



National Cooperative Purchasing Alliance

Introduction / Scope

- ◆ Region 14 ESC on behalf of itself and all states, local governments, school districts, and higher education institutions in the United States of America, and other government agencies and non-profit organizations (herein "Public Agency" or collectively "Public Agencies") is soliciting proposals from qualified vendors to enter into a Master Agreement for a complete line of HVAC Equipment, Installation, Service, & Related Products.
- ◆ Region 14 ESC, as the lead public agency, has partnered with NCPA to make the resultant contract available to all participating agencies in the United States. NCPA provides marketing and administrative support for the awarded vendor that promotes the successful vendor's products and services to Public Agencies nationwide. The Vendor will execute the NCPA Administration Agreement (Tab 2) upon award. Vendor should thoroughly review all documents and note any exceptions to NCPA terms and conditions in their proposal.
- ◆ Awarded vendor(s) shall perform covered services under the terms of this agreement. Respondents shall provide pricing based on a discount from their standard pricing schedules for products and/or services offered. Respondents must provide explanation on how they will provide either Catalog and/or price lists in their accompanying proposal. Please specify where different percentage discounts apply. Additional pricing and/or discounts may be included.
- ◆ Each service proposed is to be priced separately with all ineligible items identified. Services may be awarded to multiple vendors. Respondents may elect to limit their proposals to a single service within any category, or multiple services within any and all categories.
- ◆ National Cooperative Purchasing Alliance (NCPA)
 - The National Cooperative Purchasing Alliance (herein "NCPA") assists public agencies to increase their efficiency and reduce their costs when procuring goods and services. This is accomplished by awarding competitively solicited contracts that are leveraged nationally by combining the volumes and purchasing power of entities nationwide. Our contracts are available for use by any entity that must comply with procurement laws and regulations.

- ◆ It is the intention of Region 14 ESC and NCPA to achieve the following objectives through this RFP.
 - Provide a comprehensive competitively solicited Master Agreement offering Products and Services to Public Agencies;
 - Achieve cost savings of Vendors and Public Agencies through a single competitive solicitation process that eliminates the need for multiple proposals;
 - Combine the purchasing power of Public Agencies to achieve cost effective pricing;
 - Reduce the administrative and overhead costs of Vendors and Public Agencies through state of the art purchasing procedures.

◆ Vendor Scope

- It is the intention of Region 14 ESC to establish a contract with vendor(s) for HVAC Equipment, Installation, Service, & Related Products. Awarded vendor(s) shall provide products and perform covered services under the terms of this agreement. Offerors shall provide pricing based on a discount from a manufacturer's price list or catalog, or fixed price, or a combination of both with indefinite quantities. Additional pricing and/or discounts may be included. If Offeror has existing cooperative contracts in place, Offeror is requested to submit pricing equal or better than those that are in place. Multiple percentage discount structure is also acceptable. Please specify where different percentage discounts apply.
- Each service proposed is to be priced separately with all ineligible items identified. Services may be awarded to multiple vendors. Offerors may elect to limit their proposals to a single service within any category, or multiple services within any or all categories.
- Region 14 ESC is seeking a service provider that has the depth, breadth and quality of resources necessary to complete all phases of this contract. In addition, Region 14 ESC also requests any value-add product or service that could be provided under this contract.
- While this solicitation specifically covers HVAC Equipment, Installation, Service, & Related Products-Western USA, respondents are encouraged to submit an offering on any and all products or services available that they currently perform in their normal course of business. The scope of this RFP shall include but not be limited to the following products and services:
 - **HVAC Refrigeration** Type- Rotary, Centrifugal, Scroll, Reciprocating, Absorption
 - **Indoor Air Quality Products and Devices** Type- Active polarization, non-ionizing, electronic air cleaning systems intended to replace passive filtration, any other.
 - **Unitary** Type-rooftops, split systems, VRFs, Heat Pumps, PTACs, water-source, mini-splits

- **Air handling** Type- central station-manufactured or custom makeup air, fan, filter, coil sections
- **Air Terminal Devices and Heating Products** Type-VAV, Fan Coils, Unit Ventilators, Unit Heaters, Fin Tube Radiation/Convectors
- **DDC Controls** Type-core components, end devices, lighting, panels
- **Cooling Towers** Type- open, closed, evaporative, other
- **Pumps** Type- single stage, split case, end suction, inline, circulator, turbines
- **Invertors**
- **Boilers & Water Heaters** Type- modulating, condensing, cast iron, water tube, packaged and other
- **HVAC Specialty Products** Type (e.g., modular, outside/inside, Steam & Thermal Heat Recovery, Humidity Control, Heat Wheel, Heat Pipe, Heat Exchangers, Geothermal)
- **Equipment Parts and Supplies** Type- manufactured parts, emergency parts service, miscellaneous material and supplies and other
- **Startup & Commissioning Services** Type - equipment startups, system checkouts, control verification, retro commissioning, M & V verifications, rebate auditing, other
- **Service & Maintenance** Type- preventative and full maintenance contracts, man-at attendance, remote monitoring, annuals, emergency services, regulatory compliance, cleaning (e.g., duct, coils and filters), scheduled maintenance (e.g., oil, chemical and vibration analysis) and other
- **Installation and Turnkey Contracting** Type- retrofit, new construction, energy retrofit, controls new- and upgrade and other
- **Warranty Services** Type- Extended parts & labor (define maximum number of years available), delayed start-up and other
- **Energy Services** Type-Energy Tracking, Energy Analysis, Evaluation of Potential Upgrades, demand response, rebates and other
- **Equipment Rentals** Type-chillers, pumps, transformers, terminal units, generators, cooling towers, packaged unitary and other
- **Financial Services** Type- leasing, prompt and pre-payment discounts, guaranteed savings and other
- **Professional Services** Type- Engineering, Design, Drafting, Architectural, Project Management and other

- **Site Surveys** Type- Equipment, system analysis, operational, architectural and other

Instructions to Respondents

- ◆ **Submission of Response**
 - Only sealed responses will be accepted. Faxed or electronically transmitted responses will not be accepted.
 - Sealed responses may be submitted on any or all items, unless stated otherwise. Region 14 ESC reserves the right to reject or accept any response.
 - Deviations to the terms, conditions and/or specifications shall be conspicuously noted in writing by the respondent and shall be included with the response.
 - Withdrawal of response will not be allowed for a period of 120 days following the opening. Pricing will remain firm for 120 days from submittal.
- ◆ **Required Proposal Format**
 - Responses shall be provided in a three-ring binder or report cover using 8.5 x 11 paper clearly identified with the name of Respondents company and solicitation responding to on the outside front cover and vertical spine. Two (2) bound and signed copies of the proposals and Two (2) electronic copies on CD, DVD, or flash drives (i.e. pin or jump drives) shall be provided. Tabs should be used to separate the proposal into sections, as identified below. Respondents failing to organize in the manner listed may be considered non-responsive and may not be evaluated.
- ◆ **Binder Tabs**
 - Tab 1 – Master Agreement / Signature Form
 - Tab 2 – NCPA Administration Agreement
 - Tab 3 – Vendor Questionnaire

- Tab 4 – Vendor Profile
 - Tab 5 – Products and Services / Scope
 - Tab 6 - References
 - Tab 7 - Pricing
 - Tab 8 – Value Added Products and Services
 - Tab 9 – Required Documents
- ◆ Shipping Label
 - The package must be clearly identified as listed below with the solicitation number and name of the company responding. All packages must be sealed and delivered to the Region 14 ESC offices no later than the submittal deadline assigned for this solicitation.

From:	Dan Brandolino
Company:	Midwest Mechanical LLC
Address:	801 Parkview Blvd
City, State, Zip:	Lombard, IL 60148
Solicitation Name and Number:	17-20 HVAC Equipment, Installation, Service and Related Products
Due Date and Time:	July 23, 2020

Tab 1 – Master Agreement

General Terms and Conditions

- ◆ Customer Support
 - The vendor shall provide timely and accurate technical advice and sales support. The vendor shall respond to such requests within one (1) working day after receipt of the request.
- ◆ Disclosures
 - Respondent affirms that he/she has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor or service to a public servant in connection with this contract.
 - The respondent affirms that, to the best of his/her knowledge, the offer has been arrived at independently, and is submitted without collusion with anyone to obtain information or gain any favoritism that would in any way limit competition or give an unfair advantage over other vendors in the award of this contract.
- ◆ Renewal of Contract
 - Unless otherwise stated, all contracts are for a period of one (1) year with an option to renew annually for an additional four (4) years if agreed to by Region 14 ESC and the vendor.

- ◆ Funding Out Clause
 - Any/all contracts exceeding one (1) year shall include a standard “funding out” clause. A contract for the acquisition, including lease, of real or personal property is a commitment of the entity’s current revenue only, provided the contract contains either or both of the following provisions:
 - Retains to the entity the continuing right to terminate the contract at the expiration of each budget period during the term of the contract and is conditioned on a best efforts attempt by the entity to obtain appropriate funds for payment of the contract.

- ◆ Shipments (if applicable)
 - The awarded vendor shall ship ordered products within the written estimate of delivery time by the vendor to the entity after the receipt of the order unless modified. If a product cannot be shipped within that time, the awarded vendor shall notify the entity placing the order as to why the product has not shipped and shall provide an estimated shipping date. At this point the participating entity may cancel the order if estimated shipping time is not acceptable. All deliveries shall be freight prepaid, F.O.B. destination.

- ◆ Tax Exempt Status
 - Since this is a national contract, knowing the tax laws in each state is the sole responsibility of the vendor.

- ◆ Payments
 - The entity using the contract will make payments directly to the awarded vendor or their affiliates as long as written request and approval by NCPA is provided to the awarded vendor.

- ◆ Adding authorized distributors/dealers
 - Awarded vendors may submit a list of distributors/partners/resellers to sell under their contract throughout the life of the contract. Vendor must receive written approval from NCPA before such distributors/partners/resellers considered authorized.
 - Purchase orders and payment can only be made to awarded vendor or distributors/business partners/resellers previously approved by NCPA.
 - Pricing provided to members by added distributors or dealers must also be less than or equal to the pricing offered by the awarded contract holder.
 - All distributors/partners/resellers are required to abide by the Terms and Conditions of the vendor’s agreement with NCPA.

- ◆ Pricing
 - All pricing submitted to shall include, as a cost of sale to the awarded vendor, the administrative fee to be remitted to NCPA by the awarded vendor. It is the awarded vendor’s responsibility to keep all pricing up to date and on file with NCPA. For those

pricing requiring annual or periodic pricing updates, awarded vendors are expected to provide these changes as submitted.

- All deliveries shall be freight prepaid, F.O.B. destination and shall be included in all pricing offered unless otherwise clearly stated in writing

◆ Warranty

- Proposals should address each of the following:
 - Applicable warranty and/or guarantees of equipment and installations including any conditions and response time for repair and/or replacement of any components during the warranty period.
 - Availability of replacement parts
 - Life expectancy of equipment under normal use
 - Detailed information as to proposed return policy on all equipment
- All supplies, equipment and services shall include manufacturer's minimum standard warranty and one (1) year labor warranty unless otherwise agreed to in writing.

◆ Administrative Fee

- All pricing submitted to Region 14 ESC shall include the administrative fee to be remitted to NCPA by the awarded vendor.
- The awarded vendor agrees to pay administrative fees to NCPA of **three percent (3%)**.

◆ Audit rights

- Vendor shall, at Vendor's sole expense, maintain appropriate due diligence of all purchases made by any entity that utilizes this Agreement. NCPA and Region 14 ESC each reserve the right to audit the accounting for a period of three (3) years from the time such purchases are made. This audit right shall survive termination of this Agreement for a period of one (1) year from the effective date of termination. In the State of New Jersey, this audit right shall survive termination of this Agreement for a period of five (5) years from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request.
- Region 14 ESC shall have the authority to conduct random audits of Vendor's pricing that is offered to eligible entities at Region 14 ESC's sole cost and expense. Notwithstanding the foregoing, in the event that Region 14 ESC is made aware of any pricing being offered to eligible agencies that is materially inconsistent with the pricing under this agreement, Region 4 ESC shall have the ability to conduct an extensive audit of Vendor's pricing at Vendor's sole cost and expense. Region 14 ESC may conduct the audit internally or may engage a third-party auditing firm. In the event of an audit, the requested materials shall be provided in the format and at the location designated by Region 14 ESC or NCPA.

◆ Indemnity

- The awarded vendor shall protect, indemnify, and hold harmless Region 14 ESC and its participants, administrators, employees and agents against all claims, damages, losses and expenses arising out of or resulting from the actions of the vendor, vendor employees or

vendor subcontractors in the preparation of the solicitation and the later execution of the contract.

◆ Licenses and Duty to keep current licenses

- Vendor shall maintain in current status all federal, state and local licenses, bonds and permits required for the operation of the business conducted by vendor. Vendor shall remain fully informed of and in compliance with all ordinances and regulations pertaining to the lawful provision of services under the contract. Region 14 ESC reserves the right to stop work and/or cancel the contract of any vendor whose license(s) expire, lapse, are suspended or terminated. Vendor is expected to provide all required license(s) with this RFP response.

◆ Franchise Tax

- The respondent hereby certifies that he/she is not currently delinquent in the payment of any franchise taxes.

◆ Supplemental Agreements

- The entity participating in this contract and awarded vendor may enter into a separate supplemental agreement to further define the level of service requirements over and above the minimum defined in this contract i.e. invoice requirements, ordering requirements, specialized delivery, etc. Any supplemental agreement developed as a result of this contract is exclusively between the participating entity and awarded vendor.

◆ Certificates of Insurance

- Certificates of insurance shall be delivered to the Public Agency prior to commencement of work. The insurance company shall be licensed in the applicable state in which work is being conducted. The awarded vendor shall give the participating entity a minimum of ten (10) days notice prior to any modifications or cancellation of policies. The awarded vendor shall require all subcontractors performing any work to maintain coverage as specified.

◆ Legal Obligations

- It is the Respondent's responsibility to be aware of and comply with all local, state, and federal laws governing the sale of products/services identified in this RFP and any awarded contract and shall comply with all while fulfilling the RFP. Applicable laws and regulation must be followed even if not specifically identified herein.

◆ Protest

- A protest of an award or proposed award must be filed in writing within ten (10) days from the date of the official award notification and must be received by 5:00 pm CST. No protest shall lie for a claim that the selected Vendor is not a responsible Bidder. Protests shall be filed with Region 14 ESC and shall include the following:

- Name, address and telephone number of protester
- Original signature of protester or its representative
- Identification of the solicitation by RFP number
- Detailed statement of legal and factual grounds including copies of relevant documents and the form of relief requested
- Any protest review and action shall be considered final with no further formalities being considered.
- ◆ Force Majeure
 - If by reason of Force Majeure, either party hereto shall be rendered unable wholly or in part to carry out its obligations under this Agreement then such party shall give notice and full particulars of Force Majeure in writing to the other party within a reasonable time after occurrence of the event or cause relied upon, and the obligation of the party giving such notice, so far as it is affected by such Force Majeure, shall be suspended during the continuance of the inability then claimed, except as hereinafter provided, but for no longer period, and such party shall endeavor to remove or overcome such inability with all reasonable dispatch.
 - The term Force Majeure as employed herein, shall mean acts of God, strikes, lockouts, or other industrial disturbances, act of public enemy, orders of any kind of government of the United States or any civil or military authority; insurrections; riots; epidemics; landslides; lighting; earthquake; fires; hurricanes; storms; floods; washouts; droughts; arrests; restraint of government and people; civil disturbances; explosions, breakage or accidents to machinery, pipelines or canals, or other causes not reasonably within the control of the party claiming such inability. It is understood and agreed that the settlement of strikes and lockouts shall be entirely within the discretion of the party having the difficulty, and that the above requirement that any Force Majeure shall be remedied with all reasonable dispatch shall not require the settlement of strikes and lockouts by acceding to the demands of the opposing party or parties when such settlement is unfavorable in the judgment of the party having the difficulty
- ◆ Prevailing Wage
 - It shall be the responsibility of the Vendor to comply, when applicable, with the prevailing wage legislation in effect in the jurisdiction of the purchaser. It shall further be the responsibility of the Vendor to monitor the prevailing wage rates as established by the appropriate department of labor for any increase in rates during the term of this contract and adjust wage rates accordingly.
- ◆ Miscellaneous
 - Either party may cancel this contract in whole or in part by providing written notice. The cancellation will take effect 30 business days after the other party receives the notice of

cancellation. After the 30th business day all work will cease following completion of final purchase order.

◆ Cancellation for Non-Performance or Contractor Deficiency

- Region 14 ESC may terminate any contract if awarded vendor has not used the contract, or if purchase volume is determined to be low volume in any 12-month period.
- Region 14 ESC reserves the right to cancel the whole or any part of this contract due to failure by contractor to carry out any obligation, term or condition of the contract.
- Region 14 ESC may issue a written deficiency notice to contractor for acting or failing to act in any of the following:
 - ◆ Providing material that does not meet the specifications of the contract;
 - ◆ Providing work and/or material that was not awarded under the contract;
 - ◆ Failing to adequately perform the services set forth in the scope of work and specifications;
 - ◆ Failing to complete required work or furnish required materials within a reasonable amount of time;
 - ◆ Failing to make progress in performance of the contract and/or giving Region 14 ESC reason to believe that contractor will not or cannot perform the requirements of the contract;
- Upon receipt of a written deficiency notice, contractor shall have ten (10) days to provide a satisfactory response to Region 14 ESC. Failure to adequately address all issues of concern may result in contract cancellation. Upon cancellation under this paragraph, all goods, materials, work, documents, data and reports prepared by contractor under the contract shall become the property of Region 14 ESC on demand.

◆ Open Records Policy

- Because Region 14 ESC is a governmental entity responses submitted are subject to release as public information after contracts are executed. If a vendor believes that its response, or parts of its response, may be exempted from disclosure, the vendor must specify page-by-page and line-by-line the parts of the response, which it believes, are exempt. In addition, the respondent must specify which exception(s) are applicable and provide detailed reasons to substantiate the exception(s).
- The determination of whether information is confidential and not subject to disclosure is the duty of the Office of Attorney General (OAG). Region 14 ESC must provide the OAG sufficient information to render an opinion and therefore, vague and general claims to confidentiality by the respondent are not acceptable. Region 14 ESC must comply with the opinions of the OAG. Region 14 ESC assumes no responsibility for asserting legal arguments on behalf of any vendor. Respondent are advised to consult with their legal counsel concerning disclosure issues resulting from this procurement process and to take precautions to safeguard trade secrets and other proprietary information.

If awarded vendor is going to do business in the State of Arizona, the following terms and conditions shall apply

◆ Cancellation for Conflict of Interest

- Per A.R.S. 38-511 a School District/public entity may cancel this Contract within three (3) years after Contract execution without penalty or further obligation if any person

significantly involved in initiating, negotiating, securing, drafting, or creating the Contract on behalf of the School District/public entity is, or becomes at any time while the Contract or an extension the Contract is in effect, an employee of or a consultant to any other party to this Contract with respect to the subject matter of the Contract. The cancellation shall be effective when the awarded vendor receives written notice of the cancellation unless the notice specifies a later time.

◆ Registered Sex Offender Restriction

- Pursuant to this order, the awarded vendor agrees by acceptance of this order that no employee of the awarded vendor or a subcontractor of the awarded vendor, who has been adjudicated to be a registered sex offender, will perform work on any School District's premises or equipment at any time when District students are, or are reasonably expected to be, present. The awarded vendor further agrees by acceptance of this order that a violation of this condition shall be considered a material breach and may result in a cancellation of the order at the District's discretion.

◆ Contract's Employment Eligibility

- By entering the contract, awarded vendor warrants compliance with A.R.S. 41-4401, A.R.S. 23-214, the Federal Immigration and Nationality Act (FINA), and all other federal immigration laws and regulations. A School District/public entity may request verification of compliance from any contractor or subcontractor performing work under this contract. A School District/public entity reserves the right to confirm compliance in accordance with applicable laws. Should the School District/public entity suspect or find that the awarded vendor or any of its subcontractors are not in compliance, the School District/public entity may pursue any and all remedies allowed by law, including, but not limited to: suspension of work, termination of the contract for default, and suspension and/or debarment of the awarded vendor. All costs necessary to verify compliance are the responsibility of the award vendor.

◆ Terrorism Country Divestments

- Per A.R.S. 35-392, a School District/public entity is prohibited from purchasing from a company that is in violation of the Export Administration Act.

◆ Fingerprint Checks

- If required to provide services on School District/public entity's property, awarded vendor shall comply with A.R.S. 15-511(h).

◆ Indemnification

- Notwithstanding all other provisions of this agreement, School District/public entity does not agree to accept responsibility, waive liability, or indemnify the awarded vendor, in

whole or in part, for the errors, negligence, hazards, liabilities, contract breach and/or omissions of the awarded vendor, its employees and/or agents.

Process

Region 14 ESC will evaluate proposals in accordance with, and subject to, the relevant statutes, ordinances, rules, and regulations that govern its procurement practices. NCPA will assist Region 14 ESC in evaluating proposals. Award(s) will be made to the prospective vendor(s) whose response is

determined to be the most advantageous to Region 14 ESC, NCPA, and its participating agencies. To qualify for evaluation, response must have been submitted on time, and satisfy all mandatory requirements identified in this document.

- ◆ **Contract Administration**
 - The contract will be administered by Region 14 ESC. The National Program will be administered by NCPA on behalf of Region 14 ESC.
- ◆ **Contract Term**
 - The contract term will be for one (1) year starting from the date of the award. The contract may be renewed for up to four (4) additional one-year terms or any combination of time equally not more than 4 years.
 - It should be noted that maintenance/service agreements may be issued for up to (5) years under this contract even if the contract only lasts for the initial term of the contract. NCPA will monitor any maintenance agreements for the term of the agreement provided they are signed prior to the termination or expiration of this contract.
- ◆ **Contract Waiver**
 - Any waiver of any provision of this contract shall be in writing and shall be signed by the duly authorized agent of Region 14 ESC. The waiver by either party of any term or condition of this contract shall not be deemed to constitute waiver thereof nor a waiver of any further or additional right that such party may hold under this contract.
- ◆ **Products and Services additions**
 - Products and Services may be added to the resulting contract during the term of the contract by written amendment, to the extent that those products and services are within the scope of this RFP and has written approval of NCPA and Region 14 ESC.
- ◆ **Competitive Range**
 - It may be necessary for Region 14 ESC to establish a competitive range. Responses not in the competitive range are unacceptable and do not receive further award consideration.
- ◆ **Deviations and Exceptions**
 - Deviations or exceptions stipulated in response may result in disqualification. It is the intent of Region 14 ESC to award a vendor's complete line of products and/or services, when possible.
- ◆ **Estimated Quantities**
 - The estimated dollar volume of Products and Services purchased under the proposed Master Agreement is 20 million dollars annually. This estimate is based on the anticipated volume of Region 14 ESC and current sales within the NCPA program. There is no guarantee or commitment of any kind regarding usage of any contracts resulting from this solicitation
- ◆ **Evaluation**
 - Region 14 ESC will review and evaluate all responses in accordance with, and subject to, the relevant statutes, ordinances, rules and regulations that govern its procurement

practices. NCPA will assist the lead agency in evaluating proposals. Recommendations for contract awards will be based on multiple factors, each factor being assigned a point value based on its importance.

- ◆ Formation of Contract
 - A response to this solicitation is an offer to contract with Region 14 ESC based upon the terms, conditions, scope of work, and specifications contained in this request. A solicitation does not become a contract until it is accepted by Region 14 ESC. The prospective vendor must submit a signed Signature Form with the response thus, eliminating the need for a formal signing process.
- ◆ NCPA Administrative Agreement
 - The vendor will be required to enter and execute the National Cooperative Purchasing Alliance Administration Agreement with NCPA upon award with Region 14 ESC. The agreement establishes the requirements of the vendor with respect to a nationwide contract effort.
- ◆ Clarifications / Discussions
 - Region 14 ESC may request additional information or clarification from any of the respondents after review of the proposals received for the sole purpose of elimination minor irregularities, informalities, or apparent clerical mistakes in the proposal. Clarification does not give respondent an opportunity to revise or modify its proposal, except to the extent that correction of apparent clerical mistakes results in a revision. After the initial receipt of proposals, Region 14 ESC reserves the right to conduct discussions with those respondent's whose proposals are determined to be reasonably susceptible of being selected for award. Discussions occur when oral or written communications between Region 14 ESC and respondents are conducted for the purpose clarifications involving information essential for determining the acceptability of a proposal or that provides respondent an opportunity to revise or modify its proposal. Region 14 ESC will not assist respondent bring its proposal up to the level of other proposals through discussions. Region 14 ESC will not indicate to respondent a cost or price that it must meet to neither obtain further consideration nor will it provide any information about other respondents' proposals or prices.
- ◆ Multiple Awards
 - Multiple Contracts may be awarded as a result of the solicitation. Multiple Awards will ensure that any ensuing contracts fulfill current and future requirements of the diverse and large number of participating public agencies.
- ◆ Past Performance
 - Past performance is relevant information regarding a vendor's actions under previously awarded contracts; including the administrative aspects of performance; the vendor's history of reasonable and cooperative behavior and commitment to customer satisfaction; and generally, the vendor's businesslike concern for the interests of the customer.

Evaluation Criteria

- ◆ Product & Services/Pricing (40 points)
 - Respondent(s)' products and services (e.g.; quality and breadth of product(s)/service(s), description(s) quality, reputation in the marketplace, average on time delivery rate and historical shipping timelines, return and restocking policies and applicable fees, average Fill Rate, shipping charges and other)
 - Competitive Level of Pricing for vendor's available products and services
 - Warranties on Respondent(s)' products and services (e.g.; availability of standard/extended warranties, pricing, detailed descriptions, ease of process and others)
 - Evidence of the ability of Respondent(s)' products and services to save members time and money (e.g.; breadth of service departments, technological advances, personnel experience, product(s) efficiencies, and others)
 - Other factors relevant to this section as submitted by the responder(s)

- ◆ Ability to Provide and Perform the Required Services for the Contract (25 points)
 - Response to emergency orders & service (e.g.; response time, breadth of service coverage, strength of meeting service and warranty needs of members)
 - Customer service/problem resolution (e.g.; technical abilities of service personnel; quality of processes,)
 - Invoicing process (e.g.; ease of use; transparency, billing resolutions)
 - Respondent(s)' processes, and quality of organizational structure
 - Contract implementation/Customer transition
 - Financial condition of vendor
 - Offeror's safety record (e.g.; benchmarks, lost hours, reporting)
 - Instructional materials and training (e.g.; administrative documentation, internal technical training, training of agencies)
 - Other factors relevant to this section as submitted by the proposer

- ◆ References (10 points)
 - A minimum of ten (10) customer references for product and/or services of similar scope dating within past 3 years

- ◆ Qualification and Experience (15 points)
 - Respondent(s)' reputation in the marketplace
 - Past relationship with Region 14 ESC and/or NCPA members
 - Experience with cooperative selling (e.g.; number of other cooperatives, Exhibited understanding of cooperative purchasing)
 - Experience and qualification of key employees
 - Location and number of sales persons who will work on this contract
 - Marketing plan and capability

- Past experience working with the government sector
 - Past litigation, bankruptcy, reorganization, state investigations of entity or current officers and directors
 - Completeness of response (e.g.; filled out all sections, answered all questions, provided pricing)
 - Other factors relevant to this section as submitted by the proposer
- ◆ Value Added Services Description, Products and/or Services (10 points)
- Marketing and agency Training
 - Customer Service
 - Sales force training (e.g.; internal training plan, corporate officer involvement, orientation commitment)
 - Marketing plan and capability (e.g.; contract rollout plan, benchmarks, goals)
 - Green initiative(s) (e.g.; philosophy, certificates, awards)
 - Quality and breadth of value add(s)
 - Other factors relevant to this section as submitted by the proposer

Signature Form

The undersigned hereby proposes and agrees to furnish goods and/or services in strict compliance with the terms, specifications and conditions at the prices proposed within response unless noted in writing. The undersigned further certifies that he/she is an officer of the company and has authority to negotiate and bind the company named below and has not prepared this bid in collusion with any other Respondent and that the contents of this proposal as to prices, terms or conditions of said bid have not been communicated by the undersigned nor by any employee or agent to any person engaged in this type of business prior to the official opening of this proposal.

Prices are guaranteed: **120 days**

Company name	Midwest Mechanical LLC
Address	801 Parkview Blvd
City/State/Zip	Lombard, IL 60148
Telephone No.	630-850-8688
Fax No.	630-655-0730
Email address	Sam.giampapa@midwestmech.com
Printed name	Sam Giampapa
Position with company	President
Authorized signature	

Tab 2 – NCPA Administration Agreement

This Administration Agreement is made as of August 24, 2020, by and between National Cooperative Purchasing Alliance (“NCPA”) and Midwest Mechanical LLC (“Vendor”).

Recitals

WHEREAS, Region 14 ESC has entered into a certain Master Agreement dated August 24, 2020, referenced as Contract Number 02-91, by and between Region 14 ESC and Vendor, as may be amended from time to time in accordance with the terms thereof (the “Master Agreement”), for the purchase of HVAC Equipment, Installation, Service, & Related Products;

WHEREAS, said Master Agreement provides that any state, city, special district, local government, school district, private K-12 school, technical or vocational school, higher education institution, other government agency or nonprofit organization (hereinafter referred to as “public agency” or collectively, “public agencies”) may purchase products and services at the prices indicated in the Master Agreement;

WHEREAS, NCPA has the administrative and legal capacity to administer purchases under the Master Agreement to public agencies;

WHEREAS, NCPA serves as the administrative agent for Region 14 ESC in connection with other master agreements offered by NCPA

WHEREAS, Region 14 ESC desires NCPA to proceed with administration of the Master Agreement;

WHEREAS, NCPA and Vendor desire to enter into this Agreement to make available the Master Agreement to public agencies on a national basis;

NOW, THEREFORE, in consideration of the payments to be made hereunder and the mutual covenants contained in this Agreement, NCPA and Vendor hereby agree as follows:

◆ General Terms and Conditions

- The Master Agreement, attached hereto as Tab 1 and incorporated herein by reference as though fully set forth herein, and the terms and conditions contained therein shall apply to this Agreement except as expressly changed or modified by this Agreement.
- NCPA shall be afforded all of the rights, privileges and indemnifications afforded to Region 14 ESC under the Master Agreement, and such rights, privileges and indemnifications shall accrue and apply with equal effect to NCPA under this Agreement including, but not limited to, the Vendor’s obligation to provide appropriate insurance and certain indemnifications to Region 14 ESC.
- Vendor shall perform all duties, responsibilities and obligations required under the Master Agreement in the time and manner specified by the Master Agreement.
- NCPA shall perform all of its duties, responsibilities, and obligations as administrator of purchases under the Master Agreement as set forth herein, and Vendor acknowledges that NCPA shall act in the capacity of administrator of purchases under the Master Agreement.
- With respect to any purchases made by Region 14 ESC or any Public Agency pursuant to the Master Agreement, NCPA (a) shall not be construed as a dealer, re-marketer, representative, partner, or agent of any type of Vendor, Region 14 ESC, or such Public Agency, (b) shall not be obligated, liable or responsible (i) for any orders made by Region

14 ESC, any Public Agency or any employee of Region 14 ESC or Public Agency under the Master Agreement, or (ii) for any payments required to be made with respect to such order, and (c) shall not be obligated, liable or responsible for any failure by the Public Agency to (i) comply with procedures or requirements of applicable law, or (ii) obtain the due authorization and approval necessary to purchase under the Master Agreement. NCPA makes no representations or guaranties with respect to any minimum purchases required to be made by Region 14 ESC, any Public Agency, or any employee of Region 14 ESC or Public Agency under this Agreement or the Master Agreement.

- The Public Agency participating in the NCPA contract and Vendor may enter into a separate supplemental agreement to further define the level of service requirements over and above the minimum defined in this contract i.e. invoice requirements, ordering requirements, specialized delivery, etc. Any supplemental agreement developed as a result of this contract is exclusively between the Public Agency and Vendor. NCPA, its agents, members and employees shall not be made party to any claim for breach of such agreement.

◆ **Term of Agreement**

- This Agreement shall be in effect so long as the Master Agreement remains in effect, provided, however, that the obligation to pay all amounts owed by Vendor to NCPA through the termination of this Agreement and all indemnifications afforded by Vendor to NCPA shall survive the term of this Agreement.

◆ **Fees and Reporting**

- The awarded vendor shall electronically provide NCPA with a detailed monthly or quarterly report showing the dollar volume of all sales under the contract for the previous month or quarter. Reports shall be sent via e-mail to NCPA offices at reporting@ncpa.us. Reports are due on the fifteenth (15th) day after the close of the previous month or quarter. It is the responsibility of the awarded vendor to collect and compile all sales under the contract from participating members and submit one (1) report. The report shall include at least the following information as listed in the example below:

Agency Name	State	Zip Code	Date	PO Number	RQN Number	Sale Amount	Admin Fee (3%)
							Total _____

- Each month or quarter NCPA will invoice the vendor based on the total of sale amount(s) reported. From the invoice the vendor shall pay to NCPA the administrative fee on the amount of the agency's purchase order less any applicable sales tax and Performance and/or Payment bond cost. Deadline for term of payment will be included in the invoice NCPA provides.
- Supplier shall maintain an accounting of all purchases made by Public Agencies under the Master Agreement. NCPA and Region 14 ESC reserve the right to audit the accounting for a period of four (4) years from the date NCPA receives the accounting. In the event of such an audit, the requested materials shall be provided at the location designated by Region 14 ESC or NCPA. In the event such audit reveals an underreporting of Contract Sales and a resulting underpayment of administrative fees, Vendor shall promptly pay NCPA the amount of such underpayment, together with interest on such amount and shall be obligated to reimburse NCPA's costs and expenses for such audit.

◆ General Provisions

- This Agreement supersedes any and all other agreements, either oral or in writing, between the parties hereto with respect to the subject matter hereof, and no other agreement, statement, or promise relating to the subject matter of this Agreement which is not contained herein shall be valid or binding.
- Awarded vendor agrees to allow NCPA to use their name and logo within website, marketing materials and advertisement. Any use of NCPA name and logo or any form of publicity regarding this contract by awarded vendor must have prior approval from NCPA.
- If any action at law or in equity is brought to enforce or interpret the provisions of this Agreement or to recover any administrative fee and accrued interest, the prevailing party shall be entitled to reasonable attorney's fees and costs in addition to any other relief to which such party may be entitled.
- Neither this Agreement nor any rights or obligations hereunder shall be assignable by Vendor without prior written consent of NCPA, provided, however, that the Vendor may, without such written consent, assign this Agreement and its rights and delegate its obligations hereunder in connection with the transfer or sale of all or substantially all of its assets or business related to this Agreement, or in the event of its merger, consolidation, change in control or similar transaction. Any permitted assignee shall assume all assigned obligations of its assignor under this Agreement.
- This Agreement and NCPA's rights and obligations hereunder may be assigned at NCPA's sole discretion, to an existing or newly established legal entity that has the authority and capacity to perform NCPA's obligations hereunder
- All written communications given hereunder shall be delivered to the addresses as set forth below.

National Cooperative Purchasing Alliance:

Vendor: Midwest Mechanical

Name: Matthew Mackel

Name: Daniel T. Brandolino

Title: Director, Business Development

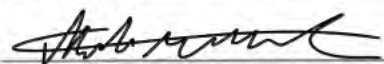
Title: Vice President- Public Sector

Address: PO Box 701273

Address: 801 Parkview Blvd

Houston, TX 77270

Lombard, IL 60148

Signature: 

Signature: 

Date: August 24, 2020

Date: 7/7/20

NCPA Registered Vendor Quotation Number

RFP responders are requested to agree to a quotation number registration program to provide consistency and faster service for our facility awarded vendors, agency members and participants. The process will require Facility Contract holders to register and receive a NCPA Vendor Registered Quotation Number that must be prominently displayed on each proposal(s) that you present to the agencies. The system will track Facility transactions from the initial proposal stage to the completion of each project. NCPA has assembled an experienced Facilities Management Team that stands ready and willing to assist its vendors in providing quality services to the awarded vendor's organization. Failure to receive the Vendor Registered Quotation Number can result in potential delays to your services and the only acceptable proposals need to have a NCPA Vendor Registered Quotation Number.

NCPA Registered Vendor Quotation Number Process

Fill out the form on the Facilities page at www.NCPA.us

***Click on RQN Logo at the bottom of the home page and a form will pop up.**

*** Fill out and submit.**

- All registered vendor quotation number requests must be submitted and a proposal number received before you present it to your potential customer.
- You will have a response with a NCPA Vendor Registered Quotation Number within 5 minutes.
- Include the quotation number on all proposals.

This document acknowledges that you have received and agree to the details, directions and expectations of the NCPA Vendor Registered Quotation Number process.

Date: July 7, 2020

RFP Number: #17-20 HVAC Equipment, Installation, Services and Related Products

Company Name: Midwest Mechanical

Printed Name: Sam Giampapa

Signature: 

Tab 3 – Vendor Questionnaire

Please provide responses to the following questions that address your company's operations, organization, structure, and processes for providing products and services.

◆ States Covered

- Bidder must indicate any and all states where products and services can be offered.
- Please indicate the price co-efficient for each state if it varies.

50 States & District of Columbia (Selecting this box is equal to checking all boxes below)

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Alabama | <input checked="" type="checkbox"/> Maryland | <input checked="" type="checkbox"/> South Carolina |
| <input type="checkbox"/> Alaska | <input checked="" type="checkbox"/> Massachusetts | <input type="checkbox"/> South Dakota |
| <input checked="" type="checkbox"/> Arizona | <input type="checkbox"/> Michigan | <input checked="" type="checkbox"/> Tennessee |
| <input type="checkbox"/> Arkansas | <input checked="" type="checkbox"/> Minnesota | <input checked="" type="checkbox"/> Texas |
| <input type="checkbox"/> California | <input type="checkbox"/> Mississippi | <input checked="" type="checkbox"/> Utah |
| <input checked="" type="checkbox"/> Colorado | <input type="checkbox"/> Missouri | <input type="checkbox"/> Vermont |
| <input checked="" type="checkbox"/> Connecticut | <input type="checkbox"/> Montana | <input checked="" type="checkbox"/> Virginia |
| <input checked="" type="checkbox"/> Delaware | <input type="checkbox"/> Nebraska | <input checked="" type="checkbox"/> Washington |
| <input checked="" type="checkbox"/> District of Columbia | <input type="checkbox"/> Nevada | <input checked="" type="checkbox"/> West Virginia |
| <input checked="" type="checkbox"/> Florida | <input checked="" type="checkbox"/> New Hampshire | <input checked="" type="checkbox"/> Wisconsin |
| <input checked="" type="checkbox"/> Georgia | <input checked="" type="checkbox"/> New Jersey | <input type="checkbox"/> Wyoming |
| <input type="checkbox"/> Hawaii | <input type="checkbox"/> New Mexico | |
| <input type="checkbox"/> Idaho | <input checked="" type="checkbox"/> New York | |
| <input checked="" type="checkbox"/> Illinois | <input checked="" type="checkbox"/> North Carolina | |
| <input checked="" type="checkbox"/> Indiana | <input type="checkbox"/> North Dakota | |
| <input type="checkbox"/> Iowa | <input checked="" type="checkbox"/> Ohio | |
| <input type="checkbox"/> Kansas | <input type="checkbox"/> Oklahoma | |

Kentucky

Oregon

Louisiana

Pennsylvania

Maine

Rhode Island

All US Territories and Outlying Areas (Selecting this box is equal to checking all boxes below)

American Samoa

Northern Marina Islands

Federated States of Micronesia

Puerto Rico

Guam

U.S. Virgin Islands

Midway Islands

◆ **Minority and Women Business Enterprise (MWBE) and (HUB) Participation**

➤ It is the policy of some entities participating in NCPA to involve minority and women business enterprises (MWBE) and historically underutilized businesses (HUB) in the purchase of goods and services. Respondents shall indicate below whether or not they are an M/WBE or HUB certified.

▪ **Minority / Women Business Enterprise**

- Respondent Certifies that this firm is a M/WBE

▪ **Historically Underutilized Business**

- Respondent Certifies that this firm is a HUB

◆ **Residency**

➤ Responding Company's principal place of business is in the city of Lombard, State of Illinois

◆ **Felony Conviction Notice**

➤ Please Check Applicable Box;

A publically held corporation; therefore, this reporting requirement is not applicable.

Is not owned or operated by anyone who has been convicted of a felony.

Is owned or operated by the following individual(s) who has/have been convicted of a felony

➤ If the 3rd box is checked, a detailed explanation of the names and convictions must be attached.

◆ **Distribution Channel**

➤ Which best describes your company's position in the distribution channel:

Manufacturer Direct

Certified education/government reseller

Authorized Distributor

Manufacturer marketing through reseller

Value-added reseller

Other: _____

◆ **Processing Information**

➤ Provide company contact information for the following:

- Sales Reports / Accounts Payable

Contact Person: [Patricia Watson](#)

Title: [Director of Accounting Services](#)

Company: [Midwest Mechanical Group, LLC](#)

Address: [801 Parkview Blvd](#)

City: [Lombard](#) State: [IL](#) Zip: [60148](#)

Phone: [630-850-8617](#)

Email: patricia.watson@midwestmech.com

- **Purchase Orders**

Contact Person: [Julie Stahurski](#)

Title: [Business Systems Specialist](#)

Company: [Midwest Mechanical Group, LLC](#)

Address: [801 Parkview Blvd](#)

City: [Lombard](#) State: [IL](#) Zip: [60148](#)

Phone: [630-850-8680](#)

Email: julie.stahurski@midwestmech.com

- **Sales and Marketing**

Contact Person: [Dan Brandolino](#)

Title: [Vice President- Public Sector and SaaS](#)

Company: [Midwest Mechanical Group, LLC](#)

Address: [801 Parkview Blvd](#)

City: [Lombard](#) State: [IL](#) Zip: [60148](#)

Phone: +1 (630) 850-8688

Email: dan.brandolino@midwestmech.com

◆ Pricing Information

- In addition to the current typical unit pricing furnished herein, the Vendor agrees to offer all future product introductions at prices that are proportionate to Contract Pricing.
 - If answer is no, attach a statement detailing how pricing for NCPA participants would be calculated for future product introductions.
 Yes No
- Pricing submitted includes the required NCPA administrative fee. The NCPA fee is calculated based on the invoice price to the customer.
 Yes No
- Vendor will provide additional discounts for purchase of a guaranteed quantity.
 Yes No

Tab 4 – Vendor Profile

Please provide answers to the following questions in a clear and concise manner. Provide the question number in your response:

GENERAL:

1. Company's official registered name.

Midwest Mechanical Group, LLC.

2. Brief history of your company, including the year it was established.

Our Midwest office is located at 801 Parkview Blvd., in Lombard, IL. Midwest was started in 1974 by an innovative, local entrepreneur by the name of Ken Beard. Ken used the expertise that he developed selling HVAC systems and solutions for a large manufacturer, to develop a business plan, which supported his dream to bring premium design/build solutions to the Chicago market. Over the years, Midwest has grown into one of the largest design/build and servicing contractors in the Chicago area.

Midwest Mechanical exists for our customers, to provide service, design/retrofit, and control solutions that achieve the most operationally efficient plumbing and HVAC systems throughout our service territory.

Our office is home to 105 full time office employees. The employees provide a wide range of expertise from project sales, service sales, engineering, project management, and customer service. We provide both design/build turnkey solutions and service for all HVAC and control systems. Our service department has 60 trucks which are always busy serving customers by keeping their heating and cooling systems running well.

Our local Chicago office has fully staffed departments dedicated to meeting our customers' needs in each of the following areas:

- **Midwest Mechanical: Provides customers with Performance Contracting solutions which comprise of Energy efficient, environmentally friendly solutions.**
- **Controls: State-of-the-art Facility Management and Control Systems (FMCS) also referred to as Building Automation Systems (BAS);**
- **Service: Total service solutions for our existing building owners including customized maintenance programs and Extended Service Warranty Programs;**

- **Training: Fully equipped local Training Centers that can easily accommodate up to 100 people. Self-study and customized training programs are also available.**

Midwest Mechanical's in-house project team consists of full-time employees that are available to devote up to 100% of their time as required throughout the life of the project. Furthermore, Midwest Mechanical also has an Applications Engineering group comprised of industry experts that provide technical guidance and expertise, both internal and external to Midwest Mechanical, in the areas of system design, control integration and product development.

In 2018, Midwest Mechanical was selected through a national RFP, to have their offering available through a cooperative purchasing contract managed by NCPA. This co-op contract has led to tremendous growth for Midwest Mechanical in the public sector. Our goal is continued growth in the public sector by finding new ways to offer additional value to our customers.

3. Company's Dun & Bradstreet (D&B) number.
D&B # 104265090

4. Corporate office location.

**801 Parkview Blvd.
Lombard, IL 60148**

5. List number of employees either nationally or regionally (if your response is not all states) with breakdown of direct sales, sales support, service technicians, engineering support and administration.

Total Employees	111
Direct Sales	17
Sales support	2
Service Technicians	67
Engineering	3
Administration	22

6. List the number and location of offices, or service centers for all states being offered in solicitation. Additionally, list the names of key contacts at each location with title, address, phone and e-mail address.

Midwest Mechanical has one main office located at 801 Parkview Blvd., Lombard, IL 60148


Key contacts are:

Sam Giampapa
President
801 Parkview Blvd
Lombard, IL 60148
Sam.giampapa@midwestmech.com
630-850-8697

Dan Brandolino
Vice President-Public Sector
801 Parkview Blvd
Lombard, IL 60148
Dan.brandolino@midwestmech.com
630-487-8961

7. Please provide contact information for the person(s) who will be responsible for the following areas, including resumes:

a.	Sales	Dan Brandolino	630-850-8688	Dan.brandolino@midwestmech.com
b.	Sales Support	Lyle Weseloh	630-850-8725	lyle.weseloh@midwestmech.com
c.	Marketing	Donna Walt	630-850-8699	Donna.walt@midwestmech.com
d.	Financial Reporting	Neal Johnson	630-850-8665	neal.johnson@midwestmech.com
e.	Executive Support	Sam Giampapa	630-850-8697	Sam.giampapa@midwestmech.com

Name of Project Team Member:	Dan Brandolino	
Current Job Title: Primary Office Location: Years with Company:	Vice President- Public Sector and SaaS Lombard, IL 2 Years	
Description of the role and responsibilities this individual will have for the project	Dan is responsible for leading the sales and development efforts for our public sector business which includes Performance contracting. Dan is the lead customer contact for this project.	
Employment History <ul style="list-style-type: none"> • Company Name • Primary job responsibilities • Years with firm 	<ul style="list-style-type: none"> • Trane (6 years)- developed, managed and led Trane’s Solutions team in Chicago which implemented Turnkey projects for public and private sector clients • Chevron Energy Solutions(7 years)- started and managed Chevron’s 8 state Central Region, implementing Performance contracts for the public sector • Exelon Energy Solutions (7 years)- started this division of Exelon to provide performance contracting services to public and federal clients in a 6 state territory 	
Degrees and Certifications	B.S. Mechanical Engineering, University of Illinois- Urbana Champaign	
Energy performance projects this individual has been involved with during their career	<ul style="list-style-type: none"> • Over \$300 million in implemented performance contracts over 25 years • Great Lakes Navy Base (\$100 million in multiple phases) • Joliet School District 86 (\$35 million in multiple phases) • Dolton School District (\$8 million) 	



Name of Project Team Member:
Current Job Title: Primary Office Location: Years with Company:
Description of the role and responsibilities this individual will have for the project
Employment History <ul style="list-style-type: none"> • Company Name • Primary job responsibilities • Years with firm
Degrees and Certifications
Energy performance projects this individual has been involved with during their career

R. Lyle Weseloh, P.E.




Director of Operations

Lombard, IL

2.5 years

Lyle is responsible for leading the operations efforts for our public sector business. Lyle directs and manages operations activities for new public sector project and including project development, engineering, project management and technical services.

- Siemens Industry, Building Technologies Division, Life Science Solutions - Sr Portfolio Manager (3 Years) – Develop, manager and coordinate entire portfolio of Life Science markets for North American region
- Siemens Industry, Building Technologies Division, Energy Services - Product Manager – (3 years) – Developed and drove the Building Performance & Sustainability energy service portfolio strategies to the field offices.
- Chevron Energy solutions – Project Manager – (6 years) - Directly managed project teams in over \$15 million in Performance Contracting projects.
- Siemens Building Technologies – Energy Engineer (7 Years) – Performed energy audits, detailed energy savings calculations, and cost estimates as well as design upgrades to HVAC and lighting systems.
- Master of Business Administration – Roosevelt University
- BS Mechanical Engineering – Southern Illinois University
- Licensed Professional Engineer in the state of Illinois
- Certified Energy Manager – Associate of Energy Engineers
- Valley View School District – (\$4 million)
- Lombard School District 44 – (\$2 million)
- Joliet School District 86 (\$35 million in multiple phases)
- Glenview Park District (\$500 thousand)

<p>Name of Project Team Member:</p>	<p>Jaylen Thompson</p>	
<p>Current Job Title: Primary Office Location: Years with Company:</p>	<p>Account Executive- Public Sector Lombard, IL 3 years</p>	
<p>Description of the role and responsibilities this individual will have for the project</p>	<p>Jaylen's role to lead sales and development efforts in the public sector with a centralized focus on the park district and library markets.</p>	
<p>Employment History</p> <ul style="list-style-type: none"> • Company Name • Primary job responsibilities • Years with firm 	<ul style="list-style-type: none"> • Priority Logistics (1 year) – Territory Sales Manager – Managed a \$425K book of business built in first year. Secured and managed 55 accounts throughout the Chicagoland area • First Midwest Bank/Standard Bank (1 year) – Commercial Credit Analyst – Analyzed and perform underwriting services for business lines of credit up to \$2MM 	
<p>Degrees and Certifications</p>	<p>BBA in Finance and Marketing – University of St. Francis</p>	
<p>Energy performance projects this individual has been involved with during their career</p>	<p>Over \$1.1 million implemented in performance contracts in the park district and library markets in the last 1.5 years</p>	



Name of Project Team Member:	Joseph Senese.
Current Job Title: Primary Office Location: Years with Company:	Project Manager Lombard, IL
Description of the role and responsibilities this individual will have for the project	Joe is responsible developing/ implementing project schedules, purchasing of equipment, material and sub-contractors and is responsible for the day to day managing of the project.
Employment History <ul style="list-style-type: none"> • Company Name • Primary job responsibilities • Years with firm 	<ul style="list-style-type: none"> • Mechanical Concepts of Illinois, Inc. (9 years) Senior Estimator/ Sales • HBC Mechanical, Inc. (4 Years) Owner • Climatemp, Inc. Estimating Sales/Project Manager (10 years)
Degrees and Certifications	BA Business Management – Lewis University
Describe any other relevant experience	<ul style="list-style-type: none"> • Estimated/ Sold over \$150,000,000.00 of public works project in the last nine years.

<p>Name of Project Team Member:</p>	<p>Donna Walt</p>
<p>Current Job Title:</p> <p>Primary Office Location:</p> <p>Years with Company:</p>	<p>Administrative Manager</p> <p>Lombard, IL</p> <p>13 years</p>
<p>Description of the role and responsibilities this individual</p>	<ul style="list-style-type: none"> • Organize promotional events coordinating to ensure proper delivery of all materials. • Manage social media marketing campaigns and day-to-day activities. • HR responsibilities – Coordinate the employment process from interviews to insurance. • Office Manager- coordinate services for the building including IT and maintenance. • Support President and Executive team.
<p>Employment History</p> <ul style="list-style-type: none"> • Company Name • Primary job responsibilities • Years with firm 	<p>ServiceMaster – 25 Years</p> <p>Variety of administrative roles from Employee Benefits Representative to assistant in Chairman’s office</p>
<p>Education</p>	<p>AA-Business Robert Morris University</p>



Name of Project Team Member:
Current Job Title: Primary Office Location: Years with Company:
Description of the role and responsibilities this individual will have for the project
Employment History <ul style="list-style-type: none"> • Company Name • Primary job responsibilities • Years with firm
Degrees and Certifications

Neal Johnson III, CPA, MBA



Chief Financial Officer

Lombard, IL

Responsible for all finance, accounting and information technology.

- W-T Engineering, Inc (4 years) – Treasurer and Chief Financial officer
- Nationair Insurance Agencies, Inc. (7 years) Vice President and Chief Financial officer
- J&M Plating, Inc. (6 years) – Chief Financial Officer

MBA – Northern Illinois University
 BS in Accountancy – University of Illinois
 Certified Public Accountant (Registered License – IL)

Name of Project Team Member:
Current Job Title: Primary Office Location: Years with Company:
Description of the role and responsibilities this individual will have for the project
Employment History <ul style="list-style-type: none"> • Company Name • Primary job responsibilities • Years with firm
Degrees and Certifications
Energy service and turnkey projects individual involved with during their career
Describe any other relevant experience

Sam Giampapa



President
Lombard, IL
4 years

Responsible for the overall leadership of the company, which translates to empowering our employees to deliver the very best client experience, and the most operationally efficient buildings in Chicagoland.

Midwest Mechanical – President – 4 Years

- Strategic focus, direction and growth.
- Oversees all financials aspects of the company and is responsible for P&L performance.

Energy Services – Regional Director – 6 Years

- Responsible for day-to-day sales and business development of energy solutions and related facility and infrastructure projects for K-12 School Districts, Higher Education institutions and Municipalities.

Trane Company – Sales Manager – 13 Years

- Responsible for owner-direct sales via service, equipment repair, equipment replacement and chiller plant controls.

BA - Business – Trinity University

AS - Air Conditioning, Heating and Refrigeration – Triton College

- 1550 LSD – Boiler & Domestic hot water plant and controls upgrade
- South Suburban College – HVAC equipment, VFD, motor and controls
- Evanston Art Center – A/C & Boiler plant, VAV, and controls upgrade
- Lake County Community College – Controls and mechanical project
- Misericordia – Chiller/Boiler plant, air handlers and controls upgrade
- Knox College – Chiller plant, lighting and controls upgrade

Field experience working as an HVAC service technician early in career.

8. Please provide contact information for the person(s) who will be responsible for the following areas, including resumes:
- a. Sales
 - b. Sales Support
 - c. Marketing
 - d. Financial Reporting

Executive Support

a.	Sales	Dan Brandolino	630-850-8688	Dan.brandolino@midwestmech.com
b.	Sales Support	Lyle Weseloh	630-850-8725	Lyle.weseloh@midwestmech.com
c.	Marketing	Donna Walt	630-850-8699	Donna.walt@midwestmech.com
d.	Financial Reporting	Neal Johnson	630-850-8665	Neal.johnson@midwestmech.com
e.	Executive Support	Sam Giampapa	630-850-8697	Sam.giampapa@midwestmech.com

9. Define your standard terms of payment.

Standard terms are net 30

10. Who is your competition in the public marketplace?

Our traditional competition in the public sector marketplace has been large plumbing and mechanical contractors and energy services companies (ESCO's).

13. What is your strategy to increase market share in the public space?

Midwest Mechanical is a business that had the majority of its success working with Private Sector clients for over 40 years. In 2018, Midwest established an aggressive growth plan to double its business in five years. A key element of Midwest's plan was to grow by expanding its reach into the public sector. Technically, Midwest built all of the core competencies needed to be successful in the public sector. However, to achieve the growth plan, Midwest needed to build competencies necessary to increase market share in the public sector. The Midwest sale strategy is aimed at achieving significant business growth in two distinct directions. Here are the key elements of the strategy we adopted:

Focus 1: Grow Sales in the Public Sector through a Cooperative Purchasing Network

In 2018, Midwest was selected through a competitive RFP to have their offering available through the NCPA purchasing cooperative. Being selected as a successful provider through NCPA allowed Midwest to offer an innovative option for public entities to purchase plumbing and other mechanical retrofits, along with service work. By purchasing through a Co-Op, a public entity is able to work with a company that is committed to a quality delivery of goods and services, while being assured that they will be able to utilize value based pricing in the process. In addition to this, the Co-Op purchasing vehicle is very easy and fast, when compared to the traditional procurement vehicles that public entities typically use. It takes very little administration time and cost to implement. In addition, purchasing through a Co-Op passes legal muster relative to purchasing guidelines and laws. The cooperative purchasing method creates a better, faster, more cost effective means for public entities to purchase plumbing and mechanical retrofits and service.

In just two years, Midwest's business has grown substantially by being able to offer this procurement vehicle through NCPA.

Currently there are very few plumbing/mechanical service companies in the Chicago area that can offer their services through a Cooperative Purchasing Network.

Midwest Mechanical's continued growth will come through this focus for the following reasons:

- 1. We intend to remain a market leader in offering services through a co-op. By being the only plumbing/mechanical contractor in the Chicago area that can offer a Co-op procurement vehicle, Midwest can offer a proven purchasing alternative to public entities. The only current competitors in this space are manufacturers.**
- 2. Manufacturers have already demonstrated the wide spread success of this procurement vehicle-nationally. Adoption is taking place at a rapid pace, however Midwest Mechanical has competitive advantage over all of the manufacturers on design/retrofit and service work due to their vendor independence and the ability to self perform. Midwest's value proposition through the Co-Op will continue to have broad appeal.**
- 3. Midwest has built and grown a sales/ops team which is focused on the public sector. By training this sales force on the nuances of public sector markets, Midwest has successfully utilized the Co-Op vehicle as a primary**

means of taking market share away from traditional procurement methods.

Focus 2: Grow Sales in the Public Sector by utilizing the HVAC contract to displace Performance Contracting. The performance contracting market in Illinois is a mature market. Schools are looking for a better alternative and Midwest believes that offering our services through a HVAC cooperative contract, will address that need. Because of budget pressures, the market has pushed providers to be ever more efficient with delivery cost for construction projects.

Through this focus, Midwest will grow its business for the following reasons:

1. Midwest Mechanical is a company that can self-perform the HVAC and controls work. This approach would lead to the lowest delivered cost in the market. This competitive advantage can be delivered to the customer, without sacrificing margin %.
2. Midwest can showcase their excellent Service capabilities. There is no doubt that these capabilities would stand up well to inquiries made by District personnel. Public Sector clients are always looking for service providers that they can trust.
3. Midwest Mechanical has made a significant investment in “Energy Services”. They have quality Energy Engineers, Design Engineers, and a SaaS platform that will allow them to stay connected to customers and create “Customers for Life”

Midwest Mechanical can proclaim “Vendor Independence” which would negate any advantage that the Independent ESCO’s have.

14. What differentiates your company from your competitors?

The primary differentiators that make Midwest stand apart, are the following:

- a. We are the only plumbing/mechanical contractor providing our services through a purchasing co-op to the public sector, in the Chicagoland area. Midwest self performs much of the work with in-house labor resulted in the lowest delivered cost available.
- b. Midwest offers a unique Software as a Service (SaaS). This type of offering has not been available through other contractors. Through our SaaS product, Midwest is able to create “Connected” buildings, where we are able to mine building data. We have developed algorithms which can analyze the data in an efficient manner that keeps installed

cost down. The algorithm is able to process the data to provide our customers with the most operationally efficient building possible

15. Briefly summarize your company's Quality control/Quality assurance program. **QA/QC is an essential component of Midwest Mechanical and is fully Integrated in the daily flow of business. From submittal review to warranty execution QA/QC provides a roadmap to successful completion and customer satisfaction of a project. Midwest Mechanicals continual maintenance of the relationships with our Vendors and Subcontractors allows Midwest Mechanical to effectively manage the QA/QC program during design and implementation. Validation, inspection and testing requirements are updated and routinely scrutinized for improvements to processes and procedures. Midwest Mechanical has a vested interest in insuring completed projects are sustainable far into the future and our approach for serviceability and reliability are a cornerstone to Midwest Mechanical reputation and longevity.**

16. Provide information regarding whether your firm, either presently or in the past, has been involved in any litigation, bankruptcy, or reorganization.

Our firm has not been involved in any litigation, bankruptcy or reorganization.

17. Provide evidence of your company's ability to continuously lower the customer's costs. Provide examples of any documented cost reduction results that your company has engaged in with your customers.

We have a documented history of lowering costs for our clients via numerous initiatives and situations:

- **As a certified contractor for the ComEd rebate program, we are able to offer multiple customers direct savings in the form of significant energy rebates and energy cost savings via more efficient equipment. To date our clients have received over \$1M in direct rebate checks and hundreds of thousands of dollars in savings via reduce energy bills.**
- **Our financial stability contributes directly to higher bonding capacities and lower bonding premiums allowing us to offer some of the lowest available bonding rates**
- **Our 40 year history of steady growth and stability provides significant buying power which substantially reduces the cost of equipment and supplies we procure through our vast network of suppliers**

PRODUCTS:

18. What is the reputation of your company's products in the public marketplace?
As an independent mechanical contractor we are not limited to specific makes and models of equipment; because we have access to the finest equipment available the reputation of our equipment is extremely good. For the purposes of this solicitation we are offering all commercially available HVAC equipment & supplies.

19. Indicate your company's ability to provide temporary cooling when needed.
Midwest is one of the leading contractors in the Chicago area providing temporary cooling. The Midwest Service Team works very closely with companies like Agrekko and Trane to provide the installation of temporary cooling systems on a regular basis. Our team is very experienced at delivering the installations of a variety of temporary cooling solutions from small dehumidifiers to large chillers.

20. What equipment/system support documents will your company provide?
For the projects that we implement, we utilize a submittal process which includes providing our customer with a detailed description of the type of equipment that they will receive as part of the project. In addition, if the project requires engineering, construction drawings will be provided as part of the submittal.

After construction is completed, Operation and Maintenance documents on all of the equipment will be delivered, along with product specific training. On a project that has engineered drawings, "as-built" drawings will be provided to the customer for their records.

Any and all associated warranty documents for products and services associated with the project will be turned over to the customer for their records and use.

21. Identify the process of receiving a purchase order to the ordering of equipment.

- 1. PO received (fax, mail, e-mail, verbal, etc.).**
- 2. Project Coordinator verifies with Service Manager and sales department then equipment ordered.**
- 3 Service Manager reviews and verifies the project with the customer regarding any proposed changes or mismatches from original proposal.**
- 4 Service Manager assigns project - hand-off occurs between Pre-construction and operations; timelines, equipment selection verification, and project details are coordinated at this time.**

- 5 A project specific job number is assigned and an electronic job file is create in our software system.
- 6 Project Coordinator is directed to complete the equipment ordering.

22. Describe your company's shipping schedule notification procedures.

After the project is established a job message is immediately sent to the customer establishing points of contact and other pertinent information regarding the project. Every Thursday a.m. for the duration of the project the customer receives a message regarding the complete status of the project to include shipping timelines. In addition to these written notification the Project Manger maintains constant contact with the customer advising them of shipping status and arrival dates/times.

23. Describe how your company deals with shipping delays. How do you notify your customer of delays?

Shipping delays cause understandable frustration with clients and can significantly impact other internal projects due to schedule changes. As outlined above, clients are immediately contacted by the designated PM regarding shipping delays and continually updated weekly at a minimum until the item is delivered.

24. Provide your shipping schedule reporting form. How many times do you update?

Shipping status reports are sent weekly at a minimum, more often if the project circumstances dictate.

25. How many products do you stock? Where?

We stock approximately 150 service related items as "truck inventory" in our service vehicles and warehouse shelves in our Lombard warehouse. All other required items are procured via multiple local parts warehouses or just-in-time delivery.

26. What is your percentage of on-time delivery at each manufacturing plant?

N/A - we are not a manufacturer

27. Describe any direct order entry system or capabilities your organization has such as internet capabilities.

Midwest Mechanical has a customer portal. Customers can access the portal by going on to our website www.midwestmech.com. On the Portal you can request service, look at past service calls and also view the equipment and maintenance schedules on the equipment.

We also have an on-line quick quote system. Customers will receive a quick quote for repairs and can approve the quote immediately on-line.

28. Are all HVAC units UL listed and in compliance with all applicable codes in all states?

Yes

29. If your product is defective, what is the replacement process and turnaround?

All of our installed products have a minimum one-year warranty; if products/equipment are defective our service department will replace the item at no charge; turnaround times are contingent on the manufacturers and the equipment and/or part availability.

30. What is the capability of your company to respond to emergency/rush orders?

The DNA of our company is "Service", so Midwest's reputation has been built on their ability to respond to emergencies and rush orders. Our internal systems and processes reflect our ability to service customers that have this need.

- 1. Midwest has a 24 hour call center which is staffed to receive any emergency call and respond immediately to that customer.**
- 2. Our call center has a process in place to dispatch a tech that is best matched to the client needs. Our techs understand the need to service that customer in an emergency and have the training, tools, and transportation to fix the problem.**
- 3. Midwest's Building Sentinel SaaS is a system that utilizes the latest technology to stay in touch with our customers. Midwest has the ability through this service to identify an emergency before our customer even knows about it. In many cases, Midwest can fix the problem "virtually" without having to roll a truck.**

For rush orders, Midwest is in a unique ability to respond to our customers needs. We have a large depth and breadth of skilled labor which allow us to be flexible and responsive to our customer's needs. In addition, Midwest has a 40 year history with suppliers which allow the company to expedite equipment orders when necessary.

31. State whether your company provides a quality guarantee on your products. If so, please describe.

Yes. Exceptional quality was one of the founding precepts of our firm, if a customer is not completely satisfied with the quality of our services our firm will work with clients until their expectations are met regardless of any extenuating circumstances.

32. Describe your procedures to monitor the quality of your products.

Yes, exceptional quality is one of the founding precepts of our company, if a customer is not completely satisfied with the quality of our services our company will work with our customers until their expectations are met.

In addition to our commitment to quality, we can utilize our Building Sentinel, SaaS platform, to create a “connected building” for our customer. Through Building Sentinel, Midwest and the Customer can collect data which is fed through algorithms which analyze a host of elements, such as:

- 1. Equipment and System Performance**
- 2. Energy Use and Patterns**
- 3. Fault Detection and Predictive Failure**

Irregularities are identified, and strategies are put in place to ensure that problems are managed before they become costly to the customer. The Building Sentinel platform becomes a cost effective and reliable means for building owners to monitor the quality of the equipment and systems which are put into their building.

33. Do you offer extended parts and labor warranties? If yes, state length of warranty.

We offer extended parts and labor warranties based on the types of products we service and support. We can extend warranties three to five years in general. Please see our response in Appendix B Products and Services.

34. Please give examples of state and local agencies where your company has extended labor warranties. Include length of these warranties.

Palos District 118

Palos 118 is one example of how we provided a turnkey boiler installation which included a full service five year warranty. This is a 2020 project where the customer will offload all the risk of operation on two boiler plants to Midwest Mechanical. Midwest will handle all of the maintenance and repair on the boiler plants for a period of five year.

35. What is your standard warranty on Building Automation Controls?

One Year on parts and labor

36. What is your standard warranty on replacement parts?

One Year on parts and labor

37. How does your company track warranties and update equipment lists/warranty periods as units or components are replaced?

All projects are tracked by their project folder and electronic system. After a project is completed, warranty letter is drafted to the customer stating their standard warranty terms. The project folder also states the warranty terms for later reference.

38. What states would your company not honor pricing on your supplied equipment for this contract, in the event that this contract is made available to all states?

Alaska and Hawaii

SERVICES:

39. Describe your company's Customer Service Department (hours of operation, number of service centers, parts outlets, number of technicians, etc.) Clarify if the service centers are owned by your company or if they are a network of subcontractors.

Midwest Mechanical owns and operates its own Customer Service Department. It is staffed by 4 customer service representatives Monday – Friday 7:00 a.m. – 5:00 p.m. with the exception of major holidays.

We currently have 67 Service Technicians.

40. Describe how your company handles after-hours customer service needs indicate your average response time to emergency service calls.

Between the hours of 5:00 p.m. – 7:00 a.m. any calls go directly to a live answering service. If there is an emergency, the service will contact one of service technicians that is on-call. They will determine what kind of service is required and contact additional staff members if required. Average on-site response times vary based on location but consistently range between 1-5 hours after the call is received.

41. Discuss your organization's capability and historical flexibility in completing timely service calls and problem resolution.

Our service technicians live all over the Chicagoland area including Indiana and Northern Illinois. Because our technicians are dispatched from their homes we have the flexibility of sending a technician that is closer to your facility. In support of timely problem resolution we have a host of in-house technical experts and relationships with multiple factory technical representatives if problems require additional expertise.

42. Please describe the quality program(s) within your company which measures your service work.

Midwest Mechanical utilizes Key2Act and Mobiletech programs and applications for Dispatching, Scheduling, Equipment Logging, Service Work Orders, Start Up and Commissioning.

Work order history includes all service work performed on each piece of equipment by model and serial number thus allowing a Technician instant access to review previous work and parts replaced or repaired while on site.

Equipment Logging Data; Data logs specifically formatted for each individual type of equipment is logged and stored in a common driver accessible 24/7 by either a Technician or authorized customer representative. Logs can be utilized to evaluate equipment performance during and after repairs or maintenance by extrapolating operational trend data.

Service Work Orders; Technicians complete each electronic service work order at the completion of the day or service call. Electronic signature can be obtained from the customer and instantly e-mailed or stored in the account folder accessible by the authorized customer or representative. Service work orders contain explanations of the call, parts recommendations and hours expended on the site.

Dispatching; Technicians are dispatched based on skill level and equipment experience. Service coordinators can evaluate the available technicians best suited for each job by utilizing an embedded program and software designed specifically to annunciate each skill and compare to the type of call. GPS aids in deciding time and location to the response.

Factory Training; Technicians attend a variety of factory authorized educational training programs these include Chillers, Pumps, Boilers, VFD's, Fans, Hydronic Systems, Compressors Etc. Weekly training is administered from established online trade curriculums concentrating on specific core content in the HVAC field.

Oversight; Service Field Manager and Senior Field Technicians provide the necessary leadership and guidance for Technicians. Providing this support enhances the customer experience and reliability of the equipment serviced.

43. List your company's standard scope of work performed for preventative maintenance visits.

Chiller annual service checks

➤ Unit

- Analyze operational log
- Inspect unit for refrigerant leaks [both visually and using electronic leak detector and repair]
- Test relief valves and replace if necessary
- Check and tighten power wiring and starters

➤ Compressor

- Megger ohm test compressor motor windings
- Check ampere balance (within 10% at RLA)
- Replace filter drier cores
- Inspect oil level, take oil sample and send out for analysis. Provide copy of report to maintenance supervisor.
- Replace oil filters
- Replace oil if indicated by analysis results

➤ Controls

- Calibrate temperature transducers
- Calibrate pressure transducers
- Check motor load limit
- Check motor load balance
- Test operation of alarm relay
- Test operation of pump interlocks
- High and low pressure cut outs

➤ Condenser

- Evaluate temperature approach
- Clean condenser tubes
- Eddy current test [as required]

➤ Evaporator

- Evaluate temperature approach
- Clean condenser tubes
- Eddy current test [as required]

Boiler annual service checks

➤ Preliminary analysis

- Check operating pressures or temperatures
- Check operating hour
- Check insulation
- Check air supply
- Check vent
- Check boiler area
- Combustion analysis [provide report to maintenance supervisor]
- Check gas pressure at main gas valve
- Check draft hood or barometric damper
- Water temperatures [in and out]

➤ Checks and corrections

- Check for clean boiler tubes and heat transfer surfaces
- Clean tube and heat transfer surfaces
- Check blow down operation [insure proper blow down procedures are being maintained to prevent sediment buildup]
- Check for water leaks and repair
- Check burner condition [clean burners and orifices]

➤ Safety checks

- Thoroughly check gas train for leaks and repair any leaks
- Check operating limit controls
- Test primary and secondary low water controls
- Check pilot safety shut off operation

Tower annual service checks

➤ Unit

- Inspect general condition of tower and check unit for unusual noise and vibration
- Drain basins and piping
- Inspect and clean cold, hot water basins, and spray nozzles
- Inspect air inlet louvers
- Check and adjust water levels in water basins
- Check and adjust make water valve
- Check and bleed rate
- Inspect tower finish

➤ Mechanical systems

- Check belt condition
- Adjust belt tension, replace as needed
- Lubricate fan shaft bearings
- Lubricate motor base adjusting screw
- Check drive alignment
- Check motor voltage and current
- Check fan motor and exterior
- Check fan motor for proper rotation
- Check general condition of fan
- Check and clean fan drain holes
- Clean all mechanical components

Hot and cold water pumps annual service checks

- Check and tighten all electrical connection on motors
- Megger test all motors and record
- Check all couplers for wear replace as necessary
- Lubricate all bearings
- Check entering and leaving pressures and record

Plate and frame heat exchanger annual service checks

- Inspect unit for water leaks repair as necessary
- Check unit for proper heat transfer
- Back flush unit for cleaning purposes

Standard Unitary Equipment

- Check for proper voltage of unit
- Check fuses – replace as needed
- Tighten all screws and lugs connected to voltage
- Check motors for lubrication and bearing wear
- Check pilot flame [if applicable]
- Check filter of any obstructions
- Check spark igniter
- Check limit switches

44. List the dollar volume your company completes nationally (or regionally if you responded as such) in HVAC maintenance annually.

Last year Midwest completed \$28,434,000 in HVAC maintenance work.

45. Describe your call center organization.

Service calls are received and processed via our dispatch(s) located in our Lombard, IL office. For simple calls the dispatcher assigns the appropriate technician. For more complex issues the Service Manager will conduct a further analysis of the issue and direct a solution based on the specific issue.

46. Does your company offer a dedicated, 800 number for all locations to place phone and fax orders? Is the call center available 24 hours/7 days week?

We have three dedicated 800 numbers depending on the region.

- **East Region 800-214-3680**
- **West Region: 800-214-3690**
- **North Region: 800-214-3603**

We respond to calls 24 hours/ 7 days per week.

47. Describe how service call problems get escalated in emergency situations during and after hours. Who would be responsible in your company for assessing the appropriate course of action to remedy the problem?

We have rotating on-call technicians (3 each day) responsible for off-hours diagnosis and troubleshooting of service calls. If the on-call technician cannot quickly diagnose the issue the problem is elevated to one of our 3 Service Managers. In rare cases when the service manager cannot address the issue the Vice President of Operations and/or equipment factory representative is contacted for additional technical assistance.

48. List the steps taken from start to finish in receiving a service call through to completion of repair and invoicing. Include time frames associated with each step.

1. **Service call is received via dispatcher or other method.**
2. **The dispatcher enters the call into the dispatch system (Key2Act)**
3. **The dispatcher calls the primary technician to run the call. If he/she is not available the next available qualified technician is sent.**
4. **The service technician goes to the site.**
5. **The service technician completes the repair or if cannot complete the call documents on the Service ticket what needs to be done and when.**
6. **The Service ticket is uploaded via our Mobiletech software directly into our system.**
7. **A copy of the ticket is sent directly to the customer.**
8. **The ticket then goes through an auditing process, to be sure the hours, and material charges are correct.**
9. **Once approved by the Service Manager, the ticket goes to the billing department.**
10. **The billing department will then do another check**
11. **The billing department send out the invoice to the customer**

49. What technology such as GPS tracking does your company use to track completion of repairs?

All of our service trucks are equipped with GPS. Our dispatchers can tell where our vehicles are at all times.

We use a software called Mobiletech. Once a service technician completes a repair he will close out the ticket in Mobiletech. The customer will get the completed ticket as well as our dispatch team,

50. What is the reputation of your company's service in the public marketplace?

Our 44 year history of providing exceptional quality and value is well documented and has earned multiple repeat customers who feel comfortable making us their “go-to” HVAC Service provider.

In 2018, Midwest Mechanical made a significant investment to grow our business and reputation in the public sector. By utilizing a purchasing co-op contract, Midwest has grown their public sector business from \$885,000 in 2017 to over \$9,000,000 in 2020. Growing your business by a factor of 10X in three years can only happen when your reputation supports it. We have delivered results to the public sector and are very proud of the reputation we have built.

51. How does your company spread the cost of a Preventative Maintenance contract over the entire year?

Historically PM contracts are written in one-year increments and involve miscellaneous work year round. We work with our clients to see what works best for them from a billing standpoint; in general clients select 12 equal payments spread throughout the length of the contract but we provide the flexibility for quarterly, bi-annually or any other method of payment.

52. Identify the process of receiving a purchase order to the providing of a service contract.

- **Once a Service Contract PO is received a Preventative Maintenance service job is set-up in Key2Act.**
- **A service technician is appointed as the primary customer point-of-contact for the contract duration and that information is relayed to the client.**
- **In most cases a face-to-face meeting is established to ensure all parties are fully aware of the site specific procedures, scope of work, timelines, billing preferences, procedures for equipment found inoperable or unserviceable, and other project specific requirements.**
- **Once all the preliminary procedures are clarified the service work commences.**

53. List your company’s current capabilities for energy management system monitoring. Discuss the process involved when resolving a problem associated with an HVAC unit or system where an energy management system is installed.

Midwest Mechanical has the ability to monitor any BacNet based Energy Management System. Our technicians have the necessary software and hardware to connect to virtually any BacNet control system, monitor setpoints, and perform troubleshooting and maintenance.

When we are notified of a problem associated with an HVAC system, our normal course of action is to remotely access the EMS first. After accessing the EMS, our technicians can usually diagnose the problem without being on site. If the problem can be fixed remotely, our technicians will perform that task. If the problem requires an on-site presence, a technician will be dispatched to the site.

54. List the number of sites your company currently monitors Energy Management Systems (EMS).

Midwest Mechanical is currently monitoring Energy Management Systems in over 500 sites at some level.

55. List your company capabilities regarding system changes and repairs to EMS systems.
- Midwest has trained technicians who can make changes and repairs to many Energy Management Systems. Midwest can perform the widest scope of system changes and repairs on BacNet based "open protocol" systems. If repair parts and software are available over the counter for a customer's system, then Midwest Mechanical can provide virtually any type of service needed.**

56. List the reporting capabilities your company has for EMS system parameters.
- Midwest Mechanical has a 24/7 Call Center, which is designed to respond to any customer needs 24 hours per day, 7 days per week, 365 days per year. The call center has the capability to monitor EMS system parameters and provide reporting or diagnostics to those specific systems.**

57. Does your company maintain and repair/replace EMS in-house (self-perform) including monitoring, alarm resolution, repairs and adjustments?
- Midwest Mechanical technicians have the capability to perform maintenance and repair/replace EMS components in-house. Our technicians and call center regularly perform monitoring, alarm resolution, repairs and adjustments as part of our normal course of work.**

58. Describe your process for trouble shooting a problem (HVAC, lighting, etc.) at a site with an EMS system. How does repair get escalated for service?

At a site with an EMS, Midwest Mechanical technicians start troubleshooting by first accessing the EMS. If the EMS can be accessed remotely, than Midwest Mechanical will do so. Midwest Mechanical will not roll a truck if the problem can be fixed remotely through the EMS. This saves the customer money.

If the problem cannot be fixed remotely, then our service dispatchers will dispatch a technician who is most qualified to diagnose and repair the specific customer site.

59. Describe your company's startup and system checkout responsibilities

MIDWEST MECHANICAL SERVICE

EQUIPMENT TEST REPORT

Chiller		PAGE	1	of	1
PROJECT	PROJECT #	DATE			
SYSTEM	LOCATION	TESTED BY			
MANUFACTURER	AREA SERVED	CERT. #			
MODEL					
SERIAL #					
<u>ITEM</u>	<u>OK</u>				
<u>PRE-START UP INSPECTION</u>					
UNIT VOLTAGE / AMPERAGE					
OUTDOOR MOTOR VOLTAGE / AMPERAGE					
COMPRESSOR VOLTAGE / AMPERAGE					
MOUNTINGS CHECK, SHIPPING BOLTS REMOVED					
FANS ROTATE FREELY					
FANS, MOTORS LUBRICATED					
ELECTRICAL CONNECTIONS COMPLETE, TIGHTEN					
DISCONNECT SWITCH INSTALLED					
PIPING SIZES, LIQUID LINE / SUCTION LINE					
REFRIGERANT TYPE					
REFRIGERANT RELIEF VALVE INSTALLED					
REFRIGERANT PIPING COMPLETED					
CONDENSATE DRAINS CLEAN AND COMPLETE					
CONTROL SYSTEM COMPLETED (END TO END CHECKS)					
<u>START UP TEST DATA</u>					
FAN ROTATION CORRECT					
UNIT VOLTAGE / AMPERAGE					
OUTDOOR MOTOR VOLTAGE / AMPERAGE					
COMPRESSOR MODEL NUMBER					
COMPRESSOR SERIAL NUMBER					
COMPRESSOR VOLTAGE / AMPERAGE					
REFRIGERANT PRESSURES, LOW AND HIGH					
FAN CONTROLS					
HIGH AND LOW PRESSURE CONTROL SETTINGS					
ELECTRICAL INTERLOCKS VERIFIED					
TEMPERATURE CONTROLS VERIFIED					
REFRIGERANT RELIEF VALVE SIZE, PRESSURE RATING					
SEQUENCE OF OPERATION VERIFIED					
SAFETY CONTROLS OPERATIONAL					
SYSTEM STARTED AND LEFT IN OPERATION					
REMARKS:					

60. Describe your company's post-installation and warranty support
The project is not complete when the unit is installed and performing well. At Midwest Mechanical Inc. we stand by our work and will back up our installations and service through the warranty period [normally 1 year] and in some cases beyond.

61. Describe your company's steps for system analysis.

- **Discuss overall operations with customer to determine what issues exist.**
- **Review alarm, transaction and operational logs to determine what issues are indicated.**
- **Gather equipment brand, model, serial number information and quantities.**
- **Check unit operation against normal operation.**
- **Report any deficiencies found.**
- **Review overall system performance and condition with client.**
- **Provide detailed recommendations to client.**

62. Discuss your company's current computer systems architecture. How do your company's computer system guarantee customers receive consistent service support, HVAC responsibility verification, and management reporting?
We currently utilize a secure Datto enterprise software system allowing for real-time access for all authorized personnel. A specialized IT company maintain and backup our files daily at a minimum. We have multiple redundancy systems in place to include emergency battery backup if power is lost ensuring connectivity with our clients/customers.

63. What does your company do to ensure bills are received from service centers within a reasonable time frame and issued to government entities for payment?
We monitor the service provided to ensure the bill is received within a two week period of time and immediately turn around as an invoice to the government entity.

64. Explain how your company qualifies/certifies its service centers and what types of checks are performed to ensure standards are upheld.
We are constantly reviewing our management software to verify that results make sense to the business being conducted. Our leadership team is constantly interacting with each center to ensure our corporate standards and quality is acceptable.

65. Is warranty coverage dependent on using your start-up procedure?

No. We provide and install multiple brands of equipment and some of these brands require a factory startup to qualify for warranty. In these cases we ensure these startups are done by the manufacturer in order to protect the customers' warranties. In such cases, the manufacturer would use their own start-up procedure.

66. Who performs your start-up procedure?

Certified and authorized in-house Service Technicians, Equipment Installers, Pipefitters, Controls Technicians, or certified factory representatives depending on the application.

68. List the other functions your company can provide regarding unit replacement to offer a turnkey project (ex. electrical, sheet metal work, EMS system connection and programming, etc.)

Midwest Mechanical is very skilled and experienced at offering Turnkey projects, especially through a purchasing Co-Op. Other functions that we have provided to customers over the last two years include the following:

- 1. Electrical work**
- 2. Installing Energy Management Systems**
- 3. Plumbing work**
- 4. Demolition work**
- 5. Concrete work**
- 6. Roofing work**
- 7. Solar Installations**
- 8. Ceiling work**
- 9. Lighting work**
- 10. Sprinkler work**
- 11. Life Safety System work**
- 12. Security System work**
- 13. Installing doors and hardware**
- 14. Installing window systems**

15. General Carpentry

16. Cleanup and rubbish removal

69. Explain how your company would propose a planned unit replacement program including how units would be identified for replacement and how pricing would be addressed.

Our involvement would typically start with co-authoring a unit replacement program with our customer. This plan would include the following:

1. An analysis of current assets, including their current condition

Our analysis would start by having our energy engineers and project developers look at as-built drawings that would prepare them for a site visit. During the following site visit, assets would be documented through photographs and nameplate data. They will also be analyzed to understand their overall operating condition, including evidence of proper operation and maintenance.

2. Identify where the assets fit in their respective life cycle.

After the asset study is completed and the data is compiled, the individual assets will be projected on a timeline reflective of expected useful life for that specific asset. There would be empirical data in addition to assumptions which would be used to place the asset on the timeline. All assumptions would be documented and discussed with the building owner. At this point, we would be able to show projected asset replacement targets based upon where each asset fits on the timeline.

3. Build a timeline and budget for projected replacement

Once the asset timeline is built, we would then work with the owner to build a replacement timeline that would reflect priorities and future budgets. To do this, we would work to provide accurate budget costs for the asset replacement. Midwest would also analyze the replacement to reflect future energy savings that could be expected through the asset replacement.

4. Issue a proposal for replacement

In concurrence with the owner, Midwest would provide proposals for the scheduled replacement of the equipment. In addition, this proposal would include the associated utility savings, incentives and rebates.

70. Describe what project scheduling tools your company use to track projects during construction.

We utilize MS Project Management as an added tool for complex projects. The project management team will meet weekly with owners to review project status and address project management issues. In addition to these weekly conferences the meeting minutes and other updates are sent electronically to every client and Midwest Mechanical staff as needed. This immediate response to items of concern will keep the customers informed and communication flowing.

71. How does your company make the proper equipment selection on a turnkey or energy retrofit contract project?

As a specialty mechanical contractor we have the ability to select from multiple manufacturers and equipment supplies to choose the absolute best equipment for each project. The selection process is a collaborative approach between our Customers, Project Engineers, Estimators, Operations/Service Personnel, and Vendors. The vendors are responsible for providing detailed cut sheets to ensure the equipment is capable of meeting the required equipment efficiency SEER, EER, and/or, IPLV energy ratings.

72. Describe how your company handles site development and project permitting process.

Permitting is done on a case-by-case basis. When permitting is required we work closely with the applicable permitting agency [ROE, Municipality, etc.] in conjunction with the customer and project engineer/architect if applicable. Midwest is very flexible in how it approaches permitting for a project. We have the ability to handle permitting within the confines of a project, however, on occasions the owner will coordinate the permitting requirements outside the project scope of work.

73. Describe you company's design-build quality control guidelines for design, construction and review on a turnkey or energy retrofit contract project.

All turnkey projects regardless of type [e.g. equipment retrofit vs. EMS] undergo essentially the same quality control measures previously discussed. Again, we embrace a collaborative approach between the Estimating Department, Operations Department, or designated engineer to determine the best application for the proposed project. Quality control is stressed at the beginning of the project as well as a review at the end. A quality issue discovered early in the process is much more readily addressed than something discovered later in the project life cycle

74. What is your company's design approach and philosophy for a turnkey or energy retrofit contract project?

Midwest understands that a "one-size-fits-all solution" doesn't maximize value. Because we spend the upfront time to understand our client's vision, needs, and goals and because we work hard to gain a thorough, holistic understanding of their building and systems; we're able to bring to full-force Midwest's long history of innovation to create value throughout our entire design process, and turnkey implementation.

Midwest Mechanical is a Design-Build contractor combining professionally licensed engineering and mechanical services, ensuring that design solutions- even highly innovative ones—are constructible and maintainable. Together, this is why we think differently and ask different questions from that of nearly every other stand-alone design engineering firm and mechanical contractor.

A "best fit" design is a practical, constructible, right-sized economically, holistic, long-term solution that is only possible through big picture thinking and a practical approach. Midwest's "best-fit" designs maximize energy savings and efficiencies and minimize lifecycle costs so that the benefits and value our customer expect are achieved (and often surpassed) over the entire lifespan of the project.

75. Describe your company's construction management plan.

We are dedicated to providing effective management and control of all projects regardless of scope. Each project has a dedicated project manager charged with ensuring the project continually meets and exceeds the expectations of the customer. The project manager will assemble a team that effectively matches their talents with the scope of the project. To assist the project manager a software program is used with certain projects to establish project goals/timelines, measurable objectives, specific tasks to ensure the project remains on task, within budget, and in-line with customer requirements. Management utilizes existing procedure manuals and standardized policies to effectively manage customer/client

communications. Our overarching goal is customer satisfaction with a quick response time, quality service, on-time completion, minimal disruptions to the customer, no contractor generated change orders and cost reasonableness.

A typical project life cycle (non-service);

- **Customer notifies Midwest Mechanical of potential maintenance request or project**
- **Midwest Mechanical schedules a customer meeting (normally 1-3 days) to discuss specific scope, timeline, and requirements. Note: Not applicable for time sensitive projects.**
- **Midwest Mechanical generates a proposal (normally 2-4 days) that includes a general scope and pricing**
- **Customer reviews the proposal and provides feedback**
- **Once the scope/price are established the customer generates a purchase order**
- **Midwest Mechanical receives the PO and transfers the project folder to the service or operations department for scheduling and execution**
- **Service/Operations immediately establishes contact with the customer to provide preliminary information**
- **Project is completed per customer specifications**
- **Midwest Mechanical schedules a final walk through with the customer to ensure the job is completed to exact specifications**
- **Final issues/tasks are resolved and the customer signs a letter of satisfaction**

One of our important goals is to have the customer be a part of the team. To ensure a timely and effective flow of communications it is highly recommended that the customer appoint a project supervisor as the point person for all customer/contractor communications.

The team will focus on project objectives, integrating the team resources with owner resources to meet project requirements. The ultimate goal is to ensure a project is on schedule, within cost, and completed with quality.

Successful project execution is largely dependent on the members of the project team. By teaming employees with diverse experience and expertise, a synergy is created which cannot be duplicated within the functional group or departmental organizations. In addition, key elements of our approach to project implementation are clearly defined management responsibility and accountability. Our planning, work performance, quality control, and reporting systems are based on two levels of management: A Project Manager with overall responsibility for

the contract, and team members who provide hands-on management of each functional area of the project.

Many of Midwest Mechanical's projects are multifaceted. Engineering, procurement, construction, installation, commissioning, testing, training, and service are all required. We are structured to allow project teams to function effectively as a group in a goal-oriented environment. At the same time, a high-level central staff of functional managers establishes policy, guides technical reviews, and ensures a work approach consistent with practices that have proven successful on previous projects.

The installation of any component and/or system is a challenge on a new project, as all facilities and customer needs are different. Retrofit projects in existing facilities add another area of complexity. Our project team must execute the project without interfering with the operation of the facility or its occupants. As the business which Midwest Mechanical plans to execute for Eligible Agencies involves existing facilities, our project teams fully recognize the special demands of retrofit projects.

A quality control inspector is responsible for making sure that all Midwest Mechanical employees and subcontractors adhere to the high quality standards for the project. This individual inspects all items of work for conformance to specifications and drawings and periodically reviews the project's quality control plan to maintain its integrity.

Certain projects require the infusion of expertise outside the normal scope of Midwest Mechanical. To ensure we meet our customers anticipated timeframe we maintain a list of vetted professionals to assist with projects outside the normal scope of our company.

76. What is your standard warranty on installation?

One year warranty on parts and labor.

77. What is your standard warranty on energy retrofit contracting?

One year warranty on parts and labor

78. Do you differentiate in your company's standard warranty if financing is part of the contract? If so, please describe.

No

79. State whether your company provides a quality guarantee on your service. If so, please describe.

Yes. Exceptional quality was one of the founding precepts of our firm, if a customer is not completely satisfied with the quality our services our firm will work with clients until their expectations, which are defined and understood during the design phase, are met regardless of any extenuating circumstances.

80. What states would your company not honor pricing on services for this contract, in the event that this contract is made available to all states?

Alaska and Hawaii

SAFETY:

81. Describe your company's safety program during service/repair work.

Midwest Mechanical, Inc. is fully committed to providing employees, subcontractors, and our partners with a safe and healthy workplace. Senior management provides the ultimate oversight and strategic direction for our company safety programs. All employee recommendations to improve the overall safety and/or health conditions within company facilities or at our worksites are given serious consideration by our management team. It's important to note that while senior management conducts the overall oversight of the safety program; ALL employees regardless of position are responsible for the company's overall safety. From day one all our employees are encouraged to speak-up, identify, and report unsafe conditions and practices without exception or delay. Everyone who uncovers a potentially unsafe condition has the authority to immediately shut a worksite down until the issue is addressed without fear of retribution. Our appointed Safety Coordinator is charged with the day-to-day management and administration of the program and regularly coordinates with our dedicated Safety Consultant.

Workplace safety and health orientation begins on the first day of initial employment or job transfer. All employees participate in company orientation and safety training before working on Midwest Mechanical projects. All employees must have a current training sticker on their hardhats for the current year. Each employee has access to a copy of our Safety Management & Training Manual and personally receives a copy of company safety rules, policies, and procedures pertaining to his or her job. Supervisors ask questions of employees and answer employees' questions to ensure knowledge and understanding of safety rules, policies, and job-specific procedures described in our workplace safety program manual are understood and followed.

Senior management is actively involved with employees in establishing and maintaining an effective safety program. Our safety program coordinator or

other members of our management team participate with field personnel in ongoing safety and health program activities, which include:

- **Promoting safety committee participation**
- **Providing safety and health education/training [weekly safety topics sent company- wide]**
- **Reviewing and updating workplace safety rules**

To further enhance our safety program we hired a consultant [Alliance Safety, LLC] in 2012 to provide independent oversight and direction for our safety program. To date we are seeing some impressive and tangible results of our increased focus on safety and our goal of instilling and maintaining a culture of safety.

- **Midwest Mechanical, Inc. is a drug free company. In the event of a workplace accident or incident all parties directly involved are required to take a mandatory drug test at the nearest U.S. Health Works Medical Group or Concentra Medical Center. An employee found to have tested positive will face immediate disciplinary action up to and including termination.**
- **Our complete safety philosophy is contained in our Safety Management & Training Manual; a complete copy is available upon request.**

82. Describe your company's safety program during construction.

We take the safety of our personnel and the safety of our clients' safety very seriously and do not differentiate between safety for service/repair work and construction safety; both types of projects follow the same procedures outlined above

83. Indicate number of lost hours or other benchmarks to verify your company's effectiveness of their safety record.

Experience Modification Rate

2016 .66

2017 .70

2018 .68

84. What reporting mechanism does your company provided to the customer upon completion of any project?

In the event of a safety incident at any of our worksites we immediately notify the owner and provide a brief explanation of what took place. After the initial response a formal investigation is completed by our Safety Consultant to reveal the causes, response effectiveness, and any lessons learned. This formal report is transmitted to the client as part of the overall project closeout documentation.

MARKETING/ SALES

85. Detail how your organization plans to market this contract within the first 90 days of the award date. This should include, but not be limited to:

- a. A co-branded press release within first 30 days
- b. Announcement of award through any applicable social media sites
- c. Direct mail campaigns
- d. Co-branded collateral pieces
- e. Advertisement of contract in regional or national publications
- f. Participation in trade shows
- g. Dedicated NCPA and Region 14 ESC internet web-based homepage with:
 - i. NCPA and Region 14 ESC Logo
 - ii. Link to NCPA and Region 14 ESC website
 - iii. Summary of contract and services offered
 - iv. Due Diligence Documents including; copy of solicitation, copy of contract and any
 - v. amendments, marketing materials

Since Midwest Mechanical is already an NCPA contract holder, much of our initial marketing has been done. However, we will need to spend considerable time informing our customers and prospects as to how this new contract would be different and offer additional value to the market place.

Our marketing strategy in the first 90 days will not only focus on announcing our contract award but contacting all our existing customers and announcing our new NCPA contract details and how will benefit them. Elements of our initial marketing strategy will include:

- **Announcement posting on our website and other social media platforms providing contract specifics.**
- **Update of existing direct mail and handout materials reflecting new contract information.**

- **Create a press release directed to the Illinois Park District Association. IPDA members were some of our first customers to use cooperative purchasing for services. Our plan is to let their membership know that Midwest Mechanical now has a new contract for their use.**
- **Create a press release specifically for the Illinois Library Association. Highlight the fact that Midwest will be exhibiting at the ILA's October trade show. Currently, there are no plumbing/mechanical contractors exhibiting at the conference. Our highlight and focus will be our NCPA cooperative relationship.**
- **New focused advertisements in regional publications like Illinois ASBO, Suburban Superintendents Association, Illinois Park District Association.**
- **Continual participation in leading industry tradeshow and conferences.**

Website updates providing all new contract documentation.

86. Describe how your company will demonstrate the benefits of this contract to eligible entities if awarded.

Midwest's Vice President- Public Sector has had extensive experience in getting a cooperative purchasing go-to-market strategy successfully launched in the past. Our focus on providing services through our existing NCPA contract has resulted in tremendous growth from less than \$1M, to around \$10M in just a two year time.

Our experience over the last two years of growth tells us that many of our public sector customers have used cooperative purchasing to some degree in the past. However, most of the purchases made by public sector clients have been for commoditized items such as paper, or supplies.

Because of this type of client experience, our focus will not be as much on "what is a Co-Op?", but more on "Did you know that you can use a Co-Op to...?" Many public sector customers are not aware that they can save millions of dollars by utilizing a cooperative purchasing agreement to purchase agreement to purchase things like plumbing and mechanical services. Past experience shows that many customers will purchase through a cooperative when they understand that extent to which they can leverage them. Our focus will be providing our sales force with presentations and material that support this type of discussion.

Over the past two years, we have developed a number of case studies and client relationships where our sales team can tell the "co-op story". Our co-op contract has proven that it is a Better, Faster, and More Cost Effective way to deliver construction services.

We will demonstrate the value of the NCPA co-op contract by:

- 1. Identifying our Co-Op relationship on all trade show booths and trade show marketing material.**
- 2. Train all public sector sales on how to present our cooperative offering.**
- 3. Train all public sector sales on the list of happy customers and case studies that Midwest has. Use this list to tell our story.**
- 4. Midwest believes the key elements that have attracted customers to the cooperative purchasing experience in Illinois are:**
 - a. The amount of money and time it saves the public entity in the procurement process.**
 - b. Being able to work with a provider that is accountable for a Quality project.**
 - c. How the cooperative purchasing process satisfies Illinois procurement laws for a public sector procurement.**

87. Explain how your company plans to market this agreement to existing government customers.

- Personally engage all existing customers immediately after selection by NCPA. At this meeting, Midwest would outline all of the benefits of our new NCPA contract. At that meeting, we would coach the customer through the process of getting signed up as an NCPA cooperative member- at no cost.**
- Based upon our knowledge of our existing customer needs, we would present the value that the NCPA cooperative could bring in addressing those needs.**
- Update and enhance our qualified list of past customers who have a history of utilizing purchasing cooperatives and/or alternative delivery methods; ensure our sales force re-engages this customer base with the benefits of this new contract.**
- Actively engage existing customers via:**
 - ✓ Get all of them signed up as NCPA members.**

Attendance at conferences, trade shows, and other marketing events

- ✓ Development and distribution of focused print marketing materials and advertise in publications historically used by potential NCAP clients.**
- ✓ Update our website to capture potential NCPA clients**
- ✓ Targeted office visits and/or business meetings**
- ✓ Utilization of existing governmental contacts to develop potential new NCPA leads.**

- **Analysis and review marketing techniques of successful firms that serve NCPA clients; adopt similar strategies if applicable.**
- **Develop on-going strategies to constantly enhance customer satisfaction (examples include telephonic follow-up, in-person meetings, coordination of marketing events, holiday cards, distribution of company marketing materials, etc.)**
- **Provide potential clients with references of recently completed work that has a similar scope and project timeline.**

88. Provide a detailed 90-day plan describing how the contract will be implemented within your company.

First 30 Days:

- a. **Pull our existing client database and contact all public sector clients over the past five years with information on NCPA and our newly established contract with them.**
- b. **Personally visit all existing public sector clients with an updated “first call”, which highlights our new NCPA relationship and the additional value that it brings.**
- c. **Get all existing public sector clients signed up with the NCPA cooperative.**
- d. **Create specific flyer/brochure detailing Midwest’s capabilities and NCPA contract.**
- e. **Place contact and site information into Midwest CRM software for review and follow up.**
- f. **Modify exhibit booth to emphasize Midwest Mechanical’s new NCPA contract.**
- g. **Schedule exhibit space at IPDA and ILA trade shows.**

Day 31 to day 60:

- a. **Obtain NCPA client listing and prioritize them into categories.**
- b. **With the highest priority clients make phone and email contact with flyer/brochure created in prior phase.**
- c. **Follow up on each high priority contact to obtain a face to face meeting to begin project development with initial budget and proposal.**
- d. **Update CRM software to measure performance.**

Day 61 to 90:

- a. Continue to follow up on high priority contacts from prior phases via email, phone and face to face meetings.
- b. Filter through middle priority contacts then phone email then with flyer/brochure
- c. Follow up on each high/medium priority contacts to obtain face to face meeting to begin project development with initial budget and proposal.
- d. Update CRM software to measure performance.

89. Describe how you intend on train your national and/or regional sales force on the Region 14 ESC agreement.

Midwest Mechanical currently has a salesforce which has been trained and is successfully delivering value through our current NCPA contract. Upon a successful selection from this solicitation, the Midwest sales team will be appraised of the highlights of this contract and immediately begin to deliver value to our customers. Our experience selling through our existing NCPA contract has led The Midwest public sector sales force has been trained on the following:

1. What is a cooperative purchasing network and how does it work?
2. The Midwest/NCPA relationship. Midwest's obligations and how we will administer and manager the work that is sold through the cooperative.
3. Review all applicable legislation that supports the legal transactions through a cooperative.
4. Dan Brandolino will present some case studies on clients that he has worked with to purchase large projects through the cooperative purchasing process.
5. Break our public sector targets into four markets, Park Districts, Libraries, Municipalities, Public Education. Our sales force will be trained on the nuances of each market. Reps will then be assigned to target specific markets based upon their strengths and experience level.
6. The sales reps will then be trained on market specific "first calls" to ensure that we have a specific message to each market.

The sales force will be deployed.

90. Acknowledge that your organization agrees to provide its company logo(s) to Region 14 ESC and agrees to provide permission for reproduction of such logo in marketing communications and promotions.

Yes, we agree to provide company logos and give permission for reproduction of such logo in marketing communications and promotions.

ADMINISTRATION

92. Describe your company's implementation and success with existing cooperative purchasing programs, if any, and provide the cooperative's name(s), contact person(s) and contact information as reference(s).

Midwest is currently under contract with NCPA, under the terms of Contract number: 02-61. To be selected, Midwest responded to RFP #14-18. The terms of the contract are on the NCPA website.

We feel that our existing NCPA contract has been the foundation of our success in the public sector.

93. Describe the capacity of your company to report monthly sales through this agreement.

Under our existing NCPA contract, we are very familiar with all of the required reporting. We communicate regularly with NCPA on monthly sales reporting.

Describe the capacity of your company to provide management reports, i.e. consolidated billing by location, time and attendance reports, etc. for each eligible agency.

Under our existing NCPA contract, Midwest has provided a great deal of management reports upon request. We communicate regularly with NCPA, and comply to all requests for reporting.

94. Please provide any suggested improvements and alternatives for doing business with your company that will make this arrangement more cost effective for your company and Participating Public Agencies.

Green Initiatives

We are committed to helping to build a cleaner future! As our business grows, we want to make sure we minimize our impact on the Earth's climate. So we are taking every step we can to implement innovative and responsible environmental practices throughout Region 14 ESC to reduce our carbon footprint, reduce waste, promote energy conservation, ensure efficient computing, and much more. We would like vendors to partner with us in this enterprise. To that effort, we ask respondents to provide their companies environmental policy and/or green initiative.

95. Please provide your company's environmental policy and/or green initiative.

Midwest Mechanical is an Energy Star Member, Utility Trade Partner, a member of the US Building Council and a member of the Associate of Energy Engineers. We are also registered with Smart Energy Design Assistance Center (SEDAC) as a Design Assistance firm and a Retro-commissioning Provider. Midwest is a ComEd, Nicor and People's Gas trade ally and registered with the Illinois Commerce Commission to install energy efficiency projects.

Midwest Mechanical has also maintained an Energy Star Rated Building since 2010.

Vendor Certifications (if applicable)

96. Provide a copy of all *current licenses, registrations and certifications* issued by federal, state and local agencies, and any *other licenses, registrations or certifications* from any other governmental entity with jurisdiction, allowing respondent to perform the covered services including, but not limited to *licenses, registrations or certifications*. M/WBE, HUB, DVBE, small and *disadvantaged business certifications and other diverse business certifications*, as well as manufacturer certifications for sales and service must be included if applicable.

Tab 5 – Products and Services

Respondents are requested to provide product forms with detailed description of your product offerings. Provide the minimum information as listed for your product categories on the following classifications of product:

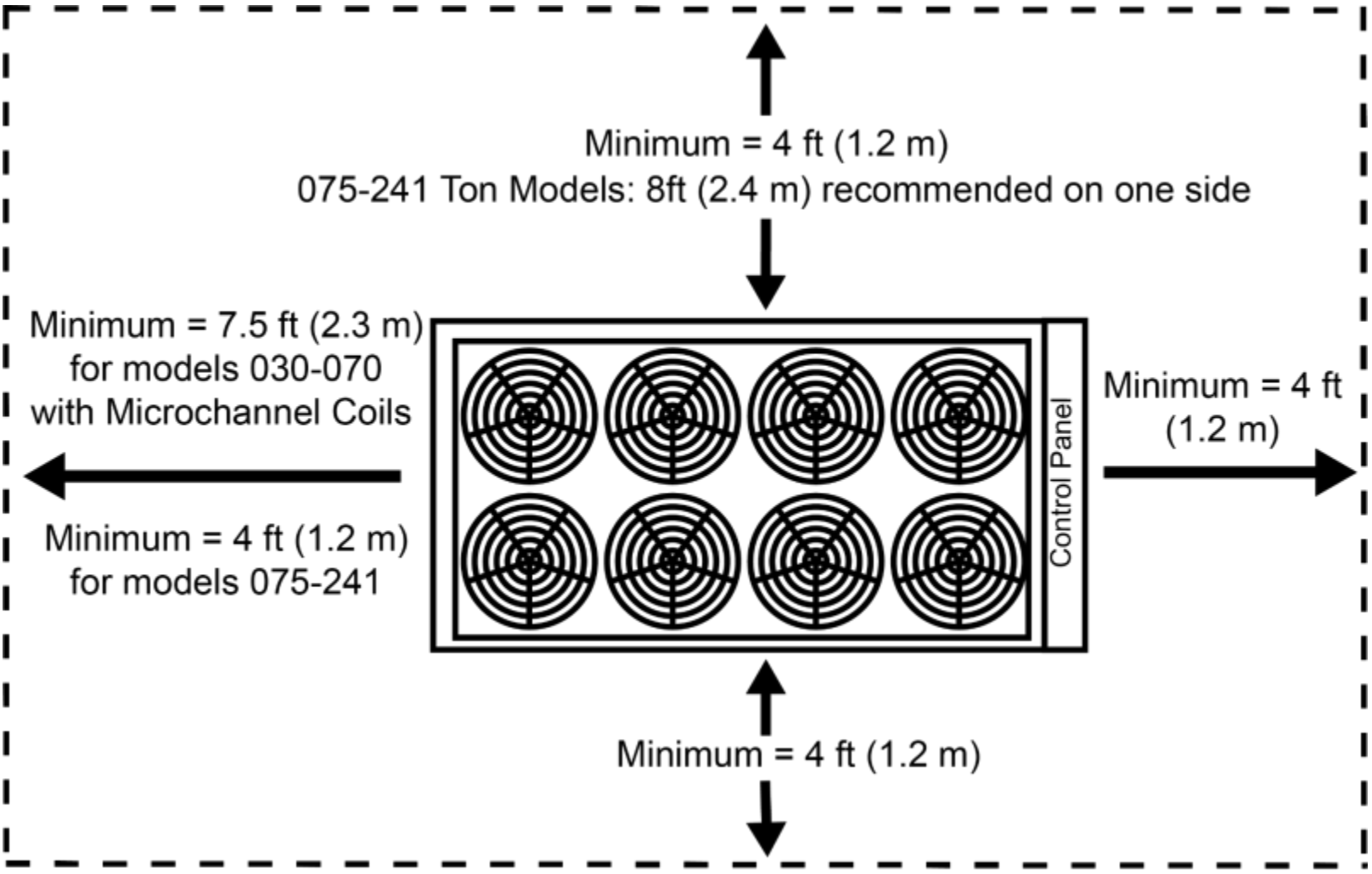
As an independent mechanical contractor we are not confined to one specific equipment make or model, we have access to and have sold/installed virtually every major manufactures equipment and services. It is not practical to list every make and model of equipment available through our extensive vendor network so the items listed below represent a small sampling of some of the common items we frequently provide and install. Each item listed is available through a wide array of manufacturers offering distinct specifications, performance characteristics, and energy efficiency options. As a licensed General Contractor we also have access to the full spectrum of specialty contractors enabling us to offer your members complete turn-key project solutions.

Note: Specification sheet examples of equipment and supplies our firm has provided, installed, and warrantied recently are contained in this section. However, it must be noted that similar detailed information will be provided for every manufacturer that we work with.


◆ HVAC Refrigeration

- Type: **All**
- Cooling medium: **Air, Water, Refrigerant**
- Brand Name(s): **All**
- Capacity Range (tons):**All**
- Standard Warranty (Parts & Labor): **One year Parts and Labor warranty is standard**
- Optional Warranty (components covered & Labor): **Multi year warranty options are available**
- Estimated Lead/Delivery Time: **Varies, Based upon manufacturer and type**
- Location of Manufacturing: **Different locations around the world**
- Range of Efficiencies (KW/Ton): **Varies**
- Estimated Market Share (North America): **Varies based upon manufacturer**
- Provide example data on each type of product provided: **Limited data is included**
- Detail Features & Benefits: **The detail provided below is an example of one project and one manufacturer. Additional information can be provided for other manufacturers.**

AGZ-E Service Clearance



*NOTE: Additional clearance is required for proper airflow. Please consult Close Spacing drawings and IOM for additional details.

Product Drawing	Unit Tag: DST Air Cooled Chiller 001	Sales Office: Thermosystems, Inc. (Chicago)			 13600 Industrial Park Blvd. Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 10.50
Product: Air-Cooled Scroll Chiller	Project Name: NORTH SCHOOL MWM FEB	Sales Engineer: Pam Siciliano			
Model: AGZ-E	Feb. 28, 2020	Ver/Rev:	Sheet: 1 of 1	Scale: NTS Tolerance: +/- 1.0" Dwg Units: in [mm]	
No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.					

No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.

Job Information		Technical Data Sheet
Job Name	NORTH SCHOOL MWM FEB RELEASE	
Date	2/28/2020	
Submitted By	Pam Siciliano	
Software Version	10.50	
Unit Tag	DST Air Cooled Chiller 001	



Image may not represent ordered unit

Unit Overview					
Model Number	Capacity ton	Voltage	Unit Starter Type	ASHRAE 90.1	LEED Enhanced Refrigerant Management Credit
AGZ140E	139.3	460 V / 60 Hz / 3 Ph	Across the Line	'07, '10, '13 & '16	Pass

Unit								
Unit Type			Platform			Unit Revision		
Air-Cooled Scroll Compressor Chiller			High Efficiency Packaged			00		
Head Pressure			Tubing					
VFD's w/o Line Reactors [High Efficiency]			Replaceable Filter Dryer with Discharge & Liquid Valves, no HGBP					
Unit Controls			Display					
Electronic Expansion Valve			On Controller only					
Refrigerant Type			Refrigerant Weight					
R410A			152 lb (per unit)					
Pump Controls								
Dual Evaporator Pumps - Dual Control Output								
Approval								
ETL/cETL, AHRI & ASHRAE 90.1								
Evaporator								
Water Volume:		15.0 gal						
Connection Hand:		Universal Connection - Facing out back						
Connection Size:		4.0 in						
Insulation:		Single Layer Insulation to Suction at each Compressor						
Entering Fluid Temperature	Leaving Fluid Temperature	Fluid Type	Glycol Concentration	Fluid Flow	Fluid Flow (with glycol) Min / Max	Pressure Drop	Pressure Drop (with glycol) Min / Max	Fouling Factor
53.00 °F	44.00 °F	Water & Propylene	30.0 %	400.0 gpm	144.9 / 603.9 gpm	24.0 ft H ₂ O	2.70 / 41.4 ft H ₂ O	0.000100 °F.ft ² .h/Btu
Note: Evaporator Pressure Drop includes Factory Installed Strainer. Pressure drop without strainer is 18.7. Minimum flow is based on a Variable Flow Pumping System Type and applies to part load conditions only.								
Condenser								
Coil Fins:		MicroChannel						
Guards:		None						
Design Ambient Air Temperature		Altitude		Fan Diameter		Minimum Design Ambient Temperature		
95.0 °F		0.000 ft		30.0 in		32.0 °F		

Unit Performance

Design										
Capacity		Input Power			Efficiency (EER)			IPLV/IP* (EER)		
139.3 ton		159.2 kW			10.50 Btu/W.h			17.24 Btu/W.h		
Performance Points rated at AHRI Ambient Relief										
Point #	% Load	Unit			Evaporator			Condenser		
		Capacity ton	Input Power kW	Efficiency (EER) Btu/W.h	Fluid Flow gpm	Pressure Drop ft H ₂ O	Entering Fluid °F	Leaving Fluid °F	Ambient Air °F	Altitude ft
1	100.0	139.3	159.2	10.50	400.0	18.7	53.00	44.00	95.0	0.000
2	90.0	125.3	128.4	11.71	400.0	18.7	52.10	44.00	89.0	0.000
3	80.0	111.4	103.4	12.93	400.0	18.7	51.20	44.00	83.0	0.000
4	70.0	97.49	78.65	14.87	400.0	18.7	50.30	44.00	77.0	0.000
5	60.0	83.56	58.64	17.10	400.0	18.7	49.40	44.00	71.0	0.000
6	50.0	69.63	44.01	18.99	400.0	18.7	48.50	44.00	65.0	0.000
7	40.0	55.71	33.32	20.06	400.0	18.7	47.60	44.00	59.0	0.000
8	30.0	41.78	23.72	21.14	400.0	18.7	46.70	44.00	55.0	0.000
9	20.0	This load point is below the chiller minimum load.								
10	10.0	This load point is below the chiller minimum load.								

* IPLV reflects AHRI standard rating conditions with water and does not change with user defined conditions

Note: Evaporator Pressure Drop in this table does Not include strainer. For strainer pressure drop data see 'Evaporator' table on page 1.

Sound (with insulation)

Type of Sound Insulation: Low Noise (Sound Reduction Compressor Blankets)											
Sound Pressure (at 30 feet)											
63 Hz dB	125 Hz dB	250 Hz dB	500 Hz dB	1 kHz dB	2 kHz dB	4 kHz dB	8 kHz dB	Overall dBA	75% Load dBA	50% Load dBA	25% Load dBA
64	59	62	60	56	54	53	45	63	62	60	59
Sound Power											
63 Hz dB	125 Hz dB	250 Hz dB	500 Hz dB	1 kHz dB	2 kHz dB	4 kHz dB	8 kHz dB	Overall dBA	75% Load dBA	50% Load dBA	25% Load dBA
91	86	90	87	82	81	80	72	89	88	86	85

Octave band is non 'A' weighted and overall readings are 'A' weighted. Sound data rated in accordance with AHRI Standard-370.

Physical

Unit				
Length*	Height	Width*	Shipping Weight*	Operating Weight*
238 in	99 in	88 in	6555 lb	6674 lb

* Shipping and operating weights do not include the weights of any Options or Accessories. Contact Chiller Applications for additional information.

Electrical

Unit Electrical Data

Voltage	Starter Type	Fan Motor Quantity	LRA Fan Motor (each)	FLA Fan Motors (each)
460 v / 60 Hz / 3 Ph	Across the Line	10	18 A	3.6 A
Power Connection Type:	High Short Circuit Current Rating with Single Point Disconnect Switch and Circuit Protection			
Short Circuit Current Rating:	65 kA			

Single Point Power Connection

MCA:	309.3 A
Fuse Size (recommended):	350 A
MOCP (maximum):	350 A
Connector Wire Range:	(2) 3/0-500

Compressor Electrical Data

Compressor Type	Compressor Quantity		Starter Type	
Scroll	4		Across the Line	
Circuit #:	1		2	
Compressor #:	1	3	2	4
RLA:	54.5 A	73 A	54.5 A	73 A
Inrush Current:	310 A	408 A	310 A	408 A

Note: Power wiring connections to the chiller may be done with either copper or aluminum wiring. Wire should be sized per NEC and/or local codes. Wire sizing and wire count must fit in the power connection lug sizing listed in latest installation manual. Please contact your local sales office for more information.

Options

Basic Unit

Control Box Ambient:	High Ambient with Exhaust Fans (125°F maximum)
Evaporator Strainer:	Factory Installed Evaporator Strainer – 175 PSI Pressure Rating

Control

Communication:	BACnet MS/TP
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Electrical

Water Flow Indicator:	Thermal Dispersion Type
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Warranty

Unit Startup	Domestic
Standard Warranty:	1st Year Entire Unit Parts & Labor
Extended Compressor Warranty:	Compressor Only; extended 4 years parts only (5 Years Total)

AHRI Certification



Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Unit contains freeze protection fluids in the evaporator with a leaving chilled fluid temperature above 32°F [0°C] and is certified when rated per the Standard with water. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Accessories

Optional

Part Number	Description
332320106	Spring Isolator Kit; AGZ: PKGD, 140-150E (non-Seismic)

◆ Indoor Air Quality Products and Devices

- Type : **Midwest offers all types of Indoor Air Quality products. Midwest Mechanical has a unique distribution agreement with GPS, a manufacturer of Needlepoint Bipolar Ionization**
- Brand Name(s): **GPS and others**
- Capacity Range: **all ranges**
- Standard Warranty (Parts & Labor): **one year parts and labor**
- Optional Warranty (components covered & Labor): **all options available**
- Estimated Lead/Delivery Time: **Varies**
- Location of Manufacturing (City, State or Country): **Locations around the USA and world**
- Range of Efficiencies : **All**
- Estimated Market Share (North America): **N/A**
- Provide example data on each type of product provided : **See product detail below**
- Detail Features & Benefits: **Below is an example of a product which is distributed by Midwest Mechanical**

GPS[®]

GLOBAL PLASMA
SOLUTIONS



Engineering Air for a Cleaner World™

GPS



With over 30 patents and more than 150,000 installations worldwide using our NEEDLEPOINT BIPOLAR IONIZATION technology, also known as NPBI, GPS is truly the Indoor Air Quality (IAQ) revolutionizer.

Our proven technology delivers clean indoor air that is safe and healthy – producing neither ozone nor other harmful by-products. All our NPBI products are UL and CE approved. Through NPBI, our products purify the air by eliminating airborne Particulates, Odors and Pathogens. All this while saving you 30% on Energy consumption and lowering your carbon footprint by reducing outdoor air intake by up to 75%.

Engineering Air for a Cleaner World™



GPS FACT: GPS can be installed in any system in any building...

- Agriculture
- Airports
- Animal Care
- Arenas & Stadiums
- Banks
- Casinos
- Child Care
- Convention Centers
- Fitness
- Food Service
- Healthcare
- Hospitality
- Hospitals
- Institutional
- Manufacturing
- Office Building
- Retail
- Schools & Universities
- Senior Care
- Transportation
- Theater
- Worship

Truly a revolutionIZER
A pioneer with many innovations:

1st

- ... with universal power supply
- ... with a auto-cleaning
- ... duct-mounted design
- ... to use carbon fiber brush needlepoint emitters
- ... with ionization bar
- ... with flexible ionization strip
- ... modular ionization bar
- ... to achieve UL 867 Ozone Standard
- ... AND ONLY to pass the RCTA, DO-160 standard for aircraft
- ... to be installed on a commercial jet
- ... to be certified by FAA
- ... to be installed in commercial hand driers
- ... AND ONLY to receive UL 2998 Ozone Free Certification
- ... to receive OSHPH seismic (OSP) certification

WHY GPS?

GPS DELIVERS P.O.P.E.



**PARTICLES
REDUCED**

Particle Reduction

The GPS NPBI technology reduces airborne particles (i.e., dust, pet dander, pollen) through agglomeration. The ions attach to the airborne particles. The particles are subsequently attracted to one another, effectively increasing their mass and size. The airfiltration system easily captures the larger particles, increasing the capture efficiency of your HVAC system.



**PATHOGENS
KILLED**

Pathogen Reduction

During the GPS cleaning process the NPBI technology attacks and kills viruses, mold spores and bacteria. The ions steal away hydrogen from the pathogens, leaving them to die, and leaving you with clean and healthy indoor air.



**ODORS
NEUTRALIZED**

Odor Reduction

During the GPS cleaning process chemical, pet, cooking, and other odors are broken down into basic harmless compounds, leaving the indoor air fresh smelling and free of odor causing VOCs.



**ENERGY
SAVED**

Energy Saving

GPS' environmentally friendly cleaning process allows commercial buildings to significantly reduce the amount of outdoor air required to operate. This equates to a safer, more comfortable environment that requires up to 30% less energy to condition.

THE GPS ADVANTAGE

	GPS NPBI	OTHER NPBI	CORONA DISCHARGE	HEPA FILTERS	CARBON FILTERS	ULTRAVIOLET (UV)	UV-PCO
Produces Harmful Byproducts	No	Yes	Yes	No	No	Yes	Yes
Reduces Airborne Particles	✓	Yes	Yes	Yes	No	No	No
Destroys VOCs	✓	Yes	Yes	No	Captures	No	Yes
Kills Pathogens	✓	Yes	Yes	No	Captures	Yes	Yes
Reduces Energy Cost	30%	Yes	Yes	No	No	No	No
UL 2998 No-Ozone Certified	✓	No	No	N/A	N/A	N/A	N/A
Treats In-Room Air	✓	Yes	Yes	No	No	No	No
No Replacement Parts	✓	No	No	No	No	No	No
Auto Self-Cleaning	✓	No	No	No	No	No	No
Simple to Install	✓	No	No	No	No	No	No
Low Total Cost	✓	Yes	No	No	No	No	No

AUTO-CLEANING NPBI

GPS-FC48-AC™

An automatic self-cleaning, lightweight NPBI system that handles up to 4,800 CFM or 12 tons. Designed for multiple mounting options including fan inlet, interior duct walls or floors. The composite construction allows for mounting in corrosive environments.

Features

- + > 400 Million + and - Ions Per cc/sec
- + Universal Voltage Input (24 - 240 VAC)
- + Programmable Auto-Cleaning Cycle
- + Carbon Fiber Brush Emitters
- + Alarm Contacts

UNIVERSAL VOLTAGE



MAINTENANCE FREE



Features

- + > 300 Million + and - Ions Per cc/sec
- + Universal Voltage Input (24 - 240 VAC)
- + Programmable Auto-Cleaning Cycle
- + Carbon Fiber Brush Emitters
- + Alarm Contacts



CARBON FIBER EMITTERS

GPS-FC24-AC™

An automatic self-cleaning, lightweight NPBI system that handles up to 2,400 CFM or 6 tons. Designed for multiple mounting options including fan inlet, interior duct walls or floors. The composite construction allows for mounting in corrosive environments.

APPLICATIONS

- | | |
|----------------------|--------------------------|
| • Agriculture | • Hospitality |
| • Airports | • Hospitals |
| • Animal Care | • Institutional |
| • Arenas & Stadiums | • Manufacturing |
| • Banks | • Office Building |
| • Casinos | • Retail |
| • Child Care | • Schools & Universities |
| • Convention Centers | • Senior Care |
| • Fitness | • Transportation |
| • Food Service | • Theaters |
| • Healthcare | • Worship |

GPS-DM48-AC™

The world's first automatic self-cleaning, duct mounted, lightweight NPBI electronic air cleaner. The maintenance free unit is designed for indoor or outdoor duct mounting and can handle up to 4,800 CFM or 12 tons.

Features

- + > 400 Million + and - Ions Per cc/sec
- + Universal Voltage Input (24 - 240 VAC)
- + Programmable Auto-Cleaning Cycle
- + Carbon Fiber Brush Emitters
- + Alarm Contacts
- + 3/4" Quick-Turn Duct Adapter

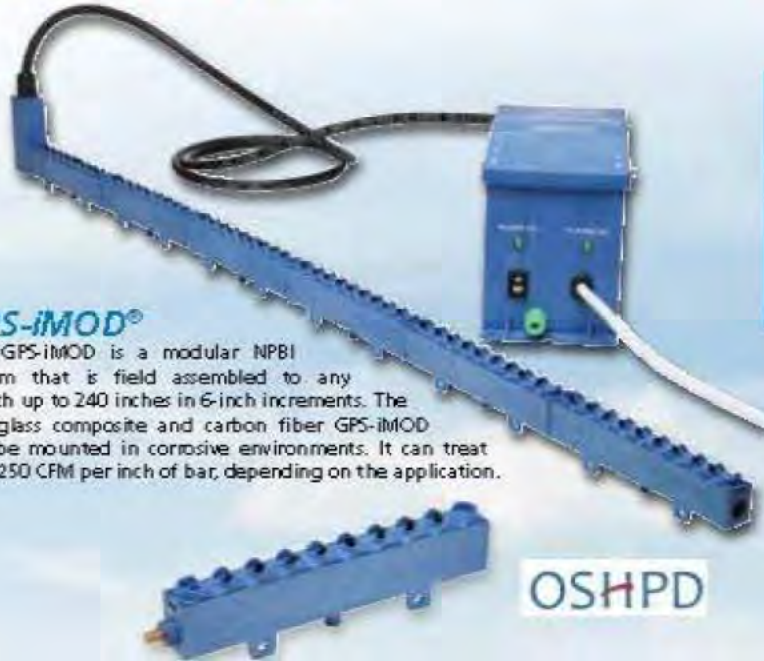
SELF-CLEANING



2016 IAQ GOLD AWARD WINNER



BARS & STRIPS



GPS-iMOD®

The GPS-iMOD is a modular NPBI system that is field assembled to any length up to 240 inches in 6-inch increments. The fiberglass composite and carbon fiber GPS-iMOD can be mounted in corrosive environments. It can treat 50 – 250 CFM per inch of bar, depending on the application.

Features

- + > 140 Million + and - Ions Per Inch/Sec
- + Universal Voltage Selector Switch
- + Six HV Output Ports
- + Alarm Contacts
- + Illuminated On/Off Switch
- + Plasma on Indication Light
- + UL 2908 Ozone Free



GPS-iRIB® 18/36

The GPS-iRIB is available in 18" and 36" lengths. They are made from a flexible chemical, heat and cold resistant Kapton® material containing a circuit with special carbon fiber ion emitters soldered into the circuit traces. This mechanism is engineered to deliver the highest level of ionization with the least amount of energy in the most compact size. Designed for 3200 CFM or 8 tons.

Perfect For

- + Traditional Split Systems
- + Ductless Mini Splits
- + Heat Pump PTACs
- + Ducted Modules
- + Fan Coils



Features

- + > 25 Million + and - Ions Per Foot/Sec
- + Fold-To-Length Circuit
- + Local LED Power Indication
- + Integral Control Relay for BAS Interface
- + Velcro® for Easy Installation
- + Voltage Input 110VAC to 240VAC



GPS-NEMA4-OE

The GPS-NEMA4-OE is a NEMA 4X-rated fiberglass enclosure designed to house one GPS-iMOD power supply. The panel adds a superior finished look to any project while providing the required protection against foreign substances, such as water and dust, when power supplies are mounted in non-NEMA 1 rated environment.

COMPACT NPBI



GPS-FC-1™ / GPS-FC-2™

The GPS-FC series is designed to be mounted inside fan coils, heat pumps, PTACs, ductless mini-splits and air handlers up to 1,200 CFM or 3 tons. Their compact size allows them to be mounted almost anywhere in just a few minutes.

Features

- + > 25 Million + and - Ions Per cc/sec
- + GPS-FC-1 Powered by 110-120 Volts AC
- + GPS-FC-2 Powered by 208-240 Volts AC
- + Carbon Fiber Brushes
- + LED Operation Status
- + Carbon Fiber Brush Emitters



GPS-FC-3-BAS™

The GPS-FC-3-BAS unit is designed to be mounted inside fan coils, heat pumps, PTACs, ductless mini-splits, and air handlers up to 3,200 CFM or 8 tons. Its compact size and simple mounting requirements allow it to be quickly mounted almost anywhere.

Features

- + > 170 Million + and - Ions Per cc/sec
- + Powered by 24 Volts AC
- + Carbon Fiber Brush Emitters
- + BAS Alarm Contacts
- + LED Operation Status

SENSORS & MEASUREMENTS

GPS-IMEASURE™

The GPS-IMEASURE is the first commercially available ion detector that can be permanently mounted in the space to measure ion levels in real time and report back to a BAS.



MONITOR IONIZATION LEVELS REMOTELY

- + Auto Calibration/Auto Zero
- + 0 - 1,000,000 Ions/cc

GPS-IMEASURE-D™

The GPS-IMEASURE-D ion detector is permanently mounted in the duct downstream of any GPS ionization device. It measures ion levels in real time and reports back to a BAS. It includes three sensitivity levels: 20,000/200,000/2,000,000 ions/cc/sec that can be set based on the application and in-duct location.

MONITOR IN-DUCT IONIZATION LEVELS

- + 20,000 to 2M Ions/cc
- + Input Voltage 12 to 24V AC or DC
- + LED Operation Status



GPS-IDTECT-P™

The GPS-IDTECT-P is a plenum-mounted ionization detector that confirms the output from the GPS-IMOD. The GPS-IDTECT-P provides the ability to monitor ionization status in a plenum to confirm that the ionization equipment is working properly.



Features

- + Universal Voltage Input
- + 1,000 - 200,000,000 Ions/cc (+ or -)
- + 0-100% Humidity

How Ionization Works

GPS' NPBI technology works to safely clean the air inside industrial, commercial and residential buildings. The patented technology uses an electronic charge to create a plasma field filled with a high concentration of + and - ions. As these ions travel with the air stream they attach to particles, pathogens and gas molecules. The ions help to agglomerate fine sub-micron particles, making them filterable. The ions kill pathogens by robbing them of life-sustaining hydrogen. The ions breakdown harmful VOCs with an Electron Volt Potential under twelve (eV<12) into harmless compounds like O₂, CO₂, N₂ and H₂O. The ions produced travel within the air stream into the occupied spaces, cleaning the air everywhere the ions travel, even in spaces unseen.



What is an Ion you may ask?

An ion is a molecule or atom that is positively or negatively charged, meaning that it has electrons to give or needs electrons to become uncharged, thus becoming stable.

Mother Nature's Way of Cleaning

GPS' technology generates the same ions as Mother Nature creates with lightning, waterfalls, and ocean waves. Mother Nature uses energy to break apart molecules. It is nature's way of cleansing the air naturally and creating a healthy environment. The only difference is that GPS' technology does it without forming ozone or other harmful byproducts.

GPS' NPBI technology has been certified by UL 867 and UL 2998 to be ozone free.



3rd Party Testing Summary

Pathogen	Time in Chamber	Kill Rate	Test Agency
Tuberculosis	60 minutes	69.09%	EMSL
Clostridium Difficile	30 minutes	86.87%	EMSL
Norovirus	30 minutes	99.50%	ATS Labs
MRSA	30 minutes	96.24%	EMSL
Staphylococcus	30 minutes	96.24%	EMSL
Mold Spores	24 hours	99.50%	GCA
E.coli	15 minutes	99.68%	EMSL
Legione lla	30 minutes	99.71%	EMSL

**Airborne Mold Spores
Reduced by 95%**



ATS LABS

EXCELLENCE IN ANTIMICROBIAL TESTING

Owned by Accuratus Lab Services

www.GlobalPlasmaSolutions.com

GPS PRODUCT CHART

AUTO-CLEANING LINE	VOLTAGE	CFM RATING	IDHS/cc/sec
GPS-FC24-AC	24-240 VAC	2,400	> 300 million
GPS-FC48-AC	24-240 VAC	4,800	> 400 million
GPS-DM48-AC	24-240 VAC	4,800	> 400 million
COMPACT LINE	VOLTAGE	CFM RATING	IDHS/cc/sec
GPS-FC-1	110-120 VAC	1,200	> 25 million
GPS-FC-2	208-240 VAC	1,200	> 25 million
GPS-FC3-BAS	24 VAC	3,200	> 170 million
BARS & STRIPS LINE	VOLTAGE	CFM RATING	IDHS/cc/sec
GPS-IMOD	24-240 VAC	50-250 CFM/inch	> 140 million/in
GPS-IRIB-18	110-240 VAC	3,200	> 35 million/ft
GPS-IRIB-36	110-240 VAC	3,200	> 35 million/ft

GPS FACT: Aviation Application

GPS' technology is the only active air purification system that has been designed and approved to operate in commercial and private aircraft. Aviation applications require passing the stringent RTCA DO-160 test proving the technology does not generate EMI, line noise or interfere with the avionics in any way. This is important to note because GPS' technology is used in many healthcare applications and will not cause interference with the imaging equipment.



RTCA
DO-160

GPS

**GLOBAL PLASMA
SOLUTIONS**

Engineering Air for a Cleaner World™

980-279-5622

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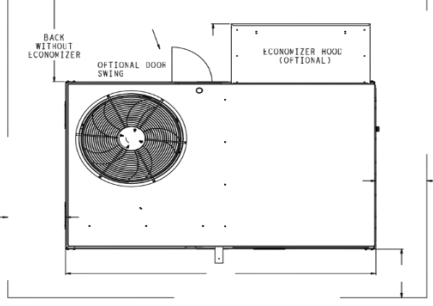
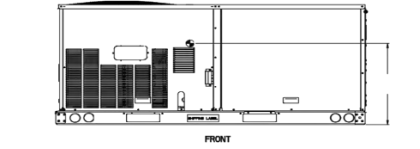
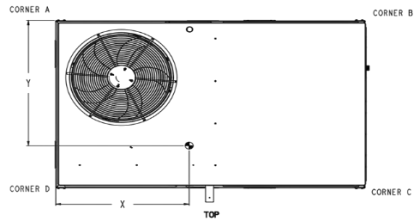
All technical information and advice given here are based on GPS previous experience and/or test results. GPS gives this information to the best of its knowledge but assumes no legal responsibility. Customers are asked to check the suitability and usability in the specific application, since the performance of the product can only be judged when all necessary operating data are available. The above information is subject to change.

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UNIT WEIGHT	CONDENSER WEIGHT (A)	CONDENSER WEIGHT (B)	CONDENSER WEIGHT (C)	CONDENSER WEIGHT (D)	C.G.	REFERT
48004111	150	150	150	150	150	150
48004112	150	150	150	150	150	150
48004113	150	150	150	150	150	150
48004114	150	150	150	150	150	150

* STANDARD UNIT WEIGHT IS WITH LOW GAS HEAT AND WITHOUT PACKAGING.
FOR OTHER SIZES AND ACCESSORIES REFER TO THE PRODUCT DATA CATALOG.



NOTES:
1. FOR ALL WORKMAN CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

SURFACE	CLEARANCE		DIMENSIONS
	SERVICE WITH CONDUCTIVE BARRIER	SERVICE WITH NONCONDUCTIVE BARRIER	
FRONT	48 (1 1/2 mm)	36 (1 1/4 mm)	18 (4/5 mm)
LEFT	48 (1 1/2 mm)	42 (1 3/8 mm)	18 (4/5 mm)
BACK	48 (1 1/2 mm)	42 (1 3/8 mm)	18 (4/5 mm)
BACK W/DOOR	36 (1 1/4 mm)	36 (1 1/4 mm)	18 (4/5 mm)
RIGHT	36 (1 1/4 mm)	36 (1 1/4 mm)	18 (4/5 mm)
TOP	72 (2 3/8 mm)	72 (2 3/8 mm)	72 (2 3/8 mm)

TYPE CLASSIFICATION	SHEET	DATE	APPROVALS	480C 94-94 SINGLE PACKAGE ELECTRICAL COOLING WITH GAS HEAT	48TC003099	REV
U.S. EECN:MSR	2 OF 3	09/07/18	08/03/18			1

Unit Parameters

Unit Model: **48GCEM04A1M6-2U2C0**

Unit Size: **04 (3 Tons)** Volts-Phase-Hertz: **460-3-60** Heating Type:

..... Gas Duct Cfg: **Vertical Supply / Vertical Return Medium Heat**

Two Stage Cooling Models

Dimensions (ft. in.) & Weight (lb.) ***

Unit Length:..... 6' 2.375"

Unit Width:..... 3' 10.625"

Unit Height:..... 2' 9.375"

*** Total Operating Weight:..... 813 lb

*** Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

Lines and Filters

Return Air Filter Type:..... Throwaway

Return Air Filter Quantity:..... 2

Return Air Filter Size:..... 16 x 25 x 2

Unit Configuration

- Direct Drive - EcoBlue - Standard Static
- Al/Cu - Al/Cu - Louvered Hail Guards
- RTU Open Controller
- Temp Ultra Low Leak Economizer w/Baro Relief Powered
- Convenience Outlet
- Non-Fused
- Disconnect Standard
- Packaging

Warranty Information

- 1-Year parts(std.)
- 5-Year compressor parts(std.)
- 10-Year heat exchanger - Aluminized(std.) No

optional warranties were selected.

NOTE: Please see Warranty Catalog 500-089 for explanation of policies and ordering methods.

Ordering Information

Part Number	Description	Quantity
48GCEM04A1M6-2U2C0	Rooftop Unit	1
	Base Unit	
	Al/Cu - Al/Cu - Louvered Hail Guards	
	Powered Convenience Outlet	
	Non-Fused Disconnect	
	RTU Open controls Ultra Low Leak Temp Econo 2, baro relief-Meets Calf. Title 24 FDD & Leak Rate	
	Accessories	
CRRFCURB002A01	24-inch Tall Roof Curb	1

◆ Air handling

- Types: **Midwest Mechanical provides all types of Air Handling equipment including packaged AHU's, built up AHU's, custom AHU's, Make up air systems, coil sections, fan arrays, etc.**
- Brand Name(s): **All Major manufacturers**
- Fan Types: **Midwest Mechanical provides every type of fan system**
- Capacity Range (CFM): **All capacities**
- Heating Medium: **Electric, Gas, Steam, Hot Water, VRF**
- Cooling Medium: **DX, Chilled water, Ammonia**
- Standard Warranty (Parts & Labor): **Standard warranty is one year**
- Optional Warranty (components covered & Labor): **Mult year warranties are available**
- Estimated Lead/Delivery Time: **Varies based upon manufacturer and type**
- Location of Manufacturing: **The products Midwest uses are manufactured in many different locations around the world**
- Estimated Market Share: **Varies based upon manufacturer**
- Provide example data on each type of product provided: **Below is an example of one specific type of equipment. Additional submittals available upon request**
- Detail Features & Benefits

Table of Contents

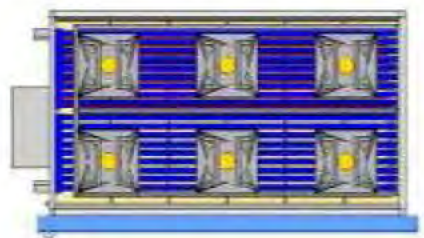
Drawing for AHU-1 fan array.....	4
Fan Curve for AHU-1 fan array	11
Technical Data Sheet for AHU-1 fan array	13



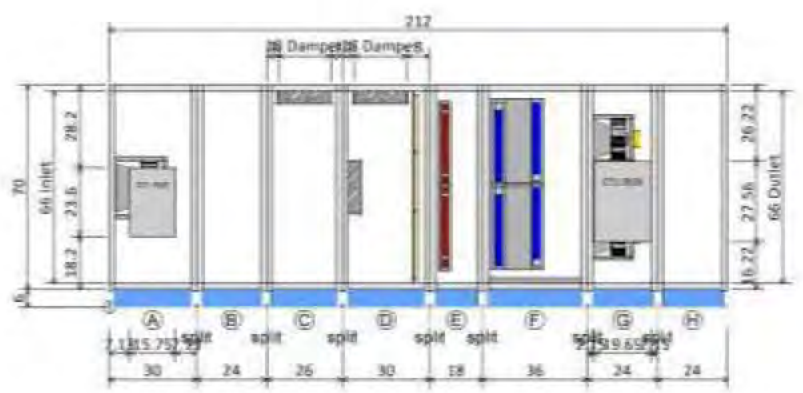
ISOMETRIC VIEW



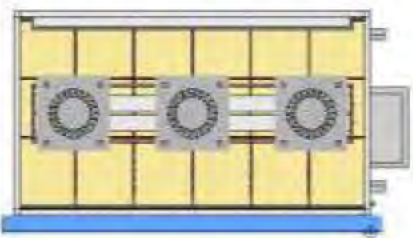
PLAN VIEW



REAR END VIEW



ELEVATION VIEW

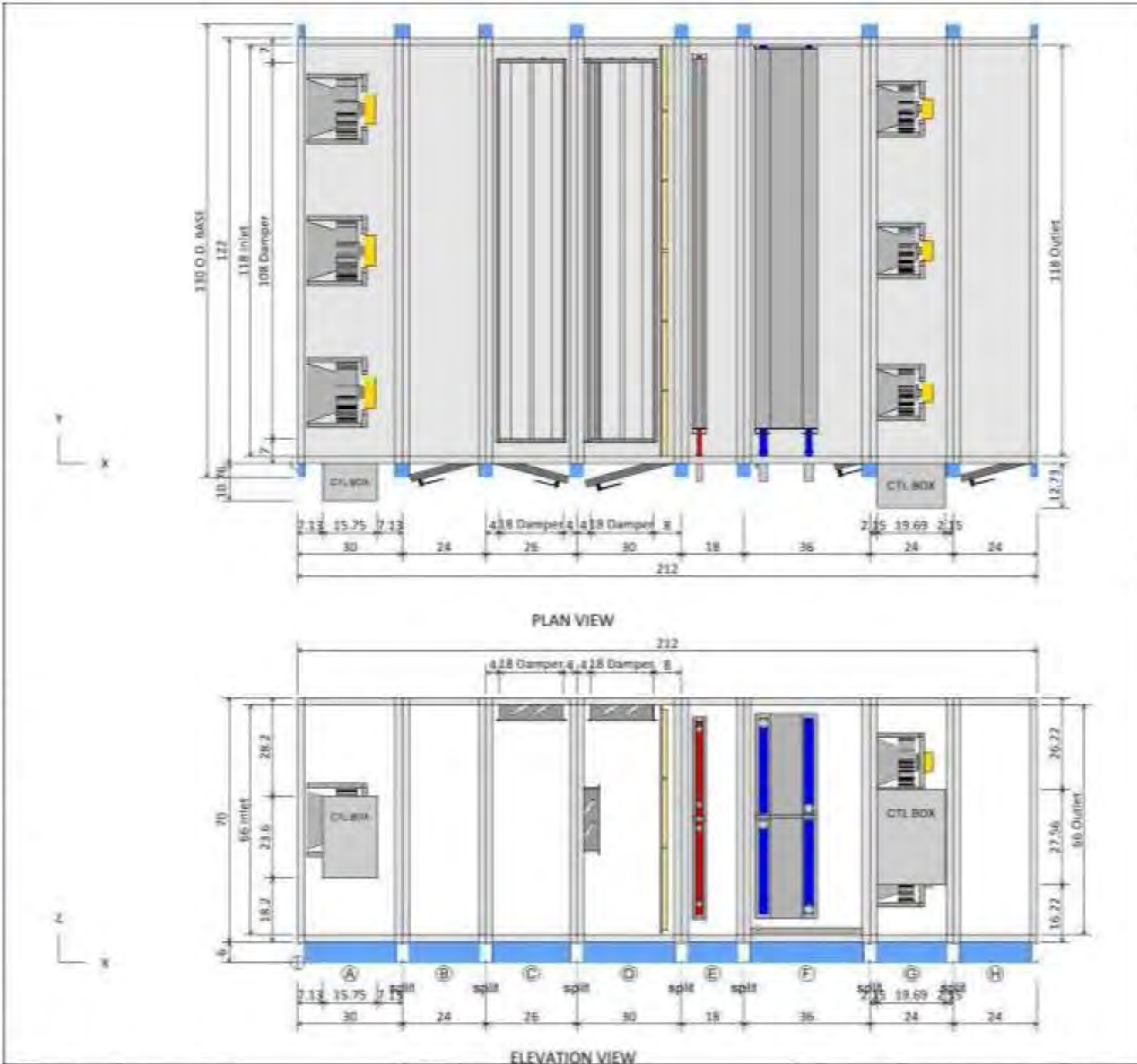


FRONT END VIEW

Plan/Elevation	Unit Tag: AHU-1 fan array		Sales Office: Thermosystems, Inc. (Chicago)			
Product: Vision Air Handler	Project Name: NORTH SCHOOL MWM FEB RELEASE		Asst. Engineer:			
Model: CAH047GDCM	Feb. 27, 2020	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in



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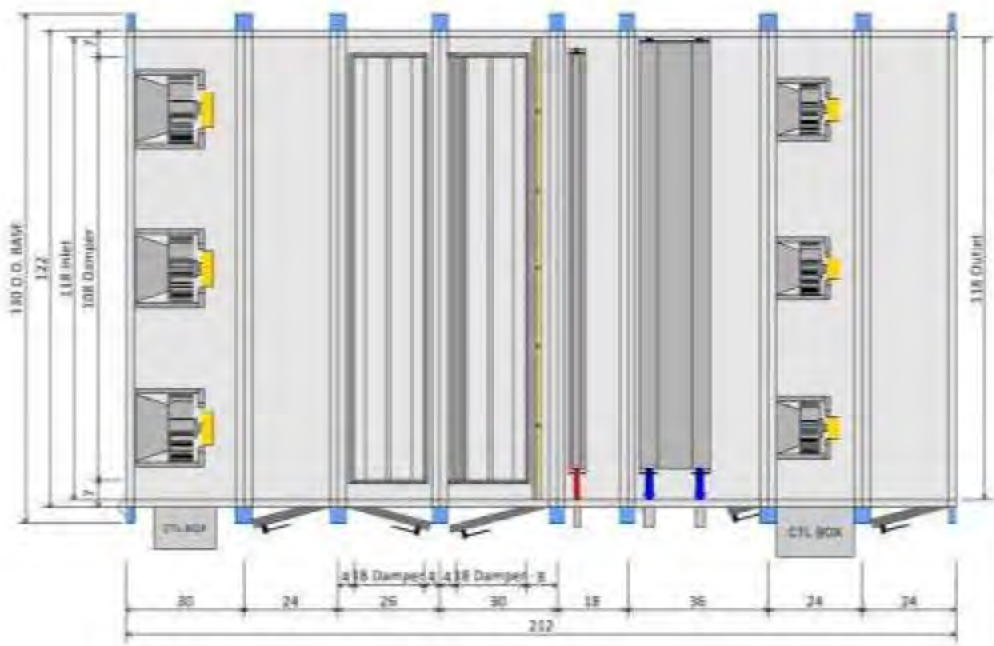


Component Key	
Return Fan	
Fan Type:	Centrifugal - Plenum
Fan Size (Class):	450 (2)
(A) Air Flowrate:	6030.0 cfm
T.S.P.:	0.9 insWg
Motor Power:	3.5 HP
Control box door swing:	15.75 ins
Access Section	
Right Door (WxH):	20 ins x 66 ins
Economizer Return/Exhaust	
Right Door (WxH):	22 ins x 66 ins
Economizer Mixing/Outside Air	
(D) Filter Type:	PerfectPleat HC M8
Right Door (WxH):	26 ins x 66 ins
Hot Water Coil	
(E) Coil Model:	5WH0801C
Total Capacity:	530107.0 Btu/hr
Chilled Water coil	
(F) Coil Model:	5WM0812C
Total Capacity:	781742.0 Btu/hr
Right Door (WxH):	8 ins x 58 ins
Supply Fan	
Fan Type:	Centrifugal - Plenum
Fan Size (Class):	355 (2)
(G) Air Flowrate:	3015.0 cfm
T.S.P.:	4.3 insWg
Motor Power:	3.3 HP
Control box door swing:	19.69 ins
Access Section	
(H) Right Door (WxH):	20 ins x 66 ins

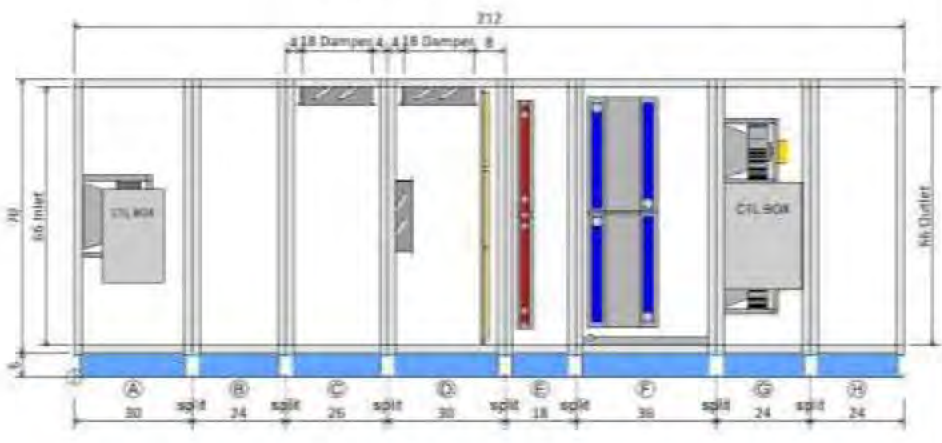
Plan/Elevation - No Ends	Unit Tag: AHU-1 fan array	Sales Office: Thermosystems, Inc. (Chicago)					
Product: Vision Air Handler	Project Name: NORTH SCHOOL MWM FEB RELEASE	Sales Engineer:					
Model: CAH047GDCM	Feb. 27, 2020	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in	13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 11.94

Component Key					
Type	X	Y	Z	Wid	Hgt
(A) Return Fan Opening	0.00	2.00	8.00	118.00	66.00
(C) Economizer Return/Exhaust Exhaust air damper	58.00	7.00	76.00	108.00	18.00
(D) Economizer Mixing/Outside Air Outside air damper	84.00	7.00	76.00	108.00	18.00
(H) Access Section Opening	212.00	2.00	8.00	118.00	66.00

Note: Dimensions are measured from the origin point.



PLAN VIEW

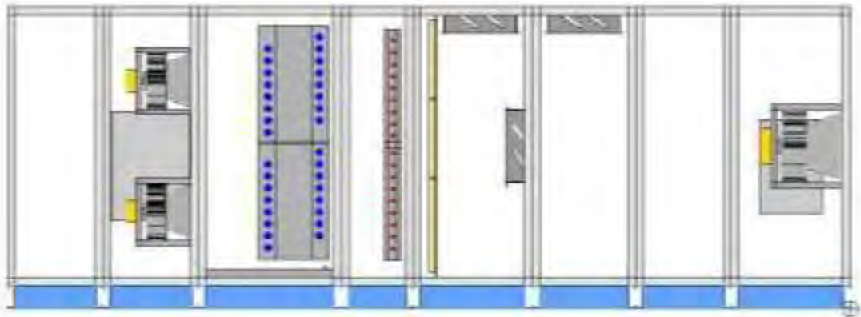


ELEVATION VIEW

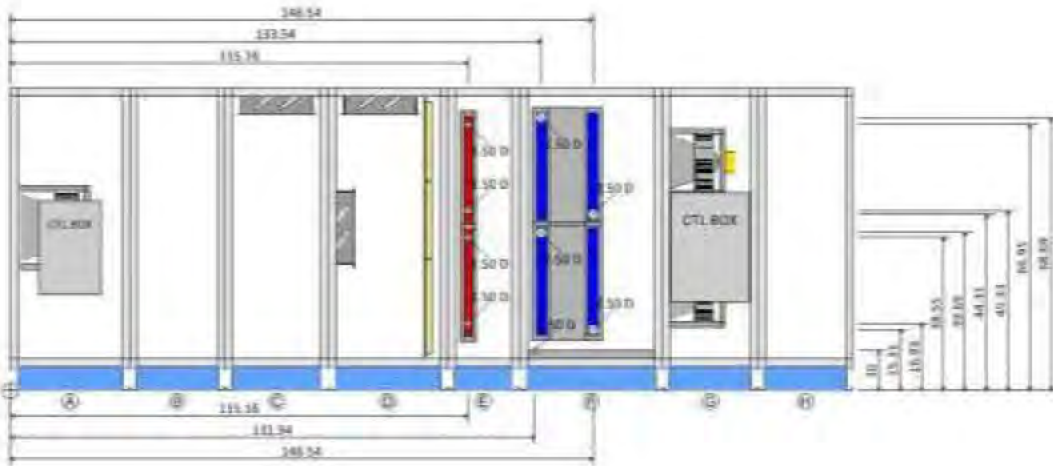
Opening/Damper Connections	Unit Tag: AHU-1 fan array	Sales Office: Thermosystems, Inc. (Chicago)	
Product: Vision Air Handler	Project Name: NORTH SCHOOL MWM FEB RELEASE	Asst. Engineer:	
Model: CAH047GDCM	Feb. 27, 2020	Ver/Rev:	Sheet: 1 of 1
		Scale: NTS	Tolerance: +/-0.25"
		Dwg Units: in	



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LEFT ELEVATION VIEW



RIGHT ELEVATION VIEW

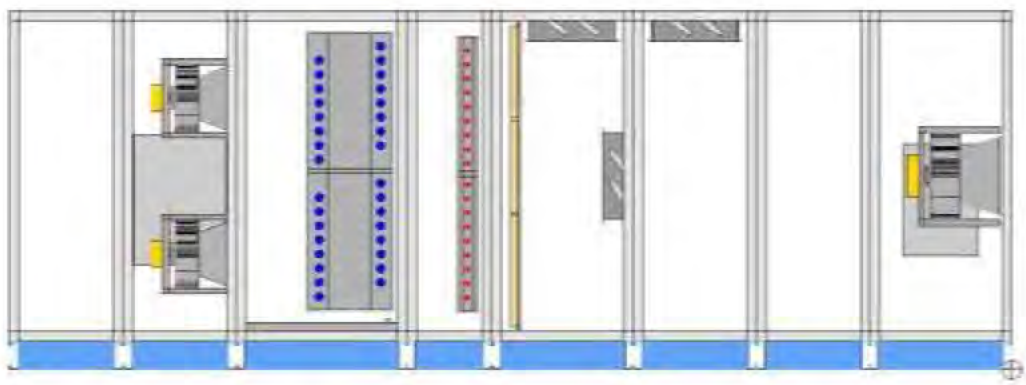
Coil and Drain Connections					
Type	X	Y	Z	Diam	
Hot Water Coil					
Hot water inlet:	115.16	-7.00	16.93	1.50	
Hot water outlet:	115.16	-7.00	38.55	1.50	
Hot water inlet:	115.16	-7.00	45.33	1.50	
Hot water outlet:	115.16	-7.00	66.95	1.50	
Chilled Water coil					
Condensate drain conn:	131.94	-3.40	10.00	1.50	
Cold water inlet:	146.54	-7.00	15.31	2.50	
Cold water outlet:	133.54	-7.00	39.69	2.50	
Cold water inlet:	146.54	-7.00	44.31	2.50	
Cold water outlet:	133.54	-7.00	68.69	2.50	

Note: Dimensions are measured from the origin point.

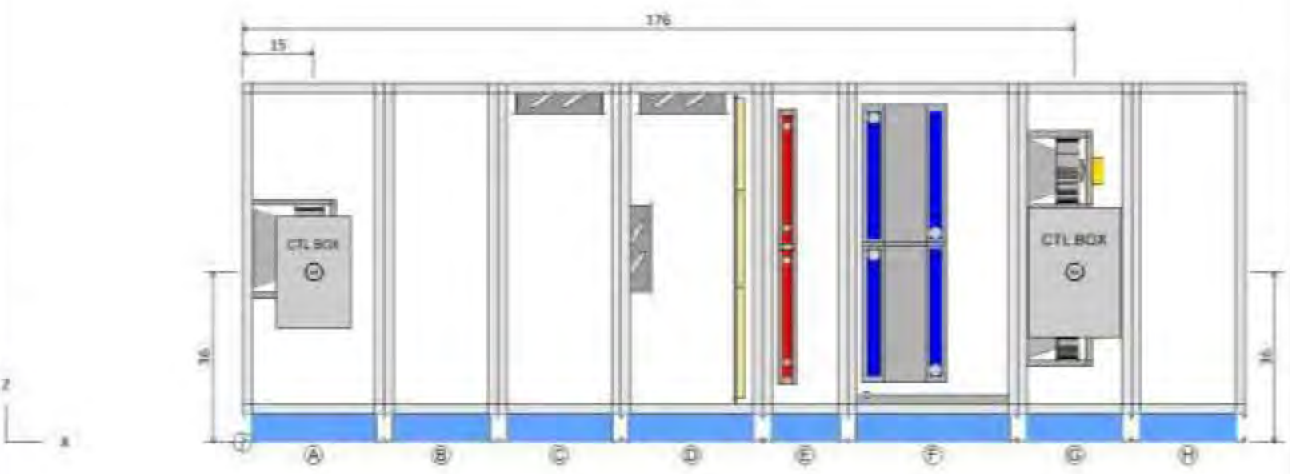
Coil and Drain Connections		Unit Tag: AHU-1 fan array		Sales Office: Thermosystems, Inc. (Chicago)	
Product: Vision Air Handler		Project Name: NORTH SCHOOL MWM FEB RELEASE		Sales Engineer:	
Model: CAH047GDCM	Feb. 27, 2020	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"
				Dwg Units: in	



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LEFT ELEVATION VIEW



RIGHT ELEVATION VIEW

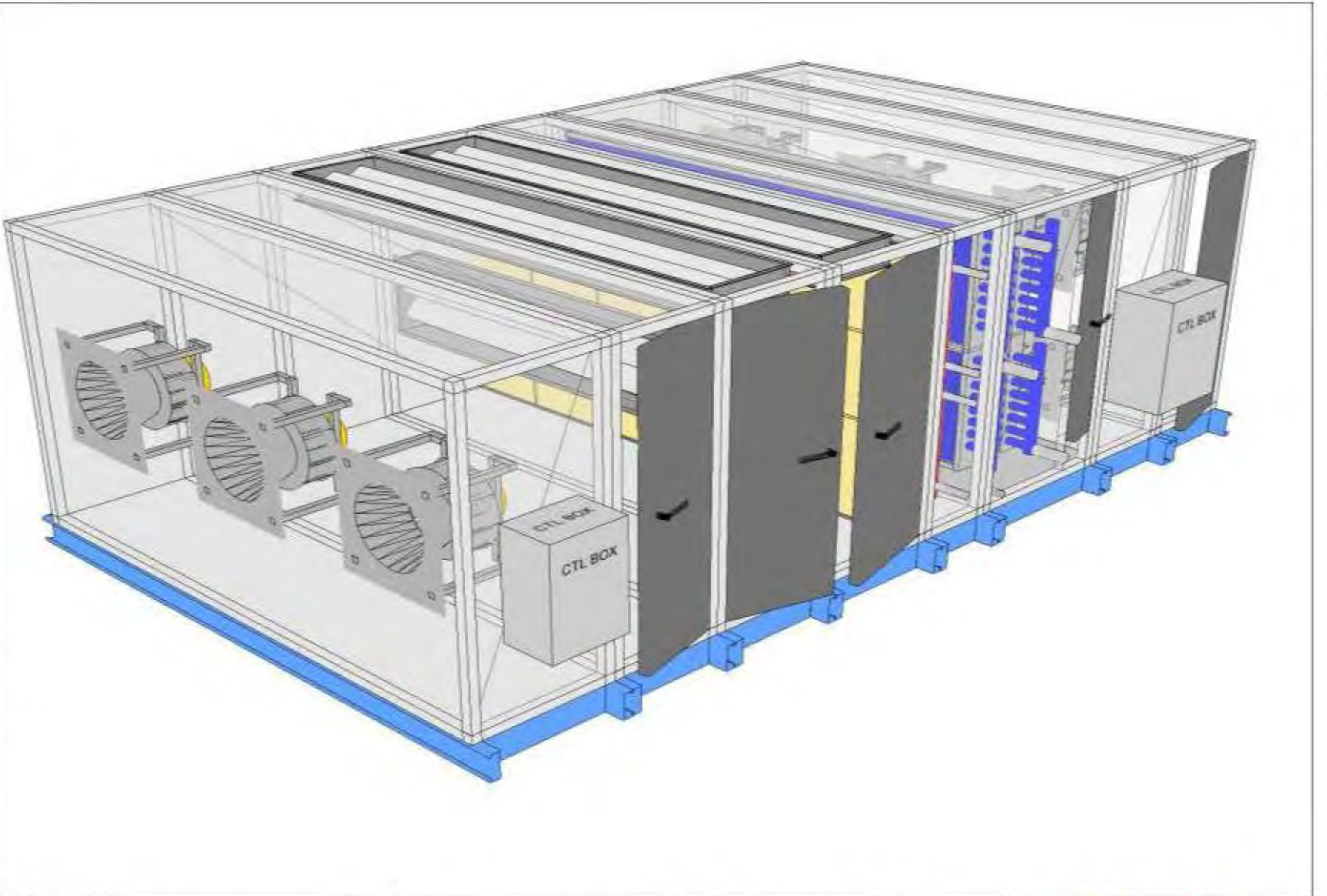
Component Key						
Type	X	Y	Z	Volts	Phase	
(A) Return Fan Fan	15.00	0.00	36.00	460	3	
(G) Supply Fan Fan	176.00	0.00	36.00	460	3	

Note: Dimensions are measured from the origin point.

Electrical Connections	Unit Tag: AHU-1 fan array	Sales Office: Thermosystems, Inc. (Chicago)			
Product: Vision Air Handler	Project Name: NORTH SCHOOL MWM FEB RELEASE	Sales Engineer:			
Model: CAH047GDCM	Feb. 27, 2020	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"
			Dwg Units: in		



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Job Number:

NWV10U
NORTH SCHOOL MWM FEB

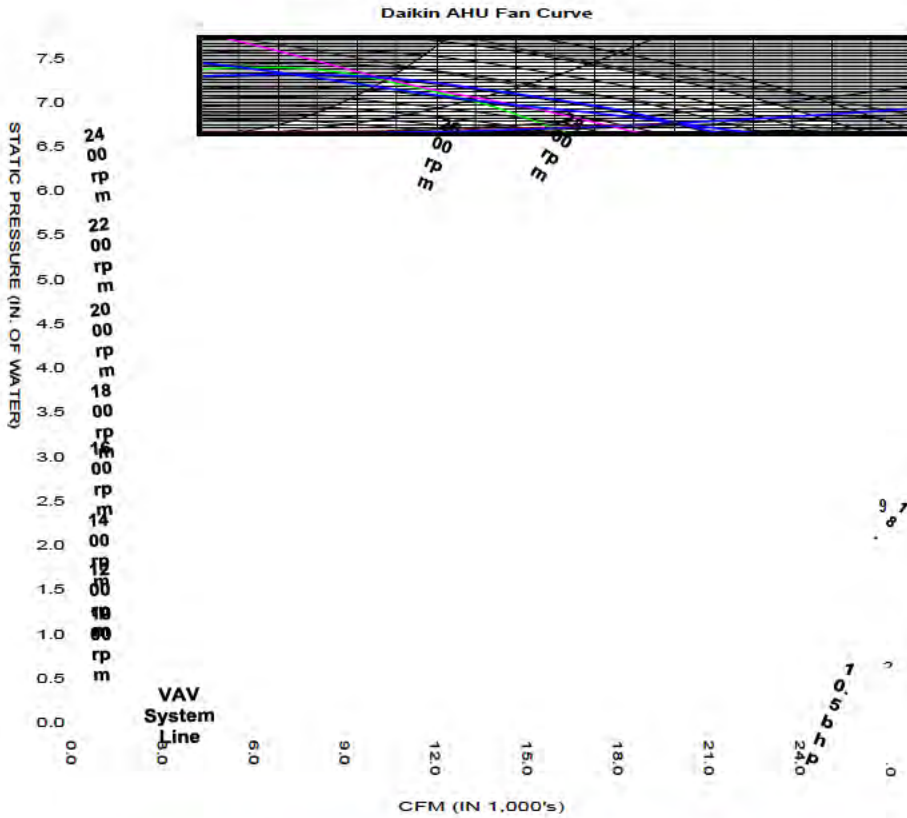
Page
10 of 18

Prepared Date:

2/27/2020
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Product Drawing	Unit Tag: AHU-1 fan array	Sales Office: Thermosystems, Inc. (Chicago)		 13600 Industrial Park Blvd, Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 11.94		
Product: Vision Air Handler	Project Name: NORTH SCHOOL MWM FEB RELEASE	Asst. Engineer:				
Model: CAH047GDCM	Feb. 27, 2020	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/-0.25"	Dwg Units: in

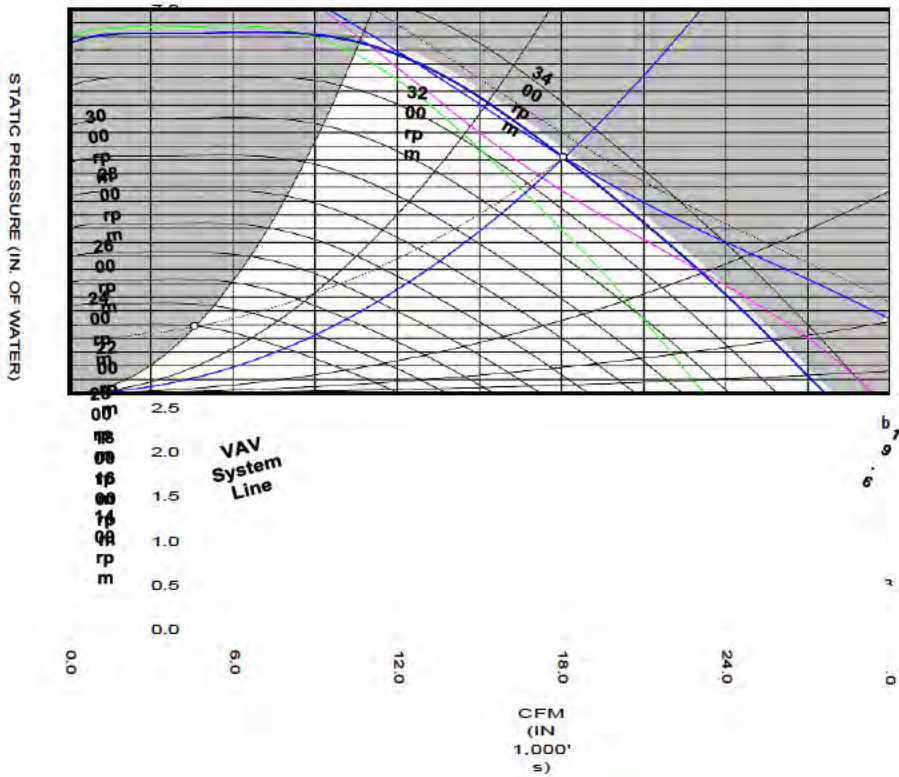
Fan Curve for AHU-1 fan array



EBM450-RPII 1x3 (3 Fans) Ret/Exh Fan at Standard Conditions					
Air volume	18090	cfm	Fan speed	2024	rpm
Total static	0.89	insWg	Max speed	2600	rpm
Brake horsepower	6.3	bhp	Efficiency	40.1	%
Minimum CFM	1563	cfm			
Unit tagging	AHU-1 fan array		Date February-27-2020		
Job name	NORTH SCHOOL MWM FEB RELEASE Time 13:35				

Fan Curve for AHU-1 fan array

Daikin AHU Fan Curve



Green line = fan curve for 6 fan(s) at max speed
Red line = BHP curve for 6 fan(s) at max power of selected motor

EBM355-RPII 2x3 (6 Fans) Supply Fan at Standard Conditions					
Air volume	18090	cfm	Fan speed	3205	rpm
Total static	4.29	insWg	Max speed	3230	rpm
Brake horsepower	18.0	bhp	Efficiency	68.0	%
Minimum CFM	4610	cfm	Minimum Fan Speed	1395	rpm
Redundancy	89.3	%	Motor Speed	3230	rpm
Unit tagging	AHU-1 fan array		Date	February-27-2020	

Job name NORTH SCHOOL MWM FEB RELEASE Time 13:35

Technical Data Sheet for AHU-1 fan array



Job Information		Technical Data Sheet	
Job Name			
Date	NORTH SCHOOL MWM FEB RELEASE		
Submitted By			
	February 27 2020		
Software Version	AHU-1 fan array		

Unit Overview

Model Number	Supply						Return/Exhaust					
	Air Volume cfm	Static Pressure		External Dimensions			Air Volume cfm	Static Pressure		External Dimensions		
		External inWc	Total inWc	Height in	Width in	Length in		External inWc	Total inWc	Height in	Width in	Length in
CAH047GDCM	18090	2.00	4.29	70*	122*	132	18090	0.75	0.89	70*	122*	80

*Not including base rails, coil connectors, drain connectors and control boxes.

Unit

Model Number:	CAH047GDCM		
Approval:	ETL Listed / ETL Listed to Canadian Safety Standards (ETL Label / ETLc Label)		
Outer Panel:	24 gauge G90 Galvanized Steel (unpainted)		
Liner:	24 gauge Galvanized Steel (unless noted per section)		
Insulation:	R-13 Injected Foam		
Unit Configuration:	Inline horizontal	Drive (Handling) Location:	Right
Base:	6" formed channel	Wall Thickness:	2 in
Altitude:	0 ft	Parts Warranty:	Standard One Year

Return/Exhaust Fan Array	Component: 1	Length: 30 in	Shipping Section: 1
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Fan Performance								
Air Volume*	Static Pressure			Brake Horsepower*	Speed		Fan Circuit	
	External	Total	Cabinet		Operating	Maximum	MOP	MCA
6030 cfm	0.75 inWc	0.89 inWc	0.00 inWc	2.10 BHP	2024 rpm	2600 rpm	15.0 A	14.6 A

Fan Data						
Fan Type	Blade Type / Class	Quantity of Fans	Wheel Diameter	Number of Blades	Discharge	Motor Location
ECM / 1x3 : 3	Airfoil / N/A	3	17.71 in	5	Axial	Behind Fan

Motor Data						
Power	Electrical Supply	Speed	Control Signal	Supplier	Lock Rotor Current*	Full Load Current*
3.5 HP	460/60/3 V/Hz/Phase	2140 rpm	0-10V	EBM-Papst	4.50 A	4.50 A

Fan Options	
Isolator Type:	Rigid

VFD/Starter/Disconnect Data			
Selection Type:	Integrated Drive	Vendor:	Daikin Applied
Auxiliary Control:	Disconnect w/ motor starter	Voltage:	460 v
Disconnect Type:	Fused	Height x Width x Depth:	23.60 in x 15.75 in x 10.76 in
Mounting:	Drive Side	Enclosure:	NEMA 3R

Panel		
Location	Width	Opening
Removable panels	- in	Outward

Notes

* after a unit label denotes the data for an individual fan.

◆ Air Terminal Devices and Heating Products

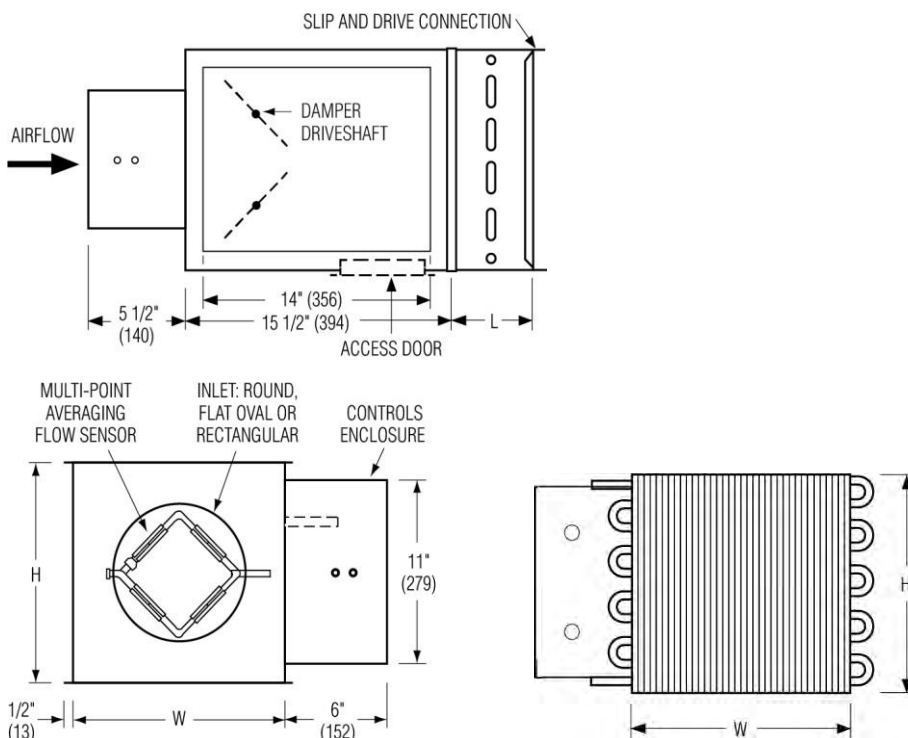
- Type: **Midwest Mechanical provides all types of Air Terminal devices and heating products used in commercial HVAC. The list includes VAV components, Fan coils, Unit Ventilators, Unit Heaters, Fin Tube Radiation, VRF units, etc.**
- Brand Name(s): **Midwest Mechanical supplies all major Brand Names**
- Capacity Range (CFM): **Our products cover all capacity ranges**
- Heating Medium: **Electric, Gas, Steam, Hot water, VRF**
- Cooling Medium: **DX, Chilled Water**
- Standard Warranty (Parts & Labor): **Midwest Mechanical's standard warranty is one year**
- Optional Warranty (components covered & Labor): **Optional warranty terms are available**
- Estimated Lead/Delivery Time: **Varies based upon manufacturer and product**
- Location of Manufacturing: **Products used by Midwest Mechanical are manufactured in various parts of the world**
- Estimated Market Share (North America): **Varies based upon manufacturer and product**
- **Provide example data on each type of product provided: Below is an example of the types of equipment provided by Midwest Mechanical. Further detail will be provided for each individual project**
- Detail Features & Benefits below

D30RW

Single Duct Terminal Unit with Hot Water Reheat • Digital



Items: 1, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 23, 25, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41; Tags: VAV- 3; VAV-9; VAV-10; VAV-11; VAV-12; VAV-14; VAV-15; VAV-23; VAV-24; VAV-25; VAV-97; VAV-98; VAV-99; VAV-100A; VAV-100B; VAV-100C; VAV-100D; VAV-128-2; VAV-132-1; VAV-136; VAV-137A; VAV-137-1; VAV-137-2; VAV-143; VAV-147; VAV-H1; VAV-H2; VAV-H3; VAV-H4; VAV-H5; VAV-H6; VAV-H7



Right-hand controls location shown
 *Controls Enclosure optional with field mounted controls

DIMENSIONAL DATA

Unit Size	Inlet Size	Air Flow Range cfm (l/s)	Width (W)	Height (H)	Inlet Size (Nominal)	Coil Length (L) 1&2 Rows	Coil Connections 2 Row
6	6	0 – 550 (0 – 260)	10 (254)	10 (254)	5 7/8 (149) Round	5 (127)	7/8 (22)
12	12	0 – 2500 (0 – 1180)	18 (457)	12 1/2 (318)	12 15/16 x 9 13/16 (329 x 249) Oval	5 (127)	7/8 (22)

Access Door
8 x 5
8 x 5

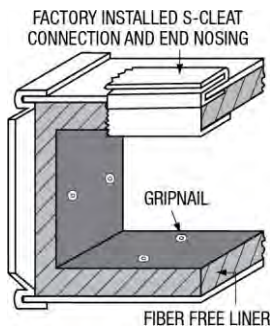
Maximum airflow limits based upon 1.5" w.g. (373 Pa) max. differential pressure signal from Diamond Flow Sensor.

O.D. male solder sweat connections.

:

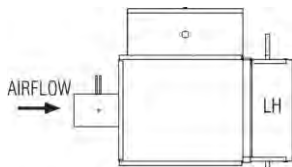
- 16 ga. (1.61) corrosion-resistant steel inclined opposed blade damper with extruded PVC seals. 45° rotation, CW to close. Tight close-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (750 Pa)
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position
- Multi-point averaging Diamond Flow Sensor. Aluminum construction. Supplied with balancing tees
- 1/2" (13) Copper tubes and aluminum ripple fins, 10 per inch
- D1 - Digital Controls: Unknown, Factory Mounted (Supplied by Others)
- MA - Damper Actuator: By Controls Manufacturer
- OL - 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction, left hand (determined when looking opposite in the direction of airflow)
- QF - Toggle disconnect switch
- FG2 - 3/4" (19) Fiber Free Liner
- FN - Full NEMA 1 type 24V Controls Enclosure
- FP - Access Door
- FS - Hanger Brackets
- W2L - Hot Water Coil: 2 Row, Left-hand

FG2 - Fiber Free Liner



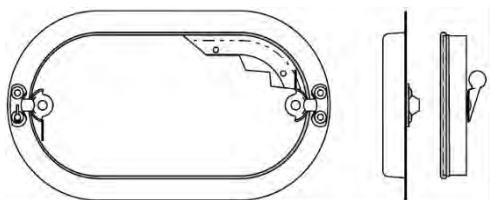
- 3/4" (19) thick closed cell elastomeric foam
- Meets requirements:
- UL 181 & 723
 - ASTM E 84, C 209 & C 665
 - CAN/ULC S102-M88

OL/W2L - Top View Orientation- Controls Location, Hot Water Coil Connection



Left Hand Controls Location/Left Hand Hot Water Coil Connection

FP - Access Door

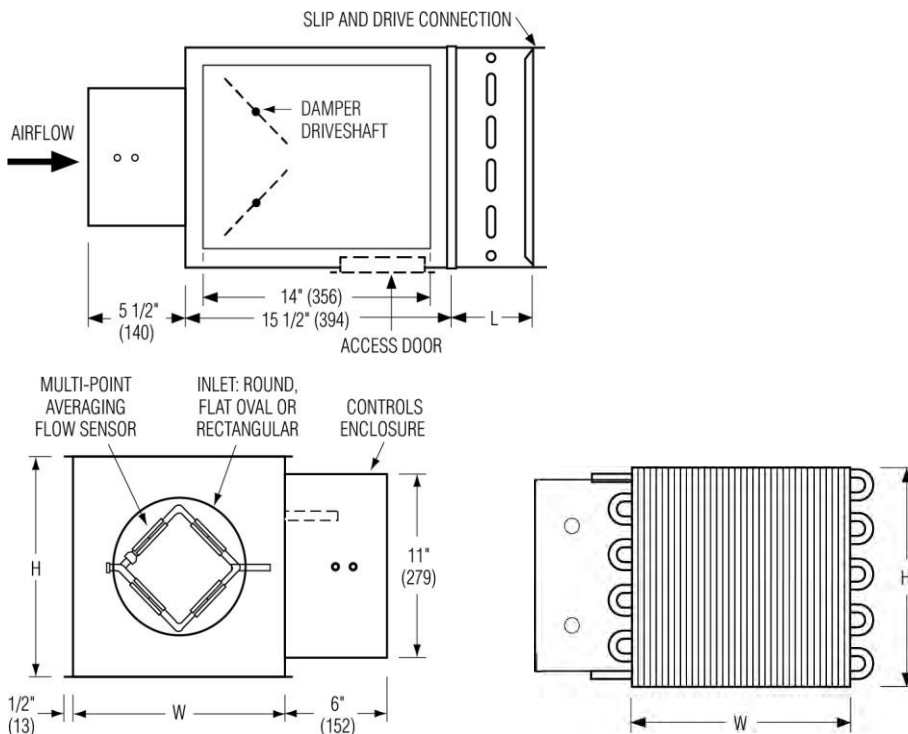


- Ultra-low leakage, flat oval design
- 22 ga. (0.86) galvanized steel flanged frame and door panel
- 1" (25) insulation with 22 ga. (0.86) galvanized steel backing plate
- Positive bulb door seal
- Plated steel camlock fasteners

Project: JAMIE MCGEE ELEMNTARY SCHOOL (FPB & VAV)
Engineer:

Date: 3/19/2020
Version No: 3.78.00 Rev.11

Items: 2, 9, 20, 21, 22, 24, 26, 28; Tags: VAV-4; VAV-22; VAV-127; VAV-128; VAV-128-1; VAV-131; VAV-132-2; VAV-133



Right-hand controls location shown
 *Controls Enclosure optional with field mounted controls

DIMENSIONAL DATA

Unit Size	Inlet Size	Air Flow Range cfm (l/s)	Width (W)	Height (H)	Inlet Size (Nominal)	Coil Length (L) 1&2 Rows	Coil Connections 2 Row
6	6	0 – 550 (0 – 260)	10 (254)	10 (254)	5 7/8 (149) Round	5 (127)	7/8 (22)
12	12	0 – 2500 (0 – 1180)	18 (457)	12 1/2 (318)	12 15/16 x 9 13/16 (329 x 249) Oval	5 (127)	7/8 (22)

Access Door
8 x 5
8 x 5

Maximum airflow limit is based upon 1.5" w.g. (373 Pa) max. differential pressure signal from Diamond Flow Sensor.

O.D. male solder sweat connections.

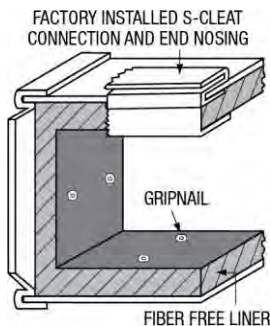
FEATURES

Project: JAMIE MCGEE ELEMNTARY SCHOOL (FPB & VAV)
 Engineer:

Date: 3/19/2020
 Version No: 3.78.00 Rev.11

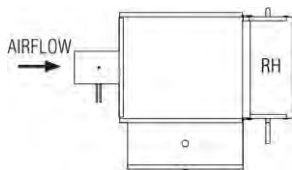
- 16 ga. (1.61) corrosion-resistant steel inclined opposed blade damper with extruded PVC seals. 45° rotation, CW to close. Tight close-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (750 Pa)
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position
- Multi-point averaging Diamond Flow Sensor. Aluminum construction. Supplied with balancing tees
- 1/2" (13) Copper tubes and aluminum ripple fins, 10 per inch
- D1 - Digital Controls: Unknown, Factory Mounted (Supplied by Others)
- MA - Damper Actuator: By Controls Manufacturer
- OR - 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction, right hand (determined when looking in the direction of airflow)
- QF - Toggle disconnect switch
- FG2 - 3/4" (19) Fiber Free Liner
- FN - Full NEMA 1 type 24V Controls Enclosure
- FP - Access Door
- FS - Hanger Brackets
- W2R - Hot Water Coil: 2 Row, Right-hand

FG2 - Fiber Free Liner



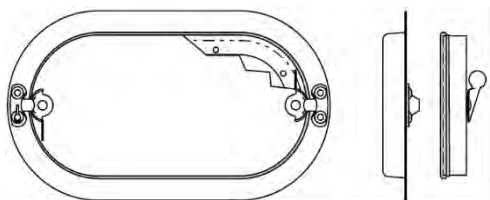
- 3/4" (19) thick closed cell elastomeric foam
- Meets requirements:
- UL 181 & 723
 - ASTM E 84, C 209 & C 665
 - CAN/ULC S102-M88

OR/W2R - Top View Orientation- Controls Location, Hot Water Coil Connection



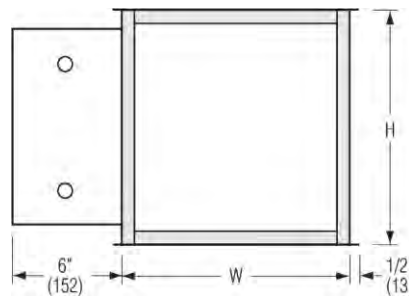
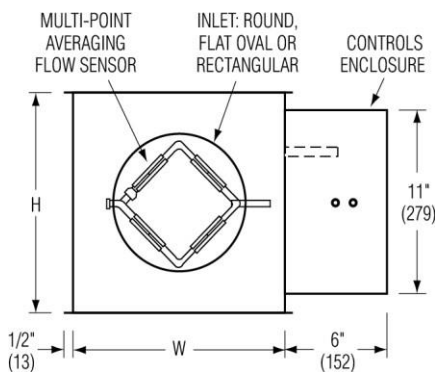
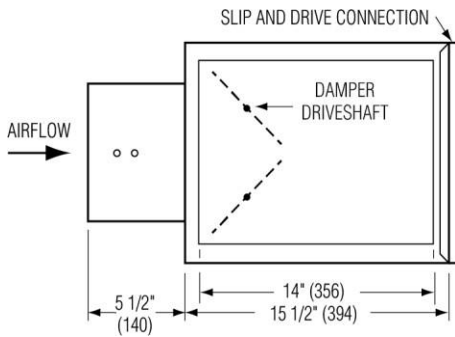
Right Hand Controls Location/Right Hand Hot Water Coil Connection

FP - Access Door



- Ultra-low leakage, flat oval design
- 22 ga. (0.86) galvanized steel flanged frame and door panel
- 1" (25) insulation with 22 ga. (0.86) galvanized steel backing plate
- Positive bulb door seal
- Plated steel camlock fasteners

Item: 27; Tags: VAV-132-3



Right-hand controls location shown

*Controls Enclosure optional with field mounted controls

DIMENSIONAL DATA

Unit Size	Air Flow Range cfm (l/s)	Width (W)	Height (H)	Inlet Size
12	0 – 2500 (0 – 1180)	18 (457)	12 1/2 (318)	12 15/16 x 9 13/16 (329 x 249) Oval

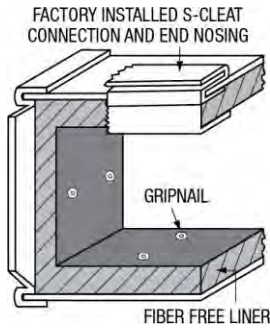
Maximum airflow limit is based upon 1.5" w.g. (373 Pa) max. differential pressure signal from Diamond Flow Sensor.

FEATURES

- 16 ga. (1.61) corrosion-resistant steel inclined opposed blade damper with extruded PVC seals. 45° rotation, CW to close. Tight close-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (750 Pa)
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position
- Multi-point averaging Diamond Flow Sensor. Aluminum construction. Supplied with balancing tees
- D1 - Digital Controls: Unknown, Factory Mounted (Supplied by Others)
- MA - Damper Actuator: By Controls Manufacturer
- OL - 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction, left hand (determined when looking opposite in the direction of airflow)
- QF - Toggle disconnect switch

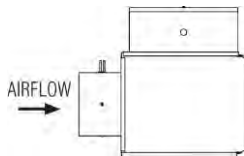
- FG2 - 3/4" (19) Fiber Free Liner
- FN - Full NEMA 1 type 24V Controls Enclosure
- FS - Hanger Brackets

FG2 - Fiber Free Liner



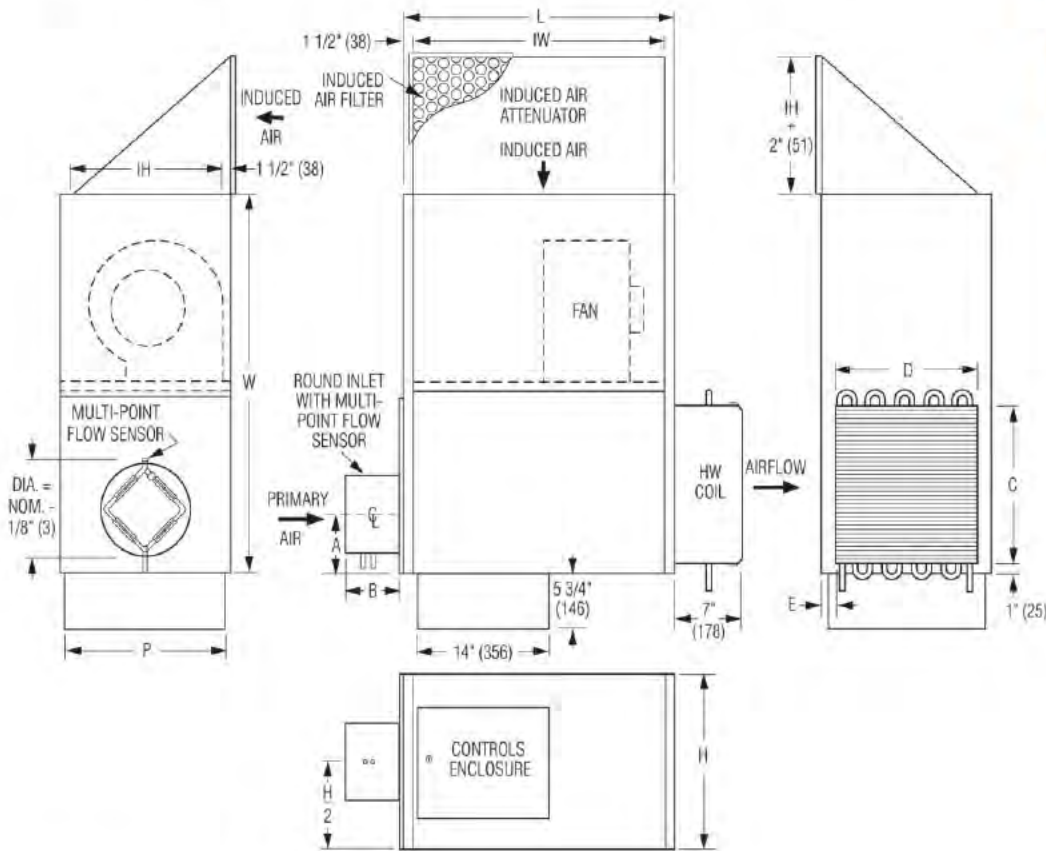
- 3/4" (19) thick closed cell elastomeric foam
- Meets requirements:
- UL 181 & 723
 - ASTM E 84, C 209 & C 665
 - CAN/ULC S102-M88

OL - Top View Orientation- Controls Location



Left Hand Controls Location

Items: 42, 43, 45, 47, 48, 49, 51, 53, 56; Tags: FPB-1; FPB-1A; FPB-5; FPB-7; FPB-8; FPB-13; FPB-17; FPB-19; FPB-26



DIMENSIONAL DATA

Unit Size	Inlet Size	A	B	P	W	H	L	Induced Air Inlet IW x IH	Outlet Duct Size C x D	E
3	12 (305)	8 (203)	6 (152)	17 (432)	38 1/4 (972)	18 (457)	28 9/16 (725)	25 9/16 x 14 3/4 (649 x 375)	16 x 15 (406 x 381)	1 1/2 (38)

Filter Size	Motor HP	277V
27 x 17	*	3.5

FLA = Full load amperage. All motors are single phase/60 Hz
 Refer to Nailor® SelectWorks for application performance data

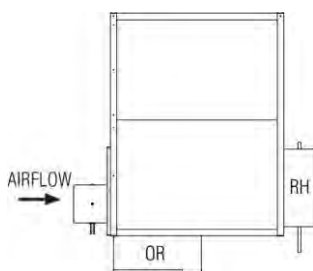
*The ECM is a variable horsepower motor

FEATURES

- 20 ga. (1.00) galvanized steel construction

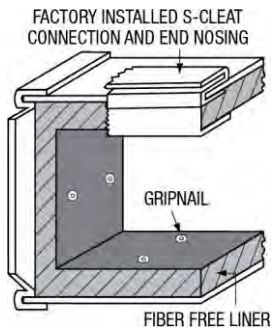
- Round laminated 2 x 20 ga. (1.00) butterfly damper with peripheral gasket, 90° rotation, CCW to open
- Backdraft damper mounted on fan discharge
- Multi-point averaging Diamond Flow Sensor
- Bottom access panels
- Discharge opening designed for flanged duct connection
- Ultra-high efficiency ECM fan motor, EPIC fan volume controller
- Standard flush mount, hinged line voltage enclosure
- Single point electrical connection
- Hot Water Coil: Coil installed on unit discharge, 1/2" (13) copper tubes, aluminum ripple fins (10 FPI).
- Bottom access panels for inspection and coil cleaning
- Hand of hot water coil connection is determined looking in the direction of airflow. Right-hand shown above is standard. Left-hand connection terminals (optional) are inverted/built as mirror image. Connections must be selected same hand as controls enclosure location
- Hot Water Coil O.D. Sweat Connections: 2 Row - 7/8" (22)
- EPIC card option fan status (on/off) contact closure not included
- V6 - Fan Motor Voltage: 277V EPIC ECM/1 phase
- D1 - Digital Controls: Unknown, Factory Mounted (Supplied by Others)
- MN - EPIC Fan Card: Manual volume control
- MA - Damper Actuator: By Controls Manufacturer
- OR - Right-hand controls location standard (shown)
- QF - Toggle disconnect switch
- FG2 - 3/4" (19) Fiber Free Liner
- FN - Full NEMA 1 type 24V Controls Enclosure
- FQ - Induced air inlet attenuator. Top entry, 6" (152) clearance is required above unit
- FR - Induced Air Filter: 1" Throwaway
- FS - Hanger brackets
- W2R - Hot Water Coil: 2 Row, Right-hand

OR - Top View Orientation- Controls Location, Hot Water Coil Connection



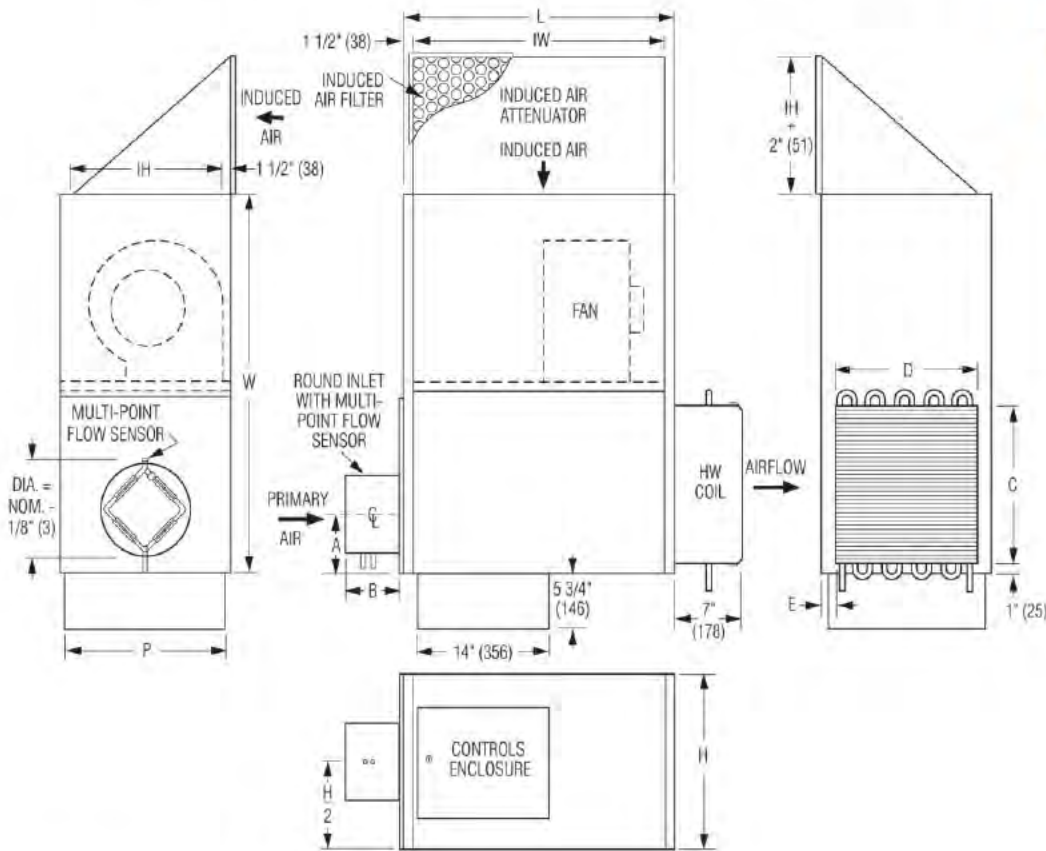
Right Hand Controls Location/Right Hand Hot Water Coil Connection

FG2 - Fiber Free Liner



- 3/4" (19) thick closed cell elastomeric foam
- Meets requirements:
- UL 181 & 723
 - ASTM E 84, C 209 & C 665
 - CAN/ULC S102-M88

Items: 44, 46, 50, 52, 54, 55, 57; Tags: FPB-2; FPB-6; FPB-16; FPB-18; FPB-20; FPB-21; FPB-27



DIMENSIONAL DATA

Unit Size	Inlet Size	A	B	P	W	H	L	Induced Air Inlet IW x IH	Outlet Duct Size C x D	E
3	12 (305)	8 (203)	6 (152)	17 (432)	38 1/4 (972)	18 (457)	28 9/16 (725)	25 9/16 x 14 3/4 (649 x 375)	16 x 15 (406 x 381)	1 1/2 (38)

Filter Size	Motor HP	277V
27 x 17	*	3.5

FLA = Full load amperage. All motors are single phase/60 Hz
 Refer to Nailor® SelectWorks for application performance data

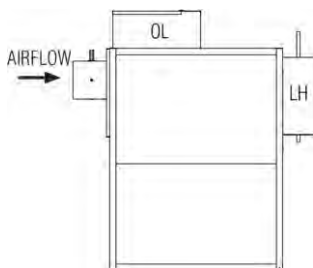
*The ECM is a variable horsepower motor

FEATURES

- 20 ga. (1.00) galvanized steel construction

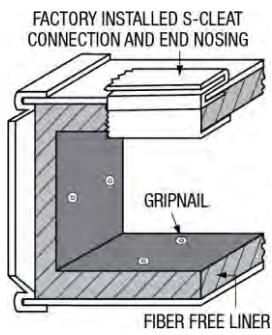
- Round laminated 2 x 20 ga. (1.00) butterfly damper with peripheral gasket, 90° rotation, CCW to open
- Backdraft damper mounted on fan discharge
- Multi-point averaging Diamond Flow Sensor
- Bottom access panels
- Discharge opening designed for flanged duct connection
- Ultra-high efficiency ECM fan motor, EPIC fan volume controller
- Standard flush mount, hinged line voltage enclosure
- Single point electrical connection
- Hot Water Coil: Coil installed on unit discharge, 1/2" (13) copper tubes, aluminum ripple fins (10 FPI).
- Bottom access panels for inspection and coil cleaning
- Hand of hot water coil connection is determined looking in the direction of airflow. Right-hand shown above is standard. Left-hand connection terminals (optional) are inverted/built as mirror image. Connections must be selected same hand as controls enclosure location
- Hot Water Coil O.D. Sweat Connections: 2 Row - 7/8" (22)
- EPIC card option fan status (on/off) contact closure not included
- V6 - Fan Motor Voltage: 277V EPIC ECM/1 phase
- D1 - Digital Controls: Unknown, Factory Mounted (Supplied by Others)
- MN - EPIC Fan Card: Manual volume control
- MA - Damper Actuator: By Controls Manufacturer
- OL - Left-hand controls are built as mirror image. Inlets and discharge are opposite of drawing
- QF - Toggle disconnect switch
- FG2 - 3/4" (19) Fiber Free Liner
- FN - Full NEMA 1 type 24V Controls Enclosure
- FQ - Induced air inlet attenuator. Top entry, 6" (152) clearance is required above unit
- FR - Induced Air Filter: 1" Throwaway
- FS - Hanger brackets
- W2L - Hot Water Coil: 2 Row, Left-hand

OL - Top View Orientation- Controls Location, Hot Water Coil Connection



Left Hand Controls Location/Left Hand Hot Water Coil Connection

FG2 - Fiber Free Liner



- 3/4" (19) thick closed cell elastomeric foam
- Meets requirements:
- UL 181 & 723
 - ASTM E 84, C 209 & C 665
 - CAN/ULC S102-M88



Unit Size	Airflow Range* cfm (l/s)	W	H	Inlet Size	Coil Connections			
					1 Row	2 Row	3 Row	4 Row
4	0-225 (0-106)	10 (254)	10 (254)	3 7/8 (98) Round	1/2(13)	7/8(22)	7/8(22)	7/8(22)
5	0-400 (0-189)	10 (254)	10 (254)	4 7/8 (124) Round	1/2(13)	7/8(22)	7/8(22)	7/8(22)
6	0-550 (0-260)	10 (254)	10 (254)	5 7/8 (149) Round	1/2(13)	7/8(22)	7/8(22)	7/8(22)
7	0-800 (0-378)	12 (305)	12 1/2 (318)	6 7/8 (175) Round	1/2(13)	7/8(22)	7/8(22)	7/8(22)
8	0-1100 (0-519)	12 (305)	12 1/2 (318)	7 7/8 (200) Round	1/2(13)	7/8(22)	7/8(22)	7/8(22)
9	0-1400 (0-661)	14 (356)	12 1/2 (318)	8 7/8 (225) Round	1/2(13)	7/8(22)	7/8(22)	7/8(22)
10	0-1840 (0-868)	14 (356)	12 1/2 (318)	9 7/8 (251) Round	1/2(13)	7/8(22)	7/8(22)	7/8(22)
12	0-2500 (0-1180)	18 (457)	12 1/2 (318)	12 15/16 x 9 13/16 (329 x 249) Oval	1/2(13)	7/8(22)	7/8(22)	7/8(22)
14	0-3125 (0-1475)	24 (610)	12 1/2 (318)	16 1/16 x 9 13/16 (408 x 249) Oval	1/2(13)	7/8(22)	7/8(22)	7/8(22)
16	0-3725 (0-1758)	28 (711)	12 1/2 (318)	19 3/16 x 9 13/16 (487 x 249) Oval	7/8(22)	7/8(22)	7/8 (22)	7/8 (22)
24 x 16	0-8330 (0-3931)	38 (965)	18 (457)	23 7/8 x 15 7/8 (606 x 403) Rect.	7/8(22)	7/8(22)	13/8(35)	13/8(35)

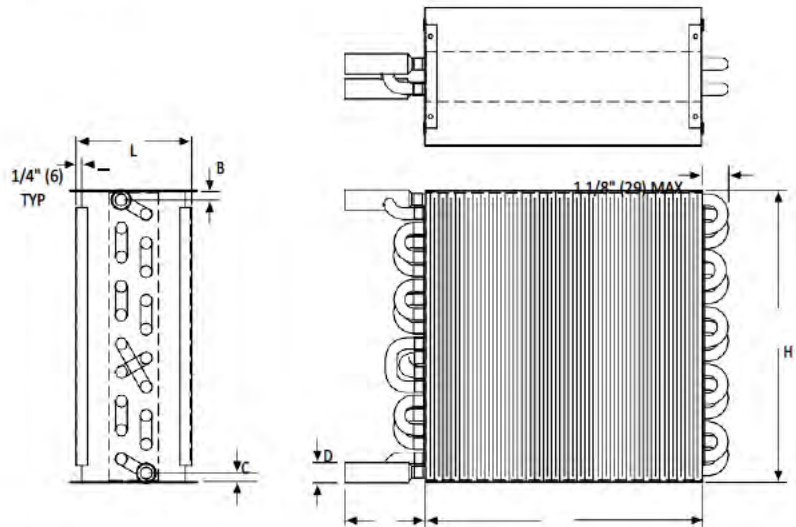




SINGLE DUCT TERMINAL UNIT HOT
WATER REHEAT COILS
 FOR USE WITH MODELS: (D, A or P) 30RW
 MODEL SERIES: 30HWC

Description:

- 0.0045" (0.11) Aluminum sine-wave corrugation and rippled fins, 10 fins per inch.
- 1/2" (13) O.D. copper tubes, 0.016" (0.41) wall thickness.
- 20 ga. (1.00) galvanized steel casing.
- 1/2" (13), 7/8" (22) or 1 3/8" (35) O.D. copper male solder sweat connections.
- Connection is slip and drive to ductwork, both sides.
- Leakage tested to 360 psi (2481 kPa).
- AHRI Certified.



Unit Size	W	H	1 Row						2 Row					
			Part No.	L	A	B	C	D	Part No.	L	A	B	C	D
4, 5, 6	10 (254)	10 (254)	V30HWC106	5 (127)	3 (76)	13/32 (10)	1 1/32 (26)	1/2 (13)	V30HWC206	5 (127)	4 (102)	13/32 (10)	13/32 (10)	7/8 (22)
7, 8	12 (305)	12 1/2 (318)	V30HWC108	5 (127)	3 (76)	13/32 (10)	1 1/32 (26)	1/2 (13)	V30HWC208	5 (127)	3 1/2 (89)	3/8 (10)	3/8 (10)	7/8 (22)
9, 10	14 (356)	12 1/2 (318)	V30HWC110	5 (127)	3 (76)	13/32 (10)	1 1/32 (26)	1/2 (13)	V30HWC210	5 (127)	3 1/2 (89)	3/8 (10)	3/8 (10)	7/8 (22)
12	18 (457)	12 1/2 (318)	V30HWC112	5 (127)	3 (76)	13/32 (10)	1 1/32 (26)	1/2 (13)	V30HWC212	5 (127)	3 1/2 (89)	13/32 (10)	13/32 (10)	7/8 (22)
14	24 (610)	12 1/2 (318)	V30HWC114	5 (127)	3 (76)	3/8 (10)	1 (25)	1/2 (13)	V30HWC214	5 (127)	3 1/2 (89)	3/8 (10)	3/8 (10)	7/8 (22)
16	28 (711)	12 1/2 (318)	V30HWC116	5 (127)	43/4 (121)	3/8 (10)	1 (25)	7/8 (22)	V30HWC216	5 (127)	4 3/4 (121)	11/16 (17)	11/16 (17)	7/8 (22)
24 x 16	38 (965)	18 (457)	V30HWC124	5 (127)	43/4 (121)	9/16 (14)	1 3/16 (30)	7/8 (22)	V30HWC224	5 (127)	4 3/4 (121)	7/8 (22)	7/8 (22)	7/8 (22)

Unit Size	W	H	3 Row					4 Row						
			Part No.	L	A	B	C	D	Part No.	L	A	B	C	D
4, 5, 6	10 (254)	10 (254)	V30HWC306	7 1/2 (191)	4 1/4 (108)	23/32 (18)	23/32 (18)	7/8 (22)	V30HWC406	7 1/2 (191)	4 1/4 (108)	11/16 (17)	11/16 (17)	7/8 (22)
7, 8	12 (305)	12 1/2 (318)	V30HWC308	7 1/2 (191)	4 1/4 (108)	23/32 (18)	23/32 (18)	7/8 (22)	V30HWC408	7 1/2 (191)	4 1/4 (108)	11/16 (17)	11/16 (17)	7/8 (22)
9, 10	14 (356)	12 1/2 (318)	V30HWC310	7 1/2 (191)	4 1/4 (108)	11/16 (17)	11/16 (17)	7/8 (22)	V30HWC410	7 1/2 (191)	4 1/4 (108)	11/16 (17)	11/16 (17)	7/8 (22)
12	18 (457)	12 1/2 (318)	V30HWC312	7 1/2 (191)	4 1/4 (108)	23/32 (18)	23/32 (18)	7/8 (22)	V30HWC412	7 1/2 (191)	4 1/4 (108)	23/32 (18)	23/32 (18)	7/8 (22)
14	24 (610)	12 1/2 (318)	V30HWC314	7 1/2 (191)	4 1/4 (108)	11/16 (17)	11/16 (17)	7/8 (22)	V30HWC414	7 1/2 (191)	4 1/4 (108)	23/32 (18)	23/32 (18)	7/8 (22)
16	28 (711)	12 1/2 (318)	V30HWC316	7 1/2 (191)	4 1/4 (108)	11/16 (17)	11/16 (17)	7/8 (22)	V30HWC416	7 1/2 (191)	4 1/4 (108)	23/32 (18)	23/32 (18)	7/8 (22)
24 x 16	38 (965)	18 (457)	V30HWC324	7 1/2 (191)	4 3/4 (121)	1 1/8 (29)	1 1/8 (29)	1 3/8 (35)	V30HWC424	7 1/2 (191)	4 3/4 (121)	1 1/8 (29)	1 1/8 (29)	1 3/8 (35)

Unit Size	1 Row			2 Row			3 Row			4 Row		
	Dry Coil Weight (lbs)	Water Weight (lbs)	Water Volume (gal)	Dry Coil Weight (lbs)	Water Weight (lbs)	Water Volume (gal)	Dry Coil Weight (lbs)	Water Weight (lbs)	Water Volume (gal)	Dry Coil Weight (lbs)	Water Weight (lbs)	Water Volume (gal)
4, 5, 6	5	0.16	0.02	7	0.43	0.06	10	0.65	0.09	12	0.81	0.11
7, 8	7	0.21	0.03	9	0.53	0.07	11	0.80	0.11	14	1.01	0.14
9, 10	7	0.23	0.03	10	0.58	0.08	12	0.87	0.12	15	1.11	0.15
12	8	0.28	0.04	11	0.67	0.09	13	1.01	0.14	17	1.30	0.17
14	10	0.35	0.05	13	0.82	0.11	16	1.23	0.17	20	1.58	0.21
16	12	0.65	0.09	16	1.32	0.18	19	1.67	0.23	23	1.77	0.24
24 x 16	19	0.96	0.13	28	2.49	0.34	43	4.53	0.61	51	5.19	0.70

SCHEDULE TYPE:

PROJECT: JAMIE McGEE (FPB & VAV)

ENGINEER:

CONTRACTOR: Midwest Mechanical

Page 1 of 1.

Dimensions are in inches (mm).

DATE

9 - 6 - 19

B SERIES

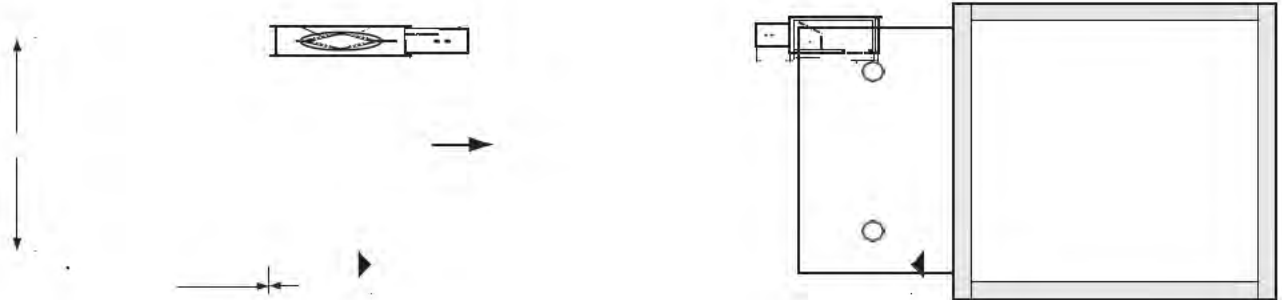
3000

SUPERSEDES

11 - 3 - 17

DRAWING NO.

D30HWC-1



Unit Size	Airflow Range * cfm (l/s)	W	H	Inlet Size
4	0-225 (0-106)	10 (254)	10 (254)	3 7/8 (98) Round
5	0-400 (0-189)	10 (254)	10 (254)	4 7/8 (124) Round
6	0-550 (0-260)	10 (254)	10 (254)	5 7/8 (149) Round
7	0-800 (0-378)	12 (305)	12 1/2 (318)	6 7/8 (175) Round
8	0-1100 (0-519)	12 (305)	12 1/2 (318)	7 7/8 (200) Round
9	0-1400 (0-661)	14 (356)	12 1/2 (318)	8 7/8 (225) Round
10	0-1840 (0-868)	14 (356)	12 1/2 (318)	9 7/8 (251) Round
12	0-2500 (0-1180)	18 (457)	12 1/2 (318)	12 15/16 x 9 13/16 (329 x 249) Oval
14	0-3125 (0-1475)	24 (610)	12 1/2 (318)	16 1/16 x 9 13/16 (408 x 249) Oval
16	0-3725 (0-1758)	28 (711)	12 1/2 (318)	19 3/16 x 9 13/16 (487 x 249) Oval
24 x 16	0-8330 (0-3931)	38 (965)	18 (457)	23 7/8 x 15 7/8 (606 x 403) Rect.



◆ DDC Controls

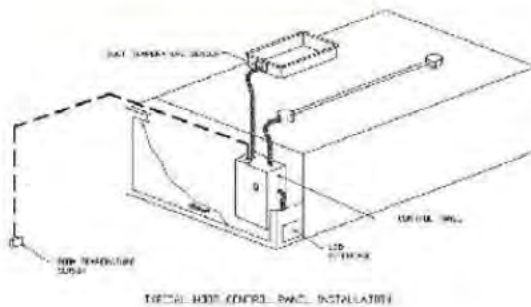
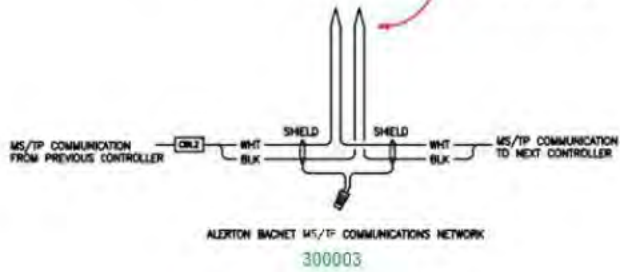
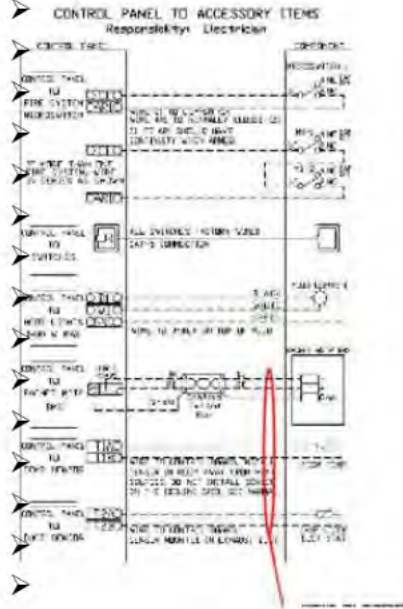
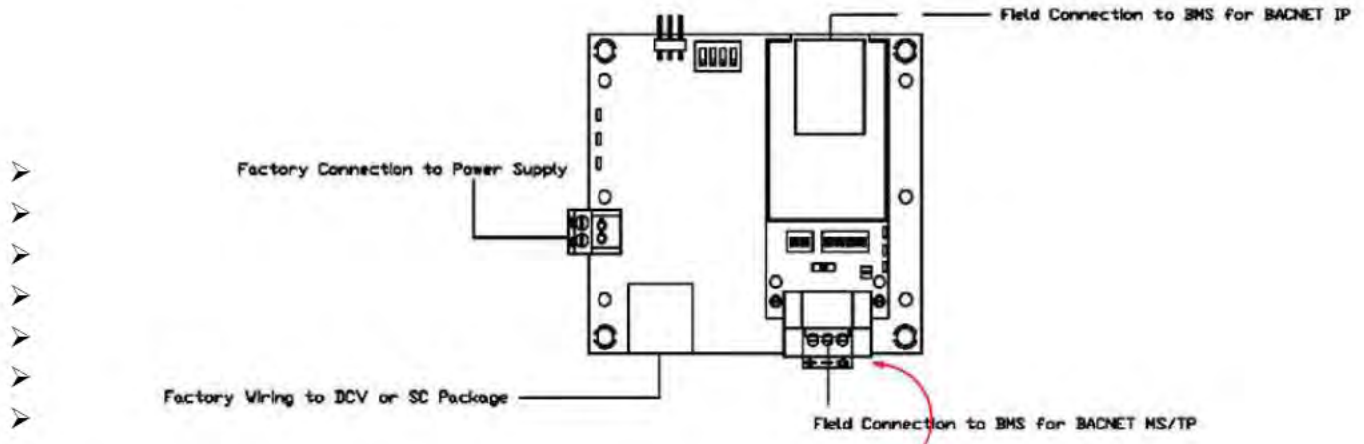
- Type: **Midwest Mechanical offers all types of commercial DDC controls for HVAC and lighting. Midwest Mechanical is brand independent when it comes to controls**
- System Protocol: **Midwest Mechanical can offer service and installation on virtually any control system, including proprietary type systems.**
- LAN Communication Structure: **Midwest can design, build, and maintain DDC systems with any type of LAN communication structure**
- Human Machine Interface: **Midwest Mechanical can design, build, and maintain DDC control systems with every type of HMI available in the market today**
- Remote alarm and message capabilities: **Midwest Mechanical has a call center which is manned 24 hours per day, seven days per week. Our call center has the capability to monitor alarms and offer web based diagnosis and repairs of all BAS systems.**
- Standard Warranty (Parts & Labor): **Standard Warranty is one year parts and labor**
- Optional Warranty (components covered & Labor): **Multiyear warranties are available upon request**
- Estimated Lead/Delivery Time: **Varies based upon manufacturer**
- Location of Manufacturing (City, State or Country): **Various locations around the world**
- Estimated Market Share (North America): **Varies based upon manufacturer**
- Detail Features & Benefits: **Below**

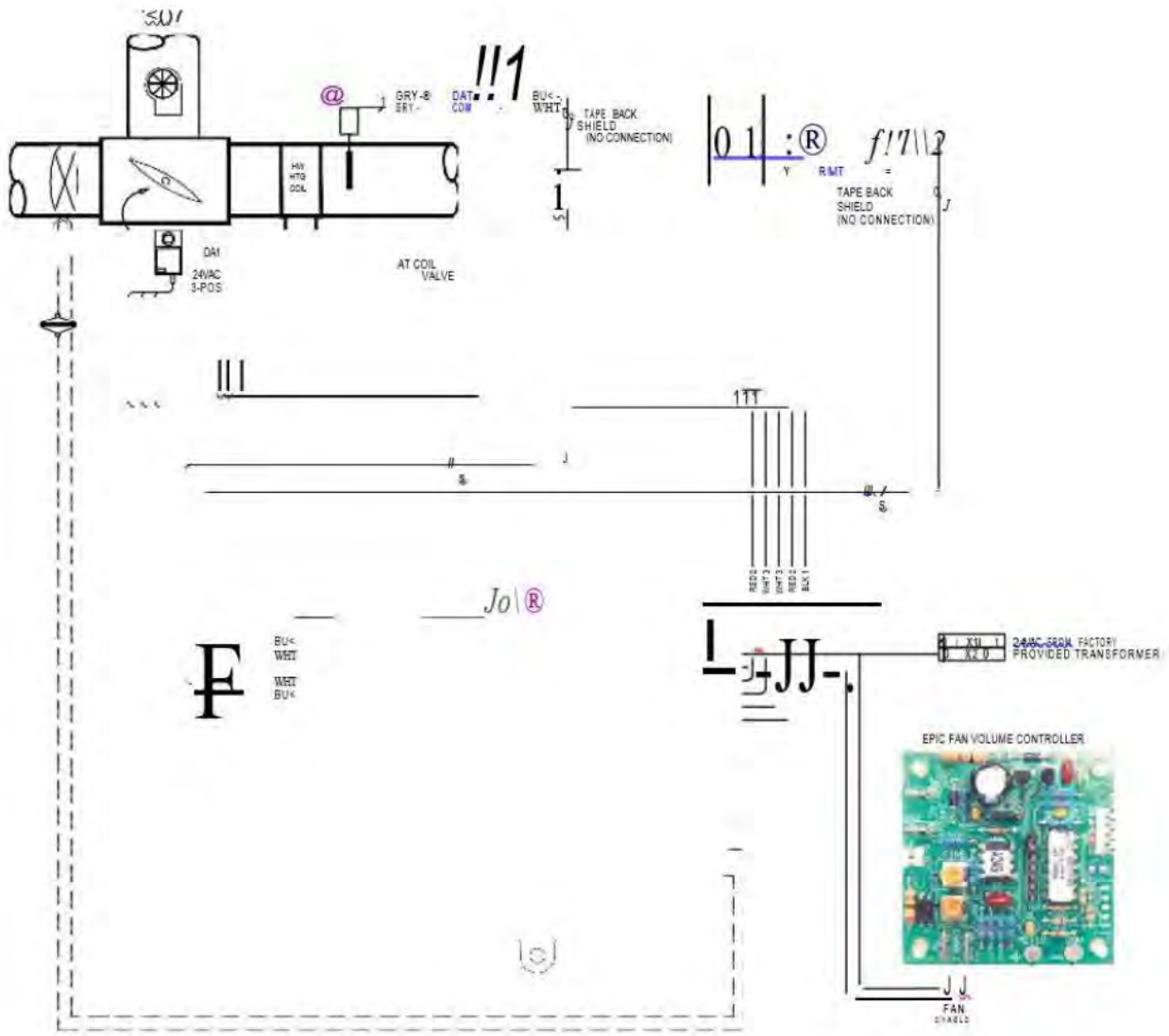
SYSERCO

AN ENERGY MANAGEMENT COMPANY

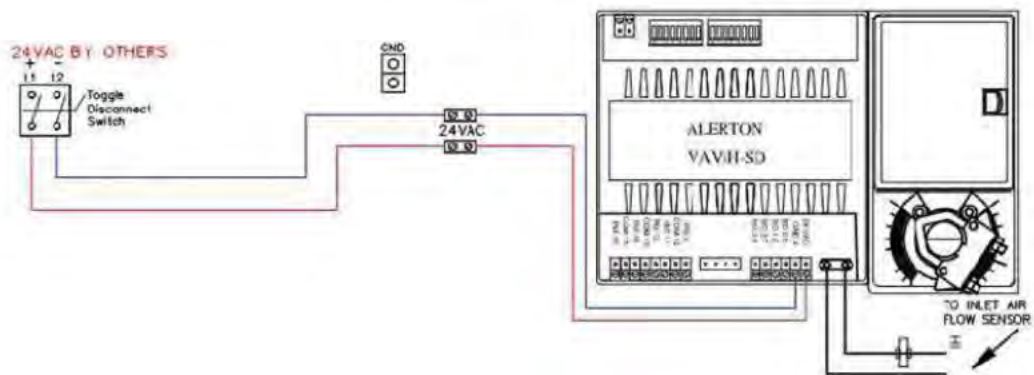
www.syserco.com

Syserco Midwest Office:
5019 Chase Avenue
Downers Grove, IL 60515
312 720-8445

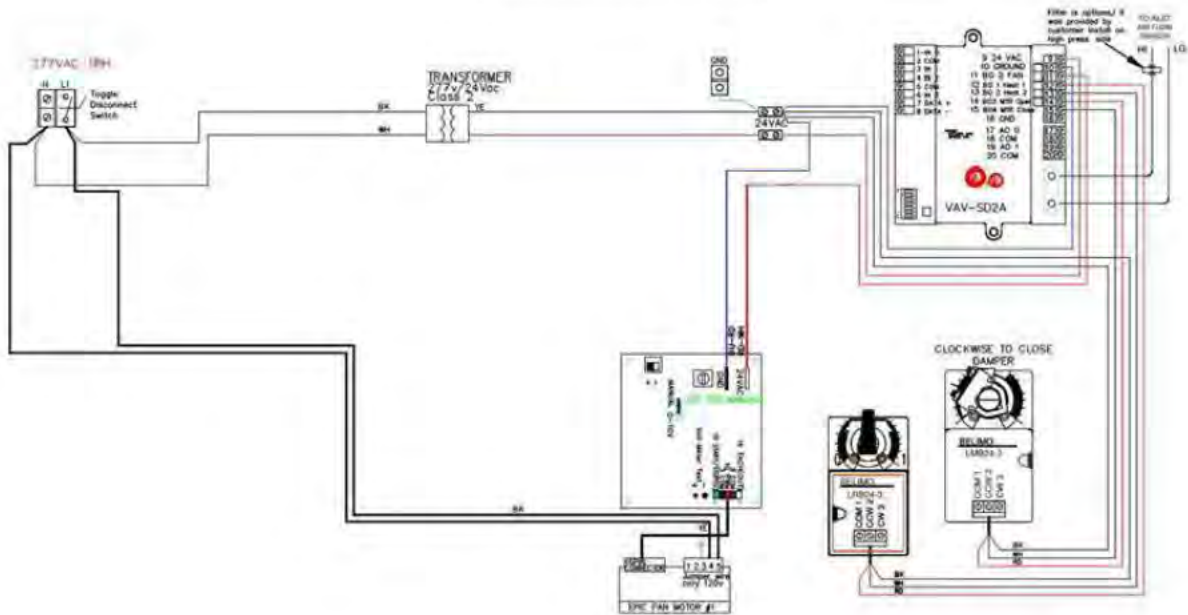




VAV FACTORY WIRING

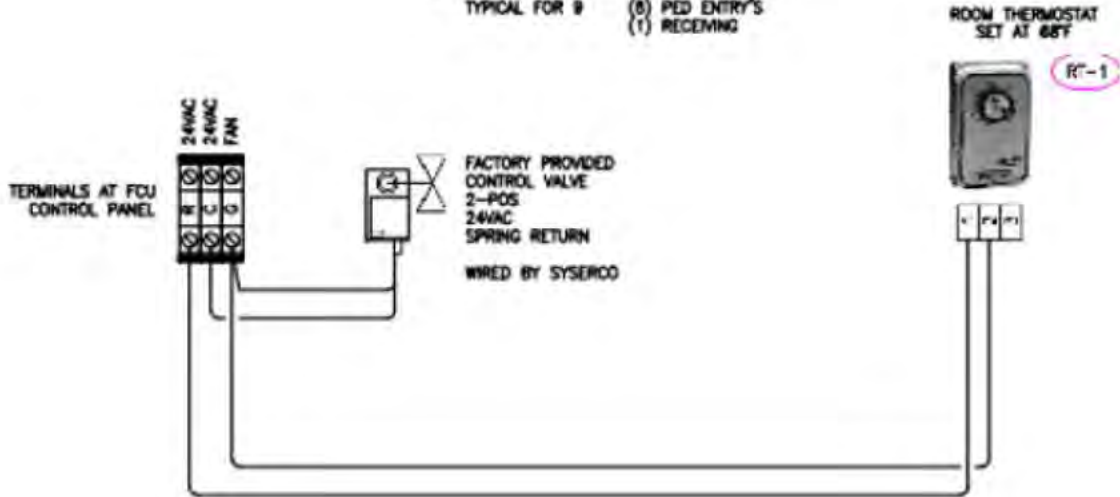


FPVAV W/RH FACTORY WIRING



FAN COIL UNIT CONTROL

TYPICAL FOR 9 (8) PED ENTRY'S
(1) RECEIVING

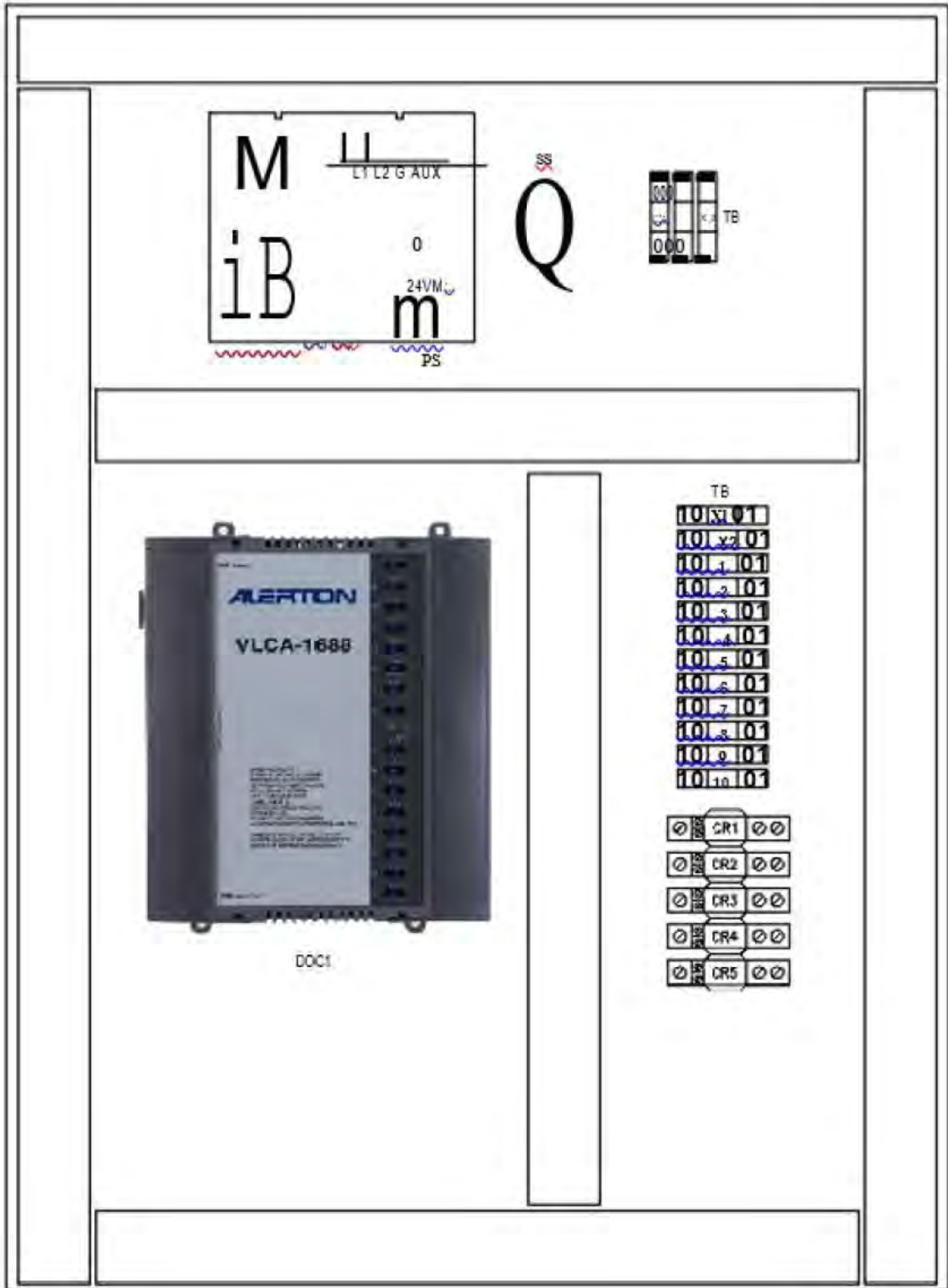


LIST OF MATERIALS

FAN COIL UNITS

NO	QUANTITY	SYMBOL	DESCRIPTION	QTY	REMARKS
RT 1	1	285 38C	2 POSITION THERMOSTAT	1	

BOILERS AND HOT WATER HEATING SYSTEM CONTROL PANEL



◆ **Cooling Towers**

- Type (e.g., open, closed, evaporative, other): **Midwest uses all types of commercial cooling towers**
- Brand Name(s): **All major brand names**
- Capacity Range (tons): **All**
- Standard Warranty (Parts & Labor): **One year parts and labor**
- Optional Warranty (components covered & Labor): **Extended warranty programs are available on every project**
- Estimated Lead/Delivery Time: **Delivery time varies based upon manufacturer and type of equipment**
- Location of Manufacturing (City, State or Country): **Midwest’s cooling towers are manufactured in cities and countries around the world.**
- Range of Efficiencies : **All**
- Estimated Market Share (North America): **Varies based upon manufacturer**
- Provide example data on each type of product provided: **Below is an example of the type of cooling tower used on Midwest Mechanical projects. Please understand that this is just an example, and each job varies based upon the customer need and engineering.**
- Detail Features & Benefits: **Below**



December 06, 2016

EVAPCO → SUBMITTAL PACKAGE

PROJECT

CARRINGTON ASSISTED

UNIT

(2) ESWA-144-45M CLOSED CIRCUIT COOLERS

CUSTOMER EVAPCO SERIAL

MIDWEST MECHANICAL

P.O. ENGINEER

S6050N-06

NO.

16-803145-803146

MIDWEST MECHANICAL / GAUGE

SUBMITTAL DATA ENCLOSED

DESCRIPTION

DOCUMENT NUMBER

PERFORMANCE AND MECHANICAL SPECIFICATIONS

ESW-12ST-ST

UNIT CERTIFIED DRAWING

WZ12124810-ERA-029

STEEL SUPPORT CONFIGURATION

SLWZ31212DA

HEATER LOCATION

HLWX12VE-DA

SLOPED LADDER

LDWZ1212EA-01

30 HEATERWIRING DIAGRAM

B2AU0000-ED

IBC CERTIFICATE

IBCIDCOC001

GUARANTEE OF THERMAL PERFORMANCE

AOS2636

EVAPCO...TAKING QUALITY AND SERVICE TO A HIGHER LEVEL!



PERFORMANCE AND MECHANICAL SPECIFICATIONS EVAPCO®

CLOSED CIRCUIT COOLER

PROJECT:	<u>Carrington Assisted Living -Lincolnwood, IL</u>		
CUSTOMER:	<u>Midwest Mechanical</u>		
ENGINEER:	<u>Midwest Mechanical / Gauge Engineering</u>		
CUSTOMER P.O.	<u>S6050N-06</u>	EVAPCO SERIAL NO.	<u>16-803145-803146</u>
Each Unit 1000 GPM OF			
CAPACITY:	<u>30% ETHYLENE GLYCOL</u>	<u>100.9 °F IN</u>	<u>90 °F OUT</u> <u>78 °F E.W.B.</u>
FAN MOTOR:	<u>Each Unit (1) 30 HP</u>	ELEC. SPEC.	<u>460/3/60</u>
PUMP MOTOR:	<u>(1) 10 HP</u>	ELEC. SPEC.	<u>460/3/60</u>
COIL PRESSURE DROP:	<u>9 PSIG</u>	<u>DRIVES SIZED FOR 0" ESP.</u>	

UNIT TYPE	Factory assembled, induced draft, counterflow closed circuit cooler.
CONSTRUCTION	All galvanized steel construction. Cold water basin, vertical support members, and removable access panels are constructed from heavy gauge mill hot-dipped galvanized steel. Upper casing panels, support members and structure are heavy gauge mill hot-dipped galvanized steel. All galvanized steel is coated with a minimum of 2.35 ounces of zinc per square foot area (G-235 designation). During fabrication, all galvanized steel panel edges are coated with a 95% pure zinc-rich compound.
IBC COMPLIANT	The unit structure is designed, analyzed, and constructed in accordance with the latest edition of International Building Code (IBC) for: $I_p = 1.00$, $S_d_s = 0.42$, $P = 119$ psf.
PAN STRAINER*	All type 304 stainless steel construction with large area removable perforated screens.
ACCESS	Sliding door is provided in the upper casing for fan drive and water distribution system access. Removable basin access panels are provided on two sides for access to the cold water basin and heat exchanger coil.
BLEED-OFF*	Waste water bleed line with adjustable valve provided.
PUMP*	Close-coupled centrifugal pump with mechanical seal. The pump is installed in a vertical position so that water will drain from the pump when the cold water basin is emptied. Pump motor is totally enclosed with protective canopy for outdoor operation.
FAN SHAFT	Solid shaft of ground and polished steel. Exposed surface coated with rust preventative.
FAN SHAFT BEARINGS	Heavy-duty, self aligning ball type bearings with extended lubrication lines to grease fittings on the exterior casing. Bearings are designed for a minimum L-10 life of 75,000 hours.

FAN(S)	Fans are axial propeller type constructed of aluminum alloy and statically balanced. The fan is installed in a closely fitted galvanized steel cowl with venturi air inlet. Fan screens are galvanized steel mesh and have galvanized steel frames bolted to the fan cowl.
FAN MOTOR	Totally enclosed, ball bearing type electric motor(s) suitable for moist air service. Motor(s) are Premium Efficient, Class F insulated, 1.15 service factor design. Inverter rated per NEMA MG1 Part 31.4.4.2 and suitable for variable torque applications and constant torque speed range with properly sized and adjusted variable frequency drives.
FAN DRIVE	The fan drive is a multi-groove, solid back, reinforced neoprene V-belt type with taper lock sheaves designed for 150% of the motor nameplate horsepower. Fan sheave and motor sheaves are constructed of aluminum alloy. The fan and fan sheave are mounted on the shaft with a specially coated bushing for maximum corrosion protection.
FILL	Polyvinyl Chloride (PVC) of cross-fluted design. PVC sheets are bonded together for strength and durability. Fill is self-extinguishing for fire resistance, has a flame spread of 5 under A.S.T.M. designation E-84-81a, and is resistant to rot, decay and biological attack.
COIL	Patent pending Sensi-Coil design utilizing tightly spaced elliptical tubes of prime surface steel, encased in steel framework with the entire assembly hot-dip galvanized after fabrication. Designed with sloping tubes for liquid drainage and tested to 390 psig air under water. Coil assembly shall be completely enclosed and protected from sunlight exposure, environmental elements and debris. Removable panels shall be provided around the coil to permit easy inspection of the coil without unit entry.
WATER DISTRIBUTION SYSTEM	Precision molded ABS spray nozzles with large 1-1/4" x 5/16" orifice and internal sludge ring to eliminate clogging. Nozzles are threaded into Schedule-40 PVC headers equipped with removable end plugs for ease of cleaning.
ELIMINATORS	The eliminators are constructed entirely of non-corrosive PVC. Design incorporates three changes in air direction and limits the water carryover to a maximum of 0.001% of the circulating water rate.
AIR INLET LOUVERS	The air inlet louvers are constructed from UV inhibited polyvinyl chloride (PVC) and incorporate an interlocking design. The louvers have a minimum of two changes in air direction and are of a non-planar design to prevent splashout, block direct sunlight and debris from entering the basin.
WATER MAKE-UP ASSEMBLY*	Brass float valve with adjustable plastic float.
PASSIVATION	All evaporative cooling equipment utilizing galvanized construction requires initial passivation to maximize the service life of the equipment. The sites water treatment vendor should be contacted several weeks prior to adding any water to the system to provide a passivation plan along with associated passivation plan costs.
*OMITTED ON UNITS FOR REMOTE SUMP OPERATION	

SPECIAL REMARKS:

- (2) 6 KW Pan Heater(s), 460/3/60, with thermostat and low water cutoff(s).
- 3 ft extension(s) provided with ladder(s). (Note: If extension(s) are over 3 feet, they are to be externally supported by others.)
- Unit(s) provided with ladder(s).
- Nitrogen charged coils (removal of welded end plate and coil connection preparation by others).
- Unit Arranged with High Flow Coils.
- IBC Standard Structural Design.

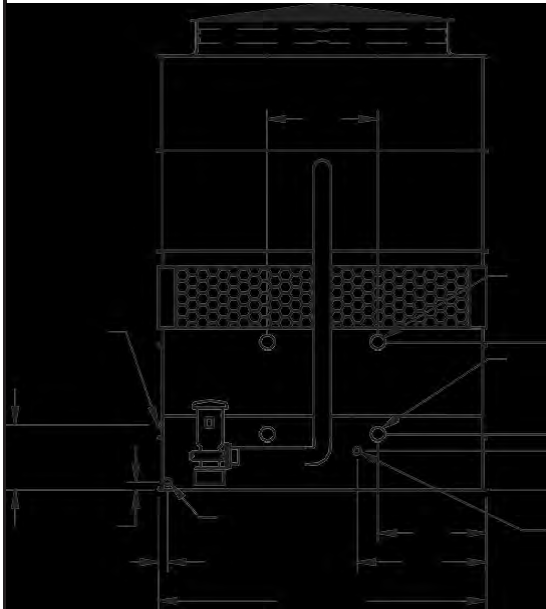
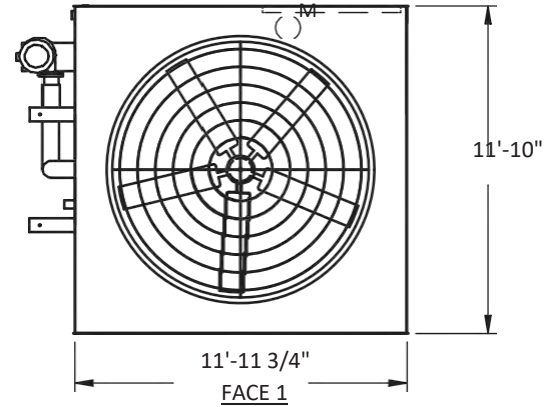
UNIT	CLOSED CIRCUIT COOLER	
MODEL #	ESWA-144-45M	SCALE N.T.S.

EVAPCO, INC.

DWG #	WZ12124810-ERA-029	REV.	-
SERIAL #	16-803145-803146	DATE	12/6/2016

- NOTES:
1. M - FAN MOTOR LOCATION
 2. HEAVIEST SECTION IS LOWER SECTION
 3. MPT DENOTES MALE PIPE THREAD FPT DENOTES FEMALE PIPE THREAD BFW DENOTES BEVELED FOR WELDING PE DENOTES PLAIN END WITH PLUG CLOSURE FOR NITROGEN CHARGE
 4. †UNIT WEIGHT DOES NOT INCLUDE ACCESSORIES (SEE SEPARATE DRAWINGS FOR ACCESSORIES)
 5. 3/4" DIA. MOUNTING HOLES. REFER TO RECOMMENDED STEEL SUPPORT DRAWING
 6. MAKE-UP WATER PRESSURE-20 psi MIN, 50 psi MAX
 7. * - APPROXIMATE DIMENSIONS DO NOT USE FOR PRE-FABRICATION OF CONNECTING PIPING
 8. MAKE-UP IS LOCATED 4 3/4" FROM CONNECTION END

**FACE 2
PLAN VIEW**



2 MPT
MAKE-UP

47
56

(2) 6 PE FLUID
OUT

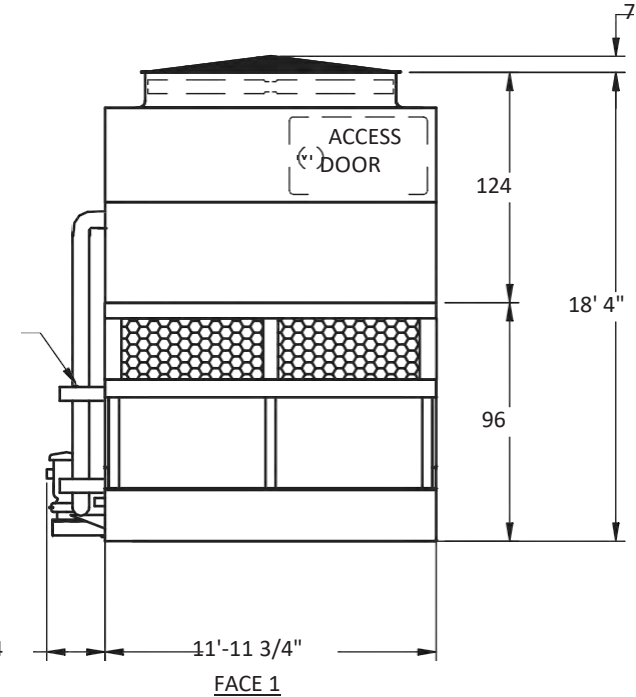
(2) 6 PE
FLUID IN 32 3/8 *

17 24

3 MPT
OVERFLOW

(2) 1/2 FPT
VENT

25 1/4



FACE 1



28 1/8



3 1/2

3 MPT
DRAIN

3 7/8

11'-10"

FACE 2

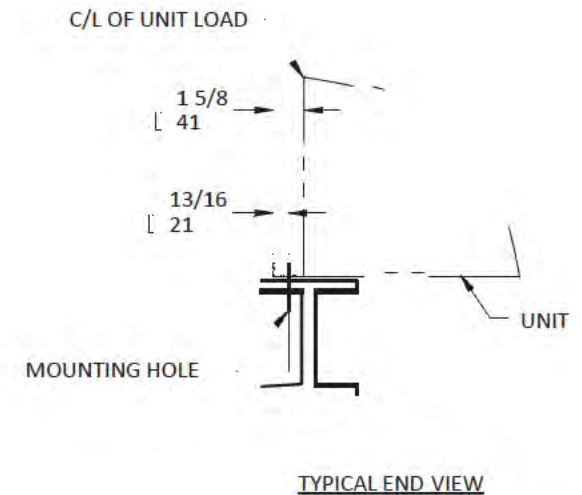
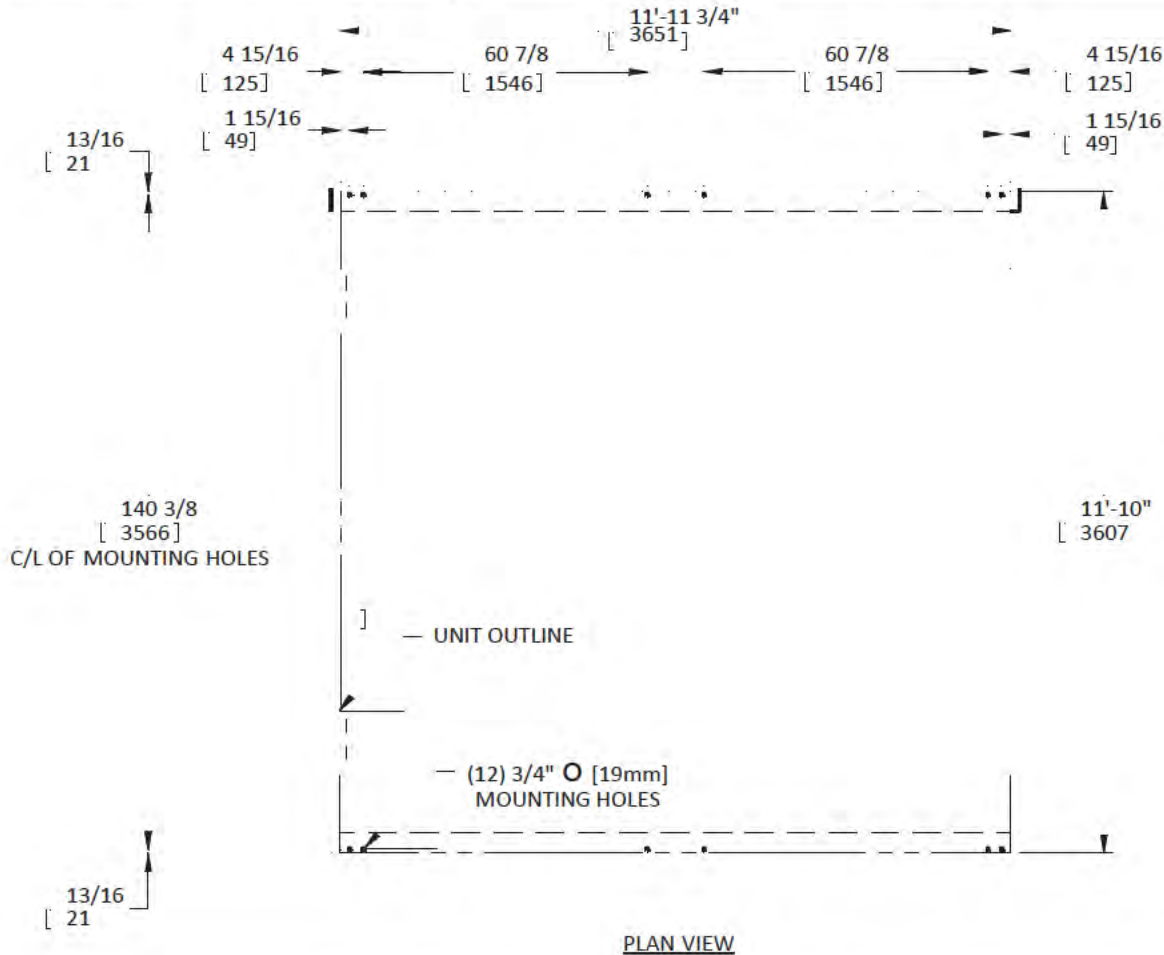


SHIPPING WEIGHT 18805 Lb+ [8530] Kg+	OPERATING WEIGHT 27765 Lb+ [12594] Kg+	HEAVIEST SECTION WEIGHT 12505 Lb+ [5672] Kg+	NO. OF SHIPPING SECTIONS 2	DRAWN BY JTG
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EVAPCO, INC.



TITLE	STEEL SUPPORT CONFIGURATION	UNIT:	12x12 ESWA3 UNITS	DWG. #	SLWZ31212-DA
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NOTES:

1. BEAMS SHOULD BE SIZED IN ACCORDANCE WITH ACCEPTED STRUCTURAL PRACTICES. MAXIMUM DEFLECTION OF BEAM UNDER UNIT TO BE 1/360 OF UNIT LENGTH NOT TO EXCEED 1/2" [13mm].
2. DEFLECTION MAY BE CALCULATED BY USING 55% OF THE OPERATING WEIGHT AS A UNIFORM LOAD ON EACH BEAM. SEE CERTIFIED PRINT FOR OPERATING WEIGHT.
3. SUPPORT BEAMS AND ANCHOR HARDWARE ARE TO BE FURNISHED BY OTHERS. ANCHOR HARDWARE TO BE ASTM A325 5/8" [16mm] BOLT OR EQUIVALENT.
4. BEAMS MUST BE LOCATED UNDER THE FULL LENGTH OF THE PAN SECTION.
5. SUPPORTING BEAM SURFACE MUST BE LEVEL. DO NOT LEVEL THE UNIT BY PLACING SHIMS BETWEEN THE UNIT MOUNTING FLANGE AND THE SUPPORTING BEAM.
6. ANCHORING ARRANGEMENT SHOWN HAS A MAXIMUM WIND RATING OF 60 PSF [2.88 kPa] ON CASED VERTICAL SURFACES.
7. THE FACTORY RECOMMENDED STEEL SUPPORT CONFIGURATION IS SHOWN. CONSULT THE FACTORY FOR ALTERNATE SUPPORT CONFIGURATIONS.
8. UNIT SHOULD BE POSITIONED ON STEEL SUCH THAT THE ANCHORING HARDWARE FULLY PENETRATES THE BEAM'S FLANGE AND CLEARS THE BEAM'S WEB.

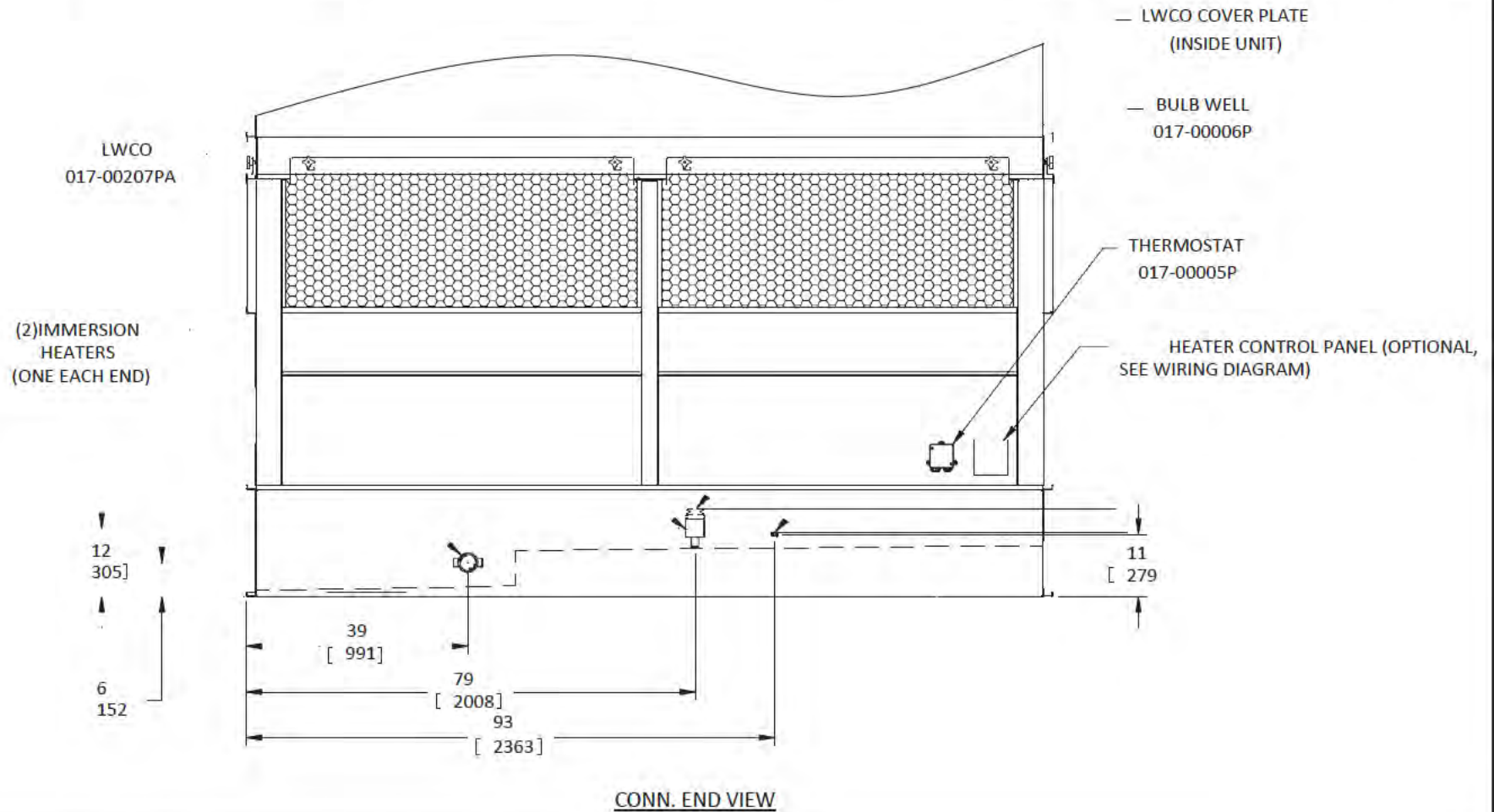
EVAPCO, INC.



TITLE HEATER LOCATION

UNIT: 12x12/18 ESW

DWG.# HLWX12VE-DA



NOTES:

1. A MINIMUM OF 15.00 in CLEARANCE IS REQUIRED BETWEEN THE HEATER OUTLET BOX AND THE NEAREST OBSTRUCTION FOR REMOVAL OF THE HEATER.
2. ALL NIPPLES ON UNIT ARE NOT SHOWN IN ORDER TO CLARIFY HEATER COMPONENT LOCATIONS.
3. ALL HEATER COMPONENTS BY EVAPCO ARE FACTORY MOUNTED WHEN POSSIBLE.
4. DIMENSIONS LISTED AS FOLLOWS: ENGLISH IN
[METRIC] [mm]

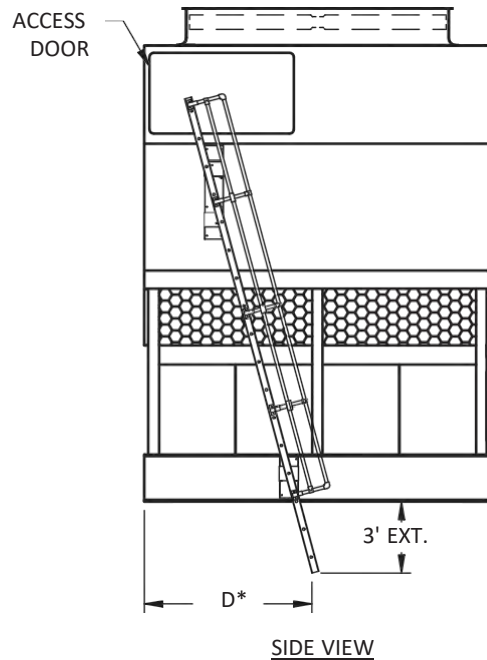
EVAPCO, INC.



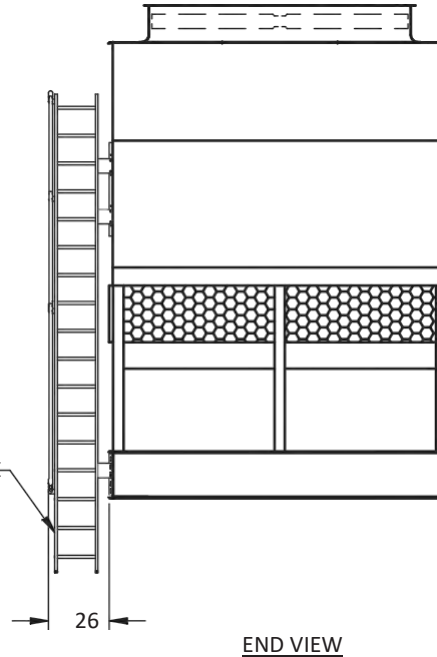
TITLE
SLOPED LADDER INSTALLATION PACKAGE

UNIT:
12x12 ESWA

DWG. #
LDWZ1212EA-01



LADDER SHIPS LOOSE
FOR FIELD
MOUNTING
(BY OTHERS)



SIDE VIEW

END VIEW

RIG LADDER BEFORE PIPING UNIT

MODEL #	D(IN)
ESWA 144-23I, 23J, 23K	63 5/8
ESWA 144-24I, 24J, 24K	66
ESWA 144-25I, 25J, 25K	66 3/4
ESWA 144-26I, 26J, 26K	69 7/8
ESWA 144-33I, 33J, 33K, 33L	66 3/4
ESWA 144-34I, 34J, 34K, 34L	69
ESWA 144-35I, 35J, 35K, 35L	69 7/8
ESWA 144-36I, 36J, 36K, 36L	73
ESWA 144-43I, 43K, 43L	69 7/8
ESWA 144-44I, 44K, 44L, 44M	72 1/8
ESWA 144-45I, 45K, 45L, 45M	73
ESWA 144-46I, 46K, 46L, 46M	76

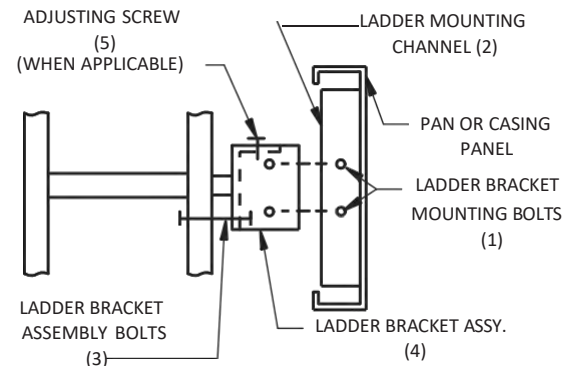
(M) -FAN MOTOR LOCATION

* THE BOTTOM OF THE LADDER IS AT THE BASE OF THE UNIT.
IF THE UNIT IS ELEVATED THEN A LADDER EXTENSION SHOULD BE
CONSIDERED. (CONSULT FACTORY).

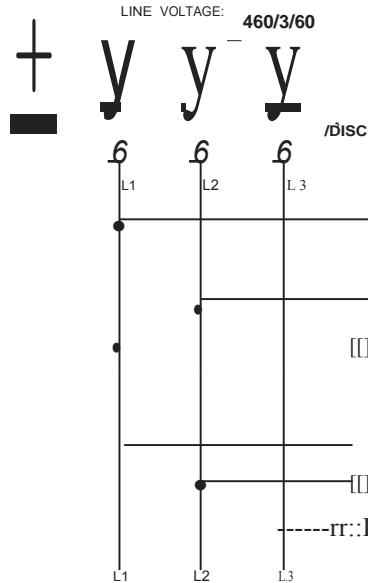
LADDER EXTENSIONS OF UP TO 3 FEET CAN BE ADDED WITHOUT ANY
ADDITIONAL SUPPORT. FOR A LADDER EXTENSION LONGER THAN 3 FEET
ADDITIONAL SUPPORT MUST BE PROVIDED BY OTHERS.

CUSTOMER INSTALLATION NOTES:

- REMOVE LADDER BRACKET MOUNTING BOLTS (1) FROM LADDER MOUNTING CHANNELS (2) ON PAN AND CASING SECTIONS.
- LOOSEN, BUT DO NOT REMOVE, LADDER BRACKET AND ASSY. BOLTS (3).
- TO ASSEMBLE, SLIDE LADDER BRACKET ASSY. (4) OVER LADDER MOUNTING CHANNELS (2) LOCATED ON PAN AND CASING (DO NOT REMOVE LADDER BRACKET ASSY. (4) FROM LADDER.)
- ALIGN HOLES AND REINSTALL LADDER BRACKET MOUNTING BOLTS (1) THROUGH LADDER BRACKET ASSY. (4) AND LADDER MOUNTING CHANNELS (2).
- TIGHTEN ALL BOLTS.
- TIGHTEN ADJUSTING SCREW (5) IN THE ADJUSTABLE MOUNTING BRACKETS WHEN APPLICABLE.



RECOMMENDED POWER AND CONTROL WIRING

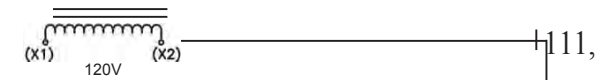


- ALL HEATERS AND CONTROLS NOT PROVIDED BY EVAPCO TO BE INSTALLED AND WIRED BY OTHERS
- ALL POWER WIRING BY OTHERS
- ALL FIELD WIRING BY OTHERS

4 < J

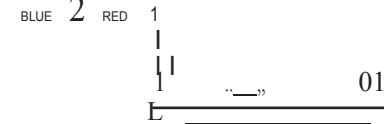
2 6 KW
IMMERSION
HEATERS

LINE VOLTAGE 460/3/60
(H4) (H2) (H3) (H1)



IF PUMP INTERLOCK
USE, REMOVE JUMPER

THERMOSTAT
UNIT



LOW WATER CUTOFF
UNIT 1

IMMERSION HEATER BY:

EVAPCO OTHERS

[J] - TERMINAL POINT
- - - REMOTE DEVICE

NOTES:

- DASHED LINES INDICATE FIELD WIRING.
- THE HEATERS HAVE BEEN SIZED TO MAINTAIN 40°F PAN WATER AT AN AMBIENT TEMPERATURE OF 60°F.
- ALL COMPONENTS BY EVAPCO HAVE NEMA 4 ENCLOSURES.
- AUXILIARY N.C. CONTACT INTERLOCKS IMMERSION HEATERS WITH SPRAY WATER CIRCULATING PUMP TO DE-ENERGIZE HEATERS WHEN SPRAY PUMP IS RUNNING.
- (1) CONTACTOR IS SUPPLIED FOR EVERY (2) HEATERS
 - CONTACTOR SHOULD BE WIRED WITH SEPARATE SUPPLY TERMINALS FOR EACH HEATER.
- (1) CONTACTOR IS SUPPLIED PER CELL OF A MULTICELL UNIT
 - PROVIDES FOR INDIVIDUAL CELL OPERATION

LOW WATER CUTOFF/THERMOSTAT CONTROL BY: EVAPCO OTHERS

AUXILIARY N.C. PUMP INTERLOCK BY: EVAPCO OTHERS

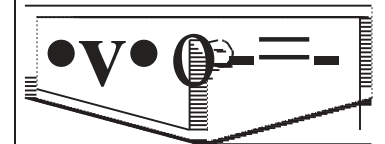
HEATER CONTROL PANEL BY: EVAPCO OTHERS

OTHERS TRANSFORMER BY: OTHERS

EVAPCO OTHERS

HEATER CONTACTOR BY: EVAPCO OTHERS

FUSED DISCONNECT BY: EVAPCO OTHERS



3φ HEATER
WIRING DIAGRAM
2 HEATERS

B2AU0000-ED



Certificate of Compliance

AT, USS, UAT, UT Cooling Towers
eco-ATWB/WB-E, ATWB and ESWA Closed Circuit Coolers
eco-ATC, ATC-E Evaporative Condensers

Are certified to meet or exceed the Seismic and Wind Load Provisions set forth in the applicable building codes for this project.

These products have been manufactured following
all applicable quality assurance programs.

Applicable Building Codes: IBC

2012

ASCE-7 NFPA

5000

Referenced

Report: VMA-

43387



Approval Agency:



VMC Seismic Consulting Group



Guarantee of Thermal Performance

EVAPCO® unequivocally guarantees the thermal performance of its equipment as shown on the certified drawings, when the equipment is installed in accordance with good engineering practice. If after installation and start-up there is any question regarding thermal performance of the equipment, at the owner's request EVAPCO will send its engineers to the jobsite to conduct a performance test. This test may be observed by the owner and the consulting engineer or by their authorized representatives. If the results of the evaluation show the equipment to be deficient, EVAPCO will make the necessary repairs or alterations to correct the deficiency at no cost to the owner. If the equipment is found to be performing in accordance with its certified drawing, the owner is expected to reimburse the company for its costs associated with this performance test. This guarantee is subject to all conditions and limitations' set forth in the express warranty that applies to the equipment.



EVAPCOSpecialists in Heat Transfer Products and Services.

◆ Pumps

- Type: **Midwest Mechanical provides every type of pump available for the HVAC industry**
- Brand Name(s): **Midwest Mechanical offers all major name brands of pumps**
- Capacity Range (GPM): **Midwest Mechanical provides pumps of every necessary capacity**
- Standard Warranty (Parts & Labor): **One Year parts and labor**
- Optional Warranty (components covered & Labor): **All non-standard warranty terms are available upon request**
- Estimated Lead/Delivery Time: **Varies based upon manufacturer and product**
- Location of Manufacturing (City, State or Country): **Midwest Mechanical's pumps are manufactured in a variety of locations around the world**
- Estimated Market Share (North America): **Varies based upon manufacturer**
- Provide example data on each type of product provided :**Examples are below**
- Detail Features & Benefits



Series e-1510 2BD
Base Mounted End Suction Pump

DESCRIPTION:

The Series e-1510 is available in 26 sizes and a variety of configuration options that enable customization and flexibility to fit a broad range of operating conditions. Flows up to 4950 GPM heads to 534 feet.

SPECIFICATIONS

FLOW 200 (GPM) HEAD 60 (FT)
HP 5 RPM 1800

VOLTS 208-230/460

CYCLE 60 PHASE 3

ENCLOSURE ODP Nema Premium Efficient

APPROX. WEIGHT 268

SPECIALS

Note: Equipped with NEOPRENE coupling

MATERIALS OF CONSTRUCTION

- Stainless Steel Fitted

FEATURES

- ANSI/OSHA Coupling Guard Center
 Drop Out Spacer Coupling Fabricated
Heavy Duty Baseplate

MAXIMUM WORKING PRESSURE

- 175 psi (12 bar) W.P.

w/ 125# ANSI flange drilling

PUMP VARIABLE SPEED CONTROL

- Integrated Technologic® Sensorless Control (ITSC)
 Integrated Technologic® (IT)

 External input by others Pressure Sensor(s)

Differential Pressure Sensor(s) Flow Sensor(s) By Others

PARALLEL PUMPING SYSTEM

- Sensorless Control (ITSC) Sensored Control (IT)

PARALLEL SENSORLESS CONTROLLER

Pump Mounted Wall Mounted

____ Pumps in Parallel

TYPE OF SEAL

Standard Seal

(Buna-Carbon/Ceramic)

-20° to 225° F (-29° to 107° C)

Max Working Pressure 175 psi (12 bar) -F Standard Seal w/ Flush Line

(Buna-Carbon/Ceramic)

-20° to 225° F (-29° to 107° C)

Max Working Pressure 175 psi (12 bar)

-S Stuffing Box construction w/ Flushed Mechanical Single Seal

(EPR-Tungsten Carbide/Carbon)

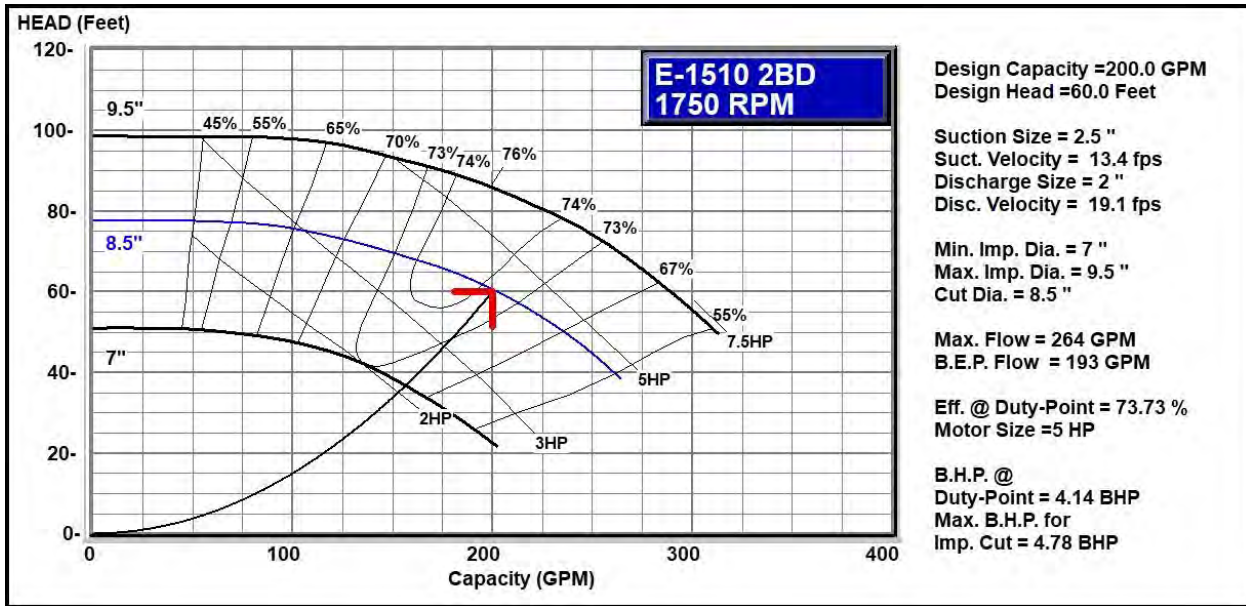
-20° to 250° F (-29° to 121° C)

Max Working Pressure 175 psi (12 bar)

-PF Stuffing Box Construction w/ Flushed Packing (Graphite Impregnated Teflon)

0° to 250° F (-17° to 121° C)

Max Working Pressure 175 psi (12 bar)



◆ Invertors

- Brand Name(s): **All**
- Capacity Range (HP): **Varies based upon design**
- Standard Warranty (Parts & Labor): **One year parts and labor**
- Optional Warranty (components covered & Labor): **Extended warranties are available**
- Estimated Lead/Delivery Time: **Varies based upon manufacturer and product**
- Location of Manufacturing (City, State or Country): **The Invertors used by Midwest Mechanical are manufactured in various locations around the world**
- Estimated Market Share (North America): **Varies based upon manufacturer**
- Provide example data on each type of product provided: **Below is just a small example of the types of Invertors provided by Midwest Mechanical. Additional detail is available upon request.**
- Detail Features & Benefits

Danfoss

460 Volt

Qty.	Tag Numbers	HP	Frame Size NEMA1/12	Model	Nominal Voltage	Max. Amps Output	Drive Disconnect	Drive Fusing	Option Card
		1.5	A2/A5	FC-102P1K1T4	460	2.7			
		2	A2/A5	FC-102P1K5T4	460	3.4			
		3	A2/A5	FC-102P2K2T4	460	4.8			
5	HWP-1,2,&5; FAN 3&5	5	A2/A5	FC-102P3K7T4	460	8.2	X	X	
		7.5	A3/A5	FC-102P5K5T4	460	11			
1	RF-4	10	A3/A5	FC-102P7K5T4	460	14.5	X	X	
4	CWP-1,2, SF-3&4	15	B1	FC-102P11KT4	460	21	X	X	
		20	B1	FC-102P15KT4	460	27			
		25	B1	FC-102P18KT4	460	34			
		30	B2	FC-102P22KT4	460	40			
		40	B2	FC-102P30KT4	460	52			

		50	C1	FC-102P37KT4	460	65			
		60	C1	FC-102P45KT4	460	77			
		75	C1	FC-102P55KT4	460	106			
		100	C2	FC-102P75KT4	460	130			
		125	C2	FC-102P90KT4	460	160			
		150	D1	FC-102P110KT4	460	190			
		200	D1	FC-102P132KT4	460	240			
		250	D2	FC-102P180KT4	460	302			
		300	D2	FC-102P200KT4	460	361			
		350	D2	FC-102P250KT4	460	443			
		450	E1	FC-102P315KT4	460	540			
		500	E1	FC-102P355KT4	460	590			
		550	E1	FC-102P400KT4	460	678			
		600	E1	FC-102P450KT4	460	730			

SPECIFICATIONS

Drive Input Power

Input voltage, 3 phase 200–240, or 380–460, or 525–600 VAC

Input voltage range for full output Nominal $\pm 10\%$

Undervoltage trip point 164, 313 VAC, or 394 VAC

Overvoltage trip point 299, 538, or 690 (792 for 100 HP and above) VAC

Input frequency 50 or 60 Hz, ± 2 Hz

Displacement power factor 0.98 or greater at all speeds and loads

Total power factor 0.90 or greater at full load and nominal motor speed

Drive Output Power

Output frequency Selectable 0 to 120 Hz

Motor voltages	200, 208, 220, 230; 380, 400, 415, 440, 460; 550 or 575 VAC
Continuous output current	100% rated current
Output current limit setting	Adjustable to 110% of drive rating
Current limit timer	0 to 60 seconds or infinite
Adjustable maximum speed	From minimum speed setting to 120 Hz
Adjustable minimum speed	From maximum speed setting to 0 Hz
Acceleration time.....	To 3,600 seconds to base speed
Deceleration time	To 3,600 seconds from base speed
Breakaway torque time	0.0 to 0.5 seconds (1.6 times motor nameplate current)
Start voltage	0 to 10%
DC braking time	0 to 60 seconds
DC braking start	0 to maximum frequency
DC braking current.....	0 to 50% of rated motor current

Environmental limits:

Efficiency.....	97% or greater at full load and nominal motor speed
Ambient operating temperature	14°F to 113°F (-10°C to 45°C) frames A2-C2; 14°F to 104°F (-10°C to 40°C) frames D1-E1
Humidity	< 95%, non-condensing
Altitude: maximum without derating	3,300 ft. (1,000 m)
Drive and options enclosure(s)	NEMA/UL Types 1 and 12; 3R optional

Protections:

Low frequency and high frequency warnings	0 to 120 Hz
Low current and high current warnings.....	0 to maximum current
Low reference and high reference warnings	-999,999 to 999,999
Low feedback and high feedback warnings	-999,999 to 999,999
Ground fault	Protected
Motor stall	Protected
Motor overtemperature	Protected (Predictive motor temperature)
Motor Condensation.....	Protected (Motor preheat circuit)
Pump no-flow	Protected
Pump end-of-curve	Protected
Dry pump	Protected
Short-cycle.....	Protected
Motor overload.....	Protected (Programmable action)
Vibration protection	Protected (Programming automated)

Control Connections

Follower signal, analog input	2; selectable voltage or current, direct and inverse acting
Programmable digital inputs.....	6 (2 can be used as digital outputs)



Programmable analog outputs	1; 0/4 to 20 mA
Programmable relay outputs	2 standard Form C 240 V AC, 2 A; 1 or 3 additional optional
Auxiliary voltage	+24 V DC, maximum 200 mA

Control Optional

MCB 101 General Purpose I/O	3 DI, 2 DO, 2 AI (voltage), and 1 AO (current)
MCB 105 Relay Card	3 standard Form C 240 VAC, 2 A
MCB 107 24V DC Supply	Allows external 24 V DC power to be connected to the VLT HVAC Drive
MCB 109 Analog I/O	3 AO (voltage), 3 AI (voltage or PT1000 or NI1000), battery backup
MCB 110 Battery back-up	Battery backup for real-time clock

Software

Lost speed reference action.....	Selectable to go to a preset speed, go to maximum speed, stay at last speed, stop, turn off, or stop and trip Time
delay for lost speed reference action	1 to 99 seconds
Adjustable auto restart time delay	0 to 600 seconds
Automatic restart attempts	0 to 20 or infinite
Automatic restart time delay.....	0 to 600 seconds between each attempt
Relay ON delay and relay OFF delay	0 to 600 seconds
Maximum number of preset speeds.....	16
Maximum number of frequency stepovers	4
Maximum stepover width.....	100 Hz
Maximum number of accel rates	4
Maximum number of decel rates.....	4
Delayed Start	0 to 120 seconds

DRIVE FEATURES – OPERATOR INTERFACE

The VLT® HVAC Drive

The VLT HVAC Drive Series is a microprocessor-based, high frequency IGBT-based, PWM AC drive with control functions and software designed solely for the unique needs of HVAC systems. The VLT HVAC Drive uses state-of-the-art Voltage Vector Control to supply full rated motor voltage at rated load and frequency, full motor performance without derating, high efficiency for both drive and motor, and a nearly perfect output sine wave. The diode-bridge rectifier and DC-link reactor provide a high displacement power factor at all speeds and loads and minimize power line harmonics. The VLT HVAC Drive utilizes a common user interface for all units.

Fully Graphic, Multilingual Display

The VLT HVAC Drive uses a large, bright, backlit graphic display to provide complete drive information at a glance. The logical arrangement of all elements simplifies the setup, operation and monitoring of the drive. Choose from 25 different items to display, including input reference, motor current, hours run, output frequency, horsepower, kW or kWh. Or select from custom units, such as GPM or HP and calibrate the maximum value to the maximum frequency of the unit. After programming one drive, the keypad can be used to transfer the same settings to all other drives.

Drive can run without the keypad in place to assure tamper-proof operation. Drive status is shown even with the keypad removed.

LED Indication

Three LEDs are provided on the VLT HVAC Drive for indication of power applied, warning and fault. Upon power up, all LEDs will briefly light as a lamp test.



Alarm – Will flash red when the drive has registered a fault condition which has caused the drive to shut down.

Warning – Will flash yellow to indicate a situation exists that exceeds the normal drive/system parameters, and if that condition continues, a trip may be imminent.

On – Will glow green to indicate that the VFD is connected to AC power (line voltage is present).

Operating Keys

Hand On – Starts the drive regardless of remote start/stop contact (assuming safety interlock is closed). The speed of the drive will generally be controlled manually via the keypad "+" and "-" buttons.

Off – Shuts the drive down regardless of other commands.

Auto/On – The drive will start and stop via the external contact closure (building automation time clock). The speed is generally controlled via the building automation signal (4 to 20 mA, 0 to 10 V DC, etc.).

Reset – Will reset any trip level fault (not trip lock) if the drive is not set for infinite automatic fault resets.

Directional Keys

Right / Left / Up / Down arrows – Used as the electronic potentiometer to manually control the speed in the Hand/Start mode. All four keys are active during operation as well as programming. They provide the ability to move the cursor around the display, or sequence through display values.

Programming Keys

Status – Used to display operational data and status.

Cancel – Used to cancel the last programming command so the change is not carried out.

OK – Used to confirm that the last programming change should be saved to memory.

Back – Used to exit present display or menu to the previous display or menu.

Quick Menu – Used for programming the VLT HVAC Drive for the most typical applications.

Main Menu – Used to access all parameters for programming. It can switch directly from this mode to quick menu.

Alarm Menu – Used to access all fault and warning data.

Info Key – Accesses an on-board manual that gives detailed explanation of a parameter.

DRIVE FEATURES – PROGRAM OPTIONS

Application-Specific Software

The VLT HVAC Drive was designed specifically for the HVAC market. This specialization has allowed Danfoss to factory program and configure the VLT HVAC Drive to make it ready to use, out of the box. This eliminates the time-consuming and often confusing job of selecting the correct parameters in the field. For the advanced user, the parameters are logically grouped, making modifications simple. Customized text fields are available to show user-specific data. Four independent setups are available for unmatched flexibility.

Menu Structure

Quick Setup Menu – Contains the 14 required setup parameters to easily start the application.

HVAC Application Menu – Easy access to the most relevant parameters for each of the most common HVAC applications.

Personal Menu – Contains up to 20 user-selectable parameters for customized access.

Changes Made Menu – Provides easy access to previously modified parameters

Keypad Features Hot-pluggable with upload and download capabilities

- On-screen scroll bars and graphs
- Up to five separate meters displayed simultaneously
- Two-level password protection
- Plain language alarms and warnings
- Remote keypad mounting kits available



USB Connectivity

The VLT HVAC Drive can be remotely commissioned and monitored through a standard USB connection and MCT 10 PC software.

DRIVE FEATURES – MOTOR AND DRIVE INTERACTION

Constant-Torque Start

The VLT HVAC Drive's constant-torque start mode provides full torque to accelerate different loads until the drive reaches the setpoint. Breakaway current can be set up to 160% for up to 0.5 seconds for starting high friction loads.

Current Limit Circuit

Adjustable from 0 to 110% of the VLT HVAC Drive's rated current (factory set at 110%). If during acceleration the current required to accelerate the load exceeds the current limit, the VLT HVAC Drive will stop accelerating until the motor current is reduced to normal levels, at which time the load will continue to accelerate at the rate set by the acceleration time.

Three-Phase Output Current Measurement

The VLT HVAC Drive's software measures output current on all three phases. Phase grounding is detected instantly. Output contactors may be repeatedly used with no damage to the drive. Multiple motors may be run from one drive.

Advanced Motor Protection

The VLT HVAC Drive features integrated electronic, thermal motor protection. The VFD calculates the motor temperature based on current, frequency, and time. This system allows for changing cooling conditions as speed and load vary. The drive can predict motor overheating and reports a % of thermal load.

Motor Preheat Circuit

This preheat function can be activated to avoid condensation on the motor windings when it is stopped.

Stall Protection

The VLT HVAC Drive provides protection against a stalled motor. When activated, this function can provide a warning or a fault condition caused by excessive motor current at low speeds.

DRIVE FEATURES

DC-Link Reactor

A dual, 5% DC-link reactor on the positive and negative rails of the DC bus is standard equipment on the VLT HVAC Drive. This reactor reduces the level of harmonics reflected back into the building power system without causing a voltage loss at the drive's input and reducing efficiency as an external AC line reactor would. This reactor also improves input power factor. The reactor is non-saturating (linear) to provide full harmonic filtering throughout the entire load range. In performance, the DC-link reactor is equivalent to a 5% AC line reactor.

Power Line Protection

Power line voltage surge protection is provided by means of input Metal Oxide Varistors (MOVs). This protects the diodes in the VLT HVAC Drive's 3-phase full wave diode bridge. The DC-link reactor also acts to reduce input current caused by power line disturbances.

Sleep Mode

Automatically stops the drive when speed drops below set "sleep" level for specified time. Automatically restarts when speed command exceeds set "wake" level. Saves energy and reduces wear on driven equipment.

Run Permissive Circuit

Ability to accept a "system ready" signal assures that dampers or other auxiliary equipment are in the proper state for drive operation. This feature also provides the ability for the drive to send a "start signal applied" signal to the system to notify the auxiliary equipment of the drive's request to start.

Firefighter's Override Mode

Overrides all other commands to provide desired operation. Ignores most alarms including overload, overcurrent, overtemperature, and phase loss. When used with bypass, selectable to run from drive, from bypass, or switch from drive to bypass in the event of a drive failure.

1756R0594

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October 2012



Acceleration / Deceleration Rates

The VLT HVAC Drive can provide four individually controlled sets of acceleration/deceleration rates each from 1 to 3600 seconds. The shape of these curves may be automatically contoured to prevent tripping.

Plenum Rated

The VLT HVAC NEMA 1 or NEMA 12 drive is recognized by UL for installation in air handling compartments.

Auto Restarts

The VLT HVAC Drive can be automatically restarted up to 20 times or infinitely at 0 to 600 second intervals. If the application causes the drive to trip more than the number of trials set, the drive will stop operating and display the fault on the display screen. A manual reset will be required by means of the reset key, a digital input, or EIA-485 command. In cases of severe trips, as a safety feature, the drive's input power may have to be cycled to restart a fault.

Carrier Frequency

By using IGBTs, the VLT HVAC Drive can employ high switching frequencies, so the motor current is practically sinusoidal. Audible motor noise can also be minimized by adjusting the switching frequency. These frequencies can be set or adjust themselves automatically to fit the application.

Input Power

The VLT HVAC Drive is equipped with an automatic sustained power or phase loss circuit. The VLT HVAC Drive will provide a full rated output with an input voltage as low as 90% of the nominal. The drive will continue to operate with reduced output with an input voltage as low as 164 volts for 208/230 volt units, 313 volts for 460 volt units, and 394 volts for 600 volt units.

Automatic Motor Adaptation (AMA)

Knowing motor stator resistance, the drive automatically optimizes performance and efficiency. The motor does not have to be run or decoupled from the load for the AMA setup to be performed.

Automated Frequency Avoidance / Critical Frequency Lockouts

For applications where it may be necessary to avoid specific frequencies due to mechanical resonance problems in the driven equipment, the VLT HVAC Drive, with its Critical Frequency Lockout Function, makes it possible to set up to four different frequency ranges which will be avoided during operation of the drive. This feature can be programmed by simply activating the feature and pushing OK at the top and bottom points that you wish to avoid.

- Each critical frequency setting can avoid a frequency band which is from 1 to 100 Hz wide. If the reference signal defines that the VLT HVAC Drive is to operate within this critical frequency range, the critical frequency lockout function will keep the drive operating continuously within this range.
- When the frequency reference signal rises above the critical frequency maximum limit, the VLT HVAC Drive will allow the motor to accelerate through the critical frequency at the rate set by the acceleration rate.

Automatic Energy Optimization Circuitry

The Automatic Energy Optimization (AEO) function adapts the output of the drive to the specific motor and load connected. This circuit optimizes the system efficiency as system loads change. The AEO function regulates the output voltage on the basis of the reactive current and the effective current. A savings of 3 to 10% in power consumption can be obtained with this function.

Preset Speeds

The VLT HVAC Drive allows for a maximum of 16 programmable preset speeds to be selected from the digital inputs.

Energy Monitoring

Real energy savings are always available without the additional expense of external equipment.

Real-Time Clock

Adds sophisticated performance to basic control schemes for increased comfort and energy savings.

Automatic High Ambient Derate

If the ambient temperature exceeds the normal limit, the drive can be set to warn of its overtemperature and continue to run, keeping the HVAC system functional. To control its temperature, the drive will reduce the output carrier frequency and then, if necessary, reduce the output current.



Preventive Maintenance Scheduling

The VLT HVAC Drive can monitor system usage and notify the operator when preventive maintenance is required.

Intelligent HVAC Controller

Four auto-tuning PIDs control the drive and up to three other devices, eliminating external controllers and reducing cost.

- Proportional: The proportional gain dictates the rate at which the deviation between actual and desired feedback signal is corrected. The higher the gain, the faster the response, but too high a gain can cause hunting and a large overshoot.
- Integral Time: The integral time continually compares the feedback value with the desired setpoint over time to make sure the setpoint is reached. The greater the integral time, the longer it takes to actually achieve the setpoint, but improves the system stability.
- Derivative: The derivative function monitors the rate at which the feedback is closing on the desired setpoint and slows the rate of approach to prevent overshooting. This function allows rapid accurate system control.

Built-in Communications

The VLT HVAC Drive is fully equipped for serial communication (EIA-485). Up to 31 drives can be connected to one serial bus up to 5,000 feet long.

Communicates directly with *Johnson Controls Metasys (N2)*, *Siemens Building Technologies System 600 (FLN*)*, *Modbus RTU* and *BACnet MS /TP* systems with no hardware changes or additional costs.

Optional communications include for *Lon-Works* with the addition of an Option A card

Broken Belt, Loss of Load

A minimum motor current value can be set to indicate the motor is not using any more current than to run at idle. This can be used to indicate a broken belt or coupler. This feature can also be used to detect when a motor is disconnected from the drive.

WARRANTY

The VLT HVAC Drive carries a standard 18-month on-site warranty from the date of shipment. This warranty includes parts, labor, travel and expenses.

EXTENDED WARRANTY

If specified, the standard 18-month warranty can be extended to a maximum of 60 months.

STARTUP

If specified, a Danfoss-authorized service technician will perform a professional startup service.

AGENCY LISTING

All drives and option packages are factory built and carry UL and C-UL listings. All drives and option packages are built in ISO 9000 and 14001 certified facilities.

◆ **Boilers & Water Heaters**

- Type (e.g., modulating, condensing, cast iron, water tube, packaged, other): **Midwest Mechanical installs all types of commercially available boilers and water heaters**
- Brand Name(s): **All**
- Heating Medium (Electric, Gas, Steam, Hot Water): **All**
- Capacity Range (MBH): **All**
- Standard Warranty (Parts & Labor): **Standard warranty is one year parts and labor**
- Optional Warranty (components covered & Labor): **Extended warranty terms are available**
- Estimated Lead/Delivery Time: **Lead time varies based upon manufacturer and type of equipment**
- Location of Manufacturing (City, State or Country): **The boilers and hot water heaters used by Midwest Mechanical are manufactured in different locations around the world.**
- Range of Efficiencies: **All**
- Estimated Market Share (North America): **Varies based upon manufacturer**
- Provide example data on each type of product provided : **Attached below is an example of a boiler used on one specific job. Additional details can be provided upon request.**
- Detail Features & Benefits

**OUTDOOR CREST
COMMERCIAL
CONDENSING BOILER**

Submittal Sheet



Lochinvar
HIGH EFFICIENCY BOILERS & WATER HEATERS

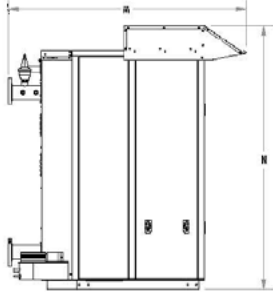
**MODELS
OF 0751 - OF 6001**



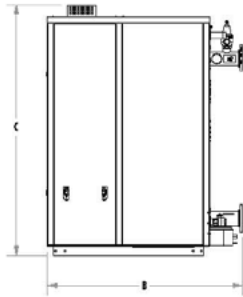
OFN-Sub-05

Job Name: _____ Location: _____ Contractor: _____ Type Gas: _____
 Engineer: _____ Model #: _____ Agent/Wholesaler: _____ Equipment Tag(s): _____

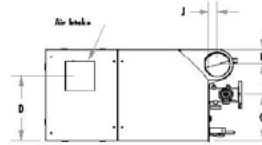
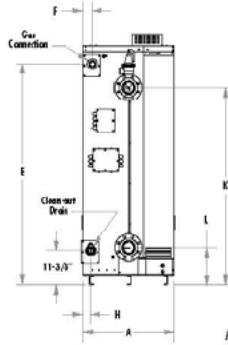
SIDES



BACK



TOP



Indoor Models Without the Hood Shown

JOB NOTES:

- Notes:
- * Insert "N" for natural gas, "L" for LP gas models
 - * Outdoor hood width matches the indoor product width.
 - * Lochinvar should be consulted before selecting a boiler for installations having unusual piping and pickup requirements, such as intermittent system operation, extensive piping systems, etc.
 - * The ratings have been determined under the provisions governing forced draft burners.
 - * The Net AHRI water ratings shown are based on a piping and pickup allowance of 1.15.

Model Number	Input		AHRI Thermal %	Gross Output MBH	Net AHRI Rating MBH	Turn-down Ratio	A	B	C	D	E	F	G	H	I	J	K	L	M	N	N	Gas Conn.	Water Conn.	Air Inlet	Vent Size	Operating Wt. (lbs.)	Shipping Wt. (lbs.)
	Min MBH	Max MBH																									
○ OF10751	30	750	96%	720	626	15:1	30"	53-7/8"	83"	21-1/4"	72-7/8"	3-1/4"	15"	31/4"	7-3/8"	3"	66-1/8"	11-7/8"	67-3/8"	87-1/8"	1-1/4"	3"	6"	6"	6"	1,768	1,560
○ OF1001	30	999	96%	959	834	20:1	30"	53-7/8"	83"	21-1/4"	72-7/8"	3-1/4"	15"	4-1/2"	6-1/2"	4"	66-1/8"	11-7/8"	67-3/8"	87-1/8"	1-1/4"	3"	6"	6"	6"	1,838	1,596
○ OF1251	62.5	1,250	96%	1,200	1,043	20:1	30"	53-7/8"	83"	21-1/4"	72-7/8"	3-1/4"	15"	3-3/4"	6-1/2"	3-1/8"	66-1/8"	11-7/8"	67-3/8"	87-1/8"	1-1/2"	3"	6"	8"	8"	1,975	1,648
○ OF1501	60	1,500	96%	1,440	1,252	25:1	30"	63-7/8"	83"	21"	70"	3"	15"	3-1/2"	5-1/8"	3-7/8"	65-3/8"	12-3/8"	77-3/8"	87-1/8"	1-1/2"	4"	8"	8"	8"	2,307	1,961
○ OF1751	70	1,750	96%	1,680	1,461	25:1	30"	64-3/8"	83"	21"	70"	3"	15"	2-7/8"	5-1/8"	2-7/8"	65-3/8"	12-3/8"	77-3/8"	87-1/8"	1-1/2"	4"	8"	8"	8"	2,458	2,017
○ OF2001	80	1,999	96%	1,919	1,669	25:1	30"	64-3/8"	83"	21"	70"	3"	15"	2-1/2"	5-1/8"	2-7/8"	65-3/8"	12-3/8"	77-3/8"	87-1/8"	1-1/2"	4"	8"	8"	2,570	2,087	
○ OF2501	125	2,500	96%	2,400	2,087	20:1	37"	79-3/8"	83"	26-13/16"	73-1/16"	7-5/16"	18-9/16"	2-11/16"	8-7/16"	5-1/16"	63-13/16"	13-1/2"	92-3/4"	87-3/16"	2"	4"	8"	9"	3,600	2,577	
○ OF3001	130	3,000	96%	2,883	2,507	20:1	37"	79-3/8"	83"	26-13/16"	73-1/16"	7-5/16"	18-9/16"	2-11/16"	8-7/16"	5-1/16"	63-13/16"	13-1/2"	92-3/4"	87-3/16"	2"	4"	10"	10"	3,900	2,880	
○ OF3501	175	3,500	96%	3,364	2,925	20:1	42"	81-7/8"	83-1/8"	29-5/16"	73-5/16"	6-1/2"	21-1/16"	4-1/8"	8-7/8"	5-3/16"	63-1/2"	13-5/8"	95-7/16"	87-1/4"	2"	4"	10"	10"	4,600	3,218	
○ OF4001	333.3	3,999	96%	3,843	3,342	12:1	48"	93-1/8"	83-1/8"	33-3/8"	74-11/16"	7-3/8"	24"	7-1/8"	11-7/8"	5-1/16"	63-1/4"	13-3/8"	106-3/4"	87-1/4"	2-1/2"	4"	12"	12"	5,200	3,805	
○ OF5001	499.9	4,999	96%	4,804	4,177	10:1	48"	94-1/16"	83-1/8"	33-3/8"	74-11/16"	7-5/8"	24-1/16"	5-9/16"	9-9/16"	4-1/16"	63-3/16"	14-7/8"	95-7/16"	87-1/4"	2-1/2"	6"	14"	14"	5,900	4,101	
○ OF6001	600	6,000	96%	5,766	5,014	10:1	52-1/16"	96-1/8"	83-1/8"	35-3/8"	73-13/16"	7-7/16"	26-1/16"	6"	10-3/8"	4-1/2"	63-3/16"	14-7/8"	109-3/4"	87-5/16"	3"	6"	14"	14"	6,900	4,711	

Information subject to change without notice. Dimensions shown are approximate and should not be used for construction purposes.

CREST[®]

CONDENSING BOILER

OUTDOOR CERTIFIED

12 INPUTS FROM 750,000 TO 6.0 MILLION BTU/HR

CON-X-US[®] REMOTE CONNECT

MODBUS AND BACnet MSTP PROTOCOL

CASCADING SEQUENCER WITH CASCADE REDUNDANCY

UP TO 25:1 TURNDOWN RATIO

FLEXIBLE FLOW RATES UP TO 600 GPM

FRONT END LOADING CAPABILITY

Smart Touch™ Features

CON-X-US Remote Connect

SMART TOUCH Touchscreen Operating Control

Full-Color 8" Touchscreen LCD Display

Built-in Cascading Sequencer for up to 8 Boilers

- › Built-in Redundancy
- › Cascade Multiple Sized Boilers
- › Lead/Lag Cascade
- › Efficiency Optimized Cascade

Front-End Loading Capability with Copper-Fin II[®] and Power-Fin[®] Boilers

Building Management System Integration with 0-10 VDC Input

BACnet MSTP Communications

Outdoor Reset Control with Outdoor Air Sensor

Password Security

Domestic Hot Water Prioritization

- › DHW tank piped with priority in the boiler loop
- › DHW tank piped as a zone in the system with the pumps controlled by the Smart System
- › DHW Modulation Limiting
- › Separately Adjustable SH/DHW Switching Times

Low Water Flow Safety Control & Indication

Inlet & Outlet Temperature Readout

Freeze Protection

Service Reminder

Time Clock

Data Logging

- › Hours Running, Space Heating
- › Hours Running, Domestic Hot Water
- › Hours Running, Modulation Rate
- › Ignition Attempts
- › Last 10 Lockouts

Programmable System Efficiency Optimizers

- › Night Setback
- › Anti-Cycling
- › Outdoor Air Reset Curve
- › Ramp Delay
- › Boost Temperature & Time
- › Modulation Factor Control

Three Pump Control

- › System Pump
- › Boiler Pump
- › Domestic Hot Water Pump

High-Voltage Terminal Strip

- › 120V/1PH/60Hz Power Supply (OF 0751-2001)
- › 208V/3PH/60Hz Power Supply (OF 2501-3501)
- › 480V/3PH/60Hz Power Supply (OF 4001-6001)
- › System Pump, Boiler Pump and DHW Pump Power

Low-Voltage Terminal Strip

- › 24 VAC Auxiliary Device Relay
- › Auxiliary Proving Switch Contacts
- › Alarm on Any Failure Contacts
- › Runtime Contacts
- › DHW Thermostat Contacts
- › Unit Enable/Disable Contacts
- › System Sensor Contacts
- › DHW Tank Sensor Contacts
- › Outdoor Air Sensor Contacts
- › Cascade Contacts
- › 0-10 VDC BMS External Control Contact
- › 0-10 VDC Variable Speed Boiler Pump Control Contact

Codes & Registrations

ANSI Z21.13/CSA Certified
 ASME Certified, "H" Stamp / National Board
 California Code Compliant
 CSD1 / Factory Mutual / GE Gap Compliant
 South Coast Air Quality Management District Qualified & Energy Star Rated (OF 0751 - 2001)
 AHRI Certified

Standard Features

Proof of Closure Valve (FB 6001)
 Modulating Burner with up to 25:1 Turndown
 Direct-Spark Ignition
 Low NOx Operation
 Sealed Combustion
 Air Inlet Filter
 Low Gas Pressure Operation
Vertical and Horizontal Direct Venting

- › Direct Vent up to 100 Feet
- › PVC, CPVC, Polypropylene or AL29-4C (FB 0751-4001)
- › AL29-4C (FB 0751-6001)

ASME "H" Stamped Heat Exchanger
 316L Stainless Steel Fire Tubes
 160 psi Working Pressure
 On/Off Switch
 Adjustable High Limit with Manual Reset
 Low Water Cutoff with Manual Reset & Test
 High & Low Gas Pressure Switches w/Manual Reset
 Low Air Pressure Switches
 Condensate Trap w/Blocked Drain Switch
 Drain Valve
 System Sensor
 Outdoor Air Sensor
 Inlet & Outlet Temperature Sensors
 High-Voltage Terminal Strip
 Low-Voltage Terminal Strip
 Downstream Gas Test Cocks
 50 psi ASME Relief Valve
 Temperature & Pressure Gauge



Zero Clearances to Combustible Materials
 10-Year Limited Warranty (See Warranty for Details)
 1-Year Warranty on Parts (See Warranty for Details)

Optional Equipment

- Alarm on Any Failure
- ASME Relief Valve Options:
 - 75 psi 100 psi 125 psi 150 psi
- BMS Gateway - BACnet IP or LonWorks
- Condensate Neutralization Kit
- Common Vent Damper Kits
- Modbus Communication
- Motorized Isolation Valve (NEMA 4)
- Outdoor Hood Kit
- RealTime O₂ Feedback™
- Wireless Outdoor Temperature Sensor
- Electrical Transformer Options (Shipped Loose):**
 - › OF 0751-2001
 - 208V/3PH/60Hz → 120V/1PH/60Hz
 - 480V/3PH/60Hz → 120V/1PH/60Hz
 - 600V/3PH/60Hz → 120V/1PH/60Hz
 - › OF 2501-3501
 - 480V/3PH/60Hz → 208V/3PH/60Hz
 - 600V/3PH/60Hz → 208V/3PH/60Hz
 - › OF 4001-6001
 - 208V/3PH/60Hz → 480V/3PH/60Hz
 - 600V/3PH/60Hz → 480V/3PH/60Hz



Lochinvar, LLC
 300 Mudbox Stripport Parkway
 Lebanon, Tennessee 37090
 P: 615.889.8900 / F: 615.547.1000
 Lochinvar.com

◆ HVAC Specialty Products

- Type: **All**
- Brand Name(s): **All**
- Heating Medium (Electric, Gas, Steam, Hot Water): **All Types of Heating Medium**
- Cooling Medium (DX, Chilled Water): **All Types of Cooling Medium**
- Capacity Range (CFM and/or MBH): **All**
- Standard Warranty (Parts & Labor): **Standard Warranty is one year**
- Optional Warranty (components covered & Labor): **Optional Warranties are available**
- Estimated Lead/Delivery Time: **Varies based upon manufacturer**
- Location of Manufacturing (City, State or Country): **Midwest's Specialty products are manufactured in various locations around the world**
- Range of Efficiencies: **All**
- Estimated Market Share (North America): **Varies based upon manufacturer**
- Provide example data on each type of product provided: **Examples below**
- Detail Features & Benefits

PLENUM SLOT DIFFUSER
SUPPLY • ADJUSTABLE
"WIPER BLADE" PATTERN CONTROLLERS
MODEL: 5750, 5775, 5710 AND 5715

DESCRIPTION:

1. The 5700 Series Plenum Slot Ceiling Diffusers have been designed for standard lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, so offering an extremely unobtrusive method of air distribution.

2. The 5700 Series incorporates an extruded aluminum adjustable pattern controller. The direction of airflow is adjustable from the face through a full 180°. The controller incorporates a soft gasket seal that seats against the inside of the plenum casing or center tee on multi-slot models in the horizontal setting, ensuring a tight projection of air across the ceiling. The horizontal pattern is maintained throughout a wide range of cataloged air volumes from maximum to minimum flow. They offer the discerning engineer and architect premium quality construction and design features, making them an excellent choice for VAV applications. Factory furnished center tees are dropped below diffuser face to match the ceiling grid.

Standard nominal lengths: 20", 24", 30", 36", 48" and 60" to suit imperial ceiling grids. 500, 600, 750, 900, 1200 and 1500 mm to suit metric grids.

Slot width: Choice of 1/2", 3/4", 1" and 1 1/2" (13, 19, 25 and 38).

Number of slots: Choice of 1, 2, 3 or 4 slot configurations.

Standard inlet sizes: 6", 8", 10" and 12" (152, 203, 254 and 305). Other sizes are available.

4 The pattern controller is split mid-way on units 36" (900) long and over. This allows a 2-way opposite blow pattern from a single slot.

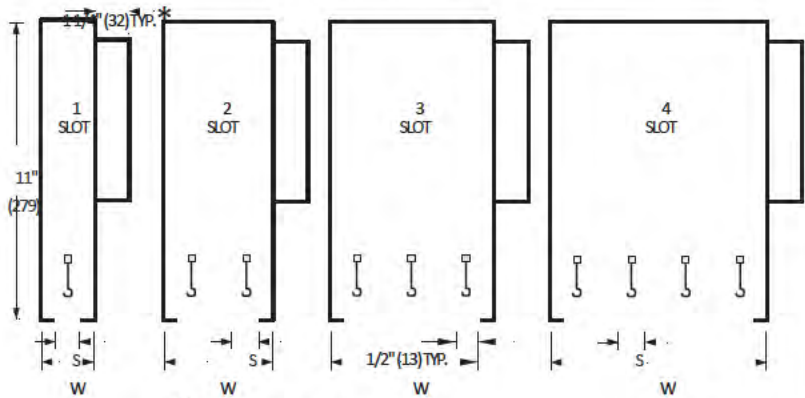
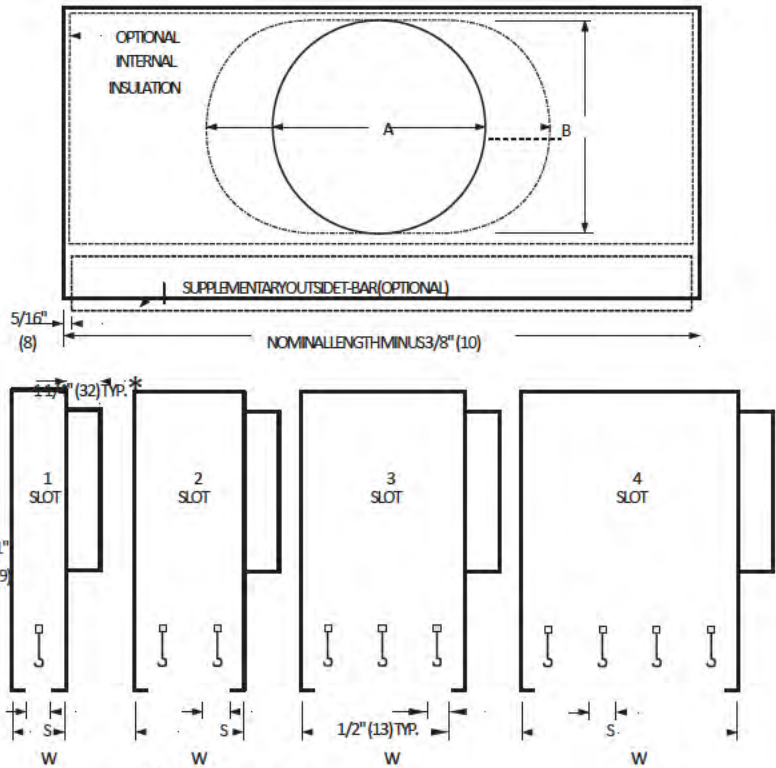
5 Material: Corrosion resistant steel for plenum, pattern controllers and center tees.

6 Standard Finish:

BK Black pattern controllers and exposed surfaces.
 AW Appliance White on center T-bars.

OPTIONS:

1. D EX External Foil Back Insulation
2. Internal Insulation
 - a D Model 5750I D Model 5710I
 D Model 5775I D Model 5715I
 - b D FGI 1/4" (6) Coated Fiberglass (standard)
 D FFI 3/8" (10) Fiber-free foam
3. D ID Inlet Damper
4. D CN Cross Notch. Bisects diffuser length to allow a 48" (1200) unit to install in a 2' x 2' (600 x 600) grid.
5. D PF Plaster Frame
6. Supplementary T-Bars
 - D T1 One (inlet side)
 - D T0 One (opposite inlet side)
 - D T2 Two (both sides)
7. Mounting Clips
 - D M1 One side (2 opposite inlet side)
 - D M2 Both sides (4)
8. D SP Special features _____.



*4\" (102) WITH OPTIONAL ID INLET DAMPER

- | | | | |
|---|----------------------|---|------------------------|
| D | MODEL 5750 | D | MODEL 5710 |
| | 1/2" (13) Slot width | | 1" (25) Slot width |
| D | MODEL 5775 | D | MODEL 5715 |
| | 3/4" (19) Slot width | | 1 1/2" (38) Slot width |

		S Slot Width			
		1/2" (13)	3/4" (19)	1" (25)	1 1/2" (38)
W	1 Slot	1 1/2" (38)	1 3/4" (44)	2" (51)	2 1/2" (64)
	2 Slot	3" (76)	3 1/2" (89)	4" (102)	5" (127)

		Nominal Inlet Size			
		6" (152)	8" (203)	10" (254)	12" (305)
	Round	Round	Oval	Oval	

SCHEDULE TYPE:

PROJECT: JAMIE McGEE - ADDED SLOT DIFFUSERS

Dimensions are in inches (mm).

ENGINEER:

DATE

B SERIES

SUPERSEDES

DRAWING NO.

CONTRACTOR: Midwest Mechanical

3 - 1 - 16

5700

11 - 11 - 13

5700-1

PERFORMANCE DATA • MODEL SERIES 5700

MODEL: 5710(I) • 1" (25) SLOT WIDTH

2 Slot • 24" (610) Long

6" Round Inlet	Airflow, CFM	50	75	100	125	150	175	200
	Total Pressure	.016	.036	.064	.100	.144	.196	.256
	Static Pressure	.012	.026	.046	.073	.105	.142	.186
	Noise Criteria	–	15	22	27	32	36	38
	Throw	2-6-13	6-10-19	9-13-21	11-17-24	14-19-26	16-20-28	18-21-30
8" Round Inlet	Airflow, CFM	70	100	130	160	190	220	250
	Total Pressure	.021	.043	.072	.109	.154	.207	.267
	Static Pressure	.018	.037	.063	.095	.135	.186	.233
	Noise Criteria	–	15	22	27	32	36	40
	Throw	5-9-18	9-13-21	11-17-24	14-19-26	16-20-28	18-21-30	19-23-32
10" Round Inlet	Airflow, CFM	90	125	160	195	230	265	300
	Total Pressure	.032	.061	.100	.149	.207	.274	.352
	Static Pressure	.030	.057	.094	.140	.194	.258	.330
	Noise Criteria	–	16	24	30	35	38	41
	Throw	8-12-19	11-16-23	14-19-26	16-20-28	18-22-30	20-24-32	22-25-33

2 Slot • 48" (1219) Long

6" Round Inlet	Airflow, CFM	80	115	150	185	220	255	290
	Total Pressure	.025	.051	.086	.131	.185	.249	.322
	Static Pressure	.014	.029	.050	.076	.107	.144	.186
	Noise Criteria	–	–	16	23	29	35	40
	Throw	3-6-14	4-10-20	8-14-25	11-18-28	13-20-30	16-23-33	19-25-36
8" Round Inlet	Airflow, CFM	85	110	140	175	220	285	360
	Total Pressure	.019	.033	.053	.083	.131	.219	.349
	Static Pressure	.015	.025	.041	.064	.101	.170	.271
	Noise Criteria	–	–	–	15	22	29	37
	Throw	3-6-16	4-10-20	7-13-24	11-16-27	14-20-30	18-24-34	22-27-38
10" Oval Inlet	Airflow, CFM	110	140	180	230	290	370	430
	Total Pressure	.021	.033	.055	.090	.143	.233	.315
	Static Pressure	.018	.029	.048	.079	.126	.205	.276
	Noise Criteria	–	–	–	20	27	35	40
	Throw	4-10-21	7-13-25	11-18-28	14-22-32	19-25-36	24-29-40	25-31-43
12" Oval Inlet	Airflow, CFM	110	140	180	225	285	365	465
	Total Pressure	.016	.025	.042	.066	.105	.172	.280
	Static Pressure	.014	.023	.039	.060	.097	.159	.258
	Noise Criteria	–	–	–	16	23	31	39
	Throw	5-11-22	7-14-25	12-18-28	13-20-30	19-25-36	23-28-37	25-31-44

2 Slot • 60" (1524) Long

6" Round Inlet	Airflow, CFM	70	115	160	205	250	295	340
	Total Pressure	.019	.050	.097	.159	.237	.329	.437
	Static Pressure	.010	.027	.052	.086	.127	.177	.235
	Noise Criteria	–	–	19	26	32	36	38
	Throw	3-5-12	6-9-17	9-12-19	11-16-22	14-18-25	15-19-27	16-20-28
8" Round Inlet	Airflow, CFM	90	150	210	270	330	390	450
	Total Pressure	.016	.044	.086	.142	.212	.297	.395
	Static Pressure	.011	.032	.062	.102	.153	.214	.284
	Noise Criteria	–	–	15	23	30	35	40
	Throw	4-7-15	8-12-19	12-16-23	15-18-26	16-20-28	18-22-31	19-23-33
10" Oval Inlet	Airflow, CFM	160	225	290	355	420	485	550
	Total Pressure	.031	.060	.100	.151	.211	.281	.361
	Static Pressure	.024	.048	.080	.120	.168	.224	.288
	Noise Criteria	–	15	22	29	34	39	43
	Throw	8-12-19	12-16-23	15-19-26	17-21-30	19-23-32	20-24-34	21-26-37
12" Oval Inlet	Airflow, CFM	220	300	380	460	540	620	700
	Total Pressure	.036	.066	.106	.155	.214	.282	.360
	Static Pressure	.029	.054	.087	.127	.175	.231	.294
	Noise Criteria	–	19	26	32	37	41	44
	Throw	12-16-23	15-19-26	18-22-31	19-23-33	21-25-36	22-27-38	24-29-41

◆ Equipment Parts and Supplies

- Type (e.g., manufactured parts, emergency parts service, miscellaneous material and supplies and other): **Midwest is a service organization at its core. Midwest Mechanical maintains a stock of equipment parts and supplies which are normally used in commercial HVAC repairs**
- Brand Name(s) stocked: **All Brands.**
- Location of stocking parts: **Many parts are stocked at our Lombard warehouse. Whatever material is not stocked in Midwest's warehouse is stocked at a variety of parts warehouses within a 10 mile radius. The Midwest service team has ready access to a variety of parts and supplies which are stocked locally**
- Standard Warranty (Parts & Labor): **Midwest Mechanical's work is warrantied for one year**
- Optional Warranty (components covered & Labor): **Optional warranties are available**
- Estimated Lead/Delivery Time: **Varies based upon product and manufacturer**
- Percentage of locally stocked parts to delivered parts: **It is estimated that Midwest has access to 85% of their needed parts in local warehouses.**
- Detail Features & Benefits

Respondents are requested to provide service forms with detailed description of your service offerings. Provide the minimum information as listed for your service categories on the following classifications of service:

◆ Startup & Commissioning Services

Define process for validation of system or equipment operation to design: **System validation is self-performed or via factory representatives depending on the specified**

requirements, project documentation, or owner preferences. The basic procedures normally involve three elements 1) Installation Qualification (IQ), 2) Operational Qualification (OQ), and 3) Performance Qualification (PQ) To complete the process the following documents and procedures are reviewed for accuracy, functionality, and proper operation depending on the system design and complexity:

- **Functional specifications (the conceptual design)**
- **Design drawings, plans, and specifications**
- **Contractor documents (e.g. shop drawings and submittals)**
- **Testing, adjusting, and balancing (TAB) and start-up reports**
- **Commissioning report (the actual executing of validation protocols may commence; commissioning may be performed as part of the development phase of validation)**
- **Validation (IQ, OQ, and PQ)**
 - Type (e.g., equipment startups, system checkouts, control verification, retro commissioning, M & V verifications, rebate auditing, other): **Midwest technicians provide startup and checkout services on all types of HVAC equipment**
 - List key personnel (factory, sub-contract, other): **Key personnel include:**
 - **Project Manager**
 - **Lead Midwest Technician**
 - **Lead Factory Technician**
 - References (public sector only):
 - **South Suburban College**
 - **Lombard School District 44**
 - **West Chicago Library**
 - **Palos School District 118**
 - **Cook County District 104**
 - **Valley View School District 365U**
 - **Buffalo Grove Park District**
- Case studies describing benefits of services: **See Case Studies in the Turnkey section of this RFP**

◆ **Service & Maintenance**

- Type: **Midwest Mechanical offers a full range of maintenance and repair services on all types of HVAC Systems, including preventative, full service and emergency 24/7 repair**
- Define processes for each type of service and/or maintenance of the system or the equipment: **Midwest Mechanical has a dedicated Service Sales and Operations staff which is dedicated to customizing our Service and Maintenance offering to each individual client. Out process starts with a clear understanding of the customer's needs, and then sales and operations work together to offer a proposal which meets those needs.**
- List key personnel: **Roger Baaske (VP of Service Operations), Jason Nape (Service Sales Manager)- Roger and Jason work together to provide service and maintenance offerings to our clients**

- References:
 - **South Suburban College (Full Service Maintenance)**
 - **River Trails School District (chiller maintenance)**
 - **College of Lake County (HVAC maintenance)**
 - **Lombard School District 44 (HVAC maintenance)**
 - **Glencoe Park District (HVAC maintenance)**
 - **West Chicago Library (HVAC maintenance)**
 - **Downers Grove Park District (HVAC maintenance)**
 - **Village of Bartlett (HVAC maintenance)**
 - **Morton Grove Public Library (HVAC maintenance)**
 - **Palos School District 118 (HVAC maintenance)**
 - **Thornton High School District 205 (HVAC maintenance)**
 - **Crete Monee School District 201 (HVAC maintenance)**
 - **Lockport School District 91 (HVAC maintenance)**
 - **Waubonsie Community College (HVAC maintenance)**

◆ **Installation and Turnkey Contracting for HVAC and related Scopes of Work**

- **Type: Turnkey Contracting for HVAC and Controls on new and existing buildings**
- Define process:
 - **Understand Client Needs for HVAC and related services**
 - **Co-Author a Design Build solution with the owner**
 - **Verify that the design and budget meets the customer needs**
 - **Deliver a Co-Op proposal which details the scope of work and pricing to the owner**
 - **Begin Construction**
- Bonding and licensing capabilities:
 - **Midwest Mechanical is licensed as a designer and contractor**
 - **Midwest Mechanical offers P&P bonds to all public sector clients**
- List key personnel:
 - **Dan Brandolino (Vice President- Public Sector)**
 - **Lyle Weseloh (Director of Operations- Public Sector)**
 - **Bob Hayes (Vice President of Engineering)**
- References (public sector only)
 - **River Forest School District 90**
 - **Cook County School District 104**
 - **Buffalo Grove Park District**
 - **Palos School District 118**
 - **Valley View District 365U**
 - **Lombard School District 44**
 - **Glenview Park District**
- Case studies describing benefits of services

Case Study 1

River Forest School District 90



River Forest
Public Schools

*To inspire a love of learning and ensure educational excellence
for every child*

The Challenge

River Forest School District is a highly successful K-8 learning environment based in one of the premier suburbs of Chicago. The three school buildings within the District were all constructed over 50 years ago and each building includes several additions and renovations. Due to the age of the buildings, there was a significant need to address a Building Automation System that was not maintainable and classroom Unit Ventilators which were broken. The District was interested in an approach which provided a cost effective but also high quality solution, and the ability to adhere to the District's vision of cooling readiness and a very restrictive construction schedule.

The Solution

Midwest Mechanical was in a unique position to offer the District the ability to do a true Design/Build project through its NCPA Cooperative Purchasing (co-op) contract. This contract vehicle allowed the District to work with Midwest directly to establish project scope, which resulted in reduced cost to the District. The engineering, skilled labor and material, and project management needed to do the work was purchased directly through the co-op contract, avoiding layers of markups. The District's architect performed an independent price check for the proposed scope. It was found that the Midwest proposal price was 20% below the architect estimate. In addition, Midwest's proposal was a guaranteed price with no change orders.

The project schedule proved to be very challenging. In two of the buildings, Midwest could not start work until July 15 and had to be substantially complete by the start of school on August 26. Planning and logistics were critical in ensuring project success

About the Client

The main contact for District 90 throughout the project was the Business Manager, Anthony Cozzi. Mr. Cozzi has been at the District for 12 years and has had the opportunity to do many projects there, using different procurement vehicles. He was able to offer insight on his use of the co-op for this project.

Q: How were you able to show your School Board that this project was a “good deal” for the District?

A: “After receiving the scope of work and cost proposal from Midwest, we asked our architect, along with our mechanical engineering consultant, to provide us with their own estimates. We did not share the Midwest proposal with them, and theirs came in significantly higher. We then share with them Midwest’s proposal for a complete review and they found no issues.”

Q: Why did you initially consider doing this work through the co-op?

A: “We initially felt that the cost savings were the driving factor. However, after we had in-depth discussions with Midwest, we felt that their expertise was equally as important.”

Q: How did your Board react to using the co-op approach for purchasing services?

A: Once the Board understood that there were significant cost savings and that our District’s legal counsel reviewed the contract, they were very supportive.”

Q: Describe how Midwest Mechanical interfaced with your architect on this project.

A: “Midwest was open to discussing all facets of the project with our architect in order for him to review progress reports, pay out requests and perform walk thru’s in order to develop punch lists.”

Q: Did you experience any additional or “hidden” costs using this approach?

A: “No. As Midwest promised, their proposal included all costs, even found conditions in the field.”

Q: How would you describe the level of communication that you received from Midwest during Design Development and Project Implementation?

A: “Midwest was always available whenever I needed help. Lyle, Jeff and Aaron always kept us informed and handled every issue that arose.”

Q: Would you do more projects through the co-op?

A: “Absolutely!”

About Midwest Mechanical

Established in 1974, Midwest Mechanical is a privately held commercial HVAC services and facility management company focused on energy efficiency for building owners and operators throughout Chicagoland. As a licensed mechanical engineering design firm, with in-house Union labor, we partner with clients to help control the cost of HVAC system operations through maintenance programs, operations and design/retrofit projects. Midwest Mechanical is a member of the NCPA Purchasing Cooperative allowing public sector clients the ability to purchase skilled labor and services direct.

How Can we Help Your School District

Case Study 2



The Challenge

Cook County School District 104 is a highly successful K-8 learning environment situated on the outskirts of Chicago. The five school buildings within the District were all constructed over 50 years ago and each facility includes several additions and renovations. The buildings were heavily renovated around 2000 with several phases of construction and upgrades being done since then. One of the few remaining needs was the heating plant at Walker School. The plant was nearly 50 years old and represented the largest financial risk to the District. The District was interested in an approach which provided a cost effective but also high quality solution.

The Solution

Midwest Mechanical was in a unique position to offer the District the ability to do a true Design/Build project through its NCPA Cooperative Purchasing (co-op) contract. This contract vehicle allowed the District to work with Midwest directly to establish project scope, which resulted in reduced cost to the District. The engineering, skilled labor and material, and project management needed for the project was purchased directly through the co-op contract, avoiding layers of markups.

The existing heating plant had several ceiling mounted inline zone pumps with no redundancy. Midwest engineering worked with the District's Director of Building and Grounds, Don Dames to develop a scope. The new heating plant include re-designed distribution system that reduced the number of pumps, added system redundancy and located system pumps to the floor to allow for ease of maintenance. The District was then able to conduct due diligence by comparing pricing developed by their architect with the pricing established though the co-op. The co-op pricing was very favorable. In addition, Midwest's proposal was a guaranteed price with no change orders.

About the Client

The Midwest team worked with two key District Administrators throughout the project. For all strategic and business issues, Dr. Troy Whalen, the Superintendent was the main contact for District 104. Dr, Whalen has been the Superintendent at 104 for six years. Don Dames, a 24 year District employee, was responsible for all things technical. An interview was conducted with Dr. Troy Whalen and here are a few of the exchanges:

Q: What was your experience purchasing services through a co-op prior to this project?

A: The District had done a Unit Vent/AC project through a purchasing co-op a few years ago. But other than things like furniture, those were the only two projects for services.

Q: How would you describe your relationship with Midwest Mechanical?

A: Very positive. Midwest offers great communication. The project team gave me consistent updates. They were very patient fielding our concerns.

Q: How were you able to show your board that this project was a “good deal” for the district?

A: The pricing which Midwest provided was compared to the architect’s estimate for the work. Midwest’s pricing was below the estimate.

Q: How did you determine the scope of the project?

A: Our Buildings and Grounds Director worked directly with the Design/Build team at Midwest to co-author a scope of work. The District was able to determine what manufacturers were used and what layout was used for the mechanical room.

Q: How would you compare and contrast this project with similar HVAC projects that you’ve done in the past using a different procurement vehicle?

A: The co-op approach is much simpler than any other method. It is very straightforward. Once a solution is developed, the pricing is very prescriptive and easy to understand. Having done Performance Contracting in the past, the co-op was a much more comfortable approach.

Q: Did you experience any additional or “hidden” costs using this approach?

A: “No.

Q: Would you do more projects through the co-op?

A: Yes

About Midwest Mechanical

Established in 1974, Midwest Mechanical is a privately held commercial HVAC services and facility management company focused on energy efficiency for building owners and operators throughout Chicagoland. As a licensed mechanical engineering design firm, with in-house Union labor, we partner with clients to help control the cost of HVAC system operations through maintenance programs,

operations and design/retrofit projects. Midwest Mechanical is a member of the NCPA Purchasing Cooperative allowing public sector clients the ability to purchase skilled labor and services direct.

How Can we Help Your School District

◆ **Warranty Services**

- **Type: Midwest Mechanical offers a standard one year parts and labor guarantee on all Projects. In addition to our standard warranty, Midwest has the ability to offer up to 10 years of additional parts and labor warranty on a project. These additional warranty options allow the customer to have peace of mind over an extended amount of time.**
- **Define processes for each type of warranty**
 - **When a project is in the midst of completion, a warranty turnover meeting is scheduled with the customer. In this meeting, the owner is introduced to their service technician and service team that will be their main contact during the warranty period.**
 - **The Service/Warranty team is part of the equipment startup process.**
 - **Once work is complete and all equipment has been installed and officially started up, the warranty term will commence.**
 - **The customer will be in contact with their service team to address any warranty or service issues that arise during the warranty period.**
- **List key personnel (factory, sub-contract, other)**
 - **Joe Senese, Project Manager**
 - **Lyle Weseloh, Director of Operations- Public Sector**
 - **Dustin Purcell, Service Sales- Public Sector**
- **References (public sector only)**
 - **River Forest School District 90**
 - **Cook County School District 104**
 - **Buffalo Grove Park District**
 - **Palos School District 118**
 - **Valley View District 365U**
 - **Lombard School District 44**
 - **Glenview Park District**

◆ **Energy Services**

Type:

- ◆ **Midwest Mechanical can provide a full array of Performance Contracting and Energy Services.**

Process:

Step 1: Preliminary Energy Audit

Conduct a relatively quick inspection of the customer's facilities to get a general idea of the current energy use, improvements needed, and the potential for savings. Compile the results of the preliminary analysis and prepare/present the findings to the customer. At this point a decision is made to proceed with a formal investment grade audit or pursue a different project path.

Step 2: Investment Grade Audit (IGA)

The IGA is a comprehensive audit of the customer's facilities. Prior to the IGA, the customer and Midwest determine the audit scope. Following the IGA, Midwest presents the final IGA Report to the customer to include an outline of a proposed project.

Step 3: Energy Performance Contract

The Energy Performance Contract defines the project scope, the terms of the guarantee to include the terms of the Measurement and Verification (M&V) period and construction schedule. Before the contract is finalized, the customer and Midwest work together to determine the final project scope, based on the customer's priorities, projected energy and O&M savings, and costs. The final Energy Performance Contract is reviewed to ensure compliance with existing procurement rules and regulations. Energy Performance Contract is signed by the customer and Midwest and the project commences. Note: While developing the performance contract Midwest Mechanical can help the customer make financing arrangements, most projects are financed through tax-exempt municipal leases or state/local bonds.

Step 4: Measurement and Verification (M&V)

- Measurement and verification occurs after the project is completed when energy and O&M cost savings are calculated to verify that the reduction in energy usage meets the terms of the guarantee. Midwest performs the M&V and reports results monthly or at agreed intervals to the customer.
 - Midwest will offer full validation and guarantee of the energy savings to our customer. This includes providing a financial guarantee of any shortfall of the contractually committed energy savings.
-
- ◆ Describe the value to participating agencies
 - Midwest Mechanical can offer a full array of Plumbing, Electrical and HVAC services that allow the customer to take full advantage of the cooperative to save time, money and resources.
 - ◆ Describe the value to NCPA
 - Midwest provides NCPA with a supplier that can offer customers a wider array of services and solutions. By expanding our offering to include the scope of our

“Value Added Products and Services”, Midwest can increase the amount of revenue sold through NCPA.

- ◆ Describe how your company would market this product and/or service through this contract
 - **Midwest is currently a leading provider of HVAC Service and Replacement to private sector clients throughout its service territory. Midwest has created a dedicated public sector sales team that would present this offering to clients in the public sector. Midwest would market through public associations such as ASBO, IPDA, and ILA to connect our offering with the end user.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **Our analysis indicates that the market opportunity for Midwest by being able to offer HVAC service and replacement through the cooperative represents a \$3M annual growth opportunity.**

Detailed Description

- ◆ Where is the product manufactured?
 - **Energy Services and Performance Contracting are not product centric offerings**
- ◆ Any certifications provided?
 - **Our engineers are professionally licensed and degreed. We have Certified Energy Managers as part of our Engineering team**
 - **Our tradesman are all union trained and certified**
- ◆ Where is the service performed?
 - **This service is performed by Midwest throughout the Chicagoland area.**
- ◆ Who performs the service and what is their expertise?
 - **This service is performed by the following professionals:**
 - **HVAC service- performed by union technicians that are trained and certified to work on this type of equipment**
 - **HVAC replacement- performed by licensed engineers and union tradesman that are trained and certified to do this type of work.**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **This service is not proprietary. Our competition is ESCO’s in the Chicago area.**
- ◆ Provide references
The following are a list of school districts that Dan Brandolino, our Vice President- Public Sector has entered into a contract with over the course of his career. These projects were secured while Dan was representing other companies. However, they do represent the level of relationship and knowledge that Midwest exhibits within the K12 marketplace.



Reed-Custer CUSD255 (2002)

Braidwood, IL

Contract Amount: **\$2,000,000**

Main Contact: **Dr. Don Hendricks, Superintendent**

Improvements: **Roofing**

◆ Equipment Rentals

- Type: **Midwest Mechanical offers all types of HVAC and Power Rentals**
- Brands available: **Midwest Mechanical installs rental equipment which is manufactured by all of the major manufacturers**
- Locations of rental fleet:
 - **Midwest accesses four different local rental fleets, all within 20 miles of our Lombard office**
- Process of accessing rental fleet during disaster event
- List key personnel
 - **Lyle Weseloh (Director of Operations- Public Sector)**
 - **Joe Senese (Project Manager- Public Sector)**
- Case studies describing benefits of services

The Following Case Study comes from one of our Rental Partners

The Setup

After a university lost operation of its chilled water plant as the result of a failed compressor bearing, their local mechanical contractor recommended a temporary solution during repairs that would span approximately two weeks in the middle of the semester.

The Story

This university's maintenance staff discovered a chiller failure on a quiet Saturday morning, causing a scramble to find assistance and to put into a place a solution that would allow for temporary operation by Monday morning when classes began, an ambitious timeline. Contacted by the university's mechanical contractor, Carrier Rental Systems responded to the call, determined a preliminary solution, and arrived onsite with equipment.

After doing an assessment for seasonality, Carrier determined that the full 1,700 tons represented by the failed chiller would not be necessary and that a 1,500 ton system would suffice, capitalizing on space and a savings capture for the university. Once on campus, Carrier quickly realized that space was at a premium on that end of the premises and that a water-cooled system with cooling towers would answer the challenge. Yet, another snag appeared: after a brief planning session, the university realized it did not have enough internal power to run Carrier's temporary system. Once that became evident, Carrier delivered portable generators along with taps for the temporary chilled water lines.

Including these decisions, points of planning, and delivery and setup of equipment, Carrier had the temporary system fully functional and running by Monday morning for class.

The Upshot

The practical effect of the mishap was largely invisible to the faculty and student body, Carrier reduced the university's expenditure by meeting their need and effectively engineering a solution that avoided unnecessary equipment and fuel charges on an extremely tight timeline.

◆ Financial Services

- Type: **Municipal Lease Offering**
- Describe each type of funding and availability:
 - **Municipal Lease Offering**
 - **Midwest Mechanical has developed a private label municipal lease offering which is designed to help customers finance much needed HVAC projects. This offering is available to all public sector clients.**
- Funding Sources: **Municipal Lease priced at current Muni Bond prices**
- List key personnel
 - **Dan Brandolino (Vice President- Public Sector)**
- References (public sector only)
 - **Johnston Community College (\$3.5M)**
 - **Alamance Community College (\$2.5M)**

◆ Professional Services

- Midwest does not offer "Professional Services" such as Engineering and Architectural Services through our NCPA contract. Any Engineering provided is inherent or incidental to the Turnkey Contracting Services which we provide.

◆ Site Surveys

- Type: **The Midwest team has the capability to provide a wide array of site surveys. Our team of experienced engineers, field superintendents and service technicians can survey equipment, energy, and maintenance items.**
- Describe type of survey
 - **All types of building surveys**
- Licensing and certification capabilities
 - **Midwest Mechanical is a licensed engineering firm in the state of Illinois**
 - **Midwest has several Certified Energy Managers on staff**
 - **Midwest has several Professional Engineers on staff**
- Advanced technology uses for each type of survey
 - **Midwest has BIM modeling capability**
- List key personnel (internal and/or external)
 - **Lyle Weseloh, Director of Operations- Public Sector**
 - **Dan Hollenbach, Engineering Manager**
- References (public sector only)
 - **Upon Request**

Tab 8 – Value Added Products and Services

- ◆ Include any additional products and/or services available that vendor currently performs in their normal course of business that is not included in the scope of the solicitation that you think will enhance and add value to this contract for Region 14 ESC and all NCPA participating entities.

Executive Summary

- ◆ Describe the product and/or service in an outline format
- ◆ Describe the value to participating agencies
- ◆ Describe the value to TCPN
- ◆ Describe how your company would market this product and/or service through this contract
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena

Detail Description

- ◆ Where is the product manufactured?
- ◆ Any certifications provided?
- ◆ Where is the service performed?
- ◆ Who performs the service and what is their expertise?
- ◆ Is this a proprietary product and, if not, who is your competition?
- ◆ Provide references
- ◆ Provide case studies
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Flooring

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Replacement of various flooring materials in a building including:**
 - **Demolition of existing flooring**
 - **VCT Flooring**
 - **Carpet**
 - **Wood**
 - **Gymnasium and Fieldhouse flooring**
 - **Tile**
- ◆ Describe the value to participating agencies
 - **In many cases, the replacement of flooring is a natural part of a larger project within a building. There is tremendous value to an agency to have**

one entity purchase and coordinate all trades and scopes of work within a building.

- ◆ Describe the value to NCPA
 - **By having Midwest complete the flooring, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Flooring would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$10M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The product is manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All required certifications are provided**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty flooring contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.
 - **Pricing is as outlined in this RFP response**

Fire Alarm Systems

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Fire Alarm systems and components in a building including**
 - **Fire alarm panels**
 - **Fire alarm detection devices**
 - **Fire alarm communication wiring**
- ◆ Describe the value to participating agencies
 - **In many cases, the replacement of a fire alarm system is a natural part of a larger project within a building. There is tremendous value to an agency to**

have one entity purchase and coordinate all trades and scopes of work within a building.

- ◆ Describe the value to NCPA
 - **By having Midwest complete the Fire Alarm work, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Any Fire Alarm work would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$100M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The product is manufactured in various states and countries, by a variety of manufacturing companies.**
- ◆ Any certifications provided?
 - **All fire alarm systems and components will meet required certification for their intended purpose and use.**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty Fire Alarm contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Pricing is as outlined in this RFP response

Building Technology

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Replacement of various Building Technology components in a building including:**
 - **Internet routers, servers and cabling**
 - **Audio/Visual equipment**

- **Classroom projection devices**
 - **Classroom learning technology**
 - **Computers**
- ◆ Describe the value to participating agencies
 - **In many cases, the replacement of Technology Components is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete the renovation of Technology, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Technology Replacement would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$100M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The products are manufactured in various states and countries**
- ◆ Any certifications provided?
 - **Any necessary certifications are provided as part of our scope of work**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty Technology contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.
 - **Pricing is as outlined in this RFP response**

Security Systems

Executive Summary

- ◆ Describe the product and/or service in an outline format

- **Replacement of various Building Security Systems and Components in a building including:**
 - **Security Panels**
 - **Security sensors**
 - **Cameras**
 - **Communication devices and cabling**
 - **Security software**
 - **Security monitoring**
 - **On-site Security services**
- ◆ Describe the value to participating agencies
 - **In many cases, the replacement of a Security System is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete the Security work, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Building Security work would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$100M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The products used are manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All necessary certifications are provided as part of our scope of work**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty Security System contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Pricing is as outlined in this RFP response

Roofing

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Replacement of various types of Roofing materials in a building including:**
 - **Demolition of existing roofing**
 - **Various types of roof decking**
 - **Various types of roofing insulation**
 - **Various types of roofing membrane**
 - **Shingles of various types**
 - **Tile roofs**
 - **Metal roofing**
 - **Gutters and related work**
- ◆ Describe the value to participating agencies
 - **In many cases, the replacement of roofing is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete the roofing, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Roofing would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$100M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The many roofing products are manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All necessary certifications are provided**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty roofing contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**

- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.
Pricing is as outlined in this RFP response

Energy Analysis

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Conducting an Energy Analysis in a building including:**
 - **Collecting and analyzing electric and gas bills**
 - **Conducting an energy audit**
 - **Performing a building survey to understand existing conditions**
 - **Providing an analysis of various retrofit options**
 - **Perform calculations showing energy savings**
 - **Provide recommendations for equipment replacement**
- ◆ Describe the value to participating agencies
 - **In many cases, an energy audit is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete an energy analysis, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **An energy analysis would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$10M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **There is no product**
- ◆ Any certifications provided?
 - **Professional and Energy Engineering licenses provided**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Midwest Mechanical will perform the work**

- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Pricing is as outlined in this RFP response

Concrete work

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Replacement and Installation of various concrete components in a building including:**
 - **Demolition of existing concrete structure**
 - **Necessary framing**
 - **Necessary site work and prep**
 - **Any required civil engineering to perform the work**
 - **Concrete pouring**
 - **Concrete finishing**
- ◆ Describe the value to participating agencies
 - **In many cases, the replacement of concrete is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete the concrete, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Concrete services would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$100M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The product is manufactured in various states and countries**
- ◆ Any certifications provided?

- **All necessary certifications are provided**
 - ◆ Where is the service performed?
 - **This service is performed in any large public building**
 - ◆ Who performs the service and what is their expertise?
 - **Specialty concrete contractors will perform the work**
 - ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
 - ◆ Provide references
 - **Available upon request**
 - ◆ Provide case studies
 - **Available upon request**
 - ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.
- Pricing is as outlined in this RFP response**

General Contracting

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Performing various General Contracting duties in a building including:**
 - **Site work**
 - **General Carpentry**
 - **Site Supervision**
 - **Cleanup**
 - **Coordination of Subcontractors**
 - **Development of a project schedule**
 - **Site Security and Safety**
 - **Purchasing and managing of various subcontractors**
- ◆ Describe the value to participating agencies
 - **In many cases, General Contracting is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete necessary General Contracting work, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **General Contracting would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena

- **The market size is in excess of \$100M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The necessary products are manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All Necessary certifications are provided**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Midwest Mechanical will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Pricing is as outlined in this RFP response

Cabinetry and Millwork

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Replacement of various cabinetry and millwork in a building including:**
 - **Demolition of existing cabinetry and millwork**
 - **Design of new cabinetry and millwork**
 - **Installation of new cabinetry and millwork**
 - **Installation of necessary trim and finish work**
- ◆ Describe the value to participating agencies
 - **In many cases, the replacement of cabinetry and millwork is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete the cabinetry and millwork, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract

- **Cabinetry and millwork would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$100M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The product is manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All necessary certifications are provided**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty cabinetry and millwork contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Pricing is as outlined in this RFP response

Electrical

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Replacement of various Electrical components in a building including:**
 - **Electrical Service into the building**
 - **Main electrical distribution**
 - **Electrical distribution panels**
 - **Electrical disconnect switching**
 - **Wiring and conduit**
 - **Switching and control**
 - **Breakers panels and circuiting**
 - **Transformers**
- ◆ Describe the value to participating agencies
 - **In many cases, the replacement of electrical components and wiring is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA

- **By having Midwest complete the electrical work, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Electrical services would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$100M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The products used for electrical work are manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All necessary certifications are provided**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Midwest Mechanical will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Pricing is as outlined in this RFP response

Fencing

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Replacement of various Fencing materials in a building including:**
 - **Demolition of existing fencing**
 - **Selection of new fencing material**
 - **Civil engineering required to locate new fence**
 - **Installation of new fencing**
- ◆ Describe the value to participating agencies

- **In many cases, the replacement of fencing is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete the fencing, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Fencing would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$10M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The product is manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All necessary certifications are provided**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty fencing contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Pricing is as outlined in this RFP response

Site Work

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Performing site work for a building project including:**
 - **Excavation of the site**
 - **Removal of spoils**

- **Grading of site**
 - **Backfill of site**
 - **Introduction of new materials**
 - **Site drainage and water detention**
 - **Storm sewer**
 - **Erosion remediation**
- ◆ Describe the value to participating agencies
 - **In many cases, site work is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete the site work, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Site Work would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$10M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The products used for site work are manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All necessary certifications are provided**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty site contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Pricing is as outlined in this RFP response

◆

Masonry

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Replacement of various masonry materials in a building including:**
 - **Demolition of existing masonry work**
 - **Selection of new masonry material**
 - **Layout and site engineering necessary**
 - **Installation of new masonry**
- ◆ Describe the value to participating agencies
 - **In many cases, the replacement of masonry is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete the masonry, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Masonry services would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$10M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The products used for masonry services are manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All necessary certifications are provided**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty masonry contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Pricing is as outlined in this RFP response

Windows and Curtainwall

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Replacement of various window and curtainwall materials in a building including:**
 - **Demolition of existing windows and curtainwall**
 - **Prep for new windows and curtainwall**
 - **Selection of new windows and curtainwall**
 - **Necessary engineering**
 - **All caulking and sealing necessary**
 - **Installation of required insulation**
- ◆ Describe the value to participating agencies
 - **In many cases, the replacement of windows and curtainwall is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete the windows and curtainwall, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Windows and Curtainwall would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$10M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The window and curtainwall products are manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All necessary certifications are provided**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty window and curtainwall contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies

- Available upon request
 - ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.
- Pricing is as outlined in this RFP response**

Painting

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Performing various painting services in a building including:**
 - **Scraping and Removal of existing painting**
 - **Selection of new paint**
 - **Necessary scaffolding**
 - **Necessary floor and furniture protection**
 - **General painting services**
- ◆ Describe the value to participating agencies
 - **In many cases, Painting is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete the painting, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Painting services would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$10M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The products are manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All certifications are provided**
- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty Painting contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references

- Available upon request
- ◆ Provide case studies
 - Available upon request
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Pricing is as outlined in this RFP response

Ceilings

Executive Summary

- ◆ Describe the product and/or service in an outline format
 - **Replacement and Installation of various ceiling products in a building including:**
 - Demolition of existing ceiling material
 - Design of new ceiling
 - Selection of new ceiling material
 - Coordination with lighting contractor
 - Installation of new grid
 - Installation of new ceiling material
 - Necessary floor protection and cleanup
- ◆ Describe the value to participating agencies
 - **In many cases, the replacement of ceiling is a natural part of a larger project within a building. There is tremendous value to an agency to have one entity purchase and coordinate all trades and scopes of work within a building.**
- ◆ Describe the value to NCPA
 - **By having Midwest complete the ceiling work, it allows customers to utilize NCPA for even more value on a given project.**
- ◆ Describe how your company would market this product and/or service through this contract
 - **Ceiling work would be offered as part of a larger project centered around HVAC and related services.**
- ◆ Provide an anticipated size of the market for this product and/or service in the public arena
 - **The market size is in excess of \$10M in Illinois**

Detail Description

- ◆ Where is the product manufactured?
 - **The product is manufactured in various states and countries**
- ◆ Any certifications provided?
 - **All necessary certifications are provided**

- ◆ Where is the service performed?
 - **This service is performed in any large public building**
- ◆ Who performs the service and what is their expertise?
 - **Specialty ceiling contractors will perform the work**
- ◆ Is this a proprietary product and, if not, who is your competition?
 - **None of the products under this scope of work is proprietary**
- ◆ Provide references
 - **Available upon request**
- ◆ Provide case studies
 - **Available upon request**
- ◆ Provide any pricing that is different than the pricing in Appendix C in this solicitation.

Pricing is as outlined in this RFP response


Tab 9 – Required Documents

- ◆ Clean Air and Water Act / Debarment Notice
- ◆ Contractors Requirements
- ◆ Antitrust Certification Statements
- ◆ FEMA Standard Terms and Conditions Addendum for Contracts and Grants
- ◆ Required Clauses for Federal Assistance by FTA
- ◆ State Notice Addendum

Clean Air and Water Act & Debarment Notice

I, the Vendor, am in compliance with all applicable standards, orders or regulations issued pursuant to the Clean Air Act of 1970, as Amended (42 U.S. C. 1857 (h), Section 508 of the Clean Water Act, as amended (33 U.S.C. 1368), Executive Order 117389 and Environmental Protection Agency Regulation, 40 CFR Part 15 as required under OMB Circular A-102, Attachment O, Paragraph 14 (1) regarding reporting violations to the grantor agency and to the United States Environment Protection Agency Assistant Administrator for the Enforcement.

I hereby further certify that my company has not been debarred, suspended or otherwise ineligible for participation in Federal Assistance programs under Executive Order 12549, "Debarment and Suspension", as described in the Federal Register and Rules and Regulations

Potential Vendor	<u>Midwest Mechanical Group, LLC.</u>
Print Name	<u>Sam Giampapa</u>
Address	<u>801 Parkview Blvd</u>
City, State, Zip	<u>Lombard, IL 60148</u>
Authorized signature	
Date	<u>7-7-20</u>

Contractor Requirements

Contractor Certification Contractor's Employment Eligibility

By entering the contract, Contractor warrants compliance with the Federal Immigration and Nationality Act (FINA), and all other federal and state immigration laws and regulations. The Contractor further warrants that it is in compliance with the various state statutes of the states it is will operate this contract in.

Participating Government Entities including School Districts may request verification of compliance from any Contractor or subcontractor performing work under this Contract. These Entities reserve the right to confirm compliance in accordance with applicable laws.

Should the Participating Entities suspect or find that the Contractor or any of its subcontractors are not in compliance, they may pursue any and all remedies allowed by law, including, but not limited to: suspension of work, termination of the Contract for default, and suspension and/or debarment of the Contractor. All costs necessary to verify compliance are the responsibility of the Contractor.

The offeror complies and maintains compliance with the appropriate statutes which requires compliance with federal immigration laws by State employers, State contractors and State subcontractors in accordance with the E-Verify Employee Eligibility Verification Program.

Contractor shall comply with governing board policy of the NCPA Participating entities in which work is being performed

Fingerprint & Background Checks

If required to provide services on school district property at least five (5) times during a month, contractor shall submit a full set of fingerprints to the school district if requested of each person or employee who may provide such service. Alternately, the school district may fingerprint those persons or employees. An exception to this requirement may be made as authorized in Governing Board policy. The district shall conduct a fingerprint check in accordance with the appropriate state and federal laws of all contractors, subcontractors or vendors and their employees for which fingerprints are submitted to the district. Contractor, subcontractors, vendors and their employees shall not provide services on school district properties until authorized by the District.

The offeror shall comply with fingerprinting requirements in accordance with appropriate statutes in the state in which the work is being performed unless otherwise exempted.

Contractor shall comply with governing board policy in the school district or Participating Entity in which work is being performed

Business Operations in Sudan, Iran

In accordance with A.R.S. 35-391 and A.R.S. 35-393, the Contractor hereby certifies that the contractor does not have scrutinized business operations in Sudan and/or Iran.

Authorized signature _____
Date 7-7-20

Antitrust Certification Statements (Tex. Government Code § 2155.005)

I affirm under penalty of perjury of the laws of the State of Texas that:

- (1) I am duly authorized to execute this contract on my own behalf or on behalf of the company, corporation, firm, partnership or individual (Company) listed below;
- (2) In connection with this bid, neither I nor any representative of the Company has violated any provision of the Texas Free Enterprise and Antitrust Act, Tex. Bus. & Comm. Code Chapter 15;
- (3) In connection with this bid, neither I nor any representative of the Company has violated any federal antitrust law; and
- (4) Neither I nor any representative of the Company has directly or indirectly communicated any of the contents of this bid to a competitor of the Company or any other company, corporation, firm, partnership or individual engaged in the same line of business as the Company.

Company name	Midwest Mechanical Group, LLC.
Address	801 Parkview Blvd
City/State/Zip	Lombard, IL 60148
Telephone No.	630-850-2300
Fax No.	630-655-0730
Email address	Sam.Giampapa@midwestmech.com
Printed name	Sam Giampapa

Position with company

President

Authorized signature

A handwritten signature in black ink, appearing to be 'S.C.P.', written over a horizontal line.

FEMA Standard Terms and Conditions Addendum for Contracts and Grants

If any purchase made under the Master Agreement is funded in whole or in part by Federal Emergency Management Agency ("FEMA") grants, Contractor shall comply with all federal laws and regulations applicable to the receipt of FEMA grants, including, but not limited to the contractual procedures set forth in Title 44 of the Code of Federal Regulations, Part 13 ("44 CFR 13").

In addition, Contractor agrees to the following specific provisions:

- 1) Pursuant to 44 CFR 13.36(i)(1), University is entitled to exercise all administrative, contractual, or other remedies permitted by law to enforce Contractor's compliance with the terms of this Master Agreement, including but not limited to those remedies set forth at 44 CFR 13.43.
- 2) Pursuant to 44 CFR 13.36(i)(2), University may terminate the Master Agreement for cause or convenience in accordance with the procedures set forth in the Master Agreement and those provided by 44 CFR 13.44.
- 3) Pursuant to 44 CFR 13.36(i)(3)-(6)(12), and (13), Contractor shall comply with the following federal laws:
 - a. Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity," as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor ("DOL") regulations (41 CFR Ch. 60);
 - b. Copeland "Anti-Kickback" Act (18 U.S.C. 874), as supplemented in DOL regulations (29 CFR Part 3);
 - c. Davis-Bacon Act (40 U.S.C. 276a-276a-7) as supplemented by DOL regulations (29 CFR Part 5);
 - d. Section 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-30) as supplemented by DOL regulations (29 CFR Part 5);

- e. Section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15); and
 - f. Mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L.94-163, 89 Stat. 871).
- 4) Pursuant to 44 CFR 13.36(i)(7), Contractor shall comply with FEMA requirements and regulations pertaining to reporting, including but not limited to those set forth at 44 CFR 40 and 41.
 - 5) Pursuant to 44 CFR 13.36(i)(8), Contractor agrees to the following provisions regarding patents:
 - a. All rights to inventions and/or discoveries that arise or are developed, in the course of or under this Agreement, shall belong to the participating agency and be disposed of in accordance with the participating agency's policy. The participating agency, at its own discretion, may file for patents in connection with all rights to any such inventions and/or discoveries.
 - 6) Pursuant to 44 CFR 13.36(i)(9), Contractor agrees to the following provisions, regarding copyrights:
 - a. If this Agreement results in any copyrightable material or inventions, in accordance with 44 CFR 13.34, FEMA reserves a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, for Federal Government purposes:
 - 1) The copyright in any work developed under a grant or contract; and
 - 2) Any rights of copyright to which a grantee or a contractor purchases ownership with grant support.
 - 7) Pursuant to 44 CFR 13.36(i)(10), Contractor shall maintain any books, documents, papers, and records of the Contractor which are directly pertinent to this Master Agreement. At any time during normal business hours and as often as the participating agency deems necessary, Contractor shall permit participating agency, FEMA, the Comptroller General of United States, or any of their duly authorized representatives to inspect and photocopy such records for the purpose of making audit, examination, excerpts, and transcriptions.
 - 8) Pursuant to 44 CFR 13.36(i)(11), Contractor shall retain all required records for three years after FEMA or participating agency makes final payments and all other pending matters are closed. In addition, Contractor shall comply with record retention requirements set forth in 44 CFR 13.42.

Required Clauses for Federal Assistance provided by FTA

ACCESS TO RECORDS AND REPORTS

Contractor agrees to:

- a) Maintain all books, records, accounts and reports required under this Contract for a period of not less than three (3) years after the date of termination or expiration of this Contract or any extensions thereof except in the event of litigation or settlement of claims arising from the performance of this Contract, in which case Contractor agrees to maintain same until Public Agency, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto.

- b) Permit any of the foregoing parties to inspect all work, materials, payrolls, and other data and records with regard to the Project, and to audit the books, records, and accounts with regard to the Project and to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed for the purpose of audit and examination.

FTA does not require the inclusion of these requirements of Article 1.01 in subcontracts. Reference 49 CFR 18.39 (i)(11).

CIVIL RIGHTS / TITLE VI REQUIREMENTS

- 1) Non-discrimination. In accordance with Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000d, Section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, Section 202 of the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. § 12132, and Federal Transit Law at 49 U.S.C. § 5332, Contractor or subcontractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, marital status age, or disability. In addition, Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.
- 2) Equal Employment Opportunity. The following Equal Employment Opportunity requirements apply to this Contract:
- a. Race, Color, Creed, National Origin, Sex. In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal Transit Law at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable Equal Employment Opportunity requirements of U.S. Dept. of Labor regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor, 41 CFR, Parts 60 et seq., and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of this Project. Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, marital status, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, Contractor agrees to comply with any implementing requirements FTA may issue.
- b. Age. In accordance with the Age Discrimination in Employment Act (ADEA) of 1967, as amended, 29 U.S.C. Sections 621 through 634, and Equal Employment Opportunity Commission (EEOC) implementing regulations, "Age Discrimination in Employment Act", 29 CFR Part 1625, prohibit employment discrimination by Contractor against individuals on the basis of age, including present and prospective employees. In addition, Contractor agrees to comply with any implementing requirements FTA may issue.
- c. Disabilities. In accordance with Section 102 of the Americans with Disabilities Act of 1990, as amended (ADA), 42 U.S.C. Sections 12101 *et seq.*, prohibits discrimination against qualified individuals with disabilities in programs, activities, and services, and

imposes specific requirements on public and private entities. Contractor agrees that it will comply with the requirements of the Equal Employment Opportunity Commission (EEOC), "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 CFR, Part 1630, pertaining to employment of persons with disabilities and with their responsibilities under Titles I through V of the ADA in employment, public services, public accommodations, telecommunications, and other provisions.

- d. Segregated Facilities. Contractor certifies that their company does not and will not maintain or provide for their employees any segregated facilities at any of their establishments, and that they do not and will not permit their employees to perform their services at any location under the Contractor's control where segregated facilities are maintained. As used in this certification the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion or national origin because of habit, local custom, or otherwise. Contractor agrees that a breach of this certification will be a violation of this Civil Rights clause.
- 3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment. In all solicitations, either by competitive bidding or negotiation, made by Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by Contractor of Contractor's obligations under this Contract and the regulations relative to non-discrimination on the grounds of race, color, creed, sex, disability, age or national origin.
- 4) Sanctions of Non-Compliance. In the event of Contractor's non-compliance with the non-discrimination provisions of this Contract, Public Agency shall impose such Contract sanctions as it or the FTA may determine to be appropriate, including, but not limited to: 1) Withholding of payments to Contractor under the Contract until Contractor complies, and/or; 2) Cancellation, termination or suspension of the Contract, in whole or in part.

Contractor agrees to include the requirements of this clause in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

DISADVANTAGED BUSINESS PARTICIPATION

This Contract is subject to the requirements of Title 49, Code of Federal Regulations, Part 26, "*Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs*", therefore, it is the policy of the Department of Transportation (DOT) to ensure that Disadvantaged Business Enterprises (DBEs), as defined in 49 CFR Part 26, have an equal opportunity to receive and participate in the performance of DOT-assisted contracts.

- 1) Non-Discrimination Assurances. Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. Contractor shall carry out all applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by Contractor to carry out these requirements is a

material breach of this Contract, which may result in the termination of this Contract or other such remedy as public agency deems appropriate. Each subcontract Contractor signs with a subcontractor must include the assurance in this paragraph. (See 49 CFR 26.13(b)).

- 2) Prompt Payment. Contractor is required to pay each subcontractor performing Work under this prime Contract for satisfactory performance of that work no later than thirty (30) days after Contractor's receipt of payment for that Work from public agency. In addition, Contractor is required to return any retainage payments to those subcontractors within thirty (30) days after the subcontractor's work related to this Contract is satisfactorily completed and any liens have been secured. Any delay or postponement of payment from the above time frames may occur only for good cause following written approval of public agency. This clause applies to both DBE and non-DBE subcontractors. Contractor must promptly notify public agency whenever a DBE subcontractor performing Work related to this Contract is terminated or fails to complete its Work, and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. Contractor may not terminate any DBE subcontractor and perform that Work through its own forces, or those of an affiliate, without prior written consent of public agency.
- 3) DBE Program. In connection with the performance of this Contract, Contractor will cooperate with public agency in meeting its commitments and goals to ensure that DBEs shall have the maximum practicable opportunity to compete for subcontract work, regardless of whether a contract goal is set for this Contract. Contractor agrees to use good faith efforts to carry out a policy in the award of its subcontracts, agent agreements, and procurement contracts which will, to the fullest extent, utilize DBEs consistent with the efficient performance of the Contract.

ENERGY CONSERVATION REQUIREMENTS

Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plans issued under the Energy Policy and Conservation Act, as amended, 42 U.S.C. Sections 6321 *et seq.* and 41 CFR Part 301-10.

FEDERAL CHANGES

Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Contract between public agency and the FTA, as they may be amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this Contract.

INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS

The provisions include, in part, certain Standard Terms and Conditions required by the U.S. Department of Transportation (DOT), whether or not expressly set forth in the preceding Contract provisions. All contractual provisions required by the DOT, as set forth in the most current FTA Circular 4220.1F, dated November 1, 2008, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other

provisions contained in this Contract. Contractor agrees not to perform any act, fail to perform any act, or refuse to comply with any public agency requests that would cause public agency to be in violation of the FTA terms and conditions.

NO FEDERAL GOVERNMENT OBLIGATIONS TO THIRD PARTIES

Agency and Contractor acknowledge and agree that, absent the Federal Government's express written consent and notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying Contract, the Federal Government is not a party to this Contract and shall not be subject to any obligations or liabilities to agency, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying Contract.

Contractor agrees to include the above clause in each subcontract financed in whole or in part with federal assistance provided by the FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS

Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. §§ 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 CFR Part 31, apply to its actions pertaining to this Contract. Upon execution of the underlying Contract, Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying Contract or the FTA assisted project for which this Contract Work is being performed.

In addition to other penalties that may be applicable, Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on Contractor to the extent the Federal Government deems appropriate.

Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307 (n)(1) on the Contractor, to the extent the Federal Government deems appropriate.

Contractor agrees to include the above clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

State Notice Addendum

The National Cooperative Purchasing Alliance (NCPA), on behalf of NCPA and its current and potential participants to include all county, city, special district, local government, school district, private K-12 school, higher education institution, state, tribal government, other government agency, healthcare organization, nonprofit organization and all other Public Agencies located nationally in all fifty states, issues this Request for Proposal (RFP) to result in a national contract.

For your reference, the links below include some, but not all, of the entities included in this proposal:

http://www.usa.gov/Agencies/Local_Government/Cities.shtml

<http://nces.ed.gov/globallocator/>

<https://harvester.census.gov/imls/search/index.asp>

<http://nccsweb.urban.org/PubApps/search.php>

<http://www.usa.gov/Government/Tribal-Sites/index.shtml>

<http://www.usa.gov/Agencies/State-and-Territories.shtml>

<http://www.nreca.coop/about-electric-cooperatives/member-directory/>

<https://sos.oregon.gov/blue-book/Pages/state.aspx>

<https://portal.ehawaii.gov/government/>

<https://access.wa.gov/governmentagencies.html>