



Purchasing Division

Invitation for Bid

IFB-5058-22-KH

DAYCARE CENTER HVAC REPLACEMENT

Responses Due:

April 22, 2022 prior to 3:00 P.M.

Accepting Electronic Responses Only
Responses Only Submitted Through the Rocky Mountain E-Purchasing
System (RMEPS)

<https://www.bidnetdirect.com/colorado>

(Purchasing Representative does not have access or control of the vendor side of RMEPS. If website or other problems arise during response submission, vendor **MUST** contact RMEPS to resolve issue prior to the response deadline. 800-835-4603)

NOTE: All City solicitation openings will continue to be held virtually.

Purchasing Representative:

Kassy Hackett., Buyer

kassyh@gjcity.org

970-244-1546

This document has been developed specifically to solicit competitive responses for this solicitation, and may not be the same as previous City of Grand Junction solicitations. All vendors are urged to thoroughly review this solicitation prior to responding. Submittal by **FAX, EMAIL or HARD COPY IS NOT ACCEPTABLE** for this solicitation.

Invitation for Bids

Table of Contents

Section 1	Instruction to Bidders
Section 2	General Contract Conditions
Section 3	Statement of Work
Section 4	Contractor's Bid Form
	Price Proposal/Bid Schedule Form
	Attachments

1. INSTRUCTIONS TO BIDDERS

NOTE: It is the Contractor's responsibility to read and review all solicitation documentation in its entirety, and to ensure that they have a clear and complete understanding of not only the scope, specifications, project requirements, etc., but also all other requirements, instructions, rules, regulations, laws, conditions, statements, procurement policies, etc. that are associated with the solicitation process and project/services being solicited.

- 1.1. **Purpose:** The City of Grand Junction is soliciting competitive bids from qualified and interested companies for all labor, equipment, and materials required to install a new VRF HVAC system in the Daycare building. All dimensions and scope of work should be verified by Contractors prior to submission of bids.

IFB Questions:

Kassy Hackett, Buyer
kassyh@gjcity.org

The City would like to remind all Contractors, Sub-Contractors, Vendors, Suppliers, Manufacturers, Service Providers, etc. that (with the exception of Pre-Bid or Site Visit Meetings) all questions, inquiries, comments, or communication pertaining to any formal solicitation (whether process, specifications, scope, etc.) must be directed (in writing) to the Purchasing Agent assigned to the project or Purchasing Division. Direct communication with the City assigned Project Managers/Engineers is not appropriate for public procurement, and may result in disqualification.

- 1.2. **Non-Mandatory Site Visit:** Prospective bidders are encouraged to attend a non-mandatory site visit on April 8, 2022 at 10:00am. Meeting location shall be at 545 25 ½ Road, Grand Junction, CO. The purpose of this visit will be to inspect and to clarify the contents of this Invitation for Bids (IFB).
- 1.3. **The Owner:** The Owner is the City of Grand Junction, Colorado and is referred to throughout this Solicitation. The term Owner means the Owner or his authorized representative.
- 1.4. **Procurement Process:** Procurement processes shall be governed by the most current version of the City of Grand Junction [Purchasing Policy and Procedure Manual](#).
- 1.5. **Submission:** Each proposal shall be submitted in electronic format only, and only through the Rocky Mountain E-Purchasing (BidNet Colorado) website, www.bidnetdirect.com/colorado. The uploaded response shall be a single PDF document with all required information included. This site offers both "free" and "paying" registration options that allow for full access of the Owner's documents and for electronic submission of proposals. (Note: "free" registration may take up to 24 hours to process. Please Plan accordingly.) Please view our "Electronic Vendor Registration Guide" at <http://www.gjcity.org/business-and-economic-development/bids/> for details. (Purchasing Representative does not have access or control of the vendor side of

RMEPS. If website or other problems arise during response submission, vendor **MUST** contact RMEPS to resolve issue prior to the response deadline. **800-835-4603**)

Solicitation Opening, Daycare Center HVAC Replacement IFB-5058-22-KH
Fri, Apr 22, 2022 3:00 PM - 3:30 PM (MDT)

Please join my meeting from your computer, tablet or smartphone.

<https://meet.goto.com/398270869>

You can also dial in using your phone.
(For supported devices, tap a one-touch number below to join instantly.)

United States: +1 (872) 240-3412
- One-touch: tel:+18722403412,,398270869#

Access Code: 398-270-869

Join from a video-conferencing room or system.
Dial in or type: 67.217.95.2 or inroomlink.goto.com
Meeting ID: 398 270 869
Or dial directly: 398270869@67.217.95.2 or 67.217.95.2##398270869

Get the app now and be ready when your first meeting starts:
<https://meet.goto.com/install>

- 1.6. **Modification and Withdrawal of Bids Before Opening.** Bids may be modified or withdrawn by an appropriate document stating such, duly executed and submitted to the place where Bids are to be submitted at any time prior to Bid Opening.
- 1.7. **Printed Form for Price Bid:** All Price Bids must be made upon the Price Bid Schedule attached, and should give the amounts both in words and in figures, and must be signed and acknowledged by the bidder.

The Offeror shall specify a unit price in figures for each pay item for which a quantity is given and shall provide the products (in numbers) of the respective unit prices and quantities in the Extended Amount column. The total Bid price shall be equal to the sum of all extended amount prices. When an item in the Price Bid Schedule provides a choice to be made by the Offeror, Offeror's choice shall be indicated in accordance with the specifications for that particular item and thereafter no further choice shall be permitted.

Where the unit of a pay item is lump sum, the lump sum amount shall be shown in the "extended amount" column and included in the summation of the total Bid.

All blank spaces in the Price Bid Schedule must be properly filled out.

Bids by corporations must be executed in the corporate name by the president or vice president or other corporate office accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown below the signature.

Bids by partnerships must be executed in the partnership name and signed by a partner whose title must appear under the signature and the official address of the partnership must be shown below the signature.

All names must be typed or printed below the signature.

The Offeror's Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Contractor's Bid Form.

The contact information to which communications regarding the Bid are to be directed must be shown.

- 1.8. Exclusions:** No oral, telephonic, emailed, or facsimile bid will be considered
- 1.9. Solicitation documents:** The complete IFB and bidder's response compose the Solicitation documents. Copies of bid documents can be obtained from the City Purchasing website, <https://www.gjcity.org/501/Purchasing-Bids>.
- 1.10. Examination of Specifications:** Bidders shall thoroughly examine and be familiar with the project Statement of Work. The failure or omission of any Offeror to receive or examine any form, addendum, or other document shall in no way relieve any Offeror from any obligation with respect to his bid. The submission of a bid shall be taken as evidence of compliance with this section. Prior to submitting a bid, each Offeror shall, at a minimum:
 - a. Examine the solicitation documents thoroughly;
 - b. Visit the site to familiarize themselves with local conditions that may in any manner affect cost, progress, or performance of the Work;
 - c. Become familiar with federal, state, and local laws, ordinances, rules, and regulations that may in any manner affect cost, progress or performance of the Work;
 - d. Study and carefully correlate Bidder's observations with the solicitation documents, and;
 - e. Notify the Purchasing Agent of all conflicts, errors, ambiguities or discrepancies in or among the solicitation documents within the designated inquiry period.

By submission of a Bid, the Offeror shall be conclusively presumed to represent that the Offeror has complied with every requirement of these Instructions to Bidders, that the solicitation documents are not ambiguous and are sufficient in scope and detail to

indicate and convey understanding of all terms and conditions for performance of the Work.

- 1.11. Questions Regarding Statement of Work:** Any information relative to interpretation of Scope of Work or specifications shall be requested of the Purchasing Representative, in writing, in ample time, prior to the inquiry deadline.
- 1.12. Addenda & Interpretations:** If it becomes necessary to revise any part of this solicitation, a written addendum will be posted electronically on the City's website at <http://www.gjcity.org/business-and-economic-development/bids/>. The Owner is not bound by any oral representations, clarifications, or changes made in the written specifications by Owner, unless such clarification or change is provided in written addendum form from the City Purchasing Representative.
- 1.13. Taxes:** The Owner is exempt from State retail and Federal tax. The bid price must be net, exclusive of taxes.
- 1.14. Sales and Use Taxes:** The Contractor and all Subcontractors are required to obtain exemption certificates from the Colorado Department of Revenue for sales and use taxes. Bids shall reflect this method of accounting for sales and use taxes on materials, fixtures and equipment.
- 1.15. Offers Binding 60 Days:** Unless additional time is required by the Owner, or otherwise specified, all formal offers submitted shall be binding for sixty (60) calendar days following opening date, unless the Bidder, upon request of the Purchasing Representative, agrees to an extension.
- 1.16. Exceptions and Substitutions:** Bidders taking exception to the specifications and/or scope of work shall do so at their own risk. The Owner reserves the right to accept or reject any or all substitutions or alternatives. When offering substitutions and/or alternatives, Bidder must state these exceptions in the section pertaining to that area. Exception/substitution, if accepted, must meet or exceed the stated intent and/or specifications and/or scope of work. The absence of such a list shall indicate that the Bidder has not taken exceptions, and if awarded a contract, shall hold the Bidder responsible to perform in strict accordance with the specifications and/or scope of work contained herein.
- 1.17. Collusion Clause:** Each bidder by submitting a bid certifies that it is not party to any collusive action or any action that may be in violation of the Sherman Antitrust Act. Any and all bids shall be rejected if there is evidence or reason for believing that collusion exists among bidders. The Owner may, or may not, accept future bids for the same services or commodities from participants in such collusion.
- 1.18. Disqualification of Bidders:** A Bid will not be accepted from, nor shall a Contract be awarded to, any person, firm, or corporation that is in arrears to the Owner, upon debt or contract, or that has defaulted, as surety or otherwise, upon any obligation to the Owner, or that is deemed irresponsible or unreliable.

Bidders may be required to submit satisfactory evidence that they are responsible, have a practical knowledge of the project bid upon and that they have the necessary financial and other resources to complete the proposed Work.

Either of the following reasons, without limitation, shall be considered sufficient to disqualify a Bidder and Bid:

- a. More than one Bid is submitted for the same Work from an individual, firm, or corporation under the same or different name; and
- b. Evidence of collusion among Bidders. Any participant in such collusion shall not receive recognition as a Bidder for any future work of the Owner until such participant has been reinstated as a qualified bidder.

1.19. Public Disclosure Record: If the bidder has knowledge of their employee(s) or sub-contractors having an immediate family relationship with a City employee or elected official, the bidder must provide the Purchasing Representative with the name(s) of these individuals. These individuals are required to file an acceptable "Public Disclosure Record", a statement of financial interest, before conducting business with the City.

2. GENERAL CONTRACT CONDITIONS

2.1. The Contract: This Invitation for Bid, submitted documents, and any negotiations, when properly accepted by the City, shall constitute a contract equally binding between the City and Contractor. The contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral. The contract may be amended or modified with Change Orders, Field Orders, or Addendums.

2.2. The Work: The term Work includes all labor necessary to produce the construction required by the Solicitation documents, and all materials and equipment incorporated or to be incorporated in such construction.

2.3. Execution, Correlation, Intent, and Interpretations: The Solicitation documents shall be signed by the Owner (City) and Contractor. City will provide the contract. By executing the contract, the Contractor represents that he/she has visited the site, familiarized himself with the local conditions under which the Work is to be performed, and correlated his observations with the requirements of the Solicitation documents. The Solicitation documents are complementary, and what is required by any one, shall be as binding as if required by all. The intention of the documents is to include all labor, materials, equipment and other items necessary for the proper execution and completion of the scope of work as defined in the technical specifications and drawings contained herein. All drawings, specifications and copies furnished by the City are, and shall remain, City property. They are not to be used on any other project, and with the exception of one contract set for each party to the contract, are to be returned to the owner on request at the completion of the work.

- 2.4. The Owner:** The Owner shall, at all times, have access to the work wherever it is in preparation and progress. The Contractor shall provide facilities for such access. The Owner will make periodic visits to the site to familiarize himself generally with the progress and quality of work and to determine, in general, if the work is proceeding in accordance with the solicitation documents. Based on such observations and the Contractor's Application for Payment, the Owner will determine the amounts owing to the Contractor and will issue Certificates for Payment in such amounts, as provided in the contract. The Owner will have authority to reject work which does not conform to the Solicitation documents. Whenever, in his reasonable opinion, he considers it necessary or advisable to insure the proper implementation of the intent of the Solicitation documents, he will have authority to require the Contractor to stop the work or any portion, or to require special inspection or testing of the work, whether or not such work can be then be fabricated, installed, or completed. The Owner will not be responsible for the acts or omissions of the Contractor, and sub-Contractor, or any of their agents or employees, or any other persons performing any of the work.
- 2.5. Contractor:** The Contractor is the person or organization identified as such in the Agreement and is referred to throughout the Solicitation documents. The term Contractor means the Contractor or his authorized representative. The Contractor shall carefully study and compare the General Contract Conditions of the Contract, Specification and Drawings, Scope of Work, Addenda and Modifications and shall at once report to the Owner any error, inconsistency or omission he may discover. Contractor shall not be liable to the Owner for any damage resulting from such errors, inconsistencies or omissions. The Contractor shall not commence work without clarifying Drawings, Specifications, or Interpretations.
- 2.6. Sub-Contractors:** A sub-contractor is a person or organization who has a direct contract with the Contractor to perform any of the work at the site. The term sub-contractor is referred to throughout the solicitation documents and means a sub-contractor or his authorized representative.
- 2.7. Award of Sub-Contractors & Other Contracts for Portions of the Work:** Contractor shall submit with their bid response to the Owner, in writing for acceptance, a list of the names of the sub-contractors or other persons or organizations proposed for such portions of the work as may be designated in the proposal requirements, or, if none is so designated, the names of the sub-contractors proposed for the principal portions of the work. Prior to the award of the contract, the Owner shall notify the successful Contractor in writing if, after due investigation, has reasonable objection to any person or organization on such list. If, prior to the award of the contract, the Owner has a reasonable and substantial objection to any person or organization on such list, and refuses in writing to accept such person or organization, the successful Contractor may, prior to the award, withdraw their proposal without forfeiture of proposal security. If the successful Contractor submits an acceptable substitute with an increase in the proposed price to cover the difference in cost occasioned by the substitution, the Owner may, at their discretion, accept the increased proposal or may disqualify the Contractor. If, after the award, the Owner refuses to accept any person or organization on such list, the Contractor shall submit an acceptable substitute and the contract sum shall be increased or decreased by the difference in cost occasioned by such substitution and an appropriate Change Order shall be issued. However, no increase in the contract

sum shall be allowed for any such substitution unless the Contractor has acted promptly and responsively in submitting a name with respect thereto prior to the award.

- 2.8. Quantities of Work and Unit Price:** Materials or quantities stated as unit price items in the Bid are supplied only to give an indication of the general scope of the Work, and are as such, estimates only. The Owner does not expressly or by implication agree that the actual amount of Work or material will correspond therewith, and reserves the right after award to increase or decrease the quantity of any unit item of the Work without a change in the unit price except as set forth in the solicitation documents. The City also reserves the right to make changes in the Work (including the right to delete any bid item in its entirety or add additional bid items) as set forth in in the solicitation documents.
- 2.9. Substitutions:** The materials, products and equipment described in the *Solicitation Documents* shall be regarded as establishing a standard of required performance, function, dimension, appearance, or quality to be met by any proposed substitution. No substitution will be considered prior to receipt of Bids unless the Offeror submits a written request for approval to the City Purchasing Division at least ten (10) days prior to the date for receipt of Bids. Such requests for approval shall include the name of the material or equipment for which substitution is sought and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for evaluation, including samples if requested. The Offeror shall set forth changes in other materials, equipment, or other portions of the Work including changes of the work of other contracts, which incorporation of the proposed substitution would require to be included. The Owner's decision of approval or disapproval of a proposed substitution shall be final. If the Owner approves a proposed substitution before receipt of Bids, such approval will be set forth in an Addendum. Offerors shall not rely upon approvals made in any other manner.
- 2.10. Supervision and Construction Procedures:** The Contractor shall supervise and direct the work, using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the contract.
- 2.11. Warranty:** The Contractor warrants to the Owner that all materials and equipment furnished under this contract will be new unless otherwise specified, and that all work will be of good quality, free from faults and defects and in conformance with the Solicitation documents. All work not so conforming to these standards may be considered defective. If required by Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. If within ten (10) days after written notice to the Contractor requesting such repairs or replacement, the Contractor should neglect to make or undertake with due diligence to the same, the City may make such repairs or replacements. All indirect and direct costs of such correction or removal or replacement shall be at the Contractor's expense. The Contractor will also bear the expenses of making good all work of others destroyed or damaged by the correction, removal or replacement of his defective work.
- 2.12. Permits, Fees, & Notices:** The Contractor shall secure and pay for all permits, governmental fees and licenses necessary for the proper execution and completion of

the work. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the work. If the Contractor observes that any of the Solicitation documents are at variance in any respect, he shall promptly notify the Owner in writing, and any necessary changes shall be adjusted by approximate modification. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Owner, he shall assume full responsibility and shall bear all costs attributable.

- 2.13. Responsibility for Those Performing the Work:** The Contractor shall be responsible to the Owner for the acts and omissions of all his employees and all sub-contractors, their agents and employees, and all other persons performing any of the work under a contract with the Contractor.
- 2.14. Use of the Site:** The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Solicitation documents, and shall not unreasonably encumber the site with any materials or equipment.
- 2.15. Cleanup:** The Contractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by contractor's operations. At the completion of work contractor shall remove all waste materials and rubbish from and about the project, as well as all tools, construction equipment, machinery and surplus materials.
- 2.16. Insurance Requirements:** The selected Bidder agrees to procure and maintain, at its own cost, policy(s) of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by the Bidder pursuant to this Section. Such insurance shall be in addition to any other insurance requirements imposed by this Contract or by law. The Bidder shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to this Section by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

Bidder shall procure and maintain and, if applicable, shall cause any Subcontractor of the Bidder to procure and maintain insurance coverage listed below. Such coverage shall be procured and maintained with forms and insurers acceptable to the Owner. All coverage shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by the Bidder pursuant to this Section. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage. Minimum coverage limits shall be as indicated below unless specified otherwise in the Special Conditions:

(a) Worker Compensation: Contractor shall comply with all State of Colorado Regulations concerning Workers' Compensation insurance coverage.

(b) General Liability insurance with minimum combined single limits of:

One Million Dollars (\$1,000,000) each occurrence and
One Million Dollars (\$1,000,000) per job aggregate.

The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall include coverage for explosion, collapse, and underground hazards. The policy shall contain a severability of interests provision.

(c) Comprehensive Automobile Liability insurance with minimum combined single limits for bodily injury and property damage of not less than:

One Million Dollars (\$1,000,000) each occurrence and
One Million Dollars (\$1,000,000) aggregate

This policy shall provide coverage to protect the contractor against liability incurred as a result of the professional services performed as a result of responding to this Solicitation.

With respect to each of Bidder's owned, hired, or non-owned vehicles assigned to be used in performance of the Work. The policy shall contain a severability of interests provision. The policies required by paragraph (b) above shall be endorsed to include the City and/or County, and the City's and/or County's officers and employees as additional insureds. Every policy required above shall be primary insurance, and any insurance carried by the Owner, its officers, or its employees, or carried by or provided through any insurance pool of the Owner, shall be excess and not contributory insurance to that provided by Bidder. No additional insured endorsement to any required policy shall contain any exclusion for bodily injury or property damage arising from completed operations. The Bidder shall be solely responsible for any deductible losses under any policy required above.

2.17. Indemnification: The Contractor shall defend, indemnify and save harmless the Owner, and all its officers, employees, insurers, and self-insurance pool, from and against all liability, suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the Contractor, or of any Contractor's agent, employee, sub-contractor or supplier in the execution of, or performance under, any contract which may result from proposal award. Contractor shall pay any judgment with cost which may be obtained against the Owner growing out of such injury or damages.

2.18. Miscellaneous Conditions: Material Availability: Contractors must accept responsibility for verification of material availability, production schedules, and other pertinent data prior to submission of bid. It is the responsibility of the bidder to notify the Owner immediately if materials specified are discontinued, replaced, or not available for an extended period of time. **OSHA Standards:** All bidders agree and warrant that services performed in response to this invitation shall conform to the standards declared by the US Department of Labor under the Occupational Safety and Health Act of 1970 (OSHA). In the event the services do not conform to OSHA standards, the Owner may require the services to be redone at no additional expense to the Owner.

- 2.19. Time:** Time is of the essence with respect to the time of completion of the Project and any other milestones or deadline which are part of the Contract. It will be necessary for each Bidder to satisfy the City of its ability to complete the Work within the Contract Time set forth in the Solicitation documents. The Contract Time is the period of time allotted in the Solicitation documents for completion of the work. The date of commencement of the work is the date established in a Notice to Proceed. If there is no Notice to Proceed, it shall be the date of the Contract or such other date as may be established therein, or as established as entered on the Bid Form. The Date of Final Completion of the work is the date certified by the Owner when all construction, and all other work associated to include, but not be limited to: testing, QA/QC, receipt of required reports and/or forms, grant requirements (if applicable), punch list items, clean-up, receipt of drawings and/or as-builts, etc., is fully complete, and in accordance with the Solicitation documents.
- 2.20. Progress & Completion:** The Contractor shall begin work on the date of commencement as defined in the Contract and shall carry the work forward expeditiously with adequate forces and shall complete it within the contract time.
- 2.21. Payment & Completion:** The Contract Sum is stated in the Contract and is the total amount payable by the Owner to the Contractor for the performance of the work under the Solicitation documents. Upon receipt of written notice that the work is ready for final inspection and acceptance and upon receipt of application for payment, the Owner's Project Manager will promptly make such inspection and, when he finds the work acceptable under the Solicitation documents and the Contract fully performed, the Owner shall make payment in the manner provided in the Solicitation documents.
- 2.22. Bid Bond:** Each Bid shall as a guaranty of good faith on the part of the Bidder be accompanied by a Bid Guaranty consisting of: a certified or cashier's check drawn on an approved national bank or trust company in the state of Colorado, and made payable without condition to the City; or a **Bid Bond** written by an approved corporate surety in favor of the City. The amount of the Bid Guaranty shall not be less than 5% of the total Bid amount. Once a Bid is accepted and a Contract is awarded, the apparent successful bidder has ten calendar days to enter into a contract in the form prescribed and to furnish the bonds with a legally responsible and approved surety. Failure to do so will result in forfeiture of the Bid Guaranty to the City as Liquidated Damages.

Each bidder shall guaranty its total bid price for a period of sixty (60) Calendar Days from the date of the bid opening.

- 2.23. Performance & Payment Bonds:** Contractor shall furnish a Performance and a Payment Bond, each in an amount at least equal to that specified for the contract amount as security for the faithful performance and payment of all Contractor's obligations under the Solicitation documents. These bonds shall remain in effect for the duration of the Warranty Period (as specified in the Special Conditions). Contractor shall also furnish other bonds that may be required by the Special Conditions. All bonds shall be in the forms prescribed by the Solicitation documents and be executed by such sureties as (1) are licensed to conduct business in the State of Colorado and (2) are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in

Circular 570 (amended) by the Audit Staff, Bureau of Accounts, U.S. Treasury Department. All bonds signed by an agent must be accompanied by a certified copy of the Authority Act. If the surety on any bond furnished by the Contractor is declared bankrupt, or becomes insolvent, or its rights to do business in Colorado are terminated, or it ceases to meet the requirements of clauses (1) and (2) of this section, Contractor shall within five (5) days thereafter substitute another bond and surety, both of which shall be acceptable to the City.

- 2.24. Retention:** The Owner will deduct money from the partial payments in amounts considered necessary to protect the interest of the Owner and will retain this money until after completion of the entire contract. The amount to be retained from partial payments will be five (5) percent of the value of the completed work, and not greater than five (5) percent of the amount of the Contract. When the retainage has reached five (5) percent of the amount of the Contract no further retainage will be made and this amount will be retained until such time as final payment is made.
- 2.25. Liquidated Damages for Failure to Enter Into Contract:** Should the Successful Bidder fail or refuse to enter into the Contract within ten Calendar Days from the issuance of the Notice of Award, the City shall be entitled to collect the amount of such Bidder's Bid Guaranty as Liquidated Damages, not as a penalty but in consideration of the mutual release by the City and the Successful Bidder of all claims arising from the City's issuance of the Notice of Award and the Successful Bidder's failure to enter into the Contract and the costs to award the Contract to any other Bidder, to readvertise, or otherwise dispose of the Work as the City may determine best serves its interest.
- 2.26. Liquidated Damages for Failure to Meet Project Completion Schedule:** If the Contractor does not achieve Final Completion by the required date, whether by neglect, refusal or any other reason, the parties agree and stipulate that the Contractor shall pay liquidated damages to the City for each such day that final completion is late. As provided elsewhere, this provision does not apply for delays caused by the City. The date for Final Completion may be extended in writing by the Owner.

The Contractor agrees that as a part of the consideration for the City's awarding of this Contract liquidated damages in the daily amount of **\$350.00** is reasonable and necessary to pay for the actual damages resulting from such delay. The parties agree that the real costs and injury to the City for such delay include hard to quantify items such as: additional engineering, inspection and oversight by the City and its agents; additional contract administration; inability to apply the efforts of those employees to the other work of the City; perceived inefficiency of the City; citizens having to deal with the construction and the Work, rather than having the benefit of a completed Work, on time; inconvenience to the public; loss of reputation and community standing for the City during times when such things are very important and very difficult to maintain.

The Contractor must complete the Work and achieve final completion included under the Bid Schedule in the number of consecutive calendar days after the City gives is written Notice to Proceed. When the Contractor considers the entire Work ready for its intended use, Contractor shall certify in writing that the Work is fully complete. Final Completion date is the date by which the Contractor shall have fully completed all clean-up, and all items that were identified by the City in the inspection for final completion.

Unless otherwise stated in the Special Conditions, for purposes of this liquidated damages clause, the Work shall not be finished and the Contract time shall continue to accrue until the City gives its written Final Acceptance.

If the Contractor shall fail to pay said liquidated damages promptly upon demand thereof after having failed to achieve Final Completion on time, the City shall first look to any retainage or other funds from which to pay said liquidated damages; if retainage or other liquid funds are not available to pay said liquidated damages amounts, the Surety on the Contractor's Performance Bond and Payment Bond shall pay such liquidated damages. In addition, the City may withhold all, or any part of, such liquidated damages from any payment otherwise due the Contractor.

Liquidated damages as provided do not include any sums to reimburse the City for extra costs which the City may become obligated to pay on other contracts which were delayed or extended because of the Contractor's failure to complete the Work within the Contract Time. Should the City incur additional costs because of delays or extensions to other contracts resulting from the Contractor's failure of timely performance, the Contractor agrees to pay these costs that the City incurs because of the Contractor's delay, and these payments are separate from and in addition to any liquidated damages.

The Contractor agrees that the City may use its own forces or hire other parties to obtain Final Completion of the work if the time of completion has elapsed and the Contractor is not diligently pursuing completion. In addition to the Liquidated Damages provided for, the Contractor agrees to reimburse the City for all expenses thus incurred.

2.27. Contingency/Force Account/Minor Contract Revisions: Contingency/Force Account/Minor Contract Revisions work will be authorized by the Owner's Project Manager and is defined as minor expenses to cover miscellaneous or unforeseen expenses related to the project. The expenses are not included in the Drawings, Specifications, or Scope of Work and are necessary to accomplish the scope of this contract. Contingency/Force Account/Minor Contract Revisions Authorization will be directed by the Owner through an approved form. Contingency/Force Account/Minor Contract Revisions funds are the property of the Owner and any Contingency/Force Account/Minor Contract Revisions funds, not required for project completion, shall remain the property of the Owner. Contractor is not entitled to any Contingency/Force Account/Minor Contract Revisions funds, that are not authorized by Owner or Owner's Project Manager.

2.28. Protection of Persons & Property: The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. Contractor shall erect and maintain, as required by existing safeguards for safety and protection, and all reasonable precautions, including posting danger signs or other warnings against hazards promulgating safety regulations and notifying owners and users of adjacent utilities. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct by the Contractor in the execution of the work, or in consequence of the non-execution thereof by the Contractor, he shall restore, at his own expense, such property to a condition similar or equal to that existing before such damage or injury was

done, by repairing, rebuilding, or otherwise restoring as may be directed, or it shall make good such damage or injury in an acceptable manner.

- 2.29. Changes in the Work:** The Owner, without invalidating the contract, may order changes in the work within the general scope of the contract consisting of additions, deletions or other revisions, the contract sum and the contract time being adjusted accordingly. All such changes in the work shall be authorized by Change Order and shall be executed under the applicable conditions of the solicitation documents. A Change Order is a written order to the Contractor signed by the Owner issued after the execution of the contract, authorizing a change in the work or an adjustment in the contract sum or the contract time. The contract sum and the contract time may be changed only by Change Order.
- 2.30. Claims for Additional Cost or Time:** If the Contractor wishes to make a claim for an increase in the contract sum or an extension in the contract time, he shall give the Owner written notice thereof within a reasonable time after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute the work, except in an emergency endangering life or property in which case the Contractor shall precede in accordance with the regulations on safety. No such claim shall be valid unless so made. Any change in the contract sum or contract time resulting from such claim shall be authorized by Change Order.
- 2.31. Minor Changes in the Work:** The Owner shall have authority to order minor changes in the work not involving an adjustment in the contract sum or an extension of the contract time and not inconsistent with the intent of the solicitation documents.
- 2.32. Field Orders:** The Owner may issue written Field Orders which interpret the Solicitation documents in accordance with the specifications, or which order minor changes in the work in accordance with the agreement, without change in the contract sum or time. The Contractor shall carry out such Field Orders promptly.
- 2.33. Uncovering & Correction of Work:** The Contractor shall promptly correct all work rejected by the Owner as defective or as failing to conform to the solicitation documents whether observed before or after substantial completion and whether or not fabricated installed or completed. The Contractor shall bear all costs of correcting such rejected work, including the cost of the Owner's additional services thereby made necessary. If within one (1) year after the date of completion or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the solicitation documents, any of the work found to be defective or not in accordance with the solicitation documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discover of condition. All such defective or non-conforming work under the above paragraphs shall be removed from the site where necessary and the work shall be corrected to comply with the solicitation documents without cost to the Owner. The Contractor shall bear the cost of making good all work of separate Contractors destroyed or damaged by such removal or correction. If the Owner prefers to accept defective or non-conforming work, he may do so instead of requiring its removal and correction, in which case a Change Order will be issued to reflect an appropriate

reduction in the payment or contract sum, or, if the amount is determined after final payment, it shall be paid by the Contractor.

- 2.34. Amendment:** No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All amendments to the contract shall be made in writing by the Owner.
- 2.35. Assignment:** The Contractor shall not sell, assign, transfer or convey any contract resulting from this IFB, in whole or in part, without the prior written approval from the Owner.
- 2.36. Compliance with Laws:** Bids must comply with all Federal, State, County and local laws governing or covering this type of service and the fulfillment of all ADA (Americans with Disabilities Act) requirements.
- 2.37. Confidentiality:** All information disclosed by the Owner to the Contractor for the purpose of the work to be done or information that comes to the attention of the Contractor during the course of performing such work is to be kept strictly confidential.
- 2.38. Conflict of Interest:** No public official and/or City/County employee shall have interest in any contract resulting from this IFB.
- 2.39. Contract Termination:** This contract shall remain in effect until any of the following occurs: (1) contract expires; (2) completion of services; (3) acceptance of services or, (4) for convenience terminated by either party with a written *Notice of Cancellation* stating therein the reasons for such cancellation and the effective date of cancellation.
- 2.40. Employment Discrimination:** During the performance of any services per agreement with the Owner, the Contractor, by submitting a Bid, agrees to the following conditions:
- 2.40.1.** The Contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, handicap, or national origin except when such condition is a legitimate occupational qualification reasonably necessary for the normal operations of the Contractor. The Contractor agrees to post in conspicuous places, visible to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
- 2.40.2.** The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, shall state that such Contractor is an Equal Opportunity Employer.
- 2.40.3.** Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
- 2.41. Affirmative Action:** In executing a Contract with the City, the Contractor agrees to comply with Affirmative Action and Equal Employment Opportunity regulations presented in the General Contract Conditions.

- 2.42. Immigration Reform and Control Act of 1986 and Immigration Compliance:** The Offeror certifies that it does not and will not during the performance of the contract employ illegal alien workers or otherwise violate the provisions of the Federal Immigration Reform and Control Act of 1986 and/or the immigration compliance requirements of State of Colorado C.R.S. § 8-17.5-101, *et.seq.* (House Bill 06-1343).
- 2.43. Ethics:** The Contractor shall not accept or offer gifts or anything of value nor enter into any business arrangement with any employee, official, or agent of the Owner.
- 2.44. Failure to Deliver:** In the event of failure of the Contractor to deliver services in accordance with the contract terms and conditions, the Owner, after due oral or written notice, may procure the services from other sources and hold the Contractor responsible for any costs resulting in additional purchase and administrative services. This remedy shall be in addition to any other remedies that the Owner may have.
- 2.45. Failure to Enforce:** Failure by the Owner at any time to enforce the provisions of the contract shall not be construed as a waiver of any such provisions. Such failure to enforce shall not affect the validity of the contract or any part thereof or the right of the Owner to enforce any provision at any time in accordance with its terms.
- 2.46. Force Majeure:** The Contractor shall not be held responsible for failure to perform the duties and responsibilities imposed by the contract due to legal strikes, fires, riots, rebellions, and acts of God beyond the control of the Contractor, unless otherwise specified in the contract.
- 2.47. Independent Contractor:** The Contractor shall be legally considered an Independent Contractor and neither the Contractor nor its employees shall, under any circumstances, be considered servants or agents of the Owner. The Owner shall be at no time legally responsible for any negligence or other wrongdoing by the Contractor, its servants, or agents. The Owner shall not withhold from the contract payments to the Contractor any federal or state unemployment taxes, federal or state income taxes, Social Security Tax or any other amounts for benefits to the Contractor. Further, the Owner shall not provide to the Contractor any insurance coverage or other benefits, including Workers' Compensation, normally provided by the Owner for its employees.
- 2.48. Nonconforming Terms and Conditions:** A bid that includes terms and conditions that do not conform to the terms and conditions of this Invitation for Bid is subject to rejection as non-responsive. The Owner reserves the right to permit the Contractor to withdraw nonconforming terms and conditions from its bid prior to a determination by the Owner of non-responsiveness based on the submission of nonconforming terms and conditions.

Items for non-responsiveness may include, but not be limited to:

- a. Submission of the Bid on forms other than those supplied by the City;
- b. Alteration, interlineation, erasure, or partial detachment of any part of the forms which are supplied herein;

- c. Inclusion of unauthorized additions conditional or alternate Bids or irregularities of any kind which may tend to make the Bid incomplete, indefinite, or ambiguous as to its meaning;
- d. Failure to acknowledge receipt of any or all issued Addenda;
- e. Failure to provide a unit price or a lump sum price, as appropriate, for each pay item listed except in the case of authorized alternative pay items;
- f. Failure to list the names of Subcontractors used in the Bid preparation as may be required in the Solicitation Documents;
- g. Submission of a Bid that, in the opinion of the Owner, is unbalanced so that each item does not reasonably carry its own proportion of cost or which contains inadequate or unreasonable prices for any item;
- h. Tying of the Bid with any other bid or contract; and
- i. Failure to calculate Bid prices as described herein.

2.49. Evaluation of Bids and Offerors: The Owner reserves the right to:

- reject any and all Bids,
- waive any and all informalities,
- negotiate final terms with the Successful Bidder, and
- disregard any and all nonconforming, nonresponsive or conditional Bids.

Discrepancies between words and figures will be resolved in favor of words. Discrepancies between Unit Prices and Extended Prices will be resolved in favor of the Unit Prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. The corrected extensions and totals will be shown in the tabulation of Bids.

The Owner may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the work as to which the identity of Subcontractors and other persons and organizations must be submitted. Operating costs, maintenance considerations performance data, and guarantees of materials and equipment may also be considered by the Owner.

The Owner will conduct such investigations as deemed necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of the Offeror, proposed Subcontractors and other persons and organizations to do the Work in accordance with the *Solicitation documents* to the City's satisfaction within the Contract Time.

The Offeror shall furnish the Owner all information and data requested by the Owner to determine the ability of the Offeror to perform the Work. The Owner reserves the right to reject the Bid if the evidence submitted by, or investigation of such Offeror fails to satisfy the Owner that such Offeror is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.

By submitting a Bid, each Offeror authorizes the Owner to perform such investigation of the Offeror as the Owner deems necessary to establish the responsibility, qualifications and financial ability of the Offeror and, by its signature thereon, authorizes the Owner to obtain reference information concerning the Offeror and releases the party providing such information and the Owner from any and all liability to the Offeror as a result of such reference information so provided.

The Owner reserves the right to reject the Bid of any Offeror who does not pass any evaluation to the Owner's satisfaction.

If the Contract is to be awarded, it will be awarded to the Offeror who, by evaluation, the Owner determines will best meet the Owner's interests.

The Owner reserves the right to accept or reject the Work contained in any of the Price Bid Schedules or alternates, either in whole or in part.

2.50. Award of Contract: Unless otherwise indicated, a single award will be made for all the bid items in an individual bid schedule. In the event that the Work is contained in more than one Bid Schedule, the City may award Schedules individually or in combination. In the case of two Bid Schedules which are alternative to each other, only one of such alternative Schedules will be awarded. Within forty-five (45) Calendar Days of Bid Opening, the City will issue a Notice of Award to the Successful Bidder which will be accompanied by four (4) unsigned copies of the Contract and the Performance and Payment Bond forms. Within ten (10) Calendar Days thereafter, the Successful Bidder shall sign and deliver four (4) copies of the Contract, Performance Bond, Payment Bond and Certificates of Insurance to the City. Within ten (10) Calendar Days thereafter, the City will deliver two (2) fully executed counterparts of the Contract to the Contractor. No contract shall exist between the Successful Bidder and the City and the Successful Bidder shall have no rights at law or in equity until the Contract has been duly executed by the City.

The Successful Bidder's failure to sign and submit a Contract and other documents set forth in this Paragraph within the prescribed time shall be just cause of annulment of the award, and forfeiture of the Bid Guaranty. The award of Contract may then be made to the next qualified Bidder in the same manner as previously prescribed.

2.51. Ownership: All plans, prints, designs, concepts, etc., shall become the property of the Owner.

2.52. Oral Statements: No oral statement of any person shall modify or otherwise affect the terms, conditions, or specifications stated in this document and/or resulting agreement. All modifications to this request and any agreement must be made in writing by the Owner.

- 2.53. Patents/Copyrights:** The Contractor agrees to protect the Owner from any claims involving infringements of patents and/or copyrights. In no event shall the Owner be liable to the Contractor for any/all suits arising on the grounds of patent(s)/copyright(s) infringement. Patent/copyright infringement shall null and void any agreement resulting from response to this IFB.
- 2.54. Remedies:** The Contractor and Owner agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.
- 2.55. Venue:** Any agreement as a result of responding to this IFB shall be deemed to have been made in, and shall be construed and interpreted in accordance with, the laws of the City of Grand Junction, Mesa County, Colorado.
- 2.56. Expenses:** Expenses incurred in preparation, submission and presentation of this IFB are the responsibility of the company and cannot be charged to the Owner.
- 2.57. Sovereign Immunity:** The Owner specifically reserves its right to sovereign immunity pursuant to Colorado State Law as a defense to any action arising in conjunction to this agreement.
- 2.58. Non-Appropriation of Funds:** The contractual obligation of the Owner under this contract is contingent upon the availability of appropriated funds from this fiscal year budget as approved by the City Council or Board of County Commissioners from this fiscal year only. State of Colorado Statutes prohibit obligation of public funds beyond the fiscal year for which the budget was approved. Anticipated expenditures/obligations beyond the end of the current Owner's fiscal year budget shall be subject to budget approval. Any contract will be subject to and must contain a governmental non-appropriation of funds clause.
- 2.59. Cooperative Purchasing:** Purchases as a result of this solicitation are primarily for the City/County. Other governmental entities may be extended the opportunity to utilize the resultant contract award with the agreement of the successful provider and the participating agencies. All participating entities will be required to abide by the specifications, terms, conditions and pricings established in this Bid. The quantities furnished in this bid document are for only the City/County. It does not include quantities for any other jurisdiction. The City or County will be responsible only for the award for its jurisdiction. Other participating entities will place their own awards on their respective Purchase Orders through their purchasing office or use their purchasing card for purchase/payment as authorized or agreed upon between the provider and the individual entity. The City/County accepts no liability for payment of orders placed by other participating jurisdictions that choose to piggy-back on our solicitation. Orders placed by participating jurisdictions under the terms of this solicitation will indicate their specific delivery and invoicing instructions.
- 2.60. Keep Jobs in Colorado Act:** Contractor shall be responsible for ensuring compliance with Article 17 of Title 8, Colorado Revised Statutes requiring 80% Colorado labor to be employed on public works. Contractor shall, upon reasonable notice provided by the Owner, permit the Owner to inspect documentation of identification and

residency required by C.R.S. §8-17-101(2)(a). If Contractor claims it is entitled to a waiver pursuant to C.R.S. §8-17-101(1), Contractor shall state that there is insufficient Colorado labor to perform the work such that compliance with Article 17 would create an undue burden that would substantially prevent a project from proceeding to completion, and shall include evidence demonstrating the insufficiency and undue burden in its response.

Unless expressly granted a waiver by the Owner pursuant to C.R.S. §8-17-101(1), Contractor shall be responsible for ensuring compliance with Article 17 of Title 8, Colorado Revised Statutes requiring 80% Colorado labor to be employed on public works. Contractor shall, upon reasonable notice provided by the Owner, permit the Owner to inspect documentation of identification and residency required by C.R.S. §8-17-101(2)(a).

2.60.1. "Public project" is defined as:

- (a) any construction, alteration, repair, demolition, or improvement of any land, building, structure, facility, road, highway, bridge, or other public improvement suitable for and intended for use in the promotion of the public health, welfare, or safety and any maintenance programs for the upkeep of such projects
- (b) for which appropriate or expenditure of moneys may be reasonably expected to be \$500,000.00 or more in the aggregate for any fiscal year
- (c) except any project that receives federal moneys.

3. STATEMENT OF WORK

3.1. Project Description: The City of Grand Junction is soliciting competitive bids from qualified and interested companies for all labor, equipment, and materials required to install a new VRF HVAC system in the Daycare building. The work is to be done in two phases. Phase one is the HVAC replacement of the existing building and Phase two will be the HVAC installation in the new addition. All dimensions and scope of work should be verified by Contractors prior to submission of bids.

3.2. SPECIAL CONDITIONS & PROVISIONS:

3.2.1 Non-Mandatory Site Visit: **Prospective bidders are encouraged to attend a non-mandatory site visit on April 8, 2022 at 10:00am. Meeting location shall be at 545 25 ½ Road, Grand Junction, CO.** The purpose of this visit will be to inspect and to clarify the contents of this document.

3.2.2 Questions Regarding Solicitation Process/Scope of Work:

Kassy Hackett, Buyer
City of Grand Junction
kassyh@gjcity.org

3.2.3 Project Manager: The Project Manager for the Project is Jim Stavast. During Construction, all notices, letters, submittals, and other communications directed to the City shall be addressed and mailed or delivered to:

City of Grand Junction

General Services Department, Facilities
Attn: Jim Stavast, Project Manager
333 West Avenue, Building B
Grand Junction, CO 81501
Office: 970-244-1569
Cell: 970-812-7275
jimst@gjcity.org

3.2.4 Contract Administrator: The Contract Administrator for the Project is Duane Hoff Jr., Contract Administrator, who can be reached at (970)244-1545. During Construction, contract related inquiries, issues, and other communications shall be directed to:

Duane Hoff Jr., Contract Administrator
duaneh@gjcity.org

3.2.5 Pricing: Pricing shall be all inclusive to include but not be limited to: all labor, equipment, supplies, materials, freight (F.O.B. Destination – Freight Pre-paid and Allowed to each site), travel, mobilization costs, fuel, set-up and take down costs, and full-time inspection costs, and all other costs related to the successful completion of the project. Owner shall not pay nor be liable for any other additional costs including but not limited to: taxes, shipping charges, insurance, interest, penalties, termination payments, attorney fees, liquidated damages, etc.

3.2.6 Freight/Shipping: Freight/Shipping: All freight/shipping shall be F.O.B. Destination – Freight Pre-Paid and Allowed to the project site(s), Grand Junction, CO. Contractor must meet all federal, state, and local rules, regulations, and requirements for providing such services.

3.2.7 Contract: A binding contract shall consist of: (1) the IFB and any amendments thereto, (2) the bidder's response (bid) to the IFB, (3) clarification of the bid, if any, and (4) the City's Purchasing Department's acceptance of the bid by "Notice of Award" or by "Purchase Order". All Exhibits and Attachments included In the IFB shall be incorporated into the contract by reference.

A. The contract expresses the complete agreement of the parties and, performance shall be governed solely by the specifications and requirements contained therein.

B. Any change to the contract, whether by modification and/or supplementation, must be accomplished by a formal contract amendment signed and approved by and between the duly authorized representative of the bidder and the City Purchasing Division or by a modified Purchase Order prior to the effective date of such modification. The bidder expressly and explicitly understands and agrees that no other method and/or no other document, including acts and oral communications by or from any person, shall be used or construed as an amendment or modification to the contract.

3.2.7 Time of Completion: The scheduled time of Completion for the Project for Phase One is to be completed by May 31st. The scheduled time of Completion for the Project for Phase Two is to be completed by June 17th.

Completion is achieved when site cleanup and all punch list items (resulting from the final inspection) have been completed. Completion shall have the meaning set forth in Article I, Section 3 (Definitions and Terms) of the General Contract Conditions.

3.2.8 Working Days and Hours: The working days and hours shall be as stated in the General Contract Conditions or as mutually agreed upon in the preconstruction meeting with the following exception:

All work shall be performed between the hours of 7:00 AM to 5:00 PM Monday-Friday.

3.2.9 Licenses and Permits: The City is responsible for obtaining all necessary licenses and permits required for Construction.

3.2.11 Authorized Representatives of the City: Those authorized to represent the City shall include Purchasing Agent, Engineers, and Inspectors employed by the City, only.

3.2.12 Stockpiling Materials and Equipment: All stockpiling/storage shall be in accordance with General Contract Condition Section 51.

3.2.13 Clean-Up: The Contractor is responsible for cleaning up all loose materials that have been deposited or swept into gutters, and onto sidewalks and driveways as a result of sidewalk operations. The costs for all clean-up work shall be considered incidental and will not be paid for separately.

3.2.14 Incidental Items: Any item of work not specifically identified or paid for directly, but which is necessary for the satisfactory completion of any paid items of work, will be considered as incidental to those items, and will be included in the cost of those items.

3.3. General Contractor: The City will be the General Contractor for this project.

3.4. Project Location: 545 25 ½ Road, Grand Junction, CO 81501.

3.5. Scope of Work:

1. Refer to the attached Bighorn Engineering mechanical plans for the scope of work.

2. All notes shown on the plans are to be included in the scope.

3. Provide and install the condensing unit support frame to be no less than 18" tall.

4. The housekeeping concrete pad to be done by others.

5. All line sets to go into the building addition are to be stubbed into the addition on or before May 31st. No work will be allowed in the existing building once occupied by children.

3.6. Specifications:

See attached specifications document.

3.7. Attachments:

Mechanical Sheets M0-1 through M2-6 – [Attachment 1](#)

3.8. Contractor Bid Documents: For Contractor's convenience, the following is a list of forms/items to be submitted with the Contractor's bid response. However, should a form/item not be listed in this section, but required in the solicitation documents, it is the Contractor's responsibility to ensure all forms/items are submitted.

- **Contractor's Bid Form**
- **Price Bid Schedule**

3.9. IFB TENTATIVE TIME SCHEDULE:

Invitation For Bids available	April 1, 2022
Non-Mandatory Site Visit	April 8, 2022
Inquiry deadline, no questions after this date	April 13, 2022
Addendum Posted	April 15, 2022
Submittal deadline for proposals	April 22, 2022
Notice of Award & Contract execution	April 26, 2022
Bonding & Insurance Cert due	April 29, 2022
Work begins no later than	April 29, 2022
Final Completion	Phase 1: May 31 st Phase 2: June 17 th

4. Contractor's Bid Form

Bid Date: _____

Project: IFB-5058-22-KH "Daycare Center HVAC Replacement"

Bidding Company: _____

Name of Authorized Agent: _____

Email _____

Telephone _____ **Address** _____

City _____ **State** _____ **Zip** _____

The undersigned Bidder, in compliance with the Invitation for Bids, having examined the Instruction to Bidders, General Contract Conditions, Statement of Work, Specifications, and any and all Addenda thereto, having investigated the location of, and conditions affecting the proposed work, hereby proposes to furnish all labor, materials and supplies, and to perform all work for the Project in accordance with Solicitation documents, within the time set forth and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Solicitation documents, of which this Contractor's Bid Form is a part.

The undersigned Contractor does hereby declare and stipulate that this offer is made in good faith without collusion or connection to any person(s) providing an offer for the same work, and that it is made in pursuance of, and subject to, all terms and conditions of the Instructions to Bidders, the Specifications, and all other Solicitation Documents, all of which have been examined by the undersigned.

The Contractor also agrees that if awarded the Contract, to provide insurance certificates within ten (10) working days of the date of Notification of Award. Submittal of this offer will be taken by the Owner as a binding covenant that the Contractor will be prepared to complete the project in its entirety.

The Owner reserves the right to make the award on the basis of the offer deemed most favorable, to waive any formalities or technicalities and to reject any or all offers. It is further agreed that this offer may not be withdrawn for a period of sixty (60) calendar days after closing time. Submission of clarifications and revised offers automatically establish a new thirty day (30) period.

Prices in the bid proposal have not knowingly been disclosed with another provider and will not be prior to award.

- Prices in this bid proposal have been arrived at independently, without consultation, communication or agreement for the purpose of restricting competition.
- No attempt has been made nor will be to induce any other person or firm to submit a bid proposal for the purpose of restricting competition.
- The individual signing this bid proposal certifies they are a legal agent of the offeror, authorized to represent the offeror and is legally responsible for the offer with regard to supporting documentation and prices provided.
- Direct purchases by the City of Grand Junction are tax exempt from Colorado Sales or Use Tax. Tax exempt No. 98-903544. The undersigned certifies that no Federal, State, County or Municipal tax will be added to the above quoted prices.
- City of Grand Junction payment terms shall be Net 30 days.
- Prompt payment discount of _____ percent of the net dollar will be offered to the Owner if the invoice is paid within _____ days after the receipt of the invoice. The Owner reserves the right to take into account any such discounts when determining the bid award that are no less than Net 10 day.

RECEIPT OF ADDENDA: the undersigned Contractor acknowledges receipt of Addenda to the Solicitation, Specifications, and other Solicitation documents.

State number of Addenda received: _____.

It is the responsibility of the Bidder to ensure all Addenda have been received and acknowledged.

By signing below, the Undersigned agree to comply with all terms and conditions contained herein.

Company: _____

Authorized Signature: _____

Title: _____

PRICE BID SCHEDULE: IFB-5058-22-KH Daycare Center HVAC Replacement

Item No.	Description	Total Price
1	All labor, equipment, supplies, materials, freight (F.O.B. Destination – Freight Pre-paid and Allowed to each site), travel, mobilization costs, and all other costs related to the successful completion of the HVAC replacement of 545 25 ½ Road, Grand Junction, CO 81505, as per the solicitation documents.	

Total Bid Price Written: _____

By signing below, the Undersigned agree to comply with all terms and conditions contained herein.

Company: _____

Authorized Signature: _____

Title: _____

Bidder proposes to subcontract the following portion of Work:

<u>Name & address of Sub-Contractor</u>	<u>Description of work to be performed</u>	<u>% of Contract</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

The undersigned Bidder acknowledges the right of the City to reject any and all Bids submitted and to waive informalities and irregularities therein in the City's sole discretion.

By submission of the Bid, each Bidder certifies, and in the case of a joint Bid each party thereto certifies as to his own organization, that this Bid has been arrived at independently, without collusion, consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

Attachment One

MECHANICAL ELEMENTS / VALVING

	EXISTING EQUIPMENT OR PIPE TO BE REMOVED.		RELIEF/SAFETY VALVE		ANCHOR
	GATE VALVE		GAS COCK		GUIDE
	GLOBE VALVE		AUTOMATIC FILL VALVE		EXPANSION JOINT
	PLUG VALVE		MANUAL AIR VENT		FLOW SWITCH
	BUTTERFLY VALVE		AUTOMATIC AIR VENT (EXTEND DISCHARGE TO DRAIN)		TEMPERATURE TRANSMITTER
	BALL VALVE		FLOW METER-VENTURI		PRESSURE TRANSMITTER OR PRESSURE SWITCH
	SWING CHECK VALVE		FLOW METER-ORIFICE		THERMOMETER
	LIFT CHECK VALVE		DIRECTION OF FLOW		GAUGE WITH GAUGE COCK & SYPHON (STEAM)
	GATE VALVE, ANGLE		DIRECTION OF PITCH-RISE OR DROP		AQUASTAT
	GLOBE VALVE, ANGLE		STRAINER		GAS PRESSURE REGULATOR
	DIAPHRAGM VALVE		STRAINER WITH BLOW OFF VALVE		FLOAT OPERATED CONTROL VALVE
	BALANCING VALVE		PIPE RISING UP		STEAM TRAP
	CIRCUIT SETTING BALANCING VALVE		PIPE DROPPING DOWN		EXPANSION LOOP
	THREE WAY CONTROL VALVE		CONCENTRIC REDUCER		VACUUM BREAKER
	TWO WAY CONTROL VALVE		ECCENTRIC REDUCER		THERMOSTAT
	SOLENOID VALVE		UNION - SCREWED OR FLANGED		DIGITAL SENSOR
	PRESSURE REDUCING VALVE (PRV)		STEAM LEAK DETECTOR		PUMP
	TEMPERATURE/PRESSURE RELIEF VALVE		FIRE SMOKE DAMPER		HEAT EXCHANGER
	AIR VENT		CARBON MONOXIDE		
	HYDRAULIC SEPARATOR		CARBON DIOXIDE		
			AIR SEPARATOR		

HVAC & DUCTWORK SYMBOLS

SECTION THROUGH RETURN DUCT
SECTION THROUGH EXHAUST AIR DUCT
SECTION THROUGH SUPPLY OR OUTSIDE AIR DUCT
FIRE / SMOKE DAMPER
SMOKE DAMPER
SUPPLY OR OUTSIDE AIR DUCT
ACCESS DOOR (BOTTOM OR SIDE)
ACOUSTICALLY LINED DUCT
FIRE DAMPER, SMOKE DAMPER, FIRE/SMOKE DAMPER
MANUAL VOLUME DAMPER
INCLINED DROP IN DIRECTION OF ARROW
INCLINED RISE IN DIRECTION OF ARROW
TRANSITION, RECTANGULAR TO ROUND
FLEXIBLE DUCT
IN-LINE FAN
TRANSITION, RECTANGULAR
SPIN-IN COLLAR INTO ADAPTER ON TOP OF DUCT
CEILING SUPPLY AIR REGISTER/GRILLE
SIDEWALL SUPPLY AIR REGISTER (SR)
ELBOW TURNED DOWN
ELBOW TURNED UP
ELBOW, RADIUS TYPE
ELBOW, SQUARE OR RECTANGULAR TYPE WITH AIRFOIL TURNING VANES
CEILING RETURN AIR REGISTER (RR)
SIDEWALL RETURN AIR REGISTER (RR)
OPEN END DUCT
FLEXIBLE CONNECTION

LINE DESIGNATION SYMBOLS

CHWR	CHILLED WATER RETURN	CHWS	CHILLED WATER SUPPLY
AWG	AMERICAN WIRE GAGE	CA	COMPRESSED AIR
CR	CONDENSER WATER RETURN	CS	CONDENSER WATER SUPPLY
D	DRAIN	HPR	HEAT PUMP RETURN
HPS	HEAT PUMP SUPPLY	HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY	G	NATURAL GAS
RH	REFRIGERANT HIGH PRESSURE VAPOR	R	REFRIGERANT LIQUID AND VAPOR LINE
RS	REFRIGERANT SUCTION / VAPOR	SMR	SNOWMELT RETURN
SMS	SNOWMELT SUPPLY	V	VENT PIPING

RESPONSIBLE DIVISION:

UNLESS OTHERWISE INDICATED ALL HEATING, VENTILATING, AIR CONDITIONING, PLUMBING, AND OTHER MECHANICAL EQUIPMENT, MOTORS, AND CONTROLS SHALL BE FURNISHED, SET IN PLACE AND WIRED AS FOLLOWS:

EQUIPMENT	FURNISHED	SET	POWER WIRED	CONTROL WIRED
COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS, VFD'S AND CONTACTORS	23(1)	26	26(2)	23
FUSED AND UNFUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR STARTERS	26	26	26	--
MANUAL-OPERATING AND MULTI-SPEED SWITCHES	23	26	26	26
CONTROLS, RELAYS, TRANSFORMERS	23	23	26	23
THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES	23	23	26	23
THERMOSTATS (LINE VOLTAGE)	23	23	26	26
TEMPERATURE CONTROL PANELS	23	23	26	23
MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP SWITCHES	23	23(2)	--	23(2)
FUSH-BUTTON STATIONS AND PILOT LIGHTS	23	23(2)	--	23(2)
HEATING, COOLING, VENTILATION AND AIR CONDITIONING CONTROLS	23	23	26	23
EXHAUST FAN SWITCHES	23	26	26	23(2)

SUBSCRIPT FOOTNOTES:

- MOTOR STARTER TO INCLUDE CONTROL TRANSFORMER, HOA SWITCH, (1) NO AND (1) NC AUXILIARY CONTACT, AND "ON" AND "OFF" PILOT LIGHTS.
- IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26. WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23. CONNECT UNDER DIVISION 26.

ABBREVIATIONS:

44"	MOUNTING HEIGHT ABOVE FINISHED FLOOR TO CENTER OF DEVICE	DIFF	DIFFERENTIAL	HR	HOUR	PT	PRESSURE TRANSMITTER
A	AMPS	DISCH	DISCHARGE	HT	HEIGHT	PTAC	PACKAGED TERMINAL AIR CONDITIONER
A.D.	ACCESS DOOR	DN	DOWN	HTR	HEATER	PV	PLUG VALVE
AAV	AIR ADMITTANCE VALVE	DS	DUCT SILENCER	HWR	HEATING WATER RETURN	PVC	POLYVINYL CHLORIDE
ABV	ABOVE	DWG	DRAWING	HX	HEAT EXCHANGER	QTY	QUANTITY
AC	AIR CONDITIONING UNIT	DX	DIRECT EXPANSION	HZ	HERTZ	RA	RETURN AIR GRILLE / REGISTER
AC	ABOVE COUNTER	(E)	EXISTING	ID	INSIDE DIAMETER	RCP	REFLECTED CEILING PLAN
AD	AREA DRAIN (SEE SYMBOLS)	EA	EXHAUST AIR GRILLE/REGISTER	IG	ISOLATED GROUND	RD	ROOF DRAIN
A.F.C.	ABOVE FINISHED CEILING	EAT	ENTERING AIR TEMPERATURE	IN	INCHES	REL	RELIEF
A.F.G.	ABOVE FINISHED GRADE	EC	ELECTRICAL CONTRACTOR	INV	INVERT	REQD	REQUIRED
AIC	AMPERE INTERRUPTING CAPACITY	ECC	ECCENTRIC	JBOX	JUNCTION BOX	RF	RETURN FAN
A.F.F.	ABOVE FINISHED FLOOR	EFF	EXHAUST FAN	K	KELVIN	RH	RELATIVE HUMIDITY
AHU	AIR HANDLING UNIT	EFF	EFFICIENCY	KW	KILOWATT	RHC	REHEAT COIL
ALUM	ALUMINUM	EL	ELEVATION	KVA	KILO VOLT - AMPS	RLA	RATED LOAD AMPS
AP	ACCESS PANEL OR DOOR	ELEC	ELECTRIC	L	LENGTH	RM	ROOM
ATS	AUTOMATIC TRANSFER SWITCH	ELEV	ELEVATOR	LAT	LEAVING AIR TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
AV	AUDIO / VIDEO	EM	EMERGENCY FUNCTION	LV	LAVATORY	SA	SUPPLY AIR GRILLE / REGISTER
AVG	AVERAGE	ENT	ENTERING	LB	POUND	SC	SHORT CIRCUIT
AWG	AMERICAN WIRE GAGE	EMT	ELECTRIC METALLIC TUBE	LD	LINEAR DIFFUSER	SCA	SHORT CIRCUIT AVAILABLE
BAS	BUILDING AUTOMATION SYSTEM	EQ	EQUAL	LF	LINEAR FEET	SCCR	SHORT CIRCUIT CURRENT RATING
BB	BASEBOARD	EQUIP	EQUIPMENT	LN	LINEAR	SCH	SCHEDULE
BD	BACK DRAFT DAMPER	EQUIV	EQUIVALENT	LIQ	LIQUID	SD	SMOKE DAMPER
BFP	BACK FLOW PREVENTOR	ES	END SWITCH	LM	LUMEN	SEF	SMOKE EXHAUST FAN
BL	BOILER	ESP	EXTERNAL STATIC PRESSURE	LRA	LOCKED ROTOR AMPS	SF	SUPPLY FAN
BLDG	BUILDING	ET	EXPANSION TANK	LV	LOUVER	SH	SENSIBLE HEAT
BLW	BELOW	EWC	ELECTRIC WATER COOLER	LVG	LEAVING	SH	SHOWER
BOB	BOTTOM OF BEAM	EWT	ENTERING WATER TEMPERATURE	LWT	LEAVING WATER TEMPERATURE	SP	STATIC PRESSURE
BOD	BOTTOM OF DUCT	EX	EXHAUST	MBH	THOUSANDS OF BTU PER HOUR	SPD	SURGE PROTECTION DEVICE
BOP	BOTTOM OF PIPE	EXAN	EXPANSION	MC	MECHANICAL CONTRACTOR	SPEC	SPECIFICATION
BST	BASEMENT	EXT	EXTERNAL	MCA	MINIMUM CIRCUIT AMPACITY	SQ	SQUARE
BTU	BRITISH THERMAL UNIT	F	DEGREES FAHRENHEIT	MCB	MAIN CIRCUIT BREAKER	SS	STAINLESS STEEL
C	CHILLER	FA	FREE AREA	MD	MOTORIZED DAMPER	SS	SAFETY SHOWER
CAP	CAPACITY	FC	FAN COIL UNIT	MDP	MAIN DISTRIBUTION PANEL	STD	STANDARD
CB	CIRCUIT BREAKER	FC	FOOTCANDLE	MED	MEDIUM	STL	STEEL
CBV	CIRCUIT BALANCING VALVE	FDV	FLOW CONTROL VALVE	MFR	MANUFACTURER	SYS	SYSTEM
CCT	CORRELATED COLOR TEMPERATURE	FD	FIRE DAMPER	MIN	MINIMUM	TEMP	TEMPERATURE
CKT	CIRCUIT	FIN	FINISHED	MISC	MISCELLANEOUS	TR	TRANSFER GRILLE / REGISTER
CFH	CUBIC FEET PER HOUR	FLA	FULL LOAD AMPS	MLO	MAIN LUG ONLY	TR	TAMPER RESISTANT
CFM	CUBIC FEET PER MINUTE	FLEX	FLEXIBLE	MOCP	MAXIMUM OVERCURRENT PROTECTION	TT	TEMPERATURE TRANSMITTER
CHWR	CHILLED WATER RETURN	FLR	FLOOR	MTD	MOUNTED	TTB	TELECOMMUNICATIONS TERMINAL BACKBOARD
CHWS	CHILLED WATER SUPPLY	FOB	FLAT ON BOTTOM	MUA	MAKE-UP AIR UNIT	TYP	TYPICAL
CI	CAST IRON	FOT	FLAT ON TOP	N	NEUTRAL	TX	TRANSFORMER
CL	CENTER LINE	FP	FIRE PROTECTION	NC	NORMALLY CLOSED	UC	UNDERCUT DOOR
CLG	CEILING	FP	FIRE PUMP	NEG	NEGATIVE	UH	UNIT HEATER
CMU	CONCRETE MASONRY UNIT	FPM	FEET PER MINUTE	NIC	NOT IN CONTRACT	UNO	UNLESS NOTED OTHERWISE
CO	CLEAN OUT	FPS	FEET PER SECOND	NL	NIGHT / SECURITY LIGHT - DO NOT SWITCH	UNOCC	UNOCCUPIED
COL	COLUMN	FPS	FEET PER SECOND	NO	NORMALLY OPEN	UR	URINAL
COMP	COMPRESSOR	FSD	FIRE/SMOKE DAMPER	NOM	NOMINAL	V	VOLTS
CONC	CONCRETE	FT	FEET	NTS	NOT TO SCALE	VA	VOLT AMPERE
COND	CONDENSATE	FXC	FLEXIBLE CONNECTION	OA	OUTSIDE AIR	VA	VALVE
CONN	CONNECTION	GND	GROUND	OBD	OPPOSED BLADE DAMPER	VAV	VARIABLE AIR VOLUME UNIT
CONT	CONTINUATION	GA	GAUGE	OC	ON CENTER	VFD	VARIABLE FREQUENCY DRIVE
CONTR	CONTRACTOR	GAL	GALLON	OCC	OCCUPIED	VRF	VARIABLE REFRIGERANT FLOW
CRI	COLOR RENDERING INDEX	GALV	GALVANIZED	OCP	OVER CURRENT PROTECTION	VOLT	VOLTAGE
CT	COOLING TOWER	GC	GENERAL CONTRACTOR	OD	OUTSIDE DIAMETER	VTR	VENT THROUGH ROOF
CT	CURRENT TRANSFORMER	GPH	GALLONS PER HOUR	OL	OVERLOAD	W	WIDTH
CU	CONDENSING UNIT	GPM	GALLONS PER MINUTE	ORD	OVERFLOW ROOF DRAIN	W	WATTS
CU	COPPER	GRS/LB	GRAINS PER POUND	OZ	OUNCE	W	WITH
CUH	CABINET UNIT HEATER	H2O	WATER	PBD	PARALLEL BLADE DAMPER	W/O	WITHOUT
CVB	CONSTANT VOLUME BOX	HD	HOSE BIBB	PD	PRESSURE DROP	WB	WET BULB
CWR	CONDENSER WATER RETURN	H2O	WATER	PH	PHASE	WC	WATER COLUMN
CWS	CONDENSER WATER SUPPLY	HP	HORSEPOWER	POS	POSITIVE PRESSURE	WC	WATER CLOSET
DB	DRY BULB	HP	HORSEPOWER	POS	POINT OF SALES	WG	WATER GAUGE
DEPT	DEPARTMENT	HP	HORSEPOWER	PRV	PRESSURE REDUCING VALVE	WP	WEATHERPROOF
DF	DRINKING FOUNTAIN	HP	HORSEPOWER	PS	PRESSURE SWITCH	WPIU	WEATHERPROOF IN-USE
DIA	DIAMETER	HP	HORSEPOWER	PSI	POUNDS PER SQUARE INCH	WSR	WITHSTAND RATING
DIAG	DIAGRAM	HP	HORSEPOWER			XFMR	TRANSFORMER

SUBSTITUTIONS:

A. SUBSTITUTIONS: SUBSTITUTION OF SPECIFIED EQUIPMENT WILL BE ALLOWED THROUGH A PRIOR APPROVAL PROCESS INITIATED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT INTENDED SUBSTITUTION AT LEAST FIVE DAYS PRIOR TO BID FOR APPROVAL FROM ENGINEER. SUBMITTAL SHALL INCLUDE CAPACITIES, DIMENSIONS AND OPERATING INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT. SUBSTITUTION SHALL OCCUR AT NO COST TO THE OWNER. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF APPROVED SUBSTITUTION AND SHALL INCUR ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING STRUCTURAL MODIFICATIONS, SPACE LAYOUT AND REDESIGN COSTS. SEE ALSO DIVISION I GENERAL REQUIREMENTS.

EXAMINATION OF SITE, DRAWINGS, SPECIFICATIONS:

- EXAMINE CAREFULLY THE SITE AND CONDITIONS OF THE SITE. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR TO INSTALL A COMPLETE WORKING SYSTEM WITHIN THE SITE CONDITIONS.
- EXAMINE THE DRAWINGS AND SPECIFICATIONS AND 5 DAYS PRIOR TO BIDDING REPORT ANY ERRORS, OMISSIONS, INCONSISTENCIES, AND CONFLICTS TO THE ENGINEER TO BE REMEDIED IN AN ADDENDUM TO THE PROJECT PRIOR TO BID TIME.
- DRAWINGS ARE DIAGRAMMATIC AND CATALOG NUMBERS GIVEN ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE CAPACITY OF THE EQUIPMENT MEETS THE DRAWING REQUIREMENTS AND SHALL NOT DIMENSION FROM THE MECHANICAL, PLUMBING, OR PIPING DRAWINGS.
- THE LATEST ADOPTED VERSIONS OF THE INTERNATIONAL BUILDING CODES SHALL BE USED AS REQUIRED. THIS WILL ALSO INCLUDE THE LATEST ADOPTED VERSIONS OF THE MECHANICAL PLUMBING CODES AND THE 2009 INTERNATIONAL ENERGY CONSERVATION CODE. ALL METHODS AND MATERIALS REQUIRED BY THESE CODES SHALL BE REQUIRED BY THESE SPECIFICATIONS UNLESS INDICATED OTHERWISE. OTHER APPLICABLE LOCAL CODES AND ORDINANCES SHALL BE AS REQUIRED AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE KNOWN/EDGABLE OF THESE REQUIREMENTS.
- WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL.

DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.



Bighorn Consulting Engineers, Inc.
Mechanical & Electrical Engineers
386 Indian Road
Grand Junction, CO 81501
Phone: (970) 241-8709

CITY OF GRAND JUNCTION
DAYCARE FACILITY
545 24 1/2 ROAD
GRAND JUNCTION, COLORADO

DATE:	ISSUED FOR:
03/16/2022	PERMIT

DATE:	03/11/2022
JOB NO.:	22-003
DRAWN BY:	BCE
CHECKED BY:	BCE
SCALE:	AS SHOWN

SHEET NUMBER:
MO-1

DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.

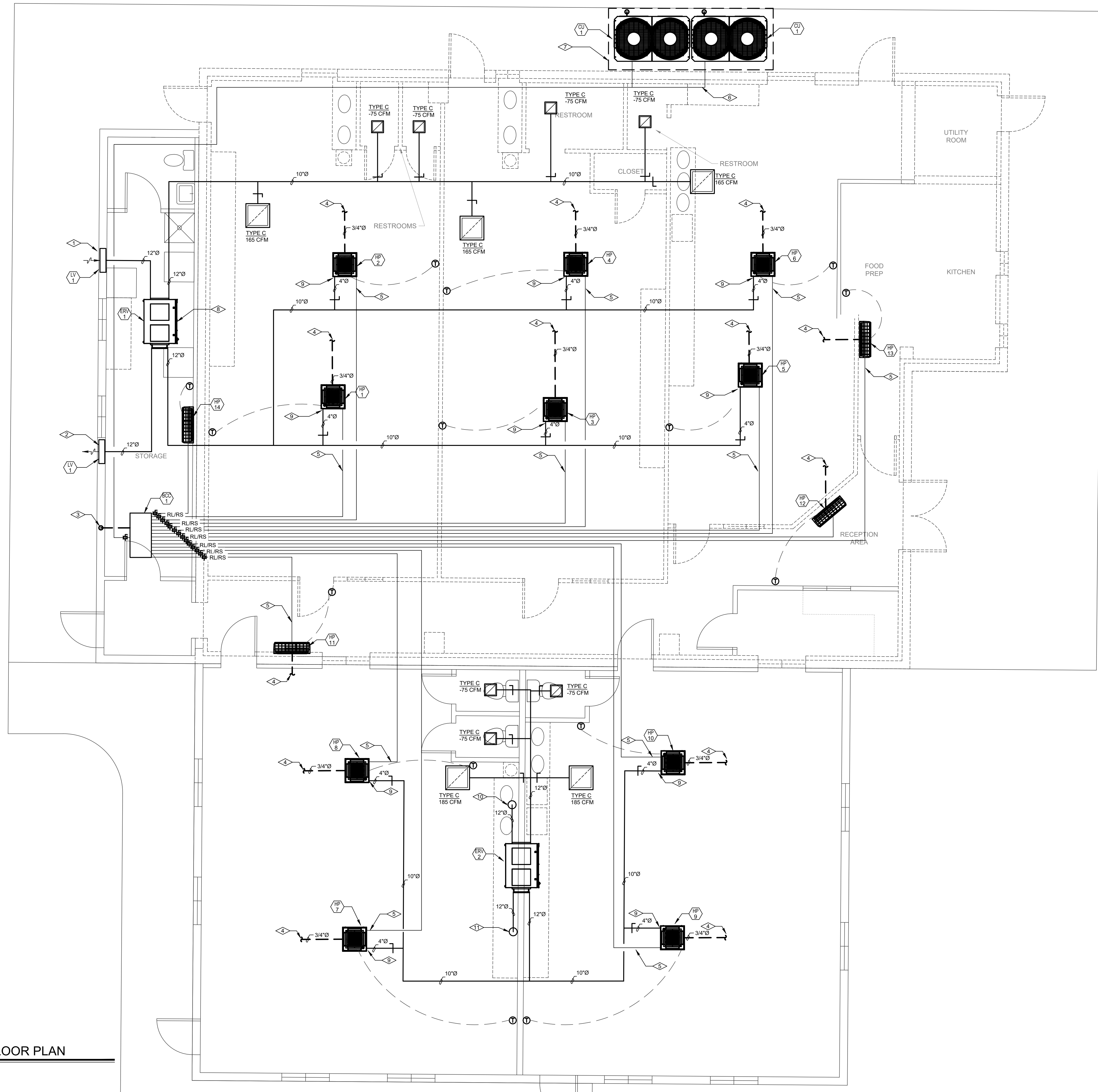


Bighorn Consulting Engineers, Inc.
 Mechanical & Electrical Engineers
 386 Indian Road
 Grand Junction, CO 81501
 Phone: (970) 241-8709

**CITY OF GRAND JUNCTION
 DAYCARE FACILITY**
 545 24 1/2 ROAD
 GRAND JUNCTION, COLORADO

DATE:	ISSUED FOR:
03/16/2022	PERMIT

DATE:	03/11/2022
JOB NO:	22-003
DRAWN BY:	BCE
CHECKED BY:	BCE
SCALE:	AS SHOWN
SHEET NUMBER:	M1-1



- FLAG NOTES:**
- DUCT CONTAINING UNTEMPERED OUTSIDE AIR TO BE PROVIDED WITH INSULATION PER 2009 IECC. PROVIDE INTAKE AIR WITH BIRD SCREEN. FIELD COORDINATE LOCATION OF WALL PENETRATION.
 - PROVIDE BUILDING EXHAUST TERMINATION WITH BIRD SCREEN. MAINTAIN 10 FEET CLEARANCE OF ALL MECHANICAL AIR INTAKES.
 - ROUTE CONDENSATE FROM UNIT THROUGH EXTERIOR WALL ROUTED TO DISCHARGE OUTSIDE.
 - CONDENSATE TO DRAIN TO THE NEAREST PLUMBING FIXTURE GROUP AND DISCHARGE THROUGH AIR GAP. CONTRACTOR TO FIELD COORDINATE ROUTING.
 - REFRIGERANT LINES ROUTED TO CASSETTES PER MANUFACTURER RECOMMENDATION. CONTRACTOR TO FIELD COORDINATE ROUTING. PROVIDE ISOLATION ON BOTH SUCTION AND LIQUID LINES.
 - ROUTE REFRIGERANT LINE THROUGH EXTERIOR WALL. PROVIDE WITH AIREX REFRIGERANT PIPE INSULATION KIT. ROUTE PER MANUFACTURER RECOMMENDATION.
 - PLACE CONDENSING UNIT ON 4" CONCRETE HOUSEKEEPING PAD.
 - MOUNT UNIT AS HIGH AS POSSIBLE IN SPACE.
 - PROVIDE DUCT ADaptor REQUIRED TO CONNECT FA DUCT TO HP UNIT. COORDINATE CONNECTION WITH MANUFACTURER INSTALLATION GUIDE.
 - ROUTE INTAKE UP THROUGH ROOF TO SCREENED GOOSENECK.
 - ROUTE EXHAUST UP THROUGH ROOF TO SCREENED GOOSENECK.

- MECHANICAL GENERAL NOTES:**
- DRAWING IS DIAGRAMMATIC IN NATURE. LOCATIONS AND SIZES MAY VARY DURING FIELD COORDINATION & INSTALLATION OF MECHANICAL, PLUMBING, & ELECTRICAL. DRAWINGS DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS, CERTIFIED EQUIPMENT DRAWINGS AND FROM THE STRUCTURE ITSELF BEFORE FABRICATING ANY WORK. VERIFY ALL SPACE REQUIREMENTS COORDINATING WITH OTHER TRADES, AND INSTALL THE SYSTEMS IN THE SPACE PROVIDED WITHOUT EXTRA CHARGES TO THE OWNER.
 - DUCT DIMENSIONS DO NOT REFLECT ADDITIONAL DIMENSIONS FOR INSULATION. ALL DUCTING SHALL BE INSULATED PER 2018 IECC CODE REQUIREMENTS. (SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH NOT LESS THAN R-4 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES AND WHERE LOCATED OUTSIDE THE BUILDING WITH NOT LESS THAN R-8 INSULATION IN CLIMATE ZONES 1 THROUGH 4 AND NOT LESS THAN R-12 INSULATION IN CLIMATE ZONES 5 THROUGH 8. WHERE LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED OR EXEMPT SPACES BY NOT LESS THAN R-8 INSULATION IN CLIMATE ZONES 1 THROUGH 4 AND NOT LESS THAN R-12 INSULATION IN CLIMATE ZONES 5 THROUGH 8. MESA COUNTY IS CLIMATE ZONE 5B)
 - COORDINATE FINAL LOCATION OF THERMOSTAT WITH OWNER PRIOR TO INSTALLATION. IF THERMOSTAT IS LOCATED ON EXTERIOR WALL PROVIDE THERMOSTAT WITH INSULATED BACKING.
 - ALL REFRIGERANT LINES SHALL BE INSULATED IN A WORKMAN LIKE MANNER PER MANUFACTURER'S INSTRUCTIONS.
 - MECHANICAL EQUIPMENT MANUFACTURERS AS SCHEDULED ON MECHANICAL DRAWINGS ARE SUGGESTED MANUFACTURERS. UNLESS NOTED OTHERWISE DUE TO OWNER/CLIENT REQUIREMENTS AND PREFERENCES. MECHANICAL CONTRACTOR CAN SUBMIT EQUIVALENT EQUIPMENT FROM MANUFACTURERS THAT DIFFER FROM SCHEDULED MECHANICAL EQUIPMENT. ALTERNATE MANUFACTURERS OF MECHANICAL EQUIPMENT WILL BE REVIEWED FOR EQUIVALENCE OF PERFORMANCE AND FUNCTIONALITY BY ENGINEER.
 - THREE PHASE VRF HEAT PUMP CONDENSER MODULES SHALL BE PROVIDED WITH LOCAL PHASE MONITOR PROTECTION BEFORE EACH INDIVIDUAL CONDENSER MODULE. PHASE PROTECTION DEVICE SHALL BE BETWEEN MAIN POWER SUPPLIED TO THE UNIT AND INTERNAL COMPONENTS. PHASE PROTECTION DEVICE SHALL PROVIDE PROTECTION FROM VOLTAGE SAG, PHASE IMBALANCE AND SPORADIC FREQUENCY. PHASE PROTECTION DEVICE SHALL AUTOMATICALLY SHUT OFF CONDENSER MODULE UPON DETECTION OF POWER EVENT. PHASE PROTECTION DEVICE SHALL AUTOMATICALLY ENERGIZE AND START UP CONDENSER MODULE UPON POWER EVENT ENDING. PHASE MONITOR PROTECTION DEVICE SHALL BE SIMILAR/EQUIVALENT TO ICM #450 WITH 2-POLE & 3-POLE CONFIGURATIONS.

MECHANICAL - PROPOSED FLOOR PLAN
 SCALE: 1/4"=1'-0"
 NORTH

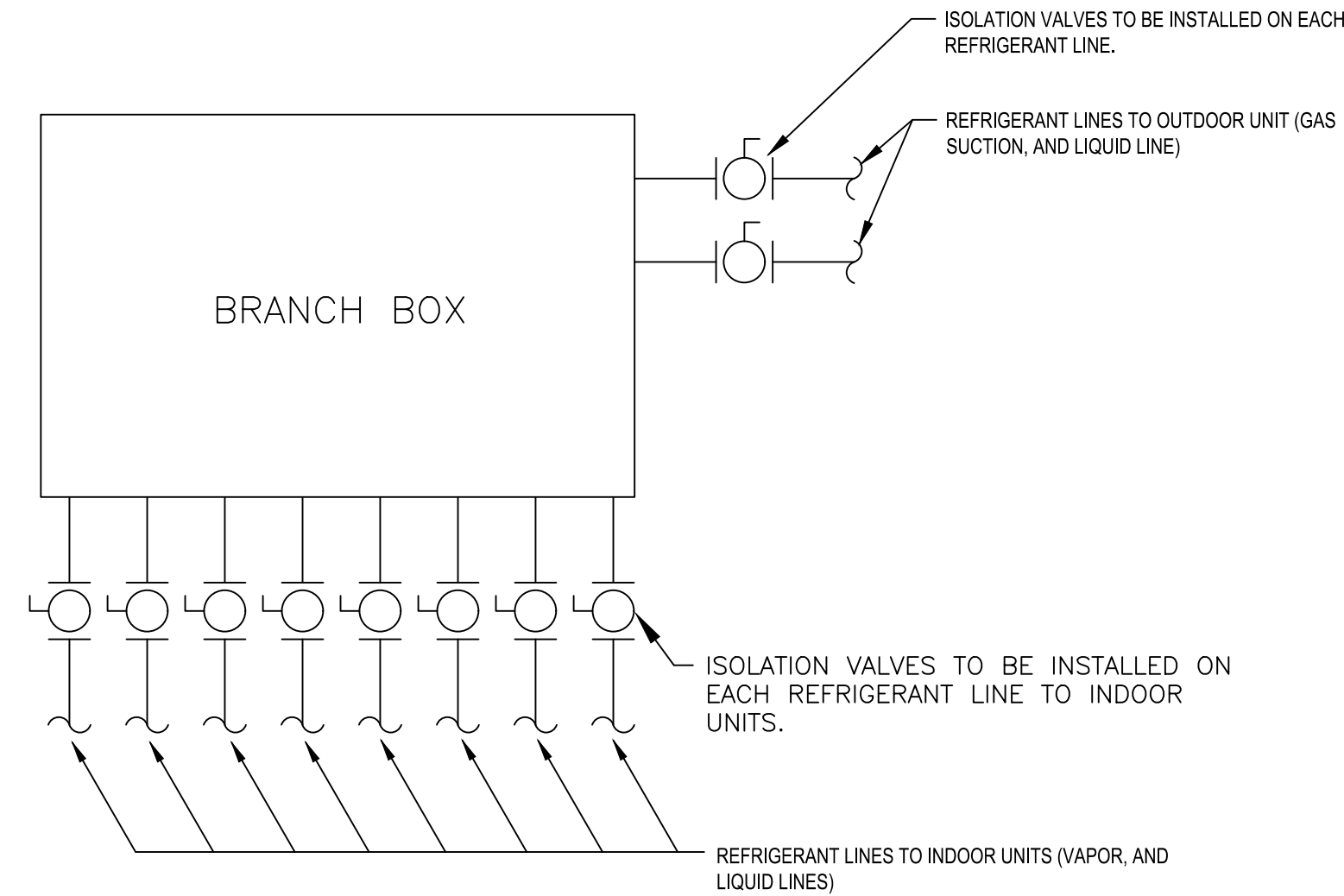
ENERGY RECOVER VENTILATOR SCHEDULE

EQUIPMENT NO.	SERVICE	LOCATION	SUPPLY CFM	TEMPERATURE		E.S.P. (IN W.G.)	SUPPLY FAN			E.S.P. (IN W.G.)	EXHAUST CFM	EXHAUST FAN		PRE-HEAT	ELECTRICAL		MANUFACTURER & MODEL	OPTIONS/ACCESSORIES	
				E.A.T	L.A.T		HP	TYPE:	V./PH./HZ.			HP	TYPE:		V./PH./HZ.	KW			MCA
ERV-1	BUILDING VENTILATION	STORAGE ROOM	800	0	60	0.75	0.75	VFD	208/1/60	0.75	800	0.75	VFD	208/1/60	N/A	10.1	15	RENEWAIRE 1XINH	NOTE-1
ERV-2	BUILDING VENTILATION	CLASSROOM	600	0	60	0.75	0.75	VFD	208/1/60	0.75	600	0.75	VFD	208/1/60	N/A	10.1	15	RENEWAIRE 1XINH	NOTE-1

NOTES:
1. PROVIDE WITH RETURN AIR THERMOSTAT, INTERNALLY MOUNTED CONTROL CENTER SENSORS, MOTOR STARTER, CONTROL TRANSFORMER, HANGERS AND RUBBER IN SHEAR VIBRATION ISOLATORS, DOUBLE WALL CONSTRUCTION, FILTERS ON THE OUTSIDE AIR INTAKE, AUTOMATIC DEFROST CONTROLS, DUCT FLANGES, AND MOTORIZED BACKDRAFT DAMPERS.

MECHANICAL PROVISIONS

- SCOPE OF WORK
 - THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR TO SATISFY A COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
 - ALL WORK IS TO BE PERFORMED IN STRICT COMPLIANCE WITH ALL LOCAL CODES AND ALL OTHER REGULATION GOVERNING WORK OF THIS NATURE.
 - THE CONTRACTOR SHALL, BEFORE SUBMITTING ANY PROPOSAL, EXAMINE THE PROPOSED SITE AND SHALL DETERMINE FOR HIMSELF THE CONDITIONS THAT MAY AFFECT THE WORK. NO ALLOWANCE SHALL BE MADE IF THE CONTRACTOR FAILS TO MAKE SUCH EXAMINATIONS.
 - ALL EQUIPMENT AND MATERIALS SHALL BE AS SPECIFIED OR "APPROVED EQUAL" BY THE ENGINEER OR ARCHITECT.
- PERMITS
 - THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES.
- SHOP DRAWINGS
 - SUBMIT MATERIAL LIST AND SHOP DRAWINGS FOR MAJOR EQUIPMENT TO THE ARCHITECT/ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL SUBMIT FIVE SETS OF SHOP DRAWINGS AND THEY SHALL BE CLEARLY LABELED.
- FLEXIBLE DUCT WORK
 - FLEXIBLE TYPE DUCT SHALL BE OF TWO ELEMENT SPIRAL CONSTRUCTION COMPOSED OF A CORROSION RESISTANT METAL SUPPORTING SPIRAL AND COATED FABRIC WITH A MINERAL BASE. FLEXIBLE DUCT CONNECTORS SHALL BE LISTED BY U.L. CLASS 1 DUCTS, AND SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AND A SMOKE DEVELOPED RATING NOT EXCEEDING 50.
 - USE OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO NO MORE THAN 8 LINEAR FEET PER RUN.
 - CONTRACTOR SHALL BE CAREFUL SO AS NOT TO KINK OR COLLAPSE FLEXIBLE DUCT.
- REFRIGERANT
 - PIPING CONTRACTOR SHALL PROVIDE AND INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN SUCH A WAY AS TO BE INCONSPICUOUS AND FREE FROM ANY POSSIBLE CONDENSATION.
 - INSULATE REFRIGERANT LINES WITH ARMOUR-FLEX TYPE INSULATION, SHALL BE TYPE "K" COPPER TUBING, WITH WROUGHT COPPER SOLDER TYPE FITTINGS SUITABLE FOR CONNECTION WITH SILVER SOLDER.
- DUCTWORK
 - THE DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "SMACNA" APPLICABLE MANUALS.
 - ALL DUCTWORK SHALL BE THE LOW VELOCITY TYPE, UNLESS SPECIFIED OTHERWISE.
 - CONTRACTOR SHALL PROVIDE AND INSTALL APPROVED FIRE DAMPERS AND ACCESS PANELS IN ANY AND ALL DUCTWORK WHICH PENETRATES A HORIZONTAL OR VERTICAL FIRE PARTITION, OR AS OTHERWISE SHOWN ON DRAWINGS.
 - ALL BRANCH DUCTS TO HAVE VOLUME DAMPERS, SMOOTH TURN RADIUS DUCTWORK OR TURNING VANES SHALL BE USED THROUGHOUT WHERE FLOW EXCEEDS 150 CFM.
 - ALL DUCT JOINTS TO BE SEALED IN ACCORDANCE WITH "SMACNA" STANDARDS AND ACCEPTED GOOD PRACTICE.
 - ALL DUCT DIMENSIONS SHOWN ARE NET INSIDE VALUES. DIMENSIONS MAY BE CHANGED SO LONG AS THE NET FREE FACE AREA IS MAINTAINED.
 - ALL CONCEALED DUCTWORK SHALL BE INSULATED WITH 1-1/2" FIBERGLASS INSULATING BLANKET WITH ALUMINUM FOIL FACING.
 - ALL SUPPLY AND RETURN DUCTWORK 15 FEET DOWNSTREAM OF THE HVAC UNIT SHALL BE INTERNALLY LINED WITH A 1/2" ACOUSTICAL DUCT LINER UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- DRAINAGE PIPING
 - (CONDENSATE) SHALL BE SCHEDULE 40 PVC PIPE WITH SOLVENT JOINTS. PITCH HORIZONTAL LINES 1" IN 10'-0". CONDENSATE DRAINS SHALL BE ROUTED TO FLOOR DRAIN, ROOF DRAIN OR INDIRECT WASTE DRAIN.
- HVAC CONTROLS
 - CONTRACTOR TO SUPPLY AND INSTALL ALL CONTROL WIRING AND THERMOSTATS AS REQUIRED.
- ELECTRICAL
 - CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR LOCATION OF WIRING FOR EACH HVAC UNIT.
- PIPE SUPPORTS
 - ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE OR METAL STRAP TO SUPPORT PIPES WILL NOT BE PERMITTED. SPACING OF PIPE SUPPORTS SHALL NOT EXCEED 8 FEET FOR ALL PIPING. PLASTIC PIPING TO BE SUPPORTED EVERY 4 FEET.
- GAS PIPING
 - PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE IRON FITTINGS. WHERE GAS PIPE CONNECTS TO EQUIPMENT, IT SHALL BE PROVIDED WITH A DRIP LEG THE FULL SIZE OF THE RUNOUT. A 100% SHUT-OFF VALVE AND A UNION. GAS PIPING CONTAINING PRESSURE GREATER THAN 9" W.G. SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH WELDED JOINTS.
- MISCELLANEOUS
 - ALL EXTERIOR OPENINGS TO BE PROPERLY CAULKED AND SEALED WITH A SEALANT OF HIGH QUALITY AND LONG LIFE, TO PREVENT INFILTRATION OF OUTSIDE AIR INTO CONDITIONED SPACE. COORDINATE INSTALLATION OF ALL ROOF FLASHING AT ROOF PENETRATION.
 - DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS.
 - VERIFY ALL FIGURES, CONDITIONS, AND DIMENSIONS AT THE JOB SITE.
 - THE MECHANICAL PLANS ARE INTENDED TO BE DIAGRAMMATIC AND ARE BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT.
 - THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO ENSURE THAT THE EQUIPMENT WILL FIT IN THE AVAILABLE SPACE.
 - PEX TUBING, IF PEX TUBING IS USED AS AN APPROVED ALTERNATE FOR APPLICATIONS WHERE METALLIC PIPING IS THE BASIS OF DESIGN, THE PEX MANUFACTURER SHALL SUBMIT SHOP DRAWINGS CLEARLY INDICATING THAT THE DESIGN HAS BEEN ANALYZED AND MODIFIED, AS REQUIRED TO MAINTAIN SCHEDULED HYDRONIC SYSTEM PARAMETERS. ANY DESIGN RESULTING IN INCREASED SYSTEM PRESSURE DROP AS A RESULT OF IMPROPER PEX SIZING OR DESIGN SHALL NOT BE PERMITTED.
- TESTING AND BALANCING
 - THE HVAC SYSTEM SHALL BE TESTED AND BALANCED BY AN INDEPENDENT AGENCY, UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. A SEALED TYPE WRITTEN REPORT SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL.
- GUARANTEE
 - MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THAT PERIOD SHALL BE CORRECTED AT THIS CONTRACTOR'S EXPENSE.
 - FOR THE SAME PERIOD, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY HIM.



TYPICAL BRANCH BOX VALVE LAYOUT
NOT TO SCALE

INDOOR VRF UNIT EQUIPMENT SCHEDULE

EQUIPMENT NO.	SERVICE	NOMINAL COOLING CAPACITY (BTU/HR.)	NOMINAL HEATING CAPACITY (BTU/HR.)	CFM	REFRIGERANT PIPING DIAMETER		ELECTRICAL		MANUFACTURER & MODEL	OPTIONS/ACCESSORIES
					LIQUID	SUCTION	MCA (AMPS)	V./PH./HZ.		
HP-1	CLASSROOM	18,000	40,000	315-460	1/4"	1/2"	0.5	208/1/60	TRANE-MITSUBISHI ELECTRIC TPLFY018FM140A	NOTE-1
HP-2	CLASSROOM	18,000	40,000	315-460	1/4"	1/2"	0.5	208/1/60	TRANE-MITSUBISHI ELECTRIC TPLFY018FM140A	NOTE-1
HP-3	CLASSROOM	18,000	40,000	315-460	1/4"	1/2"	0.5	208/1/60	TRANE-MITSUBISHI ELECTRIC TPLFY018FM140A	NOTE-1
HP-4	CLASSROOM	18,000	20,000	315-460	1/4"	1/2"	0.5	208/1/60	TRANE-MITSUBISHI ELECTRIC TPLFY018FM140A	NOTE-1
HP-5	CLASSROOM	18,000	20,000	315-460	1/4"	1/2"	0.5	208/1/60	TRANE-MITSUBISHI ELECTRIC TPLFY018FM140A	NOTE-1
HP-6	CLASSROOM	18,000	20,000	315-460	1/4"	1/2"	0.5	208/1/60	TRANE-MITSUBISHI ELECTRIC TPLFY018FM140A	NOTE-1
HP-7	CLASSROOM	18,000	20,000	315-460	1/4"	1/2"	0.5	208/1/60	TRANE-MITSUBISHI ELECTRIC TPLFY018FM140A	NOTE-1
HP-8	CLASSROOM	18,000	20,000	315-460	1/4"	1/2"	0.5	208/1/60	TRANE-MITSUBISHI ELECTRIC TPLFY018FM140A	NOTE-1
HP-9	CLASSROOM	18,000	20,000	315-460	1/4"	1/2"	0.5	208/1/60	TRANE-MITSUBISHI ELECTRIC TPLFY018FM140A	NOTE-1
HP-10	CLASSROOM	18,000	20,000	315-460	1/4"	1/2"	0.5	208/1/60	TRANE-MITSUBISHI ELECTRIC TPLFY018FM140A	NOTE-1
HP-11	HALLWAY	12,000	13,500	152-297	1/4"	1/2"	0.24	208/1/60	TRANE-MITSUBISHI ELECTRIC TPKFY012LM140A	NOTE-2
HP-12	RECEPTION	12,000	13,500	152-297	1/4"	1/2"	0.24	208/1/60	TRANE-MITSUBISHI ELECTRIC TPKFY012LM140A	NOTE-2
HP-13	KITCHEN	12,000	13,500	152-297	1/4"	1/2"	0.24	208/1/60	TRANE-MITSUBISHI ELECTRIC TPKFY012LM140A	NOTE-2
HP-14	STORAGE	12,000	13,500	152-297	1/4"	1/2"	0.24	208/1/60	TRANE-MITSUBISHI ELECTRIC TPKFY012LM140A	NOTE-2

NOTES:
1. PROVIDE WITH LINESET RECOMMENDED BY MANUFACTURER, PROVIDE WITH CEILING MOUNT, INTEGRAL CONDENSATE PUMP, AND FACTORY CONTROLS WITH IN ROOM WIRELESS THERMOSTATS. PROVIDE WITH 4" DUCT KNOCKOUT AND 4-6" DUCT FLANGE.
2. PROVIDE WITH LINESET RECOMMENDED BY MANUFACTURER, PROVIDE WITH WALL MOUNT, INTEGRAL CONDENSATE PUMP, AND FACTORY CONTROLS WITH IN ROOM WIRELESS THERMOSTATS.

CONDENSING UNIT SCHEDULE

EQUIPMENT NO.	SERVICE	NOMINAL COOLING CAPACITY (TON)	EFFICIENCY (EER)	REFRIG. PIPING		ELECTRIC			MANUFACTURER & MODEL	OPTIONS/ACCESSORIES
				LIQUID	VAPOR	V/PH/HZ	MOP (A)	MCA (A)		
CU-1	HP 1-14	16	13.5	7/8"	1-1/8"	208/3/60	70	44	TRANE-MITSUBISHI ELECTRIC TURYH192BN40AN	NOTE-1

NOTES:
1. PROVIDE LINE SET AS RECOMMENDED BY MANUFACTURER. PROVIDE WITH WIND BAFFLES AND HAIL GUARD, 12" STAND, AND AIREX INSULATION KIT.

VRF BRANCH CIRCUIT CONTROLLER SCHEDULE

EQUIPMENT NO.	SYSTEM NO.	# BRANCH CIRCUITS PER UNIT	LOCATION	ELECTRICAL			DIMENSIONS LxWxH INCHES	MANUFACTURE & MODEL	OPTIONS/ACCESSORIES
				MCA	MOC	V./PH./HZ.			
BCC-1	CU-1	16	HANGING	1.82	15	208/1/60	21-1/2" X 44-11/16" X 9-7/8"	TRANE-MITSUBISHI ELECTRIC TCMBM1016JA11N4	NOTE-1

NOTES:
1. PROVIDE WITH POWER DISCONNECT, CONDENSATE CATCH PAN AND CONDENSATE PUMP, ISOLATION VALVES UPSTREAM AND DOWNSTREAM OF BRANCH CONTROLLER BOX. VIBRATION ISOLATION HANGERS.

LOUVER SCHEDULE

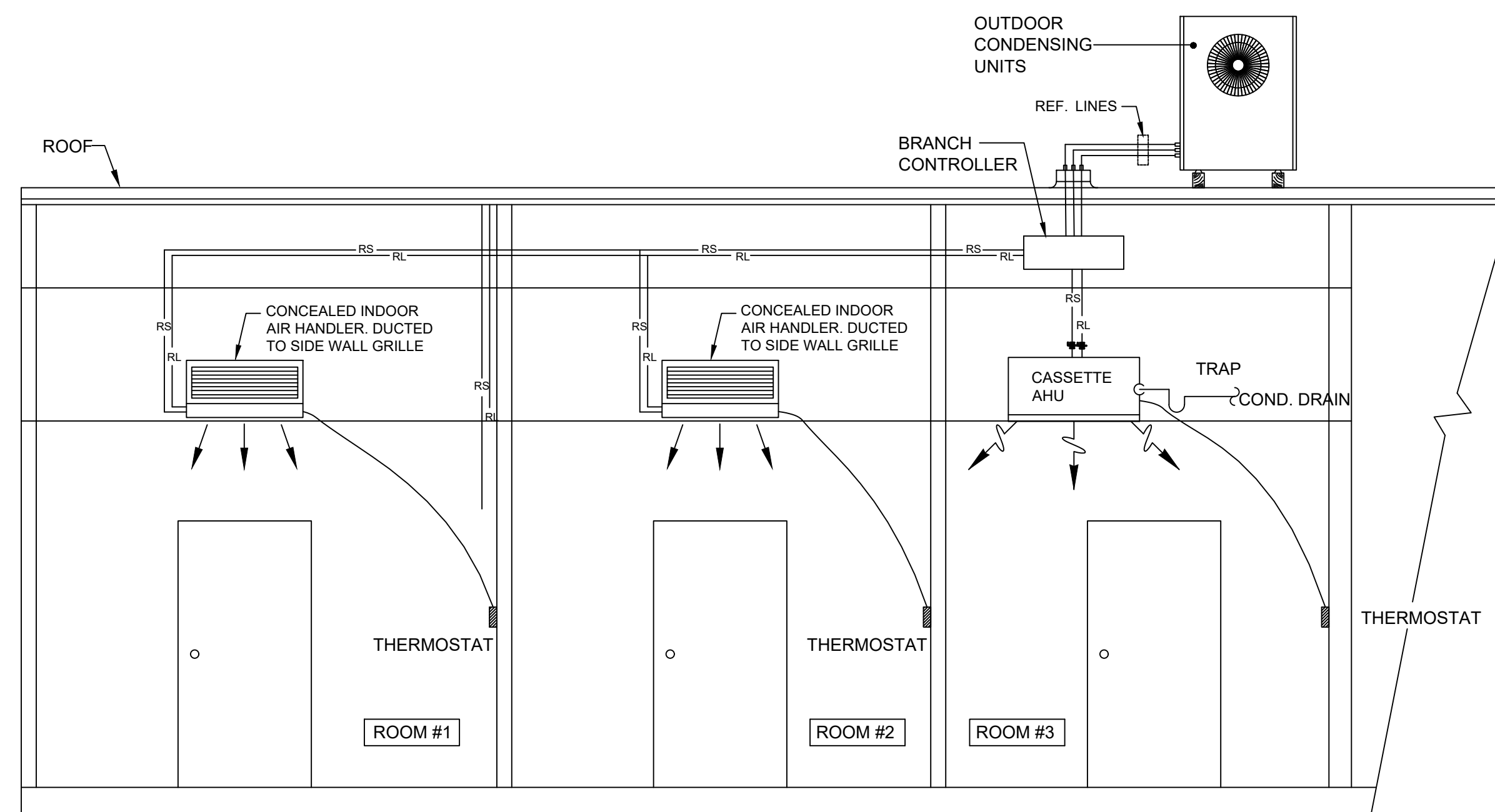
EQUIPMENT NO.	SERVICE	WIDTH (IN)	HEIGHT (IN)	THICKNESS OF WALL (IN)	MATERIAL	INSECT/BIRD SCREEN	MANUFACTURER & MODEL	OPTIONS/ACCESSORIES
LV-1	ERV-1	24	24	6	ALUMINUM	YES	GREENHECK EAD-635-24X24	NOTE-1

NOTES:
1. PROVIDE HOUSING AND BIRD SCREEN.

GRILLE-REGISTER-DIFFUSER SCHEDULE

EQUIPMENT NO.	SIZE	MODEL	MANUFACTURER	FINISH	OPTIONS/ACCESSORIES
C	12"X12"	85	PRICE	WHITE	NOTE-1

NOTES:
1. COORDINATE ALL MOUNTING TYPES WITH CEILING.

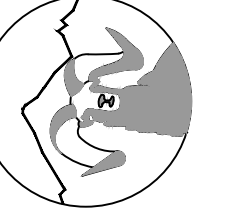


DUCTLESS SPLIT-SYSTEM WITH MULTIPLE
AIR HANDLING UNITS DETAIL
N.T.S.

DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.



Bighorn Consulting Engineers, Inc.
Mechanical & Electrical Engineers
386 Indian Road
Grand Junction, CO 81501
Phone: (970) 241-8709



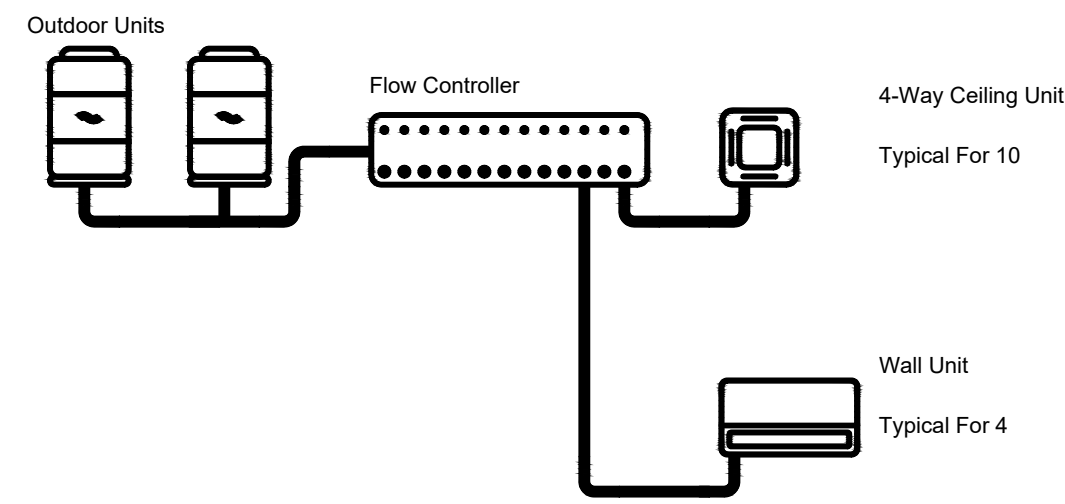
CITY OF GRAND JUNCTION
DAYCARE FACILITY
545 24 1/2 ROAD
GRAND JUNCTION, COLORADO

DATE:	ISSUED FOR:
03/16/2022	PERMIT

DATE:	03/11/2022
JOB NO:	22-003
DRAWN BY:	BCE
CHECKED BY:	BCE
SCALE:	AS SHOWN

SHEET NUMBER:
M2-1

Flow Diagram: VRF SYSTEM



Sequence of Operation: VRF SYSTEM

Variable Refrigerant Flow (VRF) System Sequence of Operation:

This sequence of operations describes the "system-level" control functions of a variable refrigerant flow (VRF) system, which includes coordinating the operation of the outdoor unit with terminal units during the various operating modes. The "equipment-level" control functions of the outdoor unit and the terminal units are contained in their respective sequence of operations documents.

Variable Refrigerant Flow (VRF) Heat Recovery System:

A Heat Recovery System shall provide synchronous/simultaneous heating and cooling to individual zones served by the VRF system. The state of the VRF system is Off when the outdoor unit is off and all terminal units are off. When any terminal unit transitions to the On state, the outdoor unit shall transition to the On state and the VRF system shall transition to the On state.

While the VRF system is in the On state, the outdoor unit supplies subcooled liquid and super-heated gas refrigerant to the refrigerant manifold device(s). The refrigerant manifold device shall simultaneously distribute liquid refrigerant to terminal units requesting cooling, and gas refrigerant to terminal units requesting heat. Each terminal unit shall communicate to the outdoor unit the need for heating or cooling.

While the outdoor unit is in the On state, if all of the terminal units transition to the Off state, the outdoor unit shall transition to the Shutdown state. Entering this state shall cause the outdoor unit to perform the necessary functions required to prepare the refrigerant system to stop operation. Once the refrigerant system has stopped operation, the outdoor unit shall transition to the Off state and the VRF System state shall transition to the Off state.

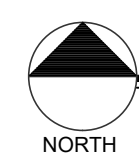
VRF System Control (No BAS):

The VRF System Control device is a computer based application that provides a method for a building operator to monitor and control the operation of one or more Variable Refrigerant Flow (VRF) systems that serve a building.

The VRF System Control device shall have the ability to monitor and control VRF system functions such as, but not limited to, time schedule based system operation, recording of operating parameter data values as a time or sample series, and control individual VRF terminal units or groups of terminal units. System level functionality is limited in scope to a VRF system, with no ability or minimal ability to control and monitor other non-VRF equipment or systems.

Points List: VRF OUTDOOR UNIT

System Point Description	POINTS										ALARMS				
	GRAPHIC	ANALOG HARDWARE INPUT (AI)	BINARY HARDWARE INPUT (BI)	ANALOG HARDWARE OUTPUT (AO)	BINARY HARDWARE OUTPUT (BO)	SOFTWARE POINT (SFT)	HARDWARE INTERLOCK (HDW)	WIRELESS (WLS)	NETWORK (NET)	HIGH ANALOG LIMIT	LOW ANALOG LIMIT	BINARY	LATCH DIAGNOSTIC	SENSOR FAIL	COMMUNICATION FAIL
COMPRESSOR DISCHARGE TEMPERATURE CMP DT		X													
COMPRESSOR OUTPUT(S) CMP OUT				X											
DEMAND (EMERGENCY) STOP CMP ES			X												
HIGH SIDE SATURATION TEMPERATURE HSAT TEMP		X													
INVERTER HEAT SINK TEMPERATURE IVR TEMP		X													
LOW SIDE SATURATION TEMPERATURE LSAT TEMP		X													
OUTDOOR AIR TEMPERATURE OAT		X													
OUTDOOR UNIT FAN OUTPUT(S) OFN SPD					X										
POWER 3PH BUT ONLY MEASURING ONE LEG CURRENT (PH-A) CMP PHA		X													
POWER 3PH BUT ONLY MEASURING ONE LEG CURRENT (PH-C) CMP PHC		X													
REFRIGERANT HIGH SIDE PRESSURE HPRESS		X													
REFRIGERANT LOW SIDE PRESSURE LPRESS		X													
SUCTION LINE TEMPERATURE SUC TEMP		X													
ALARM CODE ALM					X										
ALARM MESSAGE ALM MSG					X										
COMPRESSOR OPERATION STATUS CMP STS					X										
LOW AMBIENT CAPACITY CONTROL LAMB CAP					X										
OPERATING SPEED OF THE MAIN ODU CMP FQ					X										
OPERATIONAL MODE STATUS MOD STS					X										
OUTDOOR UNIT FAN STATE OFN STS					X										
POWER LINE FREQUENCY PWR FQ					X										
REVERSING VALVE POSITION REV VLV POS					X										



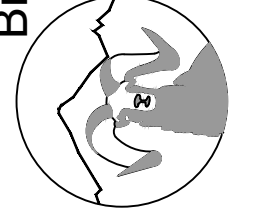
MECHANICAL - PROPOSED FLOOR PLAN

SCALE: 1/4"=1'-0"

DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.



Bighorn Consulting Engineers, Inc.
Mechanical & Electrical Engineers
386 Indian Road
Grand Junction, CO 81501
Phone: (970) 241-8709



**CITY OF GRAND JUNCTION
DAYCARE FACILITY**
545 24 1/2 ROAD
GRAND JUNCTION, COLORADO

DATE: 03/16/2022
ISSUED FOR: PERMIT

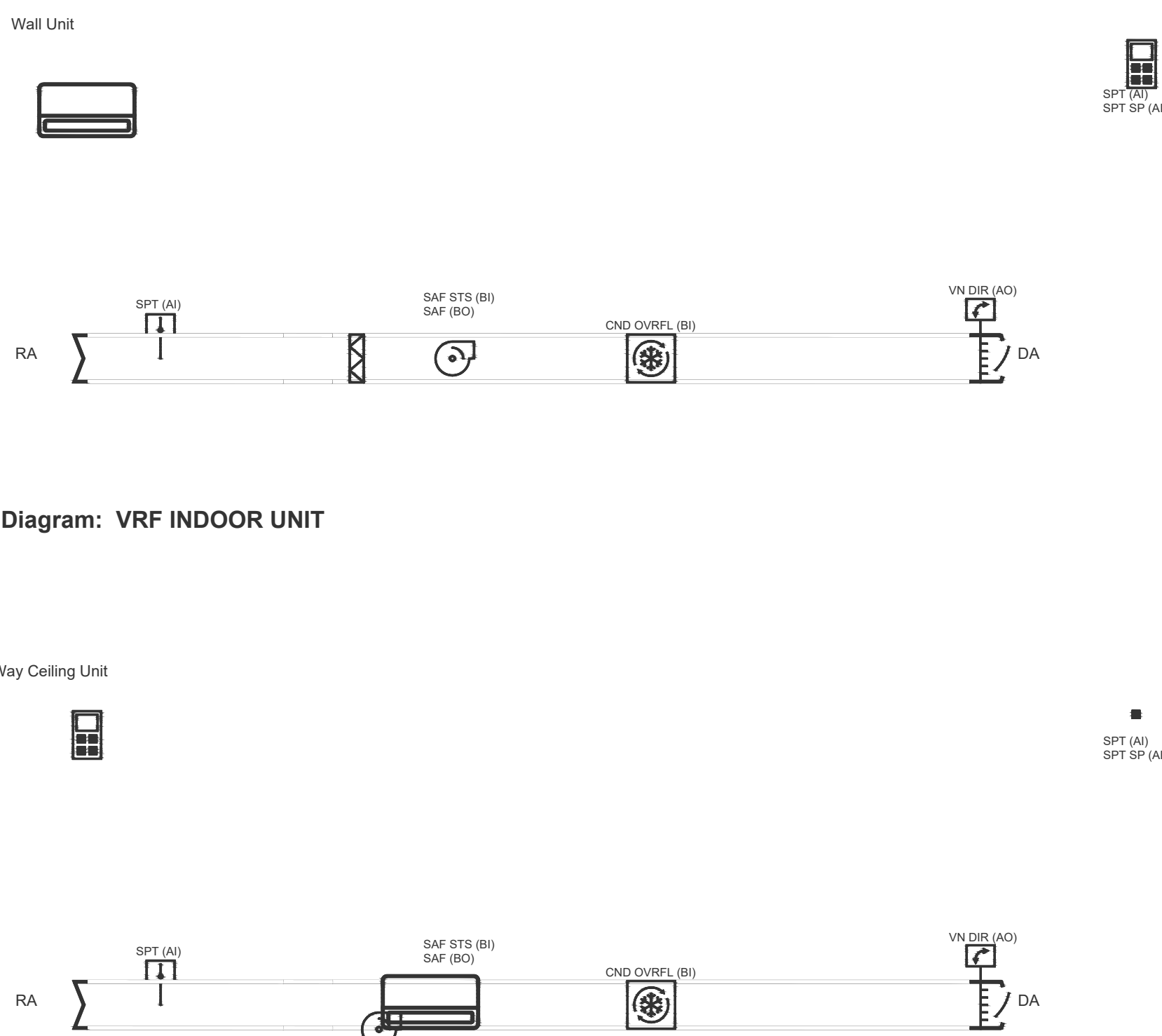
DATE: 03/11/2022
JOB NO: 22-003
DRAWN BY: BCE
CHECKED BY: BCE
SCALE: AS SHOWN

SHEET NUMBER:
M2-2

Points List: VRF INDOOR UNIT

System Point Description	POINTS										ALARMS				
	GRAPHIC	ANALOG HARDWARE INPUT (AI)	BINARY HARDWARE INPUT (BI)	ANALOG HARDWARE OUTPUT (AO)	BINARY HARDWARE OUTPUT (BO)	SOFTWARE POINT (SFT)	HARDWARE INTERLOCK (HDW)	WIRELESS (WLS)	NETWORK (NET)	HIGH ANALOG LIMIT	LOW ANALOG LIMIT	BINARY	X LATCH DIAGNOSTIC	SENSOR FAIL	COMMUNICATION FAIL
CONDENSATE OVERFLOW DETECTION LOCAL CND OVRFL			X												
FAN SPEED STATUS SAF STS				X											
SPACE TEMPERATURE LOCAL SPT	X	X													
SPACE TEMPERATURE SETPOINT LOCAL SPT SP	X	X													
SPACE TEMPERATURE (TH1) SPT	X														
SUPPLY FAN SPEED SAF					X										
VANE DIRECTION VN DIR	X		X												
ALARM CODE ALM					X										
ALARM MESSAGE ALM MSG					X										
BAS COMMUNICATION STATE BAS COM					X										X
EXPANSION VALVE STATE XV RATE					X										
FILTER TIMER HOURS FIL HRS					X										
GAS PIPE TEMPERATURE (TH3) VAPT					X										
GAS PIPE TEMPERATURE (TH4) VAPT					X										
INDOOR LEV RATE LEV RATE					X										
LIQUID PIPE TEMPERATURE (TH2) LIQT					X										
OCCUPIED COOLING SETPOINT OCC CLG SP					X										
OCCUPIED HEATING SETPOINT OCC HTG SP					X										
SUBCOOL (SC) SC					X										
SUPERHEAT (SH) SH					X										
UNOCCUPIED COOLING SETPOINT UNOCC CLG SP					X										
UNOCCUPIED HEATING SETPOINT UNOCC HTG SP					X										

Flow Diagram: VRF INDOOR UNIT



Flow Diagram: VRF INDOOR UNIT

Sequence of Operation: VRF INDOOR UNIT

Building Automation System Interface:

The VRF System Control device will allow the user to monitor the status of Variable Refrigerant Flow (VRF) terminal units, outdoor units, and secondary VRF equipment, and modify control parameters of terminal units and secondary VRF equipment as necessary to maintain the desired space conditions.

If communication between the VRF equipment and the VRF System Control device is lost, the VRF system will continue to operate using the current control parameters stored within the equipment to maintain the desired space conditions.

External Control Device:

In this specification the term 'external control device' is used to denote one or more user interface control devices that may be present in the system. The control devices that may be present are a Local Control device, VRF System Control device, or a Building Automation System. When more than one external control device is present in the control system, the last command or configuration value received by the indoor unit governs indoor unit operation.

There may be other means to provide commands and configuration parameters to the VRF system, such as hardwired control inputs. However, these are not considered the typical system control use case and the specification does not address them as written.

Zone Temperature Setpoint Control:

Single Setpoint. One zone air temperature setpoint is present. When the terminal unit is in a heating or cooling mode, it will control the zone air temperature value to the Zone Temperature Setpoint value.

On/Off Mode:

The terminal unit has two modes that drive the overall operation of the unit, On and Off mode.

On. The internal algorithm will control the unit to maintain the desired zone air temperature.

Off. The internal algorithm will NOT control the unit to maintain the desired zone air temperature. The algorithm will control components internal to the unit to minimize energy consumption and isolate it from VRF system refrigerant circuit. The zone air temperature sensor in use will be monitored to allow the Zone Air Temperature Value to be displayed at an External Control Device(s).

Operation Mode:

Operation mode is the primary control parameter of the indoor unit when it is in the On state. The operation mode command provided to the indoor unit from an external control device will determine the base HVAC control function the indoor unit is providing. Available modes of operation are Cool, Dry, Fan, Heat, Setback, and Auto.

Cool. When the terminal unit Operation Mode is the Cool state, liquid refrigerant is provided to the terminal unit. The amount of refrigerant entering the evaporator coil is regulated by the Linear Expansion Valve. The position of LEV is determined by an algorithm internal to the terminal unit. The algorithm calculates the temperature difference value between the measured zone air temperature value and the Cooling Temperature Setpoint value. When a large difference value exists, the LEV is driven open to allow more refrigerant into the evaporator coil. As the zone air temperature decreases the difference value becomes less. The algorithm will respond and drive the LEV to more closed position reducing the amount of refrigerant entering into the evaporator coil. As the difference value approaches zero, the system stabilizes and the amount of LEV modulation is minimal.

Dry. When the terminal unit Operation Mode is the Dry state, liquid refrigerant is provided to the terminal unit. The amount of refrigerant entering the evaporator coil is regulated by the Linear Expansion Valve. The goal in Dry mode is to remove water vapor from the air, not control the zone air temperature value to a zone temperature setpoint. When the terminal unit is commanded to the Dry state, an algorithm internal to the terminal unit drives the LEV to an open position. It is assumed that the position of the valve allows a sufficient amount of refrigerant to enter the coil, to cause the surface temperature of the coil fins to fall below the dew point temperature. The result is condensation that removes water vapor from the air passing through the coil.

When the zone air temperature value is greater than or equal to the Cooling Temperature Setpoint, Dry state is beneficial from both a humidity and zone temperature perspective because water vapor is being removed from the air in the zone and the difference value between the zone air temperature value and the Cooling Temperature Setpoint value is reduced.

Continued dehumidification will cause the zone air temperature value to become less than the Cooling Temperature Setpoint, which is undesirable. To combat the effect, the algorithm calculates the temperature difference value between the zone air temperature value and Cooling Temperature Setpoint. Based on the difference value, the algorithm uses a sliding time scale method to modulate the LEV between the open position and the fully closed position for a variable length of time. It is assumed that when the LEV is in the fully closed position latent heat within the zone will cause the zone air temperature value to increase. The method allows some dehumidification to take place without significantly lowering the air temperature in the zone below the Cooling Temperature Setpoint.

Fan. When the terminal unit Operation Mode is the Fan state, the LEV is closed and the terminal unit does not attempt regulate the air temperature in the zone. The temperature of the air in the zone may change due to latent heat within the zone. With the use of an external user interface, the speed of the fan may be modulated between the discrete states supported by the terminal unit.

Heat. When the terminal unit Operation Mode is the Heat state, hot gas refrigerant is provided to the terminal unit. The amount of refrigerant entering the evaporator coil is regulated by the Linear Expansion Valve. The position of LEV is determined by an algorithm internal to the terminal unit. The algorithm calculates the temperature difference value between the measured zone air temperature value and the Heating Temperature Setpoint value. When a large difference value exists, the LEV is driven open to allow more refrigerant into the evaporator coil. As the zone air temperature increases the difference value becomes less. The algorithm will respond and drive the LEV to more closed position reducing the amount of refrigerant entering into the evaporator coil. As the difference value approaches zero, the system stabilizes and the amount of LEV modulation is minimal.

Setback. Some terminal units may not support the Setback state. When the terminal unit Operation Mode

transitions to Setback state, the LEV is driven closed and the zone air temperature is allowed to drift. The amount of drift is bounded by the Setback Cooling Temperature Setpoint and the Setback Heating Temperature Setpoint.

When the zone air temperature value is greater than the Setback Cooling Temperature Setpoint the terminal unit will execute the setback cool algorithm. The algorithm modulates the LEV to maintain the zone temperature to the Setback Cooling Temperature Setpoint.

When the zone air temperature value is less than the Setback Heating Temperature Setpoint the terminal unit will execute the setback heat algorithm. The algorithm modulates the LEV to maintain the zone temperature to the Setback Heating Temperature Setpoint.

Auto. Some manufacturers' terminal units may not support the Auto state of Operation Mode.

Auto mode is beneficial in a heat recovery system because it allows the terminal unit to automatically switch between cooling and heating states based on the current zone air temperature and the zone temperature setpoint in use. When the terminal unit Operation Mode is the Auto state, two sub-states are available, Auto (Cool) and Auto (Heat).

Depending on the setpoint control configuration of the terminal unit, one of three setpoints is used for control. When the unit is configured for single setpoint control, the Auto Zone Temperature Setpoint is used. When the unit is configured for dual setpoint control, the Cooling Temperature Setpoint is used when the unit is in the Auto (Cool) state and Heating Temperature Setpoint is used when the unit is in the Auto (Heat) state.

When the terminal unit Operation Mode is the Auto (Cool) state, liquid refrigerant is provided to the terminal unit. The amount of refrigerant entering the evaporator coil is regulated by the Linear Expansion Valve. The position of LEV is determined by an algorithm internal to the terminal unit.

The algorithm subtracts the Zone Air Temperature value from the zone temperature setpoint value, the result is the temperature difference value. When the result is a large positive value, the LEV is driven open to allow more refrigerant into the evaporator coil. As the zone air temperature increases the difference value becomes smaller. The algorithm will respond and drive the LEV to a more closed position to reduce the amount of refrigerant entering into the evaporator coil. As the difference value approaches zero, the system stabilizes and the amount of LEV modulation is minimal. When the difference value is negative, the LEV is driven closed to prevent refrigerant from entering the evaporator.

When the terminal unit Operation Mode is the Auto (Heat) state, hot gas refrigerant is provided to the terminal unit. The amount of refrigerant entering the evaporator coil is regulated by the Linear Expansion Valve. The position of LEV is determined by an algorithm internal to the terminal unit.

The algorithm subtracts the zone temperature setpoint value from the Zone Air Temperature value, the result is the temperature difference value. When the result is a large positive value, the LEV is driven open to allow more refrigerant into the evaporator coil. As the zone air temperature increases the difference value becomes smaller. The algorithm will respond and drive the LEV to a more closed position reducing the amount of refrigerant entering into the evaporator coil. As the difference value approaches zero, the system stabilizes and the amount of LEV modulation is minimal. When the difference value is negative, the LEV is driven closed to prevent refrigerant from entering the evaporator.

Auto Mode System Changeover. The state of the terminal unit is Auto (Cool). When the absolute value of the difference value is greater than the factory defined changeover delta value, the terminal unit will transition to the Auto (Heat) state.

The state of the terminal unit is Auto (Heat). When the difference value is greater than the factory defined changeover delta setpoint, the terminal unit will transition to the Auto (Cool) state.

Fan Control. When the indoor unit is in the Off state, the fan is controlled to the minimum speed required to measure zone air temperature at the return air temperature sensor. This allows zone air temperature to be accurately measured while the indoor unit is in the Off state.

Upon transition from the Off state to the On state, the RPM of the fan is governed to match a manufacture specified, RPM value assigned to the each discrete fan speed state available in the unit. The number of distinct fan speed states and the fan RPM value for each state varies by manufacture and model of indoor unit. The fan speed state is controlled by one of two methods, automatic fan speed control or manual fan speed control. The choice of control method is made by a user of the system.

Upon indoor unit transition from the On state to the Off state, the fan transitions to the state described when the indoor unit is in the Off state.

Manual Fan Speed Control. A user of the system selects a desired fan speed state. The fan speed RPM will change to match the manufacture specified RPM value and maintain the RMP value until a different fan speed state is selected or a change is made to another control parameter of the indoor unit that causes the fan to change to a different state.

Automatic Fan Speed Control. When a user of the system selects the fan speed state Auto, an algorithm internal to the indoor unit controls the selection of the fan speed state. The algorithm calculates the temperature difference value between the measured zone air temperature value and the zone temperature setpoint value in use. When a large difference value exists, the fan state selected will have a highest fan speed RPM value. As the difference value is reduced, the algorithm will change the fan speed in use to a state with a smaller RPM value.

Vane Direction:

The terminal unit has movable air vanes to change the direction of air flow from the unit. Three air vane control modes are available: Auto, Swing, and Manual. The external user interface is used to select the air vane position in use.

Auto. When the Operation Mode is Cool state, the air vanes modulate to direct airflow parallel to the ceiling. When the Operation Mode is Heat state, the air vanes modulate to direct airflow perpendicular to the ceiling.

Swing. Regardless of Operation Mode state, the air vanes continuously modulate between parallel and perpendicular flow to the ceiling in a periodic manner.

Manual. Regardless of Operation Mode state, the air vanes are fixed at a position. The number of individual positions available varies by manufacturer and model type. Typically, two to five fixed positions are supported.

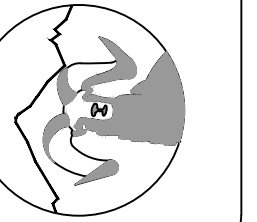
Condensate Overflow Monitoring:

The unit shall be equipped with a condensate drain pan level sensor to protect against drain pan overflow. If the sensor detects a high condensate level in the drain pan, the control shall shut down the indoor unit before an overflow can occur and a condensate alarm diagnostic shall annunciate at the BAS.

DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.



Bighorn Consulting Engineers, Inc.
Mechanical & Electrical Engineers
386 Indian Road
Grand Junction, CO 81501
Phone: (970) 241-8709

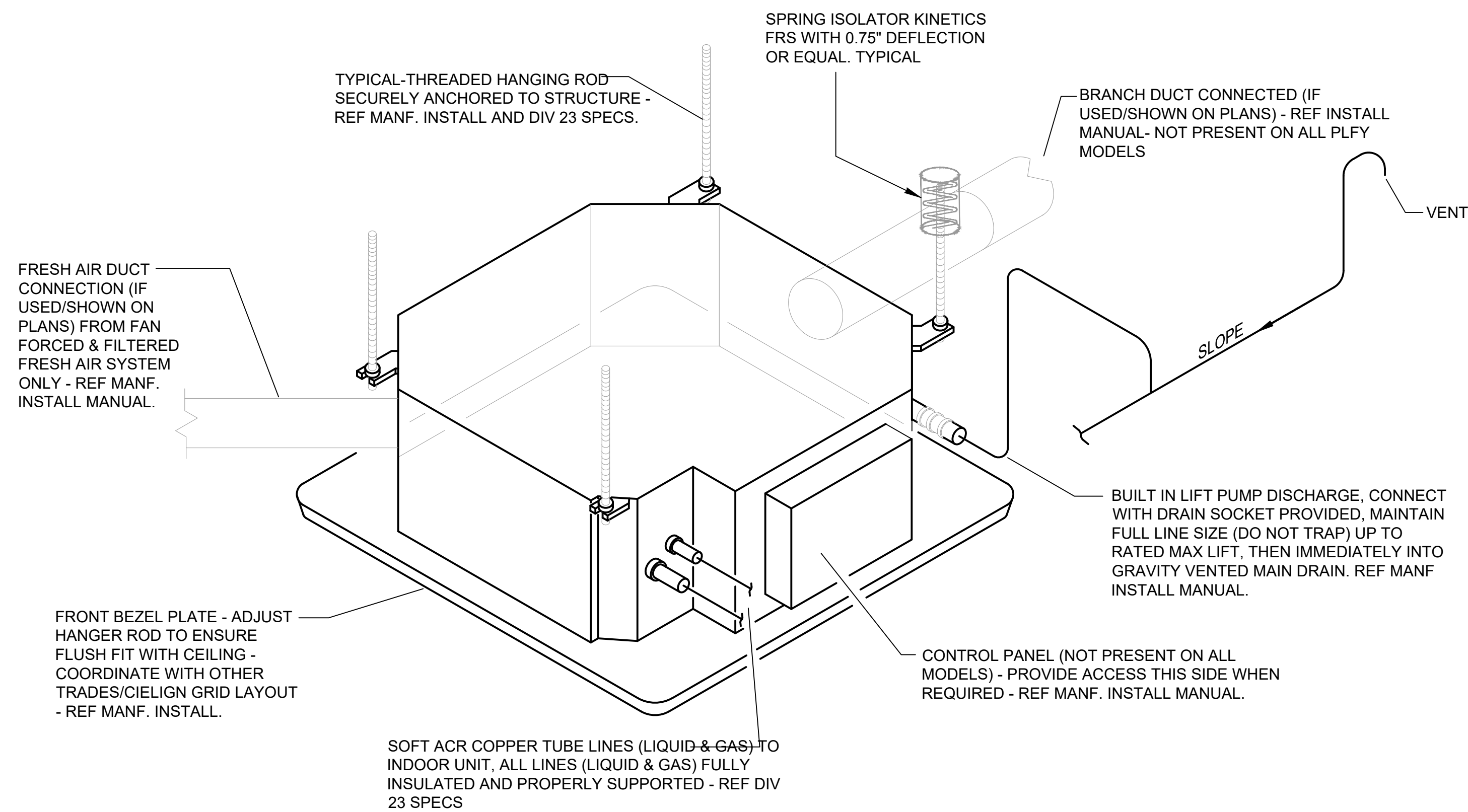


CITY OF GRAND JUNCTION
DAYCARE FACILITY
545 24 1/2 ROAD
GRAND JUNCTION, COLORADO

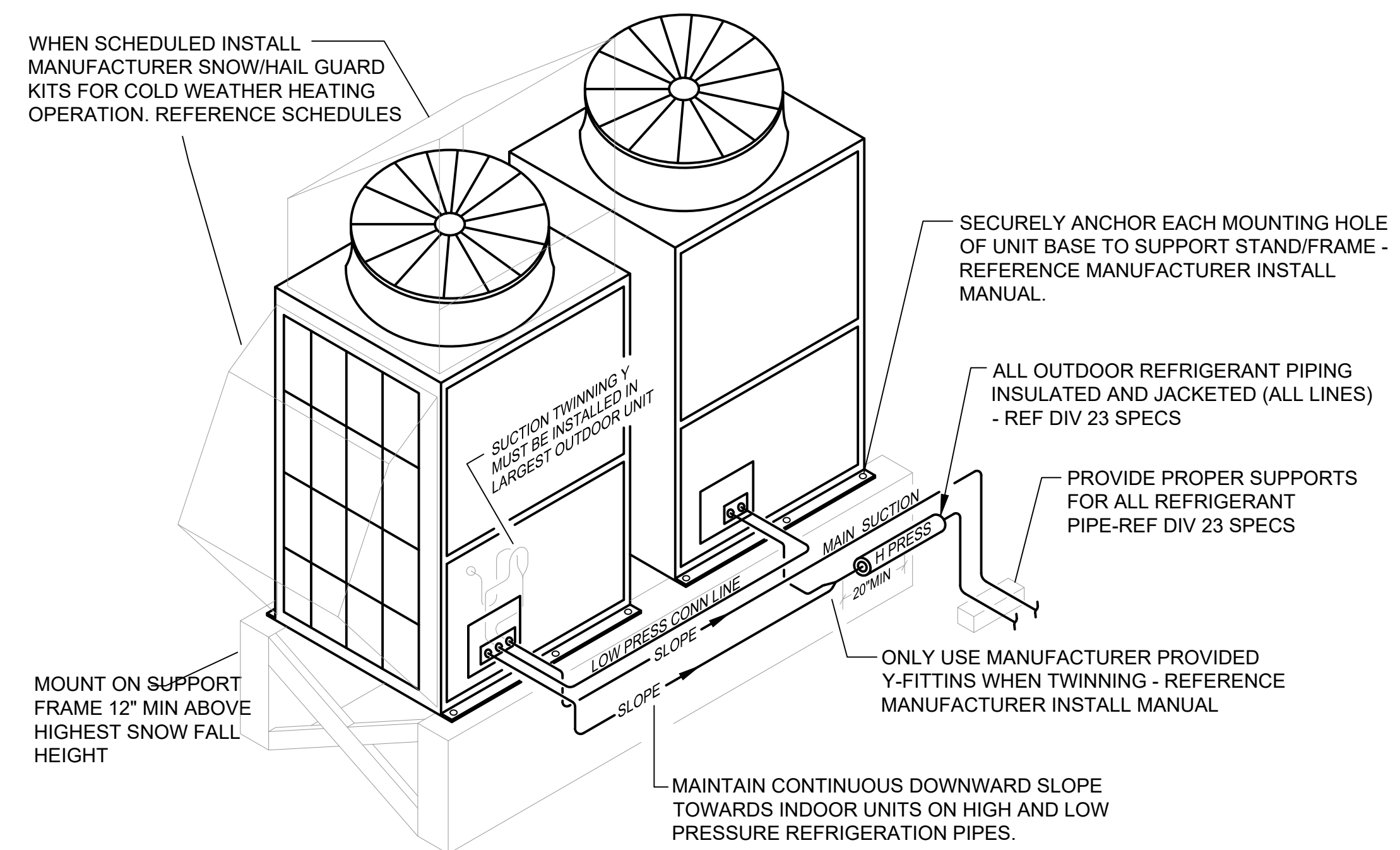
DATE:	ISSUED FOR:
03/16/2022	PERMIT

DATE:	03/11/2022
JOB NO:	22-003
DRAWN BY:	BCE
CHECKED BY:	BCE
SCALE:	AS SHOWN

SHEET NUMBER:
M2-3



VRF CASSETTE INDOOR UNIT (PLFY) DETAIL

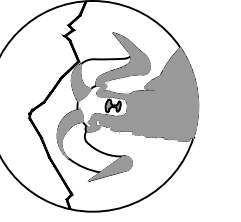


VRF OUTDOOR
HEAT RECOVERY-R2 (PURY-TWINNED) DETAIL

DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.



Bighorn Consulting Engineers, Inc.
Mechanical & Electrical Engineers
386 Indian Road
Grand Junction, CO 81501
Phone: (970) 241-8709



CITY OF GRAND JUNCTION
DAYCARE FACILITY
545 24 1/2 ROAD
GRAND JUNCTION, COLORADO

DATE:	ISSUED FOR:
03/16/2022	PERMIT

DATE:	03/11/2022
JOB NO:	22-003
DRAWN BY:	BCE
CHECKED BY:	BCE
SCALE:	AS SHOWN
SHEET NUMBER:	M2-4

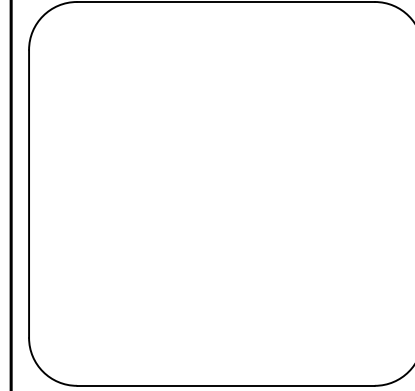
DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.



Bighorn Consulting Engineers, Inc.
 Mechanical & Electrical Engineers
 386 Indian Road
 Grand Junction, CO 81501
 Phone: (970) 241-8709

**CITY OF GRAND JUNCTION
 DAYCARE FACILITY**
 545 24 1/2 ROAD
 GRAND JUNCTION, COLORADO

DATE:	ISSUED FOR:
03/16/2022	PERMIT



DATE:	03/11/2022
JOB NO.:	22-003
DRAWN BY:	BCE
CHECKED BY:	BCE
SCALE:	AS SHOWN
SHEET NUMBER:	M2-5

DIAGRAM DISPLAY	SYMBOL DESCRIPTION	LEGEND	CONT.No	PAGE
---	---	---		
---	---	---		
---	---	---		

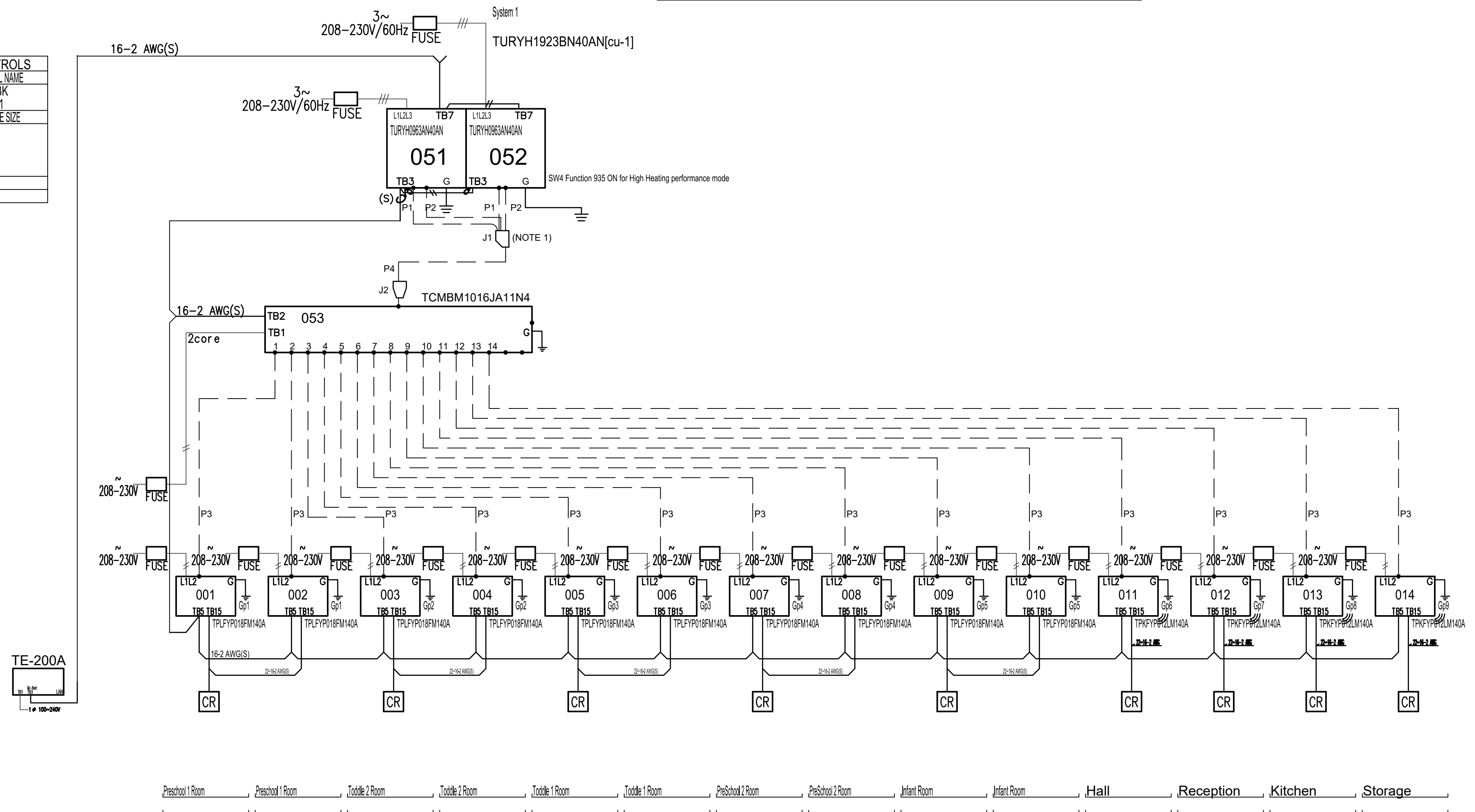
CITY MULTI
 SYSTEM SCHEMATIC DWG.

This drawing is schematic in nature. Final routing of piping & wiring shall be determined by the installing contractor and/or designer of record. Additional refrigerant charge is needed depending on the size and length of extended piping. Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.

1.25mm³(16 AWG) : 1.25mm³(16 AWG) or more. 0.75mm³(20 AWG) : between 0.5mm³(24 AWG) and 0.75mm³(20 AWG).

Coded Notes:
 NOTE 1: Install twinning 'Y's within 15 degrees of level and with 20 inches of straight pipe on converging connection - reference installation manual for additional details, including but not limited to special tapping requirements when twinning, and pipe slope requirements.

PIPING AND CONTROLS	
SYMBOL	BRANCH PIPE MODEL NAME
J1	CMY-R200NCBK
J2	CMY-R302S-G1
SYMBOL LIQUID PIPE/GAS PIPE SIZE	
P1	3/4
P2	1/8
P3	1/4 1/2
P4	1/8 1-1/8
SYMBOL MODEL NUMBER	
CR	TAC-YTES-CRAU-LJ



Diamond System Builder
 sw: 4.4.0.14
 db: 4.4.0.7
 2/11/2022
 9:52 AM

REMARKS
 Comments:

Indoor Units: 14 / 1 to 48
 Capacity: 228 / 96 to 288 (118.8%)
 * Connectable capacity is not actual capacity.
 Total Pipe Length: 455.8 / 1960.5 feet
 Furthest Actual: 75.0 / 541.0 feet
 Furthest Equiv.: 83.2 / 623.0 feet
 Furthest IU from BC Actual: 35.0 / 131.0 feet
 Furthest IU from BC Equiv.: 38.3 / 131.0 feet
 Furthest IU from BC Thru Sub BC Actual: 0.0 / 0.0 feet
 Furthest IU from BC Thru Sub BC Equiv.: 0.0 / 0.0 feet

Correction Factors

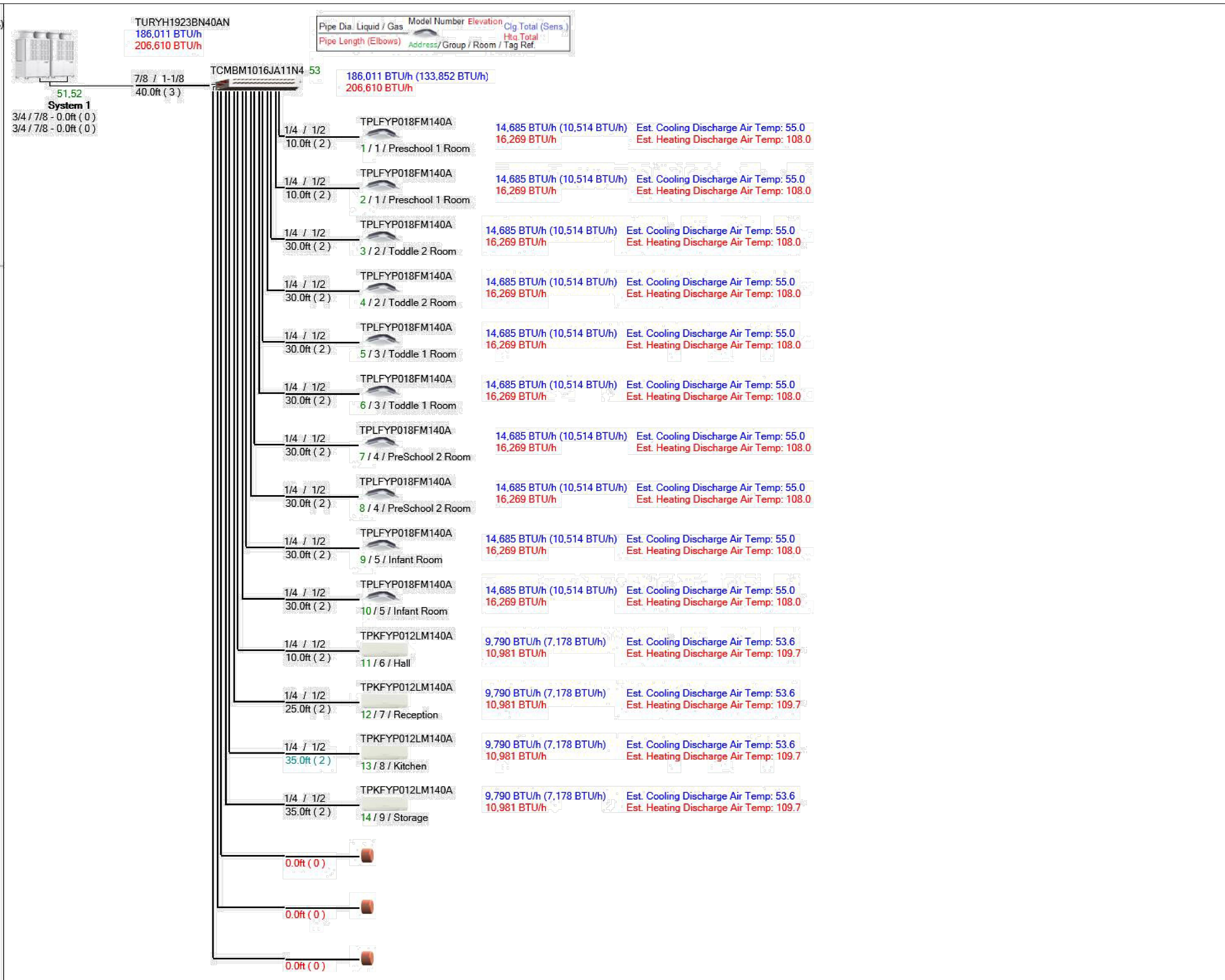
Outdoor Unit Capacity: 1.04 1.00
 Temperature: 1.00 1.07
 Piping Length: 0.97 0.99
 Defrosting: - 0.95
 User Derate: 1.00 1.00

Total Derate: 0.97 0.96
 Additional Refrigerant: 38.7 lb
 Total Refrigerant Amount: 86.3 lb

Conditions (°F)

Cooling
 Indoor DB 80.0 Humidity 51.8% Indoor WB 67.0
 Outdoor DB 96.0

Heating
 Indoor DB 70.0
 Outdoor DB 2.0 Humidity 72.8% Outdoor WB 1.1



DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER. WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER.



Bighorn Consulting Engineers, Inc.
 Mechanical & Electrical Engineers
 386 Indian Road
 Grand Junction, CO 81501
 Phone: (970) 241-8709

**CITY OF GRAND JUNCTION
 DAYCARE FACILITY**
 545 24 1/2 ROAD
 GRAND JUNCTION, COLORADO

DATE:	ISSUED FOR:
03/16/2022	PERMIT

DATE:	03/11/2022
JOB NO.:	22-003
DRAWN BY:	BCE
CHECKED BY:	BCE
SCALE:	AS SHOWN
SHEET NUMBER:	M2-6