

Building 'A' 2017 HVAC Improvements

McHenry County College

8900 US Hwy 14

Crystal Lake, Illinois 60012

PROJECT MANUAL

April 21, 2017

20/10 Engineering Group, LLC
1216 Tower Road
Schaumburg, Illinois 60173
847-882-2010
Fax (847) 882-2201

SET NO.

20/10 ENGINEERING GROUP, LLC
1216 Tower Road
Schaumburg, IL 60173
847-882-2010
Fax (847) 882-2201

PROJECT MANUAL FOR: **Building 'A' 2017 HVAC Improvements**

DATE: April 21, 2017

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DIVISION 00 - PROCUREMENT AND CONTRACT REQUIREMENTS
Document 00 0115 - List of Drawing Sheets

Mechanical/Electrical

ME-1 Building 'A' Mechanical/Electrical Roof Plan
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All drawings are dated April 21, 2017.

END 00 0115

DIVISION 00 - PROCUREMENT AND CONTRACT REQUIREMENTS

Section 00 1116 - Invitation to Bid

Owner: McHenry County College
8900 US Hwy 14
Crystal Lake, IL 60012

Engineer: 20/10 Engineering Group, LLC
1216 Tower Road
Schaumburg, IL 60173
847-882-2010
Fax 847-882-2201

Date: April 21, 2017

This Invitation to Bid (ITB) does not obligate McHenry County College (MCC) or its Board of Trustees to award a contract or complete the proposed project, and each reserves the right to cancel this ITB if it is considered to be in its best interest. Proposals must be clear and concise. Proposals that are difficult to follow or that do not conform to the ITB format or binding specifications, may be rejected. Responding vendors must include the required information called for in this ITB. MCC reserves the right to reject a proposal if required information is not provided or is not organized as directed. MCC also reserves the right to change the evaluation criteria or any other provision in this ITB by posting notice of the change(s) on MCC's website, www.mchenry.edu/bid. For this ITB, posting on the captioned website above constitutes written notification to each vendor. Vendors should check the site daily and are expected to review information on the site carefully before submitting a final proposal.

Contractors are invited to submit an offer for Building 'A' 2017 HVAC Improvements. Offers will be received at the office of Jennifer Jones, Director of Business Support Services, McHenry County College, 8900 US Highway 14, Building A, Room 246, Crystal Lake, IL 60012, by 2:00 PM local prevailing time on Wednesday, May 24, 2017. Bids will be publicly opened 8:00 AM on Thursday, May 25, 2017 in Building A, Board Room # 217.

The project consists of: **Condensing unit replacement, modification to existing roof mounted air handling unit, and associated mechanical/electrical work.**

A single stipulated sum bid will be received for all work.

Refer to other Bidding requirements described in Document 00 2100 - Instructions to Bidders.

Submit Bid on the Bid Form provided. Bidders are required to complete Bid Form.

Bid will be required to be submitted under a condition of irrevocability for a period of 60 days after submission.

The Owner reserves the right to accept or reject any or all offers, or to waive any informalities in the bidding.

The successful bidder will be required to furnish and pay for a satisfactory Performance and Payment Bond in the full amount of the contract. Said bond shall be delivered to the Owner, along with an executed copy of the Contract and a valid certificate of insurance, within ten days after the successful bidder has received Notice of Award of the contract.

Key Event Dates: The following dates are set forth for informational and planning purposes; however, MCC reserves the right to change the dates.

MCC Issues ITB listed at www.mchenry.edu/bid	May 9, 2017
Last day for vendors questions via email: keith@2010engineering.com	May 18, 2017
Response to vendor questions will be listed by addendum at www.mchenry.edu/bid	May 19, 2017
Bid Due Date/Location to Submit Bids	May 24, 2017 – 2:00 PM Jennifer Jones McHenry County College 8900 US Highway 14 Building A, Room 246 Crystal Lake, IL 60012
Bid Opening Date/Location	May 25, 2017 - 8:00 AM McHenry County College 8900 US Highway 14 Bldg A, Board Room #217 Crystal Lake, IL 60012
Recommendation to Board of Trustees	June 22, 2017
Notification of Award by	June 26, 2017
Contract Start Date	July 10, 2017
Project Manager Contact	Todd Wheeland, Director of Facilities 815-455-8564
Project Completion Date	July 24, 2017
Plan Holder	20/10 Engineering Group, LLC 1216 Tower Road Schaumburg, IL 60173 847-882-2010

MCC TERMS & CONDITIONS

Addendum: The only method by which any requirement of this solicitation may be modified is by written addendum. MCC is not responsible if a vendor does not receive the proposal revision in time to include the information with the proposal submission. Any addendum will be posted to MCC's website at www.mchenry.edu/bid. The addendum shall be acknowledged by signature and included in your bid submission.

Taxes: MCC is exempt from all federal excise, state and local taxes unless otherwise stated in this document. In the event taxes are imposed on the services purchased, MCC will not be responsible for payment of the taxes. The vendor shall absorb the taxes entirely. Upon request, MCC's Tax Exemption Certificate will be furnished.

Right to Cancel: MCC may cancel contracts resulting from this ITB at any time for a breach of any contractual obligation by providing the contractor with thirty-calendar day's written notice of such cancellation. Should MCC exercise its right to cancel, such cancellation shall become effective on the date as specified in the notice to cancel.

Proprietary Information: Bidder should be aware that the contents of all submitted bids are subject to public review and will be subject to the Illinois Freedom of Information Act. All information submitted with your bid will be considered public information unless bidder identifies all proprietary information in the proposal by clearly marking on the top of each page so considered, "Proprietary Information." The Illinois Attorney General shall make a final determination of what constitutes proprietary information or trade secrets. While MCC will endeavor to maintain all submitted information deemed proprietary within MCC, MCC will not be liable for the release of such information.

Negotiation: MCC reserves the right to negotiate all elements, which comprise the bidder's proposal to ensure the best possible consideration, be afforded to all concerned. MCC further reserves the right to waive any and all minor irregularities in the proposal, waive any defect, and/or reject any and all proposals, and to seek new proposals when such an action would be deemed in the best interest of MCC.

Retention of Documentation: All bid materials and supporting documentation that is submitted in response to this proposal becomes the permanent property of MCC.

Recycled Materials: McHenry County College is required to purchase products incorporating recycled materials whenever technically and economically feasible. Contractors are encouraged to offer products with recycled content which meet specifications conforming to Illinois State Statute 415 ILCS 20/3.1 pertaining to public community colleges.

Department of Employment Security Law: By entering into this contract, Vendor agrees to either (1) link its employment vacancies with the IllinoisJobsLink.com System or successor system, or (2) provide an online link to its employment vacancies so that this link is accessible through the web page of the IllinoisJobLink.com System or successor system, as required by Illinois Public Act 098-0107 (20 ILCS 1005/1005-47). **NOTE:** Vendors who are parties to a collective bargaining agreement with a bona fide labor organization for the performance of construction or construction-related services are exempt from this requirement.

Prevailing Wage Law: The Illinois Prevailing Wage Act, 820 ILCS 130/01 et.seq. shall be mandatory for all contractors and subcontractors who are hired by the College. The Act requires contractors and subcontractors to pay laborers, workers, and mechanics performing services on public works projects no less than the prevailing rate of wages in the county where the work is performed.

Indemnification: The Contractor shall protect, indemnify and hold MCC harmless against any liability claims and costs for injury to or death of any person or persons and for loss or damage to any property occurring in connection with or in any incident to or arising out of occupancy, use, service, operations or performance of work in connection with the contract, resulting in whole or in part from the negligent acts or omissions of the Contractor.

Disclosure: Contractors shall note any and all relationships that might be a conflict of interest and include such information with the bid.

Terms of Payment: MCC operates under terms of payment for work completed and product delivered within Net 30 days from date of invoice. All payments of invoices need to be approved on a monthly basis. In no case will MCC agree to late fees prior to 60 days before payment is received, this is based on State Statutes for State funded entities.

McHenry County College
8900 US Hwy 14
Crystal Lake, IL 60012

END 00 1116

DIVISION 00 - PROCUREMENT AND CONTRACT DOCUMENTS
Section 00 2100 - Instructions to Bidders

1. GENERAL

1.1. SECTION INCLUDES

- A. Invitation to Bid
- B. Bid Documents and Contract Documents
- C. Site Assessment
- D. Qualifications
- E. Bid Submission
- F. Bid Enclosures/Requirements
- G. Other Requirements
- H. Offer Acceptance/Rejection

1.2. RELATED SECTIONS

- A. Specified Elsewhere:
 - 1. Section 00 1116 - Invitation to Bid
 - 2. Section 00 4100 - Bid Form
 - 3. Section 00 7300 - Supplementary Conditions

2. INVITATION TO BID

2.1. BID SUBMISSION

- A. Bids signed, executed, and dated shall be received until time and at location indicated in the Invitation to Bid.

2.2. CONTRACT TIME

- A. **Bidder agrees to commence work upon execution of the contract, and to be substantially complete with the work by July 24, 2017.**

3. BID DOCUMENTS AND CONTRACT DOCUMENTS

3.1. DEFINITIONS

- A. Bid Documents: Contract Documents supplemented with Invitation to Bid, Instructions to Bidders, and Bid Form identified herein.
- B. Contract Documents: Defined in General Conditions, including issued Addenda.
- C. Bid, Offer, or Bidding: Act of submitting an offer.
- D. Bid Price: Monetary sum identified by the Bidder in the Bid Form.

3.2. AVAILABILITY

- A. Bid Documents may be obtained from the office of the Engineer, 20/10 Engineering Group, LLC (847-882-2010).
- B. Bid Documents are made available only for the purpose of obtaining offers for this project. Their use does not grant a license for other purposes.

3.3. EXAMINATION

- A. Upon receipt of Bid Documents verify that documents are complete. Notify the Engineer should the documents be incomplete.
- B. Immediately notify the Engineer upon finding discrepancies or omissions in the Bid Documents.

3.4. QUERIES/ADDENDA

- A. Fax or email questions to the Engineer. Telephone (voice) queries are discouraged.
- B. Addenda may be issued during the Bidding period. All Addenda become part of the Contract Documents. Include resultant costs in the Bid Price.
- C. Verbal interpretations of the meaning of the drawings or specifications are not binding on any party.
- D. Addenda shall be forwarded not later than three days prior to the date fixed for the opening of bids. Failure of any Bidder to receive such addenda shall not relieve such Bidder from any obligation under his Bid as submitted.
- E. Each Bidder shall ascertain prior to submitting Bid that said Bidder has received all Addenda, and shall acknowledge receipt on the Bid Form.

3.5. PRODUCT/SYSTEM SUBSTITUTIONS

- A. Where the Bid Documents stipulate a particular product, requests for substitutions (from prime bidders) will be considered by the Engineer up to 10 days before receipt of Bids.
- B. The request for substitution shall provide sufficient information to determine acceptability of such products.
- C. In submission of requests for substitutions to products specified, Bidder shall include in his Request any changes required in the Work and changes to Contract Time and Contract Sum to accommodate such substitutions. A later claim by the Bidder for an addition to the Contract Time or Contract Sum because of changes in Work necessitated by use of substitutions shall not be considered.

4. SITE ASSESSMENT

4.1. SITE EXAMINATION

- A. A **MANDATORY** pre-bid conference will be held at 8:30 am Thursday May 18th, 2017 in Board Meeting Room, Building A, Room 217. **Failure to attend conference will disqualify contractor's bid from being accepted.**
- B. It is recommended that the Bidder examine the project site with any sub-contractors before submitting a Bid.
- C. A visit to the project site may be arranged for Bidders by contacting
Todd Wheeland
McHenry County College,
8900 US Hwy 14, Crystal Lake, IL 60012
815-455-8564

5. BID SUBMISSION

5.1. SUBMISSION PROCEDURE

- A. Submit two printed copies and one copy on a flash drive of the executed offer on the Bid Forms provided, signed and sealed.
- B. All blank spaces for bid amounts shall be filled, using ink or typewritten, with both words and figures. In case of discrepancy, the amount shown in words shall govern. Write "No Bid" on blank spaces where bidder is not bidding.

5.2. BID INELIGIBILITY

- A. Failure to provide bonding or insurance requirements may at the discretion of the Owner, invalidate the Bid.

6. BID ENCLOSURES/REQUIREMENTS

6.1. PERFORMANCE ASSURANCE

- A. Accepted Bidder: Provide a Performance and Payment Bond as described in Document 00 7300 - Supplementary Conditions.
- B. Include the cost of performance assurance bonds in the Bid amount and identify the cost when requested by the Owner.

6.2. BID FORM SIGNATURE

- A. The Bid Form shall be signed by the Bidder, as follows:
 - 1. Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.
 - 2. Partnership: Signature of all partners in the presence of a witness who will also sign. Insert the word "Partner" under each signature. Affix seal to each signature.
 - 3. Corporation: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix the corporate seal. If the Bid is signed by officials other than the President and Secretary of the company, or the President/Secretary/Treasurer of the company, a copy of the by-law resolution of the Board of Directors authorizing them to do so, must also be submitted with the Bid Form in the Bid envelope.
 - 4. Joint Venture: Each party of the joint venture shall execute the Bid Form under their respective seals in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

7. OTHER REQUIREMENTS

7.1. AGREEMENT

- A. The contract form for this work shall be the Standard Form of Agreement between Owner and Contractor (AIA Form A101, 1997 edition).

7.2. LIQUIDATED DAMAGES

- A. At the owner's discretion, liquidated damages of \$1,500/day will be charged to the contractor for every day project is not substantially complete after July 24, 2017.

8. OFFER ACCEPTANCE/REJECTION

8.1. DURATION OF OFFER

- A. Bids shall remain open to acceptance and shall be irrevocable for a period of sixty (60) days after the Bid closing date.

8.2. ACCEPTANCE OF OFFER

- A. The Owner reserves the right to accept or reject any or all offers, or to waive any informalities in the Bidding.
- B. After acceptance by the Owner, the Engineer, on behalf of the Owner, will issue a Notice of Award to the successful Bidder.

END 00 2100

A. DIVISION 00 - PROCUREMENT AND CONTRACT DOCUMENT
Section 00 4100 - Bid Form

To: Jennifer Jones
Director of Business Support Services
McHenry County College
8900 US Hwy 14
Building A, Room 246
Crystal Lake, IL 60012

Project: **Building 'A' 2017 HVAC Improvements**

Date: _____

Submitted by:
(full name)

(full address)

1. OFFER

Having examined the Place of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by 20/10 Engineering Group, LLC, Engineer for the above mentioned project, we, the undersigned, hereby offer to enter into a contract to perform the Work for **Building 'A' 2017 HVAC Improvements**.

(Amount shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern.)

A. All work associated with the **Building 'A' 2017 HVAC Improvements** for the contract sum of:
_____ Dollars (\$_____).

2. ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for sixty (60) days from the Bid closing date.

If the Bid is accepted by the Owner within the time period stated above, we will:

- A. Execute the Agreement within ten (10) days of receipt of Notice of Award.
- B. Furnish the required bonds within ten (10) days of receipt of Notice of Award in the form described in the Supplementary Conditions.
- C. Furnish the required Certificate of Insurance within ten (10) days of receipt of Notice of Award in the form and amounts described in the Supplementary Conditions.
- D. Commence work as established by the written Notice to Proceed.

3. CONTRACT TIME

If the Bid is accepted, we will complete the work by _____ (bidder insert date).

4. ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted therein have been considered and all costs thereto are included in the Bid Sum.

Addendum # _____ Dated _____

5. BID FORM SIGNATURE(S)

The Corporate Seal of

(Bidder - please print the full name of your Proprietorship, Partnership, or Corporation)

was hereunto affixed in the presence of:

(Authorized signing officer) (Title)

(Seal)

(Authorized signing officer) (Title)

If the bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

END 00 4100

MC HENRY COUNTY COLLEGE
BUSINESS ENTERPRISE PROGRAM
MINORITIES, FEMALES, AND PERSONS WITH DISABILITY
PARTICIPATION AND UTILIZATION PLAN

The Business Enterprise Program for Minorities, Females, and Persons with Disabilities Act (BEP) establishes certain goals for community colleges contracting with businesses that are owned and controlled by persons who are minorities (MBE), female (FBE), or persons with disabilities (DBE) (collectively, BEP certified vendor(s)).

Contract Goal to be Achieved by Vendor: This solicitation includes a specific BEP participation goal of 20 % of the total dollar amount of the contract. Percentage of contract to be awarded to BEP contractor, based on contract price.

- 5% Up to \$500,000.00 10% Over \$500,000.00- \$1m
- 15% Over \$1m-\$2m 20% Over \$2m

The BEP participation goal is applicable to all bids or offers. McHenry County College (College) will award this contract to a Vendor that meets the goal or makes good faith efforts to meet the goal. This goal is also applicable to change orders and allowances within the scope of work provided by the BEP certified vendor. If Vendor is a BEP certified vendor, the entire goal is met and no subcontracting with a BEP certified vendor is required; however, Vendor must submit a Utilization Plan indicating that the goal will be met by self-performance. ***Failure to complete a Utilization Plan or provide good faith effort documentation shall render the bid or offer non-responsive or not responsible and subject to rejection and/or disqualification in the College's sole discretion.***

The following are guidelines for Vendor's completion of the Utilization Plan. **Please read the guidelines carefully.** A format for the Utilization Plan is included in this section. Vendor should include any additional information that will add clarity to Vendor's proposed utilization of certified BEP vendors to meet the targeted goal. The Utilization Plan must demonstrate that Vendor has either: (1) met the entire contract goal or (2) made good faith efforts towards meeting the goal. Any submission of good faith efforts by Vendor shall be considered as a request for a full or partial waiver.

To meet the College's BEP participation goals, Vendor, or Vendor's proposed Subcontractor(s), must be certified with the Business Enterprise Council as a BEP certified vendor. If Vendor or Vendor's proposed Subcontractor(s) are not BEP certified vendors but do meet the definition of MBE, FBE, or DBE companies as set forth in 30 ILCS 575/2, Vendor shall have the burden of submitting sufficient evidence of the company's ownership. The College shall have the sole discretion of whether to accept non-BEP certified vendors and applying said contracts towards its BEP participation goals.

1. If applicable where there is more than one prime vendor, the Utilization Plan should include an executed Joint Venture Agreement specifying the terms and conditions of the relationship between the parties and their relationship and responsibilities to the contract. The Joint Venture Agreement must clearly evidence that the BEP certified vendor will be responsible for a clearly defined portion of the work and that its responsibilities, risks, profits and contributions of capital, and personnel are proportionate to its ownership percentage. It must include specific details related to the parties' contributions of capital, personnel, and equipment and share of the costs of insurance and other items; the scopes to be performed by the BEP certified vendor under its supervision; and the commitment of management, supervisory personnel, and operative personnel employed by the BEP certified vendor to be dedicated to the performance of the contract. Established Joint Venture Agreements will only be credited toward BEP goal achievements for specific work performed by the BEP certified vendor. **Each party to the Joint Venture Agreement must execute the bid or offer prior to submission of the bid or offer to the College.** The contract will not be awarded to Vendor unless the College approves the Vendor's Utilization Plan and Joint Venture Agreement, if applicable.

2. **Calculating BEP Certified Vendor Participation:** The Utilization Plan documents work anticipated to be performed, or goods/equipment provided, by all BEP certified vendors and paid for upon satisfactory completion/delivery. Only the value of payments made for the work actually performed by BEP certified vendors is counted toward the contract goal. Applicable guidelines for counting payments attributable to contract goals are summarized below:
- 2.1. The value of the work actually performed or goods/equipment provided by the BEP certified vendor shall be counted towards the goal. The entire amount of that portion of the contract that is performed by the BEP certified vendor, including supplies purchased or equipment leased by the BEP certified vendor shall be counted, except supplies purchased and equipment rented from the Prime Vendor submitting this bid or offer.
 - 2.2. A vendor shall count the portion of the total dollar value of the BEP contract equal to the distinct, clearly defined portion of the work of the contract that the BEP certified vendor performs toward the goal. A vendor shall also count the dollar value of work subcontracted to other BEP certified vendors. Work performed by the non-BEP certified party shall not be counted toward the goal. **Work that a BEP certified vendor subcontracts to a non-BEP certified vendor will not count towards the goal.**
 - 2.3. A Vendor shall count toward the goal 100% of its expenditures for materials and supplies required under the contract and obtained from BEP certified vendor manufacturers, regular dealers, or suppliers. A Vendor shall count toward the goal the following expenditures to BEP certified vendors that are not manufacturers, regular dealers, or suppliers:
 - 2.3.1. The fees or commissions charged for providing a bona fide service, such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials or supplies required for performance of the contract, provided that the fee or commission is determined by the College to be reasonable and not excessive as compared with fees customarily allowed for similar services.
 - 2.3.2. The fees charged for delivery of materials and supplies required by the contract (but not the cost of the materials and supplies themselves) when the hauler, trucker, or delivery service is not also the manufacturer or a supplier of the materials and supplies being procured, provided that the fee is determined by the College to be reasonable and not excessive as compared with fees customarily allowed for similar services. The BEP certified vendor's trucking firm must be responsible for the management and supervision of the entire trucking operation for which it is responsible on the contract, and must itself own and operate at least one fully licensed, insured and operational truck used on the contract.
 - 2.3.3. The fees or commissions charged for providing any bonds or insurance specifically required for the performance of the contract, provided that the fee or commission is determined by the College to be reasonable and not excessive as compared with fees customarily allowed for similar services.
 - 2.4. BEP certified vendors who are performing the contract as second tier subcontractors may be counted in meeting the established BEP goal for this contract as long as the Prime Vendor can provide documentation indicating the utilization of these vendors.
 - 2.5. A Vendor shall count towards the goal only expenditures to firms that perform a commercially useful function in the work of the contract. A Vendor shall not count towards the goal expenditures that are not direct, necessary and related to the work of the contract. Only the amount of services or goods that are directly attributable to the performance of the contract shall be counted. Ineligible expenditures include general office overhead or other Vendor support activities.

3. **Good Faith Effort Procedures:** Enclosed and sealed with the Vendor's bid documents, the Vendor must submit a: (1) Utilization Plan and (2) either Letters of Intent or subcontract documents that meet or exceed the published goal. If Vendor cannot meet the stated goal, Vendor must submit documents to support the good faith efforts it undertook to meet the goal. The College has the right to reject Vendor's bid as not-responsible and/or not responsive if the College or the Business Enterprise Council determine, in either of their sole discretion, that Vendor failed to make a good faith effort to meet the MBE goals. The College may also accept and enter into a contract with a Vendor that can provide sufficient evidence of MBE, FBE or DBE status of Vendor or its proposed subcontractors and/or sub-vendors in compliance with the Illinois Business Enterprise for Minorities, Females, and Persons with Disabilities Act. If the College or the Council determine that Vendor has made good faith efforts to meet the goal, the College may award the contract provided that Vendor is otherwise eligible for award.

4. **Contract Compliance:** Compliance with this section is an essential part of the contract. The following administrative procedures and remedies govern Vendor's compliance with the contractual obligations established by the Utilization Plan. **After approval of the Utilization Plan and award of the contract, the Utilization Plan becomes part of the contract.**
 - 4.1. The Utilization Plan may not be amended after contract execution without the College's prior written approval. Vendor may not make changes to its contractual BEP certified vendor commitments or substitute BEP certified vendors without the College's prior written approval. The Vendor's request to substitute BEP certified vendors must state the specific reasons for the change or substitutions. Unauthorized changes or substitutions, including performing the work designated for a BEP certified vendor with Vendor's own forces, shall be a violation of the Utilization Plan and a breach of the contract, and shall be cause to terminate the contract, and/or seek other contract remedies or sanctions.

 - 4.2. Vendor shall maintain a record of all relevant data with respect to the utilization of BEP certified vendors, including but without limitation, payroll records, invoices, canceled checks and books of account for a period of at least three years after the completion of the contract. The College shall have the right to access to these records upon 48 hours written demand. The College shall have the right to obtain from Vendor any additional data reasonably related or necessary to verify any representations by Vendor.

 - 4.3. The College reserves the right to withhold payment to Vendor to enforce these provisions and Vendor's contractual commitments. Final payment shall not be made pursuant to the contract until Vendor submits sufficient documentation demonstrating compliance with its Utilization Plan.

UTILIZATION PLAN

The Utilization Plan and Letter of Intent must be sealed and submitted with Vendor's Bid Documents.

(Vendor) submits the following Utilization Plan as part of our bid or offer in accordance with the requirements of the BEP Program Status and Participation section of the solicitation for McHenry County College's **Building 'A' 2017 HVAC Improvements**.

Vendor submits the following statement:

- Vendor is a BEP certified firm and plans to fully meet the goal through self-performance.
- Vendor has identified BEP certified subcontractor(s) to fully meet the established goal and submits the attached executed Letter(s) of Intent; or
- Vendor has made good faith efforts towards meeting the entire goal, or a portion of the goal, and hereby requests a waiver (complete checklist below).

Vendor's designee responsible for compliance with this BEP goal:

Name:

Title:

Telephone:

Email:

BEP Utilization Plan

The following firms will be utilized to meet the goals of the BEP Program:

Name of Firm	Contract Value	Description of Work	% of Goal
Total			

DEMONSTRATION OF GOOD FAITH EFFORTS TO ACHIEVE GOAL AND REQUEST FOR WAIVER

If the BEP participation goal was not achieved, Vendors must provide documented evidence of good faith efforts to achieve the goal.

Below is a checklist of actions that will be used to evaluate a Vendor's Demonstration of Good Faith Efforts and Request for Waiver. **Please check the actions which you completed.** If any of the following actions are not completed, please attach a detailed written explanation indicating why such action was not completed. If any other efforts were made to obtain BEP participation in addition to the items listed below, attach a detailed description of such efforts. The College reserves the right to review and audit the results of the Vendor's good faith efforts.

- Utilize the Sell2Illinois website: www2.illinois.gov/cms/business to identify BEP certified vendors within the respective commodity/service codes denoted above and at a minimum email all listed vendors and solicit quotes from all vendors who express an interest via follow-up emails or telephone calls.
- Solicit through all reasonable and available means (e.g., attendance at a vendor conference, advertising and/or written notices) the interest of BEP certified vendors that have the capability to perform the work of the contract. Vendor must solicit this interest within sufficient time to allow the BEP certified vendors to respond to the solicitation. Vendor must determine with certainty if the BEP certified vendors are interested by taking appropriate steps to follow up initial solicitations and encourage them to submit a bid or proposal. Vendor must provide interested BEP certified vendors with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding promptly to the solicitation.
- Select portions of the work to be performed by BEP certified vendors in order to increase the likelihood that the goal will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate BEP certified vendor participation, even when Vendor might otherwise prefer to perform these work items with its own forces.
- Make a portion of the work available to BEP certified vendors and selecting those portions of the work or material needs consistent with their availability, so as to facilitate BEP certified vendor participation.
- Negotiate in good faith with interested BEP certified vendors. Evidence of such negotiation must include the names, addresses, email addresses, and telephone numbers of BEP certified vendors that were considered and an explanation as to why an agreement could not be reached.
- Thoroughly investigate the capabilities of BEP certified vendors and not reject them as unqualified without documented reasons.
- Make efforts to assist interested BEP certified vendors in obtaining lines of credit or insurance as required by the College.
- Make efforts to assist interested BEP certified vendors in obtaining necessary equipment, supplies, materials, or related assistance or services.

DIVISION 00- PROCUREMENT AND CONTRACT REQUIREMENTS
Section 00 7300 - Supplementary Conditions

The following supplements modify the "General Conditions of the Contract for Construction," AIA Document A201-2007. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

ARTICLE 1: GENERAL PROVISIONS (No modifications to this article.)

ARTICLE 2: OWNER (No modifications to this article.)

ARTICLE 3: CONTRACTOR (No modifications to this article.)

ARTICLE 4: ARCHITECT (No modifications to this article.)

ARTICLE 5: SUBCONTRACTORS (No modifications to this article.)

ARTICLE 6: CONSTRUCTION BY THE OWNER OR BY SEPARATE CONTRACTORS

ARTICLE 7: CHANGES IN THE WORK (No modifications to this article.)

ARTICLE 8: TIME (No modifications to this article.)

ARTICLE 9: PAYMENTS AND COMPLETION

9.3. APPLICATIONS FOR PAYMENT - Add the following subparagraphs:

"9.3.1.3. To insure the proper performance of this Contract the Owner will retain 10% of the amount of each estimate until final completion and acceptance of all work covered by this Contract."

"9.3.2.1. Although all material and work covered by partial payments made shall have become the property of the Owner, this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and work upon which payments have been made, or the restoration of any damaged work, or as a waiver of the right of the Owner to require the fulfillment of all terms of the Contract."

"9.3.2.2 The stored materials may be included in the Application for Payment providing the Engineer can verify the cost and the existence of such stored materials. The Contractor shall reimburse the Owner for all of the Engineer's expenses required to verify materials which are stored away from the Project site if the Contractor wishes to include the cost of the stored material in an Application for Payment. Applications for stored materials must meet the following criteria:

- a. Evidence of insurance is required for the stored product.
- b. The product must be produced for this project only.
- c. The product must be stored separately from other inventory and identified for this project only."

"9.3.4. The Contractor shall provide all statements, affidavits and waivers required by the Mechanics' Liens Law of the State of Illinois, including Section 5 thereof, at such time and in such form as provided therein to protect the Owner against mechanics' or other liens, and the Contractor hereby acknowledges receipt of notice from the Owner to furnish same."

"9.3.5. Each application for payment must be accompanied by Contractor's Affidavits and by partial waivers of lien from all Subcontractors, as well as Material Suppliers, showing that the amount of money paid to date to each Subcontractor and Supplier is at least equivalent to the amount shown as the estimated total value of all labor and material incorporated into the work through the immediately preceding calendar month's estimate of work performed as submitted by the Contractor, less contract retainage."

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY (No modifications to this article.)

ARTICLE 11: INSURANCE AND BONDS

11.1. CONTRACTOR'S LIABILITY INSURANCE - Add the following paragraphs:

"11.1.2.1 The insurance coverage required here-in-under shall be the minimum amounts maintained by the Contractor and Subcontractors until all Work is completed and accepted by the Owner.

A. Workers Compensation

1. State: Statutory
2. Applicable Federal: Statutory
3. Employer's Liability:
 - a. \$500,000 per Accident
 - b. \$500,000 Occupational Disease

B. Commercial General Liability

1. Each Occurrence \$1,000,000
2. Products/Completed Operations Aggregate \$1,000,000
3. Personal/Advertising Injury \$1,000,000
4. General Aggregate \$1,000,000
5. Policy shall include:
 - a. Premises - Operations
 - b. Independent Contractors Liability
 - c. Products and Completed Operations: Maintained for minimum of one year after date of final Certificate for Payment, in full amount of the limits specified above.
 - d. Contractual Liability
 - e. Coverage for explosion (x), collapse (c) and underground (u).
6. The Commercial General Liability policy shall include a contractual liability endorsement insuring the indemnity required by the contract. The indemnities shall be named as additional insureds on the Contractor's Commercial General Liability policy using Form CG 20 10 or its equivalent. The additional insured endorsement shall provide the following:
 - a. That the coverage afforded the additional insureds will be primary insurance for the additional insureds with respect to claims arising out of operations performed by or on behalf of the contractor.
 - b. That if the additional insureds have other insurance which is applicable to the loss, such other insurance will be on an excess or contingent basis,
 - c. That the amount of the company's liability under the insurance policy will not be reduced by the existence of such other insurance, and
 - d. That the additional insureds will not be given less than 30 days prior written notice of any cancellation thereof.
 - e. The Contractor will furnish a Certificate of Insurance evidencing the foregoing.

C. Business Auto Liability (including owned, non-owned and hired vehicles).

1. Bodily Injury
 - a. \$ 500,000 Per Person
 - b. \$ 1,000,000 Per Accident

2. Property Damage \$ 500,000
 or
3. Combined Single Limit \$ 1,000,000

D. Umbrella

1. If the Contractor's Workers Compensation, Commercial General Liability and Business Auto policies do not have these minimum limits, an Umbrella policy, written in an insurance company acceptable to the Owner, may be used to meet the minimum limits required.
2. Umbrella Excess Liability (in addition to primary coverage): \$1,000,000

E. The following parties shall be included as Additional Insureds on all contractor's and subcontractor's Certificates of Insurance:

- a. 20/10 Engineering Group, LLC, 1216 Tower Road, Schaumburg IL 60173.

"11.1.3.1 Certificates of Insurance shall be submitted within ten (10) days after the date of the Notice of Award, or as otherwise mutually agreed upon by the Owner and the Contractor."

11.3. PROPERTY INSURANCE: Add the following subparagraphs:

"11.3.1.6 The **Contractor** shall purchase and maintain the property insurance. The Policy shall name as insureds the Owner, the Architect, the Architect's consultants, the Contractor, his subcontractors and their respective board members, representatives, agents, and employees in the individual and official capacities. The policy may include a deductible which shall not exceed **\$5,000** per loss. The Contractor shall be responsible for payment of the entire deductible amount."

"11.3.1.7 The prompt repair or reconstruction of the Work as a result of any loss shall be the Contractor's responsibility. Cost for the loss shall be submitted directly to the insurance carrier. The policy shall contain a provision that the policy will not be canceled, changed or altered until at least 30 days after written notice has been given to the named insureds."

11.4. PERFORMANCE BOND AND PAYMENT BOND - add to the following subparagraph:

"11.4.1.1 The Contractor shall provide and pay for a Performance Bond and a Payment Bond in the full amount of the contract. The surety of the bond shall be satisfactory to the Owner and shall be provided on the forms provided in the project manual."

"11.4.3. The Bonds shall include the provisions that the surety will fully reimburse and repay the Owner all costs, damages, attorney fees, engineer's fees, and other expenses which the Owner may incur in making good any default by the Contractor, including any default based upon failure of the Contractor to furnish maintenance, repairs or replacements for any period of time after the work is completed, as provided for in the contract documents."

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK (No modifications to this Article.)

ARTICLE 13: MISCELLANEOUS PROVISIONS (No modifications to this article.)

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT (No Modifications to this Article.)

ARTICLE 15: CLAIMS AND DISPUTES (No modifications to this article.)

END 00 7300

1. GENERAL
- 1.1. WORK INCLUDES
 - A. Work covered by contract documents: **Building 'A' 2017 HVAC Improvements.**
- 1.2. RELATED WORK
 - A. Specified Elsewhere:
 1. Section 01 5000 - Temporary Facilities and Controls
 2. Section 01 7700 - Closeout Procedures
- 1.3. DEFINITIONS. The following terms are used throughout the contract documents. The work will be governed in accord with the definitions.
 - A. Fabricated: "Fabricated" pertains to items specifically assembled or made of selected materials or components to meet individual design requirements.
 - B. Manufactured: "Manufactured" means standard units, usually mass produced by an established manufacturer of the respective item.
 - C. Provide: "Provide" means furnish and install.
 - D. Shop fabricated or shop made: "Shop fabricated or shop made" refers to items made by the Contractor in his own shop.
- 1.4. INSURANCE: See the Conditions of the Contract.
- 1.5. CONTRACT
 - A. Construct project under a single combined contract, as the General Contractor, in accordance with Supplementary Conditions, and including the following work:
 1. General Work
 2. Electrical Work
 3. Fire Protection Work
- 1.6. WORK BY OTHERS
 - A. The Owner will award contracts which will commence during the Spring/Summer of 2017. Work under these contracts includes: **Building 'A' 2017 HVAC Improvements.**
 - B. Items noted "N.I.C" (Not-in-Contract) will be furnished and installed by the Owner.
 - C. The Owner will remove and retain possession of the following items prior to start of the work: N/A
 - D. Items furnished by the Owner for final connection by the contractor: N/A
- 1.7. CONTRACTOR USE OF PREMISES
 - A. Confine operations at site to areas permitted by:
 1. Law

2. Permits
 3. Contract
 4. Drawings
 5. Owner's representative
- B. Do not unreasonably encumber site with materials or equipment.
- C. Do not load structures with weight that will endanger structure.
- D. Assume full responsibility for protection and safekeeping of products stored on premises.
- E. Use of Site: Confine operations at site to areas as designated by Contract Documents.
- F. Fire Protection:
1. Fires: Contractor shall prohibit the lighting of fires about the premises and use due diligence to see that refuse and such not be burned at the construction site. Promptly remove all refuse and such from the site for legal disposal. Prevent the accumulation of combustibles on the site or within the building.
 2. Welding and cutting: It shall be the responsibility of each contractor to take precautionary measures to prevent fire.
 3. Flammables: Gasoline and other fuels shall be kept and handled in accord with NFPA and in UL listed and labeled safety cans, and shall be stored away from hazardous work areas.
- G. Smoking inside of the existing building, including those areas associated with the work of this contract, will not be permitted. Smoking on the premises outside of the building will also not be permitted.
- 1.8. HAZARDOUS MATERIALS
- A. No asbestos containing materials, lead based paints, or other hazardous materials shall be furnished or installed in this work.
- 1.9. WORK SEQUENCE
- A. Construct work between July 10, 2017 and July 24, 2017. Coordinate construction schedule and operations with the owner:
- 1.10. OWNER OCCUPANCY
- A. The Owner intends to occupy the facility continuously.
 - B. Cooperate with the owner to minimize conflict.
 - C. Schedule the Work to accommodate these requirements.

END 01 1000

1. GENERAL
- 1.1. WORK INCLUDES
 - A. Construction mobilization.
 - B. Submittals.
 - C. Contractor duties.
 - D. Coordination.
 - E. Closeout procedures.
 - F. Testing.
- 1.2. RELATED WORK
 - A. Specified Elsewhere:
 1. General Conditions: Duties of the Contractor
 2. Section 01 7700 - Closeout Procedures
- 1.3. CONSTRUCTION MOBILIZATION
 - A. Cooperate with the Owner in allocation of mobilization areas of site and parking.
 - B. Comply with Engineer's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- 1.4. SUBMITTALS
 - A. Submit shop drawings, product data and samples for review and compliance with contract documents, for field dimensions and clearances, for relation to available space, and for relation to work of separate contracts. Revise and resubmit as required.
 - B. Submit applications for payment on AIA G702 forms (or as otherwise accepted by the Owner) for review.
 - C. Submit requests for interpretation of Contract Documents, and obtain same through Engineer.
 - D. Process requests for substitutions, and change orders, through Engineer.
 - E. Deliver closeout submittals for review and preliminary inspection reports.
- 1.5. CONTRACTOR DUTIES
 - A. Coordinate work of all contractors.
 - B. Temporary Utilities:
 1. Verify that adequate services are provided to comply with specifications for work and climatic conditions.

- C. Payments:
 - 1. Submit Contractor's application for payment including:
 - a. Request for Partial Payment.
 - b. Contractor's Sworn Statement and Affidavit
 - c. Waivers of Lien.
 - d. Requests for Payment for Stored Materials.
- D. Changes:
 - 1. Recommend necessary or desirable changes to Engineer.
 - 2. Enforce adherence to all modifications in contract documents.
- E. Permits and Fees:
 - 1. Obtain building permits and special permits for permanent improvements.
 - 2. Obtain approvals from all authorities having jurisdiction. Schedule and be present for all inspections by governmental units and authorities having jurisdiction.
 - 3. Verify that subcontractors have obtained permits for inspections and temporary facilities.
 - 4. Verify that subcontractors have included utility company fees if required.
- F. Inspection:
 - 1. Inspect work to assure that work is performed in accord with Contract Documents.
 - 2. Reject or stop portions of the work which are not in accord with Contract Documents.
- G. Interpretations of Contract:
 - 1. Consult with Engineer to obtain interpretations.
 - 2. Assist in resolution of questions which may arise.
 - 3. Transmit written interpretations to the concerned parties.
- H. Administer Coordination and Processing of:
 - 1. Shop drawings, product data and samples.
 - 2. Project record documents.
- I. Maintain Reports and Records:
 - 1. Records:
 - a. Contracts.
 - b. Purchases.
 - c. Materials and equipment records.
 - d. Inspection reports.
 - 2. Verify that contractors and subcontractors maintain project record documents on a current basis.
 - 3. At completion of project, assemble project record documents in accordance with Contract requirements and deliver to Engineer.
 - 4. Assemble documentation for handling of claims and disputes.
- J. Verify that specified cleaning is done:
 - 1. During progress of work.

2. At completion of contract.
- K. Notification of start-up of permanent equipment:
1. Notify all parties seven (7) days prior to start-up date.
 2. Record dates of start of operation of systems and equipment.
- L. Substantial Completion:
1. Upon Contractor's determination of substantial completion of work or a portion thereof, prepare for Engineer a list of incomplete or unsatisfactory items.
 2. Upon Engineer's certification of date of substantial completion, coordinate correction and completion of work.
- M. Final Completion:
1. Upon subcontractor's determination that work is finally complete:
 - a. Submit written notice to Engineer that work is ready for final acceptance.
 - b. Secure and transmit to Engineer specified closeout submittals.
 2. Turn over to Engineer:
 - a. Operations and maintenance data.
 - b. Spare parts and maintenance materials.

1.6. COORDINATION

- A. Perform all work between the hours of 8:00 AM and 5:00 PM Monday through Friday, unless other arrangements are made with the Owner.
- B. The Contractor is responsible for all security with regard to the construction. The Contractor shall cooperate completely with the Owner's security measures.
- C. Inform the Owner when coordination of his work and activities is required.

1.7. CLOSEOUT PROCEDURES

- A. Notify Engineer when Work is considered ready for Substantial Completion. Accompany Engineer on preliminary review to determine items to be listed for completion or correction in Contractor's notice of Substantial Completion.
 1. Substantial Completion will not be granted until, among other things, all inspections by authorities having jurisdiction are complete and fully accepted.
- B. Comply with Contract requirements to correct items of work listed in executed Certificates of Substantial Completion.
- C. Notify Engineer when Work is considered finally complete. Accompany Engineer for final acceptance.
- D. Comply with Contract requirements for completion of items of Work determined as necessary for final acceptance.

1.8. TESTING

- A. Notify Engineer of test schedules.

B. Verify that required personnel are present.

C. Verify that specified tests are made as scheduled.

2. PRODUCTS

Not Used.

3. EXECUTION

Not Used.

END 01 3100

1. GENERAL

1.1. WORK INCLUDES

- A. Submittals procedures.
- B. Shop drawings.
- C. Product data.
- D. Manufacturers' instructions.
- E. Schedule of Values.
- F. Contractor responsibilities.
- G. Engineer's duties.

1.2. RELATED WORK

- A. Specified Elsewhere:
 - 1. Section 01 3100 - Project Coordination
 - 2. Section 01 7700 - Closeout Procedures: Contract warranty and manufacturer's certificates; closeout submittals.

1.3. DEFINITIONS

- A. Shop Drawings: Shop drawings are original drawings prepared by Contractor, subcontractor, sub-subcontractor, supplier, or distributor, which illustrate some portion of the work, showing fabrication, layout, setting or erection details.
 - 1. Prepared by qualified detailer.
 - 2. Identify details by reference to sheet and detail number shown on contract drawings.
 - 3. Minimum sheet size: 8-1/2" x 11".
 - 4. Reproductions for submittals: Diazo Sepia transparency or other reproducible form, with two additional opaque copies.
- B. Product Data:
 - 1. Manufacturer's standard schematic drawings.
 - a. Modify to delete information which is not applicable to project.
 - b. Supplement standard information to provide additional information applicable to project.
 - 2. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data.
- C. Samples: Physical samples to illustrate materials, equipment or workmanship. Approved samples establish standards by which complete work is judged. Maintain at site as directed. Protect until no longer needed.

1.4. CONTRACTOR'S USE OF ENGINEER'S ELECTRONIC FILES

- A. General: At Contractor's written request, copies of Engineer's electronic files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:
 - 1. Upon request to utilize electronic media, the Contractor shall complete an "Electronic File Transfer" form provided by 20/10 Engineering and return the signed form.
 - 2. Construction drawings for this project have been prepared utilizing CAD. We make no representation as to the compatibility of these files with your hardware or your software beyond the specified release of the referenced specifications.
 - 3. The electronic contract documents can be used for preparation of shop drawings and as-built drawings only. The information may not be used in whole or in part for any other project.
 - 4. The use of these CAD documents by the Contractor does not relieve them from their duty to fully comply with the contract documents, including, and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, verify field conditions and coordinate your work with that of the other contractors for the project.
 - 5. The information is provided to expedite the project and assist the Contractor with no guarantee by 20/10 Engineering as to the accuracy or correctness of the information provided. 20/10 Engineering accepts no responsibility or liability for the Contractor's use of these documents.

1.5. SUBMITTAL PROCEDURES - GENERAL

- A. Sequentially number the transmittal forms. Re-submittals to have original number with an alphabetic suffix.
- B. Make all submittals in reproducible form accompanied by two additional copies.
- C. All marks and identifications on the submittals must be made with permanent ink or markers. Highlighter and pencil marks will not be acceptable.
- D. Reproduction of the Contract Documents will not be accepted as submittals. The Contract Documents are protected by copyright laws, and shall not be reused or copied in any form without written permission of the authors.
- E. Apply contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction work, and coordination of information, is in accordance with the requirements of the work and Contract Documents.
 - 1. Contractor review must be completed to the greatest extent possible prior to submission to the Engineer.
- F. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of the completed work.

1.6. MANUFACTURER'S INSTRUCTIONS SUBMITTAL PROCEDURES

- A. When specified in individual specification Sections, submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.7. SCHEDULE OF VALUES

- A. Submit Schedule of Values to Engineer at least 15 business days prior to submitting first application for payment.

1. Support values given with data to substantiate its correctness.
2. List quantities of materials specified under unit prices.
3. Use Schedule of Values as only basis for application for payment.
4. Payment for materials stored on or off site will be limited to those materials listed in Schedule of Values.

B. Form of Submittal

1. Submit typewritten Schedule of Values on form acceptable to the Engineer.
2. Use Project Manual Table of Contents as basis of format for listing costs of all work, unless otherwise indicated by the Engineer.
3. Identify each line item with number and title listed in Project Manual Table of Contents.

2. PRODUCTS

- 2.1. Not used.

3. EXECUTION

3.1. CONTRACTOR RESPONSIBILITIES

- A. Review shop drawings, product data, and samples prior to submission to Engineer.

B. Verify:

1. Field dimensions.
2. Field construction criteria.
3. Catalog numbers and similar data.

C. Coordinate each submittal with requirements of:

1. The work.
2. The contract documents.
3. The work of other contractors and Subcontractors.

- D. Contractor's responsibility for errors and omissions in submittals is not relieved by Engineer's review of submittals.

- E. Prior to submission, notify Engineer in writing of all proposed deviations in submittals from contract requirements.

- F. Do not begin any work which requires submittals without having Engineer's stamp and initials or signature.

- G. After Engineer's review, make response indicated by the Engineer's stamp. Distribute copies of reviewed submittals to concerned parties.

1. Instruct parties to promptly report any inability to comply with provisions.

3.2. ENGINEER'S DUTIES

- A. Review submittals within 20 business days, unless notice is otherwise given to the Contractor.

B. Review for:

1. Consistency with design concept of project.
 2. Compliance with Contract Documents.
- C. Review all requests for proposed deviations.
- D. Review of separate item does not constitute review of assembly in which item functions.
- E. Affix stamp, date and initials or signature certifying to review of submittal, and with indications for Contractor response.
- F. Return submittals to Contractor for response or distribution. The Engineer will return the reviewed and stamped reproducible to the Contractor. The Engineer will retain all prints submitted with the reproducible. If only prints are submitted (only with Architect's prior permission), the Engineer will retain four copies of same, and will return all additional copies.

3.3. RESUBMISSION REQUIREMENTS

- A. Shop drawings:
1. Revise initial drawings as indicated and resubmit in accordance with submittal procedures.
 2. Indicate on drawings all changes which have been made in addition to those requested by Engineer.
- B. Product data and samples: Submit new data and samples as specified for initial submittal.
- C. Make all re-submittals within 10 business days after date of Engineer's previous review.

END 01 3300

DIVISION 01 - GENERAL REQUIREMENTS
Section 01 5000 - Temporary Facilities and Controls

1. GENERAL

1.1. WORK INCLUDES

- A. Temporary Utilities: Electricity, lighting, heat, ventilation, water, and sanitary facilities.
- B. Temporary Controls: Barriers, protection of the Work, and water control.
- C. Construction Facilities: Parking, field offices, progress cleaning, and project signage.

1.2. RELATED WORK

- A. Specified Elsewhere:
 - 1. Section 01 3100 - Project Coordination
 - 2. Section 01 7700 - Closeout Procedures

1.3. SUBMITTALS

- A. Submit in accordance with Section 01 3300:

1.4. REQUIREMENTS OF REGULATORY AGENCIES

- A. Comply with specified codes and regulations:
 - 1. National Electric Code.
 - 2. Federal, State and Local requirements.
 - 3. Utility company regulations.
 - 4. Cook County Building Code

1.5. TEMPORARY UTILITIES/SERVICES RESPONSIBILITY

- A. Responsibility: The following temporary utilities and facilities on the construction site shall be provided by the party indicated below:

Item	Provider
1 - Telephone	Contractor
2 - Electricity	Owner
3 - Water (potable for construction use)	Owner
4 - Drinking water	Contractor
5 - Toilets	Contractor
6 - Parking Spaces for Workers	Owner
7 - Storage Areas and Facilities	Contractor
8 - Trash containers and Trash removal	Contractor

1.6. USE OF OWNER'S EXISTING SYSTEMS FOR CONSTRUCTION

- A. Make all arrangements with Owner's Representative. Contractor is responsible for all connection fees.
- B. Limitations: Regulate all parts of existing systems used for construction purposes.
 - 1. Do not overload system. When project requirements exceed system capacity, provide separate system to meet needs.
- C. Modify, supplement, and extend system to meet temporary utility requirements for project, subject to acceptance of Engineer and the Owner.
- D. Maintain strict supervision of use of temporary facilities.
 - 1. Enforce conformance with:
 - a. Specified codes and standards.
 - 2. Use only designated facilities, systems or portions thereof.
 - a. Electrical Power Service:
 - 1) Provide temporary extension of service to meet lighting requirements.
 - 2) Do not overload circuits.
 - 3) Replace all components damaged by Contractor's use.
 - b. Lighting:
 - 1) Provide and maintain additional lighting, extend from existing system, to comply with temporary lighting requirements.
 - 2) Contractor causing damage shall replace damaged lamps and fixtures.

1.7. TEMPORARY LIGHTING

- A. Provide and maintain lighting for construction operations.
- B. All temporary lighting requirements shall meet or exceed OSHA requirements. Remove all temporary lighting facilities at end of project.

1.8. TEMPORARY SANITARY FACILITIES

- A. Existing facilities, if designated by the Owner, may be used during construction operations. Otherwise, contractor shall provide temporary sanitary facilities or make off-site arrangements.

1.9. PROTECTION OF INSTALLED WORK

- A. Provide temporary and removable protection for installed products. Control activity in immediate work area to minimize damage.

1.10. SECURITY

- A. Coordinate with Owner's security program.

1.11. PROGRESS CLEANING

- A. Maintain all construction areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition at all times.
- B. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- C. Remove waste materials, debris, and rubbish from site and dispose legally off-site.

2. PRODUCTS

- 2.1. Not Used

3. EXECUTION

3.1. ALL TEMPORARY UTILITIES

- A. Install work in neat and orderly manner.
- B. Maintain to give safe, continuous service, and to provide safe working conditions.

3.2. REMOVAL

- A. Repair all damage caused by installation. Restore to original conditions.

END 01 5000

1. GENERAL

1.1. WORK INCLUDES

- A. Requirements and limitations for cutting and patching of work.
 - 1. Execute cutting, filling, or patching of work, required to:
 - a. Make several parts fit properly.
 - b. Uncover work to provide for installation of ill-timed work.
 - c. Remove and replace defective work.
 - d. Remove and replace work not conforming to contract requirements.
 - e. Install specified work in existing construction.
 - 2. Do not cut or alter work of another contractor without written consent of Engineer.

1.2. RELATED WORK

- A. Specified Elsewhere:
 - 1. Section 01 1000 - Project Summary
 - 2. Section 01 3300 - Submittal Procedures

1.3. SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather-exposed or moisture-resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
- B. Prior to cutting and patching done on request of Engineer, submit cost estimate.

1.4. PAYMENT FOR COSTS

- A. Costs caused by ill-timed or defective work, or work not conforming to contract documents, including costs for additional services of Engineer: Party responsible for ill-timed, rejected, or non-conforming work.
- B. Work done on request of Engineer, in addition to the contract requirements, other than defective or non-conforming work: Owner.
- C. Cutting and patching of all major holes in existing materials in remodeling work for the penetration of any contractor's work shall be installed by the Contractor. Cost of cutting and patching of these holes, as well as costs for lintels, sleeves, or other associated construction, shall be borne by the Contractor.
- D. Cost of cutting of minor holes in existing materials in remodeling work, and cost of cutting of new materials installed in remodeling work shall be the responsibility of the trade requiring the cutting. Patching shall be done by the trade normally involved with that type of work at the cost of the trade requiring the cutting.

- E. Major holes shall be defined as any opening 8" x 8" or 8" in diameter, or larger, in surface area by depth as required. Minor holes shall be defined as any opening smaller than a major hole.

2. PRODUCTS

2.1. MATERIALS

- A. Primary Products: Those required for original installation.

3. EXECUTION

3.1. EXAMINATION

- A. Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. After uncovering existing Work, inspect conditions affecting performance of work.
- C. Beginning of cutting or patching means acceptance of existing conditions.

3.2. PREPARATION

- A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.

3.3. CUTTING AND PATCHING

- A. Execute cutting, fitting, and patching to complete work.
- B. Fit products together, to integrate with other work.
- C. Remove and replace defective or non-conforming work.

3.4. PERFORMANCE

- A. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- B. Employ original installer to perform cutting and patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.
- C. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior acceptance.
- D. Restore work with new products in accordance with requirements of Contract Documents.
- E. Fit work air tight to pipes, sleeves, conduit, and other penetrations through surfaces.
- F. At penetrations of fire-rated walls, completely seal voids with fire-rated, fire resistant material to full thickness of the penetrated element.
- G. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END 01 7329

1. GENERAL
- 1.1. WORK INCLUDES
 - A. Closeout procedures.
 - B. Final cleaning.
 - C. Adjusting.
 - D. Project record documents.
 - E. Operation and maintenance data.
 - F. Warranties
- 1.2. RELATED WORK
 - A. Specified Elsewhere:
 1. Section 01 5000 - Temporary Facilities and Controls: Progress Cleaning.
- 1.3. CLOSEOUT PROCEDURES
 - A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's review.
 - B. Provide submittals to Engineer that are required by governing or other authorities.
 - C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- 1.4. FINAL CLEANING
 - A. Execute final cleaning prior to final observation.
 - B. Clean equipment and fixtures to a sanitary condition.
 - C. Remove waste and surplus materials, rubbish, and construction facilities from the site.
- 1.5. ADJUSTING
 - A. Adjust operating products and equipment to ensure smooth and unhindered operation.
- 1.6. PROJECT RECORD DOCUMENTS
 - A. Maintain on site, one set of the following record documents; record actual revisions to the Work:
 1. Contract Drawings.
 2. Specifications.
 3. Addenda.
 4. Change Orders and other Modifications to the Contract.
 5. Reviewed shop drawings, product data, and samples.

- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Submit documents to Engineer with final Application for Payment.
- E. Mark drawings with red pencil or mark work of separate subcontracts with different colors of pencils.

1.7. OPERATION AND MAINTENANCE DATA

- A. Submit two sets prior to final acceptance, bound in 8-1/2" x 11" text pages, three D side ring binders with durable plastic covers.
- B. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS" and title of project.

1.8. WARRANTIES

- A. Provide duplicate notarized copies.
- B. Submit prior to final Application for Payment.
- C. Warranties begin at the date of Substantial Completion, including items that were used during construction.

1.9. SPARE PARTS, KEYS, AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, keys, maintenance and operating tools, and extra materials in quantities specified.
- B. Deliver to project site and place in location as directed; obtain receipt prior to final payment.

1.10. OTHER PROJECT CLOSEOUT REQUIREMENTS

- A. See 01 7700 - Appendix A (attached) for additional project closeout requirements.

2. PRODUCTS
Not used.

3. EXECUTION
Not used.

PROJECT CLOSEOUT CHECKLIST - APPENDIX A

- I. ENGINEER PREPARE FOR EXECUTION:
 - A. Final Punch List
 - B. Certificate of Substantial Completion
 - C. List of all Warranties greater than 1 year duration.

- II. CONTRACTOR PREPARE FOR EXECUTION AND SUBMITTAL:
 - A. Final Application for Payment
 - B. Contractor's Affidavit of Payment of Debts and Claims
 - C. Contractor's Affidavit of Release of Liens
 - 1. Final Waivers of Lien from:
 - a. Subcontractors
 - b. Suppliers
 - 2. Contractor's Final Waiver of Lien in the full amount of the contract.
 - D. Contractor's Certification of Completion in compliance with the Contract Documents (including all Punch List items).

- III. CONTRACTOR PREPARE AND SUBMIT:
 - A. Written guarantees as required by the Contract Documents
 - B. Project Record Documents
 - C. Operating and Maintenance Manuals

- IV. CONTRACTOR OBTAIN FROM OTHERS AND SUBMIT:
 - A. Certificate of Occupancy
 - B. Consent of Surety to Final Payment

- V. CONTRACTOR VERIFY THAT OWNER HAS RECEIVED (provide Engineer with letters of transmittal signed by Owner's project representative):
 - A. Equipment Operating Tools and Keys as required by the Contract Documents

END 01 7700

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Condensing unit package.
 - 2. Charge of refrigerant and oil.
 - 3. Controls and control connections.
 - 4. Refrigerant piping connections.
 - 5. Electrical power connections.

1.3 RELATED SECTIONS

- A. Section 23 09 00 - Instrumentation and Control for HVAC: Product requirements for control components to interface with fans.
- B. Section 23 09 23 - Direct-Digital Control System for HVAC: Controls remote from unit.
- C. Section 26 05 03 - Equipment Wiring Connections: Execution and product requirements for connecting equipment specified by this section.

1.4 REFERENCES

- A. ARI 210/240 - Unitary Air-Conditioning and Air-Source Heat Pump Equipment.
- B. ARI 270 - Sound Rating of Outdoor Unitary Equipment.
- C. ARI 365 - Commercial and Industrial Unitary Air-Conditioning Condensing Units.
- D. ASHRAE 14 - Methods of Testing for Rating Positive Displacement Condensing Units.
- E. ASHRAE 15 - Safety Code for Mechanical Refrigeration.
- F. ASHRAE 90A - Energy Conservation in new Building Design.
- G. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
- H. NEMA MG 1 - Motors and Generators.
- I. UL 207 - Refrigerant-Containing Components and Accessories, Non-Electrical.
- J. UL 303 - Refrigeration and Air-Conditioning Condensing, and Air-Source Heat Pump Equipment.

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Section 23 6200 - Air Cooled Condensing Units

1.5 SUBMITTALS FOR REVIEW

- A. See Division 01 for project requirements.
- B. Product Data: Provide rated capacities, weights specialties and accessories, electrical nameplate data, and wiring diagrams. Make submission with air handling units with coils, to ensure capacities are complementary.

1.6 SUBMITTALS FOR INFORMATION

- A. Design Data: Indicate pipe and equipment sizing.
- B. Submit manufacturer's installation instructions.

1.7 SUBMITTALS AT PROJECT CLOSEOUT

- A. Operation and Maintenance Data: Include start-up instructions, maintenance instructions, parts lists, controls, and accessories.

1.8 REGULATORY REQUIREMENTS

- A. Conform to the 2016 Health/Life Safety Code for Public Schools, 23 Illinois Administrative Code 180.
- B. Conform to the 2015 International Building Code (IBC).
- C. Conform to the 2015 International Existing Building Code (IEBC).
- D. Conform to the 2015 International Fuel Gas Code (IFGC).
- E. Conform to the 2015 International Property Maintenance Code (IPMC).
- F. Conform to the 2015 International Fire Code (IFC), excluding Chapter 4.
- G. Conform to the 2015 International Energy Conservation Code (IECC).
- H. Conform to the 1997 Illinois Accessibility Code, 71 Illinois Administrative Code 400.
- I. Conform to 2014 State of Illinois Plumbing Code, 77 Illinois Administrative Code 890.
- J. Conform to the 2013 Illinois State Fire Marshall Boiler and Pressure Vessel Safety Act, 41 Illinois Administrative Code 120.
- K. Conform to the 2015 International Mechanical Code (IMC).
- L. Conform to the 2015 ICC Electrical Code.
- M. Conform to 2014 NFPA 70, National Electrical Code.
- N. Conform to 2013 NFPA 72, National Fire Alarm Code.
- O. Products: Listed and classified by Underwriter's Laboratories, Inc. as suitable for the purpose specified and indicated.

1.9 DELIVERY, STORAGE, AND PROTECTION

- A. See Division 01 for project requirements.
- B. Comply with manufacturer's installation instructions for rigging, unloading, and transporting units.
- C. Protect units on site from physical damage. Protect coils.

1.10 WARRANTY

- A. Provide a five year material and labor warranty to include coverage for refrigerant compressors.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Trane.
- B. Daikin/McQuay.
- C. York/Johnson Controls.

2.2 GENERAL UNIT DESCRIPTION

- A. Provide self-contained, packaged, factory-assembled and pre-wired units suitable for outdoor use consisting of cabinet, compressors, condensing coil and fans, subcooling circuits, and controls.

2.3 CASING

- A. Cabinet: Galvanized steel, phosphatized, and finished with an air-dry paint coating durable enough to withstand 672 consecutive-hour salt spray application in accordance with standard ASTM B 117. Units are constructed of 14-gauge welded galvanized steel frame with 14 and 16-gauge galvanized steel panels and access doors.

2.4 CONDENSER SECTION

- A. Condenser coils shall have all Aluminum Microchannel coils. All coils shall be leak tested at the factory to ensure pressure integrity. The condenser coil shall be pressure tested to 650 psig.

2.5 REFRIGERANT CIRCUITS

- A. Provide dual refrigerant circuits.

2.6 FANS AND MOTORS

- A. Condenser Fans shall have Vertical discharge, direct drive fans with aluminum blades and zinc plated steel hubs guard on discharge. Fans shall be statically and dynamically balanced.

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Section 23 6200 - Air Cooled Condensing Units

- B. Condenser fan motors shall be three-phase motors with permanently lubricated ball bearings, built in current and thermal overload protection and weather-tight slingers over motor bearings.

2.7 COMPRESSORS

- A. Condensing Unit to be provided with two circuits, each circuit consisting of a lead Variable Speed compressor with VFD. Digital Scroll Compressors will not be allowed.
- B. Compressors shall be industrial grade, Variable Speed direct-drive 3600 RPM maximum speed scroll type. The motor shall be of a suction gas cooled hermetic design. Compressor shall have centrifugal oil pump with dirt separator, oil sight glass, and oil charging valve. A solid state temperature sensor shall be embedded in the motor windings to protect against excessive winding temperatures.
 - 1. If semi-hermetic reciprocating industrial grade compressors are utilized provide single piece crankshafts, connecting rods, aluminum pistons, rings to prevent gas leakage, high strength non-flexing ring type suction and discharge valves, spring loaded heads, replaceable cylinder liners, and sealing surface immersed in oil. Provide removable discharge heads and hand hole covers, and discharge service valves.
- C. Motor shall be designed for across-the-line starting and suitable for a voltage utilization range of +/- 10 percent from nameplate voltage.

2.8 SYSTEM CONTROLS

- A. Unit Control: Provide 115 volt control circuit with fusing and control power transformer. Unit wired with contactors for compressor and condenser motors, compressor overload protection, high/low cutouts, differential oil pressure control, reset relay, and anti-cycle compressor timer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's installation instructions.
- B. Complete structural, mechanical, temperature control, and electrical connections in accordance with manufacturer's installation instructions.
- C. Provide connection to refrigeration piping system and evaporators. Refer to Section 15535. Comply with ASHRAE 15.
- D. Furnish charge of refrigerant and oil.

3.2 DEMONSTRATION AND INSTRUCTIONS

- A. See Division 01 for project requirements.
- B. Supply initial charge of refrigerant and oil for each refrigeration system. Replace losses of oil or refrigerant prior to end of correction period.
- C. Charge system with refrigerant and test entire system for leaks after completion of installation. Repair leaks, put system into operation, and test equipment performance.

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Section 23 6200 - Air Cooled Condensing Units

- D. Shut-down system if initial start-up and testing takes place in winter and machines are to remain inoperative. Repeat start-up and testing operation at beginning of first cooling season.
- E. Provide cooling season start-up.

END OF SECTION 23 6200

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Air coils.

1.3 REFERENCES

- A. Air-Conditioning and Refrigeration Institute:

- 1. ARI 410 - Forced-Circulation Air-Cooling and Air-Heating Coils.

- B. Sheet Metal and Air Conditioning Contractors:

- 1. SMACNA - HVAC Duct Construction Standard - Metal and Flexible.

1.4 SUBMITTALS

- A. See Division 01 for project requirements.
- B. Product Data: Submit coil and frame configurations, dimensions, materials, rows, connections, and rough-in dimensions. Submit mechanical and electrical service locations, capacities and accessories or optional items.
- C. Manufacturer's Installation Instructions: Submit assembly, support details, and connection requirements.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

- A. See Division 01 for project requirements.
- B. Project Record Documents: Record actual locations of components and locations of access doors in ceilings required for access to valves.
- C. Operation and Maintenance Data: Submit manufacturers descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listings.

1.6 REGULATORY REQUIREMENTS

- A. Conform to the 2016 Health/Life Safety Code for Public Schools, 23 Illinois Administrative Code 180.

- B. Conform to the 2015 International Building Code (IBC).
- C. Conform to the 2015 International Existing Building Code (IEBC).
- D. Conform to the 2015 International Fuel Gas Code (IFGC).
- E. Conform to the 2015 International Property Maintenance Code (IPMC).
- F. Conform to the 2015 International Fire Code (IFC), excluding Chapter 4.
- G. Conform to the 2015 International Energy Conservation Code (IECC).
- H. Conform to the 1997 Illinois Accessibility Code, 71 Illinois Administrative Code 400.
- I. Conform to 2014 State of Illinois Plumbing Code, 77 Illinois Administrative Code 890.
- J. Conform to the 2013 Illinois State Fire Marshall Boiler and Pressure Vessel Safety Act, 41 Illinois Administrative Code 120.
- K. Conform to the 2015 International Mechanical Code (IMC).
- L. Conform to the 2015 ICC Electrical Code.
- M. Conform to 2014 NFPA 70, National Electrical Code.
- N. Conform to 2013 NFPA 72, National Fire Alarm Code.
- O. Products: Listed and classified by Underwriter's Laboratories, Inc. as suitable for the purpose specified and indicated.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. See Division 01 for project requirements.
- B. Accept units on site in factory packing. Inspect for damage. Store under roof.
- C. Protect coil fins from crushing and bending by leaving in shipping cases until installation, and by storing indoors. Protect coils from entry of dirt and debris with pipe caps or plugs.

1.9 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.10 WARRANTY

- A. Furnish five year manufacturer's warranty for air coils.

PART 2 - PRODUCTS

2.1 AIR COILS

A. Manufacturers:

1. Temptrol .
2. Trane.
3. Daikin/McQuay.
4. Commercial.
5. Heat Craft.
6. Johnson Controls/York.

B. Fabrication:

1. Tubes: 1/2 inch or 5/8 inch (as scheduled) OD seamless copper arranged in parallel or staggered pattern, expanded into fins, brazed joints.
2. Fins: Aluminum continuous plate type with full fin collars or individual helical spiral finned tube type wound under tension.
3. Casing: Die formed channel frame of 16 gage galvanized steel with 3/8 inch mounting holes on centers determined by manufacturer. Furnish intermediate center tube supports for plate fin coils longer than 36 inches. Furnish intermediate tube supports for spiral fin coils at manufacturer's recommended intervals to eliminate sagging during operation.

C. Refrigerant Coils:

1. Headers: Seamless copper or brass tubes with silver brazed joints.
2. Liquid Distributors: Brass or copper venturi or orifice type or removable nozzle type distributor with seamless copper distributor tubes, minimum 1/4 inch OD for refrigerant R-410a; maximum circuits for each distributor to be determined by manufacturer.
3. Leak testing: Air test under water at 300 psig for working pressure of 250 psig; dehydrate, and seal with dry air or nitrogen charge.
4. Configuration: Self-draining, down feed with bottom non-oil trapping connection.
5. Fin Spacing: As scheduled.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify ductwork is ready for installation.

3.2 INSTALLATION

- A. Install air coils in ducts and casings in accordance with SMACNA HVAC Duct Construction Standards, Metal and Flexible. Refer to Section 23 31 00.

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Section 23 8216 - Air Coils

- B. Support air coil sections independent of piping on steel channel or double angle frames and secure to casings. Furnish frames for maximum three coil sections. Arrange supports to avoid piercing drain pans. Install with airtight seal between coil and duct or casing.
- C. Protect coils to prevent damage to fins and flanges. Comb out bent fins.
- D. Install coils level.
- E. Make connections to coils with unions and flanges.
- F. On refrigerant coils, install sight glass in liquid piping within 12 inches of coil.
- G. Install equipment exposed to finished areas after walls and ceilings are finished and painted. Avoid damage.

3.3 CLEANING

- A. See Division 01 for project requirements.
- B. After construction is completed, including painting, clean exposed surfaces of units. Vacuum clean coils and inside of cabinets.

END OF SECTION 23 8216