using powder-actuated anchors.
- E. Do not drill or cut structural members.
- F. Install surface-mounted cabinets and panelboards with minimum of four anchors.

### 3.02 BRIDLE RINGS

- A. Provide bridle rings for support of above ceiling voice, intercom, security and television cabling.
- B. Install bridle rings three feet on center mounted approximately 6 inches above finished ceiling in all corridors.
- C. Provide matching support fasteners.

END OF SECTION

## SECTION 26 05 33.14 - CONDUIT

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Metal conduit.
- B. Flexible metal conduit.
- C. Liquidtight flexible metal conduit.
- D. Electrical metallic tubing.
- E. Nonmetal conduit.
- F. Fittings and conduit bodies.

#### 1.02 RELATED SECTIONS

- A. General provisions specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements.
- B. Section 07841 - Firestopping
- C. Section 260533 - Boxes.
- D. Section 260526 - Grounding and Bonding.
- E. Section 260529- Supporting Devices.
- F. Section 260553 - Electrical Identification.

#### 1.03 REFERENCES

- A. ANSI C80.1
- B. ANSI C80.3
- C. ANSI C80.5
- D. ANSI/NEMA FB 1
- E. ANSI/NFPA 70
- F. NECA "Standard of Installation."
- G. NEMA RN 1
- H. NEMA TC 2
- I. NEMA TC 3

#### 1.04 DESIGN REQUIREMENTS

- A. Conduit Size: ANSI/NFPA 70.

#### 1.05 SUBMITTALS

- A. Submit under provisions of Division 1.
- B. Product Data: Provide for each type conduit.

## 1.06 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1.
- B. Accurately record actual routing of conduits larger than 2 inches.

## 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle Products to site under provisions of Division 1.
- B. Accept conduit on site. Inspect for damage.
- C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- D. Protect PVC conduit from sunlight.

## 1.08 PROJECT CONDITIONS

- A. Verify routing and termination locations of conduit prior to rough-in.
- B. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.
- C. Conduit shall be concealed in all areas except mechanical rooms.

## PART 2 PRODUCTS

### 2.01 CONDUIT REQUIREMENTS

- A. Minimum Size: 3/4 inch unless otherwise specified.
- B. Underground Installations:
  - 1. Use plastic coated conduit or thickwall nonmetallic conduit.
    - a. Under Slab on Grade: Use plastic coated conduit, or thickwall nonmetallic conduit.
    - b. Minimum Size: 3/4 inch.
    - c. Service lateral and conduit under areas subject to vehicular traffic shall be installed in ductbanks.
    - d. Transition from Underground to Above Grade: Use rigid steel or intermediate metal conduit elbow to turn up to above grade. Coat underground rigid steel or IMC conduit with asphaltum paint.
- C. Wet and Damp Locations: Use rigid steel conduit, intermediate metal conduit, or thickwall nonmetallic conduit.
- D. Dry Locations:
  - 1. Concealed: Use rigid steel conduit, intermediate metal conduit, or electrical metallic tubing.
  - 2. Exposed eight feet or below: Use rigid steel conduit or intermediate metal conduit except that EMT may be used where branch circuits connect to the top of a surface mounted panelboard below eight feet.
  - 3. Exposed above eight feet and not subject to physical damage: Electrical Metallic Tubing.

### 2.02 METAL CONDUIT

- A. Manufacturers:

1. Allied Tube and Conduit.
2. LTV Corp.
3. Wheatland Tube Co.

B. Rigid Steel Conduit: ANSI C80.1.

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

D. Fittings and Conduit Bodies: ANSI/NEMA FB 1; threaded type material to match conduit. Split couplings are not acceptable.

#### 2.03 FLEXIBLE METAL CONDUIT

A. Manufacturers:

1. Alflex Corp.
2. Carol Cable Co.
3. Alliance Cable Corp.

B. Description: Interlocked steel construction.

C. Fittings: ANSI/NEMA FB 1. Connectors; insulated throat type.

#### 2.04 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

A. Manufacturers:

1. Alflex Corp.
2. Carol Cable Co.
3. Alliance Cable Corp.

B. Description: Interlocked steel construction with PVC jacket.

C. Fittings: ANSI/NEMA FB 1. Connectors; insulated throat type.

#### 2.05 ELECTRICAL METALLIC TUBING (EMT)

A. Manufacturers:

1. Allied Tube and Conduit.
2. LTV Corp.
3. Wheatland Tube Co.

B. Description: ANSI C80.3; galvanized tubing.

C. Fittings and Conduit Bodies: ANSI/NEMA FB 1; die-cast compression type. Connectors; die-cast insulated throat type.

#### 2.06 NONMETALLIC CONDUIT

A. Manufacturers:

1. Carlon.
2. Cantex Industries
3. LCP Chemicals and Plastics, Inc.

B. Description: NEMA TC 2; Schedule 40 PVC.

C. Fittings and Conduit Bodies: NEMA TC 3.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Install conduit in accordance with NECA "Standard of Installation."
- B. Install nonmetallic conduit in accordance with manufacturer's instructions.
- C. Provide suitable nylon pull string in each empty conduit except sleeves and nipples.
- D. Use suitable plastic slip caps to protect installed conduit against entrance of dirt and moisture.
- E. Ground and bond conduit under provisions of Section 26 05 26.
- F. Identify conduit under provisions of Section 26 05 53.
- G. Tubing shall not be used in concrete or underground.
- H. Utilize liquid tight flexible metal conduit for connection to equipment.
- I. Utilize flexible metal conduit for connection of light fixtures.
- J. Underground conduits shall have routing accurately recorded on as-built drawings with location dimensions indicated from at least two permanent above ground structures. Depth from finished grade shall also be recorded.
- K. Underground conduit larger than 1" shall be encased in 3" of concrete on all sides when not routed directly below building slab.
- L. Light fixtures connections may be made with 1/2" flexible metal conduit.

### 3.02 CONDUIT SUPPORTS

- A. Arrange supports to prevent misalignment during wiring installation.
- B. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
- C. Group related conduits; support using conduit rack. Construct rack using steel channel.
- D. Fasten conduit supports to building structure and surfaces under provisions of Section 26 05 29.
- E. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
- F. Do not attach conduit to ceiling support wires.
- G. Arrange conduit to maintain headroom and present neat appearance.
- H. Conduit Supports:
  - 1. Rigid Steel, IMC, and EMT: Conduit or tubing shall be fastened in place on not more than 6 feet on center for up through one inch and 8 feet on center for sizes larger than one inch and shall be fastened within 3 feet of connection to outlet boxes, junction boxes, cabinets, or fittings.
  - 2. Nonmetallic Conduit: Fasten on not more than 3 feet on center for up through one inch, 5 feet on center for 1 1/4" through 2", and 6 feet on center for sizes larger than 2 inches. Fasten within 2 feet of connection to outlet boxes, junction boxes, cabinets, or fittings.

3. Flexible Conduit: Fasten not more than 4 1/2 feet on center and within 12 inches of connections to outlet boxes, junction boxes, cabinets, or fittings.

### 3.03 ROUTING

- A. Route exposed conduit parallel and perpendicular to walls.
- B. Route conduit installed above accessible ceilings parallel and perpendicular to walls.
- C. Route conduit under slab on grade from point-to-point.
- D. Maintain adequate clearance between conduit and piping.
- E. Maintain 12 inch clearance between conduit and surfaces with temperatures exceeding 104 degrees F.
- F. Conduit wall penetrations shall be perpendicular to the plane of the wall.
- G. Install conduit to preserve fire resistance rating of partitions, floors, and ceilings.
- H. Route conduit through roof openings for piping and ductwork or through suitable roof jack with pitch pocket.

### 3.04 CONDUIT FITTINGS

- A. Cut conduit square using saw or pipecutter; de-burr cut ends.
- B. Bring conduit to shoulder of fittings; fasten securely.
- C. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean with approved product before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum.
- D. Use conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.
- E. Install no more than equivalent of four 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use factory elbows for bends in metal conduit larger than 2-inch size.
- F. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.
- G. Provide suitable fittings to accommodate expansion and deflection where conduit crosses, control and expansion joints.

END OF SECTION

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## SECTION 26 05 33.16 - BOXES FOR ELECTRICAL SYSTEMS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.
- C. Boxes for hazardous (classified) locations.
- D. Underground boxes/enclosures.

#### 1.02 RELATED REQUIREMENTS

- A. Section 08 31 00 - Access Doors and Panels: Panels for maintaining access to concealed boxes.
- B. Section 26 05 26 - Grounding and Bonding for Electrical Systems.
- C. Section 26 05 29 - Hangers and Supports for Electrical Systems.
- D. Section 26 05 33.13 - Conduit for Electrical Systems:
  - 1. Conduit bodies and other fittings.
  - 2. Additional requirements for locating boxes to limit conduit length and/or number of bends between pulling points.
- E. Section 26 05 53 - Identification for Electrical Systems: Identification products and requirements.
- F. Section 33 71 19 - Electrical Underground Ducts, Ductbanks, and Manholes: Concrete manholes for electrical systems.

#### 1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2023.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2016.
- C. NEMA EN 10250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2024.
- D. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
- E. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; 2013 (Reaffirmed 2020).
- F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. SCTE 77 - Specifications for Underground Enclosure Integrity; 2023.
- H. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.

- I. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- J. UL 514A - Metallic Outlet Boxes; Current Edition, Including All Revisions.
- K. UL 1203 - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations; Current Edition, Including All Revisions.

#### 1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
  - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
  - 3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
  - 4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
  - 5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
  - 6. Coordinate the work with other trades to preserve insulation integrity.
  - 7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
  - 8. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

#### 1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for outlet and device boxes, junction and pull boxes, cabinets and enclosures, boxes for hazardous (classified) locations, floor boxes, and underground boxes/enclosures.
- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- D. Project Record Documents: Record actual locations for outlet and device boxes, pull boxes, cabinets and enclosures, floor boxes, and underground boxes/enclosures.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 60 00 - Product Requirements, for additional provisions.
  - 2. Keys for Lockable Enclosures: Two of each different key.

#### 1.06 IDENTIFICATION

- A. Each pull and junction box shall be identified with the box name as indicated on the Contract Drawings (e.g. CPB-ROFP-1) or as directed by the Engineer. A nameplate shall be securely affixed in a conspicuous place on each box. Nameplates shall be as specified in Section 26 05 53, Electrical – Identification.

## 1.07 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

## PART 2 PRODUCTS

### 2.01 BOXES

- A. General Requirements:
  - 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
  - 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
  - 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
  - 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
  - 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
  - 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
  - 2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
  - 3. Use suitable concrete type boxes where flush-mounted in concrete.
  - 4. Use suitable masonry type boxes where flush-mounted in masonry walls.
  - 5. Use raised covers suitable for the type of wall construction and device configuration where required.
  - 6. Use shallow boxes where required by the type of wall construction.
  - 7. Do not use "through-wall" boxes designed for access from both sides of wall.
  - 8. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
  - 9. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
  - 10. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
  - 11. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
  - 12. Minimum Box Size, Unless Otherwise Indicated:
    - a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch square by 1-1/2 inch deep (100 by 38 mm) trade size.
  - 13. Wall Plates: Comply with Section 26 27 26.

- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
1. Comply with NEMA EN 10250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
  2. In non-hazardous locations, NEMA EN 10250 Environment Type, Unless Otherwise Indicated:
    - a. Indoor Non-process Area, Dry Locations: Type 1, painted steel.
    - b. Indoor Process Area, Dry Locations: Type 12, painted steel.
    - c. Indoor Process Area, Wet Locations: Type 4X, Type 304 stainless steel.
    - d. Indoor Chemical Storage/Transfer Area: Type 4X, Type 304 stainless steel
    - e. Outdoor Locations: Type 4X, stainless steel.
  3. In hazardous locations, NEMA EN 10250 Environment Type dependent upon the classification of the area in which they are to be installed. Area classifications are indicated on the Drawings.
    - a. Class 1, Division 1, Group D – NEMA 7, Die Cast Aluminum
    - b. Class 1, Division 2, Group D – NEMA 4X, Type 304 Stainless Steel
    - c. Class 2, Division 1, Group F – NEMA 9, Die Cast Aluminum
    - d. Class 2, Division 2, Group F – NEMA 4X, Type 304 Stainless Steel
  4. Junction and Pull Boxes Larger Than 100 cubic inches:
    - a. Pull boxes shall be 6 inches wide by 6 inches tall by 4 inches deep, minimum. For applications requiring larger boxes, the box shall be sized in accordance with the fill requirements and dimensional requirements of the NEC.
    - b. Boxes smaller than 24 inches wide by 24 inches tall: Provide screw-cover enclosures; held in place by machine screws.
    - c. Boxes 24 inches wide by 24 inches tall and larger: Provide hinged-cover enclosures; held in place by screw-operated clamp mechanisms. Hinge pins shall be removable. Clamp mechanism material of construction shall match that of the associated box.
    - d. Pull boxes shall not have any wire terminations inside, other than those for grounding/bonding. A ground bar shall be provided with the necessary number of screw type terminals. Twenty percent of the total amount of terminals otherwise required for the pull box (minimum of two) shall be provided as spare terminations. Boxes requiring any other wire terminations shall be furnished and installed in accordance with the requirements for junction boxes herein.
    - e. Barriers shall be provided in pull boxes to isolate conductors of different voltages, types, and functions. Barrier material of construction shall match that of the box. Isolations shall be provided between the following groups:
      - 1) Power wiring
      - 2) AC control wiring
      - 3) DC control wiring
      - 4) Instrumentation wiring
  5. Cabinets and Hinged-Cover Enclosures, Other Than Junction and Pull Boxes:
    - a. Provide lockable hinged covers, all locks keyed alike unless otherwise indicated.
    - b. Back Panels: Painted steel, removable.
    - c. Hinge pins shall be removable. Clamp mechanism material of construction shall match that of the associated box.
  6. Finish for Painted Steel Enclosures: ANSI 61 unless otherwise indicated.
  7. Manufacturers:

- a. Eaton; B-Line
  - b. nVent; Hoffman
  - c. Hammond Manufacturing Ltd.
  - d. Hubbell Incorporated; Wiegmann
  - e. Saginaw Control & Engineering
  - f. Substitutions: See Section 01 60 00 - Product Requirements.
8. Pull and junction boxes shall not be provided with eccentric or concentric knockouts.
9. Non-metallic, NEMA 7, and NEMA 9 boxes shall be provided with threaded integral conduit hubs.
- D. Boxes for Hazardous (Classified) Locations: Listed and labeled as complying with UL 1203 for the classification of the installed location.
- 1. Manufacturers:
    - a. Appleton, a brand of Emerson Electric Co.
    - b. Cooper Crouse-Hinds, a division of Eaton Corporation
    - c. Hubbell Incorporated; Killark Products
    - d. Substitutions: See Section 01 60 00 - Product Requirements.
- E. Underground Boxes/Enclosures:
- 1. Description: In-ground, open bottom boxes furnished with flush, non-skid covers with legend indicating type of service and stainless steel tamper resistant cover bolts.
  - 2. Size: As indicated on drawings.
  - 3. Depth: As required to extend below frost line to prevent frost upheaval, but not less than 12 inches.
  - 4. Applications:
    - a. Do not use polymer concrete enclosures in areas subject to deliberate vehicular traffic.
  - 5. Polymer Concrete Underground Boxes/Enclosures: Comply with SCTE 77.
    - a. Manufacturers:
      - 1) Harger Lightning & Grounding
      - 2) Hubbell Incorporated; Quazite Products
      - 3) Oldcastle Precast, Inc
    - b. Combination fiberglass/polymer concrete boxes/enclosures are not acceptable. Use all-polymer concrete boxes/enclosures.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.

- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Box Locations:
  - 1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 31 00 as required where approved by the Architect.
  - 2. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 26 05 33.13.
- E. Box Supports:
  - 1. Secure and support boxes in accordance with NFPA 70 and Section 26 05 29 using suitable supports and methods approved by the authority having jurisdiction.
  - 2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
- F. Install boxes plumb and level.
- G. Install boxes as required to preserve insulation integrity.
- H. Underground Boxes/Enclosures:
  - 1. Install enclosure on gravel base, minimum 6 inches deep.
  - 2. Install additional bracing inside enclosures in accordance with manufacturer's instructions to minimize box sidewall deflections during backfilling. Backfill with cover bolted in place.
- I. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- J. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.
- K. Close unused box openings.
- L. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- M. Provide grounding and bonding in accordance with Section 26 05 26.

### 3.03 CLEANING

- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

END OF SECTION

## SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable markers.
- D. Underground warning tape.
- E. Warning signs and labels.

#### 1.02 RELATED REQUIREMENTS

- A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.

#### 1.03 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- B. NFPA 70E - Standard for Electrical Safety in the Workplace; 2024.
- C. UL 969 - Marking and Labeling Systems; Current Edition, Including All Revisions.

#### 1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittals procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.
- C. Shop Drawings: Provide schedule of items to be identified indicating proposed designations, materials, legends, and formats.

#### 1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.

#### 1.06 FIELD CONDITIONS

- A. Do not install adhesive products when ambient temperature is lower than recommended by manufacturer.

### PART 2 PRODUCTS

#### 2.01 IDENTIFICATION REQUIREMENTS

- A. Identification for Equipment:
  - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
    - a. Panelboards:

- 1) Identify ampere rating.
  - 2) Identify voltage and phase.
  - 3) Identify power source and circuit number. Include location when not within sight of equipment.
  - 4) Identify main overcurrent protective device. Use identification label for panelboards with a door. For power distribution panelboards without a door, use identification nameplate.
2. Service Equipment:
    - a. Use identification nameplate to identify each service disconnecting means.
  3. Available Fault Current Documentation: Use identification label to identify the available fault current and date calculations were performed at locations requiring documentation by NFPA 70.
    - a. Service equipment.
    - b. Panelboards.
    - c. Industrial control panels.
  4. Arc Flash Hazard Warning Labels: Use warning labels to identify arc flash hazards for electrical equipment, such as switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers that are likely to require examination, adjustment, servicing, or maintenance while energized.
    - a. Service Equipment: Include the following information in accordance with NFPA 70.
      - 1) Nominal system voltage.
      - 2) Available fault current.
      - 3) Date label applied.
- B. Identification for Conductors and Cables:
1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 05 19.
  2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
  3. Use wire and cable markers to identify circuit number or other designation indicated for power, control, and instrumentation conductors and cables at the following locations:
    - a. Within boxes when more than one circuit is present.
    - b. Within equipment enclosures when conductors and cables enter or leave the enclosure.
- C. Identification for Boxes:
1. Use voltage markers to identify highest voltage present.
  2. Use voltage markers or color coded boxes to identify systems other than normal power system.

## 2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
1. Materials:
    - a. Outdoor Locations: Use plastic, stainless steel, or aluminum nameplates suitable for exterior use.
  2. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.

3. Stainless Steel Nameplates: Minimum thickness of 1/32 inch; engraved or laser-etched text.
  4. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch; engraved or laser-etched text.
  5. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.
- B. Identification Labels:
1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
  2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

### 2.03 WIRE AND CABLE MARKERS

- A. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.
- B. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.
- C. Legend: Power source and circuit number or other designation indicated.
- D. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.
- E. Minimum Text Height: 1/8 inch.
- F. Color: Black text on white background unless otherwise indicated.

### 2.04 VOLTAGE MARKERS

- A. Markers for Boxes and Equipment Enclosures: Use factory pre-printed self-adhesive vinyl or self-adhesive vinyl cloth type markers.
- B. Minimum Size:
1. Markers for Equipment: 1 1/8 by 4 1/2 inches.
  2. Markers for Junction Boxes: 1/2 by 2 1/4 inches.
- C. Legend:
1. Markers for Voltage Identification: Highest voltage present.
  2. Markers for System Identification:
    - a. Other Systems: Type of service.
- D. Color: Black text on orange background unless otherwise indicated.

### 2.05 UNDERGROUND WARNING TAPE

- A. Materials: Use non-detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.
1. Exception: Use foil-backed detectable type tape where required by serving utility or where directed by Owner.
- B. Non-detectable Type Tape: 6 inches wide, with minimum thickness of 4 mil.

- C. Foil-backed Detectable Type Tape: 3 inches wide, with minimum thickness of 5 mil, unless otherwise required for proper detection.
- D. Legend: Type of service, continuously repeated over full length of tape.
- E. Color:
  - 1. Tape for Buried Power Lines: Black text on red background.

## 2.06 WARNING SIGNS AND LABELS

- A. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- B. Warning Labels:
  - 1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.

## PART 3 EXECUTION

### 3.01 PREPARATION

- A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
  - 1. Surface-Mounted Equipment: Enclosure front.
  - 2. Flush-Mounted Equipment: Inside of equipment door.
  - 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
  - 4. Elevated Equipment: Legible from the floor or working platform.
  - 5. Branch Devices: Adjacent to device.
  - 6. Interior Components: Legible from the point of access.
  - 7. Conduits: Legible from the floor.
  - 8. Boxes: Outside face of cover.
  - 9. Conductors and Cables: Legible from the point of access.
  - 10. Devices: Outside face of cover.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- F. Install underground warning tape above buried lines with one tape per trench at 3 inches below finished grade.
- G. Mark all handwritten text, where permitted, to be neat and legible.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

END OF SECTION

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## SECTION 26 05 83 - WIRING CONNECTIONS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Electrical connections to equipment.

#### 1.02 RELATED REQUIREMENTS

- A. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables.
- B. Section 26 05 33.13 - Conduit for Electrical Systems.
- C. Section 26 05 33.16 - Boxes for Electrical Systems.
- D. Section 26 27 26 - Wiring Devices.

#### 1.03 REFERENCE STANDARDS

- A. NEMA WD 1 - General Color Requirements for Wiring Devices; 1999 (Reaffirmed 2020).
- B. NEMA WD 6 - Wiring Devices - Dimensional Specifications; 2021.
- C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

#### 1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
  - 2. Determine connection locations and requirements.

#### 1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide wiring device manufacturer's catalog information showing dimensions, configurations, and construction.
- C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

#### 1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
  - 1. Colors: Comply with NEMA WD 1.
  - 2. Cord Construction: NFPA 70, Type SO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
  - 3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.

### 2.02 EQUIPMENT CONNECTIONS

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that equipment is ready for electrical connection, wiring, and energization.

### 3.02 ELECTRICAL CONNECTIONS

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.
- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to accommodate connection with attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

END OF SECTION

## SECTION 26 21 00.01 - UTILITY SERVICE ENTRANCE

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Arrangement with Utility Company for modifications to electric service.
- B. Underground service entrance.

#### 1.02 RELATED SECTIONS

- A. General provisions specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements.
- B. Section 260532 - Conduit.
- C. Section 260526 - Grounding and Bonding.

#### 1.03 REFERENCES

- A. ANSI/NFPA 70.

#### 1.04 SYSTEM DESCRIPTION

- A. Utility Company: PWC
- B. System Characteristics. 480 Y/277 volt, 3-phase, 4-wire.
- C. Electrical Contractor shall arrange for pulse demand metering to be furnished by Utility Company.

#### 1.05 QUALITY ASSURANCE

- A. Perform work in accordance with Utility Company requirements.

#### 1.06 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Division 1.
- B. Accurately record locations of service entrance feeder and equipment to include utility company pad mounted transformer if applicable. Location dimensions shall be indicated from at least two above ground locations. Record distance of transformer from building.

#### 1.07 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated.

### PART 2 PRODUCTS

### PART 3 EXECUTION

#### 3.01 EXAMINATION

- A. Verify that service equipment is ready to be connected and energized.

3.02 PREPARATION

- A. Make arrangements with Utility Company to modify electric service to the Project.

3.03 INSTALLATION

- A. Install service entrance conduit from Utility Company's pad-mounted transformer to building service entrance equipment. Coordinate conduit stub ups below transformer with pad by Contractor. Connect service lateral conductors to service entrance equipment. Utility Company will make connections at transformer.

END OF SECTION

## SECTION 26 32 13.01 - PACKAGED GENERATOR

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES:

- A. Engine generator set will be furnished by Owner and installed by Contractor.

#### 1.02 RELATED SECTIONS:

- A. Section 20529 - Enclosed Transfer Switch.

#### 1.03 REFERENCES:

- A. NFPA 70.
- B. NFPA 110.
- C. UL 2200 – Stationary Engine Generators

#### 1.04 SUBMITTALS:

- A. Submit under provisions of Division 1.
- B. Shop Drawings: Indicate proposed plan and elevation views of installation on pad with conduit connections, grounding and anchors.
- C. Test Reports: Indicate results of performance testing.
- D. Manufacturer's Field Reports: Submit under provisions of Division 1.

#### 1.05 QUALITY ASSURANCE:

- A. Perform work in accordance with NFPA 110.

#### 1.06 QUALIFICATIONS:

- A. Installer: Installer shall have a minimum of ten years of experience.

#### 1.07 DELIVERY, STORAGE, AND HANDLING:

- A. Generator supplier will deliver generators at Contractor's direction. Contractor shall off-load, store, protect and handle products to site under provisions of Division 1.
- B. Accept unit on site on skids. Inspect for damage.
- C. Protect equipment from dirt and moisture by securely wrapping in heavy plastic.

### PART 2 PRODUCTS

#### 2.01 PACKAGE ENGINE GENERATOR SYSTEM:

- A. Engine generator set will be furnished by Owner and installed by Contractor..
- B. Generator shop drawings will be furnished to Contractor for coordination.
- C. Manufacturers
  - 1. Caterpillar

## PART 3 EXECUTION

### 3.01 INSTALLATION:

- A. Install in accordance with manufacturer's instructions.
- B. Anchor generator to pad with minimum 6" x 3/8" diameter stainless steel anchors. Provide spring isolators between generator and base tank.
- C. Contractor shall coordinate and verify life-safety ATS prioritization and optional ATS load management in accordance with applicable codes and standards. Programming will be performed by a factory representative.
- D. Contractor shall provide all fuel and fill fuel tank after testing and demonstration as a condition of substantial completion.

### 3.02 FIELD QUALITY CONTROL:

- A. Field inspection and testing will be by generator supplier.
- B. Contractor will coordinate, attend and document start-up procedures.
- C. Record in 20 minute intervals during four hour test:
  - 1. Kilowatts.
  - 2. Amperes.
  - 3. Voltage.
  - 4. Coolant temperature.
  - 5. Ambient temperature.
  - 6. Frequency.
  - 7. Oil pressure.
- D. Adjust generator output voltage and engine speed.

### 3.03 CLEANING:

- A. Clean work under provisions Division 1.
- B. Clean engine and generator surfaces. Replace oil and fuel filters at substantial completion.

### 3.04 DEMONSTRATION:

- A. Provide systems demonstration under provisions of Division 1.
- B. Simulate power outage by interrupting normal source and demonstrate that system operates automatically to establish generator power to building.
- C. Contractor shall demonstrate life-safety ATS prioritization and optional ATS load management in accordance with applicable codes and standards.
- D. Provide length of session as needed for owner maintenance personnel instruction session for Owner's maintenance personnel.

END OF SECTION

## SECTION 26 36 00.01 - AUTOMATIC TRANSFER SWITCHES

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES:

- A. Automatic transfer switches to be furnished by Owner and installed by Contractor.
- B. General provisions specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements.
- C. Section 260529 - Supporting Devices.
- D. Section 260553 - Electrical Identification: Engraved nameplates.

#### 1.02 REFERENCES:

- A. NFPA 70.
- B. NFPA 110
- C. UL 1008 – Standard for Automatic Transfer Switches for Use in Emergency Standby Systems.

#### 1.03 PROJECT RECORD DOCUMENTS:

- A. Submit under provisions of Division 1.
- B. Record actual locations of enclosed transfer switches; indicate actual ratings.

#### 1.04 DELIVERY, STORAGE, AND HANDLING:

- A. The Owner will arrange to have automatic transfer switches delivered to site, contractor will off-load, store and install switches..
- B. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- C. Handle in accordance with manufacturer's written instructions. Lift only with lugs provided for the purpose. Handle carefully to avoid damage to internal components, enclosure and finish.

#### 1.05 FIELD MEASUREMENTS:

- A. Verify that field measurements are as indicated.

### PART 2 PRODUCTS

#### 2.01 MANUFACTURERS:

- A. Asco.

#### 2.02 PRODUCT OPTIONS AND FEATURES:

- A. Load Shedding Priority: Coordinate pick-up relays and interconnect transfer switches to provide priority to available source for life safety transfer switch over optional stand-

by transfer switch, and to shed optional loads first in event of generator inability to maintain output voltage.

### PART 3 EXECUTION

#### 3.01 EXAMINATION:

- A. Verify conditions under the provisions of Division 1.
- B. Verify that surface is suitable for transfer switch installation.

#### 3.02 INSTALLATION:

- A. Install transfer switches in accordance with manufacturer's instructions.
- B. Provide engraved plastic nameplates under the provisions of Section 260553.

#### 3.03 MANUFACTURER'S FIELD SERVICES:

- A. Prepare and start systems under provisions of Division 1.
- B. Supplier will provide start-up and testing services.
- C. Submit documentation that installation and start up procedures have been performed in accordance with recommended standards.

#### 3.04 DEMONSTRATION:

- A. Demonstrate operation of transfer switch in normal, and emergency modes. Demonstration shall include operation of all features of the equipment.

END OF SECTION

## SECTION 31 20 00 - EARTH MOVING

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Provide labor, equipment, and material to perform site preparation and earthwork as specified herein and indicated on the Drawings. Work shall include, but is not limited to, the following:
  - 1. Survey staking as required for construction.
  - 2. Protection of existing facilities.
  - 3. Site grading.
  - 4. Excavation, trenching, and backfilling for structures and foundation including stone base as indicated on the Drawings.
  - 5. Borrow material including, but not limited to, material, excavating, hauling, placing, and compacting.
  - 6. Maintenance and stability of site.
  - 7. Disposal of waste and surplus material.
- B. Examine the site to determine the extent of excavating, grading, and related items necessary to complete the work.

#### 1.02 RELATED SECTIONS

- A. The following Sections have work that is directly related to this Section. This does not relieve the Contractor of his responsibility of proper coordination of all the work:
  - 1. Section 31 23 33 Trenching for Utilities

#### 1.03 MEASUREMENT AND PAYMENT PROCEDURES

- A. Work in this section shall be included in the lump sum Base Bid or Alternate as appropriate, unless specifically noted otherwise, and shall include, but not be limited to, the following:
  - 1. Stone base as indicated on the Drawings.
  - 2. Protection of existing service lines and utility structures.
  - 3. Maintenance and Stability of site grading.
  - 4. Disposal of waste and surplus material.

#### 1.04 DEFINITIONS

- A. Backfill: A specified material used in refilling a cut, trench, or other excavation, placed at a specified degree of compaction.
- B. Capillary Water Barrier: A layer of clean, poorly graded crushed rock, stone, or natural sand or gravel having a high porosity, which is placed beneath a building slab with or without a vapor barrier to cut off the capillary flow of water to the area immediately below the slab.
- C. Compaction: Process of mechanically stabilizing a material by increasing its density at a controlled moisture condition. "Degree of compaction" shall be expressed as a percentage of the maximum dry density obtained by the test procedure presented in ASTM D698 (Standard Proctor).
- D. Excavation: The removal of soil or rock to obtain a specified depth or elevation.

- E. Fill: Specified material placed at a specified degree of compaction to obtain an indicated grade or elevation.
- F. Hard Material: Solid, homogeneous material which are not included in the definition of "rock" but which usually require the use of heavy excavation equipment with ripper teeth. Material having a standard penetration resistance as determined by ASTM D1586 60 and 150 blows per foot is defined as "hard material."
- G. Lift: Layer of soil placed on top of a previously prepared or placed soil.
- H. Rock: Solid, homogeneous material which cannot be removed without the systematic drilling and blasting exceeding one (1) cubic yard in volume. Material having a standard penetration resistance as determined by ASTM D1586 greater than 150 blows per foot is defined as "rock." Removal of "hard material" will not be considered rock excavation because of intermittent drilling and blasting that is performed merely to increase production.
- I. Soil classification shall be in accordance with ASTM D2487.
  - 1. Satisfactory materials: Soils classified as GW, GP, GC, GM, SP, SC, SM, SW, ML, and CL.
  - 2. Unsuitable materials: Soils considered as unsatisfactory shall be materials that do not comply with the requirements of satisfactory above and include, but shall not be limited to, the following:
    - a. Soil containing organic matter, debris, stones larger than 6 inches, or frozen material. Stones greater than 4 inches will not be permitted in the top 12 inches.
    - b. Soils classified as Pt, CH, MH, OH, and OL.
  - 3. Cohesionless: Classified as GW, GP, SW, and SP. Soils classified as GM and SM shall be classified as cohesionless only when the fines have a plasticity index of less than 10.
  - 4. Cohesive: Classified as GC, SC, ML, CL, MH, and CH. Soils classified as GM and SM shall be classified as cohesive only when the fines have a plasticity index greater than 10.
- J. Subgrade: Lowest elevation upon which fill or other work will be placed in the absence of unsuitable material.
- K. Topsoil: Natural, friable soil, representative of productive soils in the vicinity of the site. Topsoil shall be free from roots, stones larger than 1 inch, objectionable weed seeds, toxic substances, and materials that hinder grading, planting, and maintenance operations.

## PART 2 PRODUCTS

### 2.01 MATERIAL

- A. Stone Base: A clean crushed stone, crushed gravel, or uncrushed gravel conforming to ASTM C33 coarse aggregate grading size ABC

## PART 3 EXECUTION

### 3.01 GENERAL

- A. Protect existing structures and features to remain.
- B. Dispose of excavated material in such a manner that it will not obstruct the water flow, endanger existing improvements or Work in progress, impair the use or appearance of the existing facilities, or be detrimental to the completed Work.
- C. Weather Limitations: Proceed with fill and backfill operations based on the following weather conditions:
  - 1. Temperature must be above freezing.
  - 2. In windy, hot, or arid conditions with a high rate of evaporation add moisture to the material to maintain the optimum moisture content.
  - 3. Do not proceed in rain or on saturated subgrade.
- D. Repair or undercut and backfill soils that become damaged by construction activity or unsuitable due to being left exposed to the weather at no additional cost.
- E. Do not place material on surfaces that are muddy, frozen, or contain frost.
- F. Excavation carried below the elevation indicated on the Drawings shall be backfilled and compacted in accordance with these specifications.
- G. Remove and properly dispose of unsatisfactory and excess material from the site.

### 3.02 PROTECTION OF UNDERGROUND FACILITIES

- A. Refer to paragraph 5.05 of the General Conditions and 5.05.A.2 of the Supplementary Conditions concerning the protection of Underground Facilities.
- B. Approximate locations of existing underground facilities at the site are indicated on the Drawings based on information available to the Engineer. Engineer and Owner do not take responsibility for the accuracy of the information.
- C. Follow North Carolina General Statutes, Chapter 87, Article 8A Underground Utility Safety and Damage Prevention Act. Contact NC811.org before the start of excavation. Investigate underground facility locations prior to the start of construction.
- D. Review and check all information and data regarding existing Underground Facilities at the Site.
- E. Repair damage to existing facilities at no additional cost to the Owner.
- F. A change in conditions may be considered due to the location of the existing facilities as allowed in the General Conditions. This does not include the cost for repair of damaged facilities not properly located in advance of construction.

### 3.03 WATER CONTROL

- A. Perform work to prevent surface water from accumulating in excavations, and unfinished fill areas. Perform grading and excavation so the work area and affected operations shall be continually and effectively drained.
- B. Maintain dewatering until backfilling has proceeded above the natural ground water level and the structural weight is sufficient to prevent "floating" of the structure. Provide a job superintendent experienced in dewatering work.

- C. Water from dewatering operations must be disposed of in accordance with the North Carolina Sedimentation Pollution Control Act.

### 3.04 FILL AND BACKFILL

- A. Place and compact fill and backfill material adjacent to structures in a manner that prevents wedging and eccentric loading on or against structures. Do not use equipment adjacent to structures that may overload structure. Backfill against structure only after concrete has attained the specified 28-day compressive strength.
- B. Stone Base: Structures shall have a compacted crushed stone subgrade to the depth of 12 inches, except the Control Building, which shall have a stone subgrade of 6 inches.

### 3.05 EXCAVATION FOR STRUCTURES

- A. Provide shoring or side slopes of excavations as necessary to protect workmen, and existing and new structures. Use, install, and remove shoring in accordance with State and Federal OSHA regulations.
- B. Furnish, erect, and maintain required guardrails at exposed boundaries of excavation.
- C. Perform excavation for utilities in accordance with Section, Trenching for Utilities. Install utilities to a minimum distance of five (5) feet beyond the face of the structure.
- D. Make excavation to the dimensions and elevations for the structures as indicated on the Drawings. Extend excavation a sufficient distance from walls and footings to allow for placing and removal of forms.
- E. Remove unsatisfactory material below required grade and replace with select backfill material as directed by Engineer.
- F. Excavation carried below the depths indicated, without specific directions, shall be backfilled and compacted as specified herein to the proper grade. In excavations for footings the concrete shall be extended to the bottom of the over excavation. Work caused by over excavation shall be at the Contractor's expense.
- G. Excavations for Embankments, Pavements and Structures: Unsuitable materials shall be excavated to a depth of 12 inches below the existing ground elevations for embankments and the proposed subgrade elevation for pavement, footings and concrete slab areas. In the event that it is required to remove unsuitable material to a greater depth than specified, an adjustment in the contract price may be made in accordance with applicable provisions of the General Conditions of the contract unit prices from the Bid Schedule.

### 3.06 MAINTENANCE AND STABILITY

- A. Maintain fills and embankments to the grade and cross section indicated on the Drawings until the final completion and acceptance of the Project. Repair areas that are damaged.

### 3.07 DISPOSAL OF SURPLUS MATERIAL

- A. Dispose of surplus material not required or unsuitable for filling, backfilling, or grading in an approved spoil area in accordance with local ordinances.

END OF SECTION

## SECTION 31 23 33 - TRENCHING & BACKFILLING FOR UTILITIES

### PART 1 GENERAL

#### 1.01 SCOPE

- A. Provide labor, equipment, and material to perform required excavating, backfilling, and compacting for utilities and related structures as specified herein and indicated on the Drawings. Work shall include, but not be limited to, the following:
  - 1. Survey staking as required for construction.
  - 2. Protection of existing improvements.
  - 3. Location of installed utilities.
  - 4. Dewatering.
  - 5. Excavating, backfilling, and compacting for utilities.
  - 6. Installation of warning / identification tape and tracer wire.
  - 7. Borrow material.
  - 8. Disposal of surplus material.

#### 1.02 RELATED SECTIONS

- A. The following Sections have work that is directly related to this Section. This does not relieve the Contractor of his responsibility of proper coordination of all the work:
  - 1. Section 32 92 00 Lawns and Grasses

#### 1.03 MEASUREMENT AND PAYMENT

- A. Include work specified in this Section in the lump sum or unit price cost for the utility installation as appropriate unless specifically specified elsewhere in the specifications.

#### 1.04 REFERENCED STANDARDS

- A. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)); 2012 (Reapproved 2021).
- B. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System); 2017 (Reapproved 2025).
- C. N.C. Department of Transportation - Standard Specifications for Roads and Structures (NCDOT). July 2018 or latest

#### 1.05 DEFINITIONS

- A. Backfill: A specified material used in filling the excavated trench and placed at a specified degree of compaction.
  - 1. Materials: Materials listed herein include processed materials plus the soil classifications listed under the Unified Soil Classification System, (USCS) (Method ASTM D2487 and Practice D2488). The soil materials are grouped into five broad categories according to their suitability for this application.
    - a. Class I: Angular, 6 to 40-mm (1/4 to 1-1/2-in), graded stone, including a number of fill materials that have regional significance such as coral, slag, cinders, crushed stone, and crushed shell.
    - b. Class II: Coarse sands and gravels with maximum particle size of 40 mm (1-1/2 in.), including various graded sands and gravels containing small

- percentages of fines, generally granular and noncohesive, either wet or dry. Soil Types GW, GP, SW, and SP are included in this class.
- c. Class III: Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil Types GM, GC, SM, and SC are included in this class.
  - d. Class IV: Silt, silty clays, and clays, including inorganic clays and silts of medium to high plasticity and liquid limits. Soil Types MH, ML, CH and CL are included in this class. These materials shall not be used for bedding, haunching, or initial backfill.
  - e. Class V: This class includes the organic soils OL, OH, and PT as well as soils containing frozen earth, debris, rock larger than 40 mm (1 1/2 in.) in diameter, and other foreign materials. These materials shall not be used for bedding, haunching, or initial backfill.
2. Backfill Zones: Each backfill zone shall extend the full width of the trench bottom.
    - a. Foundation: Extending down from the bottom of bedding zone as defined below.
    - b. Pipe Embedment
      - 1) Bedding: Extending from 4 inches below the pipe bottom to the pipe bottom for 30-inch diameter and smaller and 6 inches below the pipe bottom for pipes larger than 30 inches in diameter.
      - 2) Haunching: Extending from the bedding (bottom of the pipe) to the pipe spring line.
      - 3) Initial Backfill: Extending from the haunching (pipe spring line) to 1 foot above the top of the pipe.
    - c. Final Backfill: Extending from the initial backfill to the finish ground elevation.
- B. Laying Conditions:
1. Type 1: Flat bottom trench with loose backfill.
  2. Type 2: Flat bottom trench with backfill lightly consolidated to centerline of pipe.
  3. Type 3: Pipe bedded in 4 inches minimum of loose soil and backfill lightly consolidated to top of pipe.
  4. Type 4: Pipe bedded on Class I material to 1/8 pipe diameter (4 inch minimum) Backfill compacted to top of pipe a minimum of 80 percent of standard proctor.
  5. Type 5: Pipe bedded in compacted Class I material to pipe centerline with 4-inch minimum under pipe. Backfill to top of pipe with Class I, II, or III and compact to 90 percent of standard proctor.
- C. Compaction: Process of mechanically stabilizing a material by increasing its density at a controlled moisture condition. "Degree of compaction" shall be expressed as a percentage of the maximum dry density obtained by the test procedure presented in ASTM D698 (Standard Proctor).
- D. Excavation: The removal of soil or rock to obtain a specified depth or elevation.
- E. Hard Material: Solid, homogeneous material which is not included in the definition of "rock" but which may require the use of heavy excavation equipment with ripper teeth. Amount must exceed 1 cubic yard in volume. Material having a standard penetration resistance as determined by ASTM D1586 between 60 and 150 blows per foot is defined as "hard material."
- F. Lift: Layer of soil placed on top of a previously prepared or placed soil.

- G. Rock: Solid, homogeneous material which cannot be removed without the systematic drilling and blasting exceeding 1 cubic yard in volume. Material having a standard penetration resistance as determined by ASTM D1586 greater than 150 blows per foot is defined as "rock." Removal of "hard material" will not be considered rock excavation because of intermittent drilling and blasting that is performed merely to increase production.
- H. Pipe Springline: A line running horizontally through the center of the pipe.
- I. Topsoil: Natural, friable soil, representative of productive soils in the vicinity of the site. Topsoil shall be free from roots, stones larger than 1 inch, objectionable weed seeds, toxic substances, and materials that hinder grading, planting, and maintenance operations.

1.06 SUBMITTALS

- A. Submit the following in accordance with Section, Submittal Procedures:
  - 1. Catalog Data: Submit manufacturer's standard drawings or catalog cuts for the following. Clearly indicate equipment to be furnished for the Project including options to be provided.
    - a. Warning / Identification tape.

PART 2 PRODUCTS

2.01 STONE

- A. Class I material shall be #67 or #78M stone in accordance with NCDOT specifications Section 1005, General Requirements for Aggregate.

2.02 WARNING AND IDENTIFICATION TAPE

- A. Tape shall be a minimum 3-inch wide polyethylene plastic tape or approved equal, manufactured specifically for identification of buried utilities with means of enabling detection by a metal detector to a minimum depth of 3 feet. Tape shall be APWA color coded (ANSI Z535.1) and continuously imprinted with warning and identification markings in bold black letters to read "CAUTION - BURIED (utility) LINE BELOW" or approved similar wording. Color and printing shall be permanent, unaffected by moisture or soil and shall be as follows:

<u>Utility</u>	<u>Color</u>
Potable Water	Blue
Sanitary Gravity, Force Mains & Drains	Green
Electric	Red
Gas, Oil, Steam	Yellow
Communication, Alarms & Signals	Orange
Reclaimed Water, Irrigation	Purple
Proposed Excavation	White

- B. Tape shall be by Blackburn Manufacturing, Pollardwater, or Reef Industries Inc.

PART 3 EXECUTION

3.01 PROJECT SAFETY

- A. Contractor is responsible for Project safety.

- B. Perform work in conformance with applicable State and Federal safety regulations including, but not limited, to the following:
  - 1. North Carolina Safety and Health Standards for the Construction Industry (29CFR 1926 Subpart P).
  - 2. NC OSHA Industry Guide No. 14, Excavations.
  - 3. NC OSHA Industry Guide No. 20, Crane Safety.
- C. Provide barriers, warning lights, and other protective devices at excavations as necessary for safety of workers and the public.
- D. Provide sloping of bank, shoring, sheeting, or other means of maintaining the stability of the trench in accordance with the requirements of the Associated Contractor's Manual of Accident Prevention OSHA, Part 1926.P.

### 3.02 PROTECTION OF UNDERGROUND FACILITIES

- A. Provide protection of Underground Facilities in accordance with paragraph 5.05 of the General Conditions.
- B. Approximate locations of existing underground facilities at the site are indicated on the Drawings based on information available to the Engineer. Engineer and Owner do not take responsibility for the accuracy of the information.
- C. Investigate underground facility locations prior to the start of construction.
- D. Repair damage to existing facilities at no additional cost to the Owner.
- E. A change in conditions may be considered due to the location of the existing facilities as allowed in the General Conditions paragraph 5.05.F. This does not include the cost for repair of damaged facilities not properly located in advance of construction.
- F. Separation distances shall be in accordance with utilities requirements.

### 3.03 CONSTRUCTION STAKING

- A. Provide construction staking as indicated in paragraph 4.03 of the General Conditions. Engineer will only provide key reference points and benchmarks.

### 3.04 LOCATION OF INSTALLED UTILITIES

- A. Provide location for contract installed utilities as requested by third parties proposing to dig in the contract area until the date that the entire contract is recommended for final payment by Engineer to Owner.

### 3.05 WATER CONTROL

- A. Prevent surface water from entering the trench.
- B. When trench bottom is below the existing ground water table, install a dewatering system to maintain water table 1 foot below trench bottom. Provide a man experienced in dewatering work at the job site.
- C. Maintain dewatering until backfilling has proceeded above the existing ground water level.
- D. Dispose of water from dewatering operations in accordance with the North Carolina Sedimentation Pollution Control Act.

### 3.06 USE OF EXPLOSIVES

- A. Explosives may not be used on the Project.

### 3.07 EXCAVATING

- A. Excavation shall be by open cut, unless otherwise indicated on the Drawings or specified herein. Short sections of trench may be tunneled or direct bored with the approval of the Engineer.
- B. Stockpile excavated material in such a manner that it will not obstruct the flow of runoff, streams, endanger Work, impair the use or appearance of existing facilities, or be detrimental to the completed Work.
- C. Segregate excavated material so as to maintain material suitable for backfill separate from material that is unsuitable.
- D. Trench dimensions at the pipe embedment and foundation zone unless noted otherwise shall be as follows:
  - 1. Minimum width: Pipe outside diameter plus 18 inches.
  - 2. Maximum width: Pipe outside diameter plus 24 inches.
  - 3. Sides shall be vertical to a minimum of one foot above the top of pipe.
- E. Shape trench bedding to provide uniform bearing for the full pipe length. Bottom shall be free of protrusions that could cause point loading on pipe. Provide bell holes as required for properly making pipe joint.
- F. Do not over excavate. Excavation below grade without approval of Engineer shall be backfilled with Class I material at no additional cost.
- G. Undercut soils that become unsatisfactory by construction activity or by being left exposed to the weather and backfill with Class I material at no additional cost.
- H. Remove shoring, bracing, and sheeting, unless otherwise noted, as the trench is backfilled. Engineer shall have the authority to require that the sheeting be left in place.
- I. Excavation of trench shall not advance more than 200 feet ahead of the installation. In no case should the excavation extend beyond that which can be backfilled by the end of the workday.
- J. Correct unstable soil conditions encountered at trench foundation by one of the following methods:
  - 1. Excavate below grade as approved by Engineer and backfill with Class I material or approved substitute material at unit price bid or the cost to be included in pipe unit bid price as indicated in Section, Unit Prices.
  - 2. Provide piling or timber cradles in a manner approved by the Engineer. Payment will be made as a change to the Contract Price.
  - 3. Provide concrete cradle or encasement of concrete at unit price bid or the cost to be included in the lump sum price as indicated in Section, Unit Prices.
- K. Rock and Hard Material
  - 1. Excavate rock and hard material to a minimum depth of 4 inches below the pipe for pipes smaller than 30 inches and 6 inches for pipes 30 inches and larger.

### 3.08 BACKFILLING

- A. Weather Limitations: Proceed with backfill operations based on the following weather conditions:
  - 1. Temperature must be above freezing and rising.
  - 2. In windy, hot, or arid conditions with a high rate of evaporation add moisture to the material to maintain the optimum moisture content.
  - 3. Do not proceed in rain or on saturated subgrade.
  - 4. Do not place material on surfaces that are muddy, frozen, or contain frost.
- B. General
  - 1. Maintain backfill operation within 200 feet from pipe laying operation.
  - 2. Backfill trench to existing ground surface with select excavated material at the specified compaction.
  - 3. If excavated material is unsuitable to obtain specified compaction, provide suitable off-site borrow material for backfill.
  - 4. Re-excavate trenches improperly compacted. Backfill and compact as specified.
  - 5. Provide appropriate tamping equipment, and water to obtain proper moisture content, to achieve specified compaction of backfill.
  - 6. Conduct operation of heavy equipment above pipe installation as to prevent damage to pipe.
  - 7. Install warning / identification tape over utilities. Bury tape one foot below finished grade above the utility. -
  - 8. Install tracer wire for non-metallic pipe. Bury tracer wire with pipe. Wire shall be looped into valve boxes to allow access for direct contact location.
- C. Backfill in pipe embedment zone (bedding, haunching, and initial backfill).
  - 1. General:
    - a. Backfill with material as specified below. Material shall be free from objects larger than 2 inches.
    - b. Where rock and hard material has been excavated below pipe bottom, backfill and compact bedding with Class I material. Class II or III material may be used for bedding with Engineer's approval.
    - c. Place backfill material to assure placement of material under pipe haunches.
    - d. Take care during placement and compacting of material to avoid movement of pipe.
  - 2. Place backfill in bedding and haunching zones in 6 inch maximum lifts and compact to 90 percent density. Place initial backfill in one lift do not compact. Provide backfill material in pipe embedment zone as specified below.
- D. Final Backfill
  - 1. Backfill with materials free of stones and free of debris larger than 6 inches in dimension. Place backfill in lifts not exceeding the thickness and compacted to the minimum density specified below.
  - 2. Trench backfilled with noncohesive materials may be compacted with water flooding; except under roadways, shoulders of roadways, and other areas subject to vehicular movement, provided the method of compaction is approved by the Engineer and provides the degree of compaction required.
  - 3. Lifts and density:
    - a. Undeveloped areas (i.e., forests, fields, and, croplands): Trench may be filled with bulldozer blade provided material fall will not damage pipe. Mound soil over the trench area sufficiently to settle level over time. Degree of compaction shall be 85 percent.

- b. Lawns: Backfill in 12-inch lifts and compact to 90 percent. Top 12 inches shall be free of material with a dimension over 2 inches.
  - c. Roads (including Rights-of-way), drives, parking areas (including areas within 20 feet), and adjacent to existing utilities: Backfill in 6 inch lifts compact to 95 percent.
  - d. Within 20 feet of foundations: Backfill in 6-inch lifts compacted to 95 percent.
- E. Utility Structures: Bring backfill to grade in even lifts on all sides. Lift depths and compaction densities shall be as specified according to area of installation for pipe above. Backfill against cast-in-place concrete structure only after concrete has attained the specified 28-day compressive strength.

### 3.09 PAVEMENT PATCHING

- A. Repair damaged pavement structure.
- B. Cut existing pavement for utility installation in straight lines generally parallel to the utility. Properly dispose of removed pavement structure.
- C. Extend pavement patch 1 foot beyond each side of trench on firm subgrade. Slope new surface to drain.
- D. Asphalt Pavements: Replace asphalt pavement with a pavement structure no less than as detailed on the Drawings. For roadways under NC Division of Highways jurisdiction, pavement shall be replaced in accordance with the requirements of the encroachment agreement.
- E. Concrete Pavements: Replace concrete pavement with pavement structure equal to existing but no less than as detailed as Drawings. Concrete shall be minimum 3,000 psi. When existing concrete joint is within 5 feet of trench remove existing concrete to joint. Provide expansion joint at edge of existing concrete. Surface treatment shall match existing.
- F. Approval of Other Authorities: Pavements under the jurisdiction of the NC Division of Highways shall be subject to the approval of a representative of that Division.

### 3.10 GRADING AND CLEAN-UP:

- A. Provide for testing and clean up as soon as practicable, so these operations do not lag far behind the pipe installation. Perform preliminary clean up and grading as soon as backfill is complete.
- B. Provide positive drainage of finished grade and drain away from structures. Finished grade shall be reasonably smooth, compacted, free from irregular surface changes and comparable to the adjacent existing ground surface.
- C. Seed disturbed areas in accordance with Section, Lawns and Grasses.
- D. Upon completion of backfilling, remove and properly dispose of excess material and waste.

END OF SECTION

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## SECTION 32 31 13 - CHAIN LINK FENCES AND GATES

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Posts, rails, and frames.
- B. Wire fabric.
- C. Manual gates with related hardware.
- D. Accessories.

#### 1.02 REFERENCE STANDARDS

- A. ASTM A392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric; 2011a (Reapproved 2022).
- B. ASTM F567 - Standard Practice for Installation of Chain-Link Fence; 2023.
- C. CLFMI CLF-PM0610 - Product Manual; 2017.
- D. FS RR-F-191/1D - Fencing, Wire and Post Metal (Chain-Link Fence Fabric); 1990.

#### 1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on fabric, posts, accessories, fittings and hardware.

#### 1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Fence Installer: Company with demonstrated successful experience installing similar projects and products, with not less than five years of documented experience.

### PART 2 PRODUCTS

#### 2.01 COMPONENTS

- A. Line Posts: 1.9 inch diameter.
- B. Corner and Terminal Posts: 2.38 inch diameter.
- C. Gate Posts: 3-1/2 inch diameter.
- D. Gate Frame: 1.66 inch diameter for welded fabrication.
- E. Fabric: 2 inch diamond mesh interwoven wire, 6 gauge, 0.1920 inch thick, top selvage knuckle end closed, bottom selvage twisted tight.
- F. Fabric with Pre-Inserted Slats: 2 inch diamond mesh interwoven wire, 6 gauge, 0.1920 inch thick, top selvage knuckle end closed, bottom selvage twisted tight.
  - 1. Privacy Slats: High-density polyethylene (HDPE), woven into fabric.
    - a. Visual Barrier: 95 percent.
    - b. Slat Color: Gray.

- G. Tension Wire: 6 gauge, 0.1920 inch thick steel, single strand.
- H. Tie Wire: Aluminum alloy steel wire.

## 2.02 MATERIALS

- A. Posts, Rails, and Frames:
  - 1. Line Posts: Type I round in accordance with FS RR-F-191/1D.
  - 2. Terminal, Corner, Rail, Brace, and Gate Posts: Type I round in accordance with FS RR-F-191/1D.
- B. Wire Fabric:
  - 1. ASTM A392 zinc coated steel chain link fabric.
  - 2. Comply with CLFMI CLF-PM0610.

## 2.03 MANUAL GATES AND RELATED HARDWARE

- A. Hardware for Single Swinging Gates: 180 degree hinges, 2 for gates up to 60 inches high, 3 for taller gates; fork latch with gravity drop and padlock hasp; keeper to hold gate in fully open position.
- B. Hinges: Finished to match fence components.
  - 1. Brackets: Round.
  - 2. Mounting: Center.
  - 3. Closing: Manual.
- C. Latches: Finished to match fence components.

## 2.04 ACCESSORIES

- A. Caps: Cast steel galvanized; sized to post diameter, set screw retainer.
- B. Fittings: Sleeves, bands, clips, rail ends, tension bars, fasteners and fittings; steel.
- C. Privacy Slats: Aluminum strips, sized to fit fabric weave.

## 2.05 FINISHES

- A. Components and Fabric: Vinyl coated over coating of 1.8 ounces per square foot galvanizing.
- B. Color(s): Black.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Install framework, fabric, accessories and gates in accordance with ASTM F567.
- B. Place fabric on outside of posts and rails.
- C. Set intermediate posts plumb, in concrete footings with top of footing 2 inches above finish grade. Slope top of concrete for water runoff.
- D. Line Post Footing Depth Below Finish Grade: ASTM F567.
- E. Install center brace rail on corner gate leaves.
- F. Position bottom of fabric 2 inches above finished grade.

- G. Fasten fabric to top rail, line posts, braces, and bottom tension wire with tie wire at maximum 15 inches on centers.
- H. Attach fabric to end, corner, and gate posts with tension bars and tension bar clips.
- I. Install bottom tension wire stretched taut between terminal posts.
- J. Install hardware and gate with fabric to match fence.

### 3.02 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch.
- B. Maximum Offset From True Position: 1 inch.

### 3.03 CLEANING

- A. Leave immediate work area neat at end of each work day.
- B. Clean jobsite of excess materials; scatter excess material from post hole excavations uniformly away from posts. Remove excess material if required.
- C. Clean fence with mild household detergent and clean water rinse well.
- D. Touch up scratched surfaces using materials recommended by manufacturer. Match touched-up paint color to factory-applied finish.

END OF SECTION

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## SECTION 32 92 00 - LAWNS AND GRASSES

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES

- A. Work shall include, but not be limited to, the following:
  - 1. Surface preparation of subsoil.
  - 2. Addition of lime and fertilizer.
  - 3. Seeding.
  - 4. Maintenance to produce a permanent stand of grass.

#### 1.02 PAYMENT PROCEDURES

- A. Base bid for the work on the specified quantities of lime, fertilizer, and seed.

#### 1.03 REFERENCES

- A. N.C. Department of Agriculture - NCDA
- B. U.S. Department of Agriculture - USDA

#### 1.04 PERFORMANCE REQUIREMENT

- A. Grassed area shall be considered established when it presents a green appearance from eye level 50 feet away and the grass is vigorous and growing well in each square foot of seeded area. It is not required that the seeded area be thick and heavy as an old established lawn.
- B. Should the permanent seed not germinate and produce a strand of grass, reseed affected areas until a permanent stand is established.

#### 1.05 QUALITY ASSURANCE

- A. Quality of fertilizer, lime, and seed, and operations in connection with the furnishing of this material, shall comply with the requirements of the N.C. Fertilizer, Lime and Seed Law; and with the requirements of the rules and, regulations adopted by the NC Department of Agriculture in accordance with the provisions of the said law.
- B. Packages for soil conditioners and fertilizer shall bear manufacturer's guaranteed analysis.
- C. Do not apply lime, fertilizer or seed in strong wind, when the soil is extremely wet, or otherwise unworkable. No rolling shall be done if precipitation after seeding would make the operation detrimental to the seed bed.

#### 1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver grass seed mixture in sealed containers showing percentage of seed mix, year of production, net production, net weight, date of packaging, and location of packaging.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

## 1.07 MAINTENANCE SERVICE

- A. Maintain seeded areas until grass is well established and exhibits a vigorous growing condition for a minimum of two cuttings. Mow grass at regular intervals to a maximum height of 3 inches.
- B. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions.
- C. Water areas seeded between May 1 and July 15 at such intervals as to maintain the seeded area in a moist condition until the grass is established and accepted by the Engineer. Provide equipment to transport and distribute the water to the seeded areas. Areas seeded between September 1 and November 1 need not be irrigated beyond the initial watering specified above except that the Contractor may apply water at his own discretion.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Topsoil: Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from drained site; free of subsoil, clay or impurities, plants, weeds, and roots; pH value of minimum 5.4 and maximum of 7.0.
- B. Lime: Ground Dolomitic agricultural limestone, not less than 85 percent total carbonates, ground so that 50 percent passes 100 mesh sieve and 90 percent passes 30 mesh sieve. Coarser material will be acceptable, provided the specified rates of application are increased proportionately on the basis of quantities passing No. 100 mesh sieve.
- C. Fertilizer: Mixed, commercial, fertilizer containing 10-10-10 percentages of available nitrogen, phosphoric acid, and potash respectively, plus superphosphate with 20 percent P<sub>2</sub>O<sub>5</sub> content. Fertilizer shall be dry, in granular (pellet) form, shall be delivered to the site in the manufacturer's original bag or container which shall be plainly marked as to formula.
- D. Seed: Fresh seed guaranteed 95 percent pure with a minimum germination rate of 85 percent within one year of tests. Provide the following seed mixtures with lime and fertilizer in disturbed areas including NCDOT Rights-of-Way:

<u>Planting Dates</u>	<u>Grass Type</u>	<u>Pounds / Acre</u>
Year Round	Pensacola Bahia	50
	KY 431 Tall Fescue	50
	Centipede	5
Lime		4,000
Fertilizer	10-20-20	500
Mulch	Straw	4,000

On 2:1 slopes delete Centipede and add 25 pounds / acre of Sericea Lespedeza.

#### 1. Temporary Seeding

<u>Planting Dates</u>	<u>Grass Type</u>	<u>Pounds / Acre</u>
Dec. 1 - Apr. 15	Rye (Grain)	120
	Kobe Lespedeza	50

Apr. 15 - Aug. 15	German Millet	40
Aug.15 - Dec.1	Rye (Grain)	120
Lime		3,000
Fertilizer	10-10-10	800
Mulch	Straw	4,000

2. Permanent Seeding

<u>Planting Dates</u>	<u>Grass Type</u>	<u>Pounds / Acre</u>
Feb. 15 - Apr. 30	Tall Fescue	100
&	Pensacola Bahiagrass	50
Sept. 1 - Oct. 31	Kobe Lespedeza	40
	Tall Fescue	100
	Pensacola Bahiagrass	50
Lime		4,000
Fertilizer	10-10-10	1,000
Mulch	Straw	4,000

- E. Matting / Erosion Control Fabric (ECF): Matting and ECF shall be heavy jute mesh over mulch held in place by staples. Commercially available ECFs may be used upon approval of the engineer. Approval of fabrics will require manufacturer's design data regarding velocity, ditch slopes, method of installation, decay cycle, repair techniques, and grass growth enhancement characteristics.
- F. Wire Staples: 16 gauge steel wire, with minimum of 3" top and 4" long legs.
- G. Mulch: Threshed straw of oats, wheat, or rye; free from seed of obnoxious weeds; or clean salt hay. Straw which is fresh and excessively brittle or straw which is in such an advanced stage of decomposition as to smother or retard growth of grass will not be acceptable.
- H. Water: Water shall be free from substances harmful to growth of grass.

PART 3 EXECUTION

3.01 PREPARATION OF SUBSOIL

- A. Complete operations in the area to be seeded and prepare subsoil to eliminate uneven areas and low spots. Bring surface to the approximate design contours.
- B. Scarify subsoil to a depth of 3 inches. Remove weeds, roots, stones and foreign materials 1-1/2 inches in diameter and larger.

3.02 APPLICATION OF LIME

- A. Liming shall be done immediately after grading has reached the fine grading stage, even though actual seeding may not be done until several months later.
- B. Spread lime evenly by means of a mechanical distributor.

3.03 APPLICATION OF FERTILIZER

- A. Spread fertilizer not more than 2 weeks in advance of seeding.

- B. Provide mechanical spreader for even distribution and spread half of the rate in one direction, and the other half at right angles to the first. Mix thoroughly into upper 2 to 3 inches of soil by disking, harrowing or other approved methods.

### 3.04 SEEDING

- A. Accomplish seeding by means of an approved power-drawn seed drill, combination corrugated roller-seeder, approved hand operated mechanical seeder, or other approved methods to provide even distribution of seed.
- B. Do not seed when ground is excessively wet or excessively dry. After seeding, roll area with a roller, not less than 18 inches in diameter and weighing not more than 210 pounds per foot of width. Upon completion of rolling, water area with a fine spray.
- C. Immediately following seeding apply mulch or matting. Do not seed areas in excess of that which can be mulched on same day.
- D. Apply water with a fine spray immediately after each area has been mulched. Saturate to 4 inches of soil depth

### 3.05 MULCHING AND MATTING

- A. Apply mulch or matting as required to retain soil and grass, but no less than the following:
  1. Slopes from 0 to 20 percent by spreading a light cover of mulch over seeded area at the rate of not less than 85 lbs. per 1000 sq. ft.
  2. Slopes greater than 20 percent mulch with matting. Pin matting to the ground with wire staples at 5 foot intervals, immediately after seeding.
  3. Use tack to prevent disruption of mulch.
- B. For tack use an asphalt tie-down of emulsified asphalt grade AE-3 or cut-back asphalt grade RC-2 or other approved equal. The application rate shall be 0.10 gal/sy (11 gal / 1000 sq ft). An approved jute mesh or net may be used in lieu of tacking straw mulch.
- C. Other types of mulch and anchoring methods may be used upon approval by the Engineer.

### 3.06 PROTECTION

- A. Protect seeded areas from damage by barricades, signs, and other appropriate means. Maintain and protect slopes from weather damage.

END OF SECTION

SECTION 33 71 19 - ELECTRICAL UNDERGROUND DUCTS, DUCTBANKS, AND  
MANHOLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Conduit and duct:
  - 1. Galvanized steel rigid metal conduit (RMC).
  - 2. Rigid polyvinyl chloride (PVC) conduit.
  - 3. High density polyethylene (HDPE) conduit.
- B. Precast concrete manholes.
- C. Cast-in-place manhole accessories.
- D. Underground boxes/enclosures.
- E. Accessories:
  - 1. Underground warning tape.

1.02 RELATED REQUIREMENTS

- A. Section 03 10 00 - Concrete Forming and Accessories.
- B. Section 03 20 00 - Concrete Reinforcing.
- C. Section 03 30 00 - Cast-in-Place Concrete.

1.03 REFERENCE STANDARDS

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC); 2020.
- B. ASTM C858 - Standard Specification for Underground Precast Concrete Utility Structures; 2019.
- C. ASTM C891 - Standard Practice for Installation of Underground Precast Concrete Utility Structures; 2020.
- D. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
- E. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; 2020.
- F. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; 2021.
- G. NEMA TC 7 - Solid-Wall Coilable and Straight Electrical Polyethylene Conduit; 2021.
- H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL 6 - Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.
- J. UL 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.

- K. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.
- L. UL 651A - Schedule 40 and 80 High Density Polyethylene (HDPE) Conduit; Current Edition, Including All Revisions.

#### 1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide for metallic conduit, nonmetallic conduit, and manhole accessories.
- C. Shop Drawings: Indicate dimensions, reinforcement, size and locations of openings, and accessory locations for precast manholes.
- D. Project Record Documents: Record actual routing and elevations of underground conduit and duct, and locations and sizes of manholes.

### PART 2 PRODUCTS

#### 2.01 CONDUIT AND DUCT

- A. Galvanized Steel Rigid Metal Conduit (RMC): NFPA 70, Type RMC; comply with ANSI C80.1 and list and label as complying with UL 6.
  - 1. Fittings: Comply with NEMA FB 1 and list and label as complying with UL 514B; steel or malleable iron, threaded type.
- B. Rigid Polyvinyl Chloride (PVC) Conduit: NFPA 70, Type PVC; comply with NEMA TC 2 and list and label as complying with UL 651; Schedule 40 unless otherwise indicated; rated for use with conductors rated 90 degrees C.
  - 1. Manufacturers:
  - 2. Fittings: Comply with NEMA TC 3 and list and label as complying with UL 651.
    - a. Manufacturer: Same as manufacturer of conduit to be connected.
- C. High Density Polyethylene (HDPE) Conduit: NFPA 70, Type HDPE; comply with NEMA TC 7 and list and label as complying with UL 651A; Schedule 40 unless otherwise indicated.

#### 2.02 PRECAST CONCRETE MANHOLES

- A. Manufacturers:
  - 1. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Description: Precast manhole designed in accordance with ASTM C858, comprising modular, interlocking sections complete with accessories.

#### 2.03 CAST-IN-PLACE MANHOLE ACCESSORIES

#### 2.04 ACCESSORIES

- A. Duct Bank Spacers: Nonmetallic; designed for maintaining conduit/duct spacing for concrete encasement in open trench installation; suitable for the conduit/duct arrangement to be installed.
- B. Underground Warning Tape: Polyethylene tape suitable for direct burial.
  - 1. Manufacturers:

- a. Brady Corporation; \_\_\_\_\_
- b. Seton Identification Products; \_\_\_\_\_
2. Legend: Type of service, continuously repeated over full length of tape.
3. Color:
  - a. Tape for Buried Power Lines: Black text on red background.
  - b. Tape for Buried Communication, Alarm, and Signal Lines: Black text on orange background.

## PART 3 EXECUTION

### 3.01 DUCT BANK INSTALLATION

- A. Install duct with minimum slope of 4 inches per 100 feet (0.33 percent). Slope duct away from building entrances.
- B. Cut duct square using saw or pipe cutter; de-burr cut ends.
- C. Insert duct to shoulder of fittings; fasten securely.
- D. Install no more than equivalent of three 90-degree bends between pull points.
- E. Provide suitable fittings to accommodate expansion and deflection where required.
- F. Stagger duct joints vertically in concrete encasement 6 inches minimum.
- G. Use suitable separators and chairs installed not greater than 4 feet on centers.
- H. Band ducts together before backfilling.
- I. Securely anchor duct to prevent movement during concrete placement.
- J. Place concrete under provisions of Section 03 30 00. Use mineral pigment to color concrete red.
- K. Provide minimum 3 inch concrete cover at bottom, top, and sides of ductbank.
- L. Provide two No. 4 steel reinforcing bars in top of bank under paved areas.
- M. Provide suitable pull string in each empty duct except sleeves and nipples.
- N. Swab duct. Use suitable caps to protect installed duct against entrance of dirt and moisture.

### 3.02 PRE-CAST MANHOLE INSTALLATION

- A. Install and seal precast sections in accordance with ASTM C891.
- B. Install manholes plumb.
- C. Use precast neck and shaft sections to bring manhole cover to finished elevation.

### 3.03 CAST-IN-PLACE MANHOLE INSTALLATION

- A. Formwork: Form inside and outside manhole surfaces in accordance with provisions of Section 03 10 00.
- B. Reinforcing: Install reinforcing under the provisions of Section 03 20 00.
- C. Concrete: Provide air-entrained, 2000 psi compressive strength at 28 days under the provisions of Section 03 30 00.

D. Shape: Square.

E. Base: Include 14 inch drain opening and two 1 inch ground rod openings. Slope to drain at 0.25 inch per foot (2 percent).

END OF SECTION