

**CONTRACT DOCUMENTS**

**LANCASTER COUNTY  
NEBRASKA**

**Roof Top HVAC Unit Replacement - County Extension  
Bid No. 19-197**

**MMC Contractors  
9751 S. 142nd Street  
Omaha, NE 68138  
(402) 861-0681**

**LANCASTER COUNTY, NEBRASKA  
CONTRACT TERMS**

THIS CONTRACT, made and entered into by and between **MMC Contractors, 9751 S. 142nd Street, Omaha, NE 68138**, hereinafter called the Contractor, and Lancaster County, Nebraska, a political subdivision of the State of Nebraska, hereinafter referred to as the County.

WHEREAS, the County has caused to be prepared, in accordance with law, Specifications, Plans, and other Contract Documents for the Work herein described, and has approved and adopted said documents and has caused to be published an advertisement for and in connection with said Work, to-wit:

**Roof Top HVAC Unit Replacement - County Extension, Bid No. 19-197**

and

WHEREAS, the Contractor, in response to such advertisement, has submitted to the County, in the manner and at the time specified, a sealed Proposal/Supplier Response in accordance with the terms of said advertisement; and

WHEREAS, the County, in the manner prescribed by law has publicly opened, read aloud, examined, and canvassed the Proposals/Supplier Responses submitted in response to such advertisement, and as a result of such canvass has determined and declared the Contractor to be the lowest responsible bidder for the said Work for the sum or sums named in the Contractor's Proposal/Supplier Response, a copy thereof being attached to and made a part of this Contract.

NOW, THEREFORE, in consideration of the sums to be paid to the Contractor and the mutual covenants herein contained, the Contractor and the County have agreed and hereby agree as follows:

1. The Contractor agrees to (a) furnish all tools, equipment, supplies, superintendence, transportation, and other construction accessories, services, and facilities; (b) furnish all materials, supplies, and equipment specified to be incorporated into and form a permanent part of the complete work; (c) provide and perform all necessary labor in a substantial and workmanlike manner and in accordance with the provisions of the Contract Documents; and (d) execute, construct, and compete all Work included in and covered by the County's award of this Contract to the Contractor, such award being based on the acceptance by the County of the Contractor's Proposal, or part thereof, as follows:

**Agreement to full proposal**

2. The County agrees to pay to the Contractor for the performance of the Work embraced in this Contract, the Contractor agrees to accept as full compensation therefor, the following sums and prices for all Work covered by and included in the Contract award and designated above, payment thereof to be made in the manner provided by the County:

**The County will pay for products/services, according to the Line Item pricing as listed in Contractors Proposal/Supplier Response, a copy thereof being attached to and made a part of this Contract, for a total of \$175,000.00.**

3. **EQUAL EMPLOYMENT OPPORTUNITY:** In connection with the carrying out of this project, the Contractor shall not discriminate against any employee, applicant for employment, or any other person because of race, color, religion, sex, national origin, ancestry, disability, age or marital status. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, national origin, ancestry, disability, age or marital status. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other compensation; and selection for training, including apprenticeship.

4. E-VERIFY: In accordance with Neb. Rev. Stat. 4-108 through 4-114, the contractor agrees to register with and use a federal immigration verification system, to determine the work eligibility status of new employees performing services within the state of Nebraska. A federal immigration verification system means the electronic verification of the work authorization program of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, 8 U.S.C. 1324 a, otherwise known as the E-Verify Program, or an equivalent federal program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work eligibility status of a newly hired employee pursuant to the Immigration Reform and Control Act of 1986. The Contractor shall not discriminate against any employee or applicant for employment to be employed in the performance of this section pursuant to the requirements of state law and 8 U.S.C.A 1324b. The contractor shall require any subcontractor to comply with the provisions of this section.

5. GUARANTEE: A performance and payment bonds in the full amount of the contract shall be required for all construction contracts. These bonds shall remain in effect during the guarantee period as stated in the specifications. Once the project is completed, the contractor may submit a maintenance bond in place of the performance bond.

6a. TERMINATION FOR CAUSE:

- a) The County may terminate the Contract if the Contractor:
  - 1. Refuses or fails to supply enough properly skilled workers or proper materials;
  - 2. Fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
  - 3. Disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
  - 4. Otherwise commits a substantial breach of any provision of the Contract Documents.
- b) When any of the above reasons exist, the County without prejudice to any other rights or remedies of the County may (after giving the Contractor and the Contractor's surety, if any, seven days' written notice) terminate employment of the Contractor. In addition the County may (subject to any prior rights of the surety):
  - 1. Take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
  - 2. Accept assignment of subcontracts; and
  - 3. Finish the Work by whatever reasonable method the County may deem expedient.
- c) If the Contract is terminated by County as provided in this section, Contractor shall not be entitled to receive any further payment until the expiration of 35 days after Final Completion and acceptance of all Work by County.
- d) If the unpaid balance of the Contract Sum exceeds the cost of completing the Work, including all additional costs and expenses made necessary thereby, including costs for County staff time, plus all losses sustained, including any liquidated damages provided under the Contract Documents, such excess shall be paid to Contractor. If such costs, expenses, losses, and liquidated damages exceed the unpaid balance of the Contract Sum, Contractor shall pay such excess to County.
- e) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination has been issued for the convenience of the County.
- f) No termination or action taken by County after termination shall prejudice any other rights or remedies of County provided by law or by the Contract Documents upon such termination; and County may proceed against Contractor to recover all losses suffered by County.

6. TERMINATION BY THE COUNTY FOR CONVENIENCE:

- a) The County may at its option, terminate this Contract in whole or in part at any time without cause by written notice thereof to the Contractor.

- b) Upon any such termination, the Contractor agrees to waive any claims for damages, including loss of anticipated profits, on account thereof, and as the sole right and remedy of the Contractor, the County shall pay Contractor in accordance with this Paragraph. The provisions of the Contract which by their nature survive final acceptance of the Work, shall remain in full force and effect after such termination to the extent provided in such provisions.
  - c) Upon receipt of any such notice of termination, the Contractor shall, unless the Notice directs otherwise, immediately:
    - 1. Discontinue the Work to the extent specified by the County;
    - 2. Place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of that portion of the Work, if any, the County has directed not to be discontinued;
    - 3. Promptly make every reasonable effort to procure cancellation upon satisfactory terms as determined by the County of all orders and subcontracts not related to that portion of the Work, if any, the County has directed not to be discontinued;
    - 4. Do only such other activity as may be necessary to preserve and protect work already in progress and to protect materials and plants and equipment on the Project Site or in transit thereto.
  - d) Upon such termination, the obligations of the Contract shall continue as to portions of the Work already performed and as to bona fide obligations the Contractor assumed prior to the date of termination.
  - e) Upon termination, the County shall pay the Contractor the full cost of all Work properly done by the Contractor to the date of termination not previously paid for by the County. If at the date of such termination the Contractor has properly prepared or fabricated off site any goods for subsequent incorporation in the Work, the County may direct the Contractor to deliver such goods to the Site or to such other place as the County may reasonably determine, whereupon the County shall pay to the Contractor the cost for such goods and materials.
  - f) Upon such termination, County shall pay to Contractor the sum of the following:
    - 1. The amount of the Contract Sum allocable to the portion of the Work properly performed by Contractor as of the date of termination, less sums previously paid to Contractor.
    - 2. Previously unpaid costs of any items delivered to the Project site which were fabricated for subsequent incorporation in the Work.
    - 3. Any proven losses with respect to materials and equipment directly resulting from such termination.
    - 4. Reasonable demobilization costs.
  - g) The above payment shall be the sole and exclusive remedy to which Contractor is entitled in the event of termination of the Contract by County pursuant to this provision; and Contractor will be entitled to no other compensation or damages and expressly waives same.
7. **INDEPENDENT CONTRACTOR:** It is the express intent of the parties that this contract shall not create an employer-employee relationship. Employees of the Contractor shall not be deemed to be employees of the County and employees of the County shall not be deemed to be employees of the Contractor. The Contractor and the County shall be responsible to their respective employees for all salary and benefits. Neither the Contractor's employees nor the County's employees shall be entitled to any salary, wages, or benefits from the other party, including but not limited to overtime, vacation, retirement benefits, workers' compensation, sick leave or injury leave. Contractor shall also be responsible for maintaining workers' compensation insurance, unemployment insurance for its employees, and for payment of all federal, state, local and any other payroll taxes with respect to its employees' compensation.
8. **PERIOD OF PERFORMANCE:** The work included in this Contract shall begin as soon as possible from Notice to Proceed. Conference Room Units must be installed and operable the week of October 28-November 1, 2019. Substantial completion will be November 8, 2019 with final completion November 22, 2019.



9. ASSIGNMENT: Contractor shall not assign its duties and responsibilities under this Contract without the express written permission of the County.
  
10. Notwithstanding anything contrary to the Contract Terms, the attached documents comprise the Contract, and consist of the following:
  1. Contract Terms
  2. Accepted Proposal
  3. Payment/Performance Bonds
  4. Insurance with Endorsements
  5. Addendum No. 1
  6. Prebid Meeting Attendee List
  7. General Specifications
  8. Technical Specifications
  9. Drawings and Plans
  10. Instructions to Bidders
  11. Insurance Requirements
  12. Employee Classification Act Requirements
  13. Proprietary Information - Bids
  14. Sales Tax Exemption Forms 13 & 17
  15. Notice to Bidders

The herein above mentioned Contract Documents form this Contract and are a part of the Contract as if hereto attached. Said documents which are not attached to this document may be viewed at: [lincoln.ne.gov](http://lincoln.ne.gov) - Keyword: Bid - Awarded or Closed bids.

This Contract contains the complete and entire Contract between the parties and may not be altered or amended except in writing executed, making specific references to this Contract, by a duly authorized officer of the Contractor and by a duly authorized official of the County.

The Contractor and the County hereby agree that all the terms and conditions of this Contract shall be binding upon themselves, and their heirs, administrators, executors, legal and personal representatives, successors, and assigns.

IN WITNESS WHEREOF, the Contractor and the County do hereby execute this contract upon completion of signature on:

Vendor Signature Page  
Lancaster County Signature Page

## Vendor Signature Page

**CONTRACT**  
**Roof Top HVAC Unit Replacement - County Extension**  
**Bid No. 19-197**  
**Lancaster County**  
**MMC Contractors**

### EXECUTION BY CONTRACTOR

#### IF A CORPORATION:

Attest:

\_\_\_\_\_  
Secretary Seal

MMC Mechanical Contractors, Inc.  
Name of Corporation

9751 S. 142nd St., Omaha, NE 68138  
Address

By:   
Duly Authorized Official

Vice President Service  
Legal Title of Official

#### IF OTHER TYPE OF ORGANIZATION:

\_\_\_\_\_  
Name of Organization

\_\_\_\_\_  
Type of Organization

\_\_\_\_\_  
Address

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

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

#### IF AN INDIVIDUAL:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Address

\_\_\_\_\_  
Signature

## Lancaster County Signature Page

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**CONTRACT**  
**Roof Top HVAC Unit Replacement - County Extension**  
**Bid No. 19-197**  
**Lancaster County**  
**MMC Contractors**

### EXECUTION BY LANCASTER COUNTY, NEBRASKA

Contract Approved as to Form:

The Board of County Commissioners of  
Lancaster, Nebraska

\_\_\_\_\_  
Deputy Lancaster County Attorney

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

dated \_\_\_\_\_

## COMMENTARY TO ACCOMPANY CONSTRUCTION BONDS

### A. GENERAL INFORMATION

There are two types of construction bonds that are required by statutes for public work in many jurisdictions and are widely used for other projects as well.

Construction Performance Bond  
Construction Payment Bond

The Construction Performance Bond is an instrument that is used to assure the availability of funds to complete the construction.

The Construction Payment Bond is an instrument that is used to assure the availability of sufficient funds to pay for labor, materials and equipment used in the construction. For public work the Construction Payment Bond provides rights of recovery for workers and suppliers similar to their rights under the mechanics lien laws applying to private work.

The objective underlying the re-writing of construction bond forms was to make them more understandable to provide guidance to users. The intention was to define the rights and responsibilities of the parties, without changing the traditional rights and responsibilities that have been decided by the courts. The new bond forms provide helpful guidance regarding time periods for various notices and actions and clarify the extent of available remedies.

The concept of pre-default meeting has been incorporated into the Construction Performance Bond. All of the participants favored early and informal resolution of the problems that may precipitate a default, but some Surety companies were reluctant to participate in pre-default settings absent specific authorization in the bond form.

The responsibilities of the Owner and the options available to the Surety when a default occurs are set forth in the Construction Performance Bond. Procedures for making a claim under the Construction Payment Bond are set forth in the form.

EJCDC recommends the use of two separate bonds rather than a combined form. Normally the amount of each bond is 100 percent of the contract amount. The bonds have different purposes and are separate and distinct obligations of the Surety. The Surety Association reports that the usual practice is to charge a single premium for both bonds and there is no reduction in premium for using a combined form or for issuing one bond without the other.

### B. COMPLETING THE FORMS

Bonds have important legal consequences; consultation with an attorney and a bond specialist is encouraged with respect to federal, state and local laws applicable to bonds and with respect to completing or modifying the bond forms.

Both bond forms have a similar format and the information to be filled in is ordinarily the same on both bonds. If modification is necessary, the modifications may be different.

The bond forms are prepared for execution by the Contractor and the Surety. Evidence of authority to bind the Surety is usually provided in the form of a power of attorney designating the agent who is authorized to sign on behalf of the Surety. The power of attorney should be filed with the signed bonds.

Each bond must be executed separately since they cover separate and distinct obligations.

Preferably the bond date should be the same date as the contract, but in no case should the bond date precede the date of the contract.

CONSTRUCTION PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

MMC Contractors  
9751 S. 142nd Street  
Omaha, NE 68138

SURETY (Name and Principal Place of Business):

Federal Insurance Company  
202B Hall's Mill Road  
Whitehouse Station, NJ 08889  
(215) 640-1000

Owner (Name and Address):

Lancaster County  
555 South 10th St.  
Lincoln, NE 68508

CONSTRUCTION CONTRACT

Date:  
Amount: \$175,000.00

Description (Name and Location):

**For all labor, material and equipment necessary for Roof Top HVAC Unit Replacement - County Extension, Bid No. 19-197.**

BOND

Date:  
Amount: \$175,000.00

Modifications to this Bond Form: None

CONTRACTOR AS PRINCIPAL  
Company:

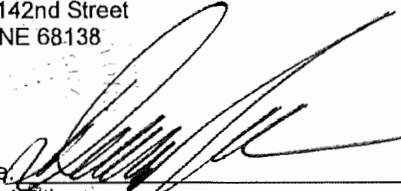
(Corp. Seal)

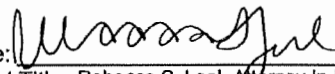
SURETY  
Company:

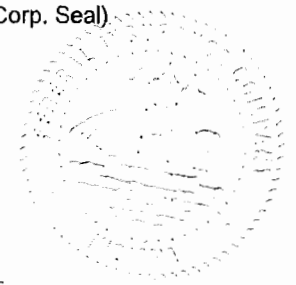
(Corp. Seal)

MMC Contractors  
9751 S. 142nd Street  
Omaha, NE 68138

Federal Insurance Company

Signature:   
Name and Title: Dennis Eden/Vice President

Signature:   
Name and Title: Rebecca S. Leal, Attorney-in-Fact



1. The Contractor and the Surety, jointly and severally, bind themselves their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except to participate in conferences as provided in Subparagraph 3.1.
3. If there is no Owner Default, the Surety's obligation under this Bond shall arise after:
  - 3.1 The Owner has notified the Contractor and the Surety at its address described in Paragraph 10 below, that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default and
  - 3.2 The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Sub-paragraph 3.1; and
  - 3.3 The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.
4. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
  - 4.1 Arrange for the Contractor, with consent of the Owner, to perform and complete the Construction Contract, or
  - 4.2 Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; or
  - 4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default, or
  - 4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
    1. After investigation, determine the amount for which it may be liable to the Owner and as soon as practicable after the amount is determined tender payment therefor to the Owner; or
    2. Deny liability in whole or in part and notify the Owner citing reasons therefor.
5. If the Surety does not proceed as provided in Paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Subparagraph 4.4 and the Owner refuses payment tendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
6. After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:
  - 6.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
  - 6.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 4; and
  - 6.3 Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
7. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, or successors.
8. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related sub-contracts, purchase orders and other obligations.
9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
10. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.
11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
12. Definitions.
  - 12.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
  - 12.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.
  - 12.3 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.
  - 12.4 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

CONSTRUCTION PAYMENT BOND

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

MMC Contractors  
9751 S. 142nd Street  
Omaha, NE 68138

SURETY (Name and Principal Place Of Business):

Federal Insurance Company  
202B Hall's Mill Road  
Whitehouse Station, NJ 08889  
(215) 640-1000

Owner (Name and Address):

Lancaster County  
555 South 10th St.  
Lincoln, NE 68508

CONSTRUCTION CONTRACT

Date:  
Amount: \$175,000.00

Description (Name and Location):

For all labor, material and equipment necessary for Roof Top HVAC Unit Replacement - County Extension, Bid No. 19-197.

BOND


Date:  
Amount: \$175,000.00

Modifications to this Bond Form: None

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

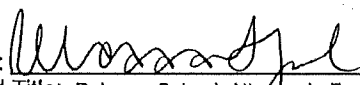
MMC Contractors  
9751 S. 142nd Street  
Omaha, NE 68138

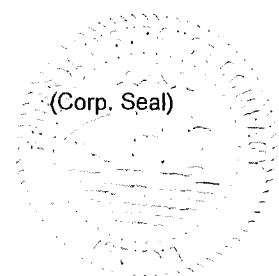
Signature:   
Name and Title: Dennis Eden / Vice President

SURETY

Company: (Corp. Seal)

Federal Insurance Company

Signature:   
Name and Title: Rebecca S. Leal, Attorney-in-Fact



1. The Contractor and the Surety, jointly and severally, bind themselves their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.
2. With respect to the Owner, this obligation shall be null and void if the Contractor:
  - 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and
  - 2.2 Defends, indemnifies and holds harmless the Owner from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Construction Contract, provided the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.
4. The Surety shall have no obligation to Claimants under this Bond until:
  - 4.1 Claimants who do not have a direct contract with the Contractor have given notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof to the Owner, stating that a claim is being made under this Bond and with substantial accuracy the amount of the claim.
  - 4.2 Claimants who do not have a direct contract with the Contractor:
    1. Have furnished written notice to the Contractor and sent a copy, or notice thereof, to the Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed, and
    2. Have either received a rejection in whole or in part from the Contractor, or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly; and
    3. Not having been paid within the above 30 days, have sent a written notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor.
5. If a notice required by Paragraph 4 is given by the Owner to the Contractor or to the Surety, that is sufficient compliance.
6. When the Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:
  - 6.1 Send an answer to the Claimant, with a copy to the Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
  - 6.2 Pay or arrange for payment of any undisputed amounts.
7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
8. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any Construction Performance Bond.

By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Owner's priority to the funds for the completion of the work.

9. The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.
11. No suite or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the work or part of the work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Subparagraph 4.1 or Clause 4.1 (iii), or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the Owner or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory bond and not as a common law bond.
14. Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.
15. DEFINITIONS
  - 15.1 Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials, or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.
  - 15.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.
  - 15.3 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.



CHUBB®

Power of Attorney

Federal Insurance Company | Vigilant Insurance Company | Pacific Indemnity Company

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint Christy M. Braile, Laura M. Buhrmester, Megan L. Burns-Hasty, Jeffrey C. Carey, Mary T. Flanigan, Tahitia M. Fry, C. Stephens Griggs, Rebecca S. Leal, Charissa D. Lecuyer, Patrick T. Pribyl, Debra J. Scarborough, Evan D. Sizemore and Charles R. Teter, III of Kansas City, Missouri-----

each as their true and lawful Attorney-In-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this 3<sup>rd</sup> day of July, 2019.

*Dawn M. Chloros*

Dawn M. Chloros, Assistant Secretary

*Stephen M. Haney*

Stephen M. Haney, Vice President



STATE OF NEW JERSEY

County of Hunterdon

ss.

On this 3<sup>rd</sup> day of July, 2019, before me, a Notary Public of New Jersey, personally came Dawn M. Chloros, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros, being by me duly sworn, did depose and say that she is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of said Companies; and that she signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that she is acquainted with Stephen M. Haney, and knows him to be Vice President of said Companies; and that the signature of Stephen M. Haney, subscribed to said Power of Attorney is in the genuine handwriting of Stephen M. Haney, and was thereto subscribed by authority of said Companies and in deponent's presence.

Notarial Seal



ROSE CURTIS  
NOTARY PUBLIC OF NEW JERSEY  
No. 50072400  
Commission Expires November 22, 2022

*Rose Curtis*  
Notary Public

CERTIFICATION

Resolutions adopted by the Boards of Directors of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY on August 30, 2016:

"RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into in the ordinary course of business (each a "Written Commitment"):

- (1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.
- (2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such person's written appointment as such attorney-in-fact.
- (3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (4) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing to any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.

FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested."

I, Dawn M. Chloros, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

- (i) the foregoing Resolutions adopted by the Board of Directors of the Companies are true, correct and in full force and effect,
- (ii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Whitehouse Station, NJ, this



*Dawn M. Chloros*

Dawn M. Chloros, Assistant Secretary

IN THE EVENT YOU WISH TO VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT:  
Telephone (908) 903-3493 Fax (908) 903-3656 e-mail: surety@chubb.com

Certified Statement Pursuant to Neb. Rev. Stat. § 77-1323

§ 77-1323 Every person, partnership, limited liability company, association, or corporation furnishing labor or material in the repair, alteration, improvement, erection, or construction of any public improvement shall furnish a certified statement to be attached to the contract that all equipment to be used on the project, except that acquired since the assessment date, has been assessed for taxation for the current year, giving the county where assessed.

Pursuant to Neb. Rev. Stat. § 77-1323, I, Daniel L Christensen, do hereby certify that all equipment to be used on Bid No. 19-197, except that equipment acquired since the assessment date, has been assessed for taxation for the current year, in Sarpy County, Nebraska.

DATED this 7 day of August, 2019.

By: [Signature]  
Title: Vice President

STATE OF NEBRASKA )  
COUNTY OF Sarpy )ss.

On August 7, 2019, before me, the undersigned Notary Public duly commissioned for and qualified in said County, personally came Daniel L Christensen, to me known to be the identical person, whose name is affixed to the foregoing instrument and acknowledged the execution thereof to be his voluntary act and deed.

Witness my hand and notarial seal the day and year last above written.

[Signature] Notary Public  
(SEAL)



**EMPLOYEE CLASSIFICATION ACT AFFIDAVIT**

For the purposes of complying with THE NEBRASKA EMPLOYEE CLASSIFICATION ACT, Nebraska Revised Statutes 48-2901 to 48-2912,

I, Daniel L Christensen, herein below known as the Contractor, state under oath and swear as follows:

- 1. Each individual performing services for the Contractor is properly classified under the Employee Classification Act.
- 2. The Contractor has completed a federal I-9 immigration form and has such form on file for each employee performing services.
- 3. The Contractor has complied with Neb. Rev. Stat. 4-114.
- 4. The Contractor has no reasonable basis to believe that any individual performing services for the Contractor is an undocumented worker.
- 5. The Contractor is not barred from contracting with the state or any political subdivision pursuant to Neb. Rev. Stat. 48-2912 of this Act.
- 6. As the Contractor, I understand that pursuant to the Employee Classification Act a violation of the Act by a contractor is grounds for rescission of the contract by Lancaster County. I understand that pursuant to the Act any contractor who knowingly provides a false affidavit may be subject to criminal penalties and upon a second or subsequent violation shall be barred from contracting with Lancaster County for a period of three years after the date of discovery of the falsehood.

I hereby affirm and swear that the statements and information provided on this affidavit are true, complete and accurate. The undersigned person does hereby agree and represent that he or she is legally capable to sign this affidavit and to lawfully bind the Contractor to this affidavit.

PRINT NAME: Daniel L Christensen  
(First, Middle, Last)

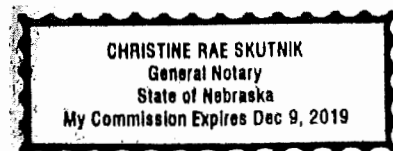
SIGNATURE: *Daniel L Christensen*

TITLE: Vice President

State of Nebraska )  
 ) ss.  
County of Sarpy )

This affidavit was signed and sworn to before me, the undersigned Notary Public, on this 7 day of August, 2019.

*Christine Rae Skutnik*  
Notary Public





# 19-197 Addendum 1 MMC Contractors Supplier Response

## Event Information

Number: 19-197 Addendum 1  
Title: Roof Top HVAC Unit Replacement - County Extension  
Type: Notice to Bidders  
Issue Date: 7/12/2019  
Deadline: 7/26/2019 12:00 PM (CT)

## Contact Information

Contact: Robert Walla Purchasing Agent  
Address: Purchasing  
440 S. 8th St.  
Suite 200  
Lincoln, NE 68508  
Phone: 1 (402) 441-8309  
Fax: 1 (402) 441-6513  
Email: [rwalla@lincoln.ne.gov](mailto:rwalla@lincoln.ne.gov)

## MMC Contractors Information

Contact: Adam Nielsen  
Address: 9751 S. 142nd Street  
Omaha, NE 68138  
Phone: (402) 861-0681  
Fax: (402) 861-0682  
Email: [anielsen@mmccontractors.com](mailto:anielsen@mmccontractors.com)

By submitting your response, you certify that you are authorized to represent and bind your company.

Adam Nielsen  
*Signature*

[anielsen@mmccontractors.com](mailto:anielsen@mmccontractors.com)  
*Email*

Submitted at 7/26/2019 11:36:50 AM

## Response Attachments

### MMC - Lancaster County.pdf

Bid Bond

## Bid Attributes

### 1 Electronic Signature

Please check here for your electronic signature.

Yes

### 2 Instructions to Bidders

I acknowledge reading and understanding the Instructions to Bidders.

Yes

### 3 Insurance Requirements and Endorsements

Vendor agrees to provide insurance coverage for each checked box on the Insurance Clause document in the Bid Attachments including the submission of the Certificate of ACORD and the applicable endorsements.

Insurance Certificate and required Endorsements are required at time of contract execution by the vendor.

**Vendors are strongly encouraged to send the insurance requirements and endorsement information to their insurance agent prior to bid close in order to expedite the contract execution process.**

Yes

### 4 Specifications

I acknowledge reading and understanding the specifications.

Yes

### 5 Bid Documents

I acknowledge and accept that it is my responsibility as a Bidder to promptly notify the Purchasing Department Staff prior to the close of the bid of any ambiguity, inconsistency or error which I may discover upon examination of the bid documents including, but not limited to the Specifications.

Yes

<b>6</b>	<b>Sample Contract</b> I acknowledge reading and understanding the sample contract. <input type="text" value="Yes"/>
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<b>7</b>	<b>Performance/Payment Bonds</b> I acknowledge that a Performance Bond and a Payment Bond each in the amount of 100% of the Contract amount will be required with the signed contract upon award of this project. <input type="text" value="Yes"/>
----------	--

<b>8</b>	<b>Bid Bond Submission - County</b> I acknowledge and understand that my bid will not be considered unless a bid bond or certified check in the sum of five percent (5%) of the total amount of the bid is made payable to the order of the Lancaster County Treasurer as a guarantee of good faith prior to the bid opening. The bid security may be scanned and attached to the 'Response Attachments' section of your response or faxed to the Purchasing Office (402)441-6513. The original bond/check must then be received in the Purchasing Office, 440 S. 8th Street, Ste. 200, Lincoln, NE 68508 within three (3) days of bid closing. Failure to submit bid bond within three (3) days may result in rejection of bid.  YOU MUST INDICATE YOUR METHOD OF BID BOND SUBMISSION IN BOX TO RIGHT! <input type="text" value="I have scanned and attached my bid bond."/>
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<b>9</b>	<b>Purchase Order, Contract and Delivery Contact</b> The City/County Purchasing Department issues Purchase Orders and Contracts via email to a designated contact person of the awarded Vendor. This designee will be the primary contact with the department through the delivery of the product/services. Please list the name, email address and phone number of the person who will be the contact person for the contract/PO to be awarded. <input type="text" value="Adam Nielsen anielsen@mmcontractors.com 402-215-2202"/>
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<b>10</b>	<b>Drawings</b> I acknowledge reading and understanding the Project Drawings. <input type="text" value="Yes"/>
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<b>11</b>	<b>Delivery and Installation</b> The requested delivery and installation date for the project is specific for each RTU unit. Can you meet this requirement? YES or NO If NO, state the specific dates when you would be able to complete installation and test for performance. <input type="text" value="YES"/>
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<b>12</b>	<b>Contact</b> Name of person submitting this bid: <input type="text" value="Adam Nielsen"/>
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<b>13</b>	<b>Tax Exempt Certification Forms</b> Materials being purchased in this bid are tax exempt and unit prices are reflected as such. A Purchasing Agent Appointment form and a Exempt Sales Certificate form shall be issued with contract documents. (Note: State Tax Law does not provide for sales tax exemption for proprietary functions for government, thereby excluding the purchases of pipes to be installed in water lines and purchase of water meters.) <input type="text" value="Yes"/>
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**1**  
**4** **U.S. Citizenship Attestation**  
**Is your company legally considered an Individual or Sole Proprietor: YES or NO**

As a Vendor who is legally considered an Individual or a Sole Proprietor I hereby understand and agree to comply with the requirements of the United States Citizenship Attestation Form, available at:  
<http://www.sos.ne.gov/business/notary/citizenforminfo.html>

All awarded Vendors who are legally considered an Individual or a Sole Proprietor must complete the form and submit it with contract documents at time of execution.

If a Vendor indicates on such attestation form that he or she is a qualified alien, the Vendor agrees to provide the US Citizenship and Immigration Services documentation required to verify the Vendor's lawful presence in the United States using the Systematic Alien Verification for Entitlements (SAVE) Program.

Vendor further understands and agrees that lawful presence in the United States is required and the Vendor may be disqualified or the Contract terminated if such lawful presence cannot be verified as required by Neb. Rev. Stat. 4-108.

**1**  
**5** **Employee Class Act EO**  
I acknowledge reading and understanding the Employee Classification Act, Executive Order 83319.

**1**  
**6** **Employee Class Act Affidavit**  
I acknowledge if awarded the contract I will abide by the law, notarize and attach the Employee Classification Act Affidavit to my contract.

**1**  
**7** **Equipment**  
Provide the brand name and model of the RTU's being bid and the projected delivery of the units to the jobsite or your office:

**1**  
**8** **Unit Price - Actuator**  
Provide the unit cost for replacement of Hot Water Control valve actuator:<br>  
Provide Brand and Model of replacement valves quoted:<br>  
<br>

The cost shall include draining the hot water system, removing the old valve, installing the new valve, refilling the system and bleeding the system.

**1**  
**9** **Unit Price - 3/4" Valve**  
Provide the unit cost for replacement of 3/4" 2-way control valve:<br>  
Provide Brand and Model of replacement valve quoted:  
<br>

The cost shall include draining the hot water system, removing the old valve, installing the new valve, refilling the system and bleeding the system.

<b>20</b>	<p><b>Unit Price - 1" Valve</b></p> <p>Provide the unit cost for replacement of 1" 2-way control valve:&lt;br&gt; Provide Brand and Model of replacement valve quoted:&lt;br&gt;</p> <p style="text-align: center;">The cost shall include draining the hot water system, removing the old valve, installing the new valve, refilling the system and bleeding the system.</p> <p style="border: 1px solid black; padding: 2px;">\$1,480.00 per Siemens 171F</p>
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<b>21</b>	<p><b>Unit Price - 1.5" Valve</b></p> <p>Provide the unit cost for replacement of 1.5" 3-way control valve:&lt;br&gt; Provide Brand and Model of replacement valve quoted:&lt;br&gt;</p> <p style="text-align: center;">The cost shall include draining the hot water system, removing the old valve, installing the new valve, refilling the system and bleeding the system.</p> <p style="border: 1px solid black; padding: 2px;">\$1,642.00 per Siemens 171F</p>
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<b>22</b>	<p><b>Agreement to Addendum No. 1</b></p> <p>Respondent hereby certifies that the change set forth in this addendum has been incorporated in their proposal and is part of their bid. Reason: See Bid Attachments section for Addendum information.</p> <p style="border: 1px solid black; padding: 2px;">Yes</p>
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**Bid Lines**

<b>1</b>	<p><b>Roof Top Unit HVAC System and Installation</b></p> <p>Quantity: <u>  1  </u> UOM: <u>  Lump Sum  </u> Unit Price: <span style="border: 1px solid black; padding: 2px;">\$175,000.00</span> Total: <span style="border: 1px solid black; padding: 2px;">\$175,000.00</span></p> <p>Item Notes: Price must include labor, materials and all other accessories required to complete a turnkey project.</p>
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**Response Total: \$175,000.00**





BUILDERS RISK: CONTRACT AMOUNT \$175,000; FLOOD DEDUCT- NO COVERAGE, EARTHQUAKE- \$25,000, AOP- \$5,000.

POLICY NUMBER: A7DG09221804

COMMERCIAL GENERAL LIABILITY  
CG 20 10 04 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED --- OWNERS, LESSEES OR  
CONTRACTORS -- SCHEDULED PERSON OR  
ORGANIZATION**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

**SCHEDULE**

**Name of Additional Insured Person(s) or Organization(s):**

ANY PERSONS OR ORGANIZATIONS TO WHOM OR TO WHICH YOU ARE REQUIRED TO PROVIDE ADDITIONAL INSURED STATUS IN A WRITTEN CONTRACT OR WRITTEN AGREEMENT EXECUTED PRIOR TO THE LOSS EXCEPT WHERE SUCH CONTRACT OR AGREEMENT IS PROHIBITED BY LAW.

**Location(s) Of Covered Operations:**

VARIOUS AS REQUIRED PER WRITTEN CONTRACT.

(Information required to complete this Schedule, if not shown above, will be shown in the Declarations.)

A. Section II - Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to Section III - Limits Of Insurance:

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

**CG 20 10 04 13**

**POLICY NUMBER: A7DG09221804**

**COMMERCIAL GENERAL LIABILITY  
CG 20 37 04 13**

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED - OWNERS, LESSEES OR  
CONTRACTORS - COMPLETED OPERATIONS**

This endorsement modifies insurance provided under the following:

**COMMERCIAL GENERAL LIABILITY COVERAGE PART**

**SCHEDULE**

Name of Additional Insured Person(s) or Organization(s):

ANY PERSONS OR ORGANIZATION TO WHOM OR TO WHICH YOU ARE REQUIRED TO PROVIDE ADDITIONAL INSURED STATUS IN A WRITTEN CONTRACT OR WRITTEN AGREEMENT EXECUTED PRIOR TO THE LOSS EXCEPT WHERE SUCH CONTRACT OR AGREEMENT IS PROHIBITED BY LAW.

Location And Description of Completed Operations:

VARIOUS AS REQUIRED BY WRITTEN CONTRACT.

(Information required to complete this Schedule, if not shown above will be shown in the Declarations.)

A. Section II - Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the Schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to Section III - Limits Of Insurance:

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

**CG 20 37 04 13**

**Policy Number: A7CA09221804**

**OLD REPUBLIC GENERAL INSURANCE CORPORATION**

**ADDITIONAL INSURED-PRIMARY AND NON-CONTRIBUTORY**

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

THIS ENDORSEMENT MODIFIES INSURANCE PROVIDED UNDER THE FOLLOWING:

**BUSINESS AUTO COVERAGE FORM**

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by this endorsement.

This endorsement identifies person(s) or organization(s) who are "insureds" under the Who Is An Insured Provision of the Coverage Form. This endorsement does not alter coverage provided in the Coverage Form.

This endorsement changes the policy effective on the inception date of the policy unless another date is indicated below.

**SCHEDULE**

Name of Person(s) or Organization(s) :

WHERE REQUIRED BY WRITTEN CONTRACT

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to the endorsement.)

Each person or organization shown in the Schedule is an "insured" for Liability Coverage, but only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured Provision contained in Section II of the Coverage Form.

If the person or organization shown in the schedule qualifies as an 'insured' for Liability Coverage, and they have coverage as a first named insured under another policy, this policy is primary to and non-contributory with that other insurance.

All other terms, conditions, and exclusions apply.

**CA EN GN 0044 02 12**

**WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE**

**WC 00 03 13**  
(Ed. 4-84)

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**WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT**

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

**SCHEDULE**

**WHERE REQUIRED BY WRITTEN AGREEMENT SIGNED PRIOR TO LOSS.**

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

Effective Policy # A7DW09221804 (AOS); A7CW09221804 (WI ONLY)

Insured: MMC Corp.

Insurance Company: Old Republic General Insurance Corporation

**ADDENDUM #1**  
**Issue Date: 07/19/2019**  
**Bid No. 19-197**

**ROOF TOP HVAC UNIT REPLACEMENT – COUNTY EXTENSION**

Addenda are instruments issued by the Purchasing Department prior to the date for receipt of offers which will modify or interpret the specification document by addition, deletion, clarification or correction. Please acknowledge receipt of this addendum in the space provided in the Attribute Section.

Be advised of the following clarifications and changes to the Specification and bidding documents.

**GENERAL ITEMS**

1. The pre-bid meeting sign-in sheet is attached to the Bid Attachment section of Ebid.
2. Question: A question was asked during the pre-bid meeting as to whose responsibility the balancing was as there is a note on the drawings referring to the controls contractor.

**Answer: The balancing shall be under the mechanical contractor and will be responsible for the balancing of the air and hydronic systems.**

3. Question: A question was asked during the pre-bid meeting as to whether any temporary heating or cooling would be required.

**Answer: Contractor will be required to provide temporary heating or cooling as needed during occupied times or to prevent freezing, while the RTU's are down. Coordinated requirements with Owner as needed.**

**DRAWINGS – MECHANICAL**

1. Sheet M2.0 Mechanical Schedules and Symbols
  - A. On the variable air volume box schedule notes, remove temperature control contractor from note 1. Note shall read: "Contractor shall re-balance all boxes to CFM setting shown."

All other terms, conditions and requirements of the request remain the same as originally indicated in the document or as modified on previous addenda.

Robert L Walla  
Purchasing Agent





# GENERAL SPECIFICATIONS

## ROOFTOP HVAC UNIT REPLACEMENT – COUNTY EXTENSION

### 1. GENERAL NOTICE

- 1.1 Lancaster County, hereinafter referred to as Owners, are requesting bids from qualified companies, hereinafter referred to as Vendor(s) for replacing the (2) existing roof top units with new units, replacing some damaged ductwork, inspecting the existing hot water control valves and rebalancing the HVAC systems at the Lancaster County Extension Office which is a 15,000 square foot single story building located at 444 Cherrycreek Rd., Lincoln, NE.
- 1.2 The Vendor shall include all costs associated with the labor, supervision, materials, supplies, permits and licenses required to perform the services requested in these Specifications, the plans and drawings and other bid documents.
  - 1.2.1 Any mention of compliance with the General Specifications shall also mean compliance according to the terms of all other documents attached to or referenced in the bid.
- 1.3 Contract will be awarded to the lowest, responsible, responsive Vendor whose bid substantially meets all of the required specifications, duties, terms and conditions as defined in this request.
- 1.4 Vendor shall maintain existing functions at the facility and protect the general public, employees, and buildings against damage during all portions of the project.
  - 1.4.1 Any damage done to any part of the facility which is not part of this construction will be immediately repaired by the Vendor at no charge to the Owners.
  - 1.4.2 Vendor shall not store construction products, tools or supplies in an area other than what is designated as a staging area.
- 1.5 The Owners will execute a firm-fixed contract for the work to be performed under the terms of an awarded contract.
  - 1.5.1 The Owners reserve the right to allow adjustments to the contract should there be a substantial change in the nature of the work involved.
    - 1.5.1.1 Such adjustments must be made in the form of a written contract amendment signed by both the Vendor and the Owners at the time of the change.
- 1.6 Any deviation from these Specifications or any other bid document must be documented on Company Letterhead and attached to the Supplier Response section of your Ebid response.
- 1.7 Vendor must submit their bid and all attachments via the City/County Ebid system.
  - 1.7.1 To submit a bid, Vendor must be registered with the City of Lincoln/Lancaster County Purchasing Dept.
  - 1.7.2 To register, go to the City of Lincoln website; [lincoln.ne.gov](http://lincoln.ne.gov) type bid in search box located in Important section. click on “supplier registration” follow instructions to completion.
- 1.8 All inquiries regarding these specifications shall be directed via e-mail request to Bob Walla, Purchasing Agent ([rwalla@lincoln.ne.gov](mailto:rwalla@lincoln.ne.gov)).
  - 1.8.1 These inquiries and/or responses shall be distributed to prospective Vendors as an electronic addenda.
  - 1.8.2 All inquiries must be submitted to the Purchasing Office 5 days prior to the bid opening.
  - 1.8.3 Vendors are not allowed to discuss this bid with the Project Engineer, County employee or elected official other than the City/County Purchasing Staff through the award process.
    - 1.8.3.1 Failure to follow this requirement may result in immediate disqualification of your bid.

- 1.9 A bid bond is required in the amount of 5% of the total bid amount at time of bid submission.
- 1.10 A Performance and Payment bond in the full amount of the contract will be required at time of contract award.
- 1.11 Work may be performed at the jobsite during operating hours which are from 7am - 5pm, Monday - Friday.
  - 1.11.1 Work outside of these days and times shall be subject to approval of the Owner.
  - 1.11.2 Due to the use of the building for many functions the scheduling and work times on this project must be coordinated with the Engineer and Owner Representative in advance.
- 1.12 The awarded contract is not assignable without the written approval of the Owners in the form of a contract amendment.
- 1.13 **Vendors are encouraged to attend a prebid meeting on Wednesday July 17 at 8:30am at the County Extension Office located at 444 Cherrycreek Road, Lincoln, NE. (Lobby Area) to familiarize themselves with the scope of the work, the area surrounding the sites, and the particularities of the overall operation.**
- 1.14 Progress payments shall be made by the County through the Engineer and Owner Representative for documented work completed during the project.
  - 1.14.1 At no time will the County make payment for work that has not been completed and approved.
  - 1.14.2 Vendor may request progress payments which will be paid according to completion and Owner approval of equipment and installation.
- 1.15 The Construction Administrator/Engineer for this project will be Tony Dupsky - ETI.
- 1.16 The Owners Representative for this project will be Karen Wobig – County Extension.

**2. CONTRACTOR INSURANCE**

- 2.1 The awarded Vendor shall furnish the Owners with a Certificate of Insurance ACORD and associated endorsements in the kinds and minimum amounts as detailed in the attached "Insurance Requirements for all Contracts" at time of award.
- 2.2 All certificates of insurance ACORD shall be filed with the Owners showing specific limits of insurance coverage required and showing Lancaster County as "Named Additional Insured" as pertains to these services.
- 2.3 **Vendors are strongly encouraged to send the insurance requirements and endorsement information to their Insurance Agent during the bid process in order to ensure contract execution within 10 days of award notice.**

**3. QUALIFICATIONS OF THE BIDDER**

- 3.1 The Owner may investigate as deemed necessary to determine the ability of the Vendor to perform the required work, and the Vendor shall furnish to the Owners all such information and data for this purpose.
- 3.2 No Vendor will be considered who is not at the present time an authorized dealer, service provider, and installer of the equipment being proposed and actively engaged in the performance of RTU HVAC system supply and installation services, and who cannot clearly demonstrate to the satisfaction of the Owners, his/her ability to satisfactorily perform the work in accordance with the requirements of this specification and standards of the industry.

- 3.3 Vendor shall provide at least three current references for other customers where similar services have been provided in the last five years at time of bid response or upon request.
  - 3.3.1 References are not required of Vendors who have performed similar services with similar cost for the County in the last 2 years. Reference responses may be attached to the Response Attachment section of the Ebid response.

**4. REMOVAL, DISPOSAL AND SITE RESTORATION**

- 4.1 The Vendor shall remove from the site and dispose of all current material, debris, installation materials and adhesives in accordance with all Local, State and Federal regulations.
  - 4.1.1 Vendors are strongly encouraged to recycle metal, concrete and any other material in order to reduce the amount of waste going to the City Landfill.

**5. CONSTRUCTION REQUIREMENTS**

- 5.1 Vendor must comply with Local, State and Federal Building Codes and Regulations.
  - 5.1.1 Any deviation from these codes must be addressed as part of the bid response prior to bid closing.
  - 5.1.2 Any deviation from the bid documents and contract which may arise during construction must be addressed and approved in writing by the Owners prior to completion of work, with a contract amendment being issued as necessary.
- 5.2 Vendor must supply equipment which is new and is the most efficient and effective equipment for the job.
- 5.3 The Vendor is responsible for obtaining and paying of all fees and charges associated with permits or licenses required to complete the work for this project.
- 5.4 Vendors will be given a location to park vehicles and stage equipment during the term of the project.
- 5.5 Unit Prices submitted with the bid must be used for the purchase of such equipment if deemed necessary to meet the bid and contract requirements.
- 5.6 Vendor takes full responsibility for all of their employees and any subcontractors who are hired to work on the project.
- 5.7 All work related to the construction shall be included in the lump sum amount for the bid item as listed in the final contract document.
- 5.8 Vendor must provide equipment and labor according to the Technical Specifications and Plans/Drawings attached to the Ebid.

**7. PROJECT COMPLETION AND WARRANTY**

- 7.1 Work must be performed and completed according to the following schedule:
  - Notice to Proceed – August 13, 2019
  - RTU shop drawings complete and units ordered – August 23, 2019
  - Conference room RTU – 2 ) changeover – October 14-18, 2019.
  - Office (RTU – 1 )changeover – completed by October 25, 2019
  - Substantial project completion – November 1, 2019
  - Final completion - November 15, 2019
- 7.2 Vendor must complete the project according to the agreed upon contract completion date which will be listed in the contract documents.
  - 7.2.1 Failure to complete the project by the contract date shall result in the charging of liquidated damages according to the following terms.

- 7.2.2 If the Contractor fails to complete the Contract prior to the completion date, considering approved extension of time, liquidated damages will be charged for each calendar day that the work remains incomplete.
- 7.2.3 The amount of liquidated damages will be deducted from the money due the Contractor prior to final payment or in the case where the remaining amount due the Contractor is less than the total amount of liquidated damages, the County shall have the right to recover the difference from the Contractor or his Surety.
- 7.3 Unless specifically amended or modified by the special provisions, the schedule below shall establish the daily amount of the liquidated damages:

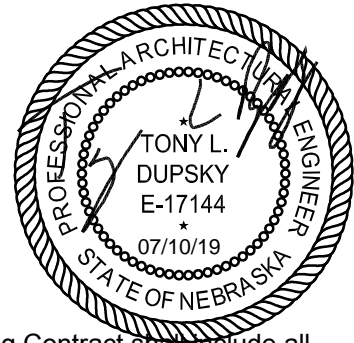
BID AMOUNT:UP TO AND INCLUDING	LIQUIDATED DAMAGES PER CALENDAR DAY
\$0 - \$100,000 .....	\$250
\$100,000 - \$500,000 .....	\$500
\$500,000 - \$1,000,000 .....	\$750
\$1,000,000 - AND UP .....	\$1000

- 7.4 The amounts set forth in the above schedule are not to be considered punitive, but rather predetermined and reasonable amounts to compensate for the detriment to the public and to defray expenses incurred by the County due to the delay in the completion of the project.
  - 7.4.1 Delays caused by the Owners or other factors not in the control of the Vendor will result in an extension of the project and an amendment to the contract.
- 7.5 Job shall be completed according to industry standards with approval of completion and final payment being made by the Construction Manager and Owner's Representative.

**8. EVALUATION CRITERIA**

- 8.1 Evaluation of bids will consist of the following:
  - 8.1.1 Total price of contract and other pricing factors that will amount to the best value to the Owners.
  - 8.1.2 Ability to provide labor and services as required in this Specification.
  - 8.1.3 Deviations from these Specifications.
  - 8.1.4 References

**SECTION 230050  
GENERAL MECHANICAL PROVISIONS**



**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. The work required under Heating, Ventilating, and Air Conditioning Contract shall include all material, labor, equipment and services necessary and reasonably incidental to the proper completion of the systems, and all special work as hereinafter specified and indicated on the drawings.
- B. All work shall be executed in such a manner as to interfere as little as possible with the normal functioning of the facility, including operations of all utility services and any equipment, and with work being done by others. Roads shall be kept clear of materials, etc., at all times so that there will be no interference with the usual traffic. Where necessary, on account of new work connecting to existing pipes, where utility services are required to be cut, they shall be cut and capped at suitable places where indicated by drawings, or in the absence of such indication, where directed by the Architect/Engineer. No road traffic or utility service such as water, gas, or steam shall be interrupted without prior approval of the Owner, and all arrangements for work which will involve such interference shall be made in advance with the Owner so that same can be effected in a minimum of time and interference.

**1.02 RELATED SECTIONS**

- A. Section 01 0000 - General Requirements
- B. Section 007200 - General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- C. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- D. Section 017000 - Execution and Closeout Requirements: Contract closeout procedures.
- E. Individual Product Sections: Specific requirements for operation and maintenance data.
- F. Individual Product Sections: Warranties required for specific products or Work.

**1.03 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS**

- A. Drawings and specifications shall be taken together. Provide work specified and not indicated, or work indicated and not specified as though mentioned in both.
- B. In case of discrepancy between drawings and specifications, or within either document, the greater quantity of work and/or better quality shall be used for estimating and the matter brought to the Architect/Engineer's attention for a written decision.
- C. Drawings are to be interpreted as diagrammatic only, intended to convey the scope of the work and to indicate the general arrangements and locations of equipment, outlets, etc., and the approximate sizes of equipment. It should be understood that the Contractor shall determine the exact locations of equipment and rough-ins, and the exact routing of pipes and ducts so as to best fit the layout of the job. Scaling of the drawings will not be sufficient or accurate for determining these locations. Contractor shall refer to the Architectural drawing for dimensions of walls, foundations, structural beams, and other structural building members. Where job conditions require reasonable changes in indicated arrangements and locations, such changes shall be made by the Contractor at no additional cost to the Owner.
- D. Because of the scale of the drawings, certain basic items, such as fittings, boxes, valves, unions, etc., may not be shown, but where such items are required by other sections of the specifications or where they are required for proper installation of the work, such items shall be furnished and installed.
- E. The determination of quantities of material and equipment required shall be made by the Contractor from the drawings. Schedules on the drawings and in the specifications are completed as an aid to the Contractor but where discrepancies arise, the greater number shall govern.

- F. Where words "provide", "install", or "furnished" are used on the drawings or in the specifications, it shall be taken to mean, to furnish, install and connect up complete and ready for operation, the items mentioned.

#### **1.04 COOPERATION AND PROGRESS**

- A. Keep informed about the work of all other trades engaged in the project and execute the work in such a manner as not to delay or interfere with the progress of other contractors. This contractor shall schedule his work so that no other contractor is delayed in the execution of his work. Complete cooperation of all trades is expected. Employ a competent foreman on job throughout the entire project to ensure that coordination is maintained.
- B. Schedule and coordinate the work of this Division with the schedule of the contractor to progress the work expeditiously, and to avoid unnecessary delays.
- C. Examine fully the drawings and specifications for other contractors for other trades, and coordinate the installation of this work with the work of the other contractors. Consult and cooperate with other contractors for determining space requirements and for determining that adequate clearance is allowed with respect to his equipment, other equipment, and the building. The Owner's representative reserves the right to determine space priority in the event of interference between piping, conduit, ducts, and equipment of the various contractors.
- D. Conflicts between the drawings and the specification shall be called to the attention of the Owner's representative and Architect/Engineer. If clarification is not asked for prior to the taking of bids, it will be assumed that none is required and that the contractor is in agreement with the drawings and specifications as issued. If clarification is required after the Contract is awarded, such clarification will be made by the Architect/Engineer and his decision will be final.
- E. Coordinate the installation of all mechanical system components with all other trades, including structural components and electrical trades. Allocate space in the different areas to allow for the installation of ductwork, piping, sprinklers, waste and vents, and mechanical equipment above ceilings and in equipment spaces. Recommend rerouting, resizing or relocation of mechanical components, if necessary, so all trades can install their systems in the space allotted. Any proposed changes from the systems layout, on the drawings, shall be done in accordance with the design criteria specified in the applicable codes and shall be subject to the review and acceptance of the Architect/Engineer.
- F. The contract drawings are schematic in nature and do not show every fitting and appurtenance for each utility because of the scale of the drawings. Each contractor is expected to have included in his bid sufficient fittings, material, and labor to allow for adjustments in routing of utilities made necessary by the coordination process. The contractor will not be allowed any contract cost extra or time extension for changes dictated by the coordination process.

#### **1.05 GUARANTEE**

- A. The Contractor, by the acceptance of this specification and the signing of the Contract, acknowledges his acquaintance with all the requirements and guarantees that every part going to make up the system, will be the best of its respective kind and will be erected in a most thorough and substantial manner by none but experienced labor.
- B. The Contractor guarantees that all piping as provided in this specification will be free from all obstructions, and that all piping will be tight and drip free.
- C. The Contractor guarantees that, in the entire hydronic piping system, a continuous and noiseless circulation of water will be established to all fixtures; and that water may be drawn from any fixture without hammering.
- D. The Contractor guarantees that the entire system of ductwork will provide free circulation of air without objectionable noise and that all air distribution within the conditioned space will be draftless and reasonably quiet.
- E. The Contractor guarantees that all equipment and appliances will successfully and acceptably perform the work for which they are installed and that each will operate smoothly and quietly up to its rated capacity.

- F. The Contractor further guarantees himself responsible for any defects which may develop in any part of the system, including equipment, piping, fixtures and appliances, due to faulty workmanship, design or material; and to replace and make good, without cost to the Owner, any such faulty parts or construction which develop defects at any time within one (1) year from the date of substantial completion. The date of substantial completion shall be as defined in the Contract Documents. Any repairs or replacement required on account of defects, as outlined in this paragraph shall be made promptly upon written notice from the Architect.
- G. Natural wear, accident, or carelessness on the part of others, however, shall not be made good by the Contractor.

#### **1.06 PROTECTION OF INSTALLED WORK AND MATERIAL STORED ON SITE**

- A. The Contractor is responsible for all work installed by him until his contract is complete and shall protect it from injury by others.
- B. All piping, fittings, equipment and material to be stored on the jobsite for any period of time shall be protected from the weather in a manner that is acceptable to the Architect.

#### **1.07 SITE VISIT**

- A. Bidders are advised to visit the site and inform themselves as to all conditions, and failure to do so will in no way relieve the successful bidder from the necessity of furnishing any material or performing any work that may be required to complete the work in accordance with the true intent and meaning of the drawings and specifications without additional cost to the Owner.

#### **1.08 RULES, REGULATIONS AND CODES**

- A. The Contractor shall become acquainted with the local codes, and in case of a discrepancy between plans or specifications and the local codes, the Contractor shall use the code requirements. The greater quantity of work and material and/or better quality shall be used for estimating and the matter brought to the Architect's attention for a written decision.
- B. Perform all work in strict accordance with all rules, regulations, codes, ordinances, or laws of Local, State, and Federal governments, or of other authorities having lawful jurisdiction. Comply therewith. Such rules, regulations, codes, ordinances, or laws include, but are not necessarily limited to, the following:
  - 1. State building and fire codes.
  - 2. State plumbing and mechanical codes.
  - 3. City building and fire codes.
  - 4. City plumbing and mechanical codes.
  - 5. American Gas Association.
  - 6. National Electric Code.
  - 7. National Fire Protection Association.
  - 8. Occupation Safety and Health Act.
- C. If the Contractor notes, at the time of bidding, any parts of the plans and specifications which are not in accord with the applicable codes or regulations, he shall inform the Architect/Engineer in writing, requesting a clarification. If there is insufficient time to follow this procedure, he shall submit with his proposal a separate price required to make the system shown on the drawings comply with the codes and regulations.
- D. All changes to the system made after the letting of the contract, in order to comply with the applicable codes or the requirements of the inspector, shall be made by the Contractor without cost to the Owner.

#### **1.09 SUBSTITUTIONS**

- A. The Architect/Engineer shall be the sole and final judge as to the suitability of items substituted for those specified.
- B. The entire cost of all changes of any type due to substitutions for materials specified shall be borne by the Contractor at no extra cost to the Owner.



- C. Unsolicited and voluntary deducts, on the part of the Contractor for substituting unapproved equipment, shall not be considered for the purpose of awarding the Contract.
- D. When the drawings and/or specifications refer to any item, article, material, method, fabrication, assembly or construction by means of one or more manufacturer's trade name, catalog reference or similar means of identification of manufacturer, the Contractor shall furnish one of the makes so identified without substitution unless other make or makes have been approved by addendum to the contract documents prior to the receipt of bids. Requests for the approval of items of equal quality are requested to be made in writing to the Architect/Engineer five days prior to the date of the receipt of bids so that a list of acceptable equal quality items can be made known to all bidders by an addendum. If substitution for names items, articles, materials, methods, fabrications, assembly or construction are approved, the Contractor assumes all responsibility for coordination and performing the related changes in the work necessitated by such substitutions and shall include in his bid all costs involved therein.

#### **1.10 SHOP DRAWING REVIEW**

- A. Shop drawings will be reviewed only to extent of information indicated. This check is only for review of general conformance with the design concept of the project and general compliance with the information given the contract documents. The contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes techniques of construction, coordinating his work in a safe and satisfactory manner.
- B. Review of shop drawings shall not relieve Contractor of responsibility for providing all controls, wiring, components, etc., which are shown or specified, or all additional controls, wiring, components, etc., required to provide complete and correctly operating mechanical systems.
- C. In cases where substituted equipment has been installed in place of specified equipment the Contractor shall bear the entire cost of all changes of any type due to the substitution, even though the shop drawings have been reviewed by the Architect/Engineer.
- D. Shop drawings in no way relieve the contractor from performing on the job as to the intent of the construction documents.

#### **1.11 CONNECTING NEW WORK TO EXISTING WORK**

- A. Connect new work to existing work in a neat workmanlike manner. In every case where any part of the existing work must be cut to install new work, or is damaged, same must be patched and repaired in a manner satisfactory to the Architect. Where relocation of existing equipment and piping systems is necessary in areas providing uninterruptible services, schedule work during slack periods. Anticipate scheduling work at a period which will result in additional construction cost, such as overtime for work to be done at night or on weekends. Include cost in the bid proposal.
- B. Do not cut into existing services without first informing the Owners representative as to the time and duration of shutdown of the existing services.
- C. Perform work that interrupts any service at a time that will cause least interference to the operation of the building.
- D. Maintain all existing services and equipment unless indicated to be removed.

#### **1.12 ACCESS TO EQUIPMENT FOR MAINTENANCE**

- A. Install all equipment, piping, etc., to permit access for normal maintenance. Maintain easy access to filters, motors, drive compressors, coils, etc. Install all such equipment and accessories to facilitate maintenance. Perform any relocation of pipes, ducts, etc. required to permit access at request of Architect/Engineer at no additional cost to Owner.

#### **1.13 FIRE AND SMOKE STOPPAGE**

- A. It shall be the responsibility of this Contractor to maintained and fire and smoke integrity of all walls, ceilings, floors, etc., through which this work passes through or into. Fire and smoke barriers shall be provided in and around as required by Codes.

- B. Where holes are required to be patched, or conduit, piping, ducts, etc., are required to be patched around, it shall be filled with a material that is UL Classified Standard 1479 for this use and Factory Mutual System approved.
- C. Fire and smoke stoppage material shall be water based with intumescent properties. Material may be in the form of caulking, putty pads or wrap strips. Materials shall be installed in accordance to manufacturers and UL standards.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION- NOT USED**

**END OF SECTION**

**SECTION 230501**  
**CLOSEOUT SUBMITTALS FOR HVAC**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

**1.02 RELATED SECTIONS**

- A. Section 007200 - General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

**1.03 SUBMITTALS**

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

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PROJECT RECORD DOCUMENTS**

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Addenda.
  - 3. Change Orders and other modifications to the Contract.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Record Drawings : Legibly mark each item to record actual construction including:
  - 1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
3. Field changes of dimension and detail.

### **3.02 OPERATION AND MAINTENANCE DATA**

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

### **3.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS**

- A. For Each Item of Equipment and Each System:
  1. Description of unit or system, and component parts.
  2. Identify function, normal operating characteristics, and limiting conditions.
  3. Include performance curves, with engineering data and tests.
  4. Complete nomenclature and model number of replaceable parts.
- B. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- C. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- D. Provide servicing and lubrication schedule, and list of lubricants required.
- E. Include manufacturer's printed operation and maintenance instructions.
- F. Include sequence of operation by controls manufacturer.
- G. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- H. Provide control diagrams by controls manufacturer as installed.
- I. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- J. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- K. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- L. Include test and balancing reports.
- M. Additional Requirements: As specified in individual product specification sections.

### **3.04 OPERATION AND MAINTENANCE MANUALS**

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- B. Prepare data in the form of an instructional manual.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

- E. Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.
- F. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
  - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Engineer, Contractor, Subcontractors, and major equipment suppliers.
  - 2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
    - a. Significant design criteria.
    - b. List of equipment.
    - c. Parts list for each component.
    - d. Operating instructions.
    - e. Maintenance instructions for equipment and systems.
  - 3. Part 3: Project documents and certificates, including the following:
    - a. Shop drawings and product data.
    - b. Air and water balance reports.
    - c. Photocopies of warranties and bonds.

### **3.05 WARRANTIES AND BONDS**

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

**END OF SECTION**

## SECTION 230502

### DEMONSTRATION AND TRAINING FOR HVAC SYSTEMS

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Demonstration of products and systems where indicated in specific specification sections.
- B. Training of Owner personnel in operation and maintenance is required for:
  - 1. HVAC systems and equipment.

##### 1.02 RELATED SECTIONS

- A. Section 220501 - Closeout Submittals: Operation and maintenance manuals.
- B. Other Specification Sections: Additional requirements for demonstration and training.

##### 1.03 SUBMITTALS

- A. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
  - 1. Include applicable portion of O&M manuals.
  - 2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
  - 3. Provide one extra copy of each training manual to be included with operation and maintenance data.
- B. Video Recordings: Submit digital video recording of each demonstration and training session for Owner's subsequent use.
  - 1. Format: DVD Disc.
  - 2. Label each disc and container with session identification and date.
- C. System Diagrams: Require system diagrams to be mounted in each mechanical equipment room with stainless steel frame and clear acrylic front, with all operating piping, valves, controls, and air and water flows shown. Final balance flows, pressures, temperatures, motor horsepower, pump and fan curves, and belt sizes shall be shown.

##### 1.04 QUALITY ASSURANCE

- A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
  - 1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
  - 2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION

##### 3.01 DEMONSTRATION - GENERAL

- A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.
- B. Demonstration may be combined with Owner personnel training if applicable.
- C. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
  - 1. Perform demonstrations not less than two weeks prior to Substantial Completion.
  - 2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- D. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
  - 1. Perform demonstrations not less than two weeks prior to Substantial Completion.

### **3.02 TRAINING - GENERAL**

- A. Conduct training on-site unless otherwise indicated.
- B. Provide training in minimum two hour segments.
- C. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
  - 1. The location of the O&M manuals and procedures for use and preservation; backup copies.
  - 2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
  - 3. Typical uses of the O&M manuals.
- D. Product- and System-Specific Training:
  - 1. Review the applicable O&M manuals.
  - 2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
  - 3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
  - 4. Provide hands-on training on all operational modes possible and preventive maintenance.
  - 5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
  - 6. Discuss common troubleshooting problems and solutions.
  - 7. Discuss any peculiarities of equipment installation or operation.
  - 8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
  - 9. Review recommended tools and spare parts inventory suggestions of manufacturers.
  - 10. Review spare parts and tools required to be furnished by Contractor.
  - 11. Review spare parts suppliers and sources and procurement procedures.
- E. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

**END OF SECTION**

**SECTION 230514**  
**VARIABLE FREQUENCY CONTROLLERS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Variable frequency controllers.

**1.02 RELATED SECTIONS**

- A. Section 260553 - Identification for Electrical Systems: Engraved nameplates.
- B. Section 262813 - Fuses.

**1.03 REFERENCES**

- A. NEMA ICS 7.1 - Safety Standards for Construction and Guide for Selection, Installation, and Operation of Adjustable Speed Drive Systems; National Electrical Manufacturers Association; 2000.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide catalog sheets showing voltage, controller size, ratings and size of switching and overcurrent protective devices, short circuit ratings, dimensions, and enclosure details.
- C. Shop Drawings: Indicate front and side views of enclosures with overall dimensions and weights shown; conduit entrance locations and requirements; and nameplate legends. Shop drawings shall indicate the Short Circuit Current Rating (SCCR).
- D. Operation Data: NEMA ICS 7.1. Include instructions for starting and operating controllers, and describe operating limits that may result in hazardous or unsafe conditions.
- E. Maintenance Data: NEMA ICS 7.1. Include routine preventive maintenance schedule.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- B. Handle in accordance with manufacturer's written instructions. Lift only with lugs provided for the purpose. Handle carefully to avoid damage to components, enclosure, and finish.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Allen Bradley/Rockwell Automation:
- B. Asea Brown Boveri (ABB):
- C. Danfoss Graham:
- D. Square D

**2.02 DESCRIPTION**

- A. Variable Frequency Controllers: Enclosed controllers suitable for operating the indicated loads, in conformance with requirements of NEMA ICS 7. Select unspecified features and options in accordance with NEMA ICS 3.1.
  - 1. Employ microprocessor-based inverter logic isolated from power circuits.
  - 2. Employ pulse-width-modulated inverter system.
  - 3. Design for ability to operate controller with motor disconnected from output.
  - 4. Design to attempt five automatic restarts following fault condition before locking out and requiring manual restart.
- B. Enclosures: NEMA 250, Type 1, suitable for equipment application in places restricted to persons employed on the premises.
- C. The Variable Frequency Controller shall have a minimum SCCR of 65,000-Amperes.



- D. Variable frequency controller shall have integral phase loss/imbalance and undervoltage protection on all 3 phase products. Provide alarm output contact to DDC controls.

### **2.03 OPERATING REQUIREMENTS**

- A. Rated Input Voltage: 208 volts, three phase, 60 Hertz.
- B. Motor Nameplate Voltage: 200 volts, three phase, 60 Hertz.
- C. Displacement Power Factor: Between 1.0 and 0.95, lagging, over entire range of operating speed and load.
- D. Operating Ambient: 0 degrees C to 40 degrees C.
- E. Volts Per Hertz Adjustment: Plus or minus 10 percent.
- F. Current Limit Adjustment: 60 to 110 percent of rated.
- G. Acceleration Rate Adjustment: 0.5 to 30 seconds.
- H. Deceleration Rate Adjustment: 1 to 30 seconds.
- I. Input Signal: 4 to 20 mA DC.

### **2.04 COMPONENTS**

- A. Display: Provide integral digital display to indicate output voltage, output frequency, and output current.
- B. Status Indicators: Separate indicators for overcurrent, overvoltage, ground fault, overtemperature, and input power ON.
- C. Furnish HAND-OFF-AUTOMATIC selector switch and manual speed control.
- D. Control Power Source: Separate circuit.
- E. Door Interlocks: Furnish mechanical means to prevent opening of equipment with power connected, or to disconnect power if door is opened; include means for defeating interlock by qualified persons.
- F. Safety Interlocks: Furnish terminals for remote contact to inhibit starting under both manual and automatic mode.
- G. Control Interlocks: Furnish terminals for remote contact to allow starting in automatic mode.
- H. Manual Bypass: Furnish contactor, motor running overload protection, and short circuit protection for full voltage, non-reversing operation of the motor. Include isolation switch to allow maintenance of inverter during bypass operation.
- I. Emergency Stop: Use dynamic brakes for emergency stop function.
- J. Disconnecting Means: Include integral fused disconnect switch on the line side of each controller. Disconnect shall have a minimum AIC of 65k amperes.
- K. Wiring Terminations: Match conductor materials and sizes indicated.

### **2.05 SOURCE QUALITY CONTROL**

- A. Shop inspect and perform standard production tests for each controller.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install in accordance with NEMA ICS 7.1 and manufacturer's instructions.
- B. Tighten accessible connections and mechanical fasteners after placing controller.
- C. Provide fuses in fusible switches; refer to Section 262813 for product requirements.
- D. Provide engraved plastic nameplates; refer to Section 260553 for product requirements and location.

### **3.02 MANUFACTURER'S FIELD SERVICES**

- A. Provide the service of the manufacturer's field representative to prepare and start controllers.

### **3.03 ADJUSTING**

- A. Make final adjustments to installed controller to assure proper operation of load system. Obtain performance requirements from installer of driven loads.

### **3.04 DEMONSTRATION**

- A. Demonstrate operation of controllers in automatic and manual modes.

**END OF SECTION**

**SECTION 230593**  
**TESTING, ADJUSTING, AND BALANCING FOR HVAC**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Testing, adjustment, and balancing of air systems.
- B. Testing, adjustment, and balancing of hydronic systems.
- C. Measurement of final operating condition of HVAC systems.

**1.02 REFERENCE STANDARDS**

- A. ASHRAE Std 111 - Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems; 2008.
- B. NEBB (TAB) - Procedural Standards for Testing Adjusting and Balancing of Environmental Systems; 2015, Eighth Edition.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
  - 1. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Engineer and for inclusion in operating and maintenance manuals.
  - 2. Provide reports in soft cover, letter size, 3-ring binder manuals, complete with index page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat locations.
  - 3. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
  - 4. Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.
  - 5. Units of Measure: Report data in I-P (inch-pound) units only.
- C. Project Record Documents: Record actual locations of flow measuring stations and balancing valves and rough setting.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 GENERAL REQUIREMENTS**

- A. Perform total system balance in accordance with one of the following:
  - 1. ASHRAE Std 111, Practices for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems.
  - 2. NEBB Procedural Standards for Testing Adjusting Balancing of Environmental Systems.
- B. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the project.
- C. TAB Agency Qualifications:
  - 1. Company specializing in the testing, adjusting, and balancing of systems specified in this section.

**3.02 EXAMINATION**

- A. Verify that systems are complete and operable before commencing work. Ensure the following conditions:
  - 1. Systems are started and operating in a safe and normal condition.
  - 2. Temperature control systems are installed complete and operable.
  - 3. Proper thermal overload protection is in place for electrical equipment.

4. Final filters are clean and in place. If required, install temporary media in addition to final filters.
5. Duct systems are clean of debris.
6. Fans are rotating correctly.
7. Fire and volume dampers are in place and open.
8. Air coil fins are cleaned and combed.
9. Access doors are closed and duct end caps are in place.
10. Air outlets are installed and connected.
11. Duct system leakage is minimized.
12. Hydronic systems are flushed, filled, and vented.

B. Beginning of work means acceptance of existing conditions.

### **3.03 ADJUSTMENT TOLERANCES**

- A. Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.
- B. Air Outlets and Inlets: Adjust total to within plus 10 percent and minus 5 percent of design to space. Adjust outlets and inlets in space to within plus or minus 10 percent of design.
- C. Hydronic Systems: Adjust to within plus or minus 10 percent of design.
- D. If system cannot be balanced per design documents, Contractors shall work together towards a solution on the site and be prepared to remedy work as required. If requirements cannot still be attained, the Contractor shall contact Engineer prior to submitting report.

### **3.04 RECORDING AND ADJUSTING**

- A. Ensure recorded data represents actual measured or observed conditions.
- B. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
- C. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.
- D. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

### **3.05 AIR SYSTEM PROCEDURE**

- A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities by adjusting fan sheaves as needed. If the factory supplied sheave does not allow for the required adjustment, the Contractor shall provide the appropriately sized sheave and belt to meet specified air quantity.
- B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.
- C. Measure air quantities at air inlets and outlets.
- D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.
- E. Use volume control devices to regulate air quantities only to extend that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters.
- F. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required. Vary branch air quantities by damper regulation.
- G. Provide system schematic with required and actual air quantities recorded at each outlet or inlet.
- H. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.
- I. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions.

- J. Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage.
- K. Where modulating dampers are provided, take measurements and balance at extreme conditions. Balance variable volume systems at maximum air flow rate, full cooling, and at minimum air flow rate, full heating.
- L. Measure building static pressure and adjust supply, return, and exhaust air systems to provide required relationship between each to maintain approximately 0.05 inches positive static pressure near the building entries.

### **3.06 WATER SYSTEM PROCEDURE**

- A. Adjust water systems to provide required or design quantities.
- B. Use calibrated Venturi tubes, orifices, or other metered fittings and pressure gages to determine flow rates for system balance. Where flow metering devices are not installed, base flow balance on temperature difference across various heat transfer elements in the system.
- C. Adjust systems to provide specified pressure drops and flows through heat transfer elements prior to thermal testing. Perform balancing by measurement of temperature differential in conjunction with air balancing.
- D. Effect system balance with automatic control valves fully open to heat transfer elements.
- E. Effect adjustment of water distribution systems by means of balancing cocks, valves, and fittings. Do not use service or shut-off valves for balancing unless indexed for balance point.
- F. Where available pump capacity is less than total flow requirements or individual system parts, full flow in one part may be simulated by temporary restriction of flow to other parts.

### **3.07 SCOPE**

- A. Test, adjust, and balance the following:
  - 1. Air Coils.
  - 2. Air Handling Units.
  - 3. Air Terminal Units.
  - 4. Air Inlets and Outlets.
  - 5. Zone Control Dampers

### **3.08 MINIMUM DATA TO BE REPORTED**

- A. Electric Motors:
  - 1. Manufacturer.
  - 2. Model/Frame.
  - 3. HP/BHP.
  - 4. Phase, voltage, amperage; nameplate, actual, no load.
  - 5. RPM.
  - 6. Service factor.
  - 7. Starter size, rating, heater elements.
  - 8. Sheave Make/Size/Bore.
- B. V-Belt Drives:
  - 1. Identification/location.
  - 2. Required driven RPM.
  - 3. Driven sheave, diameter and RPM.
  - 4. Belt, size and quantity.
  - 5. Motor sheave diameter and RPM.
  - 6. Center to center distance, maximum, minimum, and actual.
- C. Cooling Coils:
  - 1. Identification/number.
  - 2. Location.
  - 3. Service.
  - 4. Air flow, design and actual.

5. Entering air DB temperature, design and actual.
  6. Entering air WB temperature, design and actual.
  7. Leaving air DB temperature, design and actual.
  8. Leaving air WB temperature, design and actual.
  9. Water flow, design and actual.
  10. Water pressure drop, design and actual.
  11. Air pressure drop, design and actual.
- D. Heating Coils:
1. Identification/number.
  2. Location.
  3. Service.
  4. Air flow, design and actual.
  5. Water flow, design and actual.
  6. Water pressure drop, design and actual.
  7. Entering water temperature, design and actual.
  8. Leaving water temperature, design and actual.
  9. Entering air temperature, design and actual.
  10. Leaving air temperature, design and actual.
  11. Air pressure drop, design and actual.
- E. Air Moving Equipment:
1. Location.
  2. Manufacturer.
  3. Model number.
  4. Serial number.
  5. Arrangement/Class/Discharge.
  6. Air flow, specified and actual.
  7. Return air flow, specified and actual.
  8. Outside air flow, specified and actual.
  9. Total static pressure (total external), specified and actual.
  10. Inlet pressure.
  11. Discharge pressure.
  12. Sheave Make/Size/Bore.
  13. Number of Belts/Make/Size.
  14. Fan RPM.
- F. Return Air/Outside Air:
1. Identification/location.
  2. Design air flow.
  3. Actual air flow.
  4. Return air temperature.
  5. Outside air temperature.
  6. Actual mixed air temperature.
- G. Duct Traverses:
1. System zone/branch.
  2. Duct size.
  3. Area.
  4. Design velocity.
  5. Design air flow.
  6. Test velocity.
  7. Test air flow.
  8. Duct static pressure.
- H. Air Distribution Tests:
1. Air terminal number.

2. Room number/location.
3. Terminal type.
4. Terminal size.
5. Area factor.
6. Design velocity.
7. Design air flow.
8. Test (final) velocity.
9. Test (final) air flow.
10. Percent of design air flow.

**END OF SECTION**

**SECTION 230713  
DUCT INSULATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Duct insulation.

**1.02 RELATED REQUIREMENTS**

- A. Section 233100 - HVAC Ducts and Casings.

**1.03 REFERENCE STANDARDS**

- A. ASTM C916 - Standard Specification for Adhesives for Duct Thermal Insulation; 2014.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- C. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- D. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Accept materials on site in original factory packaging, labelled with manufacturer's identification, including product density and thickness.
- B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

**PART 2 PRODUCTS**

**2.01 REGULATORY REQUIREMENTS**

- A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

**2.02 GLASS FIBER, FLEXIBLE**

- A. Manufacturer:
  - 1. Knauf Fiber Glass.
  - 2. Johns Manville Corporation.
  - 3. Owens Corning Corp.
  - 4. CertainTeed Corporation.;
- B. Vapor Barrier Jacket:
  - 1. Kraft paper with glass fiber yarn and bonded to aluminized film.
  - 2. Moisture Vapor Permeability: 0.029 ng/Pa s m (0.02 perm inch), when tested in accordance with ASTM E96/E96M.
  - 3. Secure with pressure sensitive tape.

**2.03 DUCT LINER**

- A. Manufacturers:
  - 1. Knauf Fiber Glass.
  - 2. Johns Manville Corporation.
  - 3. Owens Corning Corp.
  - 4. CertainTeed Corporation; .



- B. Insulation: Incombustible glass fiber complying with ASTM C 1071; flexible blanket; impregnated surface and edges coated with poly vinyl acetate polymer or acrylic polymer shown to be fungus and bacteria resistant by testing to ASTM G 21.
  - 1. Apparent Thermal Conductivity: Maximum of 0.31 at 75 degrees F.
  - 2. Rated Velocity on Coated Air Side for Air Erosion: 5,000 fpm, minimum.
  - 3. Minimum Noise Reduction Coefficients:
    - a. 1 inch Thickness: 0.45.
    - b. 1-1/2 inches Thickness: 0.60.
- C. Adhesive: Waterproof, fire-retardant type, ASTM C916.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that ducts have been tested before applying insulation materials.
- B. Verify that surfaces are clean, foreign material removed, and dry.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Insulated ducts conveying air below ambient temperature:
  - 1. Provide insulation with vapor barrier jackets.
  - 2. Finish with tape and vapor barrier jacket.
  - 3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
  - 4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.
- C. External Duct Insulation Application:
  - 1. Secure insulation with vapor barrier with wires and seal jacket joints with vapor barrier adhesive or tape to match jacket.
  - 2. Install without sag on underside of duct. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift duct off trapeze hangers and insert spacers.
  - 3. Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive.
  - 4. Stop and point insulation around access doors and damper operators to allow operation without disturbing wrapping.

### **3.03 SCHEDULES**

- A. Supply or Return: 1-1/2" inch thick duct liner insulation.

**END OF SECTION**

## SECTION 230913

### INSTRUMENTATION AND CONTROL DEVICES FOR HVAC

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Thermostats.
- B. Temperature and humidity sensors.
- C. Control valves.
- D. Automatic dampers.
- E. Damper operators.

##### 1.02 RELATED REQUIREMENTS

- A. Section 232113 - Hydronic Piping: Installation of control valves, flow switches, temperature sensor sockets, gauge taps.
- B. Section 233300 - Air Duct Accessories: Installation of automatic dampers.
- C. Section 262726 - Wiring Devices: Elevation of exposed components.

##### 1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide description and engineering data for each control system component. Include sizing as requested. Provide data for each system component and software module.
- C. Shop Drawings: Indicate complete operating data, system drawings, wiring diagrams, and written detailed operational description of sequences. Submit schedule of valves indicating size, flow, and pressure drop for each valve. For automatic dampers indicate arrangement, velocities, and static pressure drops for each system.
- D. Project Record Documents: Record actual locations of control components, including panels, thermostats, and sensors. Accurately record actual location of control components, including panels, thermostats, and sensors.
- E. Operation and Maintenance Data: Include inspection period, cleaning methods, recommended cleaning materials, and calibration tolerances.

##### 1.04 QUALITY ASSURANCE

- A. System will require the installation of Delta components of the temperature control/energy management system in addition to other work as specified herein. The installing Contractor shall have factory trained personnel for the application, engineering installation, and programming of the Control System.

##### 1.05 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Substantial Completion.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. Delta Controls Corporation - Intelligent Buildings.

##### 2.02 EQUIPMENT - GENERAL

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

##### 2.03 CONTROL VALVES

- A. Globe Pattern:
  - 1. Up to 2 inches: Bronze body, bronze trim, rising stem, renewable composition disc, screwed ends with backseating capacity repackable under pressure.

2. Over 2 inches: Iron body, bronze trim, rising stem, plug-type disc, flanged ends, renewable seat and disc.
3. Hydronic Systems:
  - a. Rate for service pressure of 125 psig at 250 degrees F.
  - b. Replaceable plugs and seats of stainless steel.
  - c. Size for 3 psig maximum pressure drop at design flow rate.
  - d. Two way valves shall have equal percentage characteristics, three way valves linear characteristics. Size two way valve operators to close valves against pump shut off head.
- B. Electronic Operators:
  1. Valves shall spring return to normal position as indicated on freeze, fire, or temperature protection.
  2. Select operator for full shut off at maximum pump differential pressure.
- C. Ball Valves:
  1. Bronze body, bronze trim, 2 or 3 port as indicated, replaceable plugs and seats, union and threaded ends.
  2. Rate for service pressure of 125 psig at 250 degrees F.
  3. Size for 3 psig maximum pressure drop at design flow rate.
  4. Two way valves shall have equal percentage characteristics, three way valves linear characteristics. Size two way valve operators to close valves against pump shut off head.
  5. Operators (2 Position): Synchronous motor with enclosed gear train, dual return springs, valve position indicator; 24 v DC, 0.4 amp. Valves shall spring return to normal position for temperature protection.
  6. Operators (Modulating): Self contained, linear motorized actuator with approximately 3/4 inch stroke, 60 second full travel with transformer and SPDT contacts: 24 v DC, 6 watt maximum input.

#### **2.04 DAMPERS**

- A. Frames: Galvanized steel, welded or riveted with corner reinforcement, minimum 12 gage, 0.1046 inch.
- B. Blades: Galvanized steel, maximum blade size 8 inches wide, 48 inches long, minimum 16 gage, attached to minimum 1/2 inch shafts with set screws. Blades shall be typically opposed blade for control unless mixing is required and then they shall be of parallel configuration.
- C. Blade Seals: Synthetic elastomeric mechanically attached, field replaceable.
- D. Jamb Seals: Spring stainless steel.
- E. Shaft Bearings: Graphite impregnated nylon sleeve, with thrust washers at bearings.
- F. Linkage Bearings: Graphite impregnated nylon.
- G. Leakage: Less than one percent based on approach velocity of 2000 ft/min and 4 inches wg.

#### **2.05 DAMPER OPERATORS**

- A. General: Provide smooth proportional control with sufficient power for air velocities 20 percent greater than maximum design velocity and to provide tight seal against maximum system pressures. Provide spring return for two position control and for fail safe operation.
- B. Electric Operators:
  1. Spring return, adjustable stroke motor having oil immersed gear train, with auxiliary end switch.

#### **2.06 INPUT/OUTPUT SENSORS**

- A. Temperature Sensors:
  1. Resistance temperature detectors with resistance tolerance of plus or minus 0.1 percent at 70 degrees F, interchangeability less than plus or minus 0.2 percent, time constant of 13 seconds maximum for fluids and 200 seconds maximum for air.

2. Use insertion elements in ducts not affected by temperature stratification or smaller than one square meter. Use averaging elements where larger or prone to stratification sensor length 8 feet or 16 feet as required.
3. Insertion elements for liquids shall be with brass socket with minimum insertion length of 2-1/2 inches.
4. Room sensors: Locking cover .
5. Outside air sensors: Watertight inlet fitting, shielded from direct rays of sun.
6. Room sensors: Provide temperature setpoint adjust for +/- 3 deg. (adjustable) of control setpoint and occupied/unoccupied override button.

## **2.07 THERMOSTATS**

- A. Immersion Thermostat:
  1. Remote bulb or bimetallic rod and tube type, proportional action with adjustable setpoint and adjustable throttling range.
- B. Airstream Thermostats:
  1. Remote bulb or bimetallic rod and tube type, proportional action with adjustable setpoint in middle of range and adjustable throttling range.
- C. Electric Low Limit Duct Thermostat:
  1. Snap acting, single pole, single throw, manual reset switch that trips if temperature sensed across any 12 inches of bulb length is equal to or below setpoint,
  2. Provide one thermostat for every 20 sq ft of coil surface.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that systems are ready to receive work.
- C. Beginning of installation means installer accepts existing conditions.
- D. Sequence work to ensure installation of components is complementary to installation of similar components in other systems.
- E. Coordinate installation of system components with installation of mechanical systems equipment such as air handling units and air terminal units.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Check and verify location of thermostats with plans and room details before installation. Locate 60 inches above floor. Align with lighting switches and humidistats. Refer to Section 262726.
- C. Mount freeze protection thermostats using flanges and element holders.
- D. Mount outdoor reset thermostats and outdoor sensors indoors, with sensing elements outdoors with sun shield.
- E. Provide separable sockets for liquids and flanges for air bulb elements.
- F. Provide flat plate security sensors on temperature sensors in public areas.
- G. Provide mixing dampers of parallel blade construction arranged to mix streams. Provide opposed blade construction for other air control dampers. Provide pilot positioners on mixed air damper motors.
- H. Install damper motors on outside of duct in warm areas. Do not install motors in locations at outdoor temperatures.
- I. Mount control panels adjacent to associated equipment on vibration free walls or free standing angle iron supports. One cabinet may accommodate more than one system in same equipment room. Provide engraved plastic nameplates for instruments and controls inside cabinet and engraved plastic nameplates on cabinet face.

- J. Provide all control wiring in conduit. Conduit and electrical wiring shall be in accordance with Section 262717. Electrical material and installation shall be in accordance with appropriate requirements of Division 26.

**END OF SECTION**

**SECTION 230923**  
**DIRECT-DIGITAL CONTROL SYSTEM FOR HVAC**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. System description.
- B. System software.
- C. Control equipment.
- D. Software.

**1.02 RELATED REQUIREMENTS**

- A. Section 230913 - Instrumentation and Control Devices for HVAC.
- B. Section 230993 - Sequence of Operations for HVAC Controls.
- C. Section 260583 - Wiring Connections: Electrical characteristics and wiring connections.

**1.03 REFERENCE STANDARDS**

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

**1.04 SYSTEM DESCRIPTION**

- A. Automatic temperature control field monitoring and control system using field programmable micro-processor based units . System shall be an extension of the existing Delta Control system.
- B. The existing Roof Top Units are being removed in this project. Remove all control wiring/equipment to the units. The existing graphics for these units shall be revised to reflect the new installation/equipment.
- C. Base system on distributed system of fully intelligent, stand-alone controllers, operating in a multi-tasking, multi-user environment on token passing network, with central and remote hardware, software, and interconnecting wire and conduit.
- D. Include computer software and hardware, operator input/output devices, control units, local area networks (LAN), sensors, control devices, actuators.
- E. Controls for variable air volume terminals, reheat coils, unit heaters, fan coils, and the like when directly connected to the control units. Individual terminal unit control is specified in Section 230913.
- F. Provide control systems consisting of thermostats, control valves, dampers and operators, indicating devices, interface equipment and other apparatus and accessories required to operate mechanical systems, and to perform functions specified.
- G. Include installation and calibration, supervision, adjustments, and fine tuning necessary for complete and fully operational system.

**1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for each system component and software module.
- C. Shop Drawings:
  - 1. Indicate trunk cable schematic showing programmable control unit locations, and trunk data conductors.
  - 2. List connected data points, including connected control unit and input device.
  - 3. Indicate system graphics indicating monitored systems, data (connected and calculated) point addresses, and operator notations. Provide demonstration diskette containing graphics.
  - 4. Show system configuration with peripheral devices, batteries, power supplies, diagrams, modems, and interconnections.

5. Indicate description and sequence of operation of operating, user, and application software.
- D. Project Record Documents: Record actual locations of control components, including control units, thermostats, and sensors.
  1. Revise shop drawings to reflect actual installation and operating sequences.
- E. Operation and Maintenance Data:
  1. Include interconnection wiring diagrams complete field installed systems with identified and numbered, system components and devices.
  2. Include keyboard illustrations and step-by-step procedures indexed for each operator function.
  3. Include inspection period, cleaning methods, cleaning materials recommended, and calibration tolerances.

#### **1.06 QUALITY ASSURANCE**

- A. Perform work in accordance with NFPA 70.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with minimum three years of documented experience.

#### **1.07 WARRANTY**

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective Work within a one year period after Substantial Completion.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Delta Controls - Intelligent Buildings.

#### **2.02 SYSTEM SOFTWARE**

- A. Provide new system software for incorporation into the system. Software shall be Delta enteliWEB. Contractor shall install and create dashboards and alarm management per the direction of the owner.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that conditioned power supply is available to the control units and to the operator work station. Verify that field end devices and wiring is installed prior to installation proceeding.

#### **3.02 INSTALLATION**

- A. Install control units and other hardware in position on permanent walls where not subject to excessive vibration.
- B. Install software in control units and in operator work station. Implement all features of programs to specified requirements and appropriate to sequence of operation. Refer to Section 230993.
- C. Provide conduit and electrical wiring in accordance with Section 260583. Electrical material and installation shall be in accordance with appropriate requirements of Division 26.

#### **3.03 MANUFACTURER'S FIELD SERVICES**

- A. Start and commission systems. Allow sufficient time for start-up and commissioning prior to placing control systems in permanent operation.
- B. Provide basic operator training for Owner on data display, alarm and status descriptors, requesting data, execution of commands and request of logs. Include a minimum of 16 hours dedicated instructor time. Provide training on site.

#### **3.04 DEMONSTRATION AND INSTRUCTIONS**

- A. Demonstrate complete and operating system to Owner.

**3.05 MAINTENANCE**

- A. Provide service and maintenance of energy management and control systems for one years from Date of Substantial Completion.

**END OF SECTION**



**SECTION 230993**  
**SEQUENCE OF OPERATIONS FOR HVAC CONTROLS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. This section defines the manner and method by which controls function. Requirements for each type of control system operation are specified. Equipment, devices, and system components required for control systems are specified in other sections.
- B. Sequence of operation for:
  - 1. Air terminal units.
  - 2. Roof Top units

**1.02 RELATED REQUIREMENTS**

- A. Section 230913 - Instrumentation and Control Devices for HVAC.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Sequence of Operation Documentation: Submit written sequence of operation for entire HVAC system and each piece of equipment.
- C. Control System Diagrams: Submit graphic schematic of the control system showing each control component and each component controlled, monitored, or enabled.
- D. Points List: Submit list of all control points.
- E. Project Record Documents: Record actual locations of components and setpoints of controls, including changes to sequences made after submission of shop drawings.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 AIR TERMINAL UNITS**

- A. Single-duct Variable Volume:
  - 1. Cooling with Reheat:
    - a. On a rise in space temperature above the cooling set-point, the unit modulates to its maximum airflow.
    - b. As the space temperature falls below the cooling set-point, the unit modulates to its minimum airflow.
    - c. As the space temperature continues to fall to the heating set-point, the terminal modulates to its heating minimum airflow and modulates the hot water valve as required to maintain setpoint. If the space is still calling for heat when the hot water valve shall is at 100%, the unit shall modulate the airflow to maintain setpoint
  - 2. Temperature setback: During scheduled unoccupied times the space temperature set-point shall be provided with a 5 deg (adjustable) temperature setback. Provide optimized control to precondition the space so set-point temperatures are met prior to scheduled occupancy.

**3.02 ROOF TOP AIR HANDLING UNITS (RTU-1 AND RTU-2)**

- A. Time Schedule: Start and stop supply fan. Determine fan status by current sensing devices. If fan fails to start as commanded, signal alarm.
- B. Provide temp sensor/wiring and input the following points:
  - 1. Discharge air temp. and setpoint
  - 2. Return air temp.
  - 3. Mixed air temp.
  - 4. Outside air temp.
- C. Provide actuator/control for the following dampers that are unit mounted, and input damper position.

1. Return air
  2. Relief air
  3. Mixed air
- D. Hot water Heating Coil (RTU-2 only):
1. When fan is not running and outside air temperature is below 40 degrees F, fully open coil valve to heating.
  2. When fan is running, modulate coil control valve to satisfy discharge air temperature setpoint.
  3. Provide supply and return water temperature inputs off of coil.
- E. DX Cooling Coil
1. Maintain discharge air temperature of 55 degrees F (adj.) by energizing and staging compressors during a call for cooling and cycling to satisfy sensor. Provide min. run times on compressors, and high/low temp. limits. Modulate the hot gas bypass as required during times of low demand.
  2. Provide alarm off of unit motor starter indicating phase loss.
- F. Outside, Return, and Relief Dampers:
1. When supply fan is not running, outside and relief dampers are closed and return damper is open.
  2. When supply fan is running, dampers are controlled and operate with outside and relief dampers opening, and return damper closing.
  3. When building is in an occupied mode, outside air damper shall be opened to a minimum position.
  4. For cooling and outside air temperatures below 55 degrees F, modulate dampers to maintain mixed air temperature of 55 degrees F or higher.
  5. For cooling and outside air temperatures above 55 degrees F outside and relief dampers are open and return damper is closed.
  6. For cooling and outside air temperatures above 55 degrees F compare return and outside air temperatures. If return air temperature is lower, drive outside damper to minimum, close relief damper, and open return damper.
  7. For heating, drive outside damper to minimum, close relief damper, and open return damper.
- G. Provide control of supply fan
1. Control factory mounted VFD and provide input on status and speed. Provide fault indication in case of phase loss.
  2. Maintain constant supply static pressure of 1.0 inches wg by modulating supply fan speed in sequence. Locate pressure sensor minimum 50 ft downstream of supply fan in supply air duct.
  3. Provide minimum air flow sequence. VFD shall not be allowed to go below 30% of maximum setting. Coordinate percentage with condensing unit supplier. Modulate VAV box dampers as required so no one space has excessive air flow.

### 3.03 POINTS LIST

- A. Refer to the following pages for "Input/Output Summary" for listing of required control points.
- B. All control points shall be addressed according to actual mechanical equipment identification numbers and room numbers.

**END OF SECTION**



**SECTION 233100**  
**HVAC DUCTS AND CASINGS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Metal ductwork.

**1.02 RELATED REQUIREMENTS**

- A. Section 230713 - Duct Insulation: External insulation and duct liner.
- B. Section 233300 - Air Duct Accessories.
- C. Section 233700 - Air Outlets and Inlets.

**1.03 REFERENCE STANDARDS**

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- C. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.
- D. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2014.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- F. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2015.
- G. NFPA 96 - Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations; 2014.
- H. SMACNA (DCS) - HVAC Duct Construction Standards Metal and Flexible; 2005.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Project Record Documents: Record actual locations of ducts and duct fittings. Record changes in fitting location and type. Show additional fittings used.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience, and approved by manufacturer.

**1.06 REGULATORY REQUIREMENTS**

- A. Construct ductwork to NFPA 90A and NFPA 96 standards.

**PART 2 PRODUCTS**

**2.01 DUCT ASSEMBLIES**

- A. Regulatory Requirements: Construct ductwork to NFPA 90A standards.
- B. All Ducts: 2 inch w.g. pressure class, galvanized steel, unless otherwise indicated.

**2.02 MATERIALS**

- A. Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G60/Z180 coating.
- B. Aluminum for Ducts: ASTM B209 (ASTM B209M); aluminum sheet, alloy 3003-H14. Aluminum Connectors and Bar Stock: Alloy 6061-T651 or of equivalent strength.
- C. Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
  - 1. Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.

2. VOC Content: Not more than 250 g/L, excluding water.
  3. Surface Burning Characteristics: Flame spread index of zero and smoke developed index of zero, when tested in accordance with ASTM E84.
  4. For Use With Flexible Ducts: UL labeled.
- D. Hanger Rod: ASTM A36/A36M; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

### **2.03 DUCTWORK FABRICATION**

- A. Fabricate and support in accordance with SMACNA (DCS) and as indicated.
- B. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
- C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
- D. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA (DCS).

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install, support, and seal ducts in accordance with SMACNA (DCS).
- B. Install in accordance with manufacturer's instructions.
- C. Provide all ductwork offsets and fittings as required for a quality installation.
- D. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- E. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
- F. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pilot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.
- G. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- H. Connect diffusers to low pressure ducts with 3 feet maximum length of flexible duct held in place with strap or clamp.
- I. Provide approved method of sealing ductwork penetrations through fire and/or smoke rated walls and barriers with an intumescent sealant or caulk.
- J. For installation of exposed spiral ductwork, hang with stainless steel braided cable system or as detailed otherwise on the Drawings.
- K. Seal all supply duct connections to heat pumps, air handling units, fan coils, furnaces, etc.

**END OF SECTION**

## SECTION 237413

### PACKAGED OUTDOOR CENTRAL-STATION AIR-HANDLING UNITS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Packaged roof top unit.
- B. Unit controls.
- C. Roof mounting curb and base.

##### 1.02 RELATED REQUIREMENTS

- A. Section 230548 - Vibration and Seismic Controls for HVAC Piping and Equipment.
- B. Section 260583 - Wiring Connections: Electrical characteristics and wiring connections.

##### 1.03 REFERENCE STANDARDS

- A. AHRI 210/240 - Standard for Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment; 2008.
- B. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2015.

##### 1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide capacity and dimensions of manufactured products and assemblies required for this project. Indicate electrical service with electrical characteristics and connection requirements, and duct connections.
- C. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.
- D. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 016000 - Product Requirements, for additional provisions.
  - 2. Extra Filters: One set for each unit.

##### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect units from physical damage by storing off site until roof mounting curbs are in place, ready for immediate installation of units.

##### 1.06 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Provide a five year warranty to include coverage for refrigeration compressors.

#### PART 2 PRODUCTS

##### 2.01 MANUFACTURERS

- A. The Trane Company.
- B. Daikin
- C. York International Corporation/Johnson Controls Inc: [www.johnsoncontrols.com/#sle](http://www.johnsoncontrols.com/#sle).

##### 2.02 PERFORMANCE REQUIREMENTS

- A. See equipment schedule on the plans.

##### 2.03 MANUFACTURED UNITS

- A. General: Roof mounted units having no heating and electric refrigeration.
- B. Description: Self-contained, packaged, factory assembled and prewired, consisting of cabinet and frame, supply fan, controls, air filters, refrigerant cooling coil and compressor, condenser coil and condenser fan.

## **2.04 FABRICATION**

- A. Cabinet: Steel with baked enamel finish, including access panels with screwdriver operated flush cam type fasteners. Structural members shall be minimum 18 gage, 0.0478 inch, with access doors or panels of minimum 20 gage, 0.0359 inch.
- B. Insulation: one inch thick neoprene coated glass fiber with edges protected from erosion.
- C. Supply Fan: Forward curved centrifugal type, resiliently mounted with V-belt drive, adjustable variable pitch pulley, and rubber isolated hinge mounted high efficiency motor or direct drive as indicated. Isolate complete fan assembly. Refer to Section 230548.
- D. Air Filters:
  - 1. 2 inch thick glass fiber disposable media in metal frames.
- E. Provide curb adaptor to mount to existing roof curbs, verify exact dimension prior to ordering.

## **2.05 EVAPORATOR COIL**

- A. Provide copper tube aluminum fin coil assembly with composite drain pan and connection.
- B. Provide capillary tubes or thermostatic expansion valves for units of 6 tons capacity and less, and thermostatic expansion valves and alternate row circuiting for units 7.5 tons cooling capacity and larger.

## **2.06 COMPRESSOR**

- A. Provide hermetic compressors, 3600 rpm maximum, resiliently mounted with positive lubrication, crankcase heater, high and low pressure safety controls, motor overload protection, suction and discharge service valves and gage ports, and filter drier.

## **2.07 CONDENSER COIL**

- A. Provide aluminum microchannel coil assembly with subcooling rows and coil guard.
- B. Provide direct drive propeller fans, resiliently mounted with fan guard, motor overload protection, wired to operate with compressor. Provide high efficiency fan motors.

## **2.08 MIXED AIR CASING**

- A. Dampers: Provide outside, return, and relief dampers with damper operator and control package to automatically vary outside air quantity. Outside air damper to fall to closed position. Relief dampers may be gravity balanced.
- B. Gaskets: Provide tight fitting dampers with edge gaskets.
- C. Mixed Air Controls: Maintain selected supply air temperature and return dampers to minimum position on call for heating and above 75 degrees F ambient, or when ambient air temperature exceeds return air temperature.

## **2.09 OPERATING CONTROLS - VARIABLE VOLUME UNITS**

- A. Provide control terminal strip to allow the controls contractor to modulate fan speed, damper positions, compressor cycling and staging.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that roof is ready to receive work and opening dimensions are as indicated on shop drawings.
- B. Verify that proper power supply is available.

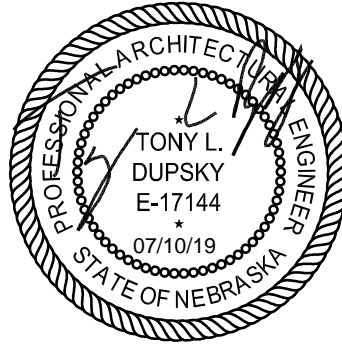
### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NFPA 90A.

**3.03 SYSTEM STARTUP**

- A. Prepare and start equipment. Adjust for proper operation.

**END OF SECTION**





# LANCASTER COUNTY EXTENSION RTU REPLACEMENT

444 Cherrycreek Rd, Lincoln, NE 68528

## LOCATION OF PROJECT



## SCHEDULE OF DRAWINGS

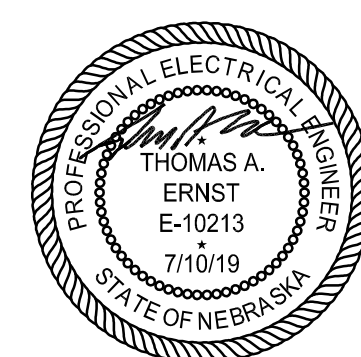
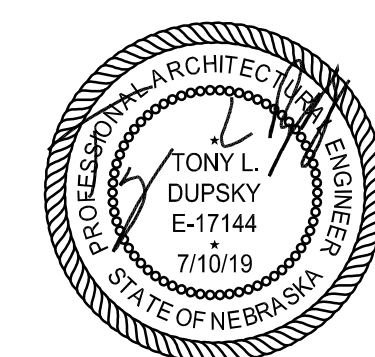
### MECHANICAL

- M1.0 FIRST FLOOR PLAN - DEMOLITION
- M1.1 FIRST FLOOR PLAN - MECHANICAL
- M1.2 ROOF PLAN - MECHANICAL
- M2.0 MECHANICAL SCHEDULES AND SYMBOLS

### ELECTRICAL

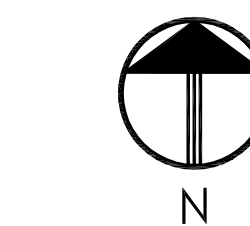
- E1.1 FIRST FLOOR PLAN - ELECTRICAL
- E2.1 SPECIFICATIONS, SYMBOLS & SCHEDULES

## PROFESSIONAL SEALS



I, Tony Dupsky, am the Coordinating Professional on the Lancaster County Extension RTU Replacement project.

DATE: JULY 10, 2019  
PROJECT NO.: 2019-054



## MECHANICAL AND ELECTRICAL



**Engineering Technologies Inc.**  
Mechanical & Electrical Building Solutions

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ETI Project No: 2019-054

LANCASTER COUNTY EXTENSION  
RTU REPLACEMENT

COVER SHEET



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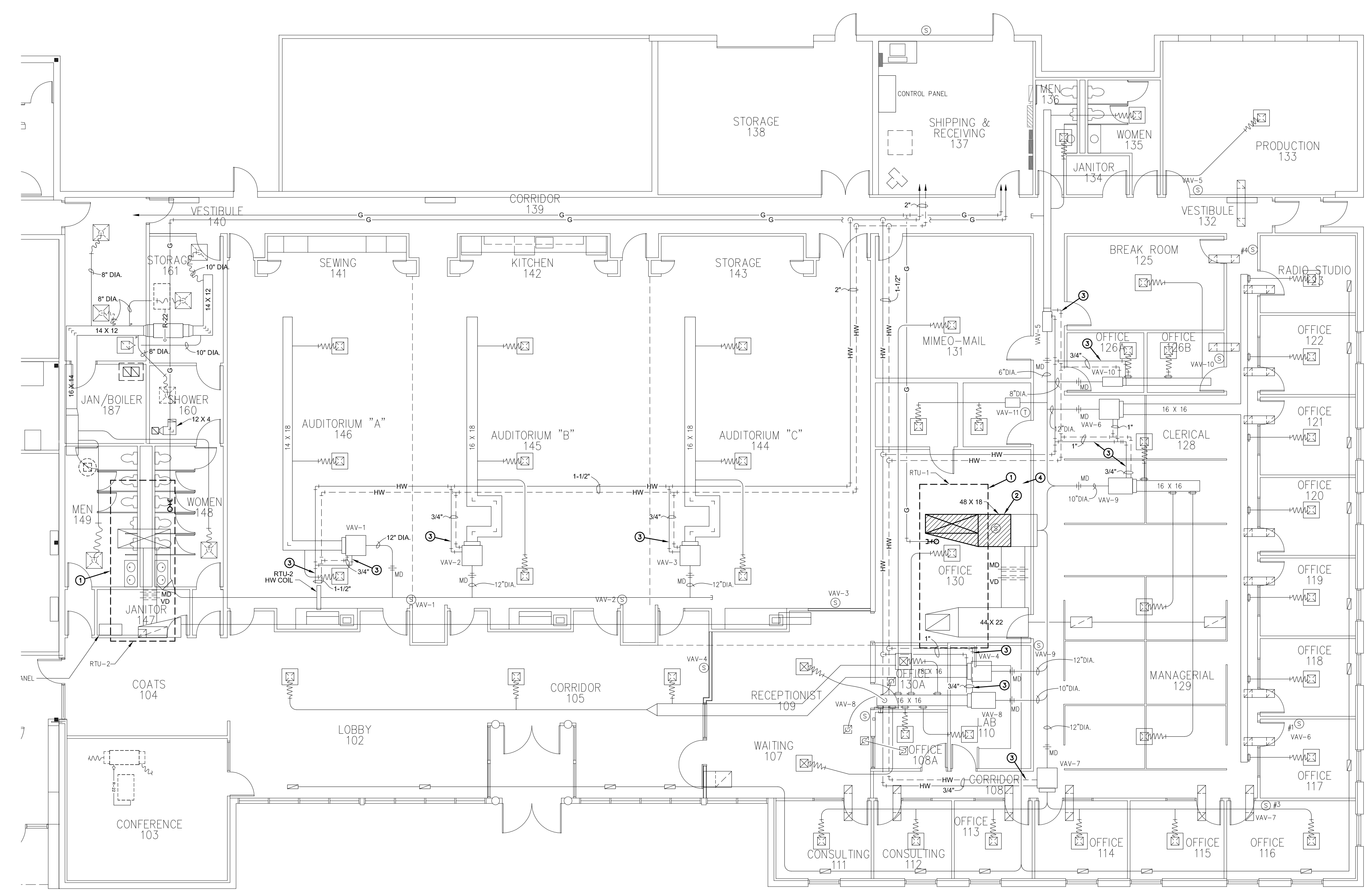
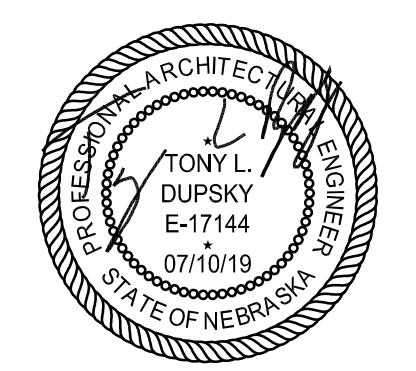
- GENERAL NOTES**
- CONTRACTOR SHALL COORDINATE TIMING OF ALL WORK WITH OWNER BEFORE PROCEEDING.
  - CONTRACTOR SHALL PROVIDE DUST / DEBRIS PROTECTION AROUND ALL AREAS OF WORK AND SHALL CLEAN AREA WHEN WORK IS COMPLETED.
  - CONTRACTOR SHALL REMOVE EXISTING LAY-IN CEILING AND REPLACE AS REQUIRED.
- SHEET NOTES**
- EXISTING ROOF TOP UNIT TO BE REMOVED, DISCONNECT AND CAP EXISTING GAS PIPING, DISCONNECT ELECTRICAL CONTROLS, DUCTWORK, ETC. AS REQUIRED. SEE SHEET M1.2 FOR ADDITIONAL INFORMATION.
  - REMOVE EXISTING SUPPLY ELBOW FROM RTU TO JUST AFTER BALLOONED PORTION OF 48 X 18 DUCT AS SHOWN. PROVIDE NEW ELBOW UP TO NEW RTU WITH 1-1/2" DUCT LINER. RELOCATE/REPLACE EXISTING STATIC PRESSURE SENSOR IF REQUIRED.
  - CONTRACTOR TO INSPECT EXISTING HOT WATER VALVE AND ACTUATOR TO MAKE SURE IT IS FULLY FUNCTIONAL. PROVIDE UNIT PRICE TO REPLACE CONTROL VALVES. SEE SPECIFICATIONS.
  - CONTRACTOR TO TEMPORARILY REMOVE CEILING GRID AS REQUIRED FOR ABOVE CEILING WORK. CONTRACTOR SHALL REINSTALL AND REPLACE ANY DAMAGED CEILING TILES.



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DATE: JULY 10, 2019	REVISION # - DATE
PROJECT NUMBER: 2019-054	
MECH. ENGINEER: TLD	
ELECT. ENGINEER: TAE	
MECH. DESIGNER: AJJ	
ELECT. TECHNICIAN: TMR	



LANCASTER COUNTY EXTENSION OFFICE  
RTU REPLACEMENT  
FIRST FLOOR PLAN - HVAC DEMOLITION

A1 FIRST FLOOR PLAN - HVAC DEMOLITION  
SCALE: 1/8" = 1'-0"

M1.0

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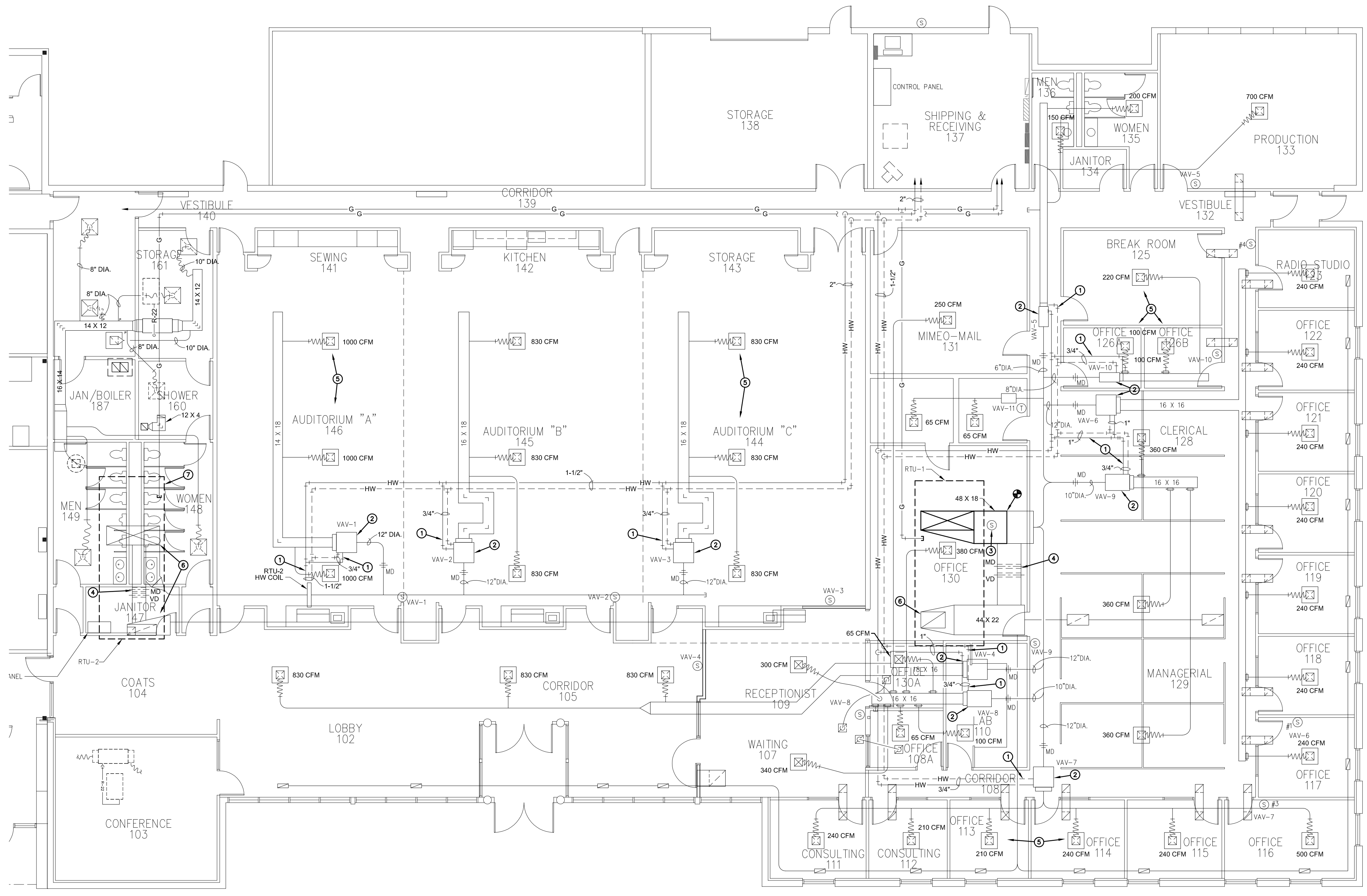
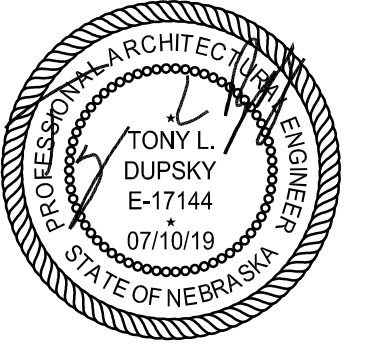
- GENERAL NOTE**
- CONTRACTOR SHALL COORDINATE TIMING OF ALL WORK WITH OWNER BEFORE PROCEEDING.
  - CONTRACTOR SHALL PROVIDE DUST / DEBRIS PROTECTION AROUND ALL AREAS OF WORK AND SHALL CLEAN AREA WHEN WORK IS COMPLETED.
  - RE-BALANCE ALL EXISTING SUPPLY REGISTER / DIFFUSERS TO CFM SHOWN. VERIFY LOCATION OF EXISTING DAMPERS.
  - CONTRACTOR SHALL REMOVE EXISTING LAY-IN CEILING AND REPLACE AS REQUIRED.
- SHEET NOTES**
- CONTRACTOR TO INSPECT EXISTING HOT WATER VALVE AND ACTUATOR TO MAKE SURE IT IS FULLY FUNCTIONAL. PATCH INSULATION AS REQUIRED. PROVIDE UNIT PRICE TO REPLACE CONTROL VALVES. SEE SPECIFICATIONS.
  - REBALANCE EXISTING VAV MOTORIZED DAMPERS AND ASSOCIATED REHEAT COILS TO VALUES NOTED ON VAV SCHEDULE. SEE SHEET M2.0.
  - TEMPERATURE CONTROLS CONTRACTOR TO REINSTALL OR PROVIDE NEW STATIC PRESSURE SENSOR AS REQUIRED.
  - EXISTING BYPASS DAMPER TO MODULATE TO MAINTAIN A MAXIMUM SUPPLY STATIC PRESSURE WHEN SUPPLY FAN VFD IS AT MINIMUM SPEED.
  - EXISTING CEILING DIFFUSERS FROM RTU-1 AND RTU-2 TO BE REBALANCED TO QUANTITY SHOWN. (TYPICAL)
  - RECONNECT EXISTING DUCTWORK TO NEW RTU. VERIFY REQUIREMENTS.
  - RTU-2 CHANGE OVER TO BE COMPLETED THE WEEK OF OCTOBER 14-16, 2019. COORDINATE EXACT TIMING WITH OWNER.



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MECH. ENGINEER: TLD	
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LANCASTER COUNTY EXTENSION OFFICE  
RTU REPLACEMENT  
FIRST FLOOR PLAN - MECHANICAL

A1 FIRST FLOOR PLAN - MECHANICAL  
SCALE: 1/8" = 1'-0"

M1.1

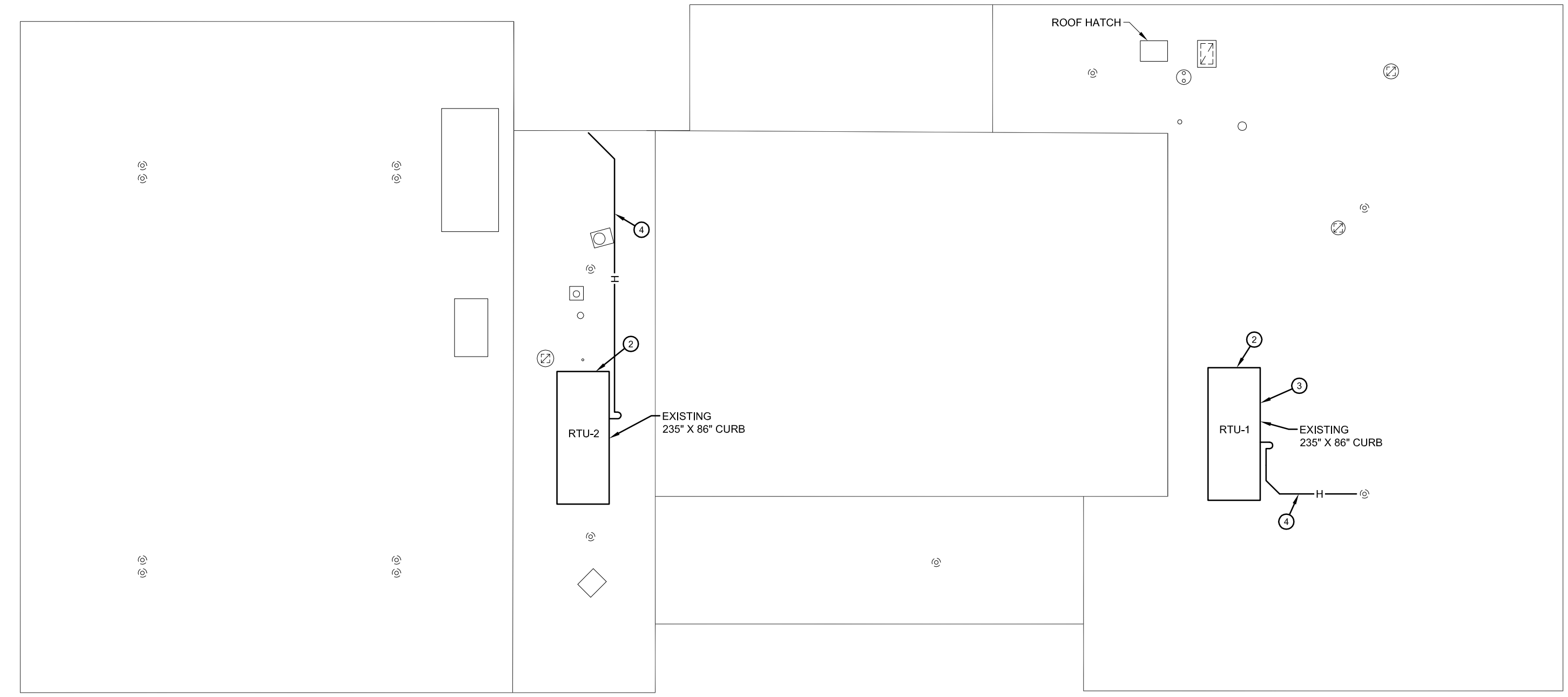
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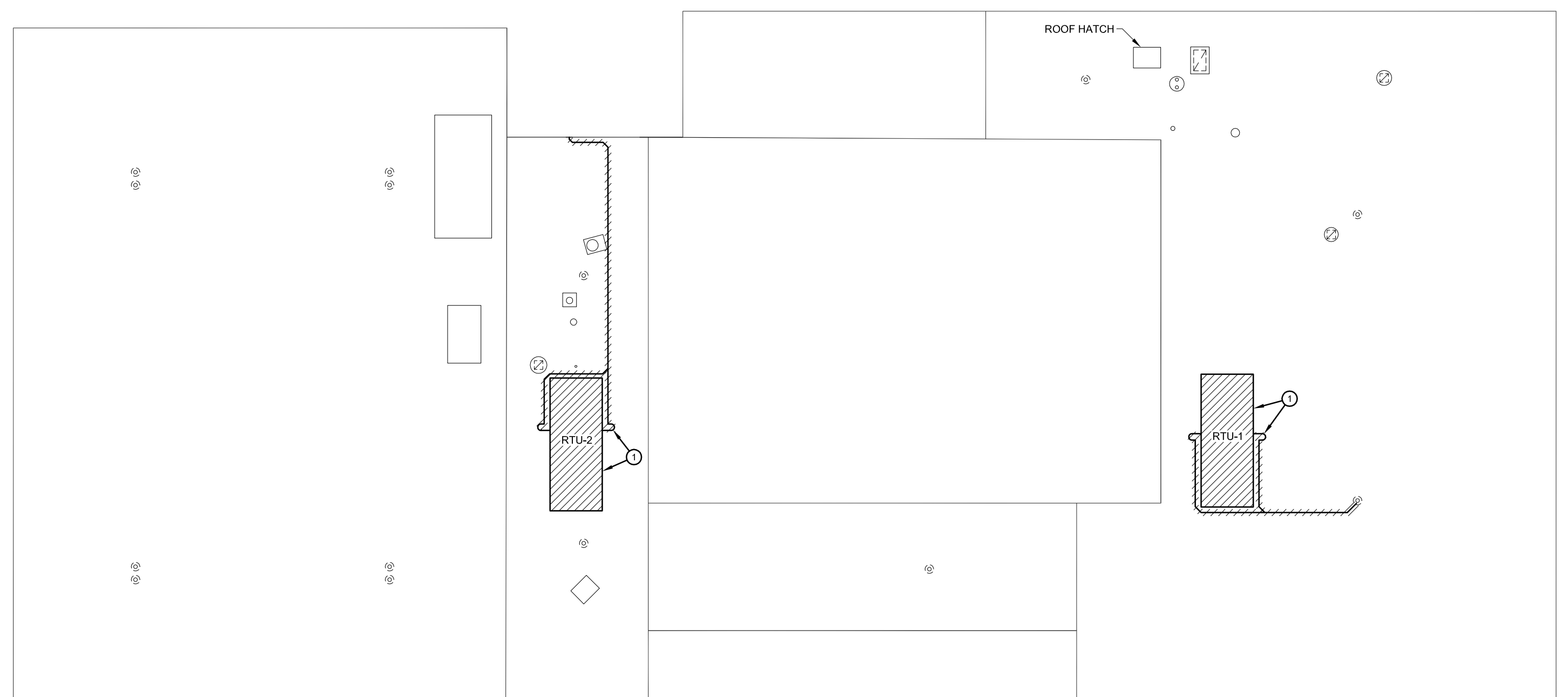
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- GENERAL NOTE**
- A. CONTRACTOR SHALL COORDINATE TIMING OF ALL WORK WITH OWNER BEFORE PROCEEDING.
  - B. CONTRACTOR SHALL PROVIDE DUST / DEBRIS PROTECTION AROUND ALL AREAS OF WORK AND SHALL CLEAN AREA WHEN WORK IS COMPLETED.
  - C. CONTRACTOR TO PROVIDE ROOF PROTECTION AS REQUIRED DURING REMOVAL AND INSTALLATION OF NEW ROOF TOP UNITS.
  - D. COORDINATE UNIT REMOVAL AND INSTALLATION SHALL WITH OWNER. THE AREA BELOW THE UNITS SHALL BE UNOCCUPIED DURING LIFTING.

- SHEET NOTES**
- 1. EXISTING ROOF TOP UNIT TO BE REMOVED. DISCONNECT AND CAP GAS PIPING BELOW. DISCONNECT CONTROLS, ELECTRICAL AND REMOVE EXISTING CONDENSATE PIPING. REUSE EXISTING CURB FOR NEW RTU.
  - 2. NEW ROOF TOP UNIT. RECONNECT ELECTRICAL. SEE ELECTRICAL PLANS. PROVIDE CURB ADAPTER AS REQUIRED. OUTSIDE CURB DIMENSIONS ARE NOTED ON PLANS.
  - 3. PROVIDE VIBRATION ISOLATION RAIL FOR RTU-1. PROVIDE AND INSTALL 2 LAYERS OF 5/8" GYPSUM IN THE EXISTING ROOF CURB AT EXISTING ROOF DECK.
  - 4. EXTEND FULL SIZE HUMIDITY DRAIN FROM RTU AS SHOWN. SLOPE PIPING AT A MINIMUM OF 1%.



H7 ROOF PLAN - MECHANICAL  
SCALE: 1/16" = 1'-0"



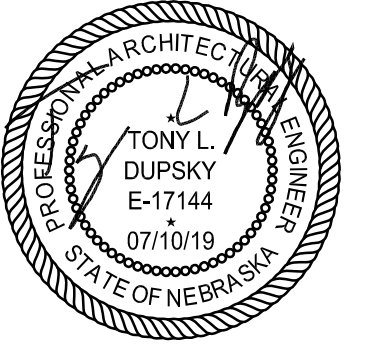
A7 ROOF PLAN - DEMOLITION  
SCALE: 1/16" = 1'-0"



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PROJECT NUMBER: 2019-054	
MECH. ENGINEER: TLD	
ELECT. ENGINEER: TAE	
MECH. DESIGNER: AJJ	
ELECT. TECHNICIAN: TMR	



LANCASTER COUNTY EXTENSION OFFICE  
RTU REPLACEMENT  
ROOF PLAN - MECHANICAL

M1.2

**MECHANICAL SYMBOLS**

	NOTE REFERENCE
	THERMOSTAT AND ZONE NUMBER (#1= ZONE 1)
	TEMPERATURE SENSOR
	SECTION IDENTIFICATION SECTION NUMBER SHEET NUMBER
	ELECTRICAL PANEL
	VARIABLE FREQUENCY DRIVE
	PIPING ABOVE FLOOR OR ABOVE GROUND SYMBOL INDICATES TYPE OF SERVICE
	PIPING BELOW FLOOR OR UNDER GROUND, SYMBOL INDICATES TYPE OF SERVICE
	EXISTING PIPING
	EXISTING PIPING TO BE REMOVED
	SOIL AND WASTE PIPING ABOVE GRADE
	SOIL AND WASTE PIPING BELOW GRADE
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	HOT WATER CIRCULATING PIPING
	HUMIDITY DRAIN PIPING
	REFRIGERANT PIPING (PAIR)
	HOT WATER HEATING SUPPLY PIPING
	HOT WATER HEATING RETURN PIPING
	ELBOW DOWN AND ELBOW UP
	TEE DOWN AND TEE UP
	BALL VALVE
	BUTTERFLY VALVE
	PIPING STRAINER
	PIPING UNION
	2-WAY TEMPERATURE CONTROL VALVE
	AUTOMATIC FLOW CONTROL VALVE
	CLEANOUT
	BELOW FLOOR OR UNDER GROUND P-TRAP
	TURNING VANES IN DUCT
	MOTORIZED DAMPER IN DUCT
	MANUAL VOLUME DAMPER IN DUCT (ADJUSTABLE)
	CEILING DIFFUSER WITH REGAIN BOX, FLEXIBLE DUCT TO BE A MAXIMUM 3'-0" LONG
	SUPPLY REGISTER
	RETURN OR EXHAUST AIR GRILLE
	HIGH EFFICIENCY TAKE-OFF, SEE SPECIFICATION
	DUCTWORK
	EXISTING DUCTWORK
	EXISTING DUCTWORK TO BE REMOVED
	VARIABLE AIR VOLUME BOX, XX INDICATES BOX DESIGNATION
	FLEXIBLE DUCTWORK CONNECTION
	RECTANGULAR DUCTWORK BREAK MARK

**ROOF TOP UNIT SCHEDULE**

UNIT #	BLOWER MOTOR HP	EXTERNAL S.P. "WC"	MIN. FRESH AIR	CFM	COOLING										TRANE MODEL #
					ENT. AIR "F D.B."	"F W.B."	MCA	MOP	VOLT / PH	STAGES	SENS. MBH	TOTAL MBH	EER		
RTU-1	10	2.0	850	10,000	80	67	170.5	200	208 / 3	5	237.0	333.5	10.8	TC0366BE**1B2EEA*YC	
RTU-2	7.5	1.7	1,350	8,000	80	67	103	125	208 / 3	3	172.7	226.0	11.0	TH024003R0B**1HA10	

**ROOF TOP UNIT SCHEDULE NOTES**

1. PROVIDE CURB ADAPTER TO MATCH EXISTING ROOF CURB, VERIFY EXACT REQUIREMENTS.
2. PROVIDE VIBRATION RAIL FOR RTU-1.
3. COOLING CAPACITY IS BASED ON 95° AMBIENT TEMPERATURE.
4. PROVIDE ENTHALPY ECONOMIZER WITH HOOD AND BAROMETRIC RELIEF DAMPER.
5. PROVIDE FACTORY MOUNTED VFD FOR SUPPLY FAN.
6. PROVIDE TERMINAL STRIP FOR THE CONTROLS CONTRACTOR TO CONNECT TO CONTROL THE UNIT, COORDINATE REQUIREMENTS WITH INTELLIGENT BUILDINGS CONTROLS.
7. PROVIDE 2" MERV #8 FILTERS.
8. PROVIDE 5 YEAR COMPRESSOR WARRANTY.

**VARIABLE AIR VOLUME BOX SCHEDULE**

EXISTING UNIT NO.	CFM SETTING			REHEAT COIL		ROOMS SERVED
	MIN.	MAX.	HEAT	GPM	Room MBH	
VAV-1	900	3000	1500	5.0	51.6	AUDITORIUM "A"
VAV-2	700	2500	1250	4.5	43.4	AUDITORIUM "B"
VAV-3	700	2500	1250	4.5	43.4	AUDITORIUM "C"
VAV-4	650	2500	1500	7.0	66.7	LOBBY
VAV-5	375	1040	625	4.5	41.6	PRODUCTION, RR
VAV-6	600	1670	1000	4.5	45.4	EAST OFFICES
VAV-7	600	1670	1000	5.0	46.9	SOUTH OFFICES
VAV-8	500	1500	900	4.5	41.5	RECEPTION, INTERIOR OFFICES
VAV-9	375	1080	650	3.5	32.7	OPEN OFFICE
VAV-10	150	420	250	1.0	10.1	BREAK, OFFICES
VAV-11	40	125	75	0.5	3.5	OFFICES

**VARIABLE AIR VOLUME BOX SCHEDULE NOTES**

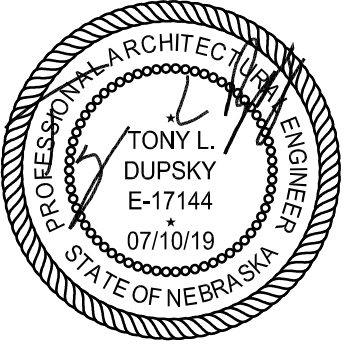
1. TEMPERATURE CONTROL CONTRACTOR SHALL RE-BALANCE ALL BOXES TO CFM SETTINGS SHOWN.
2. REBALANCE HOT WATER FLOWS TO GPM VALUES SHOWN.



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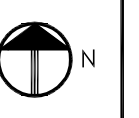
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LANCASTER COUNTY EXTENSION OFFICE  
RTU REPLACEMENT

MECHANICAL SCHEDULES AND SYMBOLS



M2.0

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

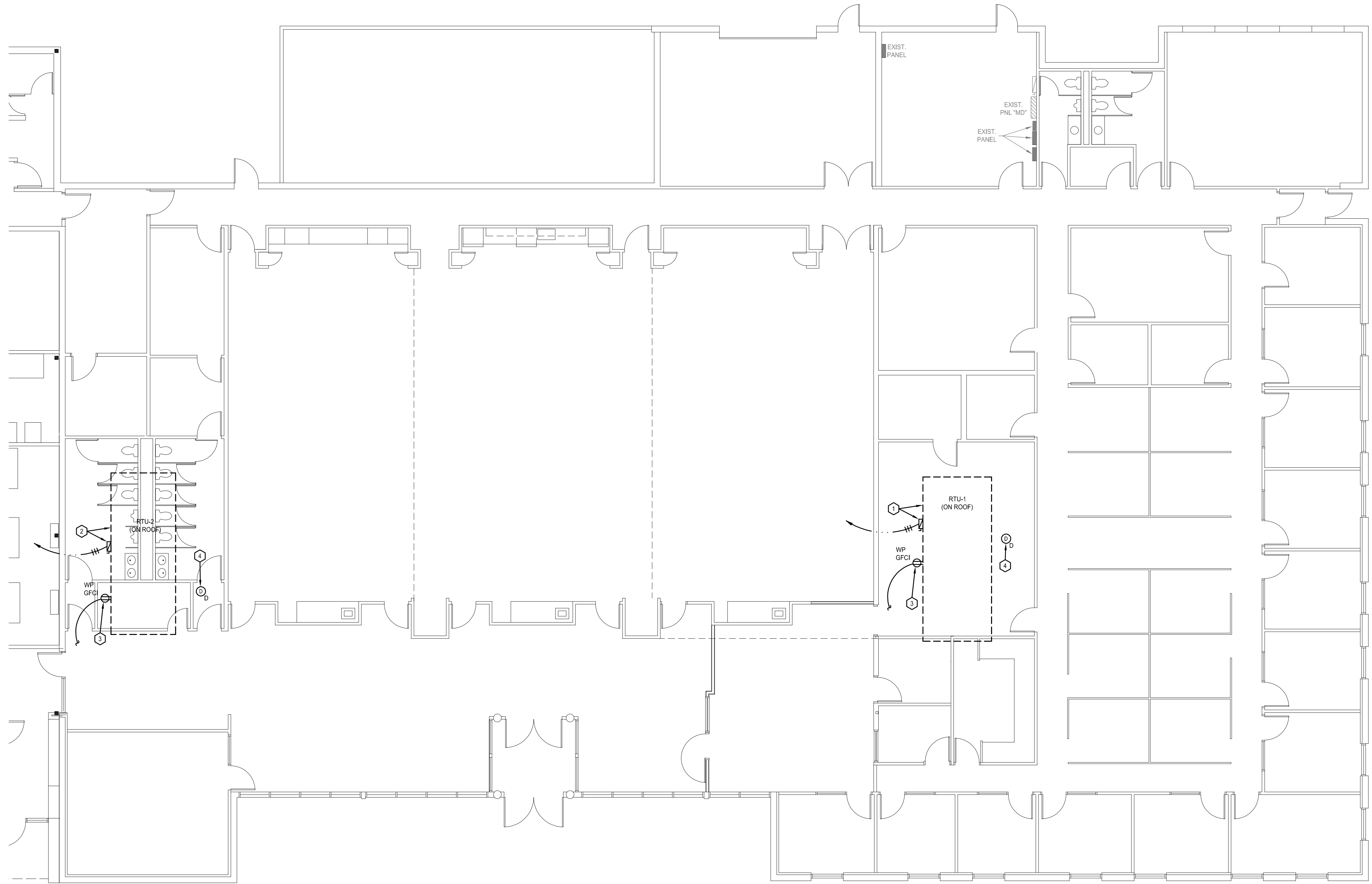
Q  
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A

**GENERAL NOTES**

A. CONTRACTOR SHALL DISCONNECT AND REMOVE LIGHTS AS REQUIRED FOR WORK. REPLACE AND RECONNECT LIGHTS WHEN WORK IS COMPLETED.

**SHEET NOTES**

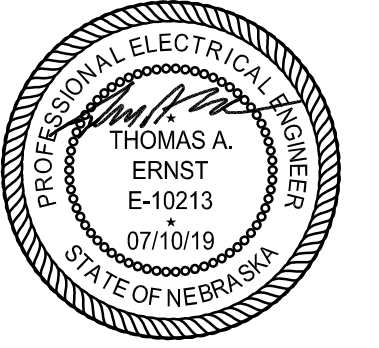
- EXISTING ROOF-TOP UNIT (RTU-1) TO BE REMOVED AND REPLACED. REMOVE EXISTING ELECTRICAL CONNECTION AND DISCONNECT SWITCH. PROVIDE A NEW 200 AMP, 3-POLE NEMA 3R FUSIBLE DISCONNECT SWITCH. FUSE AT 200 AMPS. EXTEND EXISTING BRANCH CIRCUIT TO NEW DISCONNECT SWITCH AND RTU AS REQUIRED.
- EXISTING ROOF-TOP UNIT (RTU-2) TO BE REMOVED AND REPLACED. REMOVE EXISTING ELECTRICAL CONNECTION AND DISCONNECT SWITCH. PROVIDE A NEW 200 AMP, 3-POLE NEMA 3R FUSIBLE DISCONNECT SWITCH. FUSE AT 125 AMPS. EXTEND EXISTING BRANCH CIRCUIT TO NEW DISCONNECT SWITCH AND RTU AS REQUIRED.
- RECEPTACLE TO BE LOCATED ON ROOF. DO NOT MOUNT TO EQUIPMENT ACCESS PANELS. COORDINATE MOUNTING LOCATION WITH MECHANICAL CONTRACTOR. CONNECT TO NEAREST RECEPTACLE CIRCUIT BELOW.
- EXISTING DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT. RE-CONNECT TO NEW SHUTDOWN RELAY AS REQUIRED.



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LANCASTER COUNTY EXTENSION OFFICE  
 RTU REPLACEMENT

FIRST FLOOR PLAN - ELECTRICAL

E1.0

A1 FIRST FLOOR PLAN - ELECTRICAL  
 SCALE: 1/8" = 1'-0"



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



**ELECTRICAL SPECIFICATIONS**

**SECTION 26 0101 - GENERAL ELECTRICAL REQUIREMENTS**

**A. RULES AND REGULATIONS**

ALL WORK, MATERIALS, AND MANNER OF PLACING MATERIAL OF THIS CONTRACT SHALL BE IN STRICT ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION (SEE PARTICULARLY PAMPHLETS 101, 70, AND 90A) AND WITH THE MUNICIPAL AND STATE LAWS AND ORDINANCES RELATING TO THIS WORK. ALL ELECTRICAL MATERIALS USED IN THIS WORK SHALL BE APPROVED BY THE UNDERWRITERS LABORATORIES AND SHALL BEAR THEIR LABEL OF APPROVAL. IN EVENT OF CONFLICT BETWEEN THE PLANS AND/OR SPECIFICATIONS AND GOVERNING LAWS OR ORDINANCES, THE MORE STRINGENT SHALL SUPERSEDE.

**B. PERMITS, LICENSES, AND FEES**

THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL REQUIREMENTS AS TO PERMITS, LICENSES, FEES, CODES, AND ORDINANCES AND ARRANGE TO COMPLY WITH THEM. ALL PERMITS, LICENSES, FEES, AND INSPECTIONS REQUIRED FOR THE WORK UNDER THIS CONTRACT SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED.

**C. GENERAL REQUIREMENTS**

SEE DIVISION I PROJECT MANUAL OR ARCHITECTURAL AND CIVIL DRAWINGS FOR GENERAL REQUIREMENTS, INCLUDING BUT NOT LIMITED TO ALTERNATE BID ITEMS, ADMINISTRATIVE REQUIREMENTS, PROJECT REQUIREMENTS, AND CLOSEOUT SUBMITTALS.

**D. WARRANTY**

THE CONTRACTOR SHALL WARRANT ALL MATERIAL AND WORKMANSHIP UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR FROM RECEIPT OF WRITTEN FINAL ACCEPTANCE, UNLESS NOTED OTHERWISE. HE SHALL REPAIR OR REPLACE, FREE OF CHARGE, ANY APPARATUS WHICH SHALL BE DEFECTIVE DURING THAT PERIOD OF TIME, WHICH IS DEFECTIVE DUE TO FAULTY MATERIAL OR WORKMANSHIP.

**E. SHOP DRAWINGS**

THE CONTRACTOR SHALL SUBMIT FIVE (5) COPIES OF SHOP DRAWINGS AND PRODUCT DATA TO THE ARCHITECT/ENGINEER FOR APPROVAL OR SUBMIT DIGITAL INFORMATION ON SUBMITTAL EXCHANGE OR OTHER APPROVED DIGITAL DOCUMENTING SYSTEM. STAMP, DATE, AND SIGN EACH SUBMITTAL TO INDICATE SUBMITTAL IS IN CONFORMANCE WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:

1. WIRING DEVICES AND COVER PLATES
2. ENCLOSED SWITCHES
3. PANELBOARDS, SWITCHBOARDS AND BREAKERS
4. FUSES

THE ARCHITECT/ENGINEER SHALL BE THE SOLE AND FINAL JUDGE AS TO THE SUITABILITY OF ITEMS SUBSTITUTED FOR THOSE SPECIFIED. THE ENTIRE COST OF ALL CHANGES OF ANY TYPE DUE TO SUBSTITUTIONS FOR MATERIALS SPECIFIED SHALL BE BORNE BY THE CONTRACTOR AT NO EXTRA COST.

**F. RECORD DRAWINGS**

SUBMIT A COMPLETE SET OF "AS-BUILT" RECORD DRAWINGS, THAT INCLUDES ALL ADDENDUMS, APPROVED CHANGE ORDERS, AND FIELD MODIFICATIONS THAT WERE MADE TO THE ORIGINAL CONSTRUCTION DOCUMENTS. RECORD ALL REVISIONS IN RED INK.

**SECTION 26 0501 - MINOR ELECTRICAL DEMOLITION**

THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL ELECTRICAL EQUIPMENT, WIRING DEVICES, LIGHTING FIXTURES, MOUNTING HARDWARE, ASSOCIATED WIRING, AND CONDUIT IN ALL AREAS OF THE BUILDING UNDER GOING DEMOLITION AS A PART OF THIS PROJECT. ELECTRICAL CIRCUITS SHALL BE REMOVED TO SOURCE OF SUPPLY AND SHALL BE LEFT IN A SAFE CONDITION AND ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE. ELECTRICAL DEMOLITION WORK SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR TO ENSURE THE SAFETY OF ALL WORKERS, OTHER PERSONNEL, AND PUBLIC FROM ANY HAZARD WITH RESPECT TO THE ELECTRICAL SYSTEM. PROVIDE BLANK COVER PLATES ON ALL ABANDONED BOXES.

COORDINATE ALL DOWNTIMES OF ELECTRICAL SYSTEMS WITH THE OWNER, UTILITY COMPANIES, AND LOCAL FIRE DEPARTMENT.

**SECTION 26 0519 - CONDUCTORS AND CABLES**

ALL WIRE AND CABLE SHALL BE SOFT DRAWN, COPPER WIRE WITH 600 VOLT INSULATION. WIRE AND CABLE SHALL BE TYPE THINWALL UNLESS OTHERWISE NOTED.

NO WIRES SMALLER THAN #12 SHALL BE USED, UNLESS NOTED OTHERWISE, EXCEPT #14 AWG MAY BE USED FOR CONTROL WIRING. ALL WIRING SHALL BE COLOR CODED PER N.E.C. ARTICLE 210.6. SPECIAL SYSTEM WIRE SHALL BE OF TYPE AND SIZE SPECIFIED ELSEWHERE IN THIS SPECIFICATION OR SHOWN ON THE DRAWINGS. ALL WIRE #10 AWG AND SMALLER SHALL BE SOLID COPPER AND ALL WIRE #8 AWG AND LARGER SHALL BE STRANDED COPPER WIRE.

THE USE OF MC OR AC CABLE IS PROHIBITED.

**SECTION 26 0526 - GROUNDING AND BONDING**

ALL NEUTRAL CONDUCTORS, CONDUIT SYSTEMS, CABINETS, EQUIPMENT, MOTOR FRAMES, AND OTHER ELECTRICAL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH N.E.C. AND MUNICIPAL CODES AND ORDINANCES. PROVIDE A GREEN INSULATED GROUNDING CONDUCTOR IN ALL CONDUITS. SIZE OF GROUNDING CONDUCTOR SHALL BE IN ACCORDANCE WITH THE NEC. INCREASE SIZE AS REQUIRED FOR VOLTAGE DROP.

**SECTION 26 0529 - HANGERS AND SUPPORTS**

PROVIDE ALL REQUIRED HANGERS, SUPPORTS, ANCHORS, FASTENERS, ETC. AS REQUIRED TO SECURE AND SUPPORT RACEWAYS AND EQUIPMENT, IN ACCORDANCE WITH THE NEC. DO NOT USE WIRE, CHAIN, PERFORATED PIPE STRAP, WOOD, POWDER ACTUATED OR RED ANCHORS FOR PERMANENT SUPPORTS, UNLESS NOTED OTHERWISE. DO NOT SUPPORT FROM PIPING OR HVAC DUCTWORK. ALL HANGERS, SUPPORTS, ANCHORS, FASTENERS, ETC. SHALL BE GALVANIZED AND UL LISTED FOR THE APPLICATION.

**SECTION 26 0534 - CONDUIT**

ALL WIRING SHALL BE INSTALLED IN CONDUIT RACEWAYS UNLESS OTHERWISE INDICATED HEREIN. ALL CONDUIT RUNS SHOWN ARE DIAGRAMMATIC. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD. ALL RACEWAYS SHALL BE SIZED PER THE N.E.C. NO CONDUIT SMALLER THAN 3/4 INCH SHALL BE PERMITTED FOR POWER DISTRIBUTION WIRING, EXCEPT 1/2" CONDUIT MAY BE USED FOR EXIT LIGHTS, "SWITCH LEGS", FRACTIONAL HORSEPOWER EQUIPMENT, AND WHERE NOTED ON THE DRAWINGS OR IN OTHER SPEC. SECTIONS. FLEXIBLE CONDUIT, 3/8" MINIMUM SIZE, MAY BE USED FOR FIXTURE WHIPS. ALL WIRING INSTALLED BELOW CONCRETE SLABS ON GRADE, ALL ABOVE GRADE EXTERIOR WIRING, AND ALL WIRING EXPOSED TO MOISTURE OR PHYSICAL DAMAGE SHALL BE INSTALLED IN RIGID STEEL CONDUIT OR INTERMEDIATE METAL. ALL EXTERIOR UNDERGROUND WIRING TO BE INSTALLED IN SCHEDULE 40 OR SCHEDULE 80 RIGID PVC CONDUIT UNLESS OTHERWISE NOTED. ALL MOTOR CONNECTIONS (24 INCH MAXIMUM LENGTH) TO BE MADE WITH FLEXIBLE CONDUIT. USE LIGHTWEIGHT FLEXIBLE METAL CONDUIT IN DAMP AND WET LOCATIONS. ALL OTHER WIRING MAY BE INSTALLED IN THIN WALL CONDUIT (E.M.T.), ALL STEEL COMPRESSION OR SET SCREW FITTINGS SHALL BE USED.

CONDUITS SHALL BE INSTALLED CONCEALED IN OR ABOVE CEILING OR BELOW CONCRETE FLOORS AND WITHIN WALLS. NO RACEWAY LARGER THAN 3/4 INCH SHALL BE INSTALLED WITHIN CONCRETE SLABS ON GRADE. INSTALLATION OF RACEWAYS IN REINFORCED CONCRETE SHALL COMPLY WITH AMERICAN CONCRETE INSTITUTE STANDARD NO. 318. EXPOSED CONDUIT WILL BE ALLOWED ONLY OVERHEAD IN ROOMS WITH UNFINISHED CEILINGS, FOR DROPS TO MOTORS, ON WALL FOR CONNECTION TO SURFACE-MOUNTED PANELBOARDS OR SWITCHBOARDS OR CABINETS, IN ELECTRICAL EQUIPMENT ROOMS, AND WHERE NOTED ON THE PLANS.

SUPPORT CONDUITS IN ACCORDANCE WITH THE NEC AND SPEC. SECTION 26 0529. DO NOT SUPPORT CONDUITS FROM HVAC DUCTWORK OR PIPING. PROVIDE EXPANSION FITTINGS, FIRESTOPPING, MODULAR SEALS, SLEEVES, TRENCHING, WARNING TAPE, PULLSTRINGS IN EMPTY CONDUITS, ETC. AS REQUIRED FOR A COMPLETE CONDUIT AND RACEWAY SYSTEM.

**SECTION 26 0537 - BOXES**

**A. GENERAL REQUIREMENTS**

1. PROVIDE ALL BOXES, FITTINGS, SUPPORTS, AND ACCESSORIES REQUIRED FOR A COMPLETE RACEWAY SYSTEM AND TO ACCOMMODATE DEVICES AND EQUIPMENT TO BE INSTALLED.
2. PROVIDE PRODUCTS LISTED, CLASSIFIED, AND LABELED AS SUITABLE FOR THE PURPOSE INTENDED.
3. WHERE BOX SIZE IS NOT INDICATED, SIZE TO COMPLY WITH NFPA 70, BUT NOT LESS THAN APPLICABLE MINIMUM SIZE REQUIREMENTS SPECIFIED.
4. PROVIDE GROUNDING TERMINALS WITHIN BOXES WHERE EQUIPMENT GROUNDING CONDUCTORS TERMINATE.
5. USE NEMA OS1 SHEET STEEL BOXES FOR DRY LOCATION, COMPLYING WITH UL 514A.
6. USE NEMA FB1 CAST IRON BOXES OR CAST ALUMINUM BOXES FOR DAMP OR WET LOCATIONS UNLESS OTHERWISE INDICATED OR REQUIRED, COMPLYING WITH UL 514A. FURNISH WITH COMPATIBLE WEATHERPROOF GASKETED COVERS.
7. DO NOT USE "THROUGH-WALL" BOXES DESIGNATED FOR ACCESS FROM BOTH SIDES OF WALL.
8. BOXES FOR SUPPORTING LUMINARIES AND CEILING FANS, LISTED AS SUITABLE FOR THE TYPE AND WEIGHT OF LOAD TO BE SUPPORTED.
9. MINIMUM BOX SIZE, UNLESS OTHERWISE INDICATED:
  - a. WIRING DEVICES AND COMMUNICATIONS SYSTEMS OUTLETS, 4 INCH SQUARE BY 2-1/8 INCH DEEP (100 BY 54MM) TRADE SIZE, UNLESS NOTED OTHERWISE
  - b. CEILING OUTLETS: 4 INCH OCTAGONAL OR SQUARE BY 2-1/8 INCH DEEP (100 BY 54 MM) TRADE SIZE.

**B. CABINETS AND ENCLOSURES, INCLUDING JUNCTION AND PULL BOXES LARGER THAN 100 CUBIC INCHES**

1. COMPLY WITH NEMA 250, AND LIST AND LABEL AS COMPLYING WITH UL 50 AND UL 50E, OR UL 508A.

**C. BOX LOCATIONS**

1. LOCATE BOXES SO THAT WALL PLATES DO NOT SPAN DIFFERENT BUILDING FINISHES.
2. LOCATE BOXES SO THAT WALL PLATES DO NOT CROSS MASONRY JOINTS.
3. UNLESS OTHERWISE INDICATED, WHERE MULTIPLE OUTLET BOXES ARE INSTALLED AT THE SAME LOCATION AT DIFFERENT MOUNTING HEIGHTS, INSTALL ALONG A COMMON VERTICAL CENTER LINE.
4. DO NOT INSTALL FLUSH MOUNTED BOXES ON OPPOSITE SIDES OF WALLS. BACK-TO-BACK, PROVIDE MINIMUM 24 INCHES HORIZONTAL SEPARATION UNLESS OTHERWISE NOTED.
5. ACOUSTIC-RATED WALLS: DO NOT INSTALL FLUSH MOUNTED BOXES ON OPPOSITE SIDES OF WALLS. BACK-TO-BACK, PROVIDE MINIMUM 24 INCHES HORIZONTAL SEPARATION.
6. FIRE RESISTANCE RATED WALLS, INSTALL FLUSH MOUNTED BOXES SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

**SECTION 26 0553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS**

PROVIDE ENGRAVED THREE-LAYER LAMINATED PLASTIC NAME PLATES WITH WHITE LETTERS ON BLACK BACKGROUND FOR EACH PANELBOARD, SWITCHBOARD AND BREAKERS, ENCLOSED SWITCH, LIGHTING CONTROL PANELS, OR MOTOR CONTROLLER.

**SECTION 26 2726 - WIRING DEVICES**

**A. RECEPTACLES**

DEVICES SHALL BE AS FOLLOWS:  
GENERAL CONVENIENCE RECEPTACLES SHALL BE 20 AMPERE, 125 VOLT, 3-WIRE GROUNDING TYPE. DUPLEX SPECIFICATION GRADE RECEPTACLES WITH U-SHAPED SLOT FOR GROUNDING PRONG. COLOR TO BE GRAY.

PROVIDE CLASS A, 20 AMP GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE DUPLEX RECEPTACLES WHERE NOTED ON DRAWINGS. PROVIDE WEATHER RESISTANT DEVICES AS REQUIRED BY CODE.

**B. DEVICE PLATES**

WEATHERPROOF DEVICE PLATES SHALL BE GASKETED, CAST ALUMINUM. PROVIDE WHILE-IN-USE RATED COVERS, WHERE REQUIRED BY THE NEC.

**SECTION 26 2813 - FUSES**

**I. COORDINATION**

1. COORDINATE FUSE REQUIREMENTS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND NAMEPLATE DATA FOR ACTUAL EQUIPMENT TO BE INSTALLED.

**J. APPLICATIONS**

1. FEEDERS:
  - a. FUSIBLE SWITCHES UP TO 600 AMPERES: CLASS RK1, TIME-DELAY.
  - b. FUSIBLE SWITCHES LARGER THAN 600 AMPERES: CLASS L, TIME-DELAY.
2. GENERAL PURPOSE BRANCH CIRCUITS: CLASS RK1, TIME-DELAY.
3. INDIVIDUAL MOTOR BRANCH CIRCUITS: CLASS RK1, TIME-DELAY.
4. PRIMARY PROTECTION FOR CONTROL TRANSFORMERS: CLASS CC, TIME-DELAY.

**C. FUSES**

1. PROVIDE PRODUCTS LISTED, CLASSIFIED, AND LABELED AS SUITABLE FOR THE PURPOSE INTENDED.
2. UNLESS SPECIFICALLY INDICATED TO BE EXCLUDED, PROVIDE FUSES FOR ALL FUSIBLE EQUIPMENT AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.
3. VOLTAGE RATING: SUITABLE FOR CIRCUIT VOLTAGE.

**D. PROVIDE THE FOLLOWING ACCESSORIES WHERE INDICATED OR WHERE REQUIRED TO COMPLETE INSTALLATION.**

1. FUSEHOLDERS: COMPATIBLE WITH INDICATED FUSES.
2. FUSE REDUCERS: FOR ADAPTING INDICATED FUSES TO PERMIT INSTALLATION IN SWITCH DESIGNED FOR FUSES WITH LARGER AMPERE RATINGS.
3. PROVIDE THREE (3) SPARE FUSES FOR EACH SIZE AND TYPE OF FUSE USED ON PROJECT.

**SECTION 26 2818 - ENCLOSED SWITCHES**

SAFETY SWITCHES SHALL BE NEMA HEAVY DUTY TYPE HD AND UNDERWRITERS LABORATORIES LISTED. ALL SWITCHES SHALL HAVE BLADES WHICH ARE FULLY VISIBLE IN THE OFF POSITION WHEN THE DOOR IS OPEN. SWITCHES SHALL BE OF DEAD-FRONT CONSTRUCTION WITH PERMANENTLY ATTACHED ARC SUPPRESSORS HINGED OR OTHERWISE ATTACHED TO PERMIT EASY ACCESS TO LINE-SIDE LUGS WITH OUT REMOVAL OF THE ARC SUPPRESSOR. LUGS SHALL BE UL LISTED FOR COPPER AND/OR ALUMINUM CABLE AND FRONT REMOVABLE. ALL CURRENT CARRYING PARTS SHALL BE PLATED BY ELECTROLYTIC PROCESSES. PROVIDE ADDITIONAL ACCESSORIES, AS NOTED ON THE DRAWINGS.

EQUIPMENT CONNECTION SCHEDULE										
EQUIP.	DESCRIPTION	KW	HP	VOLTS	PHASE	WIRING	DISCONNECT SWITCH	MOTOR STARTER	CONNECTION	REMARKS
RTU-1	ROOF-TOP UNIT	57.8	-	208	3Ø	REUSE EXISTING BRANCH CIRCUIT	200 AMP FUSED NEMA 3R	-	DIRECT	PROVIDE FIRE ALARM SHUTDOWN RELAY AND CONNECT TO FIRE ALARM SYSTEM AND EXISTING DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT.
RTU-2	ROOF-TOP UNIT	36.9	-	208	3Ø	REUSE EXISTING BRANCH CIRCUIT	200 AMP FUSED NEMA 3R	-	DIRECT	PROVIDE FIRE ALARM SHUTDOWN RELAY AND CONNECT TO FIRE ALARM SYSTEM AND EXISTING DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT.
-	-	-	-	-	-	-	-	-	-	-

NOTES:  
1. ALL LOW VOLTAGE HVAC CONTROL WIRING SHALL BE BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED.  
2. ALL EXHAUST FANS ARE FURNISHED WITH AN INTEGRAL DISCONNECTING MEANS, UNLESS NOTED OTHERWISE.

**A8 EQUIPMENT CONNECTION SCHEDULE**  
NO SCALE

**ELECTRICAL SYMBOLS**

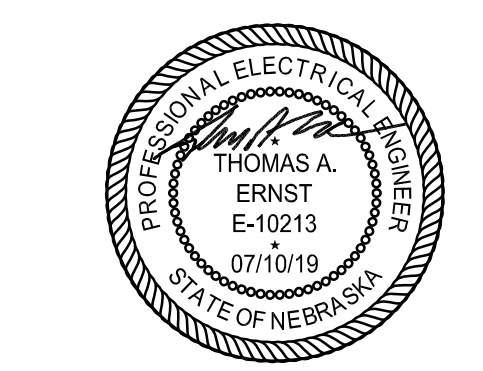
	DUPLEX CONVENIENCE RECEPTACLE (WP = WEATHERPROOF, GFCI = GROUND FAULT CIRCUIT INTERRUPTER, U = USB)
	DISCONNECT SWITCH - FUSED
	DISCONNECT SWITCH - NON FUSED
	BRANCH CIRCUIT PANEL
	DISTRIBUTION PANEL
	DUCT MOUNTED SMOKE DETECTOR
	PLAN OR DETAIL NOTE IDENTIFICATION
	HOME RUN TO PANELBOARD, LETTER INDICATES PANEL DESIGNATION, NUMBER INDICATES CIRCUIT
	CONDUIT CONCEALED IN WALLS OR CEILING, CROSSHATCHES INDICATE NUMBER OF CONDUCTORS EXCEPT NO CROSSHATCHES INDICATE 2 CONDUCTORS (GROUND WIRES ARE NOT SHOWN)
	EXISTING CONDUIT, VERIFY EXACT LOCATION
A	AMPERES
AF	ABOVE FINISHED FLOOR
AWG	AMERICAN WIRE GAUGE
BD	BOARD
C	CONDUIT
CU	COPPER
E	INDICATES EXISTING TO REMAIN
EMT	ELECTRICAL METALLIC TUBING
F OR FRAC	FRACTIONAL
GND	GROUND
HVAC	HEATING, VENTILATION, & AIR CONDITIONING
HZ	HERTZ
KVA	KILOVOLT AMPERES
KW	KILOWATT
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
P	POLE
PNL	PANELBOARD
PVC	POLY VINYL CHLORIDE NON-METALLIC RACEWAY, SCHEDULE 40 OR SCHEDULE 80
R	INDICATES ITEM TO BE REMOVED, REMOVE EQUIPMENT, INCLUDING MOUNTING HARDWARE, AND CONDUIT AND CONDUCTORS TO SOURCE OF SUPPLY, UNLESS NOTED OTHERWISE
RSC	RIGID STEEL CONDUIT
RTU	ROOF TOP UNIT
TYP	TYPICAL
V	VOLTS
W	WATT
WP	INDICATES WEATHERPROOF



825 M Street, Suite 200 Lincoln, NE 68508  
P 402.476.1273 F 402.476.1274

1111 North 13th Street Suite 216, Omaha, NE 68137  
P 402.330.2772 F 402.330.2630

DATE: JULY 10, 2019	REVISION # - DATE
PROJECT NUMBER: 2019-054	
MECH. ENGINEER: TLD	
ELECT. ENGINEER: TAE	
MECH. DESIGNER: AJJ	
ELECT. TECHNICIAN: TMR	



LANCASTER COUNTY EXTENSION OFFICE  
RTU REPLACEMENT  
ELECTRICAL SPECIFICATIONS, SCHEDULES, AND SYMBOLS

E2.0

**A8 ELECTRICAL SYMBOLS**  
NO SCALE

# INSTRUCTIONS TO BIDDERS

## LANCASTER COUNTY, NEBRASKA

### PURCHASING DIVISION

#### E-Bid

#### 1. **BIDDING PROCEDURE**

- 1.1 Sealed bid, (formal and informal), subject to Instructions and General Conditions and any special conditions set forth herein, will be received in the office of the Purchasing Division, 440 So. 8<sup>th</sup> St., Lincoln, NE 68508, until the bid closing date and time indicated for furnishing Lancaster County, hereinafter referred to as "County", the materials, supplies, equipment or services shown in the electronic bid request.
- 1.2 Bidders shall use the electronic bid system for submitting bids and must complete all required fields. If you do not care to bid, please respond to the bid request and note your reason.
- 1.3 Identify the item you will furnish by brand or manufacturer's name and catalog numbers. Also furnish specifications and descriptive literature if not bidding the specific manufacturer or model as listed in the specifications.
- 1.4 Any person submitting a bid for a firm, corporation, or other organization must show evidence of his authority so to bind such firm, corporation, or organization.
- 1.5 Bids received after the time and date established for receiving bids will be rejected.
- 1.6 The Bidders and public are invited, but not required, to attend the formal opening of bids. At the opening, prices will be displayed electronically and/or read aloud to the public. The pricing is also available for immediate viewing on-line. No decisions related to an award of a contract or purchase order will be made at the opening.

#### 2. **BID SECURITY**

- 2.1 Bid security, as a guarantee of good faith, in the form of a certified check, cashier's check, or Bidder's bond, may be required to be submitted with this bid document, as indicated on the bid.
  - 2.1.1 Bid security, if required, shall be in the amount specified on the bid. The bid security must be scanned and attached to the "Response Attachments" section of your response or it can be faxed to the Purchasing office at 402-441-6513. The original bid security should then be sent or delivered to the office of the Purchasing Division, 440 S. 8<sup>th</sup> St., Ste. 200, Lincoln, NE 68508 within three (3) days of bid closing.
  - 2.1.2 If bid security is not received in the Purchasing Division as stated above, the vendor may be determined to be non-responsive.
- 2.2 If alternate bids are submitted, only one bid security will be required, provided the bid security is based on the amount of the highest gross bid.
- 2.3 Such bid security will be returned to the unsuccessful Bidders when the award of bid is made.
- 2.4 Bid security will be returned to the successful Bidder(s) as follows:
  - 2.4.1 For single order bids with specified quantities: upon the delivery of all equipment or merchandise, and upon final acceptance by the County.
  - 2.4.2 For all other contracts: upon approval by the County of the executed contract and bonds.
- 2.5 County shall have the right to retain the bid security of Bidders to whom an award is being considered until either:
  - 2.5.1 A contract has been executed and bonds have been furnished.
  - 2.5.2 The specified time has elapsed so that the bids may be withdrawn.
  - 2.5.3 All bids have been rejected.
- 2.6 Bid security will be forfeited to the County as full liquidated damages, but not as a penalty, for any of the following reasons, as pertains to this bidding document:
  - 2.6.1 If the Bidder fails or refuses to enter into a contract on forms provided by the County, and/or if the Bidder fails to provide sufficient bonds or insurance within the time period as established in this bidding document.

#### 3. **BIDDER'S REPRESENTATION**

- 3.1 Each Bidder by electronic signature and submitting a bid, represents that the Bidder has read and understands the bidding documents, the bid attributes, the bid attachments, and the bid has been submitted in accordance therewith.
- 3.2 Each Bidder for services further represents that the Bidder has examined and is familiar with the local conditions under which the work is to be done and has correlated the observations with the requirements of the bid documents.

#### 4. **INDEPENDENT PRICE DETERMINATION**

- 4.1 By submitting this bid, the Bidder certifies that the prices in this bid have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other Bidder or with any competitor; unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the Bidder prior to bid opening directly or indirectly to any other Bidder or to any competitor; no attempt has been made, or will be made, by the Bidder to induce any person or firm to submit, or not to submit, a bid for the purpose of restricting competition.



**5. CLARIFICATION OF SPECIFICATION DOCUMENTS**

- 5.1 Bidders shall promptly notify the Purchasing Agent or designee of any ambiguity, inconsistency or error which they may discover upon examination of the bidding documents.
- 5.2 Bidders desiring clarification or interpretation of the bidding documents for formal bids shall make a written request which must reach the Purchasing Agent or designee at least five (5) calendar days prior to the date and time for receipt of formal bids.
- 5.3 Changes made to the bidding documents will be issued electronically. All vendors registered for that bid will be notified of the addendum. Subsequent Bidders will only receive the bid with the addendum included.
- 5.4 Oral interpretations or changes to the bidding documents made in any manner other than written form, will not be binding on the County; and Bidders shall not rely upon such interpretations or changes.

**6. ADDENDA**

- 6.1 Addenda are instruments issued by the County prior to the date for receipt of bids which modify or interpret the bidding document by addition, deletion, clarification or correction.
- 6.2 Addenda notification will be made available to all registered vendors immediately via e-mail for inspection on-line.
- 6.3 No formal bid addendums will be issued later than forty-eight (48) hours prior to the date and time for receipt of formal bids, except an addendum withdrawing the invitation to bid, or an addendum which includes postponement of the bid.

**7. ANTI-LOBBYING PROVISION**

- 7.1 During the period between the advertised date and the contract award, Bidders, including their agents and representatives, shall not directly discuss or promote their bid with any member of the County Board or County staff except in the course of County-sponsored inquiries, briefings, interviews, or presentations, unless requested by the County.

**8. BRAND NAMES**

- 8.1 Wherever in the specifications or bid that brand names, manufacturer, trade name, or catalog numbers are specified, it is for the purpose of establishing a grade or quality of material only; and the term "or equal" is deemed to follow.
- 8.2 It is the Bidder's responsibility to identify any alternate items offered in the bid, and prove to the satisfaction of the County that said item is equal to, or better than, the product specified.
- 8.3 Bids for alternate items shall be stated in the appropriate space on the E-Bid form. Bidders MUST attach to its bid documents in the Vendor Attachment Section of the E-Bid, a statement identifying the manufacturer and brand name of each proposed alternate, plus a complete description of the alternate items including illustrations, performance test data and any other information necessary for an evaluation.
- 8.4 The Bidder must indicate any variances and explain by item number from the bidding document no matter how slight.
- 8.5 If variations are not stated in the bid, it will be assumed that the item being bid fully complies with the County's bidding documents.

**9. DEMONSTRATIONS/SAMPLES**

- 9.1 Bidders shall demonstrate the exact item(s) proposed within seven (7) calendar days from receipt of such request from the County.
- 9.2 Such demonstration can be at the County delivery location or a surrounding community.
- 9.3 If items are small and mailable, and the Bidder is proposing an alternate product, the Bidder shall supply a sample of the exact item. Samples will be returned at Bidder's expense after receipt by the County of acceptable goods. The Bidder must indicate how samples are to be returned.

**10. DELIVERY (Non-Construction)**

- 10.1 Each Bidder shall state on the bid the date upon which it can make delivery of all equipment or merchandise. Time required for delivery is hereby made an essential element of the bid.
- 10.2 The County reserves the right to cancel orders, or any part thereof, without obligation, if delivery is not made within the time(s) specified on the bid.
- 10.3 All bids shall be based upon **inside** delivery of the equipment or merchandise F.O.B. to the County at the location specified by the County, with all transportation charges paid.
- 10.4 At the time of delivery, a designated Lancaster County employee will sign the invoice/packing slip. The signature will only indicate that the order has been received and the items actually delivered agree with the delivery invoice. This signature does not indicate all items meet specifications, were received in good condition and/or that there is not possible hidden damage or shortages.

**11. WARRANTIES, GUARANTEES AND MAINTENANCE**

- 11.1 Copies of the following documents, if requested, shall accompany the bid proposal for all items being bid:
  - 11.1.1 Manufacturer's warranties and/or guarantees.
  - 11.1.2 Bidder's maintenance policies and associated costs.
- 11.2 As a minimum requirement of the County, the Bidder will guarantee in writing that any defective components discovered within a one (1) year period after the date of acceptance shall be replaced at no expense to the County. Replacement parts of defective components shall be shipped at no cost to the County. Shipping costs for defective parts required to be returned to the Bidder shall be paid by the Bidder.

**12. ACCEPTANCE OF MATERIAL**

- 12.1 All components used in the manufacture or construction of materials, supplies and equipment, and all finished materials, shall be new, the latest make/model, of the best quality, and the highest grade workmanship.
- 12.2 Material delivered under this bid shall remain the property of the Bidder until:
  - 12.2.1 A physical inspection and actual usage of the material is made and found to be acceptable to the County; and
  - 12.2.2 Material is determined to be in full compliance with the bidding documents and accepted bid.
- 12.3 In the event the delivered material is found to be defective or does not conform to the bidding documents and accepted bid, the County reserves the right to cancel the order upon written notice to the Bidder and return materials to the Bidder at Bidder's expense.
- 12.4 Awarded Bidder shall be required to furnish title to the material, free and clear of all liens and encumbrances, issued in the name of the Lancaster County, Nebraska, as required by the bidding documents or purchase orders.
- 12.5 Awarded Bidder's advertising decals, stickers or other signs shall not be affixed to equipment. Vehicle mud flaps shall be installed blank side out with no advertisements. Manufacturer's standard production forgings, stampings, nameplates and logos are acceptable.

**13. BID EVALUATION AND AWARD**

- 13.1 The electronic signature shall be considered an offer on the part of the Bidder. Such offer shall be deemed accepted upon issuance by the County of purchase orders, contract award notifications, or other contract documents appropriate to the work.
- 13.2 No bid shall be modified or withdrawn for a period of ninety (90) calendar days after the time and date established for receiving bids, and each Bidder so agrees in submitting the bid.
- 13.3 In case of a discrepancy between the unit prices and their extensions, the unit prices shall govern.
- 13.4 The bid will be awarded to the lowest responsive, responsible Bidder whose bid will be most advantageous to the County, and as the County deems will best serve the requirements and interests of the County.
- 13.5 The County reserves the right to accept or reject any or all bids; to request rebids; to award bids item-by-item, with or without alternates, by groups, or "lump sum"; to waive irregularities and technicalities in bids; such as shall best serve the requirements and interests of the County.
- 13.6 In order to determine if the Bidder has the experience, qualification, resources and necessary attributes to provide the quality workmanship, materials and management required by the plans and specifications, the Bidder may be required to complete and submit additional information as deemed necessary by the County. Failure to provide the information requested to make this determination may be grounds for a declaration of non-responsive with respect to the Bidder.
- 13.7 The County reserves the right to reject irregular bids that contain unauthorized additions, conditions, alternate bids, or irregularities that make the bid incomplete, indefinite or ambiguous.
- 13.8 Any governmental agency may piggyback on any contract entered into from this bid.

**14. INDEMNIFICATION**

- 14.1 The Bidder shall indemnify and hold harmless, to the fullest extent allowed by law, the County, its agents, officers, employees and representatives from and against all claims, demands, suits, actions, payments, liability, judgements and expenses (including court-ordered attorney's fees), arising out of or resulting from the performance of the contract that results in bodily injury, sickness, disease, death, civil rights liability, or injury to or destruction of tangible property, including the loss of use resulting therefrom, and that are caused in whole or in part by the Bidder, its employees, agents, any subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts any of them may be liable. This section will not require the Bidder to indemnify or hold harmless the County for any losses, claims, damages and expenses arising out of or resulting from the sole negligence of the County, its agents, employees, or representatives.
- 14.2 In any and all claims against the County or any of its members, officers or employees by an employee of the Bidder, any subcontractor, anyone directly or indirectly employed by any of them or by anyone for whose acts made by any of them may be liable, the indemnification obligation under paragraph 14.1 shall not be limited in any way by any limitation of the amount or type of damages, compensation or benefits payable by or for the Bidder or any subcontractor under worker's compensation acts, disability benefit acts or other employee benefit acts.

**15. TERMS OF PAYMENT**

- 15.1 Unless stated otherwise, the County will begin processing payment within thirty (30) calendar days after all labor has been performed and all equipment or other merchandise has been delivered, and all such labor and equipment and other materials have met all contract specifications.

**16. LAWS**

- 16.1 The laws of the State of Nebraska shall govern the rights, obligations, and remedies of the parties under this bid and any contract reached as a result of this process.
- 16.2 Bidder agrees to abide by all applicable local, state and federal laws and regulations concerning the handling and disclosure of private and confidential information concerning individuals and corporations as to inventions, copyrights, patents and patent rights.
- 16.3 The Bidder agrees to hold the County harmless from any claims resulting from the Bidder's unlawful disclosure or use of private or confidential information.

**17. EQUIPMENT TAX ASSESSMENT**

- 17.1 Any bid for public improvement shall comply with Nebraska Revised Statutes 77-1323 and 77-1324. Indicating; every person, partnership, limited liability company, association or corporation furnishing labor or material in the repair, alteration, improvement, erection, or construction of any public improvement shall sign a certified statement which will accompany the contract. The certified statement shall state, stating that all equipment to be used on the project, except that acquired since the assessment date, has been assessed for taxation for the current year, giving the county where assessed.

**18. AFFIRMATIVE ACTION**

- 18.1 Each Bidder agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, ancestry, disability, age, or marital status.
- 18.2 The successful Bidder will be required to comply with the provisions of the County's Affirmative Action Policy.
- 18.3 The Equal Opportunity Officer will determine compliance or non-compliance with the County's Affirmative Action Policy upon a complete and substantial review of successful Bidder's equal opportunity policies, procedures and practices.
- 18.4 The County provides equal opportunity for all Bidders and encourages minority businesses, women's businesses and locally owned business enterprises to participate in our bidding process.

**19. INSURANCE**

- 19.1 All Bidders shall take special notice of the insurance provisions required for all County contracts (see *Insurance Clause for All County Contracts*).

**20. EXECUTION OF CONTRACT**

- 20.1 Depending on the type of service provided, one of the following methods will be employed. The method applicable to this contract will be checked below:
  - a. **PURCHASE ORDER**, unless otherwise noted.
    - 1. This contract shall consist of a Lancaster County Purchase Order.
    - 2. A copy of the Bidder's bid response (or referenced bid number) attached and that the same, in all particulars, becomes the contract between the parties hereto: that both parties thereby accept and agree to the terms and conditions of said bid documents.
  - b. **CONTRACT**, unless otherwise noted.
    - 1. County will furnish of the Contract to the successful Bidder who shall prepare attachments as required. Insurance as evidenced by a Certificate of Insurance (as required), surety bonds properly executed (as required), and Contract signed and dated.
    - 2. The prepared documents shall be returned to the Purchasing Office within 10 days (unless otherwise noted).
    - 3. The County will sign and date the Contract and submit the Contract to the County Board of Commissioners for approval and signature.
    - 4. Upon approval and signature, the County will return one copy to the successful Bidder.

**21. TAXES AND TAX EXEMPTION CERTIFICATE**

- 21.1 The County is generally exempt from any taxes imposed by the State or Federal Government. A Tax Exemption Certificate will be provided as applicable.

**22. E-VERIFY**

- 22.1 In accordance with Neb. Rev. Stat. 4-108 through 4-114, the contractor agrees to register with and use a federal immigration verification system, to determine the work eligibility status of new employees performing services within the state of Nebraska. A federal immigration verification system means the electronic verification of the work authorization program of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, 8 U.S.C. 1324 a, otherwise known as the E-Verify Program, or an equivalent federal program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work eligibility status of a newly hired employee pursuant to the Immigration Reform and Control Act of 1986. The Contractor shall not discriminate against any employee or applicant for employment to be employed in the performance of this section pursuant to the requirements of state law and 8 U.S.C.A 1324b. The contractor shall require any subcontractor to comply with the provisions of this section. For information on the E-Verify Program, go to [www.uscis.gov/everify](http://www.uscis.gov/everify).

## **INSURANCE CLAUSE FOR ALL CITY OF LINCOLN, LANCASTER COUNTY AND PUBLIC BUILDING COMMISSION CONTRACTS**

Insurance coverage on this Contract will be required for the entities selected below

City of Lincoln     Lancaster County     Public Building Commission

Vendors must provide coverage & documents related to the items with a check mark in Sections 1 – 1.9.

This includes proof of coverage and waivers as required below.

All Vendors must comply with Sections 2-8.

**THE REQUIREMENTS HEREIN APPLY TO CONTRACTS TO BE ISSUED BY THE CITY OF LINCOLN,  
LANCASTER COUNTY, AND THE LINCOLN-LANCASTER COUNTY PUBLIC BUILDING COMMISSION.  
FOR PURPOSES OF CERTIFICATES, ENDORSEMENTS AND OTHER PROOF REQUIRED HEREIN, ONLY  
INCLUDE THE ENTITY ISSUING THE CONTRACT.**

**FAILURE OF THE APPROPRIATE ENTITY (CITY, COUNTY, OR PUBLIC BUILDING COMMISSION) TO  
OBJECT TO THE FORM OF THE CERTIFICATE OR ENDORSEMENT OR TO DEMAND SUCH PROOF AS  
IS REQUIRED HEREIN SHALL NOT CONSTITUTE A WAIVER OF ANY OF THE INSURANCE  
REQUIREMENTS SET FORTH BELOW.**

### **Insurance; Coverage Information**

The Contractor shall, prior to beginning work, provide proof of insurance coverage in a form satisfactory to the City/County/PBC, which shall not withhold approval unreasonably. The coverages and minimum levels required by this Contract are set forth below and shall be in effect for all times that work is being done pursuant to this Contract. No work on the Project or pursuant to this Contract shall begin until all insurance obligations herein are met to the satisfaction of the City/County/PBC, which shall not unreasonably withhold approval. Self-insurance shall not be permitted unless consent is given by the City/County/PBC prior to execution of the Contract and may require submission of financial information for analysis. Deductible levels shall be provided in writing from the Contractor's insurer and will be no more than \$25,000 per occurrence or as may be approved by the City or County as appropriate. Said insurance shall be written on an **OCCURRENCE** basis, and shall be **PRIMARY, with any insurance coverage maintained by the City/County/PBC being secondary or excess.**

### **Certificates**

The Contractor shall provide certificates of insurance and such other proof, such as endorsements, as may be acceptable to the City or County (as appropriate) evidencing compliance with these requirements. The Contractor shall provide a Certificate of Insurance demonstrating the coverage required herein and the necessary endorsements or other proof and waivers described herein and below before being permitted to begin the work or project pursuant to this Contract.

**1. Commercial General Liability**

The Contractor shall provide proof of Commercial General Liability Insurance with a minimum limit of not less than \$1,000,000 each occurrence and \$2,000,000 aggregate. These minimum limits can be met by primary and umbrella liability policies. Coverage shall include: Premises-Operations, Products/ Completed Operations, Contractual, Broad Form Property Damage, and Personal Injury. Such coverage shall be endorsed for the general aggregate to be on a **PER PROJECT** basis, and the Contractor shall provide an additional insured endorsement acceptable to the City/County/PBC. The required insurance must include coverage for all projects and operations of Contractor or similar language that meets the approval of the City/County/PBC, which approval shall not be unreasonably withheld.

**1.1 Additional Insured (Requires an Endorsement Form)**

All Contractors shall provide an Additional Insured Endorsement form or other proof showing the City/County/PBC as additional insured for commercial general liability, auto liability and such other coverages as may be required by the City/County/PBC. The form or other proof shall be as is acceptable to the City/County Attorney.

**1.2 Automobile Liability**

The Contractor shall provide proof of Automobile Liability coverage, which shall include: Owned, Hired and Non-Owned. Bodily Injury and Property Damage Combined Single Limit shall be at least \$1,000,000 Per Accident.

**1.3 Garage Keepers / Garage Liability**

The Contractor shall provide garage insurance, if required. Coverage shall include Garage Liability and Garage Keepers on a Direct Primary Basis, including Auto Physical Damage, with limits of not less than \$1,000,000 each accident Bodily Injury and Property Damage combined liability and Actual Cash Value auto physical damage. Coverage symbol(s) 30 and 21 shall be provided, where applicable.

**1.4 Workers' Compensation; Employers' Liability**

The Contractor shall provide proof of workers' compensation insurance of not less than minimum statutory requirements under the laws of the State of Nebraska and any other applicable State. Employers' Liability coverage with limits of not less than \$500,000 each accident or injury shall be included. The Contractor shall provide the City/County/PBC with an endorsement for waiver of subrogation or other proof of such waiver as may be acceptable to the City or County. The Contractor shall also be responsible for ensuring that all subcontractors have workers' compensation insurance for their employees before and during the time any work is done pursuant to this Contract.

**1.5 Builder's Risk Insurance**

The Contractor shall purchase and maintain builder's risk property insurance for all sites upon which construction is occurring as provided by Contract and all storage sites where equipment, materials, and supplies of any kind purchased pursuant to the Contract are being held or stored unless the Contractor receives notice that the City/County/PBC has obtained a builder's risk policy for itself. Except to the extent recoverable by Contractor from another subcontractor, deductibles shall be the responsibility of the Contractor. This coverage is required whenever the work under contract involves construction or repair of a building structure or bridge.

**1.5.1 Waiver of Builder's Risk Insurance Carrier's Subrogation Rights**

The Contractor and its subcontractor(s) waive all rights of action and subrogation that the insurance company providing the builder's risk policy may have against each of them and/or the City/County/PBC, Architect, and the officers, agents and employees of any of them, for all claims, damages, injuries and losses, to the extent covered by such property insurance. Such waiver of subrogation shall be effective for such persons even though such persons would otherwise have a duty of indemnification or contribution, contractual or otherwise, and even though such persons did not pay the insurance premium directly or indirectly, and whether or not such persons had an insurable interest in any property damaged. The Contractor or subcontractor shall provide proof of such waiver.

**1.6 Pollution Liability**

Contractors shall provide proof of pollution liability insurance arising out of all operations of the Contractors and subcontractors, due to discharge, dispersal, release, or escape of contaminants or pollutants into or upon land, the atmosphere or any watercourse or body of water with bodily injury and property damage limits of not less than \$1,000,000 per occurrence and \$2,000,000 annual aggregate for:

- 1) Bodily injury, sickness, disease, mental anguish or shock sustained by any person, including death;
- 2) Property damage including physical injury to or destruction of tangible property including the resulting loss of use thereof, clean-up costs, and the loss of use of tangible property that has not been physically injured or destroyed;
- 3) Defense including loss adjustment costs, charges and expenses incurred in the investigation, adjustment or defense of claims for such compensatory damages;
- 4) Definition of pollution conditions shall include asbestos, lead, and mold so that these risks are covered if caused by Contractor/successful candidate's work or operations.
- 5) Coverage is required on an occurrence form.

**1.7 Errors and Omissions; Professional Liability**

Errors and Omissions or Professional Liability insurance, as may be required, covering damages arising out of negligent acts, errors, or omissions committed by Contractor in the performance of this Contract, with a liability limit of not less than \$1,000,000 each claim. Contractor shall maintain this policy for a minimum of two (2) years after completion of the work or shall arrange for a two year extended discovery (tail) provision if the policy is not renewed. The intent of this policy is to provide coverage for claims arising out of the performance of professional Services under this contract and caused by any error, omission, breach or negligent act, including infringement of intellectual property (except patent and trade secret) of the Contractor. This coverage is required whenever the Contractor or service provider is required to be certified, licensed or registered by a regulatory entity and/or where the provider's judgment in planning and design could result in economic loss to City/County/PBC.

**1.8 Railroad Contractual Liability Insurance**

If work is to be performed within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, road beds, tunnel, underpass or railroad crossing, the Contractor must provide proof acceptable to the City or County that any exception for such work in the Contractor's commercial general liability policy has been removed or deleted.

**1.8.1 Railroad Protective Liability**

If work is to be performed within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, road beds, tunnel, underpass or crossing or otherwise required by the Special Provisions or applicable requirements of an affected railroad, the Contractor shall provide Railroad Protective Liability Insurance naming the affected railroad/s as insured with minimum limits for bodily injury and property damage of \$2,000,000 per occurrence, \$6,000,000 aggregate, or such other limits as required in the Special Provisions or by the affected railroad. The original of the policy shall be furnished to the railroad and a certified copy of the same furnished to the City/County/PBC Purchasing Department prior to any related construction or entry upon railroad premises by the Contractor or for work related to the Contract.

**1.9 Cyber Insurance**

The Contractor shall maintain network risk and cyber liability coverage (including coverage for unauthorized access, failure of security, breach of privacy perils, as well as notification costs and regulatory defense) in an amount of not less than \$1,000,000. Such insurance shall be maintained in force at all times during the term of the Contract and for a period of two years thereafter for services completed during the term of the Contract.

**2. Cancellation Notice**

All Contractors shall include an endorsement to provide for at least thirty (30) days' firm written notice in the event of cancellation during the term of the Contract and during the period of any required continuing coverages. The Contractor shall provide, prior to expiration of the policies, certificates and endorsement forms evidencing renewal insurance coverages. The parties agree that the failure of City/County/PBC to object to the form of a certificate and/or additional insured endorsement or endorsement forms provided shall not constitute a waiver of this requirement.

**3. Risk of Loss**

Except to the extent covered by the builder's risk insurance, the Contractor shall have the sole responsibility for the proper storage and protection of, and assumes all risk of loss of, any subcontractor's Work and tools, materials, equipment, supplies, facilities, offices and other property at or off the Project site. The Contractor shall be solely responsible for ensuring each subcontractor shall take every reasonable precaution in the protection of all structures, streets, sidewalks, materials and work of other subcontractors. Contractor shall protect its Work from damage by the elements or by other trades working in the area.

**4. Umbrella or Excess Liability**

The Contractor may use an Umbrella, Excess Liability, or similar coverage to supplement the primary insurance stated above in order to meet or exceed the minimum coverage levels required by this Contract.

**5. Minimum Scope of Insurance**

All Liability Insurance policies shall be written on an "Occurrence" basis only. All insurance coverage are to be placed with insurers authorized to do business in the State of Nebraska and must be placed with an insurer that has an A.M. Best's Rating of no less than A:VII unless specific approval has been granted otherwise.

**6. Indemnification**

To the fullest extent permitted by law the Contractor shall indemnify, defend, and hold harmless the Owner, its elected officials, officers, employees, agents, consultants, and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorney fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible or intangible property, including the Work itself, but only to the extent caused by the negligent, wrongful, or intentional acts or omissions of the Contractor, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss



or expense is caused in part by the negligence of a party indemnified hereunder. In the event the claim, damage, loss or expense is caused in part by the negligence of a party indemnified hereunder, the indemnification by the Contractor shall be prorated based on the extent of the liability of the party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce obligations of indemnity which would otherwise exist as to a party or person described in this Section. Nothing herein shall be construed to be a waiver of sovereign immunity by the Owner.

**7. Reservation of Rights**

The City/County/PBC reserves the right to require a higher limit of insurance or additional coverages when the City/County/PBC determines that a higher limit or additional coverage is required to protect the City/County/PBC or the interests of the public. Such changes in limits or coverages shall be eligible for a change order or amendment to the Contract.

**8. Sovereign Immunity**

Nothing contained in this clause or other clauses of this Contract shall be construed to waive the Sovereign Immunity of the City/County/PBC.

**9. Further Contact**

For further information or questions concerning coverage or acceptable forms, Contractors may contact the Purchasing Division or the department that issued the bid or the request for proposal.

For general questions regarding Insurance Requirements, please contact Risk Management for the City or County.

# LANCASTER COUNTY

## Employee Classification Act Requirements

WHEREAS, there is concern over the inappropriate competitive advantages in the public bidding process for local publicly funded construction and delivery service contracts resulting from the misclassification of individuals performing construction labor services as “independent contractors” rather than “employees”; such “independent contractors” are commonly referred to as “1099 workers” due to the IRS form they receive rather than a W-4 which an employee receives;

WHEREAS, this misclassification of such individuals as “independent contractors” rather than as “employees” eliminates any obligation to pay these individuals legally required minimum or overtime wages, to provide legally required workers’ compensation insurance, to make unemployment insurance payments, to pay legally required employment and payroll taxes, and to provide any other health, pension, or benefit such individuals would typically receive if properly classified as employees;

WHEREAS, this misclassification of individuals performing construction labor services for the contractor as “independent contractors” rather than “employees” is a violation of federal and state law, but is difficult to enforce once public construction or delivery service contracts have been bid, awarded, and entered into;

WHEREAS, the use of public funds to compensate contractors who unlawfully avoid their obligation to pay legally required minimum or overtime wages, to provide legally required workers’ compensation insurance, to make unemployment insurance payments, to pay legally required employment and payroll taxes, and to provide any other health, pension, or benefit is not in the public interest; and

WHEREAS, the Employee Classification Act, Neb. Rev. Stat. §§ 48-2901 to 48-2912 (effective July 15, 2010) provides that any contract entered into between a political subdivision and a contractor shall require that each contractor who performs construction or delivery service pursuant to the contract submit to the political subdivision an affidavit attesting that (1) each individual performing services for such contractor is properly classified under the Employee Classification Act, (2) such contractor has completed a federal I-9 immigration form and has

such form on file for each employee performing service, (3) such contractor has complied with Neb. Rev. Stat. § 4-114 requirements that the contractor register and use a federal immigration employment verification system to determine the work eligibility status of new employees physically performing services in the State of Nebraska, (4) such contractor has no reasonable basis to believe that any individual performing services for such contractor is an undocumented worker, and (5) as of the time of the contract, such contractor is not barred from contracting with the state or any political subdivision pursuant to § 48-2912 of the Employee Classification Act.

NOW, THEREFORE, Lancaster County adopts the following policy as to the bid and award of contracts to contractors for construction and delivery services with Lancaster County”

The Purchasing Agent shall immediately include in the County’s notice to bidders for construction contracts that all contractors submitting bids in response to the notice shall affirmatively certify to the Purchasing Agent that all individuals hired to perform construction or delivery labor services for the contractor under the contract shall be properly classified as employees and not as independent contractors if the individual does not meet the requirements of an independent contractor under federal and state law (including the requirements of the State of Nebraska Employee Classification Act), and that the contractor will comply with all legal obligations with respect to these employees (including, but not limited to, minimum and overtime pay, workers’ compensation, unemployment compensation, and payment of federal and state payroll taxes). The notice to bidders shall further provide that contractors may use affidavits required pursuant to the Employee Classification Act for this purpose, but that a failure to make the affirmative certification to the Purchasing Agent shall render the bidder ineligible for award of the contract.

The Purchasing Agent shall immediately include the following provisions in contracts for construction or delivery services:

(1) Contractor agrees that each individual performing services for the contractor shall be properly classified as an employee and not as an independent contractor if the individual does not meet the requirements of an independent contractor under the State of Nebraska’s Employee Classification Act and that contractor shall comply with all legal obligations with respect to the employee (including, but not limited to, minimum and overtime pay, workers’ compensation, unemployment compensation, and payment of federal and state payroll taxes).

(2) Contractor understands and agrees that failure to classify each individual hired to

perform services under the contract as an employee rather than as an independent contractor if the individual does not meet the requirements of an independent contractor under the State of Nebraska's Employee Classification Act and/or failure to comply with legal obligations with respect to the employee (including, but not limited to, minimum and overtime pay, workers' compensation, unemployment compensation, and payment of federal and state payroll taxes) shall be considered a breach of the contract and is a ground for rescission of the Contract by the County.

(3) Contractor additionally agrees to include the following provision in each subcontract entered into with a subcontractor as part of the contractor's contract with the County:

(a) Subcontractor agrees that each individual performing services for the subcontractor shall be properly classified as an employee and not as an independent contractor if the individual does not meet the requirements of an independent contractor under the State of Nebraska's Employee Classification Act and that subcontractor shall comply with all legal obligations with respect to the employee (including, but not limited to, minimum and overtime pay, workers' compensation, unemployment compensation, and payment of federal and state payroll taxes).

(b) Subcontractor understands and agrees that subcontractor's failure to properly classify individuals hired to perform services under the subcontract as employees and not as independent contractors if the individual does not meet the requirements of an independent contractor under the State of Nebraska's Employee Classification Act and/or failure to comply with legal obligation with respect to the employee (including, but not limited to, minimum and overtime pay, workers' compensation, unemployment compensation, and payment of federal and state payroll taxes) shall be considered a breach of the contract and is a ground for rescission of the subcontract with the contractor.

(4) Contractor agrees that if subcontractor fails to or is suspected of failing to properly classify each individual hired pursuant to the subcontract as an employee and not as an independent contractor if the individual does not meet the requirements of an independent contractor under the State of Nebraska's Employee Classification Act and/or fails to comply with legal obligations with respect to the subcontractor's employees, the contractor shall take appropriate corrective action including, but not limited to, reporting the suspected violation of

the State of Nebraska Employee Classification Act to the Nebraska Department of Labor or rescission of the subcontract by the contractor. Written notification of the corrective action shall be submitted to the Lincoln-Lancaster County Purchasing Department. Contractor understands and agrees that contractor's failure to take appropriate corrective action shall be considered a breach of the contractor's contract with the County and is a ground for rescission of the contract by the County.

(5) The County shall notify the Nebraska Department of Labor of any contractor or subcontractor it has determined is in breach of contract due to the terms of this order.

(6) Any contractor or subcontractor who shall have been determined by the Nebraska Department of Labor to have knowingly provided a false affidavit to the County under the State of Nebraska's Employee Classification Act shall be referred to the Purchasing Agent of the County who shall determine whether to declare such contractor or subcontractor an irresponsible bidder who shall be disqualified from receiving any business from the County for a stated period of time.

(7) This policy does not prohibit a contractor or subcontractor from hiring individuals to perform construction labor services as independent contractors, provided that the contractor's or subcontractor's use of such individuals as an independent contractor complies with the criteria found in subdivision 5 of Neb. Rev. Stat. § 48-604 and is otherwise valid under federal and state law and is not intended to circumvent lawful obligations under federal and state law or county contractual requirements.

## Protection of Proprietary Information and Trade Secrets

Data contained in any bid (hereinafter "Submission") and all documentation provided therein, become the property of the City of Lincoln/Lancaster County. Upon receipt of any Submission by the City of Lincoln/Lancaster County, all data and documentation becomes a public record and is subject to disclosure by the City of Lincoln/Lancaster County to any party initiating a public records request under Nebraska Revised Statutes § 84-712 et seq. In response to a public records request, the City of Lincoln/Lancaster County may include the entire response. The City of Lincoln/Lancaster County has no duty to protect proprietary or commercial information and/or trade secrets.

If the Bidder wishes to have any information withheld from a public records request, such information must fall within the definition of "proprietary or commercial information" contained within Nebraska Public Records Statutes as defined by Nebraska Revised Statute § 84-712.05(3) and/or must be considered "trade secrets" as defined by Nebraska Revised Statutes §§ 87-501 to 87-507. Any and all information the Bidder wishes the City of Lincoln/Lancaster County to withhold from public disclosure must be submitted in the City/County E-bid system as a Response Attachment with the following information:

- 1) Is clearly marked "*proprietary or commercial information*" and/or "*trade secrets*" on the title of the document and the file attached;
- 2) Individually identifies each separate page as confidential;
- 3) Contains supporting documentation specifically enumerating why the information in such documents are marked and qualify as proprietary or commercial information/trade secrets. Under Nebraska law, in order for such information to be protected, the information, if released, would give competitors an advantage *and* serve no public purpose.

**FAILURE TO STRICTLY COMPLY WITH THESE INSTRUCTIONS WILL RESULT IN DISCLOSURE OF INFORMATION DECLARED BY THE BIDDER TO BE PROPRIETARY OR COMMERCIAL INFORMATION AND/OR TRADE SECRETS.  
NO NOTICE OF FAILURE TO COMPLY WILL BE PROVIDED.**

If the instructions above for designating proprietary or commercial information and/or trade secrets are strictly followed, the City of Lincoln/Lancaster County will provide the bidder with reasonable notice that a public records request has been made that may include the information designated as proprietary and commercial or a trade secret. It is the sole responsibility of the Bidder to take actions necessary to protect the information claimed as proprietary or commercial, or a trade secret.

Bidders may not mark their entire Submission as *proprietary or commercial information and/or trade secrets*. Bid pricing may not be marked as proprietary or commercial information/trade secrets, and are deemed to be a public record in the State of Nebraska. Failure of the Bidder to follow the instructions for submitting proprietary or commercial information/trade secrets may result in the material being viewed by other bidders and/or the public.

"Proprietary or commercial information" is defined as trade secrets, academic and scientific research work which is in progress and unpublished, and other information which if released would give advantage to business competitors and serve no public purpose. (see Neb. Rev. Stat. § 84-712.05(3)).

"Trade Secrets" is defined as information, including, but not limited to, a drawing, formula, pattern, compilation, program, device, method, technique, code, or process that:  
Derives independent economic value, actual or potential, from not being known to, and not being ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use; and Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.  
(See Neb. Rev. Stat. § 87-502 (4)(a)(b))

In accordance with the Nebraska Attorney General Opinions 92068 and 97033, Bidders submitting information as proprietary or commercial information/trade secrets may be required to prove specific competitor(s) by name who would be advantaged by release of the information and the specific advantage the competitor(s) would receive.

**Advertise 2 times**  
**Monday, July 15, 2019**  
**Monday, July 22, 2019**

**City of Lincoln/Lancaster County**  
**Purchasing Division**  
**NOTICE TO BIDDERS**

Sealed bids will be received by the Purchasing Agent of the City of Lincoln/Lancaster County, Nebraska BY ELECTRONIC BID PROCESS until: **12:00 pm, Friday, July 26, 2019** for providing the following:

**Roof Top HVAC Units – County Extension**  
**Bid No. 19-197**

*A Pre-bid meeting will be held on Wednesday, July 17, 2019 at 8:30 a.m. at County Extension, 444 Cherrycreek Road, Lincoln, NE. Meet in main lobby. All interested bidders are encouraged to attend.*

Bidders must be registered on the City/County's E-Bid site in order to respond to the above Bid. To register go to: [lincoln.ne.gov](http://lincoln.ne.gov) (type: e-bid - in search box, then click "Supplier Registration").

Questions concerning this bid process may be directed to City/County Purchasing at (402) 441-8103 or [purchasing@lincoln.ne.gov](mailto:purchasing@lincoln.ne.gov).