



Phelps Wing HVAC Project

Phelps Control Center
700 E. Bischeld Street
Grand Island, NE

Contact

City of Grand Island Utilities Department
Jeffrey Mead, Senior Engineer
(308) 385-5462 x.1142
jeff.mead@guid.com

Date Issued: February 10, 2022
Time/Date Bid Due: 2:00pm March 8, 2022

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SECTION A

ADVERTISEMENT FOR BIDS

ADVERTISEMENT FOR BIDS
FOR
Phelps Wing HVAC

Sealed bids will be received at the **Office of the City Clerk, 100 East First Street, Grand Island, NE 68801, until 2:00 pm. (Local Time), March 8, 2022** for Phelps Wing HVAC, FOB the City of Grand Island. Bids will be publicly opened at this time at the Office of the City Clerk, 100 East First Street, Grand Island, NE. Bids received after the specified time will be returned unopened to sender.

Plans and specifications are on file at the City of Grand Island, Phelps Control Center, 700 East Bischeld Street, Grand Island, NE. (308) 385-5462 x.1142. Bids shall be submitted on forms that will be furnished by the City OR bidding documents, plans, and specifications for use in preparing bids may be downloaded from the Quest CDN website, www.QuestCDN.com for a thirty dollar (\$30) fee. Bids must be uploaded to the Quest CDN website and received before the specified time to be considered.

Each bidder shall submit with their bid a certified check, cashiers check, or bid bond payable to the City Treasurer in an amount not less than five percent (5%) of the bid price which shall guarantee good faith on the part of the bidder and the entering into a contract within fourteen (14) days, at the bid price, if accepted by the City. **Your certified check, cashiers check or bid bond must be submitted in a separate envelope attached to the outside of the envelope containing the bid.** Each envelope must be clearly marked indicating its contents. Failure to submit the necessary qualifying information in clearly marked and separate envelopes will result in your bid not being opened or considered. OR Bid bonds must be uploaded to Quest CDN, www.QuestCDN.com. Bid bonds must be issued by surety companies authorized to do business in the State of Nebraska. Please return one original and one copy of each bid sheet.

Bids will be evaluated by the purchaser based on price, delivery, quality, and adherence to specifications. Each bidder shall supply three (3) copies of the bid and equipment specifications. Failure to provide the correct number of copies will result in the bid being deemed nonconforming and not considered. The Purchaser reserves the right to reject any or all bids, to waive technicalities, and to accept whichever bid that may be in the best interest of the City.

No Company may withdraw its bid for a period of thirty (30) days after date of bid opening.

RaNae Edwards,
City Clerk

SECTION B

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS **Phelps Wing HVAC**

Sealed bids will be **received at the office of the City Clerk**, 100 East First St., Grand Island, NE 68801 or P. O. Box 1968, Grand Island, Nebraska, until 2:00 pm (Local Time) on March 8, 2022, for Phelps Wing HVAC as specified in these bidding documents, FOB Grand Island, NE.

Exceptions to Specifications - Any bidder who has exceptions to any specifications and requirements listed in the bidding documents must mark as such on the bid form, and provide written explanation with the bid as to the nature and extent of the exceptions. It is the bidder's responsibility to clearly outline any exceptions. Failure by bidder to outline exceptions will require the successful bidder to comply with the specifications.

Attached are detailed minimum specifications. The following general specifications also apply to this bid.

Bid Bond

Each bidder shall submit with their bid a certified check, cashiers check or bid bond payable to the City Treasurer in an amount not less than five percent (5%) of the bid price which shall guarantee good faith on the part of the bidder and the entering into a contract within fourteen (14) days, at the bid price, if accepted by the City. **Your certified check, cashiers check or bid bond must be submitted in a separate envelope attached to the outside of the envelope containing the bid.** Each envelope must be clearly marked indicating its contents. Failure to submit the necessary qualifying information in clearly marked and separate envelopes will result in your bid not being opened or considered. OR Bid bonds must be uploaded to Quest CDN, www.QuestCDN.com. Bid bonds must be issued by surety companies authorized to do business in the State of Nebraska. Please return one original and one copy of each bid sheet.

Bid Submittal

All envelopes submitted by Bidder must state "Bid for Phelps wing HVAC" on the face of envelope. A minimum of three (3) copies of the bid should be included. Failure to submit the correct number of copies will result in the bid being deemed nonconforming and not considered.

Site Visit

A pre-bid site visit is required. Site visit can be arranged with Jeff Mead, Senior Engineer, City of Grand Island Utilities, Phelps Control Center, 308-385-5462 x.1142 or jeff.mead@giud.com.

Options

The general and detailed specifications are the minimum requirements. Bidder may include options if desired. Options should be noted as such and priced separately.

References

Upon request, Bidder shall supply names and contact information for two projects similar in size and nature.

OSHA & ANSI Requirements

In addition to other specified requirements, equipment and practices shall meet all current Occupational Safety and Health Administration and American National Standards Institute requirement specifications.

Award

Upon approval by the Grand Island City Council, a contract will be made between the successful bidder and the City of Grand Island Utilities Department.

Completion Date

Each bidder shall state in their bid a realistic time to procure equipment and install. Actual installation time shall be coordinated with the City during shoulder months in which air conditioning is typically not required. Installation should be no later than June 1, 2022.

Payment

Invoices will be paid after approval at the next regularly scheduled Council meeting occurring after departmental approval of each invoice; the City Council typically meets the second and fourth Tuesday of each month. Invoices must be received well in advance of Council date to allow evaluation and processing time.

Fair Employment Practices

Each bidder agrees that he/she will not discriminate against any employee or applicant for employment because of age, race, color, religious creed, ancestry, handicap, sex or political affiliation.

Fair Labor Practices

Each bidder agrees to file a statement with the City, if not already on file, that they are complying with, and will continue to comply with, fair labor standards in the pursuit of their business and also comply with such in the execution of the contract on which they are bidding.

Data Privacy

Bidder agrees to abide by all applicable Local, State, and Federal laws and regulations concerning the handling and disclosure of private and confidential information concerning individuals and corporations as to inventions, patents and patent rights. The bidder agrees to hold the City harmless from any claims resulting from the bidder's unlawful disclosure or use of private or confidential information.

Independent Price Determination

By signing and submitting bid, the bidder certifies that the prices in the bid have been arrived at independently, without consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor.

Clarification of Specification Documents

Vendors shall promptly notify Jeff Mead at (308) 385-5462 x.1142 of any ambiguity, inconsistency or error that they may discover upon examination of the specifications. Interpretations, corrections and changes made to the specifications will be made by written addenda. Oral interpretations or changes to the specifications made in any other manner will not be binding on the City; and bidders shall not rely upon such interpretations or changes.

Gratuities and Kickback

City Code states that it is unethical for any person to offer, give, or agree to give any City employee or former City employee, or for any City employee or former City employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, or preparation of any part of a program requirement or a purchase request, influencing the content of any specification or

procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefore. It shall be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated there within, as an inducement for the award of a subcontract or order.

SECTION C

CONTRACTOR'S BID FORM

**BID FORM
CITY OF GRAND ISLAND, NEBRASKA**

Phelps Wing HVAC

INSTRUCTIONS: Completely fill out and return these 2 pages with additional information as requested by the city or deemed necessary by contractor by time and date advertised and stated in "Instructions To Bidder" section.

BIDDER NAME: _____

THE UNDERSIGNED BIDDER, having examined the plans, specifications, general and special conditions, other proposed Contract documents, all addenda thereto and being acquainted with and fully understanding the extent and character of the work covered by this bid, the location, arrangement and specified requirements for the proposed work, and all other factors and conditions affecting or which may be affected by the work,

HEREBY PROPOSES to furnish all required materials, supplies, equipment, tools and plans to perform all necessary labor and supervision, and to construct, install, erect, equip and complete all work stipulated in, required by and in accordance with the Contract documents and the plans, specifications and other documents referred to therein (as altered, amended or modified by all addenda thereto) for and in consideration of the following prices.

BID PRICE: The price listed as "Grand Total" below will be used as the established lump sum price for the entire Phelps Wing HVAC Project and shall include all materials, supplies, equipment, labor, taxes, freight, and other necessary to complete the project as stated in these specifications and as shown on the plans and drawings. Break down of costs provided at contractor's discretion. The City of Grand Island, Utilities Department does pay sales tax. If bidder fails to include sales tax in the bid price or takes exception to including sales tax in the bid price, the City will add a 7.5% figure to the bid price for evaluation purposes; however, the City will only pay actual sales tax due.

1. TOTAL BASE BID: Dollars \$ _____

7.5% NEBRASKA SALES TAX: Dollars \$ _____

GRAND TOTAL BID PRICE: Dollars \$ _____

2. Not used.

3. SITE VISIT: Print name of person who performed required site visit. _____ .

4. EXCEPTIONS: Check here _____ if bidder is taking exception(s). Accompany bid with documentation outlining and explaining any and all exceptions.

5. ADDENDA: Check here _____ if bidder acknowledges that Addenda(s) were received and considered in bid preparation. Bidder acknowledges the following number of addenda _____.

6. ESTIMATED TIME REQUIRED: Bidder estimates project will take approximately _____ days to procure equipment and _____ days to install.

7. COMPLETION DATE: Installation can only occur in the shoulder months when air conditioning is not required and minimal heat is required. The City anticipates a spring 2022 installation. The City expects

the project to be complete by June 1, 2022.

8. REFERENCES: Provide upon request two references for similar projects (Company name, contact person name, contact phone number).

9. SIGNATURE OF BIDDER:

By signing, bidder acknowledges reading and abiding by the minimum insurance requirements for the City of Grand Island as specified in section "D" below.

Bidder Company Name Date

Company Address

Name of Person Completing Bid (please print)/Signature

Title of Person Completing Bid

Telephone Number of Bidder

Fax Number of Bidder

E-mail Address of Bidder

CITY OF GRAND ISLAND RESERVES THE RIGHT TO ACCEPT OR REJECT ANY OR ALL BIDS.

SECTION D

MINIMUM INSURANCE REQUIREMENTS

MINIMUM INSURANCE REQUIREMENTS

CITY OF GRAND ISLAND, NEBRASKA

The Contractor shall purchase and maintain at their expense as a minimum insurance coverage of such types and in such amounts as are specified herein to protect Contractor and the interest of Owner and others from claims which may arise out of or result from Contractor's operations under the Contract Documents, whether such operations be by Contractor or by any subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. Failure of Contractor to maintain proper insurance coverage shall not relieve him of any contractual responsibility or obligation.

1. WORKERS COMPENSATION AND EMPLOYER'S LIABILITY

This insurance shall protect the Bidder against all claims under applicable State workers compensation laws. This insurance shall provide coverage in every state in which work for this project might be conducted. The liability limits shall not be less than the following:

Workers Compensation	Statutory Limits
Employers Liability	\$100,000 each accident
\$100,000 each employee	
\$500,000 policy limit	

2. BUSINESS AUTOMOBILE LIABILITY

This insurance shall be written in comprehensive form and shall protect the Bidder, Bidder's employees, or subcontractors from claims due to the ownership, maintenance, or use of a motor vehicle. The liability limits shall be not less than the following:

Bodily Injury & Property Damage	\$ 500,000 Combined Single Limit
---------------------------------	----------------------------------

3. COMPREHENSIVE GENERAL LIABILITY

The comprehensive general liability coverage shall contain no exclusion relative to explosion, collapse, or underground property. The liability limits shall be not less than the following:

Bodily Injury & Property Damage	\$ 500,000 each occurrence
\$1,000,000 aggregate	

4. UMBRELLA LIABILITY INSURANCE

This insurance shall protect the Bidder against claims in excess of the limits provided under employer's liability, comprehensive automobile liability, and commercial general liability policies. The umbrella policy shall follow the form of the primary insurance, including the application of the primary limits. The liability limits shall not be less than the following:

Bodily Injury & Property Damage	\$1,000,000 each occurrence
\$1,000,000 general aggregate	

5. ADDITIONAL REQUIREMENTS

The City may require insurance covering a Bidder or subcontractor more or less than the standard requirements set forth herein depending upon the character and extent of the work to be performed by such Bidder or subcontractor.

Insurance as herein required shall be maintained in force until the City releases the Bidder of all obligations under the Contract.

The Bidder shall provide and carry any additional insurance as may be required by special provisions of these specifications.

6. CERTIFICATE OF INSURANCE

Satisfactory certificates of insurance shall be filed with the City prior to starting any work on this Contract. **The certificates shall show the City as an additional insured on all coverage except Workers Compensation. The certificate shall state that thirty (30) days written notice shall be given to the City before any policy is cancelled (strike the "endeavor to" wording often shown on certificate forms). If the bidder cannot have the "endeavor to" language stricken, the bidder may elect to provide a new certificate of insurance every 30 days during the contract. Bidder shall immediately notify the City if there is any reduction of coverage because of revised limits or claims paid which affect the aggregate of any policy.**

SECTION E

CITY GENERAL SPECIFICATIONS

PHELPS WING HVAC

CITY GENERAL SPECIFICATIONS PHELPS WING HVAC PROJECT

SECTION 100 – GENERAL

100.01 Description of Work. The City of Grand Island Utilities Department (City) Phelps Control Center (Phelps) is replacing the Heating Ventilation and Air Conditioning (HVAC) units for two separate 1997 building additions referred to as the west wing and the east wing. The original 1968 building section had a recent HVAC replacement and is not in the scope of this project. The west wing has two split systems with air handlers, resistant heat, outside condenser units, and controlled zone dampers. The east wing has one split system of the same design. Duct work resides in the space between the tiled drop ceiling and roof deck. The existing split systems shall be removed and replaced with new heat pump split systems. The duct work is to be reused, but original controlled zone dampers removed. The new systems shall be professionally air balanced. Installation shall include all necessary control, electrical, and whatever else is necessary to satisfy these specifications and provide complete working systems when finished.

Note, the building has base board heaters independent of the HVAC system. The base board heat is not part of this project and can be used by the occupants during the project.

100.02 Owner. The City representative is as follows.

City of Grand Island-Phelps Control
Jeff Mead
Box 1968
Grand Island, NE 68802

ph. 308-385-5462 x.1142
jeff.mead@giud.com

100.03 Specifications. The specifications as a whole will govern the entire work. Any discrepancy or conflict between this section and other information provided shall be brought to City representative's attention.

100.04 Sufficient People and Equipment. It is the intent of these specifications that the Contractor has sufficient people and equipment on the job sites capable of completing the job as specified and in the timeframe allotted. Contractor shall provide all materials, tools, rigging, hoists, and other equipment as necessary to complete the job. The City will supply 110 volt electrical supply and water from a standard wall hydrant.

100.05 Timing. Work can begin as soon as contract is awarded and proof of insurance is provided. See section D concerning insurance. Contractor and City shall jointly develop a work schedule plan with a total project completion date. Installation must occur during shoulder months when air conditioning is typically not required and minimal heat is required. Note, the building does have supplemental base board heaters, independent of this project. Work shall proceed continuously once started. The City reserves the right to modify the schedule throughout the project. It is the intent of the City for project to be completed June 1, 2022.

- 100.06 Safety. All work shall be performed in accordance with and equipment shall comply with the Occupational Safety and Health Administration standards. The Contractor shall furnish and maintain all necessary safety equipment (such as barriers, signs, warning lights, and guards), to provide adequate protection of persons and property.
- 100.07 Environmental Hazards. The building additions are vintage 1996 so asbestos materials should not be present. No asbestos containing material shall be used in this project.
- 100.08 Work Site. The site is gated with access granted via intercom communication to City staff. The Phelps Control Center building will be occupied during installation. The primary work hours are 7am to 5pm Monday through Friday, but the building is manned 24 hours a day, 7 days a week. Garden hose water and 110v electrical service are available on site. Restrooms are available for contract employees. City staff can be contacted by calling 308-385-5465. Work is preferred during primary hours, but can be performed any hours with prior acceptance by Phelps Control representative. Contractor shall provide a cellular phone number to city personnel.
- 100.09 Site Protection. Good housekeeping is essential, and shall be practiced throughout the Contract period. The Contractor and contractor's employees shall maintain a clean and safe work site free from trash and debris. Contractor to supply any waste collection containers necessary. When installation is complete the work site shall be returned to the condition it was in prior to construction. Contractor shall repair, at their expense, any damage to the grounds, buildings, structures, equipment, or other City property caused by project activities. Contractor shall perform basic cleaning of the area as necessary.
- 100.10 Material Handling and Protection. Contractor is responsible for all loading, unloading, handling, storage, protection, and other as it applies, of materials and equipment. A City representative will designate a lay down area. Any material not meeting project or manufacturer's specifications shall be replaced at contractor's expense.
- 100.11 Permits. Contractor shall obtain all necessary permits, and follow any and all applicable local, state, and federal codes.
- 100.12 Measurements. Measurements stated or shown are not entirely accurate or all inclusive of project details. It is the contractor's responsibility to solicit more information, make site visits, and/or take field measurements to assure a proper bid and to procure proper material quantities if applicable.
- 100.13 Specified Products. Directly referenced brands and products in this specification serve as an example of the system/style desired by the City and are not intended to limit or restrict competition. Example brands and products may not exactly fit and/or have all features specified here within. It is the contractor's responsibility to choose and provide equipment that fully meets the scope of work and requirements.
- 100.14 Request for Approved Equals. Bidder is free to supply equipment cut sheets and any other information as necessary at the time of bid due. Alternatively the successful bidder can submit request for equals to City representative. Approval is solely the City representative's decision. Upon rejection the bidder will have to use specified equipment.

100.15 Removals. It is the Contractor’s responsibility to remove and discard all items obsoleted or otherwise unused at the completion of this project.

SECTION 200 – HVAC PROJECT DETAILS

200.01 Existing System 1, 2, and 3. The existing systems are air handlers with resistance heating elements and outside condensers. See nameplate pictures, Attachment 1. Also see original mechanical detail prints, Attachments 2 and 3. Below is a summary table including the currently used panel circuit breakers for each unit. Existing smaller circuits for the air handler fan and controls are not included in the table. Available voltage is 120/208.

SYSTEM	A/H	HEAT	HEAT CIRCUITS	COND	COND CIRCUITS
1 (west big)	5 ton	15kW	1ph 208v, 2 double 60A	6 ton	3ph 208v, triple 60A
2 (west small)	3 ton	10kW	1ph 208v, 1 double 60A	3 ton	3ph 208v, triple 35A
3 (east)	5 ton	15kW	1ph 208v, 1 double 50A 1ph 208v, 1 double 60A	6 ton	3ph 208v, triple 60A

The existing systems also include 8 controlled zone dampers, 4 in each wing. This zone controlled system is to be changed to a balanced system.

200.02 Removal. Completely remove existing 3 air handlers, line sets, and 3 condenser units. Refrigerant shall be captured and properly recycled or disposed of. Remove 3 condenser outside disconnect switches. Remove 3 return air boxes and ductwork as necessary to properly install new units.

Remove 8 controlled zone dampers such that air flow from the new systems is not affected. Patch ductwork back in with same size duct, mechanically attached, sealed, and insulated. For duct sizes see Zone Controller designation and schedule on attachments 2 and 3, also repeated on Attachment 4 Layout with expected quantities of each size. Contractor to field verify. Remove existing control transformers and low voltage wire, then wire nut circuits, and cover existing junction boxes with blank covers. Trace circuits back to panels, place breakers off, and remark panel as “spare”. See included photo with Attachment 1.

200.03 Design. Replacement, mechanical and electrical, design and sizing is the Contractor’s responsibility, including any necessary Engineering consulting. City anticipates the same basic design and size of units as existing, but with heat pumps instead of regular condensers. City engineering calculations indicate that 5 ton condensers for systems 1 and 3 would be adequate. See layout drawing, Attachment 4 with area square feet and load information. City anticipates minimal changes necessary to the electrical supply. Any changes necessary are the responsibility of the Contractor, including new circuit breakers and wiring runs. Note, independent base board heat exists and will continue to be used.

Zone Controllers are no longer to be used. City anticipates professionally air balanced systems with no zones. City anticipates no changes to the duct work outside of the mechanical rooms, other than removing the 8 zone dampers, see section 200.02. Note, branch lines currently have balancing dampers, separate from

the zone dampers.

- 200.04 Air Handlers. Provide and install 3 appropriately sized air handlers. Modify return and supply ducts as necessary. Return air box shall be of adequate height and accommodate at least a 2 inch wide full depth and width air filter. Provide 2 new pleated air filters at least Merv 11, for each unit. Insulate ducting to be similar to existing. 1 inch lined duct work is an acceptable alternative as long as internal area is not reduced from existing. Provide and install 3 new refrigerant line sets 1 1/8 x 3/8 inch with at least 1/2 inch Armaflex insulation or equal. Make all necessary electrical and control connections. Existing conduit and wire of adequate length, size, and condition can be reused. Run new conduit and repull wire when necessary. Provide and install condensate drain piping to existing floor drains, each case, and anchor down to floor.

Systems 1 and 3. 5 ton, variable speed fan, with minimum 15kW total auxiliary heat in at least 2 stages. See available voltage and circuit information in table above.

Lennox Signature CBA38MV-060-230-6-01 or approved equal.

System 2. 3 ton, variable speed fan, with minimum 10kW total auxiliary heat in one or two stages. See available voltage and circuit information in table above.

Lennox Signature CBA38MV-036-230-6-01 or approved equal.

- 200.05 Heat Pump. Provide and install 3 appropriately sized heat pumps, with legs, on existing concrete pads. Heat pumps shall have 2 stage compressors, at least 14 SEER. Provide and wall mount the appropriately sized outside unfused service disconnect for each unit. Make all necessary electrical and control connections. Conduit and wire from new outside disconnects to new heat pumps shall be new and sized appropriately. Conduit shall be flexible liquid tight style.

Systems 1 and 3. 5 ton. See available voltages and circuit information in table above.

Lennox S-Class SPB060H4 or approved equal.

System 2. 3 ton. See available voltages and circuit information in table above.

Lennox S-Class SPB036H4 or approved equal.

- 200.06 Controls. Provide three new programmable thermostats and the appropriate number of room sensors. Discuss mounting locations with City representative. Note, existing room stat locations can be reused as appropriate. City to remove and wall patch any unused obsolete stats.

Honeywell VisionPRO 8000 RedLINK or approved equal.

- 200.07 Start Up and Balancing. Contractor to completely start system and verify functionality per manufacturer's recommendations. Contractor to employ certified professional balancing company and independently balance the three systems. Provide reports of the settings/results to the City. Note, balancing dampers currently exist on branch lines. Replacement/upgraded diffusers, as necessary, are the contractor's

responsibility. No diffuser change outs are anticipated. Contractor to provide operation and preventative maintenance training to City personnel.

200.08 Warranty. At a minimum provide the following warranties. 1 year parts and labor on entire systems, 5 years on heat pump compressors, and 15 years on heat exchangers.

END OF SECTION E

SECTION F

APPENDICES

- 1. Equipment Photos**
- 2. 1997 Mech layout M1.1 (D size)**
- 3. 1997 Mech details M1.3 (D size)**
- 4. Layout_11x17**

**City of Grand Island
 Phelps Wing HVAC
 Attachment 1.
 Equipment Photos.
 (4 pages)**

American Standard Inc.
 The Trane Company
 Tyler, TX 75711-9010 Made in USA

TWE060C15FC1 | L3653DJ5V | 3/4 | 6.0 | 200-230 | **IN**
 MOD. NO. SERIAL NO. MOTOR R.P. F.L. AMPS VOLTS MAY BE FIELD INSTALLED
 NO YES
 MFR DATE **09/96**

ELECTRIC HEATER-208 OR REFRIGERANT 22 ONLY TEST PRESSURE 300 PSI UNLESS INDICATED 'NA' ANY ONE OF THE FOLLOWING HEATERS MAY BE INSTALLED IN THIS UNIT. INSTALLER MUST MARK ONE APPROPRIATE BLOCK IN COLUMN A.

A	TRANE HEATER MODEL	VOLTS	PHASE	W		HP	AMPS	CIRCUIT BREAKER		HEAT PUMP	HEAT PUMP
				120	240			1	2		
	NONE										
	USE ACCESSORY PLATE BAY 99 X 123										
	BAY99X1405	208	1	3.80	17.3	24	30	30	35	NA	LOW
		240		4.80	20	33	35	35	35	NA	LOW
	BAY99X1408	208	1	4.33	20.8	34	35	35	35	NA	LOW
		240		5.78	24	38	40	40	40	NA	LOW
	BAY99X1408	208	1	5.77	27.7	42	45	45	45	LOW	LOW
		240		7.68	32	48	50	50	50	LOW	LOW
	BAY99X1410	208	1	7.21	34.7	57	60	60	60	LOW	LOW
		240		9.80	40	58	60	60	60	LOW	LOW
	BAY99X1411	208	1	7.85	38.1	NA	NA	NA	NA	NA	NA
		240		10.58	44	NA	NA	NA	NA	NA	NA
	BAY99X3411	208	3	7.63	24.2	39	40	40	40	LOW	LOW
		240		10.58	28	43	45	45	45	LOW	LOW
	BAY99X3415	208	3	11.84	35	48	50	50	50	LOW	LOW
		240		15.28	41.8	62	60	60	60	LOW	LOW

NOTE: Heater model number may have additional suffix digits
 * 1 'MED' SPEED FOR UPFLOW AND HORIZONTAL RIGHT.

CAUTION: WHEN HEATER MODELS BAY99X1410A, 1411A, 1414, 1416, 1419, 1421 AND 1428 ARE INSTALLED USE ONLY 240/208 VOLT SUPPLY CIRCUITS WITH 120 VOLTS TO GROUND (NOMINAL).
 FOR FIELD CONNECTIONS USE COPPER CONDUCTORS ONLY.
 USE ONLY APPROVED COMBINATIONS OF ELECTRIC HEATERS AND UNITS.
 MINIMUM INSTALLATION CLEARANCE TO COMBUSTIBLE MATERIALS WHEN ELECTRIC HEATERS ARE INSTALLED: UNIT CABINET - 6" PLUMB - 6" AND FIRST 3' OF OUTLET DUCT - 1'. MAXIMUM OUTLET AIR TEMPERATURE WITH ELECTRIC HEATERS 180°F.
NOTICE: IF AIR HANDLER IS USED WITHOUT A FACTORY SUPPLIED SUPPLEMENTARY ELECTRIC HEATER, AN ACCESSORY PLATE IS REQUIRED TO COVER THE OPEN HOLE IN THE AIRFLOW SYSTEM.
WARNING: WITH HEAT PUMP INSTALLATIONS, SOME HEATERS ARE POSITION SENSITIVE. SEE NOTES BELOW.



**Furnace and Condenser 1.
 (larger unit west wing)
 See RFQ section 200.01 for
 circuit breaker table.**

AIR CONDITIONER MFR DATE **08/96**

MOD. NO. TTA072C300A0 VOLTS **200/230**
 SERIAL NO. L355WERFF PH **3** HZ **60**
 MINIMUM CIRCUIT CAPACITY **30.0** AMPS
 OVERCURRENT PROTECTIVE DEVICE **USA** **CANADA**
 RECOMMENDED FUSE / BREAKER (HACR) **50/45** **50/45**
 MAX FUSE / BREAKER (HACR) **50/45** **50/45**
 HCFC - 22 **13** LBS. **00** OZ. OR **5.90** Kg(w)
 BAY FCCY **N/A** REQUIRED INDOORS FOR RATED PERFORMANCE

THE TRANE COMPANY
 TYLER, TX 75711-9010 MADE IN USA **OUTDOOR USE**

COMPR. MOT. **22.0** RLA **200/230** V **124** LRA
 O.D. MOT. **2.20** FLA **200/230** V **1/3** HP
 M.E.A. NO. **56-92E**
 DESIGN PSI - HIGH **300** LOW **300** F. I.D. **A78**

American Standard Inc.
The Trane Company
Tyler, TX 75711-9010

Made in USA

TWE036P130A0 L3452K21V 1/3 2.2 200-230 60Hz
MODEL NO. SERIAL NO. MOTOR R.P. F.L. AMPS VOLTS

ELECTRIC HEATER-208 OR 240V, 60HZ, 1 PH OR 3 PH
REFRIGERANT 22 ONLY TEST PRESSURE 300 PSI
UNLESS INDICATED "NA" ANY ONE OF THE FOLLOWING HEATERS MAY BE INSTALLED IN THIS UNIT. INSTALLER MUST MARK ONE APPROPRIATE BLOCK IN COLUMN A.

FACTORY INSTALLED MAY BE FIELD INSTALLED MFR. DATE 08/96

A	TRANE HEATER MODEL	SUPPLY VOLTAGE	PHASE	KW	HEATER AMP	MIN. BRANCH CIRCUIT AMPACITY	MAX. FUSE OR OVERCURRENT DEVICE	MIN. HEATING BLOWER SPEED	HEAT PUMP	HEAT PUMP	
	NONE	USE ACCESSORY PLATE BAY 99 X 123									
	BAY96X1405	208 240	1	3.80 4.80	17.3 20	24 28	25 30		LOW	LOW	
	BAY96X1408	208 240	1	4.33 5.78	20.8 24	29 33	30 35		LOW	LOW	
	BAY96X1408	208 240	1	5.77 7.68	27.7 32	37 43	40 45		LOW	LOW	
	BAY96X1410	208 240	1	7.21 9.90	34.7 40	48 53	50 60		LOW	LOW	
	BAY96X1411	208 240	1	7.93 10.58	38.1 44	50 58	50 60		LOW	HI	
	BAY96X3411	208 240	3	7.93 10.58	24.2 28	33 37	35 40		LOW	HI	
	BAY96X3415	208 240	3	11.54 15.36	38 41.8	48 52	48 50		LOW	HI	
A	TRANE HEATER MODEL	SUPPLY VOLTAGE	PHASE	KW	HEATER AMP	MIN. BRANCH CIRCUIT AMPACITY	MAX. FUSE OR OVERCURRENT DEVICE	MIN. HEATING BLOWER SPEED	HEAT PUMP	HEAT PUMP	
	CIRCUIT 1 BAY96X1415	208 240	1	7.21 9.90	34.7 40	48 53	50 60		LOW	HI	
	CIRCUIT 2	208 240	1	4.33 5.78	20.8 24	29 30	30 30				
	CIRCUIT 1 BAY96X1419	208 240	1	7.21 9.90	34.7 40	48 53	50 60		LOW	HI	
	CIRCUIT 2	208 240	1	7.20 9.90	34.7 40	43 50	45 50				
	CIRCUIT 1 BAY96X1421	208 240	1	7.21 8.88	34.7 41.8	48 52	50 60		LOW	HI *1	
	CIRCUIT 2	208 240	1	8.88 11.52	41.8 48	52 60	60 60				
	CIRCUIT 1 BAY96X1428	208 240	1	7.21 9.90	34.7 40	NA NA	NA NA		NA	NA	
	CIRCUIT 2	208 240	1	8.88 11.52	41.8 48	NA NA	NA NA				
	CIRCUIT 3	208 240	1	3.80 4.80	17.3 20	NA NA	NA NA				

NOTE: Heater model number may have additional suffix digits

CAUTION: WHEN HEATER MODELS BAY96X1410A, 1411A, 1414, 1415, 1419, 1421 AND 1428 ARE INSTALLED USE ONLY 240/208 VOLT SUPPLY CIRCUITS WITH 120 VOLTS TO GROUND (NOMINAL).

FOR FIELD CONNECTIONS USE COPPER CONDUCTORS ONLY.
USE ONLY APPROVED COMBINATIONS OF ELECTRIC HEATERS AND UNITS.
USE MINIMUM INSTALLATION CLEARANCE TO COMBUSTIBLE MATERIALS WHEN ELECTRIC HEATERS ARE INSTALLED: UNIT CABINET-0", PLENUM-1" AND FIRST 3' OF OUTLET DUCT-1". MAXIMUM OUTLET AIR TEMPERATURE WITH ELECTRIC HEATERS 194°F.

NOTICE: IF AIR HANDLER IS USED WITHOUT A FACTORY FURNISHED SUPPLEMENTARY ELECTRIC HEATER, AN ACCESSORY PLATE IS REQUIRED TO COVER THE OPEN HOLE IN THE AIRFLOW SYSTEM.

WARNING: WITH HEAT PUMP INSTALLATIONS, SOME HEATERS ARE POSITION SENSITIVE. SEE NOTES BELOW.
NOT APPROVED FOR USE IN EITHER HORIZONTAL CONFIGURATION WITH HEATPUMP.

Furnace and Condenser 2.
(smaller unit west wing)
See RFQ section 200.01 for
circuit breaker table.

AIR CONDITIONER MFR DATE 08/96

MOD. NO. TTA036C300A0 VOLTS 200/230

SERIAL NO. L3431E9BF PH 3 HZ 60

MINIMUM CIRCUIT AMPACITY 17.0 AMPS

OVERCURRENT PROTECTIVE DEVICE USA CANADA

RECOMMENDED FUSE / BREAKER (HACR) 25 25

MAX FUSE / BREAKER (HACR) 25 25

HCFC - 22 5 LBS. 12 OZ. OR 2.61 Kg(a)

BAYFCCV 071A REQUIRED INDOORS FOR RATED PERFORMANCE

THE TRANE COMPANY
TYLER, TX 75711-9010 MADE IN USA

OUTDOOR USE

COMPR. MOT. 12.0 FLA 200/230 V 101 LRA
O.D. MOT. 1.70 FLA 200/230 V 1/4 HP
M.E.A. NO. 56-92E
DESIGN PSI - HIGH 300 LOW 300 F. ID. A7C



American Standard Inc.
The Trane Company
Tyler, TX 75711-9010
Made in USA

TWE060C15FC1 L3653DA5V 3/4 6.0 200-230

MODEL NO. SERIAL NO. MOTOR H.P. F.L.A.M.P.S VOLTS

ELECTRIC HEATER-208 OR 240V, 60Hz, 1 PH OR 3 PH REFRIGERANT 22 ONLY TEST PRESSURE 300 PSI UNLESS INDICATED 'NA' ANY ONE OF THE FOLLOWING HEATERS MAY BE INSTALLED IN THIS UNIT. INSTALLER MUST MARK ONE APPROPRIATE BLOCK IN COLUMN A.

A	TRANE HEATER MODEL	VOLTS	PHASE	KW	HEATER CAPACITY (BTU/HOUR)	MIN. OVERCURRENT	MIN. OVERCURRENT
	NONE						
	USE ACCESSORY PLATE BAY 99 X 123						
	BAY9X1408	208	1	3.80	17.3	24	30
	240			4.80	20	33	35
	BAY9X1408	208	1	4.33	20.8	34	38
	240			5.78	24	38	40
	BAY9X1408	208	1	5.77	27.7	42	48
	240			7.68	32	48	50
	BAY9X1410	208	1	7.21	34.7	57	60
	240			8.60	40	58	60
	BAY9X1411	208	1	7.93	38.1	NA	NA
	240			10.88	44	NA	NA
	BAY9X3411	208	3	7.93	24.2	38	40
	240			10.88	28	43	45
	BAY9X3415	208	3	11.54	39	46	50
	240			15.38	41.8	52	60
A	TRANE HEATER MODEL	VOLTS	PHASE	KW	HEATER CAPACITY (BTU/HOUR)	MIN. OVERCURRENT	MIN. OVERCURRENT
	CIRCUIT 1	208	1	7.21	34.7	51	60
	240			8.60	40	58	60
	BAY9X1415	208	1	4.33	20.8	28	30
	CIRCUIT 2	240		5.78	24	30	30
	CIRCUIT 1	208	1	7.21	34.7	51	60
	240			8.60	40	58	60
	BAY9X1419	208	1	7.20	34.7	48	48
	CIRCUIT 2	240		8.60	40	50	50
	CIRCUIT 1	208	1	7.21	34.7	51	60
	240			8.60	40	58	60
	BAY9X1421	208	1	8.65	41.8	52	60
	CIRCUIT 2	240		11.52	48	60	60
	CIRCUIT 1	208	1	7.21	34.7	51	60
	240			8.60	40	58	60
	BAY9X1425	208	1	8.65	41.8	52	60
	CIRCUIT 2	240		11.52	48	60	60
	CIRCUIT 3	208	1	3.80	17.3	22	28
	240			4.80	20	25	28

NOTE: Heater model number may have additional suffix digits
WHEN HEATER MODELS BAY9X1408, 1411A, 1414, 1418, 1419, 1421 AND 1425 ARE INSTALLED USE ONLY 240/208 VOLT SUPPLY CIRCUITS WITH 120 VOLTS TO GROUND (NOMINAL).

FOR FIELD CONNECTIONS USE COPPER CONDUCTORS ONLY.
USE ONLY APPROVED COMBINATIONS OF ELECTRIC HEATERS AND UNITS.
MINIMUM INSTALLATION CLEARANCE TO COMBUSTIBLE MATERIALS WHEN ELECTRIC HEATERS ARE INSTALLED: UNIT CABINET-0", PLENUM-1" AND FIRST 3' OF OUTLET DUCT-1". MAXIMUM OUTLET AIR TEMPERATURE WITH ELECTRIC HEATERS 184°F.

NOTICE: IF AIR HANDLER IS USED WITHOUT A FACTORY FURNISHED SUPPLEMENTARY ELECTRIC HEATER, AN ACCESSORY PLATE IS REQUIRED TO COVER THE OPEN HOLE IN THE AIRFLOW SYSTEM.

WARNING: WITH HEAT PUMP INSTALLATIONS, SOME HEATERS ARE POSITION SENSITIVE. SEE NOTES BELOW.
* 1 'MED' SPEED FOR UPFLOW AND HORIZONTAL RIGHT.



Furnace and Condenser 3.
(east wing)
See RFQ section 200.01 for
circuit breaker table.

AIR CONDITIONER MFR DATE 08/96

MOD. NO. TTA072C300A0 VOLTS 200/230

SERIAL NO. L355WDTFF PH 3 HZ 60

MINIMUM CIRCUIT AMPACITY 30.0 AMPS

OVERCURRENT PROTECTIVE DEVICE USA CANADA

RECOMMENDED FUSE / BREAKER (HACR) 50/45 50/45

MAX FUSE / BREAKER (HACR) 50/45 50/45

HCFC - 22 13 LBS. 00 OZ. OR 5.90 Kg(m)

BAYFCCY N/A REQUIRED INDOORS FOR RATED PERFORMANCE

THE TRANE COMPANY OUTDOOR USE
TYLER, TX 75711-9010 MADE IN USA

COMPR. MOT. 22.0 RLA 200/230 V 124 LRA
O.D. MOT. 2.20 FLA 200/230 V 1/3 HP
M.E.A. NO. 56-92E
DESIGN PSI - HIGH 300 LOW 300 F. ID. A78



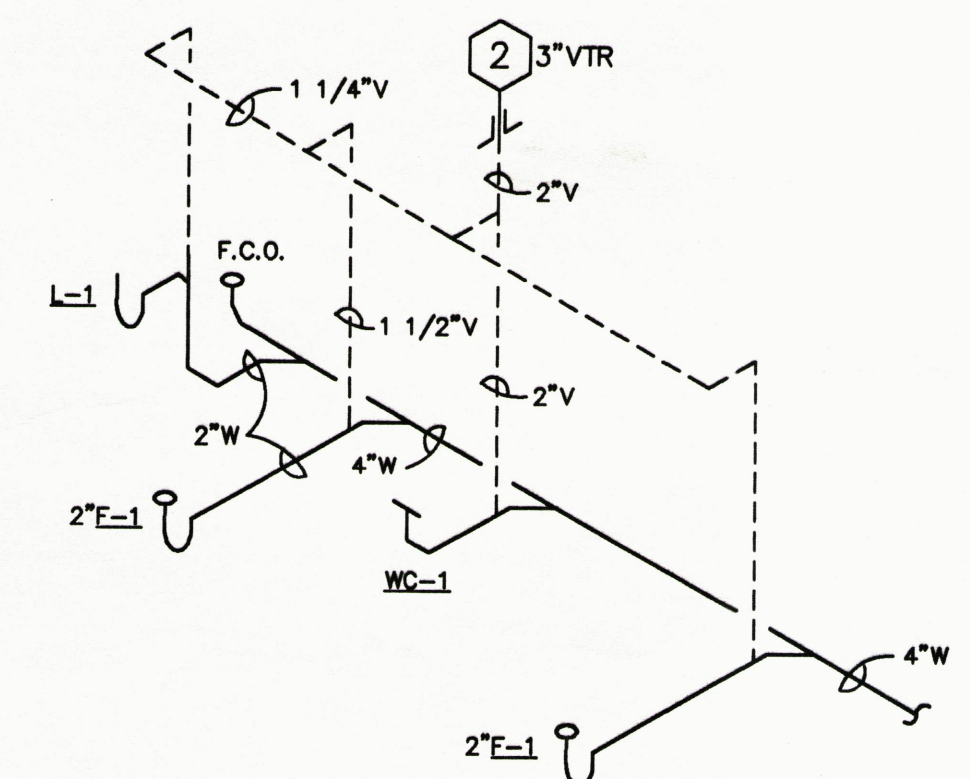
Zone damper control set up.

MECHANICAL PLAN NOTES:

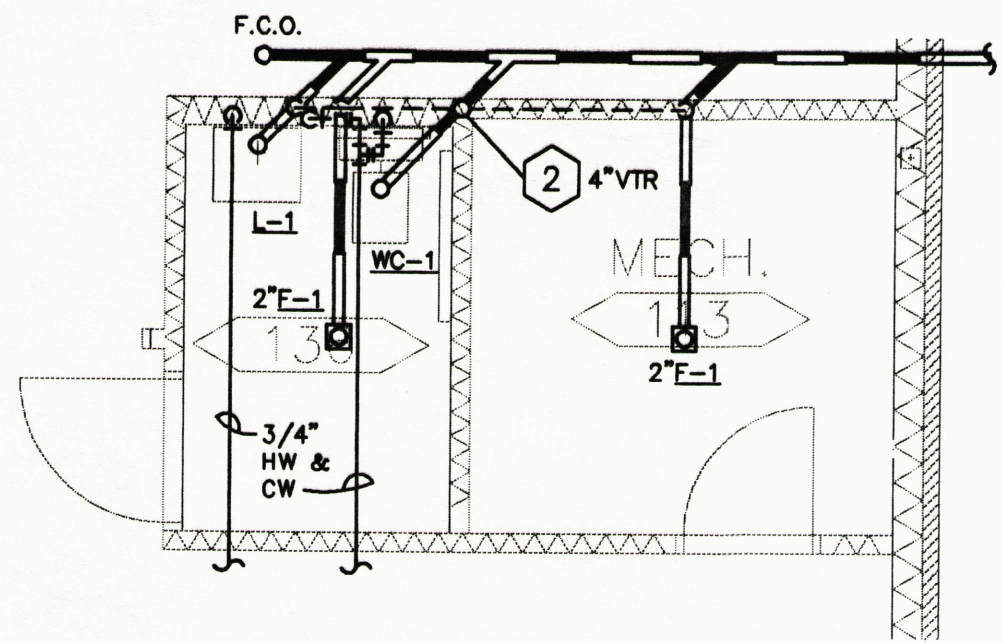
- 1 NO USED.
- 2 ROUTE CONDENSATE LINES FROM UNIT COILS TO THE NEAREST FLOOR DRAIN.
- 3 PROVIDE AND SIZE BY-PASS DUCT AND BAROMETRIC DAMPER AS PER MANUFACTURER'S RECOMMENDATIONS.
- 4 CONNECT EXISTING ROOF DRAIN TO NEW 4" ROOF DRAIN LINE.
- 5 ROUTE NEW PIPING FROM EXISTING PIPING ABOVE ACCESSIBLE CEILING. ROUTE AS SHOWN, PLACING PIPING ON WARM SIDE OF NEW WALL.

MECHANICAL NOTES:

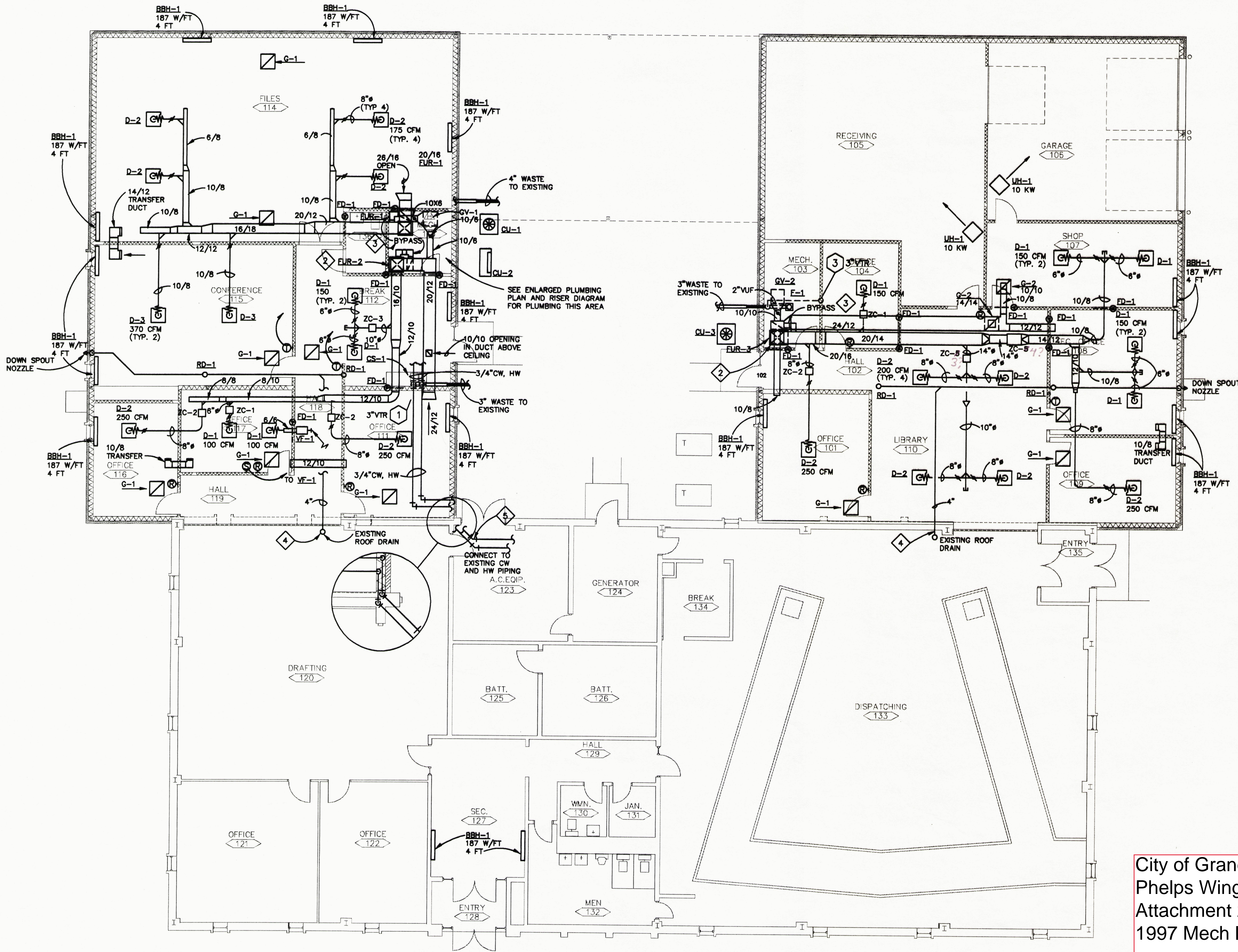
- 1. THE DATA GIVEN ON THE DRAWINGS IS EXACT AS COULD BE SECURED. THE CONTRACTOR SHALL OBTAIN EXACT LOCATION, MEASUREMENTS, LEVELS, ETC., AT THE SITE AND SHALL SATISFACTORILY ADAPT THE WORK TO THE ACTUAL CONDITIONS AT THE BUILDING.
- 2. ALL WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, LAWS, ACTS, AND ORDINANCES.
- 3. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH ALL ENGINEERING REQUIREMENTS, APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY AND THE MECHANICAL STRICTEST RECOMMENDATIONS FOR EQUIPMENT AND PRODUCT APPLICATION AND INSTALLATION.
- 4. EXACT LOCATION OF CEILING DIFFUSERS AND GRILLES SHALL BE COORDINATED WITH ELECTRICAL LIGHTING PLANS.
- 5. MECHANICAL CONTRACTOR IS COMPLETELY RESPONSIBLE FOR PROVIDING ALL PRESSURE AND/OR TEMPERATURE TAPS IN PIPING/DUCTS AS REQUIRED FOR PROPER BALANCING OF AIR AND WATER SYSTEMS.
- 6. PROVIDE MINIMUM OUTSIDE AIR DAMPER ON RETURN AIR PLENUM FOR FUR-1, FUR-2, & FUR-3.
- 7. PROVIDE ROOF DRAINS (RD-1) LOCATED AS SHOWN ON ARCHITECTURAL PLANS. COORDINATE DOWN SPOUT AND NOZZLE LOCATIONS WITH EXISTING SITE DRAINAGE.
- 8. CONTRACTOR SHALL VERIFY REFRIGERANT PIPING CONNECTIONS.



WASTE & VENT RISER DIAGRAM
NO SCALE

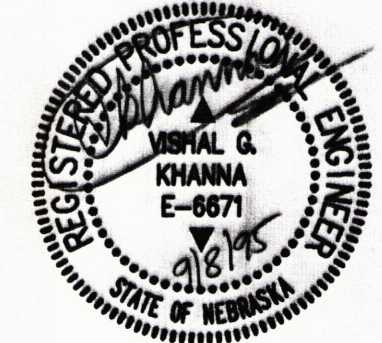


ENLARGED PLUMBING PLAN
SCALE: 1/4" = 1'-0"



PCC BUILDING - MECHANICAL PLAN
SCALE 1/8" = 1'-0"

City of Grand Island
Phelps Wing HVAC
Attachment 2.
1997 Mech layout M1.1



GRAND ISLAND ELECTRIC DEPARTMENT PROJECTS
ELECTRIC SERVICE CENTER AND GARAGE
West North Front Street, Grand Island, NE
PHELPS CONTROL CENTER
Cherry Street, Grand Island, NE

DATE 9-8-95
M1.1

MECHANICAL EQUIPMENT SCHEDULE

MARK: UH-1
FUNCTION: UNIT HEATER
LOCATION: STORAGE, ROOM 105 & GARAGE, ROOM 106
ELEC. INFO: 208 VOLT, 3 PHASE, 10 KW
CAPACITY: 34180 BTUH @ 10 KW, 500 CFM, 65 DEG F AIR TEMP RISE
REMARKS: PROVIDE BERKO MODEL HUH-1020-M HORIZONTAL/DOWNFLOW UNIT HEATER MODIFICATION OR APPROVED EQUAL. PROVIDE WITH AUTOMATIC FAN DELAY CONTROL, BUILT IN CONTACTOR, THERMAL CUTOFF, THERMAL CUTOFF, AND LINE VOLTAGE HALL THERMOSTAT, WALL MOUNTING BRACKET AND SUMMER WINTER FAN SWITCH.

MARK: UH-2
FUNCTION: UNIT HEATER
LOCATION: ESC GARAGE
ELEC. INFO: 208 VOLT, 3 PHASE, 15 KW
CAPACITY: 5145 BTUH @ 15 KW, 750 CFM, 65 DEG F AIR TEMP RISE
REMARKS: PROVIDE BERKO MODEL HUH-1520-M HORIZONTAL/DOWNFLOW UNIT HEATER DESIGNED FOR WALL MOUNT WITHOUT MODIFICATION OR APPROVED EQUAL. PROVIDE WITH AUTOMATIC FAN DELAY CONTROL, BUILT IN CONTACTOR, THERMAL CUTOFF, LINE VOLTAGE HALL THERMOSTAT, AND SUMMER WINTER FAN SWITCH.

MARK: FUR-1
FUNCTION: FURNACE
LOCATION: MECHANICAL ROOM 113, FCC BLDG.
ELEC. INFO: 208 VOLT, 1 PHASE, 3/4 HP FAN COIL UNIT, 208 VOLT, 3 PHASE, 15 KW ELECTRIC COIL.
CAPACITY: 1440 CFM @ 0.5 ESP WHICH INCLUDES DUCT, "A" COIL AND FILTERS ONLY; 65600 BTUH; 30800 BTU SENSIBLE; 40 DEG F COIL REFRIGERANT TEMPERATURE, 80 DEG F DB/67 DEG F WB EAT; 55 DEG F DB/54 DEG F WB LAT.
HEATING CAPACITY: 1440 CFM @ 0.5 ESP WHICH INCLUDES DUCT, "A" COIL AND FILTERS ONLY; 5180 BTU; 15 KW ELECTRIC HEATING COIL TO PROVIDE 21 DEG F TEMPERATURE RISE.
REMARKS: PROVIDE CARRIER MODEL FB4ANB020 DX FAN COIL UNIT OR APPROVED EQUAL. PROVIDE WITH 2 EXTRA SETS OF FILTERS. CONTRACTOR TO VERIFY SIZE OF PIPING CONNECTIONS. (A)(C)

MARK: FUR-2
FUNCTION: FURNACE
LOCATION: MECHANICAL ROOM 113, FCC BLDG.
ELEC. INFO: 120 VOLT, 1 PHASE, 1/3 HP FAN COIL UNIT, 208 VOLT, 1 PHASE, 10 KW ELECTRIC COIL.
CAPACITY: 1000 CFM @ 0.50 ESP WHICH INCLUDES DUCT, "A" COIL AND FILTERS ONLY; 35000 BTUH; 28100 BTU SENSIBLE; 40 DEG F COIL REFRIGERANT TEMPERATURE, 80 DEG F DB/67 DEG F WB EAT; 55 DEG F DB/54 DEG F WB LAT.
HEATING CAPACITY: 1000 CFM @ 0.50 ESP WHICH INCLUDES DUCT, "A" COIL AND FILTERS ONLY; 34100 BTU; 10 KW ELECTRIC HEATING COIL TO PROVIDE 21 DEG F TEMPERATURE RISE.
REMARKS: PROVIDE CARRIER MODEL FB4ANB026 DX FAN COIL UNIT OR APPROVED EQUAL. PROVIDE WITH 2 EXTRA SETS OF FILTERS. CONTRACTOR TO VERIFY SIZE OF PIPING CONNECTIONS. (A)(C)

MARK: FUR-3
FUNCTION: FURNACE
LOCATION: MECHANICAL ROOM 103, FCC BLDG.
ELEC. INFO: 208 VOLT, 1 PHASE, 3/4 HP FAN COIL UNIT, 208 VOLT, 3 PHASE, 15 KW ELECTRIC COIL.
CAPACITY: 1455 CFM @ 0.50 ESP WHICH INCLUDES DUCT, "A" COIL AND FILTERS ONLY; 62400 BTUH; 35100 BTU SENSIBLE; 40 DEG F COIL REFRIGERANT TEMPERATURE, 80 DEG F DB/67 DEG F WB EAT; 55 DEG F DB/54 DEG F WB LAT.
HEATING CAPACITY: 1455 CFM @ 0.50 ESP WHICH INCLUDES DUCT, "A" COIL AND FILTERS ONLY; 5180 BTU; 15 KW ELECTRIC HEATING COIL TO PROVIDE 21 F TEMPERATURE RISE.
REMARKS: PROVIDE CARRIER MODEL FB4ANB020 DX FAN COIL UNIT OR APPROVED EQUAL. PROVIDE WITH 2 EXTRA SETS OF FILTERS. CONTRACTOR TO VERIFY SIZE OF PIPING CONNECTIONS. (A)(C)

MARK: FUR-4
FUNCTION: FURNACE
LOCATION: MECHANICAL ROOM 102, ESC BLDG.
ELEC. INFO: 208 VOLT, 1 PHASE, 3/4 HP FAN COIL UNIT, 208 VOLT, 3 PHASE, 15 KW ELECTRIC COIL.
CAPACITY: 1400 CFM @ 0.60 ESP WHICH INCLUDES DUCT, "A" COIL AND FILTERS ONLY; 52100 BTUH; 36800 BTU SENSIBLE; 40 DEG F COIL REFRIGERANT TEMPERATURE, 80 DEG F DB/67 DEG F WB EAT; 55 DEG F DB/54 DEG F WB LAT.
HEATING CAPACITY: 1400 CFM @ 0.60 ESP WHICH INCLUDES DUCT, "A" COIL AND FILTERS ONLY; 5180 BTU; 15 KW ELECTRIC HEATING COIL TO PROVIDE 21 F TEMPERATURE RISE.
REMARKS: PROVIDE CARRIER MODEL FB4ANB020 DX FAN COIL UNIT OR APPROVED EQUAL. PROVIDE WITH 2 EXTRA SETS OF FILTERS. CONTRACTOR TO VERIFY SIZE OF PIPING CONNECTIONS. (A)(C)

MARK: FUR-5
FUNCTION: FURNACE
LOCATION: MECHANICAL ROOM 102, ESC BLDG.
ELEC. INFO: 120 VOLT, 1 PHASE, 1/3 HP FAN COIL UNIT, 208 VOLT, 1 PHASE, 10 KW ELECTRIC COIL.
CAPACITY: 1000 CFM @ 0.50 ESP WHICH INCLUDES DUCT, "A" COIL AND FILTERS ONLY; 35000 BTUH; 28100 BTU SENSIBLE; 40 DEG F COIL REFRIGERANT TEMPERATURE, 80 DEG F DB/67 DEG F WB EAT; 55 DEG F DB/54 DEG F WB LAT.
HEATING CAPACITY: 1000 CFM @ 0.50 ESP WHICH INCLUDES DUCT, "A" COIL AND FILTERS ONLY; 34100 BTU; 10 KW ELECTRIC HEATING COIL TO PROVIDE 21 DEG F TEMPERATURE RISE.
REMARKS: PROVIDE CARRIER MODEL FB4ANB026 DX FAN COIL UNIT OR APPROVED EQUAL. PROVIDE WITH 2 EXTRA SETS OF FILTERS. CONTRACTOR TO VERIFY SIZE OF PIPING CONNECTIONS. (A)(C)

MARK: CU-1
FUNCTION: CONDENSING UNIT
LOCATION: SEE PLANS
ELEC. INFO: 208 VOLT, 3 PHASE, 25.6 MCA.
CAPACITY: 65.3 MEB @ 105 DEG F AMBIENT AND 40 DEG F SST.
REMARKS: PROVIDE CARRIER MODEL 38AK007 AIR COOLED CONDENSING UNIT OR APPROVED EQUAL. CONTRACTOR SHALL VERIFY REFRIGERANT PIPING CONNECTIONS.

MARK: CU-2
FUNCTION: CONDENSING UNIT
LOCATION: SEE PLANS
ELEC. INFO: 208 VOLT, 3 PHASE, 15.5 MCA.
CAPACITY: 1000 CFM.
REMARKS: PROVIDE CARRIER MODEL 38HDA036-50 AIR COOLED CONDENSING UNIT OR APPROVED EQUAL. CONTRACTOR SHALL VERIFY REFRIGERANT PIPING CONNECTIONS.

MARK: CU-3
FUNCTION: CONDENSING UNIT
LOCATION: SEE PLANS
ELEC. INFO: 208 VOLT, 3 PHASE, 25.6 MCA.
CAPACITY: 65.3 MEB @ 105 DEG F AMBIENT AND 40 DEG F SST.
REMARKS: PROVIDE CARRIER MODEL 38AK007 AIR COOLED CONDENSING UNIT OR APPROVED EQUAL. CONTRACTOR SHALL VERIFY REFRIGERANT PIPING CONNECTIONS.

MARK: CU-4
FUNCTION: CONDENSING UNIT
LOCATION: SEE PLANS
ELEC. INFO: 208 VOLT, 3 PHASE, 23.0 MCA.
CAPACITY: 65.3 MEB @ 105 DEG F AMBIENT AND 40 DEG F SST.
REMARKS: PROVIDE CARRIER MODEL 38CK060 AIR COOLED CONDENSING UNIT OR APPROVED EQUAL. CONTRACTOR SHALL VERIFY REFRIGERANT PIPING CONNECTIONS.

MARK: CU-5
FUNCTION: CONDENSING UNIT
LOCATION: SEE PLANS
ELEC. INFO: 208 VOLT, 3 PHASE, 15.5 MCA.
CAPACITY: 65.3 MEB @ 105 DEG F AMBIENT AND EVAPORATOR FLOW OF 1000 CFM.
REMARKS: PROVIDE CARRIER MODEL 38HDA036-50 AIR COOLED CONDENSING UNIT OR APPROVED EQUAL. CONTRACTOR SHALL VERIFY REFRIGERANT PIPING CONNECTIONS.

MARK: BBH-1
FUNCTION: ELECTRICAL BASEBOARD HEATER
LOCATION: SEE PLANS
ELEC. INFO: 208 VOLT, 1 PHASE, 181 WATT.
REMARKS: PROVIDE HEAVY DUTY COMMERCIAL BASEBOARD HEATER EQUAL TO THE MARKET BASEBOARD HEATER WITH INTERGRAL T-STAT, GRILLE AND MEANS OF DISCONNECT.

MARK: VF-1
FUNCTION: VENTILATION FAN
LOCATION: OFFICE 117
ELEC. INFO: 120 VOLT, 1/6, 1/80 HP.
REMARKS: PROVIDE GREENECK MODEL 5G-60-6 CENTRIFUGAL BELT DRIVEN INLINE FAN OR APPROVED EQUAL. PROVIDE WITH A CAPACITY OF 100 CFM @ 0.1 SP.

MARK: GV-1
FUNCTION: GRAVITY VENTILATOR
LOCATION: MECHANICAL ROOM 113 (ROOF)
REMARKS: PROVIDE GREENECK MODEL 6RS-14 GRAVITY VENTILATOR OR APPROVED EQUAL. PROVIDE WITH BIRDSCREEN AND PRE-FABRICATED ROOF CURB. 630 CFM @ 0.04 SP.

MARK: GV-2
FUNCTION: GRAVITY VENTILATOR
LOCATION: MECHANICAL ROOM 103 (ROOF)
REMARKS: PROVIDE GREENECK MODEL 6RS-10 GRAVITY VENTILATOR OR APPROVED EQUAL. PROVIDE WITH BIRDSCREEN AND PRE-FABRICATED ROOF CURB. 310 CFM @ 0.04 SP.

MARK: EF-1
FUNCTION: EXHAUST FAN
LOCATION: ROOF
ELEC. INFO: 120 VOLT, 1/4 HP.
REMARKS: PROVIDE GREENECK MODEL 6B-20 CENTRIFUGAL BELT DRIVEN ROOF EXHAUSTER OR APPROVED EQUAL. PROVIDE A CAPACITY OF 140 CFM AT 0.625 SP, A BACKGROUND DAMPER, BIRDSCREEN, PRE-FABRICATED ROOF CURB, AN 8" Ø 6-3, AND A MANUAL DAMPER IN EXHAUST DUCT.

- NOTES:
 (A) SET MIN. O.A. DAMPER AT 20% O.A.
 (B) PROVIDE COMPLETE & OPERABLE COMFORT ZONE SYSTEM INCLUDING (BUT NOT LIMITED TO) BAROMETRIC BY-PASS AND 4 ZONE CONTROLLER.
 (C) CONTRACTOR TO PROVIDE BASE FOR SUPPORT OF UNIT WHICH ALLOWS BOTTOM RETURN AIR TO UNIT.

PLUMBING FIXTURE & EQUIPMENT CONNECTION SCHEDULE

*ITEMS INDICATED THIS ARE FURNISHED BY AND INSTALLED BY OTHERS--PLUMBING ROUGH-IN AND CONNECTIONS BY MECHANICAL CONTRACTOR--ALL OTHER ITEMS FURNISHED, INSTALLED & CONNECTED BY MECHANICAL CONTRACTOR.

MARK	FUNCTION	MANUFACTURER & MODEL	WASTE	VENT	HW	CW	TW	GAS
CS-1	COUNTER SINK	ELKAY "LUSTERTONE" DLR-3322-10 DOUBLE COMPARTMENT, SELF-RIM STAINLESS STEEL, COUNTER SINK (W/3 HOLES) FOR LK-232-S-BH-5 KITCHEN FAUCET, 5" BLADE HANDLES, 9" HIGH SWING SPOUT, LK-35 STRAINER-STOPPER, 1 1/2" TAILPIECE, P-TRAP, SUPPLIES AND STOPS.	1-1/2"	1-1/2"	1/2"	1/2"		
F-1	FLOOR DRAIN	WADE W-1100-TY STD 5-6 CAST IRON	2"	1-1/2"				
HB-1	HOSE BIBB	WOODFORD MODEL 24P WITH KEY, INSIDE COMMERCIAL VACUUM BREAKER-BACKFLOW PREVENTER "NIDEL" MODEL 34 HF 3/4" HOSE THREAD					3/4"	
L-1	LAVATORY ADA ACCESSIBLE	AMERICAN STANDARD "AQUALYN" 0478.028, WHITE VITREOUS CHINA LAVATORY FOR COUNTERTOP SELF-RIM, AMERICAN STANDARD 2385.130 RELIANT CERAMIC SINGLE-CONTROL CENTERSET, POL. CHROME, VANDAL-RESISTANT FAUCET, GRID ASSEMBLY, 0.5 GPM FLOW DEVICE, 1-1/4" P-TRAP, 3/8" SUPPLY TUBES, ANGLE STOPS WITH METAL STEM ASSEMBLY, INSULATED WASTE AND HW WITH TRUEBRO OR EQUAL INSULATION PACKAGE, MIN. 29" AFF CLEARANCE TO SINK	1-1/4"	1-1/4"	1/2"	1/2"		
RD-1	ROOF DRAIN	WADE W-3010-TY CAST IRON ROOF WITH FLANGE FLASHING RING, C.I. MUSHROOM DOME, UNDER DECK CLAMP	3"					
WC-1	WATER CLOSET TANK TYPE FLOOR MOUNTED ADA	AMERICAN STANDARD, 2168.100 VITREOUS CHINA TANK CLOSET CHROME FLUSH, COMPLETE WITH FLOAT, SUPPLY AND STOP, 18" HIGH BOWL, WHITE OPEN FRONT SEAT	4"	2"		1/2"		

MECHANICAL SYMBOLS LEGEND

+	PIPING TEE	⊞	FLEXIBLE CONNECTION	⊞	OPPOSED BLADE DAMPER
⊞	PIPING ELBOW DOWN	⊞	AIR GAP	⊞	PARALLEL BLADE DAMPER
⊞	PIPING ELBOW UP	⊞	FLOOR DRAIN	⊞	DUCT FLAT ON BOTTOM
⊞	PIPING TEE UP	⊞	VALVE IN ELEVATION	⊞	RETURN AIR DUCT UP/DOWN
⊞	PIPING ELBOW	⊞	PIPE TAP	⊞	TURNING VANES
⊞	PIPING TEE DOWN	⊞	INCREASER	⊞	SQUARE GRILLE DUCT - FIG = MARK, SIZE, CFM
⊞	CHECK VALVE	⊞	REDUCER	⊞	RECTANGULAR DUCT (1ST FIG. SIDE DOWN)
⊞	SHUT-OFF VALVE (GATE, BALL, BUTTERFLY)	⊞	NEW TO EXISTING PIPING CONNECTION	⊞	ROUND DUCT (1ST FIG. = DIAMETER)
⊞	WATER FLOW DIRECTION	⊞	PIPE OR ROUND DUCT RISER	⊞	FLEXIBLE DUCT CONNECTION
⊞	NOMINAL PIPE SIZE	⊞	F.C.O. FLOOR CLEANOUT		
⊞	DOMESTIC HOT WATER	⊞	W.C.O. WALL CLEANOUT		
⊞	DOMESTIC HOT WATER CIRC.	⊞	V.T.R. VENT THRU ROOF		
⊞	NATURAL GAS	⊞	E.A. EXHAUST AIR		
⊞	POTABLE COLD WATER	⊞	MANUAL BALANCING DAMPER		

DIFFUSER SCHEDULE

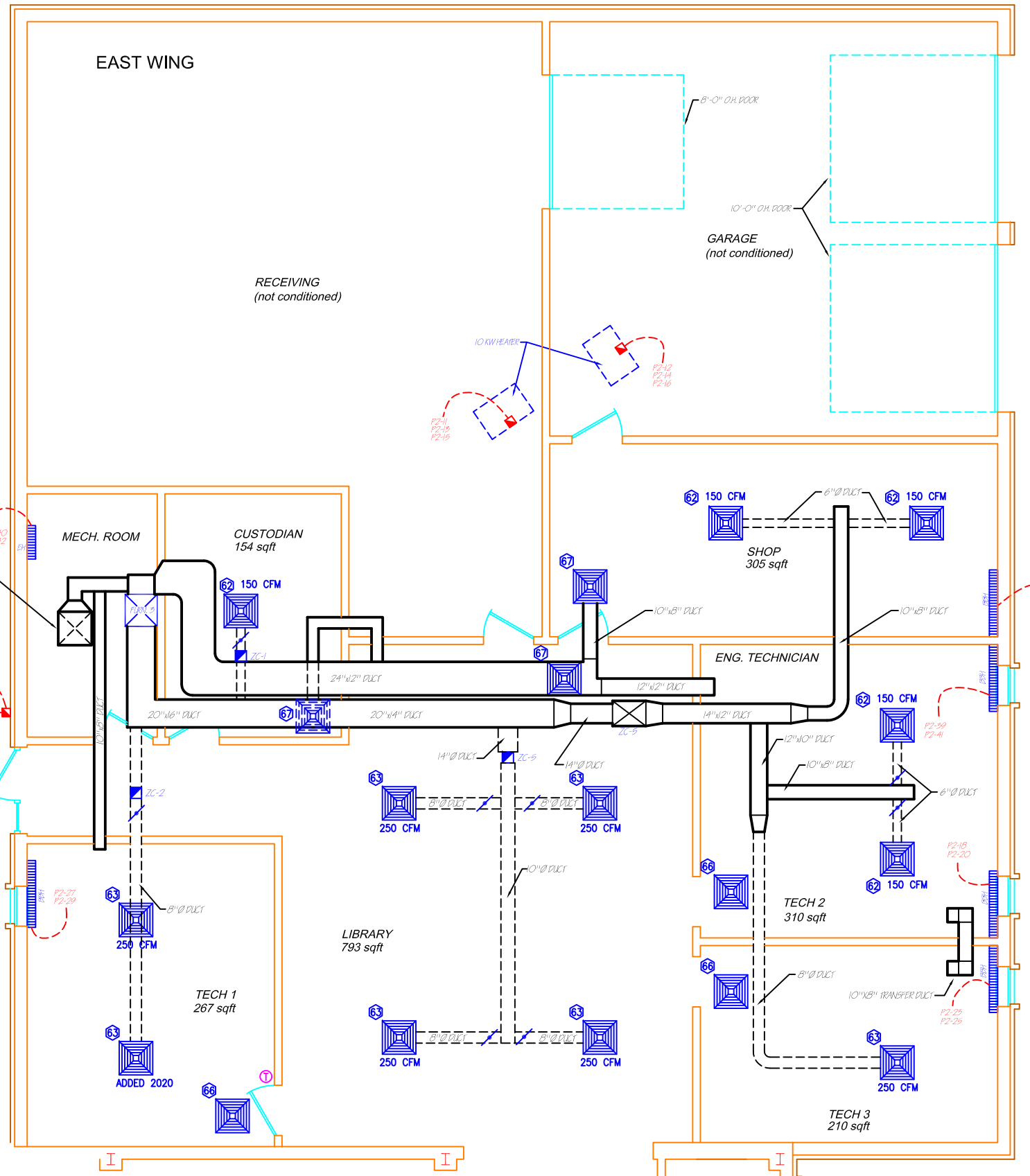
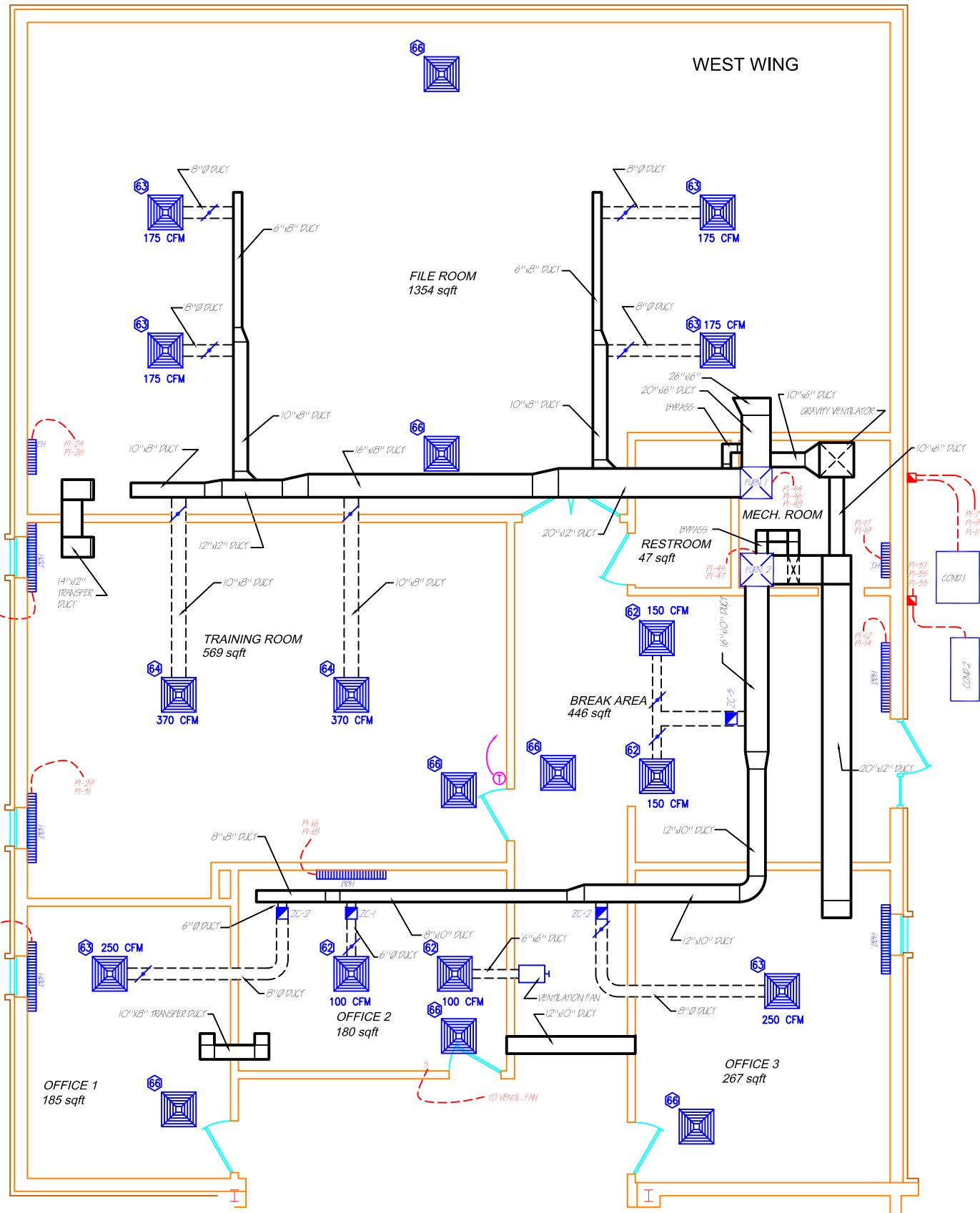
DRAWING MARK	CAPACITY	MODULE SIZE	NECK SIZE	MANUF & MODEL
D-1	SEE PLANS	24" X 24"	6"	TITUS PAS
D-2	SEE PLANS	24" X 24"	8"	TITUS PAS
D-3	SEE PLANS	24" X 24"	10"	TITUS PAS
D-4	SEE PLANS	24" X 24"	12"	TITUS PAS
6-1	SEE PLANS	24" X 24"		TITUS PXP
6-2	SEE PLANS	24" X 24"	SEE PLANS	TITUS PAR
6-3	SEE PLANS	SEE PLANS	SEE PLANS	TITUS 29RL

ZONE CONTROL SCHEDULE

MARK	MANUF	MODEL ORDER #	INLET/OUTLET INCHES	CAPACITIES CFM	FFM
ZC-1	CARRIER	420384	6	160	800
ZC-2	CARRIER	420941	8	280	800
ZC-3	CARRIER	420942	10	440	800
ZC-4	CARRIER	420943	12	630	800
ZC-5	CARRIER	420944	14	855	800

City of Grand Island
Phelps Wing HVAC
Attachment 3.
1997 Mech details M1.3





ROOM SQUARE FOOTAGE PER UNIT

FURN. 1		FURN. 2		FURN. 3	
ROOM	SQFT	ROOM	SQFT	ROOM	SQFT
FILE	1354	RESTROOM	47	CUSTODIAN	154
TRAINING	569	OFFICE 1	185	SHOP	305
TOTAL	1923	OFFICE 2	180	TECH 1	267
		OFFICE 3	267	TECH 2	310
		BREAK	446	TECH 3	210
		TOTAL	1125	LIBRARY	793
				TOTAL	2039

ZONE CONTROL DAMPER SCHEDULE *

NO.	INLET Ø	QUANTITY
ZC-1	6"	2
ZC-2	8"	3
ZC-3	10"	1
ZC-4	12"	0
ZC-5	14"	2

*(FIELD VERIFY)

LOAD INFORMATION
 Building walls CMU plus brick with few windows. 1 person per office and tech room. File Room and Library not occupied. Training Room used sparingly. Each wing open to conditioned space of main building.

City of Grand Island
 Phelps Wing HVAC
 Attachment 4. Layout 11x17