

SOUTHEASTERN CONSULTING ENGINEERS, INC.  
600 MINUET LANE  
CHARLOTTE, NORTH CAROLINA 28217  
N.C. LICENSE NO. F-0181

SPECIFICATIONS  
FOR  
POLICE STATION/CITY HALL GENERATOR INSTALLATION

CITY OF CONCORD  
CONCORD, NORTH CAROLINA  
BID NO. 2464



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NOTICE AND INSTRUCTIONS TO BIDDERS

1. Sealed proposals, including the supply of the necessary labor, equipment, and materials for installation of a diesel generation facility in Concord, North Carolina for the City of Concord (hereinafter called the "Owner") will be received on or before 1:30 PM, Thursday, December 17<sup>th</sup>, 2020, in the Ready Room of the Alfred M. Brown Operations Center at 635 Alfred Brown Jr. Court SW, Concord, North Carolina, at which time they will be opened and read. Any bids received after the time and date specified will not be considered. Proposals shall be mailed or delivered to: City of Concord, 635 Alfred Brown Jr. Court SW, Concord, North Carolina 28026, Attention: Susan Sessler.

2. Prior to bid opening the City and Engineer have scheduled a pre-bid meeting at the construction site (41 Cabarrus Avenue W., Concord, North Carolina 28027) on Tuesday, December 8<sup>th</sup>, 2020, at 9:00 AM EST.

Envelopes containing bids shall be marked as follows:

\_\_\_\_\_

(Your Company Title)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Address)

To: City of Concord  
635 Alfred Brown Jr. Court SW  
Concord, N.C. 28026  
Attn: Susan Sessler

Proposal for Police Station/City Hall Generator Installation  
Bid Opening 1:30 PM, EST Thursday, December 17<sup>th</sup>, 2020  
License No. \_\_\_\_\_

3. The project consists of installing a standby emergency generator and all equipment as shown on the enclosed construction drawings and plans.

4. The Plans, Specifications, and Construction Drawings together with all necessary forms and documents for bidders may be obtained from the Owner's Engineer, Southeastern Consulting Engineers, Inc., at the latter's office at 600 Minuet Lane, P. O. Box 240436, Charlotte, NC 28224. The Plans, Specifications, and Construction Drawings may be examined at the office of the Owner or at the office of the Engineer.

5. Proposals, together with all supporting instruments, must be submitted on the forms furnished.

6. Consideration will be given only to bids of Contractors properly licensed to perform the work required.

7. Each Bidder shall include and shall be deemed to have included, in the price quoted in the Contractor's Proposal, the amounts which it is estimated will be payable by the successful Bidder, on account of taxes imposed by any taxing authority upon the sale, purchase or use of materials, supplies or equipment incorporated in the Project. All taxes of the foregoing descriptions shall be payable by the Bidder which shall be awarded the Contract for the construction of the Project.

8. Each Proposal must be accompanied by a certified check on a bank that is a member of the Federal Deposit Insurance Corporation payable to the order of the Owner, or a Bidder's Bond acceptable to the Owner and running in favor of the Owner, in an amount equal to five percent (5%) of the maximum bid price. If a proposal is not accepted or if a proposal is accepted and a contract is executed, the check or Bidder's Bond will be returned in each instance within a period of thirty (30) days to the Bidder furnishing same; except that each Bidder agrees, provided its proposal is one of the three low proposals, that, by filing its proposal together with such check or Bidder's Bond in consideration of the Owner's receiving and considering such proposal, said proposal shall be firm and binding upon each such Bidder and such check or Bidder's Bond shall be held by the Owner for a period not exceeding ninety (90) days from the date hereinabove set for the opening of the Proposals.

9. The successful Bidder will be required to enter into a contract with the Owner and to furnish Performance and Payment Bonds, in the forms attached hereto, for the full amount of the contract price, which bonds will guarantee the full performance of the contract.

10. The name of a certain brand, make, manufacturer, etc. is to denote quality, style, type, etc., desired; and does not restrict Bidders to a specific make or manufacturer unless noted as "No Substitutes". The successful Bidder, however, must furnish materials equivalent to those specified.

11. The successful Bidder will commence construction within ten (10) calendar days after the Engineer has given written notice to commence construction, and will prosecute diligently and complete construction to the satisfaction of the Owner within 90 calendar days of commencement. Notice to commence construction is expected to be issued on January 18, 2021.

12. The Owner reserves the right to reject any and all bids and to accept any bid which appears to be in the best interest of the Owner.

13. The Owner reserves the right to waive minor irregularities or minor errors in any Proposal, if it appears to the Owner that such irregularities or errors were made through inadvertence. Any such irregularities or errors so waived must be corrected on the Proposal in which they occur prior to the execution of any Contract which may be awarded thereon.

14. Contractors must be pre-qualified prior to bid being considered.

CITY OF CONCORD  
CONCORD, NORTH CAROLINA  
(Owner)

SOUTHEASTERN CONSULTING  
ENGINEERS, INC  
(Engineer)

Date: November 24, 2020

# QUALIFICATIONS

## Qualifications Statement

**PLEASE NOTE: Contractors must be pre-qualified prior to Bid being considered.**

Bidder warrants the truth and accuracy of all statements and answers contained in this Qualifications Statement. Inclusion of any false statement(s) may be grounds for Owner declaring the Bid nonresponsive. Bidder shall provide information requested herein in its entirety.

If Bidder subcontracts portions of the Work, Owner and/or Engineer will consider the qualifications of Subcontractors identified elsewhere in the Bid and may request information similar to that contained in this Qualifications Statement from Subcontractors.

Upon receipt by Owner, this Qualifications Statement is considered a public record except for material that qualifies as "Trade Secret" information under North Carolina General Statute 66-152 et seq. Owner and Engineer will review the Qualifications Statement. In addition, members of the general public who submit public record requests will also have access to information not identified as "Trade Secret." To properly designate material as a trade secret under these circumstances, Bidder must take the following precautions:

1. Any trade secret submitted by Bidder should be submitted in a separate, sealed envelope marked "Trade Secret – Confidential and Proprietary Information – Do Not Disclose Except for the Purpose of Evaluating this Qualifications Statement"; and
2. The same trade secret/confidentiality designation should be stamped on each page of the trade secret materials contained in the envelope.

In submitting a Qualifications Statement, Bidder agrees that Owner may reveal any trade secret materials contained in such response to all Owner staff and officials involved in the Bid process and to any outside consultant or other third parties who will review this portion of the Bid. Furthermore, Bidder agrees to indemnify and hold harmless Owner and its officers, employees and agents from all costs, damages, and expenses incurred in connection with refusing to disclose any material that Bidder has designated as a trade secret.

Owner may declare a Bid nonresponsive if Bidder designates the entire Qualifications Statement as a trade secret.

**1. SUBMITTED BY:**

Official Name of Firm: \_\_\_\_\_

Contact Person: \_\_\_\_\_  
(for Qualifications Statement)

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

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

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

**2. SUBMITTED TO:** City of Concord, North Carolina

**3. SUBMITTED FOR**

Project Name: Police Station/City Hall Generator Installation

**4. AFFILIATED COMPANIES:**

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

Address: \_\_\_\_\_

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

**5. TYPE OF ORGANIZATION:**

SOLE PROPRIETORSHIP

Name of Owner: \_\_\_\_\_

Doing Business As: \_\_\_\_\_

Date of Organization: \_\_\_\_\_

PARTNERSHIP

Date of Organization: \_\_\_\_\_

Type of Partnership: \_\_\_\_\_

Name of General Partner(s): \_\_\_\_\_

CORPORATION

State of Organization: \_\_\_\_\_

Date of Organization: \_\_\_\_\_

Executive Officers:

- President: \_\_\_\_\_

- Vice President(s): \_\_\_\_\_

LIMITED LIABILITY COMPANY

State of Organization: \_\_\_\_\_

Date of Organization: \_\_\_\_\_

Members: \_\_\_\_\_

JOINT VENTURE

Sate of Organization: \_\_\_\_\_

Date of Organization: \_\_\_\_\_

Form of Organization: \_\_\_\_\_

Joint Venture Managing Partner

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

- Address: \_\_\_\_\_

Joint Venture Managing Partner

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

- Address: \_\_\_\_\_

Joint Venture Managing Partner

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

- Address: \_\_\_\_\_

\_\_\_\_\_

**6. BONDING INFORMATION**

Bonding Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Bonding Agent: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

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

Aggregate Bonding Capacity: \_\_\_\_\_

Available Bonding Capacity as of date of this submittal: \_\_\_\_\_

**7. FINANCIAL INFORMATION**

Financial Institution: (may be requested after bid) \_\_\_\_\_

Address: (may be requested after bid) \_\_\_\_\_

\_\_\_\_\_

Account Manager: (may be requested after bid) \_\_\_\_\_

Phone: (may be requested after bid) \_\_\_\_\_

AUDITED BALANCE SHEET FOR EACH OF THE LAST 3 YEARS MAY BE REQUESTED.



**8. CONSTRUCTION EXPERIENCE:**

A. Current Experience:

List on **Schedule A** all uncompleted projects currently under contract (If Joint Venture list each participant's projects separately).

B. Previous Experience:

List on **Schedule B** all projects completed within the last 5 Years (If Joint Venture list each participant's projects separately).

C. Similar Experience:

Complete **Project Qualifications** (Attachment 4) and provide experience related to Owner's Project.

**9. EQUIPMENT:**

MAJOR EQUIPMENT:

List on **Schedule C** all pieces of major equipment available for use on Owner's Project.

**10. GENERAL BACKGROUND:**

A. Has the firm listed in Section 1 ever failed to complete a construction contract awarded to it?

YES  NO

If YES, attach as an Attachment details including Project Owner's contact information.

B. Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a construction contract awarded to them in their name or when acting as a principal of another entity?

YES  NO

If YES, attach as an Attachment details including Project Owner's contact information.

C. Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

YES  NO

If YES, attach as an Attachment details including Project Owner's contact information.

D. Has the firm listed in Section 1 ever had a bankruptcy petition filed in its name, voluntarily or involuntarily within the last 10 years?

YES  NO

If YES, attach as an Attachment details including Project Owner's contact information.

E. Has the firm listed in Section 1 ever been assessed liquidated damages (LDs) in the past 10 years or served as an owner with a claim for additional compensation prepared by an attorney or a claims consultant, excluding routine change order requests?

YES  NO

If YES, attach as an Attachment details including Project Owner's contact information.

F. Has the firm listed in Section 1 defaulted on any loan agreement or financing with any bank, financial institution, or entity within the last 10 years?

YES  NO

If YES, attach as an Attachment details including Project Owner's contact information.

G. Have performance or payment bond claims ever been paid by a surety for the firm listed in Section 1 on any project in the last 10 years?

YES  NO

If YES, attach as an Attachment details including Project Owner's contact information.

H. In the past 10 years, has any surety refused to bond the firm listed in Section 1 on any project?

YES  NO

If YES, attach as an Attachment details including Project Owner's contact information.

I HEREBY CERTIFY THAT THE INFORMATION SUBMITTED HERewith, INCLUDING ANY ATTACHMENTS, IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NAME OF ORGANIZATION: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATED: \_\_\_\_\_

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_

NOTARY PUBLIC - STATE OF \_\_\_\_\_

MY COMMISSION EXPIRES: \_\_\_\_\_

**ATTACHMENTS**

1. Schedule A (Current Experience) - REQUIRED
2. Schedule B (Previous Experience) – REQUIRED
3. Schedule C (Major Equipment) – REQUIRED
4. Project Qualifications - REQUIRED
5. Applicable attachments for questions in Section 10.

The Owner reserves the right to require confirmation of information furnished by a Bidder, require additional information from a Bidder concerning its bid and require additional evidence of qualifications to perform the work described in this Invitation to Bid.

Bidder warrants the truth and accuracy of all statements and answers contained in this Qualifications Statement. Inclusion of any false statement(s) may be grounds for Owner declaring the Bid nonresponsive. Bidder shall provide information requested herein in its entirety.

**SCHEDULE A – CURRENT  
EXPERIENCE**

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Cost of Work
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date: Anticipated Completion Date:		
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date: Anticipated Completion Date:		
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date: Anticipated Completion Date:		
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date: Anticipated Completion Date:		
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date: Anticipated Completion Date:		

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Cost of Work
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date:  Anticipated Completion Date:		
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date:  Anticipated Completion Date:		
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date:  Anticipated Completion Date:		
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date:  Anticipated Completion Date:		
	Name:  Address:  Telephone:	Name:  Company: Telephone:	Contract Start Date:  Contract Completion Date:  Anticipated Completion Date:		

**SCHEDULE B – PREVIOUS EXPERIENCE (All projects completed within the past 5 years.)**

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:	Contract Start Date: Contract Completion Date: Actual Completion Date:		
	Name: Address: Telephone:	Name: Company: Telephone:	Contract Start Date: Contract Completion Date: Actual Completion Date:		
	Name: Address: Telephone:	Name: Company: Telephone:	Contract Start Date: Contract Completion Date: Actual Completion Date:		
	Name: Address: Telephone:	Name: Company: Telephone:	Contract Start Date: Contract Completion Date: Actual Completion Date:		
	Name: Address: Telephone:	Name: Company: Telephone:	Contract Start Date: Contract Completion Date: Actual Completion Date:		

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Cost of Work
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date:  Actual Completion Date:		
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date:  Actual Completion Date:		
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date:  Actual Completion Date:		
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date:  Actual Completion Date:		
	Name: Address:  Telephone:	Name: Company: Telephone:	Contract Start Date:  Contract Completion Date:  Actual Completion Date:		





## PROJECT QUALIFICATIONS

Bidder warrants the truth and accuracy of all statements and answers contained in this Project Qualifications statement. Inclusion of false statement(s) may be grounds for Owner declaring the Bid nonresponsive. Bidder shall provide information requesting herein in its entirety.

### Additional qualification criteria:

1. Provide superintendent and foreman qualifications/resumes.
2. Provide safety records for the past 10 years.
3. Provide copy of written safety program.
4. Provide a list of projects utilizing generator(s) (greater than 1MW), rigid-metallic conduits, underground sched. 40 PVC conduits, and reinforced concrete duct banks.
5. List of similar (generator, plus ancillary equipment) projects completed in the past 10 years including description of work and references.
6. Provide a list of electrical PPE owned by the firm and also detail which equipment or apparel is issued to each crew/worker.
7. If utilizing subcontractor for any portion work (terminations, testing, underground construction, etc.) please provide the name of the firm.
8. List all pieces of relevant equipment available for use on this project with details including proper operational training and experience.
9. List all grounding system installation and testing experience.
10. Provide a list of previous and/or current projects the firm has performed for the City of Concord.

NOTE: This form shall be submitted with the Bid in accordance with the Instructions to Bidders

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Bidder's Signature

## PROPOSAL

TO: CITY OF CONCORD  
CONCORD, NORTH CAROLINA

GENTLEMEN:

The undersigned has carefully examined the annexed form of General Conditions, Specifications, Plans, and Construction Drawings, and hereby declares that he will furnish miscellaneous materials and install the following items in strict accordance with the Plans, Specifications and Construction Drawings, for the following prices:

### Proposal Instructions

1. The Bidder's Proposal shall specify the price, with the price to include all costs for performance of the Work required as per Plans, Specifications, and Construction Drawings for the Project which includes, but is not limited to the following;

(a) Construction of concrete pads for the engine - generator module and the automatic transfer switch.

(b) Unloading and setting, as well as anchoring and wiring the equipment to be installed at the site which includes an engine-generator module, an automatic transfer switch, and necessary auxiliary equipment. The Equipment is to be located and installed, and connected at the City Hall (Fire Pump) and Concord Police Department, 41 Cabarrus Avenue W, Concord, North Carolina 28025.

(c) The Contractor will be responsible for assisting the manufacturer with the commissioning of the new generator.

(d) The Contractor will be responsible for running the existing generator to ensure the Police Department and City Hall do not see an outage, and is energized at all times.

The Owner has final approval to schedule any outages. The Contractor will be responsible for providing any backup generation needed during construction.

(e) The Owner will furnish all of the equipment on the following **“List of Owner Furnished Equipment”**.

**LIST OF OWNER FURNISHED EQUIPMENT**

<u>Quantity</u>	<u>Item Description</u>
One (1)	Generator Module, 1250 KW prime, 277/480 volts. Weight - 20,000 lbs. Size - 30 Ft. 11 In. long, 10 Ft. wide, 15 Ft. 1.5 In. high
One (1)	Automatic Transfer Switch Weight - 1325 lbs. Size - 5 Ft. 2 In. long, 3 Ft. 5 In. wide, 7 Ft. 11.5 In. high

2. It is the responsibility of Contractor to examine the Plans, Specifications and Construction Drawings thoroughly; visit the site and storage areas to become familiar with access and local conditions that may affect cost, progress, performance or furnishing of the Work; study and carefully correlate Bidder's observations with the Specifications and construction plans; and notify Engineer of any observed conflicts, errors or discrepancies in the Contract Documents or construction plans.

3. North Carolina Sales Tax is applicable to this purchase. Contractor shall show, as a separate item in addition to the price quoted, the amounts which will be payable by the Contractor on account of taxes imposed by any taxing authority upon the sale, purchase, or use of materials, supplies, or equipment included in the items furnished.

CITY OF CONCORD  
CONCORD, NORTH CAROLINA  
Owner

SOUTHEASTERN CONSULTING  
ENGINEERS, INC.  
Engineer

Date: November 24, 2020

**PROPOSAL** (Continued)

**BID PRICES**

<u>Site</u>	<u>Lump Sum Price</u>
Police Department/City Hall Generator Installation (Includes all work contained within these bid documents, specifications, and drawings.)	\$ _____

Miscellaneous Unit Prices: (For Contingencies only - all work as shown on plans to be included in Bid Price above.) Unit prices shall include material and labor.

Unit Adder - Suitable Fill	\$ _____/Cu. Yard
Unit Adder - Additional Excavation	\$ _____/Cu. Yard
Unit Adder - Rock Excavation	\$ _____/Cu. Yard
Unit Adder - Cut & Patch Sidewalk/Concrete	\$ _____/Cu. Yard
Unit Adder - Directional Bore - 2-2"C.	\$ _____/Ft.
Unit Adder - Additional Concrete, including forming, finishing, and reinforcing steel	\$ _____/Cu. Yard
Unit Adder - Gravel, A-B-C	\$ _____/Cu. Yard
Unit Adder - Gravel, 78M	\$ _____/Cu. Yard
Unit Adder - 600 MCM Cu. UD	\$ _____/Ft.
Unit Adder - #1 Cu. UD	\$ _____/Ft.
Unit Adder - #4/0 Cu. UD	\$ _____/Ft.
Unit Adder - #6 Cu. UD	\$ _____/Ft.
Unit Adder - #12 Cu. UD	\$ _____/Ft.
Unit Adder - #14 Cu. UD	\$ _____/Ft.
Unit Adder - #4/0 Bare Cu.	\$ _____/Ft.
Unit Adder - 1" Sch. 40 PVC Conduit	\$ _____/Ft.
Unit Adder - 1¼" Sch. 40 PVC Conduit	\$ _____/Ft.
Unit Adder - 2" Sch. 40 PVC Conduit	\$ _____/Ft.



## STANDARD FORM CONSTRUCTION CONTRACT

This contract is made and entered into as of the \_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by the City of CONCORD (“City”) and \_\_\_\_\_ (“Contractor”), (x) a corporation, ( ) a professional corporation, ( ) a professional association, ( ) a limited partnership, ( ) a sole proprietorship, or ( ) a general partnership; organized and existing under the laws of the State of \_\_\_\_\_.

### **Sec. 1. Background and Purpose.**

**Sec. 2. Services and Scope to be Performed.** The Contractor shall provide \_\_\_\_\_ at the charges set forth either in this paragraph or in Exhibit “A”. Additional Exhibits may be used to further define this Agreement when the Contractor and City so agree. Any additional exhibits shall be designated as exhibits to the Agreement with capitalized, sequential letters of the alphabet, shall be attached hereto and incorporated herein by reference as if the same were fully recited, and shall become terms of this Agreement upon execution by both parties.

In this contract, “services” means the services that the Contractor is required to perform pursuant to this contract and all of the Contractor’s duties to the City that arise out of this contract. Any amendments, corrections, or change orders by either party must be made in writing signed in the same manner as the original. (This form may be used for amendments and change orders.) The City reserves the right to refuse payment for any work outside that authorized herein or pursuant to a duly approved amendment or change order.

**Sec. 3. Complete Work without Extra Cost.** Unless otherwise provided, the Contractor shall obtain and provide, without additional cost to the City, all labor, materials, equipment, transportation, facilities, services, permits, and licenses necessary to perform the Work.

**Sec. 4. Compensation.** The City shall pay the Contractor for the Work as described in this paragraph below OR as described in Exhibit A attached. In the event of a conflict, the provisions of this paragraph shall control. Any additional expenses or charges shall only be paid after both the City and the Contractor agree to and execute a written change order. The City shall not be obligated to pay the Contractor any fees, payments, expenses or compensation other than those authorized in this contract or in a duly-approved change order.

**Sec. 4a. Retainage.** The City shall withhold no retainage on Contracts having a “total project cost” of less than \$100,000.00. The City may withhold retainage on contracts having a total project cost between \$100,000 and \$200,000. The City shall withhold retainage on contracts whose total project cost exceeds \$300,000. When withheld, retainage shall equal no more than five percent of each progress payment. When the project is fifty per cent complete, the City shall not retain anything from future project payments provided that (i) the surety concurs in writing, (ii) the Contractor continues to perform satisfactorily, (iii) any non-conforming work identified in writing by the architect, engineer(s) or City has been corrected by the Contractor and accepted by the architect, engineer(s) or City. However, if the City determines that the Contractor’s performance is unsatisfactory, the City may withhold up to five percent retainage from each project payment. The City may withhold additional amounts above five percent for unsatisfactory job progress, defective construction not remedied, disputed work, third party claims filed against the owner or reasonable evidence that a third-party claim will be filed.

### **Definitions:**

“Total Project Cost”: Total value of the Contract and any approved change orders or amendments.

“Project Fifty Percent Complete”: When the Contractor’s gross project invoices (excluding the value of the materials stored off-site) equal or exceed fifty percent of the value of the contract, except that the value of materials stored on-site shall not exceed twenty percent of the Contractor’s gross project invoices for the purpose of determining whether the project is fifty percent complete.

**Sec. 5. Term.** The Contractor shall commence work within \_\_\_\_\_ ( ) days of the date of its receipt of written Notice to Proceed from the City. The date that is \_\_\_\_\_ ( ) days from the date of the Contractor’s receipt of the Notice to Proceed shall be the “Commencement Date.” All work as set forth in the Scope of Services in Exhibit “A” shall be completed within \_\_\_\_\_ ( ) calendar days of the Commencement Date. The date that is \_\_\_\_\_ ( ) calendar days from the Commencement Date shall be the “Completion Date.” Time is of the essence with regard to this Project. If Contractor’s obligations are not completed by the Completion Date, the City reserves the right to nullify this Agreement, order the Contractor to immediately cease all work under this Agreement and vacate the premises, and to seek professional services equivalent to those outlined in Exhibit “A.” The Contractor shall be held accountable for all damages incurred by the City as a consequence of the missed Completion Date. The exercise of any of these rights by the City shall not be interpreted to prejudice any other rights the City may have in law or equity. This Contract shall not be automatically extended unless agreed to in writing by the City or as provided in Exhibit “A”.

**Sec. 6. Contractor’s Billings to City.** Payments will be made in accordance with the schedule found in this section below OR attached at Exhibit A. Contractor shall submit an original pay request (invoice) to the City Purchasing Agent by the first of each month in order to expedite payment. Upon receipt of the request the City Purchasing Agent shall verify the amounts and if correct forward the request to the Accounts Receivable Division of the Finance Dept. Final payment on the contract shall be made in 45 days, except in the case of retainage. Within 60 days after the submission of the final pay request, the City (with the written consent of the surety) shall release to the Contractor all retainage payments IF the City receives a certificate of substantial completion from the architect, engineer or designer-in-charge of the project OR the City receives beneficial occupancy and use of the project. In either case, the City may retain up to 2.5 times the estimated value of the work to be completed or corrected.

**Sec. 7. Insurance.** Contractor shall maintain and cause all sub-contractors to maintain insurance policies at all times with minimum limits as follows:

<u>Coverage</u>	<u>Minimum Limits</u>
Workers’ Compensation	\$100,000 each accident, \$100,000 bodily injury by disease each employee, \$500,000 bodily injury by disease policy limit
General Liability	\$1,000,000 per occurrence regardless of the contract size
Automobile Liability	\$1,000,000 per occurrence regardless of the contract size
Umbrella	<input type="checkbox"/> \$1,000,000 per occurrence if contract does not exceed 180 days and does not exceed \$500,000; otherwise,
	<input type="checkbox"/> \$2,000,000

Contractor shall provide a Certificate of Insurance to the City listing the City as an additional insured. Such Certificate shall be in a form acceptable to the City.

**Sec. 8. Documentation Requirements:**

A. Contractor shall provide the City with a **Certificate of Insurance** for review prior to the issuance of any contract or Purchase Order. All Certificates of Insurance will require written notice by the insurer or contractor’s agent in the event of cancellation, reduction or other modifications of coverage by the insurer. Such notice shall be not less than 30 days for nonrenewal by the insurer, not less than 10 days for cancellation due to nonpayment of the premium and as soon as possible for all other types of modifications. In addition to the notice requirement above, Contractor shall provide the City with written notice of cancellation, reduction, or other modification of coverage of insurance whether instigated by the insurer or by the Contractor immediately upon Contractor’s receipt of knowledge of such modifications. Upon failure of the Contractor to provide such notice, Contractor assumes sole responsibility for all losses incurred by the City for which insurance would have provided coverage. The insurance certificate shall

be for the insured period in which the initial contract period begins and shall be renewed by the contractor for each subsequent renewal period of the insurance for so long as the contract remains in effect.

The City shall be named as an **additional insured** on all policies except Workers' Compensation and it is required that coverage be placed with "A" rated insurance companies acceptable to the City. Statement should read, "City of Concord is added as an additional insured as evidenced by an endorsement attached to this certificate." Failure to maintain the required insurance in force may be cause for termination of this Agreement. In the event that the contractor fails to maintain and keep in force the insurance herein required, the City has the right to cancel and terminate the Agreement without notice.

B. All those doing business with the City must have a current **Privilege License** issued by the City of Concord if a privilege license is authorized by law.

C. Contractor shall provide a completed W-9 form to the City prior to execution by the City of this Agreement.

### **Sec. 9. Performance of Work by Contractor.**

(a) The Contractor warrants that all work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier. This warranty shall continue for a period of 1 year from the date of issuance by the City of written final completion of the work.

(b) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to City - owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

(c) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(d) The City shall notify the Contractor, in writing, within a reasonable time, not to exceed 30 days, after the discovery of any failure, defect, or damage.

(e) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time, not to exceed 30 days unless otherwise agreed in writing and signed by the City Manager or his designee, after receipt of notice, the City shall have the right to replace repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(f) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice,

(2) Require all warranties to be executed, in writing, for the benefit of the City, if directed to do so by the City; and

(3) Enforce all warranties for the benefit of the City, if directed to do so by the City



(g) In the event the Contractor's warranty has expired, the City may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(h) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the City nor for the repair of any damage that results from any defect in City-furnished material or design.

**Sec. 10. Performance of Work by City.** If the Contractor fails to perform the Work in accordance with the schedule referred to in Exhibit "A", the City may, in its discretion, perform or cause to be performed some or all of the Work, and doing so shall not waive any of the City's rights and remedies. Before doing so, the City shall give the Contractor reasonable notice of its intention. The Contractor shall reimburse the City for all costs incurred by the City in exercising its right to perform or cause to be performed some or all of the Work pursuant to this section.

**Sec. 11. Attachments.** Additional Exhibits may be used to further define this Agreement when the Contractor and City so agree. Any additional exhibits shall be designated as exhibits to the Agreement with capitalized, sequential letters of the alphabet, shall be attached hereto and incorporated herein by reference as if the same were fully recited, and shall become terms of this Agreement upon execution by both parties.

*The following attachments* are made a part of this contract and incorporated herein by reference:

- (a) Exhibit "A" – Scope of Services / Fee for Scope of Services.
- (b) Exhibit "B" – Contractor must execute the Affidavit attached as Exhibit B, attesting to compliance with state and federal laws related to E-Verify.
- (c) Exhibit "C" – Tax Form(s).
- (d) Exhibit "D" - Certificate of Insurance.

In case of conflict between an attachment and the text of this contract excluding the attachment, the text of this contract shall control. Any attachment that materially alters the standard terms contained herein must be reviewed by the City Attorney and approved by the City in writing.

**Sec. 12. Notice.** (a) All notices and other communications required or permitted by this contract shall be in writing and shall be given either by personal delivery, fax, or certified United States mail, return receipt requested, addressed as follows:

To the City:

Susan Sessler  
City of Concord  
P.O. Box 308  
Concord, NC 28206  
Fax Number: (704) 792-2552

To the Contractor:

VaLerie Kolczynski, Esq.  
City Attorney  
PO Box 308  
Concord, NC 28206  
Fax Number: (704) 784-1791

(b) **Change of Address, Date Notice Deemed Given:** A change of address, fax number, or person to receive notice may be made by either party by notice given to the other party. Any notice or other communication under this contract shall be deemed given at the time of actual delivery, if it is personally delivered or sent by fax. If the notice or other communication is sent by US Mail, it shall be deemed given upon the third calendar day following the day on which such notice or other communication is deposited with the US Postal Service or upon actual delivery, whichever first occurs.

**Sec. 13. Indemnification.** To the maximum extent allowed by law, the Contractor shall defend, indemnify, and save harmless the City of Concord, its agents, officers, and employees, from and against all charges that arise in any manner from, in connection with, or out of this contract as a result of the acts or omissions of the Contractor or subcontractors or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable except for damage or injury caused solely by the negligence of the City its agents, officers, or employees. In performing its duties under this section, the Contractor shall at its sole expense defend the City of Concord, its agents, officers, and employees with legal counsel reasonably acceptable to City. As used in this subsection – "Charges" means claims, judgments, costs, damages, losses, demands, liabilities, duties, obligations, fines, penalties,

royalties, settlements, expenses, interest, reasonable attorney's fees, and amounts for alleged violations of sedimentation pollution, erosion control, pollution, or other environmental laws, regulations, ordinances, rules, or orders. Nothing in this section shall affect any warranties in favor of the City that are otherwise provided in or arise out of this contract. This section is in addition to and shall be construed separately from any other indemnification provisions that may be in this contract. This section shall remain in force despite termination of this contract (whether by expiration of the term or otherwise) and termination of the services of the Contractor under this contract.

**Sec. 14. Corporate Status.** If the Contractor is dissolved or suspended and the Contractor does not notify the City of such dissolution within three (3) business days from date of dissolution or suspension, and/or the corporate status is not reinstated within thirty (30) days, this contract, at the sole option of the City, shall be declared null and void or the Contractor shall execute a new contract showing the Contractor's correct legal entity.

**Sec. 15. Miscellaneous.**

(a) Choice of Law and Forum. This contract shall be deemed made in Cabarrus County, North Carolina. This contract shall be governed by and construed in accordance with the laws of North Carolina. The exclusive forum and venue for all actions arising out of this contract shall be the appropriate division of the North Carolina General Court of Justice, in Cabarrus County. Such actions shall neither be commenced in nor removed to federal court. This section shall not apply to subsequent actions to enforce a judgment entered in actions heard pursuant to this section.

(b) Waiver. No action or failure to act by the City shall constitute a waiver of any of its rights or remedies that arise out this contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

(c) Performance of Government Functions. Nothing contained in this contract shall be deemed or construed so as to in any way estop, limit, or impair the City from exercising or performing any regulatory, policing, legislative, governmental, or other powers or functions.

(d) Severability. If any provision of this contract shall be unenforceable, the remainder of this contract shall be enforceable to the extent permitted by law.

(e) Assignment, Successors and Assigns. Without the City's written consent, the Contractor shall not assign (which includes to delegate) any of its rights (including the right to payment) or duties that arise out this contract. Unless the City otherwise agrees in writing, the Contractor and all assigns shall be subject to all of the City's defenses and shall be liable for all of the Contractor's duties that arise out of this contract and all of the City's claims that arise out of this contract. Without granting the Contractor the right to assign, it is agreed that the duties of the Contractor that arise out of this contract shall be binding upon it and its heirs, personal representatives, successors, and assigns.

(f) Compliance with Law. In performing all of the Work, the Contractor shall comply with all applicable law.

(g) City Policy. THE CITY OPPOSES DISCRIMINATION ON THE BASIS OF RACE AND SEX AND URGES ALL OF ITS CONTRACTORS TO PROVIDE A FAIR OPPORTUNITY FOR MINORITIES AND WOMEN TO PARTICIPATE IN THEIR WORK FORCE AND AS SUBCONTRACTORS AND VENDORS UNDER CITY CONTRACTS.

(h) EEO Provisions. During the performance of this Contract the Contractor agrees as follows: (1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, political affiliation or belief, age, or handicap. The Contractor shall take affirmative action to insure that applicants are employed and that employees are treated equally during employment, without regard to race, color, religion, sex, national origin, political affiliation or belief, age, or handicap. The Contractor shall post in conspicuous places available to employees and applicants for employment, notices setting forth these EEO provisions. (2) The Contractor in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, political affiliation or belief, age, or handicap.

(i) No Third Party Right Created. This contract is intended for the benefit of the City and the Contractor and not any other person.

(j) Principles of Interpretation. In this contract, unless the context requires otherwise the singular includes the plural and the plural the singular. The pronouns "it" and "its" include the masculine and feminine. Reference to statutes or regulations include all statutory or regulatory provisions consolidating, amending, or replacing the statute or regulation. References to contracts and agreements shall be deemed to include all amendments to them. The word "person" includes natural persons, firms, companies associations, partnerships, trusts, corporations, governmental agencies and units, and any other legal entities.

(k) Modifications, Entire Agreement. A modification of this contract is not valid unless signed by both parties and otherwise in accordance with requirements of law. Further, a modification is not enforceable against the City unless the City Manager or other duly authorized official signs it for the City. This contract contains the entire agreement between the parties pertaining to the subject matter of this contract. With respect to that subject matter, there are no promises, agreements, conditions, inducements, warranties, or understandings, written or oral, expressed or implied, between the parties, other than as set forth or referenced in this contract.

(l) Corporate Seal. If a corporate seal is included by any party to this Contract, it is only for authentication purposes. This Contract is not signed under seal.

**(The following section applies to construction contracts only if amount is over \$50,000)**

**Sec. 16. Bonding.** Both performance and payment bonds for the full amount of this Contract are required to be attached. Instead of bonds, you may submit a letter from your banker or stockbroker stating that cash, certified checks or government securities in the amount of this Contract will be submitted. The performance bond shall have a value equal to 100% of this Contract. This bond shall be conditioned upon faithful performance of the contract in accordance with the plans, specifications and conditions of the contract. The performance bond shall be solely for the protection of the City. The payment bond shall be in an amount equal to 100% of the Contract, and conditioned upon the prompt payment for all labor or materials for which a contractor or subcontractor is liable. The payment bond shall be solely for the protection of the persons furnishing materials or performance labor for which a contractor or subcontractor is liable.

**Sec. 17. Dispute Resolution.** It is understood and agreed that NCGS 143-128(f1-g) requires that disputes arising under an agreement for the erection, construction, alteration or repair of a building be subject to a dispute resolution process specified by the City. The amount in controversy shall be at least \$15,000.00 before this dispute resolution procedure may be used. In compliance with this statutory provision, the City specifies this Section as the dispute resolution process to be used on this Project. It is further understood and agreed that this dispute resolution process is based on non-binding mediation and will only be effective to the extent that the Parties to any mediated dispute participate in the mediation in good faith. It is also understood and agreed that the City is under no obligation under any circumstance to secure or enforce the participation of any other Party in the mediation of any dispute subject to this Section and NCGS 143-128(f1-g).

**This Section 17 does not apply to:**

- (a) **The purchase and erection of prefabricated or relocatable buildings or portions of such buildings, except that portion of the work that must be performed at the construction site; or**
- (b) **The erection, construction alteration or repair of a building when the cost of such building is \$300,000 or less.**

17.1 Any dispute arising between or among the Parties listed in Section 17.3 that arises from an agreement to construct the Project, including without limitation a breach of such agreement, shall be subject to non-binding mediation administered by the American Arbitration Association under its Construction Industry Mediation Rules ("Rules"), except as otherwise expressly set forth in this Section. To the extent any provision of the Rules is inconsistent with the provisions of this Section, the provisions of this Section shall control. The mediation provided in this Section shall be used pursuant to this Agreement and NCGS 143-128(F1-g) and is in lieu of any dispute resolution process adopted by the North Carolina State Building Commission, which process shall not apply to this Project.

17.2 For purposes of this Section the following definitions shall apply:

- a. *Agreement to construct the Project* means an agreement to construct the Project that is subject to the requirements of NCGS 143-128 and does not include any agreement related to the Project that is not subject to said statute.
- b. *Construct or construction* refers to and includes the erection, construction, alteration or repair of the Project.
- c. *Party or Parties* refers to the parties listed in Section 16.4.
- d. *Project* means the building to be erected, constructed, altered or repaired pursuant to this Agreement.

17.3 The City and any Party contracting with the City or with any first-tier or lower-tier subcontractor for the construction of the Project agree to participate in good faith in any mediation of a dispute subject to

this Section and NCGS 143-128(f1-g), including without limitation the following Parties (if any): architect(s), engineer(s), surveyor(s), construction manager, construction manager at risk, prime contractor(s), surety(ies), subcontractor(s), and supplier(s).

17.4 In order to facilitate compliance with NCGS 143-128(f1-g), the Contractor and all other Parties shall include this Section in every agreement to which it (any of them) is a Party for the construction of the Project without variation or exception. Failure to do so will constitute a breach of this Agreement, and the Contractor or other Party failing to include this Section in any agreement required by this Section shall indemnify and hold harmless the remaining Parties from and against any and all claims, including without limitation reasonable attorney fees and other costs of litigation, arising in any manner from such breach. Notwithstanding the foregoing provisions of this Section, it is expressly understood and agreed that the Parties are intended to be and shall be third-party beneficiaries of the provisions of this Section and can enforce the provisions hereof.

17.5 The following disputes are not subject to mediation: (i) a dispute seeking a non-monetary recovery; and (ii) a dispute seeking a monetary recovery of \$15,000 or less.

17.6 A dispute seeking the extension of any time limit set forth in an agreement to construct the Project shall be subject to mediation pursuant to this Section and NCGS 143-128(f1-g), but only if the damages which would be suffered by the Party seeking the extension would exceed \$15,000 if the disputed extension is denied. To the extent that liquidated damages are set forth in such agreement as the measurement of damages for failure by such Party to meet such time limit, such liquidated damages shall be the exclusive standard for determining the amount of damages associated with such dispute.

17.7 For purposes of this Section, a dispute is limited to the recovery of monetary damages from the same transaction or occurrence against a single Party or two or more Parties alleged to be liable jointly, severally or in the alternative. Two or more disputes may not be consolidated or otherwise combined without the consent of all Parties to such disputes.

17.8 In addition to such matters as are required by the Rules, a request for mediation shall include the amount of the monetary relief requested.

17.9 Prior to requesting mediation, a Party must form a good faith belief that it is entitled under applicable law to recover the monetary amount to be included in the request from one or more of the remaining Parties. Such belief must be based on a reasonable and prudent investigation into the dispute that is the subject of the request. The request for mediation must be based on such investigation and may not include any amount or the name of any remaining Party, unless supported by such investigation and good faith belief by the Party requesting the mediation.

17.10 If a Party breaches any provision of Section 17.9, it shall indemnify and hold harmless all other Parties from any costs, including reasonable attorney fees and other costs of litigation, and damages incurred by such other Parties that arise from such breach.

17.11 All expenses incurred by a Party to a dispute in preparing and presenting any claim or defense at the mediation shall be paid by the Party. Such expenses include without limitation preparation and production of witnesses and exhibits and attorney fees. All other expenses of the mediation, including filing fees and required traveling and other expenses of the mediator, shall be borne as follows: one half by the Party requesting the mediation, with the remaining parties paying equal shares of the remaining expenses and costs; provided that, if the City is named as a party to the mediation, the City shall pay at least one-third of the mediation expenses and costs divided among the Parties. If more than one Party to a dispute requests a mediation, the mediation expenses and costs to be divided among the Parties shall be borne equally by the Parties to the dispute; provided that, if the City is named as a Party to the mediation, the City shall pay at least one-third of the mediation expenses and costs divided among the Parties.

17.12 The mediation shall be held at a location agreeable to the mediator and all of the Parties; provided that, if no agreement can be reached, the mediation will be held at such location in Cabarrus County as the mediator shall determine.

17.13 The provisions of this Section are subject to any other provision of this Agreement concerning the submission, documentation and/or proof of any claim or dispute. Such other provisions shall apply in full force and shall be satisfied as a condition precedent to mediation pursuant to this Section.

17.14 The Parties understand and agree that mediation in accordance with this Section shall be a condition precedent to institution of any legal or equitable proceeding seeking monetary recovery based on any dispute that is subject to mediation pursuant to this Section.

**Sec. 18. Breach.** In the event of a violation of any material term of this Agreement, the non-violating party may terminate the Agreement upon written notice. Such notice shall state the violation with specificity and shall give ten (10) days to cure the violation. The cure period shall be measured as ten (10) days from the date of receipt of notice by the violating party, or, if the date is not known, then thirteen (13) days from the date the notice is placed in the United States Post. If the violation remains uncorrected at the end of the cure period, the Agreement shall be terminated without any further action by the non-violating party. Any remaining disputes shall be subject to the dispute resolution procedure set forth above, if applicable.

IN WITNESS WHEREOF, the City of Concord and the Contractor have caused this contract to be executed by their respective duly authorized agents or officers.

CITY OF CONCORD:

(Typed or Printed Legal Name of Contractor)

By: \_\_\_\_\_  
City Manager

By: \_\_\_\_\_  
Signature of President/Vice President/Manager/Partner

ATTEST BY:

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

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

\_\_\_\_\_  
City Clerk

ATTEST:

BY: \_\_\_\_\_  
Signature of Vice President, Secretary, or other officer

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

Title \_\_\_\_\_

APPROVED AS TO FORM:

\_\_\_\_\_  
Attorney for the City of Concord

SEAL

**APPROVAL BY CITY FINANCE OFFICER**

This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

\_\_\_\_\_  
Signature

**EXHIBIT "A"**

This document is an Exhibit to the Agreement for Professional Services between the CITY OF CONCORD and \_\_\_\_\_ Dated \_\_\_\_\_ 2\_\_\_\_.

**Scope of Services:**

**Fee for Scope of Services:**

The fee for services shall not exceed \_\_\_\_\_ and shall be based on a time and material format, whereby fees would be invoiced by the amount of actual time/material expended. Fees for \_\_\_\_\_ staff time shall be based on the rate schedule provided below. Invoices shall be directed to: City of Concord Attention: \_\_\_\_\_, Post Office Box 308, Concord, NC 28026-0308. Should changes or extra services be needed, which will cause a cost overrun; \_\_\_\_\_ will consult with the City for adjustments prior to conducting the work.

The budget for the scope of services is based on the following estimates:

**EXHIBIT "B"**

STATE OF NORTH CAROLINA

AFFIDAVIT

COUNTY OF CABARRUS

\*\*\*\*\*

I, \_\_\_\_\_ (the individual signing below), being duly authorized by and on behalf of  
\_\_\_\_\_ (the legal name of the entity entering the contract, "Employer")

after first being duly sworn hereby swears or affirms as follows:

1. Employer understands that E-Verify is the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law in accordance with NCGS §64-25(5).
2. Employer understands that Employers Must Use E-Verify. Each employer, after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCGS§64-26(a). Employer attests that Employer is in compliance with the requirements of the federal and state laws relevant to E-verify.
3. Employer is a person, business entity, or other organization that transacts business in the State of North Carolina. Employer employs 25 or more employees in this State. (mark Yes or No)  
a. YES \_\_\_\_\_, or b. NO \_\_\_\_\_.
4. Employer attests that all subcontractors employed by it as part of this contract comply with the requirements of E-Verify, and Employer will ensure compliance with E-Verify by any subcontractors subsequently hired by Employer as part of any contract with the City of Concord.
5. Employer shall have a continuing duty to inform the City of Concord of any changes to this sworn information.

This \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Signature of Affiant  
Print or Type Name: \_\_\_\_\_

State of North Carolina County of Cabarrus

Signed and sworn to (or affirmed) before me, this the \_\_\_\_  
day of \_\_\_\_\_, 20\_\_.

My Commission Expires:

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

(Affix Official/Notarial Seal)

EXHIBIT "C"

TAX FORM(S)



EXHIBIT "D"

**CERTIFICATE OF INSURANCE**

CONTRACTOR'S PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, THAT, we \_\_\_\_\_

\_\_\_\_\_

Hereinafter called the "Principal" and \_\_\_\_\_

\_\_\_\_\_

a corporation incorporated under the laws of the State of \_\_\_\_\_

hereinafter called the "Surety", are held and firmly bound unto the \_\_\_\_\_

\_\_\_\_\_

hereinafter called the "Owner", in the full and just sum of \_\_\_\_\_

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

lawful money of the United States of America, to be paid to the said Owner, its successors, or its assigns, for which payment well and truly to be made and done we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents. Sealed with our seals, and dated this \_\_\_\_\_ day of \_\_\_\_\_ A.D., \_\_\_\_\_.

WHEREAS, the above bonded "Principal" has entered into a contract with the said Owner, bearing the date \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

A copy of which said contract is incorporated herein by reference and is made a part hereof as if fully copied herein:

For the full and complete execution of work in connection with \_\_\_\_\_

\_\_\_\_\_

NOW THEREFORE, the conditions of this obligation are such that if the above bonded "Principal", as Contractor, shall in all respects comply with the terms of the contract and conditions of said contract, and his, their, and its obligation thereunder, including the specifications and plans therein referred to and made a part thereof, and such alterations as may be made in said specifications and plans as therein provided for, and shall well and truly, and in a

manner satisfactory to the Owner, complete the Work contracted for within the time stipulated in the contract, and shall save harmless the Owner from any expense incurred through the failure of said Contractor to complete the Work as specified, and from any damage growing out of the carelessness of said Contractor, or his, their or its servant, and also shall save and keep harmless the said Owner against and from all losses to it from any cause whatever, including patent, trademark and copyright infringements in the manner of constructing said Project, then this obligation shall be void; otherwise to be and remain in full force and virtue.

Provided, however, that no suit, action or proceeding by reason of any default whatever shall be brought on this Bond after twenty-four (24) months from the day on which the final payment under the Contract falls due.

And provided further the said surety, for value received, hereby stipulates and agrees that no change, extension of time, alterations or addition to the terms of Contract or to the Work to be performed thereunder of the specifications accompanying the same shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the specifications.

The obligation shall remain in full force and effect until the performance of all covenants, terms and conditions herein stipulated, and after such performance it shall become null and void.

IN TESTIMONY WHEREOF witness the hands and seals of the parties hereto on this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

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

\_\_\_\_\_  
(Contractor) (SEAL)

By \_\_\_\_\_

\_\_\_\_\_  
(Witness as to Contractor)

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

By \_\_\_\_\_

\_\_\_\_\_  
(Witness as to Surety)

Countersigned:

\_\_\_\_\_  
(Licensed Resident Agent)

CONTRACTOR'S PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, THAT we \_\_\_\_\_

\_\_\_\_\_

hereinafter called the "Principal" and \_\_\_\_\_

\_\_\_\_\_

a corporation incorporated under the laws of the State of \_\_\_\_\_

hereinafter called the "Surety", are held and firmly bound unto the \_\_\_\_\_

\_\_\_\_\_

hereinafter called the "Owner", in the full and just sum of \_\_\_\_\_

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

lawful money of the United States of America, to be paid to the said Owner, its successors, or its assigns for which payment well and truly to be made and done we bind ourselves, our heirs, executors, administrators, and successors jointly and severally, firmly by these presents. Sealed with our seals and dated this \_\_\_\_\_ day of \_\_\_\_\_, A.D., \_\_\_\_\_.

WHEREAS, the above bonded "Principal" has entered into a contract with the said Owner, bearing the date \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

A copy of which said contract is incorporated herein by reference and is made a part hereof as if fully copied herein:

For the full and complete payment for all labor and materials used in execution of Work in connection with \_\_\_\_\_

\_\_\_\_\_

NOW THEREFORE, if the above bonded "Principal" as Contractor, shall promptly make payment to all persons supplying labor and 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, then this obligation shall be void; otherwise to remain in full force and virtue.

Provided, however, that no suit, action or proceeding by reason of any default whatever shall be brought on this Bond after twenty-four (24) months from the day on which the final payment under the Contract falls due.

And provided further the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or additions to the terms of the Contract or to the Work to be performed thereunder or to the specifications accompanying the same shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the specifications.

This obligation shall remain in full force and effect until the performance of all covenants, terms and conditions herein stipulated, and after such performance it shall become null and void.

IN TESTIMONY WHEREOF witness the hands and seals of the parties hereto on this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

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

\_\_\_\_\_  
(Contractor) (SEAL)

By \_\_\_\_\_

\_\_\_\_\_  
(Witness as to Contractor)

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

By \_\_\_\_\_

\_\_\_\_\_  
(Witness as to Surety)

Countersigned:

\_\_\_\_\_  
(Licensed Resident Agent)

## **1.0 GENERAL CONDITIONS OF THE CONTRACT**

### **1.1 General**

These conditions and every part herein are binding upon the Contractor insofar as they can or do apply to him or his work, and he shall be responsible for neglect to read or to attend to any paragraph or item contained herein. The Engineer shall decide as to the meaning and the applicability of any part of these General Conditions, or the Contract Documents, and in each case, his decision shall be binding and final.

### **1.2 Definitions**

The Contract Documents consist of the General/Special Conditions of the Contract, the Proposal, the Contract, the Components of Installation Construction, Specifications and Drawings, including all bulletins, addenda, revisions or other modifications of the Contract Documents after execution of the Contract. All of these items together form the Contract Documents.

The Owner is defined as the City of Concord, or its authorized agent.

The Engineer is defined as Southeastern Consulting Engineers, Inc., or its authorized agent.

The Contractor is defined as the Successful Proposer who enters into a contract for the performance of the specified Work.

The term Subcontractor, as employed herein, includes only those having a direct contract with the Contractor and it includes one who furnishes material worked to a special design according to the plans or specifications of this Work, but does not include one who merely furnishes material not so worked.

Written notice shall be defined as notice in writing delivered in person to the individual, or to a partner of the firm in the case of a partnership, or to an officer of the organization in the case of a corporation, or sent by registered mail to the last known business address known to him who gives the notice.

The term "Work" as used herein, refers to and includes all plant, labor, materials, supplies, equipment and other facilities and things necessary or proper for or incidental to the carrying out and completion of the terms of this Contract.

The term Substantial Completion is defined as that point in the Work where the Work at each Project Site has progressed to the state where, in the opinion of the Engineer, as stated in

writing to the Owner, it is sufficiently complete, in accordance with the Contract Documents, so that the entire Work at that site can be utilized for the purposes for which it is intended.

Time of Substantial Completion as stated in the Contract Documents is of the essence of this Contract.

### 1.3 Execution, Correlation and Intent of Documents

The Contract shall be executed in quadruplicate by the Owner and the Contractor.

The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the Work. Materials or Work described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards.

It is not intended that work not covered under any heading, section, branch, class or trade of the specifications, shall be supplied unless it is shown in the Contract Documents or is reasonably inferable therefrom as being necessary to produce the intended results.

### 1.4 Detail Drawings and Instructions

The Engineer shall furnish with reasonable promptness, additional instructions by means of drawings or otherwise, necessary for the proper execution of the Work. All such drawings and instructions shall be consistent with the Contract Documents, true developments thereof, and reasonably inferable therefrom. The Work shall be executed in conformity therewith and the Contractor shall do no work without proper drawings and instructions.

### 1.5 Copies Furnished

Unless otherwise provided in the Contract Documents, the Owner will furnish, free of charge, three (3) copies of the Contract Documents and Construction Drawings or portions thereof, upon the Contractor's request.

### 1.6 Shop Drawings

Where shop drawings are called for, or are necessary for properly carrying out of the Work, the Contractor shall submit for the Engineer's approval an electronic copy of drawings before commencing installation Work.

The Contractor shall make any and all corrections necessary for obtaining approval, and then shall furnish the Engineer with revised drawings.

The Engineer's approval of Contractor's drawings shall not relieve the Contractor from errors, omissions or deviations from the plans or specifications, unless the Contractor has in writing called the Engineer's attention to such deviation at the time of submittal.

It is the duty of the Contractor to check all shop drawings before submitting them for approval. Drawings shall bear the Contractor's stamp showing that they have been so checked. Engineer's approval will be given for design and general arrangement only, and will not cover detailed dimensions or deviations from plans and specifications unless such detailed approval is requested at time of submission.

#### 1.7 Record Drawings

As the Work progresses the Contractor shall keep a complete record of any and all variations between the actual Project installations and the contract drawings and specification requirements. Upon completion of the Project, one set of drawings shall be marked in red to show all such variations and these drawings shall be forwarded to the Engineer as a part of the "close-out" documents.

#### 1.8 Ownership of Drawings and Specifications

All drawings, specifications and copies thereof are instruments of service and remain the property of the Owner or Engineer whose name appears thereon. They are not to be used on work other than this Contract without permission. All copies of drawings and specifications other than Contract copies shall be returned to the Engineer upon request after completion of the Work.

#### 1.9 Material and Labor

All materials of every kind shall be new and shall be of the best quality unless otherwise specified, and all labor and work shall be done and performed in the most thorough and workmanlike manner and to the satisfaction of the Owner and Engineer.

#### 1.10 Approval of Material

All materials and equipment hereinafter specified shall be subject to the approval of the Engineer and the Owner, but where material and equipment are specifically or definitely named on the plans or in the specifications such materials or equipment may be used without further reference or action.

Specific reference in the specification to any article, device, product, materials, fixture, form or type of construction, by name, make or catalog number, with or without the words "or equal", shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition. The Contractor in such cases may, at his option, use any article, device,



product, material, fixture, form or type of construction, which, in the judgment of the Engineer, expressed in writing, is equal to that named.

Requests for written approval of substitute materials or equipment considered by the Contractor as equal to those specified, shall be submitted, for approval, to the Engineer and Owner before execution of the Contract. Requests shall be accompanied by samples, descriptive literature and engineering information, as necessary to fully identify and appraise the product. No increase in the Contract Sum will be considered when requests are not approved. Approved substitutions will be listed and become part of the Contract.

#### 1.11 Approval of Work

Whenever in the specifications or upon the drawings and the words "as directed", "as required", "as permitted", or words of like effect are used, it shall be understood that the direction, requirement, or permission of the Engineer is intended; and, similarly, the words "approved", "acceptable", "satisfactory", or words of the like import, shall mean approved by, acceptable to, or satisfactory to, the Engineer.

#### 1.12 Subcontracts and Subcontractors

The Contractor shall submit to the Engineer a list giving the names and addresses of subcontractors he proposes to use, together with the scope of their respective parts of the Work. Should any subcontractor be disapproved by the Engineer, the Contractor shall submit additional names for approval. The Engineer shall act promptly in the approval of subcontractors, and when approval of the list is given, no changes of the subcontractors will be permitted except for cause or reason considered justifiable by the Engineer.

The Engineer will furnish to any subcontractor, at any time upon his request, evidence regarding amounts of money paid to the Contractor on account of the subcontractor's work.

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 this Contract, and that the subcontractor acts on this Work as an agent or employee of the Contractor.

The Owner reserves the right to limit the amount of portions of the Work to be subcontracted as hereinafter specified.

#### 1.13 Contractor and Subcontractor Relationships

The Contractor agrees that the terms of these Contract Documents, including all portions hereof, apply equally to a subcontractor as to the Contractor, and that the subcontractor is bound by those terms as an employee of the Contractor. 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 the Contractor-subcontractor relationships.

#### 1.14 Progress Schedule

The Contractor shall submit to the Engineer for approval within 10 days after the Notice of Award of Contract a "Progress Schedule" showing starting and Substantial Completion dates for the various categories of work to be performed.

#### 1.15 Advertising

The Contractor shall not display on or about the premises any other sign, trademark or other advertising device except as may be necessary to identify such storage sheds as he may erect.

#### 1.16 Dimensions

All necessary dimensions shall be given on the drawings which in all cases shall be strictly complied with. The figures and writing upon the drawings showing or indicating dimensions shall be taken instead of measurements of a drawing by scale, and measurements of a drawing by scale shall not be used as a dimension to work by, except on large-scale drawings not figured.

#### 1.17 Construction Supervision

Throughout the progress of the Work, each Contractor shall keep on each job site a competent superintendent or supervisory staff satisfactory to the Engineer. The superintendent shall not be changed without the consent of the Engineer unless said superintendent ceases to be employed by the Contractor or ceases to be competent. The superintendent 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, important directions, instructions and notices will be confirmed in writing to the Contractor as will all such items if requested by the Contractor.

The Contractor shall examine and study the Contract Documents, including the drawings, specifications, installation sites, 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 Contract Documents, including the drawings or specifications, he shall report them to the Engineer 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.

#### 1.18 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 fifteen (15) days written notice to the Contractor from the Engineer or Owner, may perform or have performed that portion of the Work and may deduct the cost thereof from any amounts due or to become due the Contractor, such action and cost of same having been first approved by the Engineer. 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.

#### 1.19 Cooperation with Other Contractors, Municipal Members and Owner

The Contractor will cooperate to the fullest extent with other contractors, the Owner, its Municipal Members and the Engineer, to the end that all Work may be executed economically and without delay. If the Contractor becomes aware of any damage or defect to any Owner Furnished equipment, or to work performed by the Owner, then Contractor shall immediately notify the Engineer of such defect or damage. Contractor shall avoid performing any work in connection with the damaged or defective equipment or work which would subsequently require re-working.

#### 1.20 Determination of Amount of Allowances for Added Work

Before proceeding with any Work that varies from that shown on drawings or specified herein, for which the Contractor may claim extra compensation, or for which the Owner may claim a credit, the Contractor shall first submit a detailed estimate in triplicate of the additional charges, or amount of credit he will allow, for making the change.

This estimate shall give the quantity of materials involved, the actual cost of materials, cost of labor, other incidental costs, and the amount charged for supervision, overhead, and profit. The Contractor shall do no work in connection with same without written authorization from the Owner stating the cost or credit, and no claim for an addition to the Contract Sum shall be valid unless so ordered.

#### 1.21 Close-Out Documents and Operating Manuals

The Contractor shall furnish directly to the Owner's Representative two (2) copies of all Close-Out documents including operating manuals, instruction books, parts lists, installation drawings, and any others required by the Contract Documents, etc. for all equipment and Work furnished under this Contract. It shall be the Contractor's responsibility to satisfy the Owner's authorities regarding these requirements without reference to any other parties involved. The Close-Out documents relating to the Work shall be presented to the Owner's authorities at the time of final inspection and not transmitted as received.

## 1.22 Removal of Rubbish

The Contractor shall clean up and from time to time, but at a minimum at the end of every work week, dispose of all dirt and debris resulting from construction operations at such times and in the manner directed.

At the completion of the Work, the Contractor shall remove from the site the machinery, tools, or other items used in the construction; clean up and dispose of all dirt and debris resulting from his construction operations; and leave the whole Work in a clean and slightly condition acceptable to the Owner and Engineer.

## 1.23 Guarantee of Work

(a) Except as otherwise specified, all Work shall be guaranteed by the Contractor and his Sureties against defects resulting from the use of inferior materials, equipment, or workmanship for one (1) year from the date of final completion of the entire Work as signified by acknowledgment of receipt of Final Payment by the Contractor.

(b) If, within any guarantee period, repairs or changes are required in connection with guaranteed work, which, in the opinion of the Engineer, are rendered necessary as the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, the Contractor shall, promptly upon receipt of notice from the Owner, and without expense to the Owner:

- (1) Place in satisfactory condition, in every particular, all of such guaranteed work;
- (2) Correct all defects therein;
- (3) Make good all damage to the system or site, or equipment or contents thereof, which, in the opinion of the Engineer, is the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract; and
- (4) Make good any work or material, or equipment disturbed in fulfilling any such guarantee.

(c) If, in fulfilling the requirements of the Contract or of any guarantee embraced therein or required thereby, the Contractor disturbs any work guaranteed under another contract, he shall restore such disturbed work to a condition satisfactory to the Engineer, and shall guarantee such restored work to the same extent as it was guaranteed under such other contract.

(d) If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the Owner may have the defects corrected and the Contractor and his Surety shall be liable for all expenses incurred.

(e) All special guarantees applicable to definite parts of the Work that may be stipulated in the specifications or other papers forming a part of the Contract shall be subject to the terms of this paragraph during the first year of the life on such special guarantee.

(f) Copies of all warranties and guarantees shall be furnished to the Owner.

#### 1.24 Compliance with Laws

The Contractor shall comply with all applicable regulatory requirements including federal, state, and local laws, rules and regulations, codes, criteria, and standards.

To the fullest extent allowed by law, the Contractor hereby agrees to indemnify the Owner from and against all claims, suits, damages, costs, losses and expenses in any manner arising out of or connected with the failure of the Contractor, its subcontractors, agents, successors, assigns, officers or employees to comply with provisions of applicable laws, rules and regulations.

#### 1.25 Liability Insurance

To the fullest extent allowed by law, the Contractor hereby agrees to indemnify and save harmless the Owner or his agents, servants and employees, from and against any and all loss, expense, damage, or injury caused or occasioned, directly or indirectly, by his act of negligence, or the act of negligence of any subcontractor or his agents or employees in performing any of the Work called for in this Contract.

The Contractor shall maintain such insurance as shall protect him from claims under the Workmen's Compensation Acts and also such insurance as shall protect him from claims for damages for personal injury, including death and claims for damage to property which may arise from operations under this contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them.

In any event, the Contractor shall provide and maintain insurance coverage as provided in the Contract and Contract Documents.

#### 1.26 Unemployment Insurance, Old Age Pensions, etc.

To the fullest extent allowed by law, contractor agrees to indemnify and save Owner harmless, and to assume full responsibility for payment of all State and Federal taxes for unemployment insurance, old age pensions, or any other Social Security legislation as to all

employees engaged in the performance of this contract, and further agrees to meet all requirements that may be specified in regulations now or hereafter promulgated from time to time by administrative officials.

#### 1.27 Performance Bond and Payment Bond Forms

The Contractor shall furnish a performance bond and payment bond with an approved bonding company for the full amount of the contract price. The Bonds shall be executed on the forms attached hereto or on another form suitable to the Owner. Premium on these bonds is to be paid by the Contractor.

#### 1.28 Sales Tax

The Contractor shall pay to the State all such taxes levied against this Work by law and hold Owner and his agents harmless against any claim or liability from such cause.

#### 1.29 Permits and Fees

The Contractor shall obtain and pay for all permits and certificates of whatsoever kind required for the performance of his Work, and shall deliver same to the Engineer before his Work will be finally accepted.

#### 1.30 Standards

Installation shall be in compliance with all applicable State and Local Codes as well as the National Electrical Code, latest Edition.

#### 1.31 Patents and Royalties

The Contractor and his sureties shall assume all responsibility for damage arising through infringement of patent copyright or intellectual property rights connected with any or all of the materials, equipment, articles, systems, or processes furnished by Contractor in the performance of this Work and shall pay all royalties on apparatus or methods installed by him.

#### 1.32 Payments to Contractor

Upon Substantial Completion of all construction, as certified to by the Engineer, and as accepted by the Owner, the Contractor shall be paid within thirty (30) days, for all materials and equipment furnished, and all Work done at that particular site in accordance with the Proposal Price less a retainage amount equal to ten percent (10%) of the total amount due, in one lump sum, by the Owner. The total amount due the Contractor will be the contract amount plus any additional charges and less any credits as evidenced by change orders issued by the Engineer and signed by the Owner, the Contractor, and the Engineer.

Upon notice by the Contractor to the Engineer that all Work has been completed at each site in accordance with the Contract Documents and any change orders, the Engineer will make a final inspection and test with the Owner and Contractor and will notify the Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. The Contractor shall immediately take such measures as are necessary to remedy such deficiencies.

Following correction by the Contractor of all deficiencies noted in the final inspection, the Engineer shall issue a Certificate of Completion to the Owner and the Contractor. Following receipt of the certificate of completion, the Contractor shall deliver all maintenance and operating instructions, schedules, warranties, test reports, and marked-up record documents to the Owner. The Contractor shall deliver to the Engineer waivers or releases of all liens arising out of or filed in connection with the Work in the form attached hereto. The Engineer shall issue to the Owner the final papers for the Project which shall show the total cost of the Project and the final payment, in the retainage amount above, due to the Contractor. Upon receipt of all Close-Out documents and the appropriate lien waivers, the Owner shall pay the final amount due to the Contractor within thirty days. Should the Owner fail to pay the final payment to the Contractor within thirty (30) days, the amount due will be increased by interest thereon at the legal rate.

#### 1.33 Payments to Contractor Withheld

The Engineer may withhold, or, on account of subsequently discovered evidence, nullify the whole or a part of any payment approval to such extent as may be necessary to protect the Owner from loss on account of:

- (a) Defective work not remedied.
- (b) Claims filed or reasonable evidence indicating probable filing of claims.
- (c) Failure of the Contractor to make payments properly to subcontractors for material or labor.
- (d) A reasonable doubt that the Contract can be completed for the balance then unpaid.
- (e) Damage to another Contractor.

When the above grounds are removed, payment shall be made for amounts withheld because of them.

#### 1.34 Acceptance of Final Payment Constitutes Release

(a) The acceptance by the Contractor of Final Payment shall be and shall operate as a release to the Owner of all claims and of all liability to the Contractor for all things done or

furnished in connection with this Work and for every act and neglect of the Owner and others relating to or arising out of this Work. No payment, however, final or otherwise, shall operate to release the Contractor or his Sureties from any obligations under the Contract or Bonds.

(b) If any lien should arise after Final Payment is made, all money which the Owner pays in discharging such lien, including all costs and a reasonable attorney's fee, shall be paid by the Contractor.

#### 1.35 Storage Facilities

The Contractor shall provide adequate storage facilities at a site to be approved by the Owner for all materials subject to damage by the weather or otherwise. Any materials so damaged shall be removed immediately from the site. All items of equipment subject to the deleterious effects of weather or the severity of conditions imposed by job storage shall be suitably protected and insured by the Contractor pending use or installation.



## COMPONENTS OF INSTALLATION CONSTRUCTION

### 1.0 Scope

The Work covered by these specifications consists of furnishing all labor, equipment, tools, supplies, and materials and performing all operations, except as herein exempted, as necessary for the installation and interconnection of one diesel-electric generating module and associated equipment in strict accordance with the Contract Documents, including the specifications and the applicable drawings. The following items give a brief outline of the Work to be performed. The Work is further described in the Contract Documents, including the specifications and/or indicated on the accompanying drawings.

### 2.0 Construction Components

The various components of the construction are as follows:

#### 2.1 Schedule

- a. Provide Construction Schedule for approval.
- b. Schedule startup and commissioning of the new automatic transfer switch (ATS) with ASCO.
- c. Schedule startup and commissioning of the new generator with Engineer and Manufacturer.

#### 2.2 Outages and Emergency Power

- a. Run existing generator to ensure that the Police Department and City Hall are energized at all times.
- b. Note: Unless otherwise approved by the City of Concord, the Police Department and City Hall remain on Emergency Power for no longer than twelve (12) hours at a time.
- c. All outages and transitions to emergency power shall be scheduled with and approved by the City.
- d. Provide qualified electricians during any scheduled outage to ensure the reliability of the existing generator to keep the existing emergency panels (that feed the Police Department and City Hall) energized at all times.

#### 2.3 Equipment

- a. The contractor shall be responsible for setting the new Generator and new ATS on their corresponding foundations.
- b. Verify Generator phase rotation.
- c. The Generator comes with following equipment to be installed by the Contractor:

- Stairs and Platform
  - Raincap
  - Exhaust 90deg Elbow with rain guard
  - Normal and emergency vents (sub-base day tank)
- d. The Contractor shall be responsible for disconnecting existing terminations at the following:
- Existing generator
  - Fire Pump transfer switch
  - Incoming feed to service disconnects (City Hall and Police Department)
  - Install the generator annunciator panel within the Police Department Electrical Room
  - Disable existing automatic transfer switches in City Hall (2) and Police Department (1)

2.4 Concrete and Foundations

- a. Provide concrete foundations for the new engine-generator module and new automatic transfer switch as per plan and detail drawings.
- b. Cut and patch trench from the new Generator to existing Fire Pump transfer switch (located in City Hall garage) through alley behind Police Department.
- c. Cut and patch trench from utility transformer to new automatic transfer switch.

2.5 Conduit and Raceway

- a. Install all conduits as shown on the construction plan, in accordance with the National Electric Code (NEC).
- b. Where penetration of a fire separation wall, floor or rated assembly with be made, firestop caulk, or approved equal, shall be utilized to maintain the fire resistive integrity.
- c. The enclosed wireway (above disconnect switches) shall be galvanized steel NEMA type 3R rain-proof wiring trough, E-BOX Catalog type “RT”, or approved equal.
- d. Provide underground PVC conduit for the following:
- From the transformer to the ATS
  - ATS exit to service disconnects
  - From the Generator to the ATS
  - From the Generator to the Fire Pump ATS
- e. Provide rigid steel conduit from the new ATS to the service disconnects (above ground).
- f. Provide metallic conduit for the following:
- From the new ATS to panel SDP and new annunciator panel (Police Department Electrical Room)
  - From the fire pump transfer switch junction box to the elevator control panel (City Hall)

- g. The Contractor shall tie into existing Fire Pump transfer switch conduit (from existing generator) as shown on the construction plans.

## 2.6 Conductor/Cables

- a. Provide and install wiring as specified as shown on drawings. This includes all conduit terminations and supports, all the wiring connections in accordance with termination schedules provided by the Engineer.
- b. Provide 120/208V power from panel SDP to service panel (120/208V 100A) in the new generator.
- c. Provide 277/280V power cables from utility transformer to new ATS for normal power.
- d. Provide 277/480V power cables and control cables (stranded) from new generator to new ATS.
- e. Provide 277/480V power cables from new ATS to each existing service disconnect.
- f. Provide 277/480V power cables from new generator to Fire Pump transfer switch.
- g. Provide 24VDC and comm cables from the new annunciator panel to the new generator.
- h. Provide signal cables from new generator to new junction box adjacent to Fire/Jockey Pump (City Hall).
- i. Disconnect the following wires:
  - Existing feed to service disconnects (from transformer)
  - Existing emergency feed to transfer switches (2-City Hall, 1-Police Department, 1-Fire Pump)
  - Existing generator connections
- j. Terminate all new connections.
- k. Install equipment grounding loop conductor and ground rods as shown on plans.

## 2.7 Site/Safety

- a. Demo existing brick wall adjacent to Police Department service disconnect.
- b. Maintain limited access to areas of construction at all times.
- c. Provide permanent site restoration after construction as specified. This includes patching asphalt driveway, repairing concrete curbs and sidewalks.
- d. Provide labor and material for touch-up painting of surfaces damaged during installation and thorough facility clean-up on completion.

**GENERAL SPECIFICATIONS**  
**FOR**  
**INSTALLATION OF**  
**ENGINE-GENERATOR MODULES AND**  
**AUXILIARY EQUIPMENT**

1.0 General Purpose and Provisions

1.01 Purpose of Specifications

It is the intent and purpose of these specifications to describe the work necessary for installing one electric power generating module and necessary auxiliary equipment. These specifications describe the performance, functions, and quality standards required in the installation, equipment, material, and workmanship which are to be furnished.

1.02 Miscellaneous Material to be Furnished by Contractor

Miscellaneous materials shall include all material and equipment, other than the Owner Furnished Equipment listed in the Proposal, necessary to complete the installation and connection of the generator module and associated equipment in accordance with the installation plans. Miscellaneous materials shall include, but shall not be limited to: Wiring, conduits and fittings, concrete foundations, wiring boxes, secondary connectors, grounding conductor and connectors.

1.03 Installation Plans

Detailed installation plans will be provided by the Engineer as required to the Contractor and shall include the following:

- 1 - Site Plan
- 2 - Installation & Construction Details

Should any further installation plans be required by the Contractor, they shall be requested from the Engineer. The Contractor shall not proceed with the installation of any equipment until the drawings and specifications have been provided by the Engineer.

2.0 Erosion and Sediment Control

2.01 General

Contractor shall comply with all local, state and federal laws, ordinances, rules and regulations pertaining to erosion and sediment control.

## 2.02 Erosion and Sediment Control Measures

Contractor shall take all measures to control erosion and sedimentation at the construction site, including borrow and waste areas and temporary access roads, and at off-site areas especially vulnerable to damage from erosion and sedimentation. All erosion and sediment control measures will be subject to approval by the Engineer.

2.03 Silt Fences: Immediately after site clearing, silt fences shall be placed in the location as required. Silt fences shall consist of a specially manufactured woven or nonwoven drainage and filtration fabric attached to a temporary support system of galvanized woven wire mesh and steel posts. Height of fabric above grade shall be as required. Fabric skirt shall be buried to anchor the bottom edge of the fabric.

As far as practicable, fences shall be located on uniform contours and arranged at right angles to the runoff direction. Fence ends shall be turned up the contour for a short distance to prevent bypass of silt.

Silt fences shall be removed as soon as disturbed areas and slopes have been stabilized to the satisfaction of the Engineer.

## 3.0 Earthwork

### 3.01 General

The Contractor shall take the sites in their present condition and perform all grubbing, excavation, trenching, backfilling and compacting necessary for the execution of the construction.

### 3.02 Grubbing

Grubbing shall include the removal and disposal of all stumps, roots larger than three inches in diameter, and matted roots to the depths indicated. In foundations areas, stumps, roots, logs, matted roots and other debris not suitable for foundation purposes shall be removed to a depth not less than 18 inches below any subgrade. All depressions excavated below the original surface for or by the removal of stumps, roots, logs, rotten wood, and refuse shall be refilled with suitable material of fill quality and compacted to make the surface conform to the bearing capacity of the surrounding subgrade surface.

### 3.03 Excavation

The Contractor shall excavate to elevations and dimensions shown, plus sufficient space to permit erection of forms, sheeting, shoring, and bracing. Excavations carried below the depths

indicated, without specific directions shall be refilled to the proper grade with thoroughly compacted suitable fill.

Trenches for ducts shall have a width to afford a minimum of 4 inches clearance between trench walls and extreme outside dimension of the conduit structure in order to provide space for making the joints.

Contractor shall at all times during construction of the Work, provide and maintain ample means and equipment with which to promptly remove and properly dispose of all water entering excavations or other parts of the Work and keep excavation dry until duct lines or other structures to be built therein are completed.

### 3.04 Compaction

Fill and backfill materials shall be placed in layers not more than twelve inches in loose depth for materials compacted by heavy equipment, and not more than eight inches in loose depth for materials compacted by hand-operated tampers.

In all areas under the generator pad, the top twelve inches of subgrade and each layer of fill or backfill shall be compacted to 95% maximum density at optimum moisture content. In seeded or unpaved areas, the top six inches shall be compacted to 90% maximum density at optimum moisture content.

### 3.05 Rock Excavation

Rock excavation for trenches and pits includes removal and disposal of materials and obstructions encountered that cannot be excavated with a track-mounted power excavator equivalent to Caterpillar Model 215C LC, and rated not less than 115 flywheel horsepower and 32,000 pound drawbar pull, equipped with a short stick and a 42-inch wide, short tip radius rock bucket rated at 0.81 cubic yard (heaped) capacity. Trenches in excess of 30 feet in length or eight feet in width are classified as open excavation.

Rock excavation in open excavations includes removal and disposal of materials and obstructions encountered that cannot be dislodged and excavated with modern, track-mounted, heavy-duty excavating equipment without drilling, blasting, or ripping. Rock excavation equipment is defined as Caterpillar Model 973 or equivalent track-mounted loader, rated not less than 210 flywheel horsepower and developing a minimum of 45,000 pound breakout force (measured in accordance with SAE 0732).

Materials classified as rock will include boulders  $\frac{1}{2}$  cubic yard or more in volume, solid rock, rock in ledges, and rock-hard cementitious aggregate deposits.

### 3.06 Existing Utilities

Contractor shall take every precaution to protect existing utility services from damage during construction operations. If damage occurs, repairs shall be made promptly at the Contractor's expense. All repair work shall be satisfactory to the Engineer and the owner of the utility.

When interruptions of existing utilities occur, temporary service shall be provided as approved by the Engineer and owner of the Utility.

### 4.0 Site Grading

#### 4.01 Excavation

Excavations shall be made to the elevations, slopes and limits shown on the plans.

#### 4.02 Fill

Material to be used for fill shall be classified as "ML" (low plasticity silts), "SM" (silty sands), or better, in accordance with the Unified Soil Classification System. Fill material shall exhibit a plasticity index of less than 20 and a standard Proctor maximum dry density greater than 90 pounds per cubic foot. Fill shall not contain organic material, debris or rock larger than 6 inches in any dimension.

Where fill is to be placed, all existing vegetation, roots and other organic matter down to 12 inches below grade shall be stripped and disposed of as directed.

Fill shall be placed in successive layers of not more than 8 inches loose thickness. Each layer shall be spread evenly and compacted as specified below before the next layer is placed.

Rock shall not be incorporated in fill sections supporting pavement or structures. Rock shall be evenly distributed. Rock larger than 4 inches in any dimension will not be allowed in the top 12 inches of fills or slopes. Voids between rock material shall be well filled with suitable fill material, and all rock shall be covered with at least 6 inches of fill material.

Where natural slopes exceed 3:1, horizontal benches shall be cut to receive fill material. Slopes of less than 3:1 and other areas shall be scarified prior to placing fill material.

Borrow material, as required, shall be obtained from the Work site or other acceptable source, at the Contractor's expense.

#### 4.03 Compaction

Unless otherwise noted, each layer of fill and backfill and the top 12 inches of existing subgrade material in cuts shall be compacted by approved equipment as specified below. The degree of compaction and the density shall be determined by the Standard Proctor Test (ASTM D698).

	<u>Min. Compaction of Max. Dry Density at Optimum Moisture Content</u>
Fill or cut under foundations and backfill adjacent to foundations	95%
Top 8 inches of fill or cut under pavement or aggregate surfacing	95%
Fill and backfill in other areas	90%

Material too dry for proper compaction shall be moistened by suitable watering devices, turned and harrowed to distribute moisture, and then properly compacted. When material is too wet for proper compaction, operations shall stop until such material has sufficiently dried.

#### 4.04 Dressing Off

All cuts, fills and slopes shall be neatly dressed off to the required grade or subgrade.

#### 4.05 Cleanup

Cleanup of the site shall be made upon completion of grading work, or any major part thereof. Whenever possible, excess or surplus material shall be wasted and dressed off on the site, or adjacent thereto, to the Engineer's satisfaction. Excess or surplus material wasted in off-site spoil areas shall be spread and leveled as directed.

### 5.0 Landscaping

#### 5.01 General

All areas disturbed during construction shall be re-established and landscaped. Landscaping shall include rough and fine grading, spreading gravel within the fenced areas and on access drives, and fertilizer, lime, seeding and mulch to stabilize other portions of the Work site.



## 5.02 Grading

Rough grading shall be done as soon as all excavation required in the area has been backfilled. The necessary earthwork shall be accomplished to bring the existing ground to the desired finish elevations as shown on the Site Grading Plans or as otherwise directed.

Fine grading shall consist of shaping the final contours for drainage and removing all large rock, clumps of earth and waste construction material, prior to spreading the rock in the lot.

Areas adjacent to foundations shall be graded to draw water away from foundations and to prevent ponding.

## 6.0 Foundations

### 6.01 Excavation

Excavations shall be of sufficient size, and only of sufficient size, to give suitable room for the proper construction of structures and appurtenances, including allowances for sheeting, dewatering, and other similar work necessary for completion of the Work.

Excavations shall be made only to the depths shown on the plans, specified, or directed.

### 6.02 Excavation below Specified Depth

In case the materials encountered at the specified depth are not suitable for proper support of structures or equipment, the Contractor shall excavate from the depth shown or specified, to such new depth, as will be order by the Engineer. Excavation below specified depth shall be done only upon express orders of the Engineer. The additional space excavated below the subgrade shall be refilled with granular materials, Class "C" as the Engineer may direct.

### 6.03 Removal of Water

The Contractor shall at all times during construction, provide and maintain proper means and devices for the removal of all water entering the excavations, and shall remove all such water as fast as it may collect. Removal of water includes the construction and removal of cofferdams, sheeting and bracing, the furnishing of materials and labor necessary therefore, excavation and maintenance of ditches and sluice-ways and the furnishing and operation of pumps, wellpoints, and appliances needed to maintain thorough drainage of the work in a satisfactory manner.

Water shall not be allowed to rise over or come in contact with any masonry, concrete or mortar, until at least 24 hours after placement, and no stream of water shall be allowed to flow over such work until such time as the Engineer may permit.

#### 6.04 Backfilling

Backfilling around structures shall not be commenced until directed by the Engineer. Backfill around structures may be placed by machine, provided the work shall be done carefully to prevent damage to the structure. In no case shall backfill materials be allowed to fall directly on a structure until at least 12 inches of hand placed material has been placed thereon and compacted.

Backfill around structures shall be deposited in horizontal layers not more than one foot in thickness and shall be compacted to prevent settlement.

All excavations shall be backfilled to the original surface of the ground or such other grades as may be shown, specified or directed. Backfilling shall be done with suitable excavated materials, approved by the Engineer, which can be satisfactorily compacted during refilling of the excavation. In the event the excavated materials are not suitable, special backfill obtained from approved borrow pits shall be used for backfilling.

Stones or pieces of rock greater than one cubic foot in volume shall not be used in any portion of backfill and all stones shall be distributed and alternated with the earth filling in such manner that all interstices between them shall be filled with earth. Frozen earth shall not be used for backfilling.

Where required, the Contractor shall add sufficient water during tamping to assure complete consolidation of the fill material. If, due to rain or other causes, the material is too wet for satisfactory compaction, it shall be allowed to dry as required, before compaction.

#### 6.05 Concrete

Unless otherwise specified, all concrete shall be Class "C" achieving a compression strength of 4000 PSI within 28 days.

Portland cement shall comply with ASTM C-150.

Fine aggregate shall comply with ASTM C-33, and shall consist of sand having clean, hard, durable, uncoated grains, free from deleterious substances.

Coarse aggregate shall comply with ASTM C-33 and shall consist of clean gravel or crushed stone free from soft or elongated pieces and deleterious substances. In no case shall the maximum size be greater than 75% of the minimum clear spacing between the reinforcing bars or 20% of the narrowest dimension between the sides of forms.

Water shall be clear, and free from injurious amounts of oil, acid, alkali, organic matter or other deleterious substances. Approval of the Engineer is required on any water source other than a public water supply intended for domestic consumption.

All concrete shall be thoroughly vibrated by qualified personnel, taking care to give complete coverage without causing undue bleeding or segregation. Vibrators shall be applied vertically and shall be removed when the first sheen of mortar appears on the surface.

Calcium chloride or other chemicals shall not be used to prevent concrete from freezing. Concrete damaged by freezing shall be removed and replaced at the Contractor's own expense.

Contractor shall perform and furnish to Engineer concrete testing of three cylinders per batch of concrete furnished. Provide testing of one break at 7 days, one at 28 days, and hold one in reserve until rated strength is achieved.

#### 6.06 Forms

Forms shall conform to the shape, lines and dimensions of the members as called for on the Plans and shall be substantially free from surface defects.

They shall be properly braced or tied together so as to maintain position and shape before, during and after placing. The Contractor shall be fully responsible for the adequacy and safety of the forms.

All forms shall be built and maintained in an excellent condition, so that, when removed, the concrete will be left with a smooth, presentable surface, free from offsets, fins, ridges, and other unsightly defects. Forms shall be cleaned and a thin coat of form oil applied.

Forms for exposed concrete shall be given special attention to provide a smooth surface free from defects and form marks so that rubbing and finishing will be kept to a minimum.

Vertical and horizontal corners of exposed concrete shall be chamfered.

Care shall be exercised to prevent damage of concrete during the removal of forms. The following schedule shall be considered the minimum period under normal conditions when Type I cement is used; but its use shall not in any way relieve the Contractor of responsibility for the safety and appearance of the structure.

Temperatures		
Above 60 Degrees	50 - 60 Degrees	40 - 50 Degrees
24 Hrs.	36 Hrs.	72 Hrs.

When the temperature to which form or concrete surfaces are exposed drops below 40 degrees F, the forms shall remain in place an additional time equal to the time of the sub-40 degree exposure. If form insulation is used, concrete surface temperature shall apply.

## 6.07 Reinforcing Steel

Reinforcing bars shall meet the requirements of ASTM Des: A615. Grade shall be as shown on the drawings but shall be grade 60 unless otherwise noted.

All bars shall be stored off the ground and shall, at all times, be protected from moisture and be kept free from dirt, oil, or injurious coatings. If concreting is delayed for any considerable number of days after the reinforcing is placed in position, it shall be protected by covering with canvas or other satisfactory covering, or, if directed, shall be painted with a coat of neat cement grout. Any bars or fabric having scaly rust shall be cleaned.

Metal reinforcing shall be properly fabricated, supported, and securely held in place so that it will be in the correct position after the concrete has been placed and compacted. Bars shall be bent in the shop to the shapes shown or required. Field bending shall be done only with the written approval of the Engineer.

Hooks and bends in reinforcing shall be fabricated in accordance with ACI 318. All bars shall be bent cold.

Reinforcing steel shall be adequately secured in position by concrete or metal chairs or spacers. Bars shall be fastened together with annealed wire of not less than 18 gauge or other approved method.

Unless noted on the drawings, minimum cover for reinforcing shall be 2 inches.

## 7.0 Structures and Equipment

### 7.01 Electrical Equipment

All electrical equipment such as generator modules, step-up transformers, instrument transformers, A-C control equipment, D-C control equipment, and relay and metering equipment shall be installed in accordance with installation instructions, construction drawings, and manufacturer's drawing.

Installation instructions and manufacturer's drawing are provided with each piece of equipment. Construction drawings will be provided by the Engineer.

Any equipment or manpower required for lifting, assembling, transporting and placing the equipment on the foundation, shall be furnished by the Contractor.

All high-voltage, low-voltage and control connections to the electrical equipment shall be made in accordance with the manufacturers instructions and the construction specifications and drawings. All bolted connections shall be tightened and torqued to the proper value.

After installation all equipment shall be inspected for paint chips and scrapes. All damaged areas shall be repaired and re-painted in accordance with the manufacturers' instruction.

#### 7.02 Equipment Grounding and Bonding

All equipment, including generator modules and associated equipment shall be grounded as shown on the construction plans and drawings. Interconnections to the ground grid conductors shall be made using compression connectors, as indicated. All ground grid conductors and interconnections shall be a minimum depth of 30 inches.

#### 8.0 Wires and Cables

This section shall include the wires and cables as shown, specified or required for the complete power, control and other systems or work of the Contract.

Unless otherwise shown or specified, all power and control circuits shall be wired with 600 volt insulated conductors enclosed in cable tray, cable trench, or conduit. Conductors installed in ladder tray, cable trench or cable tray shall be multi-conductor control cable with overall jacket, type TC XHHW-2 or TC THWN-2, 600 volt copper. Conductors installed in underground conduits shall be Type TC XHHW-2 or TC THWN-2 for multi-conductor cables or XHHW-2 or THWN-2 for single conductors.

Conductors number 14 AWG and larger shall be stranded. Insulated conductors shall be legibly marked along their entire length indicating AWG and insulation type.

All power and control conductors connected to identified terminal boards shall be coded with the number or letters and numbers designation which shall be the same as the coding of the terminal boards. Coding shall be by means of printed plastic tape.

All conductors shall be carefully handled to avoid kinks or damage to insulation. Lubricants shall not be used to assist in pulling conductors into conduits, unless approved for this purpose as non-damaging to insulation. No splicing shall be made in conductors. Connections shall be made with approved lugs and connectors and insulation of the connected conductors.

Connections shall be made to all equipment in accordance with the Contract Drawings, wiring diagrams furnished by manufacturers, and specific directions by the Engineer. The Contractor shall be responsible for the accuracy of connection work. Any damage resulting from erroneous connections shall be made good by the Contractor at his own expense.

## 9.0 Specifications for Raceways

### 9.01 Rigid Steel Conduit

Rigid steel conduit, including bushings, couplings, elbows, nipples, and other fittings, shall be galvanized by hot-dipping, electroplating, sherardizing, or metalizing process and shall meet the requirements of ANSI C80.1, ANSI C80.4, UL, and the NEC. Setscrew type couplings, bushings, elbows, nipples, and other fittings are not acceptable.

### 9.02 Heavy Wall PVC Conduit

Rigid PVC conduit shall be Schedule 40, UL listed for concrete-encased, underground direct burial, concealed and direct sunlight exposed use, and UL listed and marked for use with conductors having 90 degrees C insulation. Conduits, couplings, bushings, elbows, nipples, and other fittings shall meet the requirements of NEMA TC 2 and TC 3, Federal Specifications W-C-1094, UL, NEC, and ASTM specified tests for the intended use.

### 9.03 Flexible PVC Conduit

Flexible non-metallic PVC conduit shall be UL listed as suitable for underground direct burial, concealed and direct sunlight exposed use and marked for use with conductors having 90 degrees C insulation. Conduit couplings, bushings, elbows, nipples and other fittings to be the same as specified for Heavy Wall PVC Conduit.

### 9.04 Raceway Fittings

Fittings for rigid steel conduit shall comply with Specifications for Fittings for Rigid Metal Conduit and Electrical Metallic Tubing, ANSI C80.4.

Fittings for PVC conduit shall comply with Standard for PVC Fittings for use with Rigid PVC Conduit and Tubing, NEMA TC-2 and shall be NEMA Type IV.

### 9.05 Wireways

Galvanneal steel-enclosed wireway shall be constructed for the conditions of the area. Wireways with heights up through 8 inches shall be hinged cover; wireways over 8 inches high may be screw cover. Wireways and fittings shall be UL listed, and have a gray, baked enamel finish. Wireways must be installed in accordance with the NEC.

### 9.06 Underground Ducts

Underground duct lines shall be of Schedule 40 polyvinyl chloride conduit. Connection of conduit shall be by a waterproof cement and coupling as recommended by the manufacturer.

Conduits shall be direct-buried in accordance with details on the drawings. Conduit in underground ducts shall be not smaller in diameter, inside, than indicated on drawings. The top of the conduit shall be not less than 24 inches below grade. Changes in direction of runs exceeding a total of 10 degrees, either vertical or horizontal, shall be accomplished by long sweep manufactured bends. The long sweep bends may be made up of one or more curved or straight sections or combinations thereof. Manufactured bends shall have a minimum radius of 24 inches for conduits sized 3½ inches or smaller. Conduits sized 4 inches and larger shall have 36 inch radius bends. Conduit separators shall be of unfilled high impact polystyrene molding compounds. The joints of the conduit shall be staggered by rows and layers so as to provide a duct line having the maximum strength. During construction, partially completed duct lines shall be protected from the entrance of debris such as mud, sand, and dirt by means of suitable conduit plugs. As each section of duct line is completed a testing mandrel not less than 12 inches long with a diameter 1/4 inches less than the size of the conduit shall be drawn through until the conduit is clear of all particles of earth, sand, or gravel; conduit plugs shall then be immediately installed.

#### 9.07 Above Ground Conduits

Exposed conduits associated with power, control, and metering functions shall be Rigid Metal Conduits, sizes as indicated.

All exposed conduits shall be run vertically, perpendicular to walls, or parallel to walls. Bends shall be either field bends or prefabricated, except that bends in three-inch conduit shall be not less than twenty-four inches radius.

All conduits which are not embedded in concrete or attached directly to walls shall be supported by metal framing, Unistrut or approved equal, not more than ten feet apart on centers.

All conduits shall be identified where connected to a terminal device by a numbering tape which provides an unique number for each conduit. The number shall be the number of the conductor group which is enclosed in the conduit as shown on the conductor schedule in the drawings.

#### 9.08 Concrete Encasement

This section covers the work necessary to furnish and install complete, ready for use all concrete backfill in duct bank.

American Concrete Institute "Standard Specification for Structural Concrete for Buildings", ACI 301-10, is hereby made a part of this specification to the same extent as if bound herein. ACI 301-10 shall be amended, supplemented, or deleted as required by the following paragraphs and as such constitutes the specification for this project.

All concrete shall be Class “B”, , 3000 lb. ps. minimum 28-day compressive strength, or controlled low strength material (flowable fill) with a compressive strength of approximately 60 psi.

## 1. Class “B” Concrete Specifications

### Portland Cement

Portland cement shall comply with ASTM C-150.

### Fine Aggregate

Fine aggregate shall comply with ASTM C-33, and shall consist of sand having clean, hard, durable, uncoated grains, free from deleterious substances.

### Coarse Aggregate

Coarse aggregate shall comply with ASTM C-33 and shall consist of clean gravel or crushed stone free from soft or elongated pieces and deleterious substances.

In no case shall the maximum size be greater than 75% of the minimum clear spacing between the reinforcing bars of 20% or the narrowest dimension between the sides of forms.

### Water

Water shall be clear, and free from injurious amounts of oil, acid, alkali, organic matter or other deleterious substances. Approval of the Engineer is required on any water source other than a public water supply intended for domestic consumption.

## 2. Flowable Fill Specifications

Flowable Fill shall be manufactured with materials conforming to the standards listed below. The ENGINEER shall approve the use of all non-conforming materials. Approval shall be based on documentation that controlled low strength material mixtures manufactured with the nonconforming materials meet the specified plastic and hardened properties and are suited for the intended application.

Hydraulic Cement AASHTO M 85 or M 240  
Fly Ash AASHTO M 295  
Granulated Blast Furnace Slag AASHTO M 302  
Fine Aggregate AASHTO M 6  
Coarse Aggregate AASHTO M 80  
Lightweight Aggregate AASHTO M 195  
Water AASHTO M 157



Chemical Admixtures AASHTO M 194  
Air Entrainment Admixtures Approved by the ENGINEER  
Foaming Admixture ASTM C 869

**Flowability** - Normal flowable material shall have a flow of 6 to 8 inches tested in accordance with ASTM D6103. Low flowable material shall have a maximum flow of 6 inches. High flowable material shall have a minimum flow of 8 inches.

**Unconfined Compressive Strength for Excavatable CLSM** - Excavatability shall be evaluated on the basis of past performance and experience. When past performance records are not available, excavatability shall be evaluated on the basis of unconfined compressive strength tested in accordance with ASTM D4832. Excavatable CLSM shall have a minimum strength of 30 psi. The one-year strength shall not exceed 150 psi. In place of one year test data, the ENGINEER, may approve the CLSM mixture based on sufficient documentation, provided by the ready mix producer, that indicates the strength gain has ceased.

CLSM shall attain a minimum 28-day compressive strength of 60 psi.

**Water and Admixture Addition** - The addition of water and admixtures on the jobsite is permitted. The amount of water and admixture added shall be recorded. The CLSM mixture shall be mixed for a minimum of 30 revolutions after the addition of the water or admixture.

### 3. Conveying and Depositing Concrete

(a) Conveying:

Concrete shall be conveyed by means that will prevent segregation and loss of mortar from the mix. Adequate manpower and equipment in the form of buckets, buggies, chutes, conveyors, pneumatic conveying equipment or other approved means shall be provided to insure continuous operation.

(b) Depositing:

Concrete shall not be deposited in water, (unless so specifically intended) or on frozen areas.

Concrete shall be deposited as nearly as possible to its final position and shall not be moved by vibration. Segregation and overworking shall be kept to a minimum.

Concrete that is contaminated, that has been re-tempered or has taken its initial set shall not be used. The elapsed time between the introduction of the mixing water to the cement and aggregates and the disposition in the work shall, in no case, exceed one hour and this limit may be reduced by the Engineer, should the rate of hardening dictate.

(c) Vibration:

All concrete shall be thoroughly vibrated by qualified personnel, taking care to give complete coverage without causing undue bleeding or segregation. Vibrators shall be applied vertically and shall be removed when the first sheen of mortar appears on the surface.

(d) Duct Cover

Care shall be taken to ensure a minimum of three inches of separation and cover are provided around each conduit. The Contractor shall furnish adequate means (ie. spacers, rebar, etc.) to maintain spacing and prevent floating during concrete placement.

9.09 Wall/Fire Penetrations

Installation of conduit/raceways through walls or floors shall be made so that the possible spread of fire or products of combustion will not be substantially increased. Openings around penetrations through fire-resistant-rated walls, partitions, floors, or ceilings shall be fire-stopped using approved methods to maintain the fire resistance ratings.

10.0 Patching

Where existing sidewalks, driveways, streets and highways are cut, the patching shall be finished in such a manner as to match the adjoining surfaces. Curbs and gutters shall be replaced by the same shape and materials as existing walkways and/or steps shall be replaced with concrete construction or similar to existing construction. All pavement cut shall be patched whether or not a paved surface is indicated on the plans. Work shall be done neatly by workmen skilled in the trade.

Where street paving is cut, the asphalt shall be neatly cut with an asphalt cutter. Breaking the asphalt out with a backhoe or other means will not be tolerated. Boards or other suitable materials shall be placed under backhoe outrigging to prevent damage to the asphalt. The patching shall consist of a minimum of 6 inches of run-of-crusher stone and 4 inches of asphalt of existing type. If the surrounding pavement is damaged by backhoe or by any other means, the damaged spot shall be cut out and patched as above. If the surface of surrounding area is damaged, the whole area shall be paved over with 3/4 inches sand-asphalt at no additional cost to the Owner.

Stone base and paving shall be placed immediately after opening is backfilled. Backfill shall be tamped thoroughly and any settlement which occurs in the street during 12 months warranty period shall be repaired and resurfaced with asphalt at no further cost to the Owner.

In order to provide bearing for replaced pavement, all pavement cuts shall be wider on each side than earth cut a top of trench in accordance with detail provided on Drawing 18-70-03.

## **MATERIAL SPECIFICATIONS**

**SPECIFICATIONS**  
**FOR**  
**CONDUCTORS**

**ITEM A: 600V, 600 MCM CU SECONDARY UD CABLE**

This specification covers the construction, mechanical and electrical requirements for 600 MCM CU abrasion resistant secondary UD cable.

The cable shall be manufactured in U.S.A., rated 600VAC, 420 amperes minimum in buried conduit.

The conductor must be suitable for the use in wet or dry locations at temperatures not to exceed 90°C.

The conductor shall meet or exceed all applicable ASTM specifications, UL standard 83, Federal specification A-A-59544 and requirements of National Electric Code.

The conductors shall be annealed (soft) copper, insulated with a tough heat and moisture resistant polyvinyl chloride (PVC), jacketed with abrasion, moisture, gasoline, and oil resistant nylon (polyamide) or UL-listed equivalent.

The cable shall be furnished in continuous lengths of the completed cable assembly on reels. Reels are to be non-returnable and substantially constructed of good materials and shall afford proper protection to the cable during shipment.

The cable shall be marked on the outer jacket with the following:

Sequential footage marking –  
Name of the manufacturer and location of plant –  
Date of manufacture – month and year – (Example: 0218)

The markings are not to exceed a distance of three feet between repetitions. The printed numbers must be legible and of a size which may be easily read.

Cable ends shall not extend beyond surface of the reels ends.

A watertight seal shall be applied to each end of the cable to prevent the entrance of moisture during transit or out-of-doors storage.

A durable label shall be securely attached to each flange of the reel. Each label shall indicate purchase order number, name of manufacturer, number of reel, description of cable, tare weight of reel, and the footage of cable on the reel, as well as the first and last sequential numbers printed on the jacket.

## **ITEM B: 600V, #1 AWG CU SECONDARY UD CABLE**

This specification covers the construction, mechanical and electrical requirements for #1 AWG Cu abrasion resistant secondary UD cable.

The cable shall be manufactured in U.S.A., rated 600VAC, 130 amperes minimum in buried conduit.

The conductor must be suitable for the use in wet or dry locations at temperatures not to exceed 90°C.

The conductor shall meet or exceed all applicable ASTM specifications, UL standard 83, Federal specification A-A-59544 and requirements of National Electric Code.

The conductors shall be annealed (soft) copper, insulated with a tough heat and moisture resistant polyvinyl chloride (PVC), jacketed with abrasion, moisture, gasoline, and oil resistant nylon (polyamide) or UL-listed equivalent.

The cable shall be furnished in continuous lengths of the completed cable assembly on reels. Reels are to be non-returnable and substantially constructed of good materials and shall afford proper protection to the cable during shipment.

The cable shall be marked on the outer jacket with the following:

Sequential footage marking –  
Name of the manufacturer and location of plant –  
Date of manufacture – month and year – (Example: 0218)

The markings are not to exceed a distance of three feet between repetitions. The printed numbers must be legible and of a size which may be easily read.

Cable ends shall not extend beyond surface of the reels ends.

A watertight seal shall be applied to each end of the cable to prevent the entrance of moisture during transit or out-of-doors storage.

A durable label shall be securely attached to each flange of the reel. Each label shall indicate purchase order number, name of manufacturer, number of reel, description of cable, tare weight of reel, and the footage of cable on the reel, as well as the first and last sequential numbers printed on the jacket.

## **ITEM B: 600V, #6 AWG CU SECONDARY UD CABLE**

This specification covers the construction, mechanical and electrical requirements for #1 AWG Cu abrasion resistant secondary UD cable.

The cable shall be manufactured in U.S.A., rated 600VAC, 65 amperes minimum in buried conduit.

The conductor must be suitable for the use in wet or dry locations at temperatures not to exceed 90°C.

The conductor shall meet or exceed all applicable ASTM specifications, UL standard 83, Federal specification A-A-59544 and requirements of National Electric Code.

The conductors shall be annealed (soft) copper, insulated with a tough heat and moisture resistant polyvinyl chloride (PVC), jacketed with abrasion, moisture, gasoline, and oil resistant nylon (polyamide) or UL-listed equivalent.

The cable shall be furnished in continuous lengths of the completed cable assembly on reels. Reels are to be non-returnable and substantially constructed of good materials and shall afford proper protection to the cable during shipment.

The cable shall be marked on the outer jacket with the following:

Sequential footage marking –  
Name of the manufacturer and location of plant –  
Date of manufacture – month and year – (Example: 0218)

The markings are not to exceed a distance of three feet between repetitions. The printed numbers must be legible and of a size which may be easily read.

Cable ends shall not extend beyond surface of the reels ends.

A watertight seal shall be applied to each end of the cable to prevent the entrance of moisture during transit or out-of-doors storage.

A durable label shall be securely attached to each flange of the reel. Each label shall indicate purchase order number, name of manufacturer, number of reel, description of cable, tare weight of reel, and the footage of cable on the reel, as well as the first and last sequential numbers printed on the jacket.

### **ITEM C: 600V, #12 SECONDARY UD CABLE**

This specification covers the construction, mechanical and electrical requirements for #12 AWG abrasion resistant secondary UD cable.

The cable shall be manufactured in U.S.A., rated 600VAC, 20 amperes minimum in buried conduit.

The conductor must be suitable for the use in wet or dry locations at temperatures not to exceed 90°C.

The conductor shall meet or exceed all applicable ASTM specifications, UL standard 83, Federal specification A-A-59544 and requirements of National Electric Code.

The conductors shall be annealed (soft) copper, insulated with a tough heat and moisture resistant polyvinyl chloride (PVC), jacketed with abrasion, moisture, gasoline, and oil resistant nylon (polyamide) or UL-listed equivalent.

The cable shall be furnished in continuous lengths of the completed cable assembly on reels. Reels are to be non-returnable and substantially constructed of good materials and shall afford proper protection to the cable during shipment.

The cable shall be marked on the outer jacket with the following:

Sequential footage marking –  
Name of the manufacturer and location of plant –  
Date of manufacture – month and year – (Example: 0218)

The markings are not to exceed a distance of three feet between repetitions. The printed numbers must be legible and of a size which may be easily read.

Cable ends shall not extend beyond surface of the reels ends.

A watertight seal shall be applied to each end of the cable to prevent the entrance of moisture during transit or out-of-doors storage.

A durable label shall be securely attached to each flange of the reel. Each label shall indicate purchase order number, name of manufacturer, number of reel, description of cable, tare weight of reel, and the footage of cable on the reel, as well as the first and last sequential numbers printed on the jacket.

#### **ITEM D: 600V, #14 AWG SECONDARY UD CABLE**

This specification covers the construction, mechanical and electrical requirements for #14 AWG abrasion resistant secondary UD cable.

The cable shall be manufactured in U.S.A., rated 600VAC, 15 amperes minimum in buried conduit.

The conductor must be suitable for the use in wet or dry locations at temperatures not to exceed 90°C.

The conductor shall meet or exceed all applicable ASTM specifications, UL standard 83, Federal specification A-A-59544 and requirements of National Electric Code.

The conductors shall be annealed (soft) copper, insulated with a tough heat and moisture resistant polyvinyl chloride (PVC), jacketed with abrasion, moisture, gasoline, and oil resistant nylon (polyamide) or UL-listed equivalent.

The cable shall be furnished in continuous lengths of the completed cable assembly on reels. Reels are to be non-returnable and substantially constructed of good materials and shall afford proper protection to the cable during shipment.

The cable shall be marked on the outer jacket with the following:

Sequential footage marking –  
Name of the manufacturer and location of plant –  
Date of manufacture – month and year – (Example: 0218)

The markings are not to exceed a distance of three feet between repetitions. The printed numbers must be legible and of a size which may be easily read.

Cable ends shall not extend beyond surface of the reels ends.

A watertight seal shall be applied to each end of the cable to prevent the entrance of moisture during transit or out-of-doors storage.

A durable label shall be securely attached to each flange of the reel. Each label shall indicate purchase order number, name of manufacturer, number of reel, description of cable, tare weight of reel, and the footage of cable on the reel, as well as the first and last sequential numbers printed on the jacket.



**ITEM E: 600V, 4/0 AWG BARE COPPER WIRE**

This specification covers the construction, mechanical and electrical requirements for 4/0 AWG bare copper wire.

The wire shall be manufactured in U.S.A., have ampacity no less than 480A when directly buried.

The conductor shall be made of soft drawn copper and shall have unilay construction. Conductor shall be of greater flexibility to be suitable for uninsulated hook up, jumpers and grounds in electrical construction.

The conductor shall meet or exceed all applicable ASTM specifications.

**SPECIFICATION**  
**FOR**  
**CONDUITS**

**ITEM A: PVC CONDUIT**

This section covers the work necessary to furnish and install, complete, ready for operation electrical conduits. The Contractor shall submit approval drawings showing the material to be installed in the work, the details of hangers, sleeves, and inserts, and the locations of all pull and junction boxes.

All conduits of a given type shall be the product of one manufacturer.

The conduits shall be rigid PVC conduit, Schedule 40, UL listed for concrete-encased, underground direct burial, concealed and direct sunlight exposed use, and UL listed and marked for use with conductors having 90 degrees C insulation. The conduits, couplings, bushings, elbows, nipples, and other fittings shall meet the requirements of NEMA TC 2 and TC 3, Federal Specifications W-C-1094, UL, NEC, and ASTM specified tests for the intended use.

Underground conduits shall be installed as per the duct bank detail shown in the attached drawings.

Conduits shall be of a quality as made by Triangle, Carlon, Ocal, Wheatland, or equal. Condulets, couplings, boxes, hangers and similar devices shall be PVC-coated rigid or A304 stainless steel.

Contractor shall furnish and install conduit bells of required sizes at ends of all conduits.

Except as otherwise shown and specified, all conduit work runs shall be parallel to horizontal planes and shall be neatly aligned. Elbows and offsets shall be used wherever possible; for bends made in the field, an approved conduit bending machine shall be used. Field bends shall be symmetrical and carefully made so as to prevent damage or deformation of conduit. Any conduit which has been crushed or deformed in any way shall not be installed. Routing of conduits shall be of the shortest possible and compatible with good layout. The number of bends, offsets and crossovers shall be kept to a minimum. The Contractor shall exercise the necessary precautions to prevent lodgement of dirt in conduits, boxes and fittings during installation. A run of conduit which has become clogged shall be swabbed to remove all foreign matter or shall be replaced.

Where practicable, conduit runs shall be slightly pitched to facilitate draining the condensate or shall be otherwise installed to prevent trapping of condensation.

There shall not be more than the equivalent of three quarter bends (270 degrees total) between all points, for example, conduit bodies, boxes, padmounted enclosures, manholes, handholes, etc.

Conduits shall be terminated into an enclosure with fittings that do not violate the NEMA rating of enclosure.

Hangers and supports for conduits shall be of an approved design and shall be adequate to support conduit systems with a factor of safety of at least 10. All steel parts of the conduit support systems shall be A304 stainless steel.

Where conduits pass through concrete pads, walls or pilasters, they shall be installed in suitable sleeves. All sleeves shall be Schedule 40 PVC pipe.

# **MANUFACTURER DRAWINGS**