Orland Park Health & Fitness Center
HVAC System Upgrades

15430 West Ave, Orland Park, IL 60462

Proposal Prepared For:

Village of Orland Park:

- Joel Van Essen - *Director of Public Works*
- Mike Mazza - *Operations Manager - Natural Resources & Facilities*
- Scott Hiland - *Supervisor - Natural Resources & Facilities*

Date:
November 11th, 2024

Payment Terms:
Net 30

Delivery Terms:
Freight Allowed and Prepaid – F.O.B Factory

Proposal Expiration Date:
30 Days

OMNIA Partners Cooperative Quote Number: R1-192278-24-004

OMNIA Partners Cooperative Contract Number: Trane Racine #3341

Trane® Commercial HVAC, Upper Midwest Region
7100 S. Madison Street Willowbrook, IL 60527 United States Tel (888) 770-6469

Trane® Turnkey Scope of Work

"Scope of Work" and notations within are based on the existing as-built drawings of the facility and on the multiple site surveys performed by the Trane Turnkey team with the Village of Orland Park staff's assistance and input.

Existing Removals/Demolition

- Demo/Remove/Dispose of existing chiller, pumps, air handling units (roof mounted and in mechanical room), gas piping, flues, ductwork, and required system demolition.
- Remove/reinstall ceiling tiles & open drywall ceiling/install access to reach existing VAV boxes
- Demo/Remove/Dispose of existing VAV boxes (terminal units)
- Demo/Remove two (2) abandoned kitchen makeup air units on rooftop, cap existing curbs
- All electrical disconnects/make-safe

Furnish & Install New

- **Qty 1 - Trane IntelliPak Rooftop Unit, 75-ton capacity, "RTU-6"**
- **Qty 1 - Trane IntelliPak Rooftop Unit, 60-ton capacity, "RTU-1"**
- **Qty 1 - Trane Voyager Rooftop Unit, 50-ton capacity, "RTU-3"**
- **Qty 1 - Trane Voyager Rooftop Unit, 27.5-ton capacity, "RTU-4"**
- **Qty 1 - Trane Precedent Rooftop Unit, 15-ton capacity, "RTU-5"**
  - High efficiency packaged rooftop units (RTUs)
  - DX Cooling/Modulating Gas Heat
  - Roof mounted
  - Air-Side Economizers with Demand Control Ventilation
  - 100% Modulating Powered Exhaust w/ Space Pressure Control (RTU-6 Only)
- **Qty 3 – Curbs for RTUs**
- **Qty 2 – Curb Adapters for RTUs**
- **Qty 47 – Trane® Variable Air Volume Terminal Units ("VAV Boxes")**
  - SCR Electric reheat
  - Wireless space temperature/CO2 sensors
  - High efficiency modulating
- **Qty 1 – Gas Unit Heater** in mechanical room
- **Qty 1 – Trane Mini Split** in gear room

- **Cranes**
- **All required hoisting, cartage, and work-planning for safe removal and installation of Equipment (***existing access & site logistics reviewed by Trane***)**
- **Remove/reinstall of existing ceiling tiles for VAV boxes**
- **In drywall ceiling areas, neatly cut access, and furnish & install access door if none exists**
- **Furnish & Install new ladders for rooftop access, Qty - 3**

- **Mechanical Installation**
  - Furnish & Install new structural reinforcement steel for new RTUs
  - Install curbs (qty 3) and curb adapters (qty 2)
  - Set/install rooftop units (RTUs), qty 5
  - Set/install gas unit heater in mechanical room
  - Set/install mini-split in gear room
  - Set/install VAV boxes, qty 47
  - New duct drop connections and transitions where required to connect to existing ductwork
  - Cap existing roof hood curbs after removal of equipment
  - Extend existing gas lines to new RTUs
  - Install new condensate drain lines
  - Supply/return/outside air ductwork in mechanical room
  - All required piping, connections for RTUs

- **Electrical Installation**
  - Re-feed power wire to new RTUs from MCC-2, qty 3
  - Reconnect power to new RTUs, qty 2
  - New 20A circuit breaker and power feed to Gas Unit Heater
  - New 90A circuit breaker and power feed to RTU-4
  - New 50A circuit breaker and power feed to RTU-5
  - New 250A circuit breaker and power feed to RTU-6
  - New 200A circuit breaker and power feed to RTU-1
  - New 150A circuit breaker and power feed to RTU-3
  - Reconnect power to VAV boxes, qty 47 (VAVs have factory fused disconnects)
  - New 20A circuit breaker, transformer, and 208V/1ph power feed to 1.5-ton Mini Split in gear room, wire indoor unit to outdoor unit, install thermostat interface
  - Wireless zone sensor installation
  - Provide BAS Controls wiring to RTUs, including reconnection of existing duct smoke detectors and new Air-Fi wireless coordinators

- **Trane Controls/BAS**
  - Install five (5) RTU Air-Fi wireless coordinators with power back to existing Tracer SC+
  - Install one (1) Symbio 500 with Air-Fi Exhaust Fan controller w/ enclosure in gear room
  - Install one (1) Symbio 500 with Air-Fi w/ enclosure, wire to thermostat interface on mini split in gear room
  - Mount Air-Fi space temp/CO2 sensor for RTU-5
  - Mount Air-Fi space temp/CO2 sensor, space pressure control poly tubing to space and outdoor pickups for RTU-6
  - Install forty-seven (47) Air-Fi wireless space temp/CO2 sensors for new VAV boxes
  - Utilize existing Tracer SC+, remove legacy bridge, and upgrade legacy controllers
  - New 3D floor plan graphics with temperatures and navigation
- **Pre-testing of AHUs supply, return, and outside air flows**
- **Pre-testing of VAV box supply air flows**
- **Post-testing of RTUs supply, return, and outside air flows**
- **Post-testing and balancing of VAV boxes air flows**
- **Trane Start-up of all equipment**
- **Final Commissioning by Trane**

Trane® Turnkey Inclusions for Village of Orland Park

- **Mechanical & Electrical Engineering**
- **Trane Turnkey Project Manager, Single Point of Contact**
- **All required Installation/Subcontracting for Scope of Work items**
- **Engineered Design Plans provided to Village of Orland Park**
- **Temporary storage of all equipment, delivery to jobsite on day of installation**
- **Trane will assist with document prep required for Permits**
- **Performance and Payment Bond**
- **5-year parts/labor warranty on all Trane Equipment**
- **1-year labor and materials warranty on all non-Trane Equipment**

General Exclusions:

- Permit costs & fees
- Taxes
- Asbestos abatement
- Premium time
- Upgrading existing non-compliant code issues outside of our Scope of Work
- Temporary services
- Any other services not explicitly outlined within this Proposal

Total Turnkey Proposal Price……..$2,867,190

Respectfully submitted,

Tim Reynolds
Account Executive
Trane® Turnkey Contracting
312.771.7436 cell
Timothy.Reynolds@trane.com

Acceptance of Proposal By

Customer: Village of Orland Park

Name Title

Date Signature

Purchase Order #: _____

(if applicable)

OMNIA Partners Cooperative Quote Number: R1-192278-24-004

TERMS AND CONDITIONS – COMMERCIAL INSTALLATION

"Company" shall mean Trane U.S. Inc. for Work performed in the United States or Trane Canada ULC for Work performed in Canada.

1. Acceptance; Agreement. These terms and conditions are an integral part of Company's offer and form the basis of any agreement (the "Agreement") resulting from Company's proposal (the "Proposal") for the commercial goods and/or services described (the "Work"). COMPANY'S TERMS AND CONDITIONS AND EQUIPMENT PRICES ARE SUBJECT TO PERIODIC CHANGE OR AMENDMENT. The Proposal is subject to acceptance in writing by the party to whom this offer is made or an authorized agent ("Customer") delivered to Company within 30 days from the date of the Proposal. Prices in the Proposal are subject to change at any time upon notice to Customer. If Customer accepts the Proposal by placing an order, without the addition of any other terms and conditions of sale or any other modification, Customer's order shall be deemed acceptance of the Proposal subject to Company's terms and conditions. If Customer's order is expressly conditioned upon Company's acceptance or assent to terms and/or conditions other than those expressed herein, return of such order by Company with Company's terms and conditions attached or referenced serves as Company's notice of objection to Customer's terms and as Company's counteroffer to provide Work in accordance with the Proposal and the Company terms and conditions. If Customer does not reject or object in writing to Company within 10 days, Company's counteroffer will be deemed accepted. Notwithstanding anything to the contrary herein, Customer's acceptance of the Work by Company will in any event constitute an acceptance by Customer of Company's terms and conditions. This Agreement is subject to credit approval by Company. Upon disapproval of credit, Company may delay or suspend performance or, at its option, renegotiate prices and/or terms and conditions with Customer. If Company and Customer are unable to agree on such revisions, this Agreement shall be cancelled without any liability, other than Customer's obligation to pay for Work rendered by Company to the date of cancellation.

2. Connected Services. In addition to these terms and conditions, the Connected Services Terms of Service ("Connected Services Terms"), available at https://www.trane.com/TraneConnectedServicesTerms, as updated from time to time, are incorporated herein by reference and shall apply to the extent that Company provides Customer with Connected Services, as defined in the Connected Services Terms.

3. Title and Risk of Loss. All Equipment sales with destinations to Canada or the U.S. shall be made as follows: FOB Company's U.S. manufacturing facility or warehouse (full freight allowed). Title and risk of loss or damage to Equipment will pass to Customer upon tender of delivery of such to carrier at Company's U.S. manufacturing facility or warehouse.

4. Pricing and Taxes. Unless otherwise noted, the price in the Proposal includes standard ground transportation and, if required by law, all sales, consumer, use and similar taxes legally enacted as of the date hereof for equipment and material installed by Company. Tax exemption is contingent upon Customer furnishing appropriate certificates evidencing Customer's tax-exempt status. Company shall charge Customer additional costs for bonds agreed to be provided. Equipment sold on an uninstalled basis and any taxable labor/labour do not include sales tax and taxes will be added. Within thirty (30) days following Customer acceptance of the Proposal without addition of any other terms and conditions of sale or any modification, Customer shall provide notification of release for immediate production at Company's factory. Prices for Work are subject to change at any time prior to shipment to reflect any cost increases related to the manufacture, supply, and shipping of goods. This includes, but is not limited to, cost increases in raw materials, supplier components, labor, utilities, freight, logistics, wages and benefits, regulatory compliance, or any other event beyond Company's control. If such release is not received within 6 months after date of order receipt, Company reserves the right to cancel any order. If shipment is delayed due to Customer's actions, Company may also charge Customer storage fees. Company shall be entitled to equitable adjustments in the contract price to reflect any cost increases as set forth above and will provide notice to Customer prior to the date for which the increased price is to be in effect for the applicable customer contract. In no event will prices be decreased.

5. Exclusions from Work. Company's obligation is limited to the Work as defined and does not include any modifications to the Work site under the Americans With Disabilities Act or any other law or building code(s). In no event shall Company be required to perform work Company reasonably believes is outside of the defined Work without a written change order signed by Customer and Company.

6. Performance. Company shall perform the Work in accordance with industry standards generally applicable in the area under similar circumstances as of the time Company performs the Work. Company may refuse to perform any Work where working conditions could endanger property or put at risk the safety of persons. Unless otherwise agreed to by Customer and Company, at Customer's expense and before the Work begins, Customer will provide any necessary access platforms, catwalks to safely perform the Work in compliance with OSHA or state industrial safety regulations.

7. Payment. Customer shall pay Company's invoices within net 30 days of invoice date. Company may invoice Customer for all equipment or material furnished, whether delivered to the installation site or to an off-site storage facility and for all Work performed on-site or off-site. No retention shall be withheld from any payments except as expressly agreed in writing by Company, in which case retention shall be reduced per the contract documents and released no later than the date of substantial completion. Under no circumstances shall any retention be withheld for the equipment portion of the order. If payment is not received as required, Company may suspend performance and the time for completion shall be extended for a reasonable period of time not less than the period of suspension. Customer shall be liable to Company for all reasonable shutdown, standby and start-up costs as a result of the suspension. Company reserves the right to add to any account outstanding for more than 30 days a service charge equal to 1.5% of the principal amount due at the end of each month. Customer shall pay all costs (including attorneys' fees) incurred by Company in attempting to collect amounts due and otherwise enforcing these terms and conditions. If requested, Company will provide appropriate lien waivers upon receipt of payment. Customer agrees that, unless Customer makes payment in advance, Company will have a purchase money security interest in all equipment from Company to secure payment in full of all amounts due Company and its order for the equipment, together with these terms and conditions, form a security agreement. Customer shall keep the equipment free of all taxes and encumbrances, shall not remove the equipment from its original installation point and shall not assign or transfer any interest in the equipment until all payments due Company have been made.

8. Time for Completion. Except to the extent otherwise expressly agreed in writing signed by an authorized representative of Company, all dates provided by Company or its representatives for commencement, progress or completion are estimates only. While Company shall use commercially reasonable efforts to meet such estimated dates, Company shall not be responsible for any damages for its failure to do so. Delivery dates are approximate and not guaranteed. Company will use commercially reasonable efforts to deliver the Equipment on or before the estimated delivery date, will notify Customer if the estimated delivery dates cannot be honored, and will deliver the Equipment and services as soon as practicable thereafter. In no event will Company be liable for any damages or expenses caused by delays in delivery.

9. Access. Company and its subcontractors shall be provided access to the Work site during regular business hours, or such other hours as may be requested by Company and acceptable to the Work site' owner or tenant for the performance of the Work, including sufficient areas for staging, mobilization, and storage. Company's access to correct any emergency condition shall not be restricted. Customer grants to Company the right to remotely connect (via phone modem, internet or other agreed upon means) to Customer's building automation system (BAS) and or HVAC equipment to view, extract, or otherwise collect and retain data from the BAS, HVAC equipment, or other building systems, and to diagnose and remotely make repairs at Customer's request.

10. Completion. Notwithstanding any other term or condition herein, when Company informs Customer that the Work has been completed, Customer shall inspect the Work in the presence of Company's representative, and Customer shall either (a) accept the Work in its entirety in writing, or (b) accept the Work in part and specifically identify, in writing, any exception items. Customer agrees to re-inspect any and all excepted items as soon as Company informs Customer that all such excepted items have been completed. The initial acceptance inspection shall take place within ten (10) days from the date when Company informs Customer that the Work has been completed. Any subsequent re-inspection of excepted items shall take place within five (5) days from the date when Company informs Customer that the excepted items have been completed. Customer's failure to cooperate and complete any of said inspections within the required time limits shall constitute complete acceptance of the Work as of ten (10) days from date when Company informs Customer that the Work, or the excepted items, if applicable, has/have been completed.

11. Permits and Governmental Fees. Company shall secure (with Customer's assistance) and pay for building and other permits and governmental fees, licenses, and inspections necessary for proper performance and completion of the Work which are legally required when bids from Company's subcontractors are received, negotiations thereon concluded, or the effective date of a relevant Change Order, whichever is later. Customer is responsible for necessary approvals, easements, assessments and charges for construction, use or occupancy of permanent structures or for permanent changes to existing facilities. If the cost of such permits, fees, licenses and inspections are not included in the Proposal, Company will invoice Customer for such costs.

12. Utilities During Construction. Customer shall provide without charge to Company all water, heat, and utilities required for performance of the Work.

13. Concealed or Unknown Conditions. In the performance of the Work, if Company encounters conditions at the Work site that are (i) subsurface or otherwise concealed physical conditions that differ materially from those indicated on drawings expressly incorporated herein or (ii) unknown physical conditions of an unusual nature that differ materially from those conditions ordinarily found to exist and generally recognized as inherent in construction activities of the type and character as the Work, Company shall notify Customer of such conditions promptly, prior to significantly disturbing same. If such conditions differ materially and cause an increase in Company's cost of, or time required for, performance of any part of the Work, Company shall be entitled to, and Customer shall consent by Change Order to, an equitable adjustment in the Contract Price, contract time, or both.

14. Pre-Existing Conditions. Company is not liable for any claims, damages, losses, or expenses, arising from or related to conditions that existed in, on, or upon the Work site before the Commencement Date of this Agreement ("Pre-Existing Conditions"), including, without limitation, damages, losses, or expenses involving Pre-Existing Conditions of building envelope issues, mechanical issues, plumbing issues, and/or indoor air quality issues involving mold/mould and/or fungi. Company also is not liable for any claims, damages, losses, or expenses, arising from or related to work done by or services provided by individuals or entities that are not employed by or hired by Company.

15. Asbestos and Hazardous Materials. Company's Work and other services in connection with this Agreement expressly excludes any identification, abatement, cleanup, control, disposal, removal or other work connected with asbestos, polychlorinated biphenyl ("PCB"), or other hazardous materials (hereinafter, collectively, "Hazardous Materials"). Customer warrants and represents that, except as set forth in a writing signed by Company, there are no Hazardous Materials on the Work site that will in any way affect Company's Work and Customer has disclosed to Company the existence and location of any Hazardous Materials in all areas within which Company will be performing the Work. Should Company become aware of or suspect the presence of Hazardous Materials, Company may immediately stop work in the affected area and shall notify Customer. Customer will be exclusively responsible for taking any and all action necessary to correct the condition in accordance with all applicable laws and regulations. Customer shall be exclusively responsible for and, to the fullest extent permitted by law, shall indemnify and hold harmless Company (including its employees, agents and subcontractors) from and against any loss, claim, liability, fees, penalties, injury (including death) or liability of any nature, and the payment thereof arising out of or relating to any Hazardous Materials on or about the Work site, not brought onto the Work site by Company. Company shall be required to resume performance of the Work in the affected area only in the absence of Hazardous Materials or when the affected area has been rendered harmless. In no event shall Company be obligated to transport or handle Hazardous Materials, provide any notices to any governmental agency, or examine the Work site for the presence of Hazardous Materials.

16. Force Majeure. Company's duty to perform under this Agreement is contingent upon the non-occurrence of an Event of Force Majeure. If Company shall be unable to carry out any material obligation under this Agreement due to an Event of Force Majeure, this Agreement shall at Company's election (i) remain in effect but Company's obligations shall be suspended until the uncontrollable event terminates or (ii) be terminated upon 10 days' notice to Customer, in which event Customer shall pay Company for all parts of the Work furnished to the date of termination. An "Event of Force Majeure" shall mean any cause or event beyond the control of Company. Without limiting the foregoing, "Event of Force Majeure" includes: acts of God; acts of terrorism, war or the public enemy; flood; earthquake; tornado; storm; fire; civil disobedience; pandemic insurrections; riots; labor/labour disputes; labor/labour or material shortages; sabotage; restraint by court order or public authority (whether valid or invalid), and action or non-action by or inability to obtain or keep in force the necessary governmental authorizations, permits, licenses, certificates or approvals if not caused by Company; and the requirements of any applicable government in any manner that diverts either the material or the finished product to the direct or indirect benefit of the government.

17. Customer's Breach. Each of the following events or conditions shall constitute a breach by Customer and shall give Company the right, without an election of remedies, to terminate this Agreement or suspend performance by delivery of written notice: (1) Any failure by Customer to pay amounts when due; or (2) any general assignment by Customer for the benefit of its creditors, or if Customer becomes bankrupt or insolvent or takes the benefit of any statute for bankrupt or insolvent debtors, or makes or proposes to make any proposal or arrangement with creditors, or if any steps are taken for the winding up or other termination of Customer or the liquidation of its assets, or if a trustee, receiver, or similar person is appointed over any of the assets or interests of Customer; (3) Any representation or warranty furnished by Customer in this Agreement is false or misleading in any material respect when made; or (4) Any failure by Customer to perform or comply with any material provision of this Agreement. Customer shall be liable to Company for all Work furnished to date and all damages sustained by Company (including lost profit and overhead)

18. Indemnity. To the fullest extent permitted by law, Company and Customer shall indemnify, defend and hold harmless each other from any and all claims, actions, costs, expenses, damages and liabilities, including reasonable attorneys' fees, resulting from death or bodily injury or damage to real or tangible personal property, to the extent caused by the negligence or misconduct of their respective employees or other authorized agents in connection with their activities within the scope of this Agreement. Neither party shall indemnify the other against claims, damages, expenses or liabilities to the extent attributable to the acts or omissions of the other party. If the parties are both at fault, the obligation to indemnify shall be proportional to their relative fault. The duty to indemnify will continue in full force and effect, notwithstanding the expiration or early termination hereof, with respect to any claims based on facts or conditions that occurred prior to expiration or termination.

19. Limitation of Liability. NOTWITHSTANDING ANYTHING TO THE CONTRARY, IN NO EVENT SHALL COMPANY BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT CONSEQUENTIAL, OR PUNITIVE OR EXEMPLARY DAMAGES (INCLUDING WITHOUT LIMITATION BUSINESS INTERRUPTION, LOST DATA, LOST REVENUE, LOST PROFITS, LOST DOLLAR SAVINGS, OR LOST ENERGY USE SAVINGS, INCLUDING CONTAMINANTS LIABILITIES, EVEN IF A PARTY HAS BEEN ADVISED OF SUCH POSSIBLE DAMAGES OR IF SAME WERE REASONABLY FORESEEABLE AND REGARDLESS OF WHETHER THE CAUSE OF ACTION IS FRAMED IN CONTRACT, NEGLIGENCE, ANY OTHER TORT, WARRANTY, STRICT LIABILITY, OR PRODUCT LIABILITY). In no event will Company's liability in connection with the provision of products or services or otherwise under this Agreement exceed the entire amount paid to Company by Customer under this Agreement.

20. CONTAMINANTS LIABILITY

The transmission of COVID-19 may occur in a variety of ways and circumstances, many of the aspects of which are currently not known. HVAC systems, products, services and other offerings have not been tested for their effectiveness in reducing the spread of COVID-19, including through the air in closed environments. **IN NO EVENT WILL COMPANY BE LIABLE UNDER THIS AGREEMENT OR OTHERWISE FOR ANY INDEMNIFICATION, ACTION OR CLAIM, WHETHER BASED ON WARRANTY, CONTRACT, TORT OR OTHERWISE, FOR ANY BODILY INJURY (INCLUDING DEATH), DAMAGE TO PROPERTY, OR ANY OTHER LIABILITIES, DAMAGES OR COSTS RELATED TO CONTAMINANTS (INCLUCING THE SPREAD, TRANSMISSION, MITIGATION, ELIMINATION, OR CONTAMINATION THEREOF) (COLLECTIVELY, "CONTAMINANT LIABILITIES") AND CUSTOMER HEREBY EXPRESSLY RELEASES COMPANY FROM ANY SUCH CONTAMINANTS LIABILITIES.**

21. Patent Indemnity. Company shall protect and indemnify Customer from and against all claims, damages, judgments and loss arising from infringement or alleged infringement of any United States patent by any of the goods manufactured by Company and delivered hereunder, provided that in the event of suit or threat of suit for patent infringement, Company shall promptly be notified and given full opportunity to negotiate a settlement. Company does not warrant against infringement by reason of Customer's design of the articles or the use thereof in combination with other materials or

in the operation of any process. In the event of litigation, Customer agrees to reasonably cooperate with Company. In connection with any proceeding under the provisions of this Section, all parties concerned shall be entitled to be represented by counsel at their own expense.

22. Limited Warranty. Company warrants for a period of 12 months from the date of substantial completion ("Warranty Period") commercial equipment manufactured and installed by Company against failure due to defects in material and manufacture and that the labor/labour furnished is warranted to have been properly performed (the "Limited Warranty"). Trane equipment sold on an uninstalled basis is warranted in accordance with Company's standard warranty for supplied equipment. **Product manufactured by Company that includes required startup and is sold in North America will not be warranted by Company unless Company performs the product start-up**. Substantial completion shall be the earlier of the date that the Work is sufficiently complete so that the Work can be utilized for its intended use or the date that Customer receives beneficial use of the Work. If such defect is discovered within the Warranty Period, Company will correct the defect or furnish replacement equipment (or, at its option, parts therefor) and, if said equipment was installed pursuant hereto, labor/labour associated with the replacement of parts or equipment not conforming to this Limited Warranty. Defects must be reported to Company within the Warranty Period. Exclusions from this Limited Warranty include damage or failure arising from: wear and tear; corrosion, erosion, deterioration; Customer's failure to follow the Company-provided maintenance plan; refrigerant not supplied by Company; and modifications made by others to Company's equipment. Company shall not be obligated to pay for the cost of lost refrigerant. Notwithstanding the foregoing, all warranties provided herein terminate upon termination or cancellation of this Agreement. No warranty liability whatsoever shall attach to Company until the Work has been paid for in full and then said liability shall be limited to the lesser of Company's cost to correct the defective Work and/or the purchase price of the equipment shown to be defective. Equipment, material and/or parts that are not manufactured by Company ("Third-Party Product(s)" are not warranted by Company and have such warranties as may be extended by the respective manufacturer. **CUSTOMER UNDERSTANDS THAT COMPANY IS NOT THE MANUFACTURER OF ANY THIRD-PARTY PRODUCT(S) AND ANY WARRANTIES, CLAIMS, STATEMENTS, REPRESENTATIONS, OR SPECIFICATIONS ARE THOSE OF THE THIRD-PARTY MANUFACTURER, NOT COMPANY AND CUSTOMER IS NOT RELYING ON ANY WARRANTIES, CLAIMS, STATEMENTS, REPRESENTATIONS, OR SPECIFICATIONS REGARDING THE THIRD-PARTY PRODUCT THAT MAY BE PROVIDED BY COMPANY OR ITS AFFILIATES, WHETHER ORAL OR WRITTEN. THE WARRANTY AND LIABILITY SET FORTH IN THIS AGREEMENT ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, WHETHER IN CONTRACT OR IN NEGLIGENCE, EXPRESS OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND/OR OTHERS ARISING FROM COURSE OF DEALING OR TRADE. COMPANY MAKES NO REPRESENTATION OR WARRANTY .OF ANY KIND, INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE. ADDITIONALLY, COMPANY MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND REGARDING PREVENTING, ELIMINATING, REDUCING OR INHIBITING ANY MOLD, FUNGUS, BACTERIA, VIRUS, MICROBIAL GROWTH, OR ANY OTHER CONTAMINANTS (INCLUDING COVID-19 OR ANY SIMILAR VIRUS) (COLLECTIVELY, "CONTAMINANTS"), WHETHER INVOLVING OR IN CONNECTION WITH EQUIPMENT, ANY COMPONENT THEREOF, SERVICES OR OTHERWISE. IN NO EVENT SHALL COMPANY HAVE ANY LIABILITY FOR THE PREVENTION, ELIMINATION, REDUCTION OR INHIBITION OF THE GROWTH OR SPREAD OF SUCH CONTAMINANTS INVOLVING OR IN CONNECTION WITH ANY EQUIPMENT, THIRD-PARTY PRODUCT, OR ANY COMPONENT THEREOF, SERVICES OR OTHERWISE AND CUSTOMER HEREBY SPECIFICALLY ACKNOWLDGES AND AGREES THERETO.**

23. Insurance. Company agrees to maintain the following insurance while the Work is being performed with limits not less than shown below and will, upon request from Customer, provide a Certificate of evidencing the following coverage:

Commercial General Liability	$2,000,000 per occurrence
Automobile Liability	$2,000,000 CSL
Workers Compensation	Statutory Limits

If Customer has requested to be named as an additional insured under Company's insurance policy, Company will do so but only subject to Company's manuscript additional insured endorsement under its primary Commercial General Liability policies. In no event does Company waive its right of subrogation.

24. Commencement of Statutory Limitation Period. Except as to warranty claims, as may be applicable, any applicable statutes of limitation for acts or failures to act shall commence to run, and any alleged cause of action stemming therefrom shall be deemed to have accrued, in any and all events not later than the last date that Company or its subcontractors physically performed work on the project site.

25. General. Except as provided below, to the maximum extent provided by law, this Agreement is made and shall be interpreted and enforced in accordance with the laws of the state or province in which the Work is performed, without regard to choice of law principles which might otherwise call for the application of a different state's or province's law. Any dispute arising under or relating to this Agreement that is not disposed of by agreement shall be decided by litigation in a court of competent jurisdiction located in the state or province in which the Work is performed. Any action or suit arising out of or related to this Agreement must be commenced within one year after the cause of action has accrued. To the extent the Work site is owned and/or operated by any agency of the Federal Government, determination of any substantive issue of law shall be according to the Federal common law of Government contracts as enunciated and applied by Federal judicial bodies and boards of contract appeals of the Federal Government. This Agreement contains all of the agreements, representations and understandings of the parties and supersedes all previous understandings, commitments or agreements, oral or written, related to the subject matter hereof. This Agreement may not be amended, modified or terminated except by a writing signed by the parties hereto. No documents shall be incorporated herein by reference except to the extent Company is a signatory thereon. If any term or condition of this Agreement is invalid, illegal or incapable of being enforced by any rule of law, all other terms and conditions of this Agreement will nevertheless remain in full force and effect as long as the economic or legal substance of the transaction contemplated hereby is not affected in a manner adverse to any party hereto. Customer may not assign, transfer, or convey this Agreement, or any part hereof, or its right, title or interest herein, without the written consent of the Company. Subject to the foregoing, this Agreement shall be binding upon and inure to the benefit of Customer's permitted successors and assigns. This Agreement may be executed in several counterparts, each of which when executed shall be deemed to be an original, but all together shall constitute but one and the same Agreement. A fully executed facsimile copy hereof or the several counterparts shall suffice as an original.

26. Equal Employment Opportunity/Affirmative Action Clause. Company is a federal contractor that complies fully with Executive Order 11246, as amended, and the applicable regulations contained in 41 C.F.R. Parts 60-1 through 60-60, 29 U.S.C. Section 793 and the applicable regulations contained in 41 C.F.R. Part 60-741; and 38 U.S.C. Section 4212 and the applicable regulations contained in 41 C.F.R. Part 60-250 Executive Order 13496 and Section 29 CFR 471, appendix A to subpart A, regarding the notice of employee rights in the United States and with Canadian Charter of Rights and Freedoms Schedule B to the Canada Act 1982 (U.K.) 1982, c. 11 and applicable Provincial Human Rights Codes and employment law in Canada.

27. U.S. Government Work.

The following provision applies only to direct sales by Company to the US Government. The Parties acknowledge that all items or services ordered and delivered under this Agreement are Commercial Items as defined under Part 12 of the Federal Acquisition Regulation (FAR). In particular, Company agrees to be bound only by those Federal contracting clauses that apply to "commercial" suppliers and that are contained in FAR 52.212-5(e)(1). Company complies with 52.219-8 or 52.219-9 in its service and installation contracting business.

The following provision applies only to indirect sales by Company to the US Government. As a Commercial Item Subcontractor, Company accepts only the following mandatory flow down provisions in effect as of the date of this subcontract: 52.203-19; 52.204-21; 52.204-23; 52.219-8; 52.222-21; 52.222-26; 52.222-35; 52.222-36; 52.222-50; 52.225-26; 52.247-64. If the Work is in connection with a U.S. Government contract, Customer certifies that it has provided and will provide current, accurate, and complete information, representations and certifications to all government officials, including but not limited to the contracting officer and officials of the Small Business Administration, on all matters related to the prime contract, including but not limited to all aspects of its ownership, eligibility, and performance. Anything herein notwithstanding, Company will have no obligations to Customer

unless and until Customer provides Company with a true, correct and complete executed copy of the prime contract. Upon request, Customer will provide copies to Company of all requested written communications with any government official related to the prime contract prior to or concurrent with the execution thereof, including but not limited to any communications related to Customer's ownership, eligibility or performance of the prime contract. Customer will obtain written authorization and approval from Company prior to providing any government official any information about Company's performance of the work that is the subject of the Proposal or this Agreement, other than the Proposal or this Agreement.

28. Limited Waiver of Sovereign Immunity. If Customer is an Indian tribe (in the U.S.) or a First Nation or Band Council (in Canada), Customer, whether acting in its capacity as a government, governmental entity, a duly organized corporate entity or otherwise, for itself and for its agents, successors, and assigns: (1) hereby provides this limited waiver of its sovereign immunity as to any damages, claims, lawsuit, or cause of action (herein "Action") brought against Customer by Company and arising or alleged to arise out of the furnishing by Company of any product or service under this Agreement, whether such Action is based in contract, tort, strict liability, civil liability or any other legal theory; (2) agrees that jurisdiction and venue for any such Action shall be proper and valid (a) if Customer is in the U.S., in any state or United States court located in the state in which Company is performing this Agreement or (b) if Customer is in Canada, in the superior court of the province or territory in which the work was performed; (3) expressly consents to such Action, and waives any objection to jurisdiction or venue; (4) waives any requirement of exhaustion of tribal court or administrative remedies for any Action arising out of or related to this Agreement; and (5) expressly acknowledges and agrees that Company is not subject to the jurisdiction of Customer's tribal court or any similar tribal forum, that Customer will not bring any action against Company in tribal court, and that Customer will not avail itself of any ruling or direction of the tribal court permitting or directing it to suspend its payment or other obligations under this Agreement. The individual signing on behalf of Customer warrants and represents that such individual is duly authorized to provide this waiver and enter into this Agreement and that this Agreement constitutes the valid and legally binding obligation of Customer, enforceable in accordance with its terms.

29. Building Automation Systems and Network Security. Customer and Trane acknowledge that Building Automation System (BAS) and connected networks security requires Customer and Trane to maintain certain cybersecurity obligations. Customer acknowledges that upon completion of installation and configuration of the BAS, the Customer maintains ownership of the BAS and the connected network equipment. Except for any applicable warranty obligations, Customer is solely responsible for the maintenance and security of the BAS and related networks and systems. In the event there is a service agreement between Trane and Customer, Trane will provide the services as set forth in the service agreement.

In order to maintain a minimum level of security for the BAS, associated networks, network equipment and systems, Customer's cybersecurity responsibilities include without limitation:

1. Ensure that the BAS, networks, and network equipment are physically secure and not accessible to unauthorized personnel.
2. Ensure the BAS remains behind a secure firewall and properly segmented from all other customer networks and systems, especially those with sensitive information.
3. Keep all Inbound ports closed to any IP Addresses in the BAS.
4. Remove all forwarded inbound ports and IP Addresses to the BAS.
5. Maintain user login credentials and unique passwords, including the use of strong passwords and the removal of access for users who no longer require access.
6. Where remote access is desired, utilize a secure method such as Trane Connect Secure Remote Access or your own VPN.
7. For any Trane services requiring remote data transfer and/or remote user access, configure the BAS and related firewall(s) per instructions provided by Trane. This typically includes configuring Port 443 and associated firewall(s) for Outbound only.
8. Perform regular system maintenance to ensure that your BAS is properly secured, including regular software updates to your BAS and related network equipment (i.e., firewalls).

Any and all claims, actions, losses, expenses, costs, damages, or liabilities of any nature due to Customer's failure to maintain BAS security responsibilities and/or industry standards for cybersecurity are the sole responsibility of the Customer.

1-26.251-10(0123)
Supersedes 1-26.251-10(1221)

SECURITY ADDENDUM

This Addendum shall be applicable to the sale, installation and use of Trane equipment and the sale and provision of Trane services. "Trane" shall mean Trane U.S. Inc. for sales and services in the United States, or Trane Canada ULC for sales and services in Canada.

1. **Definitions.** All terms used in this Addendum shall have the meaning specified in the Agreement unless otherwise defined herein. For the purposes of this Addendum, the following terms are defined as follows:
"Customer Data" means Customer account information as related to the Services only and does not include HVAC Machine Data or personal data. Trane does not require, nor shall Customer provide personal data to Trane under the Agreement. Such data is not required for Trane to provide its Equipment and/or Services to the Customer.

   "Equipment" shall have the meaning set forth in the Agreement.

   "HVAC Machine Data" means data generated and collected from the product or furnished service without manual entry. HVAC Machine Data is data relating to the physical measurements and operating conditions of a HVAC system, such as but not limited to, temperatures, humidity, pressure, HVAC equipment status. HVAC Machine Data does not include Personal Data and, for the purposes of this agreement, the names of users of Trane's controls products or hosted applications shall not be Personal Data, if any such user chooses to use his/her name(s) in the created accounts within the controls product (e.g., firstname.lastname@address.com). HVAC Machine Data may be used by Trane: (a) to provide better support services and/or products to users of its products and services; (b) to assess compliance with Trane terms and conditions; (c) for statistical or other analysis of the collective characteristics and behaviors of product and services users; (d) to backup user and other data or information and/or provide remote support and/or restoration; (e) to provide or undertake: engineering analysis; failure analysis; warranty analysis; energy analysis; predictive analysis; service analysis; product usage analysis; and/or other desirable analysis, including, but not limited to, histories or trends of any of the foregoing; and (f) to otherwise understand and respond to the needs of users of the product or furnished service. "Personal Data" means data and/or information that is owned or controlled by Customer, and that names or identifies, or is about a natural person, such as: (i) data that is explicitly defined as a regulated category of data under any data privacy laws applicable to Customer; (ii) non-public personal information ("NPI") or personal information ("PI"), such as national identification number, passport number, social security number, social insurance number, or driver's license number; (iii) health or medical information, such as insurance information, medical prognosis, diagnosis information, or genetic information; (iv) financial information, such as a policy number, credit card number, and/or bank account number; (v) personally identifying technical information (whether transmitted or stored in cookies, devices, or otherwise), such as IP address, MAC address, device identifier, International Mobile Equipment Identifier ("IMEI"), or advertising identifier; (vi) biometric information; and/or (vii) sensitive personal data, such as, race, religion, marital status, disability, gender, sexual orientation, geolocation, or mother's maiden name.

   "Security Incident" shall refer to (i) a compromise of any network, system, application or data in which Customer Data has been accessed or acquired by an unauthorized third party; (ii) any situation where Trane reasonably suspects that such compromise may have occurred; or (iii) any actual or reasonably suspected unauthorized or illegal Processing, loss, use, disclosure or acquisition of or access to any Customer Data.

   "Services" shall have the meaning set forth in the Agreement.

2. HVAC Machine Data; Access to Customer Extranet and Third Party Systems. If Customer grants Trane access to HVAC Machine Data via web portals or other non-public websites or extranet services on Customer's or a third party's website or system (each, an "Extranet"), Trane will comply with the following:
   a. Accounts. Trane will ensure that Trane's personnel use only the Extranet account(s) designated by Customer and will require Trane personnel to keep their access credentials confidential.
   b. Systems. Trane will access the Extranet only through computing or processing systems or applications running operating systems managed by Trane that include: (i) system network firewalls; (ii) centralized patch management; (iii) operating system appropriate anti-malware software; and (iv) for portable devices, full disk encryption.
   c. Restrictions. Unless otherwise approved by Customer in writing, Trane will not download, mirror or permanently store any HVAC Machine Data from any Extranet on any medium, including any machines, devices or servers.

d. Account Termination. Trane will terminate the account of each of Trane's personnel in accordance with Trane's standard practices after any specific Trane personnel who has been authorized to access any Extranet (1) no longer needs access to HVAC Machine Data or (2) no longer qualifies as Trane personnel (e.g., the individual leaves Trane's employment).

e. Third Party Systems. Trane will provide Customer prior notice before it uses any third party system that stores or may otherwise have access to HVAC Machine Data, unless (1) the data is encrypted and (2) the third party system will not have access to the decryption key or unencrypted "plain text" versions of the HVAC Machine Data.

3. Customer Data; Confidentiality. Trane shall keep confidential, and shall not access or use any Customer Data and information that is marked confidential or by its nature is considered confidential ("Customer Confidential Information") other than for the purpose of providing the Equipment and Services, and will disclose Customer Confidential Information only: (i) to Trane's employees and agents who have a need to know to perform the Services, (ii) as expressly permitted or instructed by Customer, or (iii) to the minimum extent required to comply with applicable law, provided that Trane (1) provides Customer with prompt written notice prior to any such disclosure, and (2) reasonably cooperate with Customer to limit or prevent such disclosure.

4. Customer Data; Compliance with Laws. Trane agrees to comply with laws, regulations governmental requirements and industry standards and practices relating to Trane's processing of Customer Confidential Information (collectively, "***Laws***").

5. Customer Data; Information Security Management. Trane agrees to establish and maintain an information security and privacy program, consistent with applicable HVAC equipment industry practices that complies with this Addendum and applicable Laws ("***Information Security Program***"). The Information Security Program shall include appropriate physical, technical and administrative safeguards, including any safeguards and controls agreed by the Parties in writing, sufficient to protect Customer systems, and Customer's Confidential Information from unauthorized access, destruction, use, modification or disclosure. The Information Security Program shall include appropriate, ongoing training and awareness programs designed to ensure that Trane's employees and agents, and others acting on Trane's, behalf are aware of and comply with the Information Security Program's policies, procedures, and protocols.

6. Monitoring. Trane shall monitor and, at regular intervals consistent with HVAC equipment industry practices, test and evaluate the effectiveness of its Information Security Program. Trane shall evaluate and promptly adjust its Information Security Program in light of the results of the testing and monitoring, any material changes to its operations or business arrangements, or any other facts or circumstances that Trane knows or reasonably should know may have a material impact on the security of Customer Confidential Information, Customer systems and Customer property.

7. Audits. Customer acknowledges and agrees that the Trane SOC2 audit report will be used to satisfy any and all audit/inspection requests/requirements by or on behalf of Customer. Trane will make its SOC2 audit report available to Customer upon request and with a signed nondisclosure agreement.

8. Information Security Contact. Trane's information security contact is Local Sales Office.
9. Security Incident Management. Trane shall notify Customer after the confirmation of a Security Incident that affects Customer Confidential Information, Customer systems and Customer property. The written notice shall summarize the nature and scope of the Security Incident and the corrective action already taken or planned.

10. Threat and Vulnerability Management. Trane regularly performs vulnerability scans and addresses detected vulnerabilities on a risk basis. Periodically, Trane engages third-parties to perform network vulnerability assessments and penetration testing. Vulnerabilities will be reported in accordance with Trane's cybersecurity vulnerability reported process. Trane periodically provides security updates and software upgrades.

11. Security Training and Awareness. New employees are required to complete security training as part of the new hire process and receive annual and targeted training (as needed and appropriate to their role) thereafter to help maintain compliance with Security Policies, as well as other corporate policies, such as the Trane Code of Conduct. This includes requiring Trane employees to annually re-acknowledge the Code of Conduct and other Trane policies as appropriate. Trane conducts periodic security awareness campaigns to educate personnel about their responsibilities and provide guidance to create and maintain a secure workplace.

12. Secure Disposal Policies. Policies, processes, and procedures regarding the disposal of tangible and intangible property containing Customer Confidential Information so that wherever possible, Customer Confidential Information cannot be practicably read or reconstructed.

13. Logical Access Controls. Trane employs internal monitoring and logging technology to help detect and prevent unauthorized access attempts to Trane's corporate networks and production systems. Trane's monitoring includes a review of changes affecting systems' handling authentication, authorization, and auditing, and privileged access to Trane production systems. Trane uses the principle of "least privilege" (meaning access denied unless specifically granted) for access to customer data.

14. Contingency Planning/Disaster Recovery. Trane will implement policies and procedures required to respond to an emergency or other occurrence (i.e. fire, vandalism, system failure, natural disaster) that could damage Customer Data or any system that contains Customer Data. Procedures include the following
    (i) data backups; and
    (ii) formal disaster recovery plan. Such disaster recovery plan is tested at least annually.

15. Return of Customer Data. If Trane is responsible for storing or receiving Customer Data, Trane shall, at Customer's sole discretion, deliver Customer Data to Customer in its preferred format within a commercially reasonable period of time following the expiration or earlier termination of the Agreement or, such earlier time as Customer requests, securely destroy or render unreadable or undecipherable each and every original and copy in every media of all Customer's Data in Trane's possession, custody or control no later than [90 days] after receipt of Customer's written instructions directing Trane to delete the Customer Data.

16. Background checks Trane shall take reasonable steps to ensure the reliability of its employees or other personnel having access to the Customer Data, including the conducting of appropriate background and/or verification checks in accordance with Trane policies.

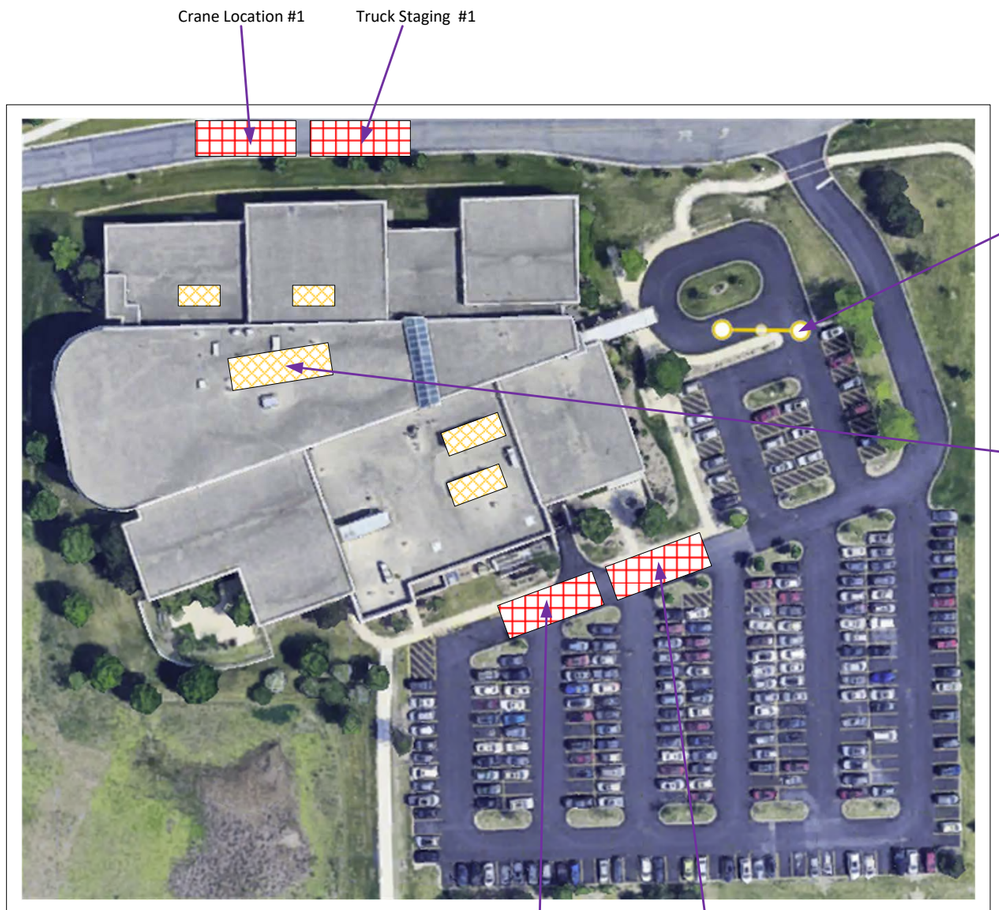
17. DISCLAIMER OF WARRANTIES. EXCEPT FOR ANY APPLICABLE WARRANTIES IN THE AGREEMENT, THE SERVICES ARE PROVIDED "AS IS", WITH ALL FAULTS, AND THE ENTIRE RISK AS TO SATISFACTORY QUALITY, PERFORMANCE, ACCURACY AND EFFORT AS TO SUCH SERVICES SHALL BE WITH CUSTOMER. TRANE DISCLAIMS ANY AND ALL OTHER EXPRESS OR IMPLIED REPRESENTATIONS AND WARRANTIES WITH RESPECT TO THE SERVICES AND THE SERVICES PROVIDED HEREUNDER, INCLUDING ANY EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR THAT THE SERVICES WILL OPERATE ERROR-FREE OR UNINTERRUPTED OR RETURN/RESPONSE TO INQUIRIES WITHIN ANY SPECIFIC PERIOD OF TIME.

ORLAND PARK

Health & Fitness Center

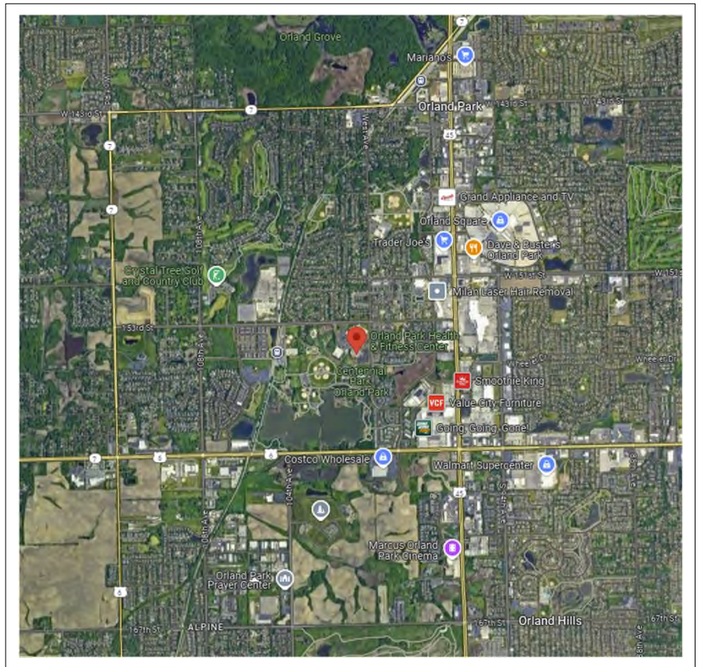
15430 West Ave.
Orland Park, IL 60462

Project:
HVAC Upgrade



SATELLITE VIEW

NEW WORK:
Replace existing AHUs and VAVs with (5) new RTUs, (47) new VAVs, & upgrade BAS



VICINITY MAP

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TRANE TECHNOLOGIES
Trane.com/Chicago

7100 South Madison Street
Willowbrook, IL 60527
P. 630-734-3200
F. 630-323-9040

15430 West Ave.
Orland Park, IL 60462

Health & Fitness Center

Rev	Date	Description
1	10-16-24	35% Design
2	11-5-24	Update

TITLE PAGE

T-1

Larson Engineering, Inc.
1488 Bond Street, Suite 100
Naperville, IL 60563-6503
630.357.0540 Fax: 630.357.0164
www.larsonengr.com

Larson

September 16, 2024

Mr. Daniel Burrows, P.E.
Trane U.S., Inc.
7100 S. Madison Street
Willowbrook, IL 60527

Re: Orland Park Health & Fitness Center
15430 West Ave.
Orland Park, IL 60462 LEI Project No: 21240764.000

Dear Mr. Burrows:

Pursuant to your request, Larson Engineering, Inc. (LEI) performed a structural review of a portion of the existing roof framing at the building referenced above. The purpose of the review was to determine whether two (2) replacement roof top units (RTU) and three (3) new RTU's could be placed on the existing roof without the need for supplemental reinforcement of the existing roof framing. The existing roof framing is understood to be steel bar joists and wide flange beams supported by wide flange steel girders and columns. All existing steel observed at the time of LEI's site visit was in adequate structural condition, free of corrosion and permanent deformation.

LEI's review was based upon the following information:

- Roof Top Unit dimensions and weights provided by Client.
  - RTU-1 & 3 - Trane SFHPF604P Weighing 11,388 lbf.
  - RTU-4 & 5 - Trane YCD330D4P Weighing 5,3206 lbf.
  - RTU-6 - Trane SFHRC9040 Weighing 13,912 lbf.
- Existing Structural Drawings by Philips Swagger Associates Dated February 9, 2000 (Rev 5).
- Structural and dimensional information gathered by LEI during site visit on August 29, 2024.

It is LEI's understanding that the RTU will be oriented as shown in the attached RTU plan view sketch (SK-1A – SK-1B, SK-3). Based upon our review, LEI has determined the existing roof framing is capable of supporting the new RTU's without the need for supplemental reinforcement other than the required web reinforcement per SJI. See SK-2 and SK-4 for required framing details.

If you have any further questions regarding this matter, please feel free to contact our office.

Sincerely,
Larson Engineering, Inc.

Michael B. Burrows
Engineer III – Structural
mburrows@larsonengr.com

Matthew J. Kan, S.E.
Engineer III - Structural
mkan@larsonengr.com

MBB:amr

Attachments:
- RTU Framing Plan View Sketch (SK-1A – SK-1B, SK-3)
- RTU Framing Sketches (SK-2 & SK-4)

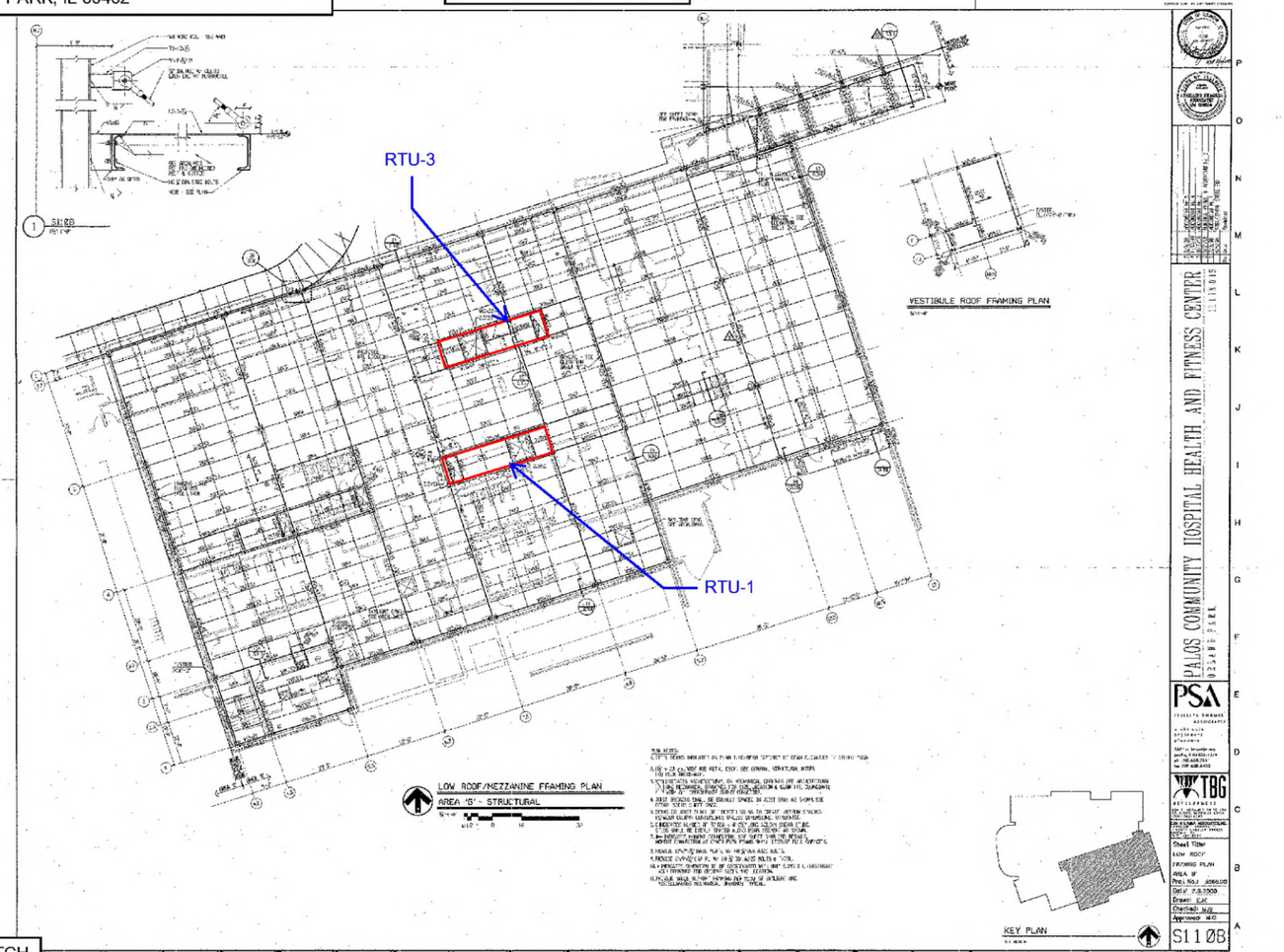
LICENSED STRUCTURAL ENGINEER
MATTHEW J. KAN
081-008179
STATE OF ILLINOIS

09/16/2024
EXP 11/30/2024
Illinois Design Firm No: 184-001442

21240764.000_240916_MBB_L1

ORLAND PARK HEALTH AND FITNESS CENTER
15430 WEST AVE.
ORLAND PARK, IL 60462

RTU FRAMING PLAN VIEW



LEI SKETCH
9/16/2024

SK-1A

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Health & Fitness Center

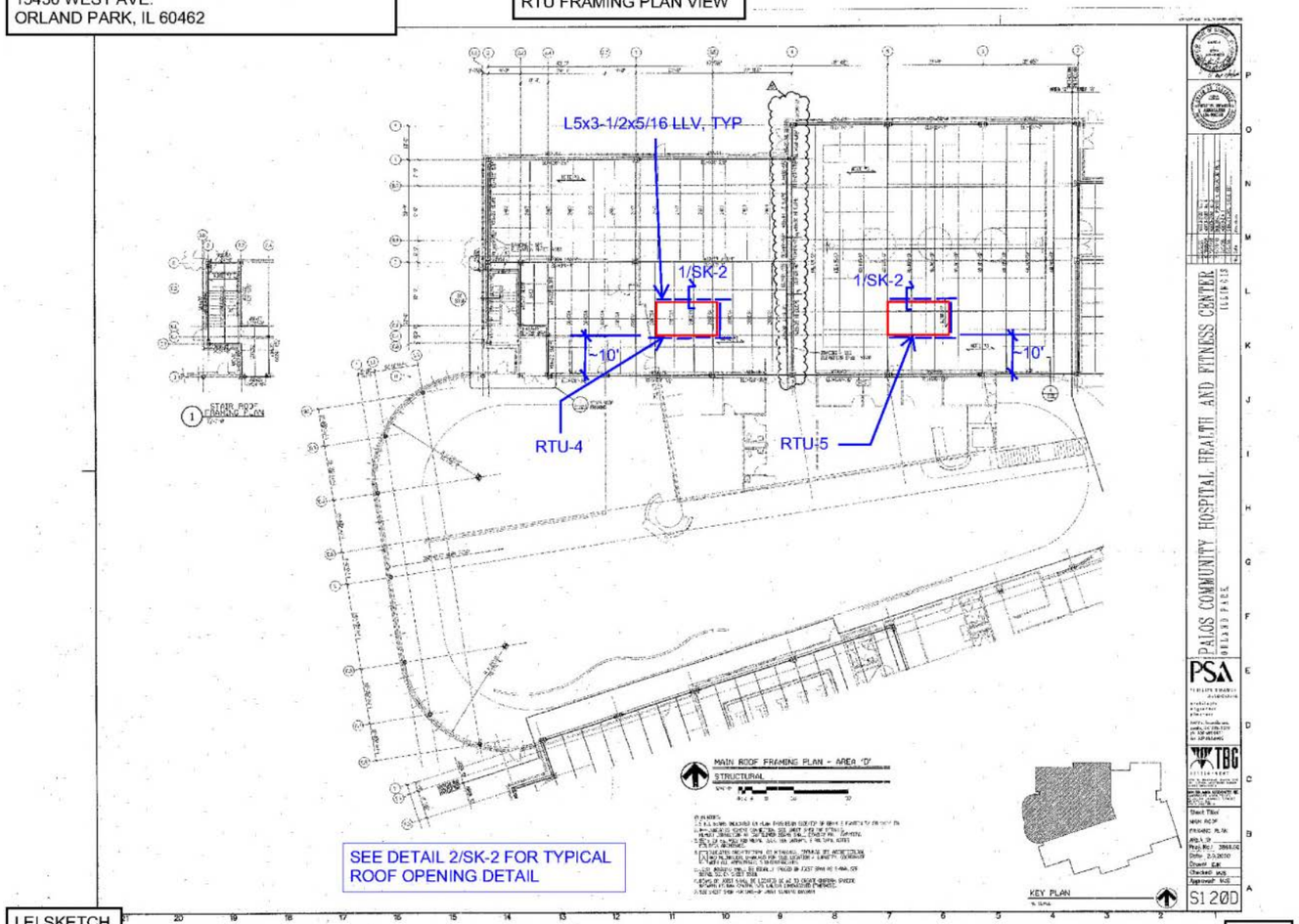
Rev	Date	Description
1	10-16-24	35% Design
2	11-5-24	Update

STRUCTURAL

S-1

ORLAND PARK HEALTH AND FITNESS CENTER
15430 WEST AVE.
ORLAND PARK, IL 60462

RTU FRAMING PLAN VIEW



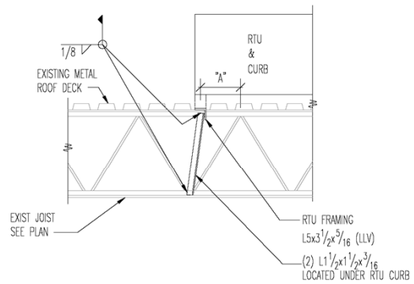
SEE DETAIL 2/SK-2 FOR TYPICAL ROOF OPENING DETAIL

LEI SKETCH
9/16/2024

SK-1B

ORLAND PARK HEALTH AND FITNESS CENTER
15430 WEST AVE.
ORLAND PARK, IL 60462

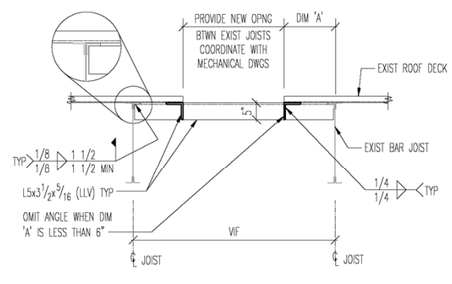
NOTES:
1. STEEL MEMBERS ARE DESIGNED PER THE "MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN", 15TH EDITION
2. STEEL ANGLES SHALL MEET THE REQUIREMENTS OF ASTM A36 (Fy = 36 KSI, Fu = 58 KSI)
3. STEEL WELDING ELECTRODE TO BE MINIMUM E70XX.
4. ALL WELDING SHALL BE BY CERTIFIED WELDERS AND SHALL CONFORM TO THE LATEST "STRUCTUAL WELDING CODE", AWS D1.1 AND MEET AISC MINIMUM REQUIREMENT FOR WELD SIZE.
5. ALL STEEL TO BE PRIME PAINTED WITH ONE COAT OF FABRICATORS STANDARD RUST-INHIBITIVE PRIMER.



NOTE: (2) L1 1/2 x 1 1/2 x 3/16 ARE NOT REQ'D IF "A" IS LESS THAN 4".

1 / 5K-2 TYPICAL JOIST REINFORCEMENT UNDER RTU CURB (EXISTING)
NO SCALE

IN LIEU OF ANGLE FRAMES SHOWN, PROPRIETARY TUBE FRAMING SYSTEM BY CHICAGO CLAMP (OR EQUIVALENT) MAY BE UTILIZED



NOTE: ROOF FRAMES REQ'D @ ALL OPENINGS LARGER THAN 1'-0" OR AS NOTED.

2 / 5K-2 TYPICAL OPENING IN EXISTING ROOF DETAIL
NO SCALE

FRAMING DETAILS - MAIN ROOF AREA (REF: SK-1B)

LEI SKETCH
9/16/2024

SK-2

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15430 West Ave. Orland Park, IL 60462

Health & Fitness Center

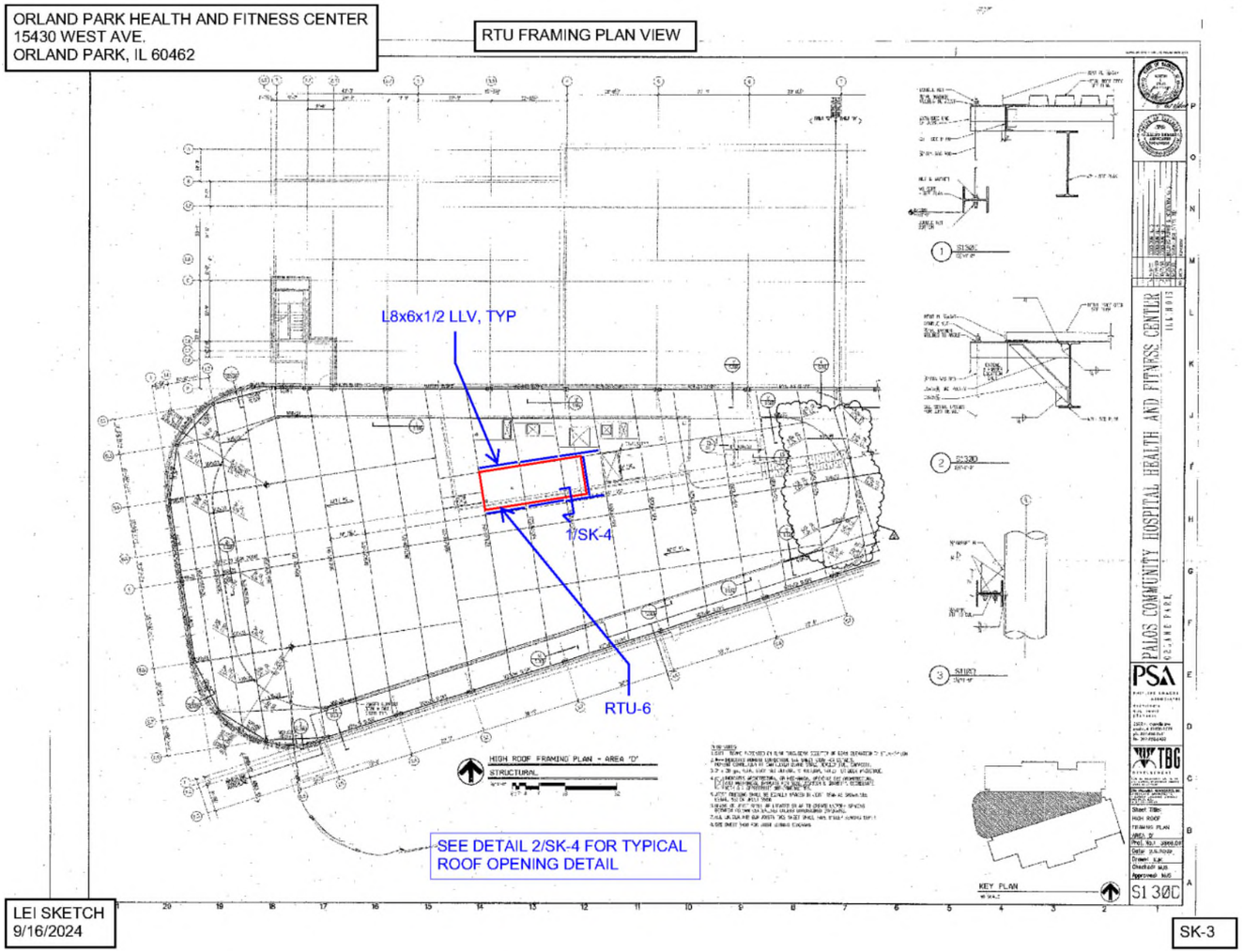
Rev	Date	Description
1	10-16-24	35% Design
2	11-5-24	Update

STRUCTURAL

S-2

ORLAND PARK HEALTH AND FITNESS CENTER
15430 WEST AVE.
ORLAND PARK, IL 60462

RTU FRAMING PLAN VIEW



LEI SKETCH
9/16/2024

SK-3

ORLAND PARK HEALTH AND FITNESS CENTER
15430 WEST AVE.
ORLAND PARK, IL 60462

NOTES:
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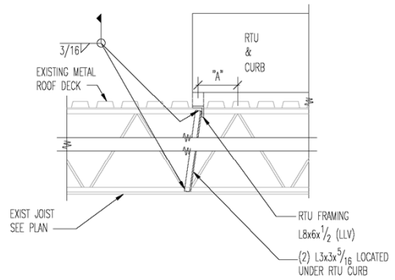
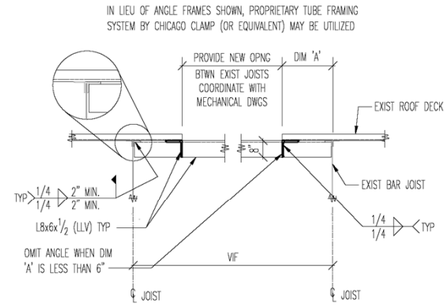


NOTE: (2) L3x3x$^5/_{16}$ ARE NOT REQ'D IF "A" IS LESS THAN 4".

1 SK-4 TYPICAL JOIST REINFORCEMENT UNDER RTU CURB (EXISTING)
NO SCALE

IN LIEU OF ANGLE FRAMES SHOWN, PROPRIETARY TUBE FRAMING SYSTEM BY CHICAGO CLAMP (OR EQUIVALENT) MAY BE UTILIZED



NOTE: ROOF FRAMES REQ'D @ ALL OPENINGS LARGER THAN 1'-0" OR AS NOTED.

2 SK-4 TYPICAL OPENING IN EXISTING ROOF DETAIL
NO SCALE

FRAMING DETAILS - HIGH ROOF AREA (REF: SK-3)

LEI SKETCH
9/16/2024

SK-4

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Orland Park, IL 60462

Health & Fitness Center

Rev	Date	Description
1	10-16-24	35% Design
2	11-5-24	Update

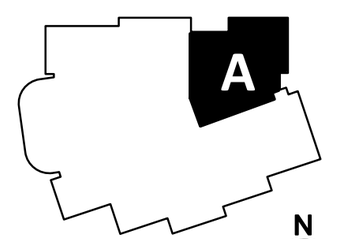
STRUCTURAL

S-3

Demolition

Demo Notes:

- Remove ceiling tiles as required for VAV removal, replace if broken once new box is installed
- In drywall ceiling areas, neatly cut access, and furnish & install access door if none exists
- Demo VAV boxes with electric reheat, power to be reused for new boxes



SCALE
6'

KEY PLAN
NO SCALE

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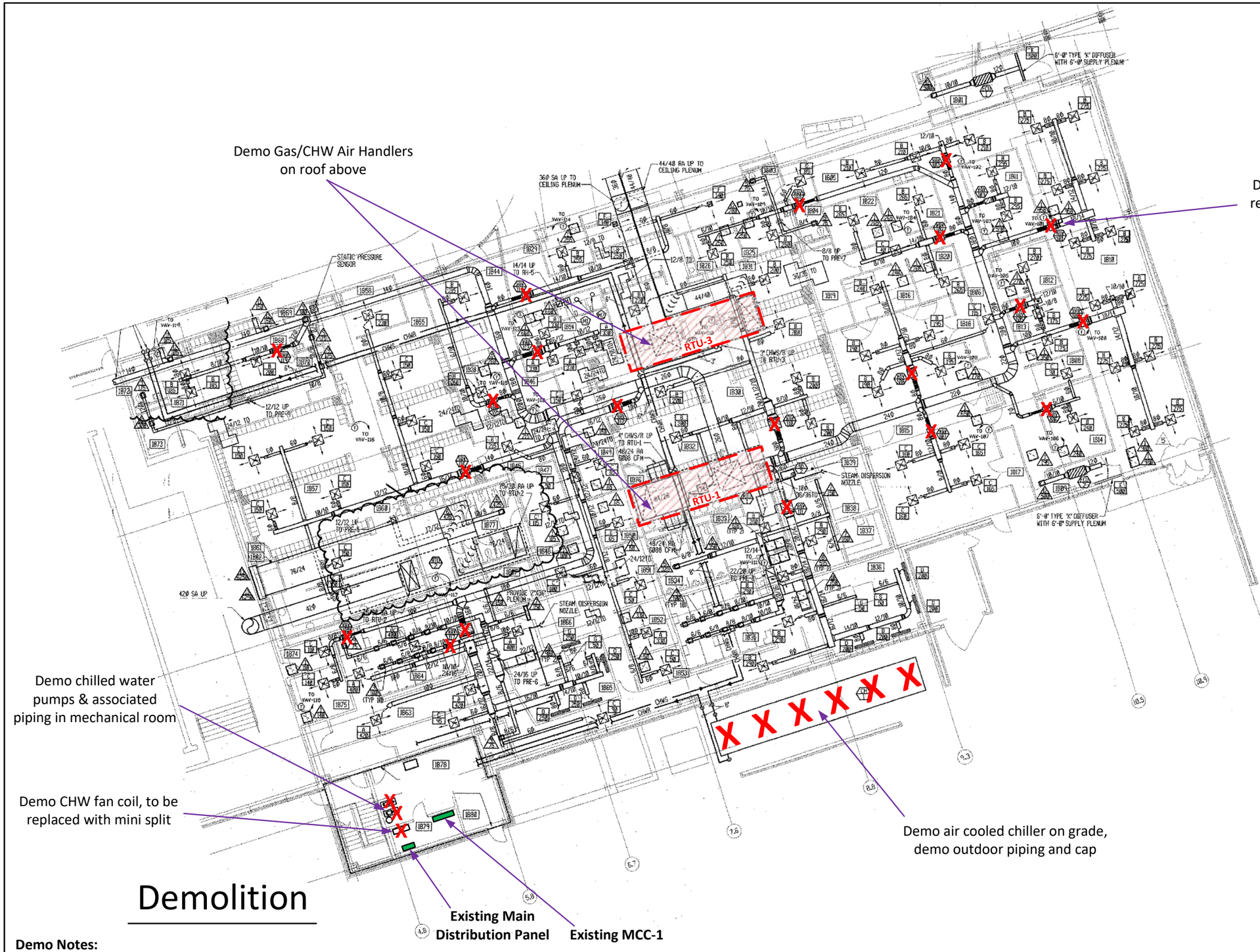
FIRST FLOOR PLAN
AREA A DEMOLITION

MD-1



Demolition

Demo Notes:

- Remove ceiling tiles as required for VAV removal, replace if broken once new box is installed
- In drywall ceiling areas, neatly cut access, and furnish & install access door if none exists
- Demo VAV boxes with electric reheat, power to be reused for new boxes
- Drain CHW piping, recover refrigerant from chiller, demo chiller on grade and cap piping outside
- Demo chilled water pumps and associated piping in mechanical room

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Trane.com/Chicago

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1	10-16-24	35% Design
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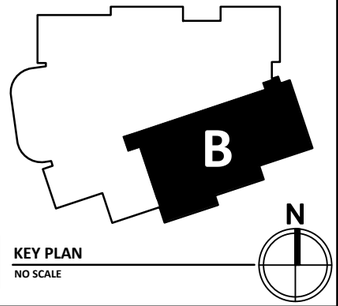
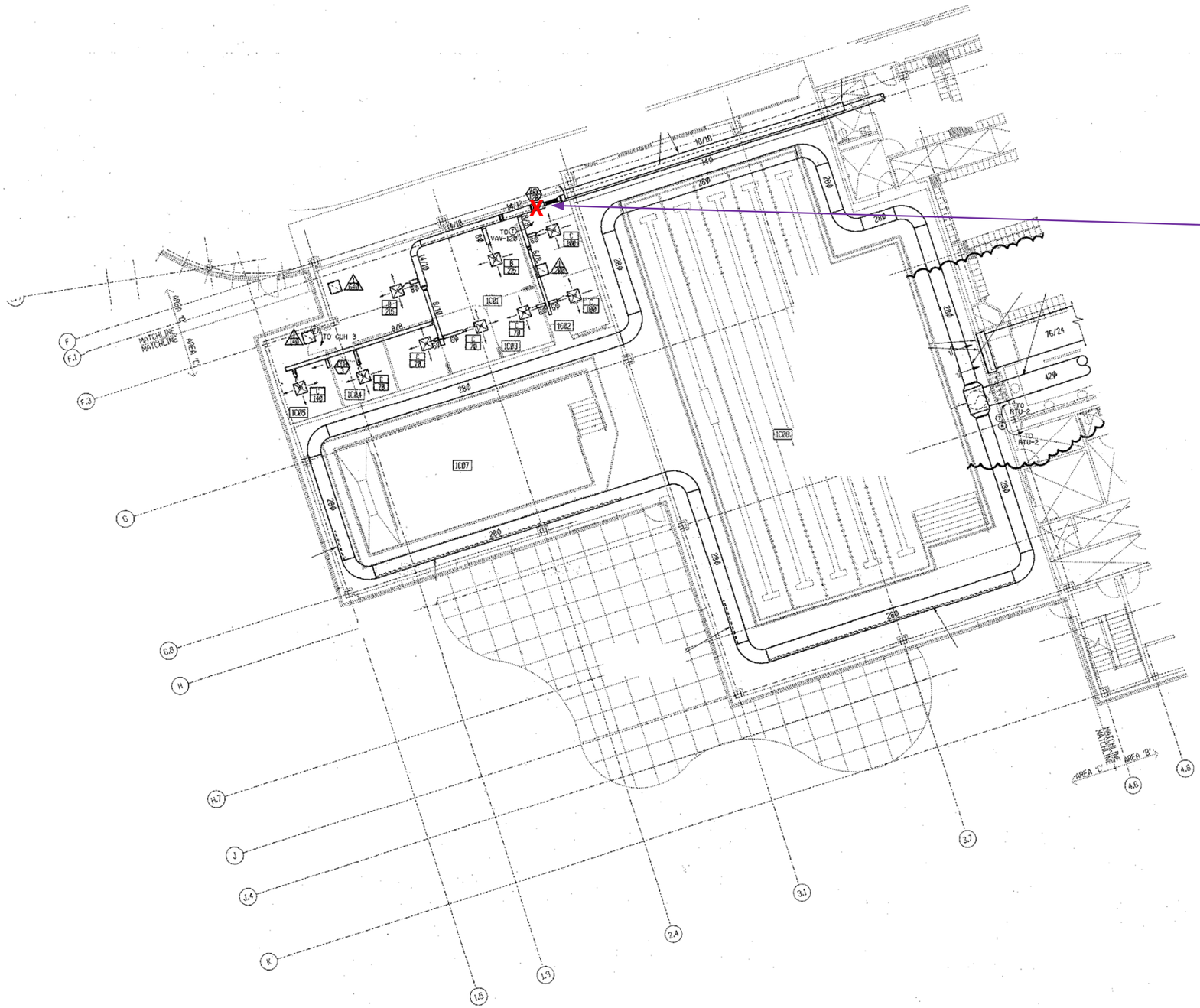


SCALE
6'

KEY PLAN
NO SCALE

FIRST FLOOR PLAN
AREA B DEMOLITION

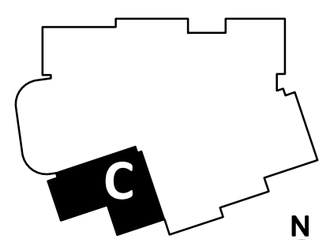
MD-2



Demolition

Demo Notes:

- Remove ceiling tiles as required for VAV removal, replace if broken once new box is installed
- In drywall ceiling areas, neatly cut access, and furnish & install access door if none exists
- Demo VAV boxes with electric reheat, power to be reused for new boxes



SCALE
6'

KEY PLAN
NO SCALE

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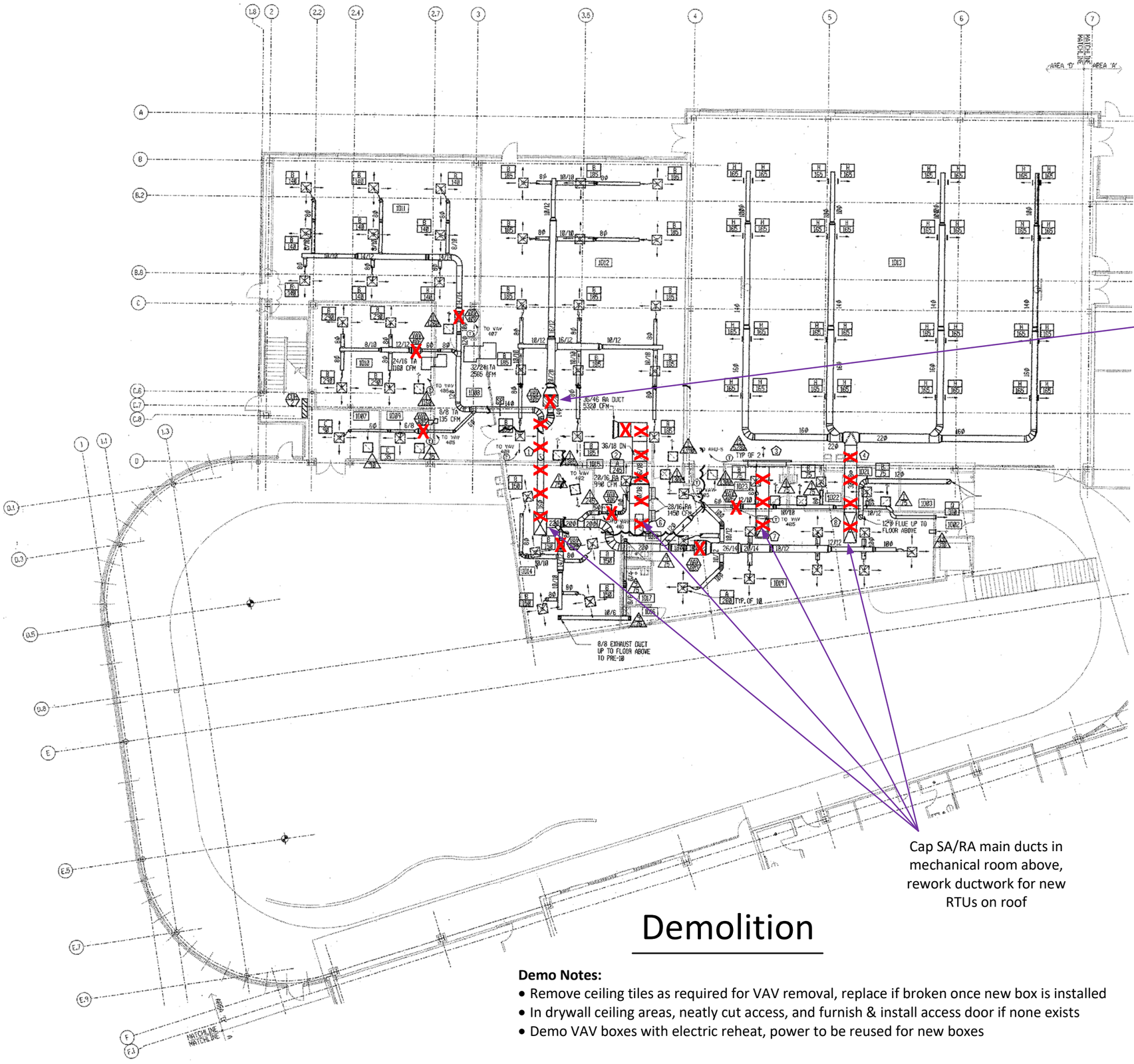
Health & Fitness Center

Rev	Date	Description
1	10-16-24	35% Design
2	11-5-24	Update

FIRST FLOOR PLAN
AREA C DEMOLITION

MD-3



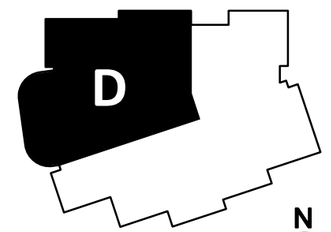
Demo VAV box with electric reheat, power to be reused for new box

Cap SA/RA main ducts in mechanical room above, rework ductwork for new RTUs on roof

Demolition

Demo Notes:

- Remove ceiling tiles as required for VAV removal, replace if broken once new box is installed
- In drywall ceiling areas, neatly cut access, and furnish & install access door if none exists
- Demo VAV boxes with electric reheat, power to be reused for new boxes



SCALE 6'

KEY PLAN
NO SCALE

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FIRST FLOOR PLAN
AREA D DEMOLITION

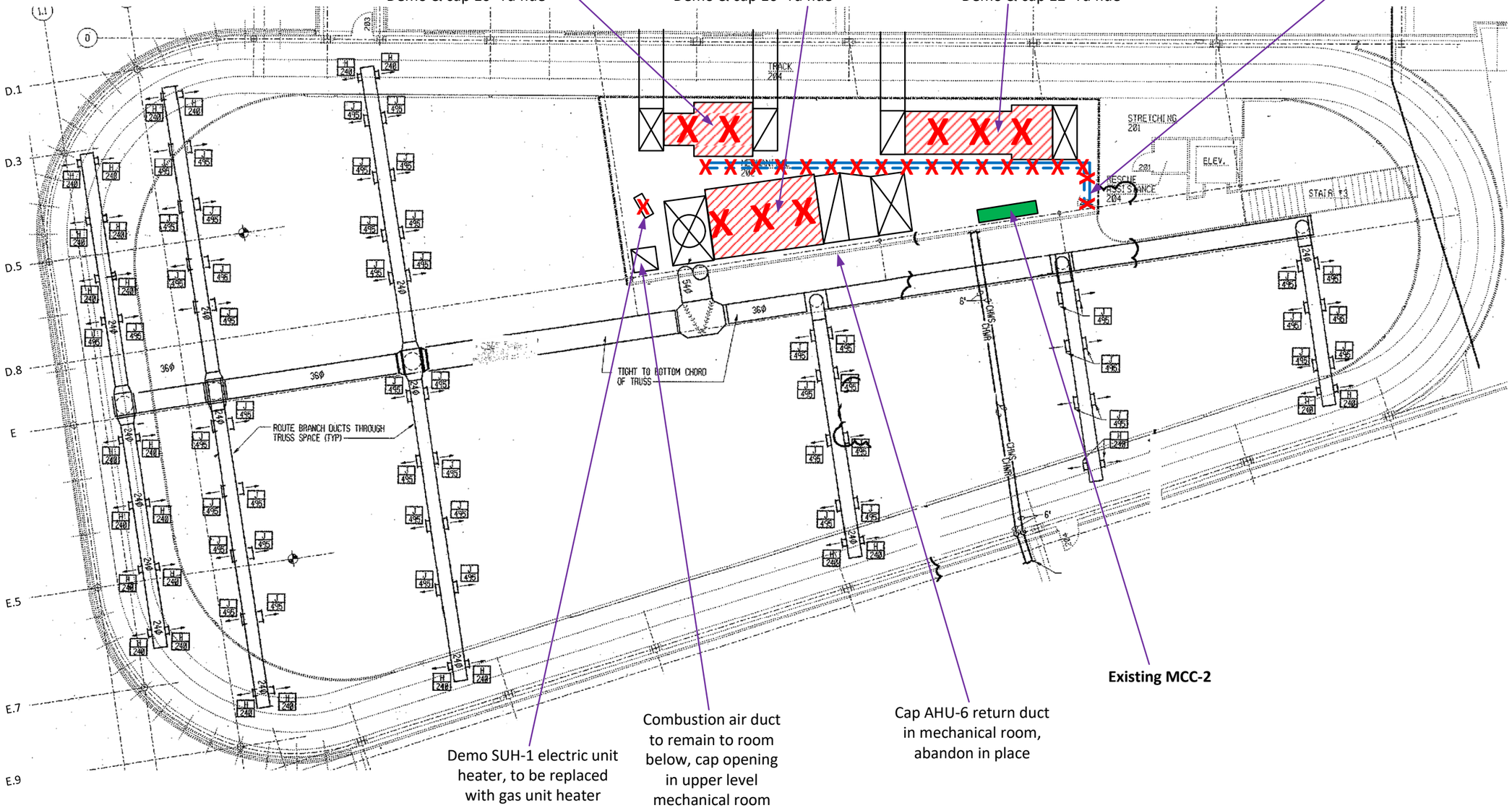
MD-4

AHU-4: Demo CHW/Gas Heat AHU,
Demo 32x32 relief air duct to roof
Demo relief air fan on roof
Demo 25x71 OA hood on roof
F&I insulated caps to existing roof curbs
Demo & cap 10" rd flue

AHU-6: Demo CHW/Gas Heat AHU,
Demo 70x70 relief air duct to roof
Demo relief air fan PRE-3 on roof
Demo 56x103 OA hood on roof
F&I insulated caps to existing roof curbs
Demo & cap 16" rd flue

AHU-5: Demo CHW/Gas Heat AHU,
Demo 34x34 relief air duct to roof
Demo relief air fan RF-2 on roof
Demo OA hood on roof
F&I insulated caps to existing roof curbs
Demo & cap 12" rd flue

Demo 6" CHW lines
back to wall



Demo SUH-1 electric unit heater, to be replaced with gas unit heater

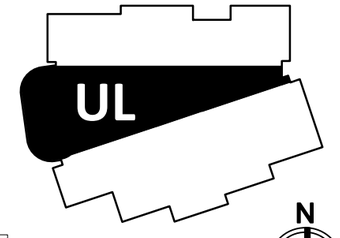
Combustion air duct to remain to room below, cap opening in upper level mechanical room

Cap AHU-6 return duct in mechanical room, abandon in place

Demolition

Demo Notes:

- Demo relief fans PRE-1 PRE-2, & PRE-3
- Demo (3) DX/gas indoor AHUs
- Demo chilled water piping back to mechanical room wall and cap
- Remove Relief and Outdoor air hoods and install insulated caps
- Combustion air duct to remain
- Move existing exhaust fan PRE-10 to make room for RTU-6
- Flue from RTU-4 to be reused as portal for new flue for gas unit heater



SCALE 6'

KEY PLAN
NO SCALE

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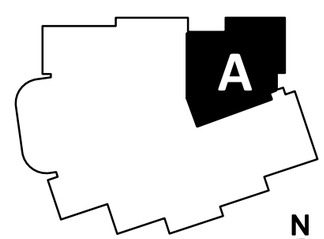
UPPER LEVEL FLOOR PLAN DEMOLITION

MD-5

Installation

Install Notes:

- Install new VAV boxes with duct transitions
- Reconnect power
- In drywall ceiling areas, neatly cut access, and furnish & install access door if none exists
- Replace existing space temperature sensors with new Air-Fi wireless space temp/CO2 sensors



SCALE 6'

KEY PLAN
NO SCALE

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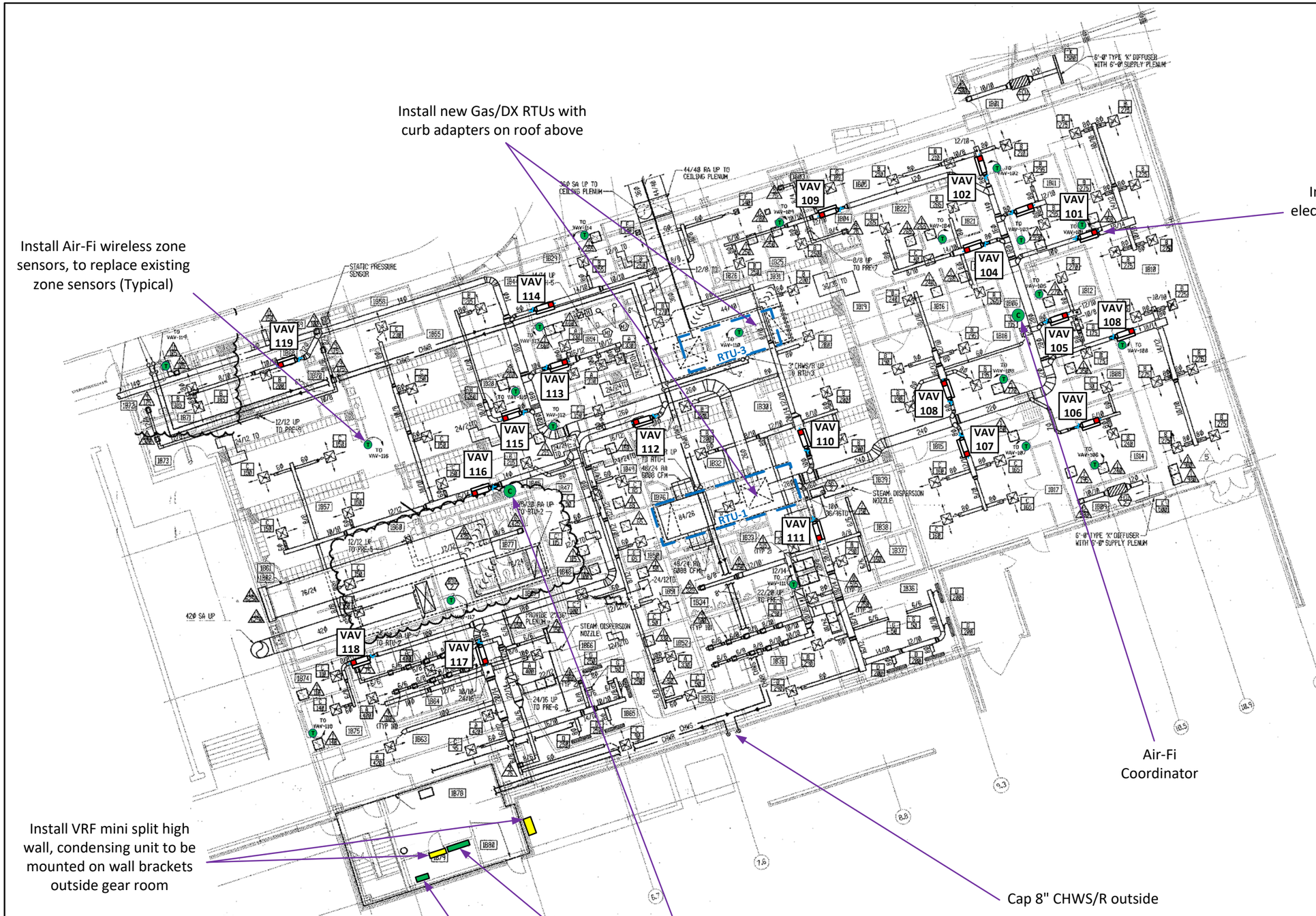
FIRST FLOOR PLAN AREA A INSTALLATION

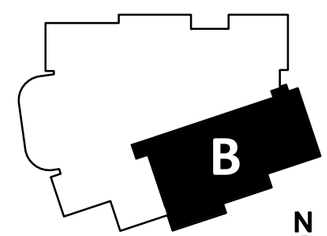
M-1



Installation

Install Notes:

- Install new VAV boxes with duct transitions
- Reconnect power
- In drywall ceiling areas, neatly cut access, and furnish & install access door if none exists
- Replace existing space temperature sensors with new Air-Fi wireless space temp/CO2 sensors
- Cap 8" CHWS/R outside where chiller was previously connected
- Install new RTU-1 and RTU-3 Gas/DX RTUs with curb adapters on roof above



SCALE 6'

KEY PLAN
NO SCALE

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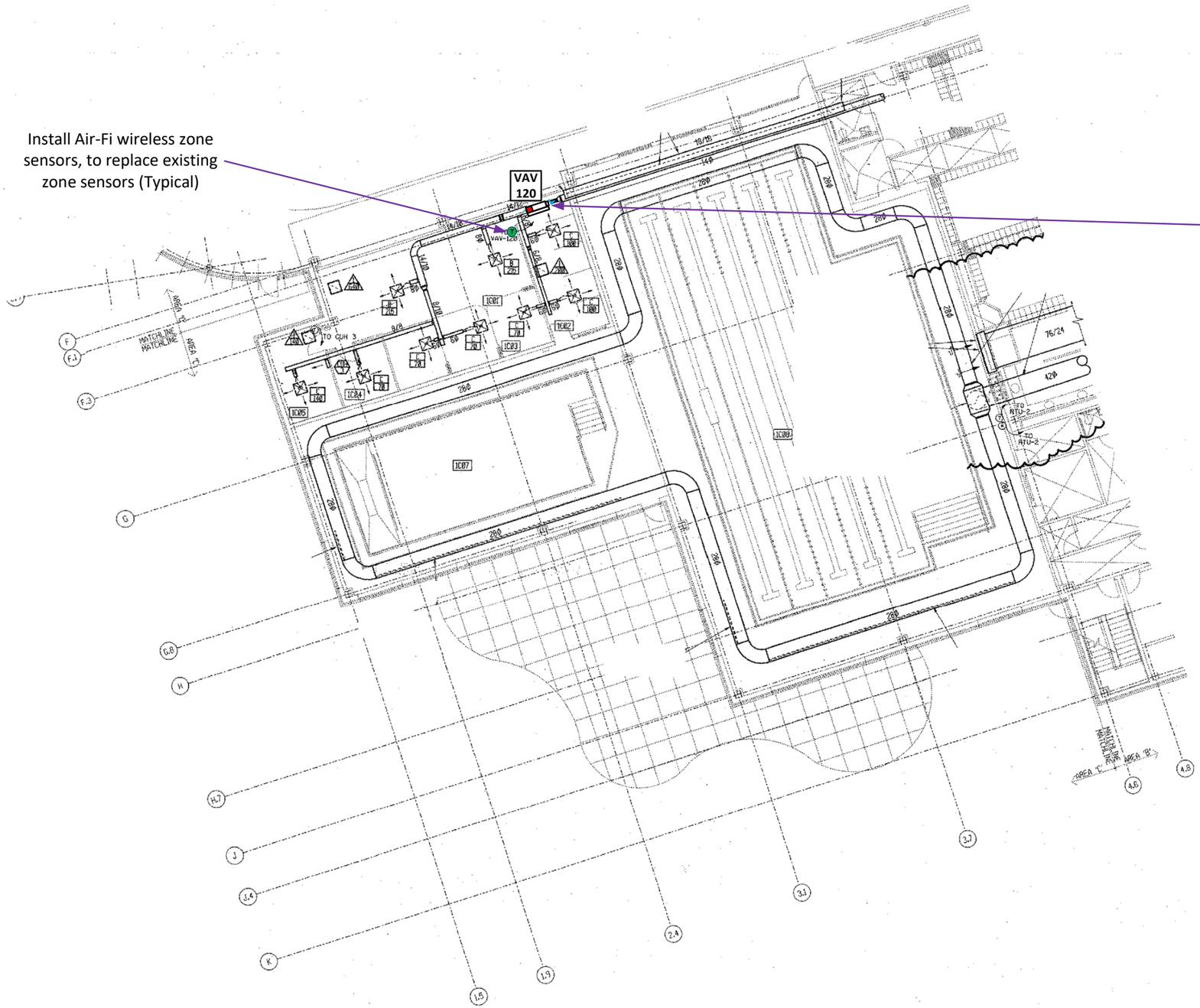
FIRST FLOOR PLAN
AREA B INSTALLATION

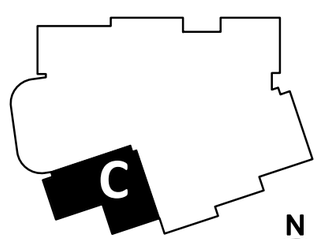
M-2



Installation

Install Notes:

- Install new VAV box with duct transitions
- Reconnect power
- In drywall ceiling areas, neatly cut access, and furnish & install access door if none exists
- Replace existing space temperature sensor with new Air-Fi wireless space temp/CO2 sensor



SCALE
6'

KEY PLAN
NO SCALE

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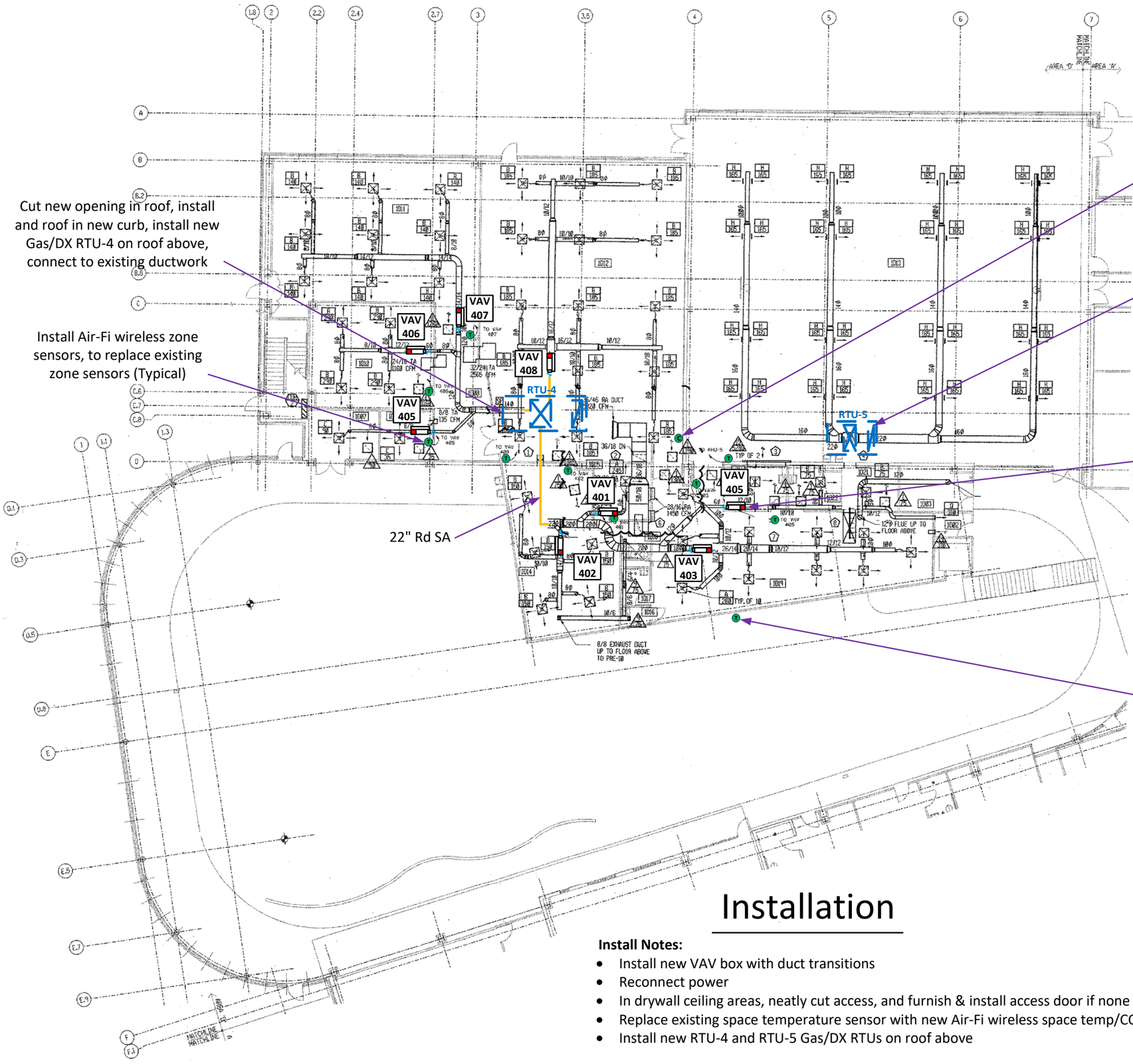
FIRST FLOOR PLAN
AREA C INSTALLATION

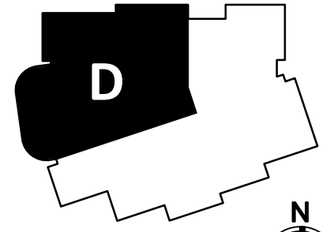
M-3



Installation

Install Notes:

- Install new VAV box with duct transitions
- Reconnect power
- In drywall ceiling areas, neatly cut access, and furnish & install access door if none exists
- Replace existing space temperature sensor with new Air-Fi wireless space temp/CO2 sensor
- Install new RTU-4 and RTU-5 Gas/DX RTUs on roof above



SCALE 6'

KEY PLAN
NO SCALE

N

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FIRST FLOOR PLAN
AREA D INSTALLATION

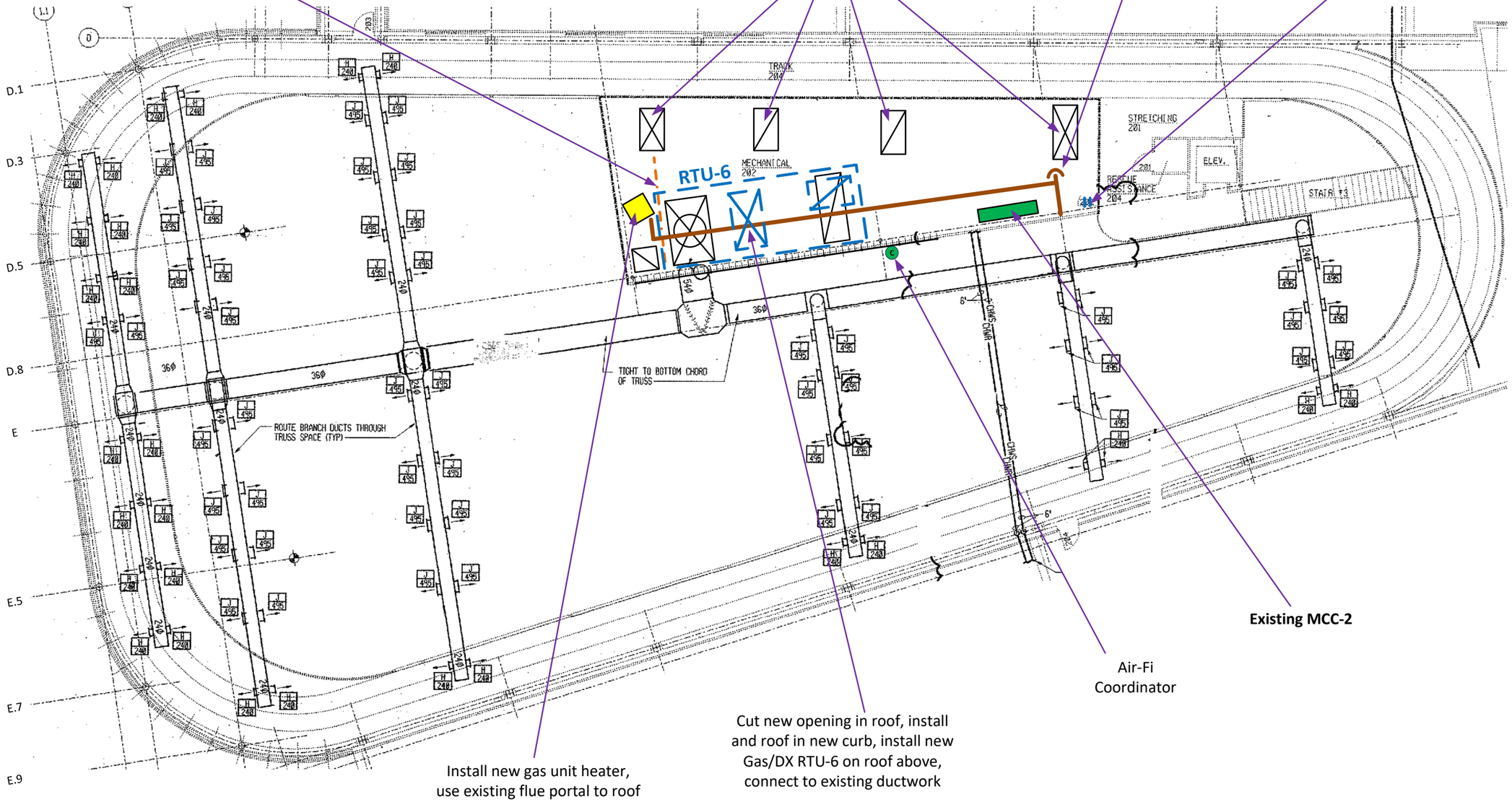
M-4

Move existing fiber optic line on roof to make room for new RTU

Cap existing SA/RA/OA duct drops where not being reused

Existing 4" gas, extend 2.5" gas up to roof for new RTUs and tee 0.5" line for new gas unit heater

Cap 6" CHW lines at wall



Existing MCC-2

Air-Fi Coordinator

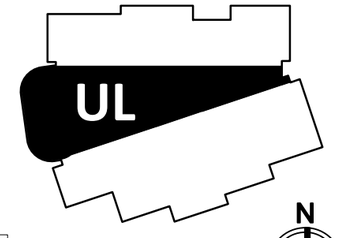
Install new gas unit heater, use existing flue portal to roof

Cut new opening in roof, install and roof in new curb, install new Gas/DX RTU-6 on roof above, connect to existing ductwork

Installation

Demo Notes:

- Cut opening in roof and install new curb for new RTU
- Install new Gas/DX RTU, install re-route gas line up to roof, use existing roof portal where possible and seal
- Install new gas unit heater in mechanical room
- Cap chilled water piping at mechanical room wall
- Cap SA/RA/OA ductwork where not being reused
- Combustion air duct to remain, cap opening in upper level mechanical room
- Move existing fiber optic line on roof to allow for installation of new RTU



SCALE 6'

KEY PLAN
NO SCALE

N

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UPPER LEVEL FLOOR PLAN INSTALLATION

M-5

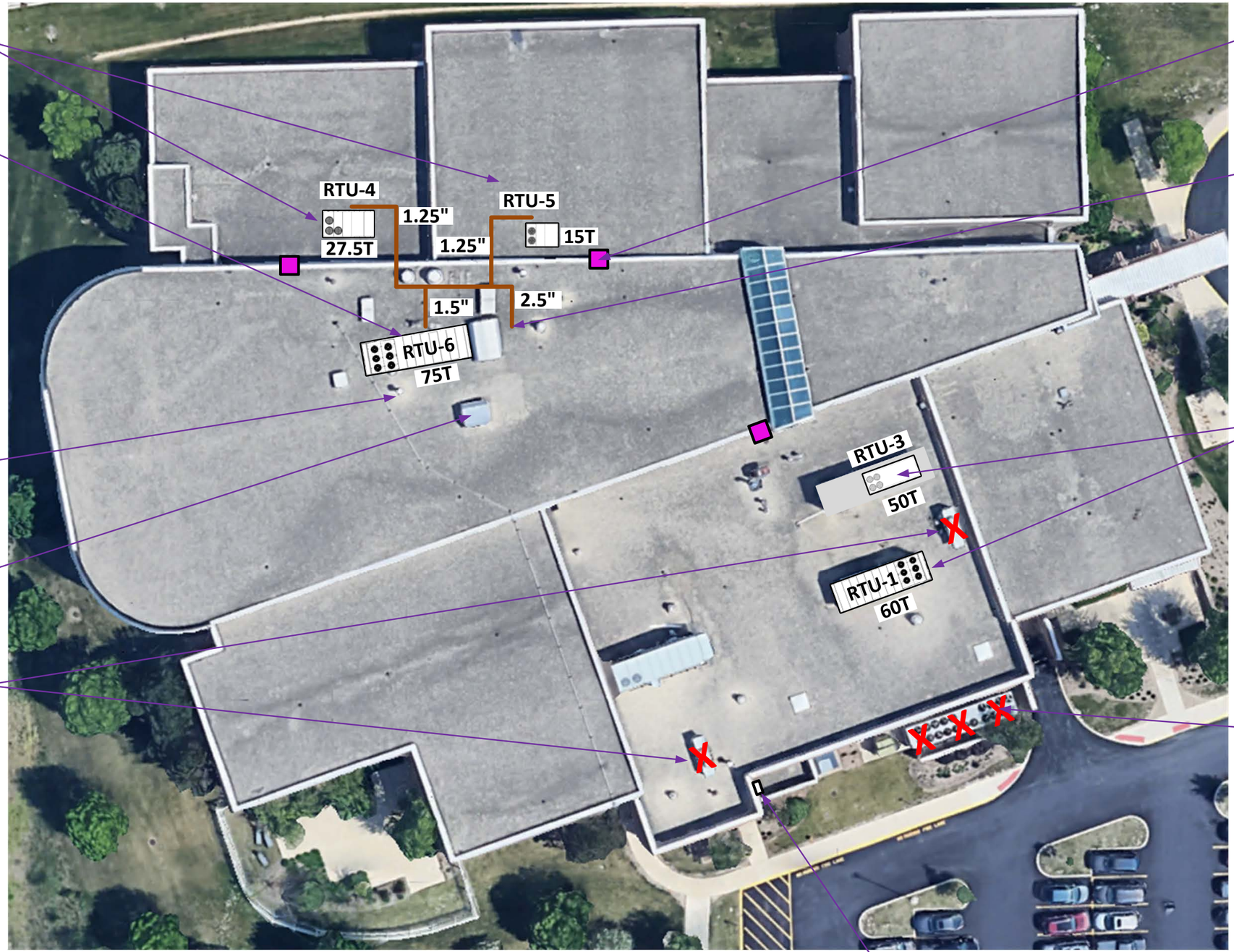
Install new roof curbs, F&I new regulators

Install new Pitched roof curb, F&I new regulator

Relocate existing exhaust fan PRE-10 as necessary to make room for RTU-6

Remove remaining exhaust/OA intake hoods and install insulated caps

Demo (2) MAUs on roof, cap curbs, make safe gas and electrical



MC to F&I new permanently installed fixed wall-mount ladders w/ rooftop handrail for maintenance access (Typ. 3)

Install new gas line for RTUs up through new pipe portal from mechanical room below

Install plenum curb adapters, F&I new regulators, reconnect existing gas

Demo chiller on grade

Install new VRF mini split for Gear Room, condenser to be wall mounted on factory-supplied brackets

SCALE
0' 25' 50'

N

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1	10-16-24	35% Design
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ROOF PLAN

M-6

TRANE Job Name: Orland Park - Health Fitness Center Turnkey | Unit Tag: RTU-1 | Prepared For: | Quantity: 1

RTU-1

Unit Overview - SFHPF604P*44CAAD8001D0WU00000*0*T1W8A0

Unit Function	Tonnage	EER @ AHRI	IEER @ AHRI	Net Capacity @ AHRI	System Power	Elevation
Cooling / Gas Heat	60 Ton Air Cooled	10.1 EER	16.0 EER	612.28 MBh	90.44 kW	0.00 ft

Dimensions				Installed Weight
Height	Width	Overall Length	Footprint Length	
87.250 in	119.000 in	394.500 in	0.000 in	11387.8 lb

Unit Features

Panel	Access Doors
Agency Approval	cULus Approval

Unit Electrical

Overview	
Voltage/Phase/Frequency	460/60/3
SCCR Rating	5000.00 A
Disconnect Switch	Unit Mounted Disconnect w Conv Outlet
Condenser	
Condenser Fan 1 FLA	2.20 A
Condenser Fan 2 FLA	2.20 A
Condenser Fan 3 FLA	2.20 A
Condenser Fan 4 FLA	2.20 A
Condenser Fan 5 FLA	2.20 A
Condenser Fan 6 FLA	2.20 A
Supply/Relief	
Supply Fan 1 FLA	53.60 A
Relief Fan 1 FLA	6.00 A
Other FLA	4.50 A

Compressor	
Compressor 1 RLA	24.00 A
Compressor 2 RLA	24.00 A
Compressor 3 RLA	24.00 A
Compressor 4 RLA	27.40 A
Circuit 1	
MCA	191.00 A
MOP	225.00 A
DSS	250.00 A

Note: DSS value reflects factory installed Disconnect Switch Size

Note: Connect properly sized and protected power supply wiring to the unit (copper wiring only to the unit)

Condensing Section

Compressor Count	4.00 Number	Refrigerant Charge Circuit 1	33.8 lb
Compressor Steps	100/72/48/24	Refrigerant Charge Circuit 2	33.0 lb
Condenser Coil Face Area	136.00 sq ft	Minimum Room Area	1000.80 sq ft
Condenser Coil Rows	1.00 Number	Design Ambient Temperature	95.00 F
		Condenser Fan Count	6.00 Number
		Condenser Fan VFD Count	0.00 Number
		Condenser Fan Size	26.000 in
		Condenser Fan HP (each)	1.000 hp

Heating Section

Function	Cooling / Gas Heat	Gas Heat Steady State Efficiency	81.00 %
Heat Type & Capacity	High Modulating Gas Heat	Output Heating Capacity (MBh)	688.50 MBh
Gas Pipe Connection Size	1.000 in	Output Heating Capacity with Fan (MBh)	798.04 MBh
Min Gas Inlet Pressure (in WC)	7.000 in H2O	Heating EAT	60.00 F
Max Gas Inlet Pressure (in WC)	14.000 in H2O	Heating LAT	87.25 F
		Heating Delta T	27.25 F

Cooling Coil (DX) Section

		Cooling Performance	
Type	Cu-Al	Leaving Coil Dry Bulb	56.98 F
Rows	6.00 Number	Leaving Coil Wet Bulb	56.90 F
Face Area	43.00 sq ft	Leaving Unit Dry Bulb	62.11 F
		Leaving Unit Wet Bulb	58.90 F
Inputs		Gross Total Capacity	721.82 MBh
Design Airflow	23500 cfm	Gross Sensible Capacity	572.59 MBh
Entering Dry Bulb	80.00 F	Gross Latent Capacity	149.23 MBh
Entering Wet Bulb	67.00 F	Net Total Capacity	612.28 MBh
		Net Sensible Capacity	463.05 MBh
		Net Sensible Heat Ratio	75.63 %

Supply Fan

		Performance	
Supply Fan	50 HP FC	Design Airflow	23500 cfm
Supply Fan Count	2.00 Number	Supply Duct Static Pressure	2.800 in H2O
Supply Motor Count	1.00 Number	Total Static Pressure	4.964 in H2O
VFD Count	1.00 Number	Total Supply BHP	40.04 bhp
Shaft Grounding Ring	Standard	Supply Fan RPM	1000 RPM
		Supply Fan Motor Heat	109.54 MBh

Filter Sections

Pre-Evap Coil	
Quantity/Size - #1	35-16x20x2
Face Area (sq ft)	77.80 sq ft
Face Velocity (ft/min)	302 ft/min
Filter Selection (Position 1 / 2)	M8 Hi-Eff TA / None
Filter Monitoring	Pre Evap Filter Monitor

Outside Air & Relief Sections

Outside Air Section		Relief Section	
Outside Air Control	0-100% Economizer	Fan Motor	100% Exhaust - 5 HP w/Statitrac
Economizer Options	Ultra Low Leak Damper	Return Duct Static Pressure	0.500 in H2O
Ambient Control	Standard Ambient	Operating Speed	433 rpm
Fresh Air Control	Economizer Control with Dry Bulb	Relief/Return Airflow	13000 cfm
		Relief/Return Break Horsepower	2.36 bhp
		Relief/Return Fan RPM	433 rpm
		Relief/Return	100% Exhaust - 5 HP w/Statitrac
		Relief/Return Fan Drive RPM	400 RPM

Total Static Pressure

Supply Duct	2.800 in H2O
Return Duct	0.500 in H2O
Total Static Pressure	4.964 in H2O

Acoustics

	63	125	250	500	1K	2K	4K	8K
Ducted Discharge (Supply)	95 dB	89 dB	87 dB	86 dB	80 dB	76 dB	71 dB	66 dB
Ducted Inlet (Return)	88 dB	80 dB	76 dB	73 dB	68 dB	65 dB	61 dB	63 dB
Outdoor Noise	100 dB	97 dB	96 dB	95 dB	93 dB	89 dB	84 dB	78 dB

Sound power level in dB re 1 pW

Outdoor Noise prediction conforms to ARI 370.

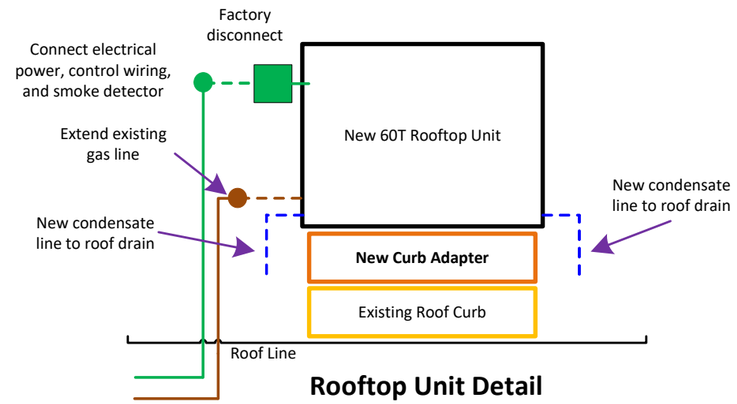
Supply/Return Duct Prediction data conform to ARI 260

Weights

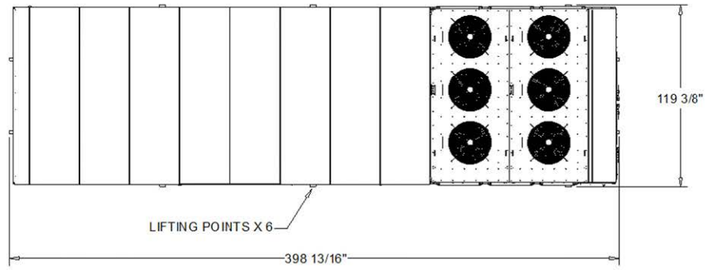
Center of Gravity - X Dimension	16.80 ft	Installed Point Load Weight 1	987.4 lb
Center of Gravity - Y Dimension	4.71 ft	Installed Point Load Weight 2	924.1 lb
Installed Point Load - X1	0.33 ft	Installed Point Load Weight 3	1084.3 lb
Installed Point Load - X2	8.42 ft	Installed Point Load Weight 4	1021.0 lb
Installed Point Load - X3	15.58 ft	Installed Point Load Weight 5	1170.2 lb
Installed Point Load - X4	22.83 ft	Installed Point Load Weight 6	1107.0 lb
Installed Point Load - X5	30.83 ft	Installed Point Load Weight 7	1257.1 lb
Installed Point Load - 1Y	0.33 ft	Installed Point Load Weight 8	1193.9 lb
Installed Point Load - 2Y	9.33 ft	Installed Point Load Weight 9	1353.1 lb
Total Installed Weight	11387.8 lb	Installed Point Load Weight 10	1289.8 lb

Controls

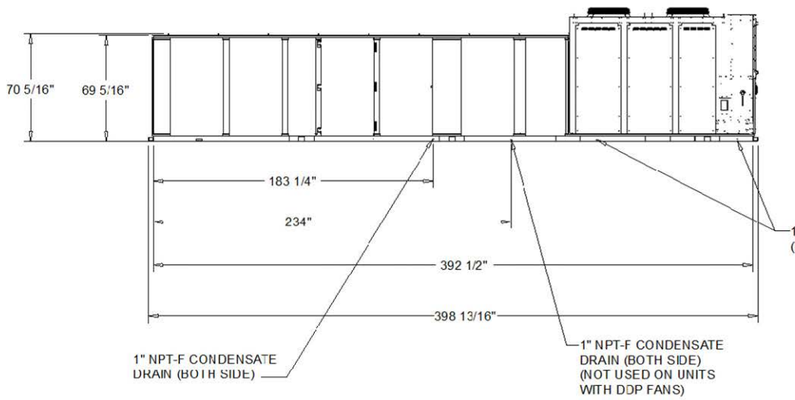
Unit Tag	RTU-1
Address	0.00 Number
Baud Rate	76800
BAS/Net Module	AirFi



Rooftop Unit Detail



PLAN VIEW



LEFT SIDE VIEW

FRONT VIEW

60 TON COOLING AND GAS HEAT UNIT

DIMENSION DRAWING

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Rev	Date	Description
1	10-16-24	35% Design
2	11-5-24	Update

EQUIPMENT

M-7

RTU-3

Job Name: Orland Park - Health Fitness Center Turnkey
Prepared For:
Unit Tag: RTU-3
Quantity: 1

Unit Overview - YCD600D4T*1B9P14A0*****HJBE100R0N00*0000X**********

Unit Function	Tonnage	Estimated Installed Weight	EER @ AHRI	IEER @ AHRI	System Power	Elevation
DX Cooling, natural gas heat	50 Ton	6219.0 lb	10.0 EER	14.5 EER	60.21 kW	0.00 ft

Unit Features

Efficiency/Condenser Coil	Standard efficiency unit
System Control	VAV
Airflow Configuration	Downflow supply and upflow return
Filters	2" MERV 8 Throwaway filters
Outside Air Selection	Economizer, dry bulb, w/ Traq OA measure

Unit Electrical

Voltage/Phase/Hertz	460/60/3
SCCR Rating	High fault SCCR w/ disc & conv outlet

Condenser Motor FLA	2.20 A	Supply Fan FLA	30.50 A	MCA	123.00 A
Condenser Motor Count	4.00 Each	Exhaust Fan Count	0.00 Each	MOP	150.00 A
Compressor 1 RLA	19.10 A	CCH FLA	1.00 A	DSS	250.00 A
Compressor 2 RLA	27.60 A				
Compressor 3 RLA	27.60 A				

Note: Connect properly sized and protected power supply wiring to the unit (copper wiring only to the unit)

Cooling Section

Refrigerant Type	R-454B	Gross Total Capacity	569.96 MBh
Refrigerant Charge - Circuit 1	57.2 lb	Gross Sensible Capacity	447.14 MBh
Minimum Room Area	937.00 sq ft	Gross Latent Capacity	122.82 MBh
Condenser Coil Type	MCHE	Net Total Capacity	509.44 MBh
Condenser Coil Rows	2	Net Sensible Capacity	386.62 MBh
Evaporator Face Area	36.70 sq ft	Net Sensible Heat Ratio (%)	0.76 %
Evaporator Coil Rows	5	Fan Motor Heat	54.16 MBh
Evaporator Face Velocity	360. ft/min	Leaving Coil Dry Bulb	56.69 F
Design Airflow	18000. cfm	Leaving Coil Wet Bulb	56.61 F
Entering Dry Bulb	80.00 F	Leaving Unit Dry Bulb	60.42 F
Entering Wet Bulb	67.00 F	Leaving Unit Wet Bulb	58.10 F
Ambient Dry Bulb	95.00 F	Compressor Power	38.39 kW

Heating Section

Function	DX Cooling, natural gas heat	Heating EAT	60.00 F
Heat Type & Capacity	High modulating gas 40 & 50T	Heating LAT	93.48 F
Input Heating Capacity	800.00 MBh	Heating Delta T	33.48 F
Output Heating Capacity	648.00 MBh		

Fan Section

Unit Airflow Design	Downflow supply and upflow return	Exhaust Fan Data	
Supply Fan Data		Exhaust Fan Type	Prop
Supply Fan Type	FC	Exhaust Fan Option	Barometric relief
System Control/SGR	VAV	Exhaust Fan Drive	Direct
Design Airflow	18000. cfm	Exhaust Fan Count	0.00 Each
Design ESP	1.500 in H2O	Outdoor Fan Data	
Total Static Pressure	3.646 in H2O	Outdoor Fan Type	Prop
Supply Fan Motor HP	25 Hp	Outdoor Fan Drive	Direct
Total Supply BHP	21.26 bhp	Low Ambient Temp	0 F
Supply Fan Drive	775 RPM	Condenser Fan Count	4.00 Each
Operating Speed (RPM)	782 rpm	Outdoor Fan Motor Power	0.00 kW
Supply Motor Power	15.87 kW		

Acoustics

	63	125	250	500	1K	2K	4K	8K
Supply Duct	101 dB	101 dB	87 dB	90. dB	83 dB	82 dB	76 dB	72 dB
Return Duct	91 dB	94 dB	87 dB	84 dB	79 dB	81 dB	75 dB	79 dB
Outdoor Noise	104 dB	97 dB	96 dB	97 dB	95 dB	93 dB	88 dB	79 dB

Controls

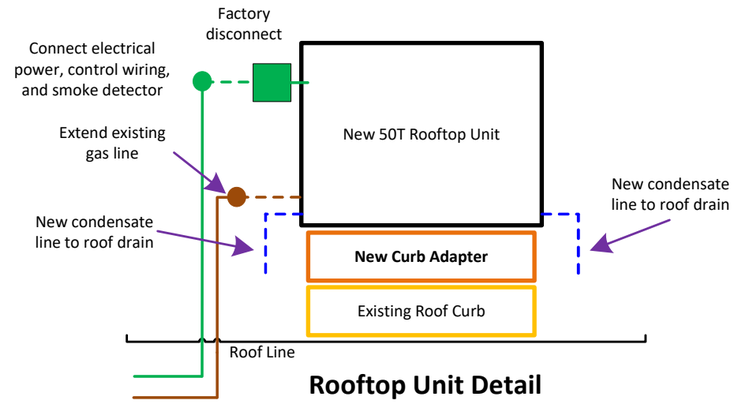
Communications Options	Adv Ctrl & BACnet/Modbus Comm. (BCI)

Service Options

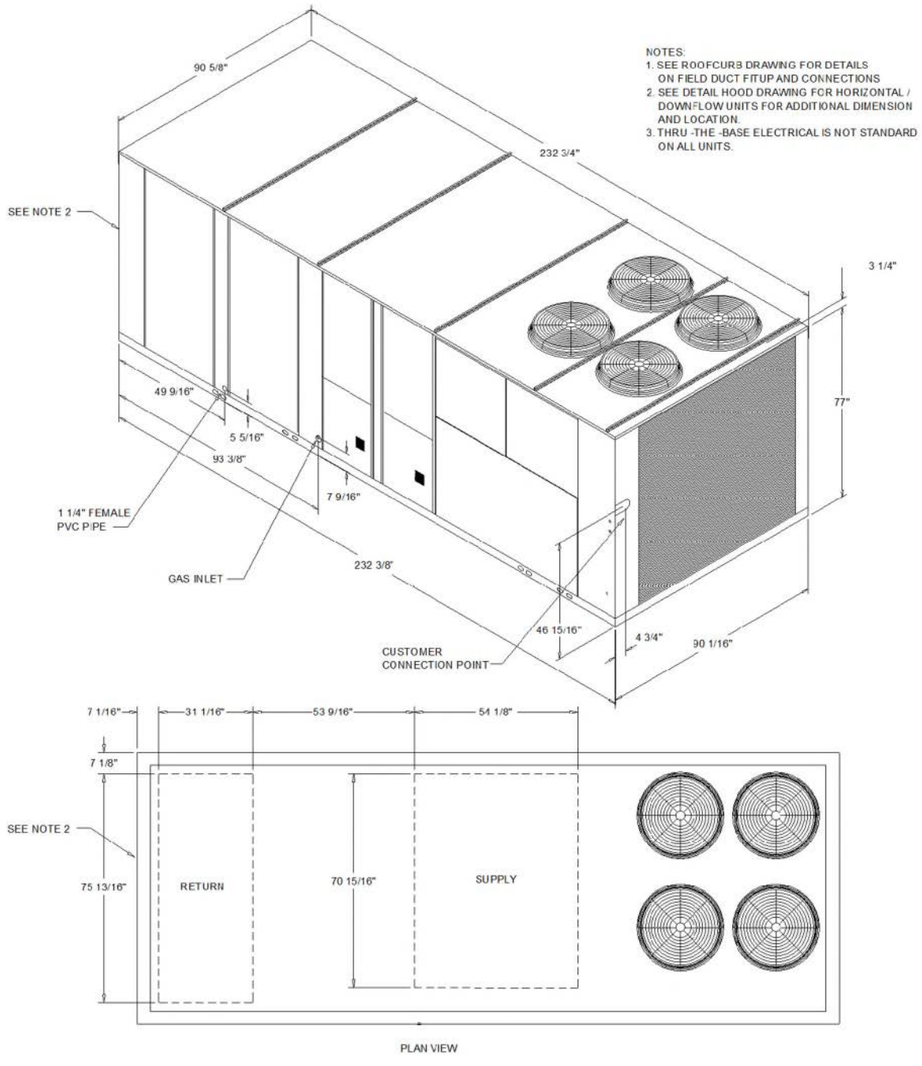
DX Service Options	Pre-painted steel pan w/ cond overflow	Clogged Filter Switch	Clogged filter switch
Service Valve	Service valves	Condenser Coil Guards	Condenser coil guards
Hinged Service Access	Hinged service access		

Accessories/Misc.

Zone Sensor	Digital display zone sensor	CO2 Sensor	Duct mounted CO2 sensor



Rooftop Unit Detail



DOWNFLOW SUPPLY AND UPFLOW RETURN CONFIGURATION

DIMENSIONAL DRAWING

TRANE TECHNOLOGIES
Trane.com/Chicago

7100 South Madison Street
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P. 630-734-3200
F. 630-323-9040

15430 West Ave.
Orland Park, IL 60462

Health & Fitness Center

Rev	Date	Description
1	10-16-24	35% Design
2	11-5-24	Update

EQUIPMENT

M-8

Job Name: Orland Park - Health Fitness Center Turnkey
Prepared For:
Unit Tag: RTU-4
Quantity: 1

RTU-4

Unit Overview - YCD330D4P*1B3RJ40B*D***HJB0200*0N00*0000X**********

Unit Function	Tonnage	Estimated Installed Weight	EER @ AHRI	IEER @ AHRI	System Power	Elevation
DX Cooling, natural gas heat	27.5 Ton	5206.0 lb	10.8 EER	15.0 EER	36.15 kW	0.00 ft

Unit Features

Efficiency/Condenser Coil	Standard efficiency unit
System Control	VAV
Airflow Configuration	Downflow supply and upflow return
Filters	2" MERV 8 Throwaway filters
Outside Air Selection	Economizer, dry bulb w/ ultra low damper

Unit Electrical

Voltage/Phase/Hertz	460/60/3
Unit Mounted Power Connection 2	Fac. Pwrd. GFCI conv. outlet w/disc sw
SCCR Rating	5k SCCR

Condenser Motor FLA	2.20 A	Supply Fan FLA	18.00 A	MCA	84.00 A
Condenser Motor Count	3.00 Each	Exhaust Fan Count	0.00 Each	MOP	100.00 A
Compressor 1 RLA	14.50 A	CCH FLA	1.00 A	DSS	100.00 A
Compressor 2 RLA	19.10 A				
Compressor 3 RLA	19.10 A				

Note: Connect properly sized and protected power supply wiring to the unit (copper wiring only to the unit)

Cooling Section

Refrigerant Type	R-454B	Gross Total Capacity	342.12 MBh
Refrigerant Charge - Circuit 1	31.0 lb	Gross Sensible Capacity	251.21 MBh
Minimum Room Area	501.00 sq ft	Gross Latent Capacity	90.91 MBh
Condenser Coil Type	MCHE	Net Total Capacity	312.90 MBh
Condenser Coil Rows	1	Net Sensible Capacity	221.99 MBh
Evaporator Face Area	31.70 sq ft	Net Sensible Heat Ratio (%)	0.71 %
Evaporator Coil Rows	4	Fan Motor Heat	25.86 MBh
Evaporator Face Velocity	351 ft/min	Leaving Coil Dry Bulb	55.34 F
Design Airflow	9640 cfm	Leaving Coil Wet Bulb	55.27 F
Entering Dry Bulb	80.00 F	Leaving Unit Dry Bulb	58.78 F
Entering Wet Bulb	67.00 F	Leaving Unit Wet Bulb	56.65 F
Ambient Dry Bulb	95.00 F	Compressor Power	24.56 kW

Heating Section

Function	DX Cooling, natural gas heat	Heating EAT	60.00 F
Heat Type & Capacity	High modulating gas 27.5, 30, 35T	Heating LAT	106.89 F
Input Heating Capacity	600.00 MBh	Heating Delta T	46.89 F
Output Heating Capacity	486.00 MBh		

Fan Section

Unit Airflow Design	Downflow supply and upflow return	Exhaust Fan Data	
Supply Fan Data		Exhaust Fan Type	Prop
Supply Fan Type	FC	Exhaust Fan Option	Barometric relief
System Control/SGR	VAV	Exhaust Fan Drive	Direct
Design Airflow	9640 cfm	Exhaust Fan Count	0.00 Each
Design ESP	2.700 in H2O	Outdoor Fan Data	
Total Static Pressure	3.479 in H2O	Outdoor Fan Type	Prop
Supply Fan Motor HP	15 Hp	Outdoor Fan Drive	Direct
Total Supply BHP	10.15 bhp	Low Ambient Temp	0 F
Supply Fan Drive	850 RPM	Condenser Fan Count	3.00 Each
Operating Speed (RPM)	856 rpm	Outdoor Fan Motor Power	0.00 kW
Supply Motor Power	7.58 kW		

Acoustics

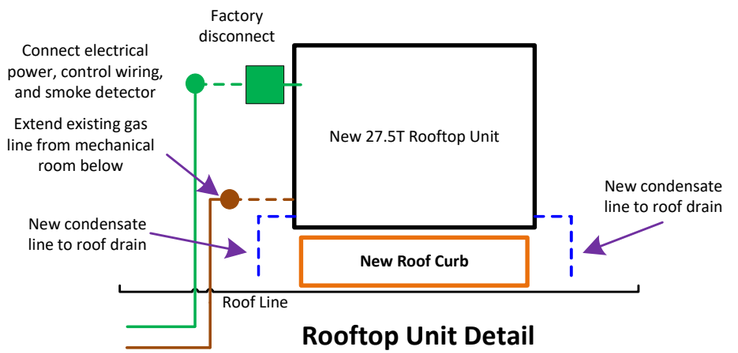
	63	125	250	500	1K	2K	4K	8K
Supply Duct	87 dB	84 dB	81 dB	78 dB	80 dB	77 dB	73 dB	65 dB
Return Duct	87 dB	79 dB	75 dB	73 dB	72 dB	66 dB	62 dB	58 dB
Outdoor Noise	100 dB	96 dB	97 dB	96 dB	93 dB	89 dB	90 dB	83 dB

Controls

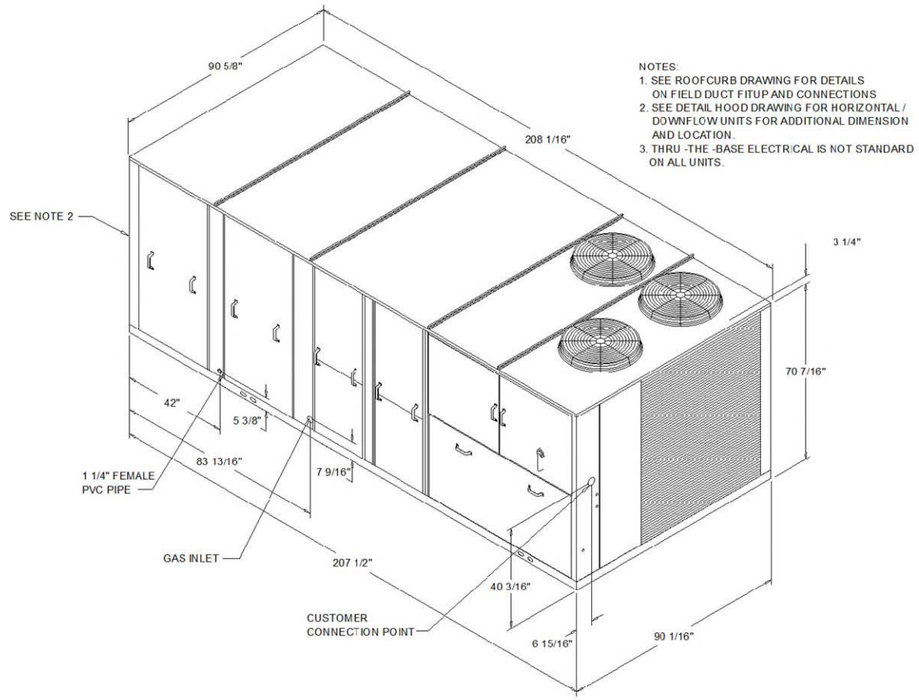
Communications Options	Adv Ctrl & BACnet/Modbus Comm (BCI)

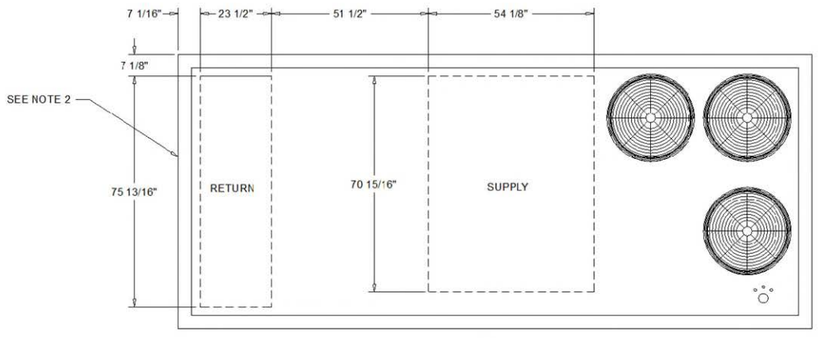
Service Options

DX Service Options	SS drain pan w/ condensate overflow swit	Condenser Coil Guards	Condenser coil guards
Hinged Service Access	Hinged service access	Through the Base Electrical	Thru-the-base electrical provision



Rooftop Unit Detail





PLAN VIEW

DOWNFLOW SUPPLY AND UPFLOW RETURN CONFIGURATION

DIMENSIONAL DRAWING

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Health & Fitness Center

Rev	Date	Description
1	10-16-24	35% Design
2	11-5-24	Update

EQUIPMENT

M-9

Job Name: Orland Park - Health Fitness Center Turnkey
Prepared For:
Unit Tag: RTU-5
Quantity: 1

RTU-5

Trane Precedent Packaged Rooftop

Unit Overview - YSK180A4SBH**K2C0A1A10004010000000000000

Application	Unit Size	Supply Fan		External Dimensions (in.)			Operating Weight	EER	IEER/SEER	Elevation
		Airflow	Total Static Pressure	Height	Width	Length				
DX Cooling / Gas Heat	15 Ton	5500. cfm	1.892 in H2O	4.92 ft	7.25 ft	10.25 ft	2368.0 lb	10.80 Number	14.50 Number	0.00 ft

Unit Features

Unit Efficancy	Standard Efficiency
Refrigerant	R-454B Refrigerant
Hinged Service Access/Filters	Hinged Access Panels with 2-in MERV 8
Through the Base Provisions	Electric
Disconnect / Circuit Breaker	Non-Fused Disconnect Switch
Convenience Outlet	Unpowered 20A Convenience Outlet
Fresh Air Selection	Downflow Low Leak Economizer DB with BR

Unit Electrical

Voltage/phase/hertz	460/60/3
MCA	40.00 A
MOP	50.00 A
Condenser Fan FLA	1.30 A
Evaporator Fan FLA	4.60 A
Compressor 1 RLA	15.50 A
Compressor 2 RLA	8.10 A
Compressor Power	12.57 kW
System Power	18.11 kW

Controls

Unit Controls	Symbio 700
Communications Option	Advanced Controls and BACnet BAS
System Monitoring Controls 1	Clogged Filter & Condensate Overflow
SupplyFan/Drive/MotorType	Single Zone VAV with Standard Motor

Cooling Section

Entering Dry Bulb	80.00 F	Capacity	
Entering Wet Bulb	67.00 F	Gross Total	184.97 MBh
Ambient Temp	95.00 F	Gross Latent	46.39 MBh
Leaving Coil Dry Bulb	56.69 F	Gross Sensible	138.57 MBh
Leaving Coil Wet Bulb	56.04 F	Net Total	176.72 MBh
Leaving Unit Dry Bulb	58.75 F	Net Sensible	130.33 MBh
Leaving Unit Wet Bulb	56.86 F	Net Sensible Heat Ratio	74.00 %
Saturated Discharge Temperature	122.34 F	Fan Motor Heat	3.41 MBh
Saturated Suction Temperature	52.49 F	Refrig Charge-Circuit 1	11.8 lb

Heating Section

Heat Type	Modulating Gas Heat
Heating	High Gas Heat
Input Heating Capacity	400.00 MBh
Output Heating Capacity	324.00 MBh
Heating EAT	60.00 F
Heating LAT	113.94 F
Heating Temp Rise	53.94 F
Heating Stages	10:1

Fan Section

Indoor Fan Data		Indoor Fan Performance	
Airflow Application	Downflow	Airflow	5500. cfm
Design ESP	1.500 in H2O	Supply Motor Horsepower	3.000 hp
Component SP	0.235 in H2O	Total Supply Motor Operating Power	3.200 hp
Heat SP	0.158 in H2O	Indoor RPM	1357 rpm
Total SP	1.892 in H2O	Outdoor Fan Data	
Indoor Fan Drive Type	Variable Direct	Outdoor Fan Drive Type	Direct
Indoor Fan Quantity	2.00 Number	Outdoor Fan Quantity	2
Indoor Fan Type	BC Plenum	Outdoor Fan Type	Propeller
		Filters	
		1st Filter Size and Qty	8 - 20 x 24 x 2

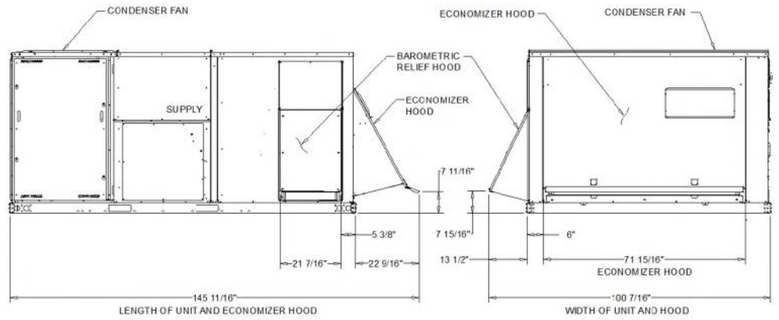
Field Installed Accessories

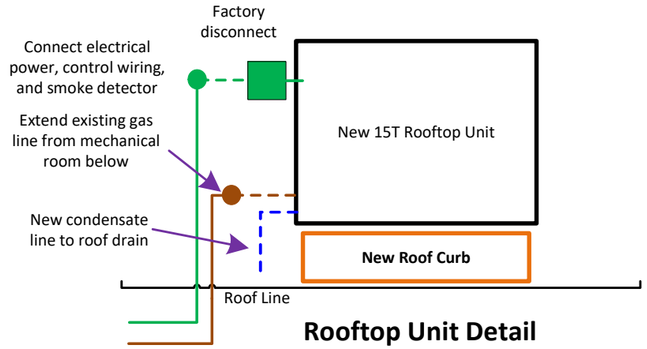
Zone sensors	Digital display zone sensor
Symbio Adv Controls and BACnet Conv Kit	None

Acoustics

Sound Path	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Ducted Discharge	80. dB	94 dB	80. dB	74 dB	69 dB	65 dB	65 dB	64 dB
Ducted Inlet	80. dB	85 dB	73 dB	68 dB	64 dB	61 dB	60. dB	58 dB
Outdoor Noise	85 dB	88 dB	88 dB	85 dB	82 dB	77 dB	74 dB	69 dB

Note:Ducted Discharge/Ducted Inlet prediction data conform to AHRI 260

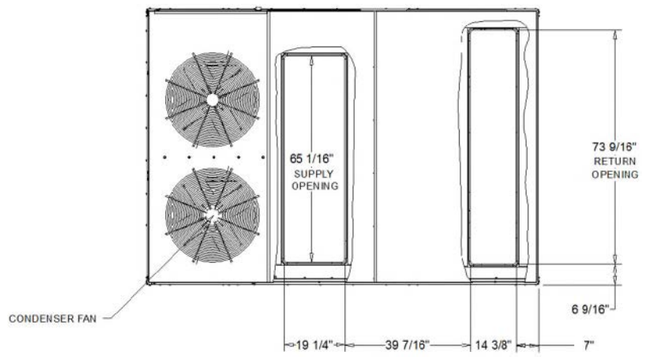




Rooftop Unit Detail

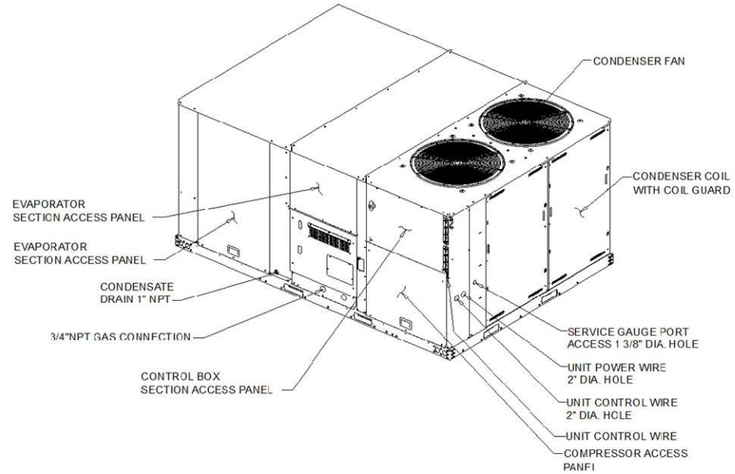
LOW LEAK ECONOMIZER AIR DAMPER (OPTION)

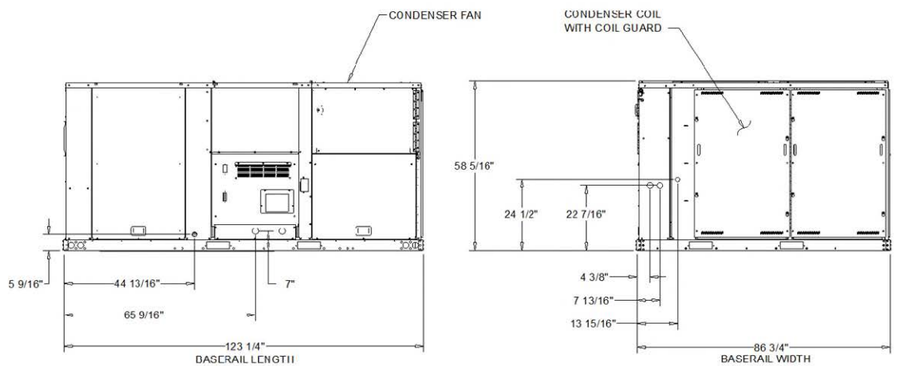
DX COOLING / GAS HEAT STANDARD EFFICIENCY



PLAN VIEW OF DOWNFLOW OPENINGS

NOTES:
1. THRU THE BASE ELECTRICAL IS NOT STANDARD ON ALL UNITS.
2. VERIFY WEIGHTS, CONNECTIONS, AND ALL DIMENSIONS WITH INSTALLER DOCUMENTS BEFORE INSTALLATION





DX COOLING / GAS HEAT STANDARD EFFICIENCY

DIMENSION DRAWING

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Health & Fitness Center

Rev	Date	Description
1	10-16-24	35% Design
2	11-5-24	Update

EQUIPMENT

M-10

RTU-6

Job Name: Orland Park - Health Fitness Center Turnkey
Prepared For:
Unit Tag: RTU-6
Quantity: 1

Unit Overview - SFHPF754P*66CVHECD01E0WE0H000004T1M8A0

Unit Function	Tonnage	EER @ AHRI	IEER @ AHRI	Net Capacity @ AHRI	System Power	Elevation
Cooling / Gas Heat	75 Ton Air Cooled	10.0 EER	16.2 EER	896.51 MBh	110.47 kW	0.00 ft

Dimensions				Installed Weight
Height	Width	Overall Length	Footprint Length	
87.250 in	119.000 in	394.500 in	0.000 in	12417.5 lb

Unit Features

Panel	Access Doors
Agency Approval	cULus Approval

Unit Electrical

Overview	
Voltage/Phase/Frequency	460/60/3
SCCR Rating	65000.00 A
Disconnect Switch	Unit Mounted Dis w HF SCCR/Conv Outlet
Condenser	
Condenser Fan 1 FLA	2.20 A
Condenser Fan 2 FLA	2.20 A
Condenser Fan 3 FLA	2.20 A
Condenser Fan 4 FLA	2.20 A
Condenser Fan 5 FLA	2.20 A
Condenser Fan 6 FLA	2.20 A
Supply/Relief	
Supply Fan 1 FLA	44.90 A
Relief Fan 1 FLA	11.50 A
Other FLA	4.50 A

Compressor	
Compressor 1 RLA	25.00 A
Compressor 2 RLA	34.90 A
Compressor 3 RLA	34.90 A
Compressor 4 RLA	34.90 A
Circuit 1	
MCA	216.00 A
MOP	250.00 A
DSS	400.00 A

Note: DSS value reflects factory installed Disconnect Switch Size

Note: Connect properly sized and protected power supply wiring to the unit (copper wiring only to the unit)

Condensing Section

Compressor Count	4.00 Number	Refrigerant Charge Circuit 1	44.8 lb
Compressor Steps	100/73/46/20	Refrigerant Charge Circuit 2	43.5 lb
Condenser Coil Face Area	136.00 sq ft	Minimum Room Area	1296.90 sq ft
Condenser Coil Rows	2.00 Number	Design Ambient Temperature	95.00 F
		Condenser Fan Count	6.00 Number
		Condenser Fan VFD Count	0.00 Number
		Condenser Fan Size	26.000 in
		Condenser Fan HP (each)	1.000 hp

Heating Section

Function	Cooling / Gas Heat	Gas Heat Steady State Efficiency	81.00 %
Heat Type & Capacity	High Modulating Gas Heat	Output Heating Capacity (MBh)	688.50 MBh
Gas Pipe Connection Size	1.000 in	Output Heating Capacity with Fan (MBh)	779.87 MBh
		Heating EAT	60.00 F
		Heating LAT	83.72 F
		Heating Delta T	23.72 F
		Gas regulator input pressure	7 - 14" w.c.
		Gas regulator output pressure	6.8 - 7.2" w.c.

Cooling Coil (DX) Section

Type	Cu-Al	**Cooling Performance**	
Rows	6.00 Number	Leaving Coil Dry Bulb	55.29 F
Face Area	43.00 sq ft	Leaving Coil Wet Bulb	55.20 F
		Leaving Unit Dry Bulb	59.28 F
Inputs		Leaving Unit Wet Bulb	56.83 F
Design Airflow	27000. cfm	Gross Total Capacity	987.88 MBh
Entering Dry Bulb	80.00 F	Gross Sensible Capacity	730.97 MBh
Entering Wet Bulb	67.00 F	Gross Latent Capacity	256.90 MBh
		Net Total Capacity	896.51 MBh
		Net Sensible Capacity	639.61 MBh
		Net Sensible Heat Ratio	71.34 %

Supply Fan

Supply Fan	40 HP DDP 80W	**Performance**	
Supply Fan Count	2.00 Number	Design Airflow	27000. cfm
Supply Motor Count	2.00 Number	Supply Duct Static Pressure	2.000 in H2O
VFD Count	1.00 Number	Total Static Pressure	5.131 in H2O
Shaft Grounding Ring	Standard	Total Supply BHP	32.40 bhp
		Supply Fan RPM	1700 RPM
		Supply Fan Motor Heat	91.37 MBh

Filter Sections

Pre-Evap Coil	
Quantity/Size - #1	35-16x20x2
Face Area (sq ft)	77.80 sq ft
Face Velocity (ft/min)	347 ft/min
Filter Selection (Position 1 / 2)	M8 Hi-Eff TA / None
Filter Monitoring	Pre Evap Filter Monitor

Outside Air & Relief Sections

Outside Air Section		Relief Section	
Outside Air Control	0-100% Econ with Traq and DCV	Fan Motor	100% Exhaust - 10 HP w/Statitrac
Economizer Options	Low Leak Fresh Air Damper	Return Duct Static Pressure	0.500 in H2O
Ambient Control	Standard Ambient	Operating Speed	555 rpm
Fresh Air Control	Economizer Control with Dry Bulb	Relief/Return Airflow	20000. cfm
		Relief/Return Break Horsepower	6.26 bhp
		Relief/Return Fan RPM	555 rpm
		Relief/Return	100% Exhaust - 10 HP w/Statitrac
		Relief/Return Fan Drive RPM	600 RPM

Total Static Pressure

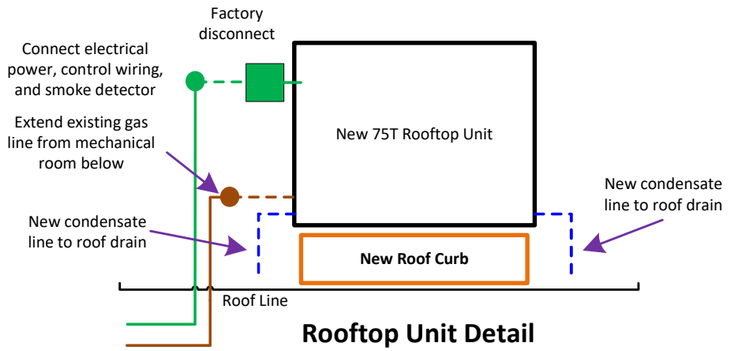
Supply Duct	2.000 in H2O
Return Duct	0.500 in H2O
Total Static Pressure	5.131 in H2O

Weights

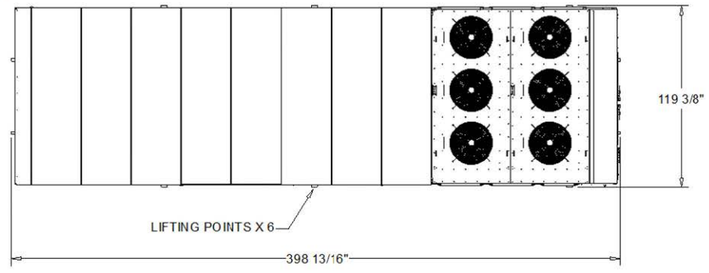
Center of Gravity - X Dimension	17.65 ft	Installed Point Load Weight 1	900.7 lb
Center of Gravity - Y Dimension	4.83 ft	Installed Point Load Weight 2	900.2 lb
Installed Point Load - X1	0.33 ft	Installed Point Load Weight 3	1081.4 lb
Installed Point Load - X2	8.42 ft	Installed Point Load Weight 4	1080.9 lb
Installed Point Load - X3	15.58 ft	Installed Point Load Weight 5	1241.6 lb
Installed Point Load - X4	22.83 ft	Installed Point Load Weight 6	1241.2 lb
Installed Point Load - X5	30.83 ft	Installed Point Load Weight 7	1403.7 lb
Installed Point Load - 1Y	0.33 ft	Installed Point Load Weight 8	1403.2 lb
Installed Point Load - 2Y	9.33 ft	Installed Point Load Weight 9	1582.6 lb
Total Installed Weight	12417.5 lb	Installed Point Load Weight 10	1582.1 lb

Controls

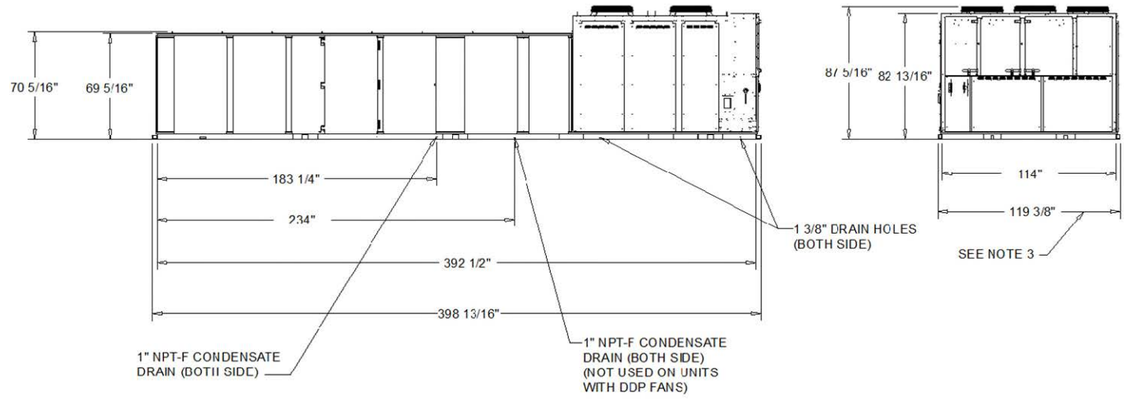
Unit Tag	RTU-6
Address	0.00 Number
Baud Rate	76800
BAS/Net Module	Trane BACnet Communication



Rooftop Unit Detail



PLAN VIEW



LEFT SIDE VIEW

FRONT VIEW

75 TON COOLING AND GAS HEAT UNIT

DIMENSION DRAWING

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Health & Fitness Center

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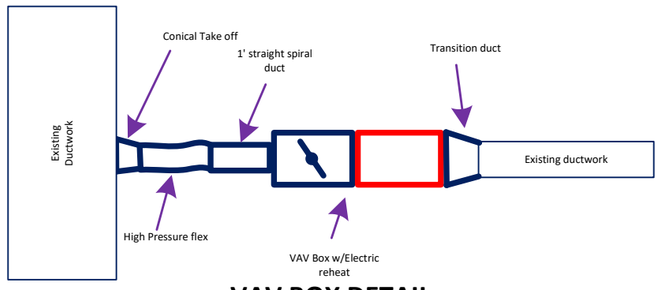
EQUIPMENT

M-11

VAV EQUIPMENT SCHEDULE

TAG	CLG CFM MAX	CLG CFM MIN	HTG CFM MAX	HTG CFM MIN	LOCAL HEAT MIN	ELEC REHEAT	MODEL NUMBER	SIZE	SERVED BY	BUILDING CONTROLLER	NOTES	Voltage	Ph	Type
VAV - 100	1650	825	825	825	825	9 kW	VCEF	12"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 101	1650	825	825	825	825	9 kW	VCEF	12"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 102	630	315	315	315	315	3.5 kW	VCEF	8"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 103	585	295	295	295	295	2.5 kW	VCEF	8"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 104	835	420	420	420	420	4 kW	VCEF	8"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 105	620	310	310	310	310	3 kW	VCEF	8"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 106	270	135	135	135	135	1 kW	VCEF	5"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 107	650	325	325	325	325	3.5 kW	VCEF	8"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 108	1120	560	560	560	560	7 kW	VCEF	10"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 109	590	295	295	295	295	3.5 kW	VCEF	8"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 110	1980	990	990	990	990	15 kW	VCEF	12"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 111	1970	985	985	985	985	10 kW	VCEF	12"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 112	1260	630	630	630	630	7.5 kW	VCEF	10"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 113	1320	0	0	0	0	-	VCCF	10"	RTU-1	SC - 01	1, 2	-	-	-
VAV - 114	790	395	395	395	395	5 kW	VCEF	8"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 115	480	240	240	240	240	3 kW	VCEF	6"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 116	1580	790	790	790	790	9 kW	VCEF	12"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 117	3225	1615	1615	1615	1615	15 kW	VCEF	16"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 118	250	125	125	125	125	1 kW	VCEF	5"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 119	580	290	290	290	290	3.5 kW	VCEF	8"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 120	1050	525	1050	1050	1050	9 kW	VCEF	10"	RTU-1	SC - 01	1, 2	460	3	SCR
VAV - 300	1095	535	550	550	550	4.5 kW	VCEF	10"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 301	1255	630	630	630	630	4.5 kW	VCEF	10"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 302	1470	735	735	735	735	9 kW	VCEF	12"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 303	290	145	145	145	145	1 kW	VCEF	5"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 304	455	230	455	455	455	4 kW	VCEF	6"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 305	590	295	295	295	295	3.5 kW	VCEF	8"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 306	355	180	180	180	180	2 kW	VCEF	6"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 307	2880	1400	2920	2920	2920	20 kW	VCEF	14"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 308	2800	1400	1400	1400	1400	17 kW	VCEF	14"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 309	2800	1400	1400	1400	1400	17 kW	VCEF	14"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 310	2800	1400	1400	1400	1400	17 kW	VCEF	14"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 311	1065	535	190	190	190	4 kW	VCEF	10"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 312	605	305	430	430	430	2.5 kW	VCEF	8"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 313	325	165	165	165	165	1 kW	VCEF	6"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 314	335	170	170	170	170	1 kW	VCEF	6"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 315	490	245	265	265	265	3 kW	VCEF	6"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 316	460	230	480	480	480	2.5 kW	VCEF	8"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 317	960	480	245	245	245	4 kW	VCEF	10"	RTU-3	SC - 01	1, 2	460	3	SCR
VAV - 401	245	125	125	125	125	1 kW	VCEF	5"	RTU-4	SC - 01	1, 2	460	3	SCR
VAV - 402	800	400	400	400	400	4.5 kW	VCEF	8"	RTU-4	SC - 01	1, 2	460	3	SCR
VAV - 403	2590	1295	1295	1295	1295	16 kW	VCEF	14"	RTU-4	SC - 01	1, 2	460	3	SCR
VAV - 404	535	270	270	270	270	3 kW	VCEF	8"	RTU-4	SC - 01	1, 2	460	3	SCR
VAV - 405	135	70	135	135	135	1 kW	VCEF	5"	RTU-4	SC - 01	1, 2	460	3	SCR
VAV - 406	1160	580	580	580	580	6 kW	VCEF	10"	RTU-4	SC - 01	1, 2	460	3	SCR
VAV - 407	1270	635	1270	1270	1270	12 kW	VCEF	10"	RTU-4	SC - 01	1, 2	460	3	SCR
VAV - 408	2765	1385	1385	1385	1385	20 kW	VCEF	14"	RTU-4	SC - 01	1, 2	460	3	SCR

NOTES:
1. Air-Fi Space Temperature/CO2 Sensor
2. Factory Fused Disconnect



VAV BOX DETAIL
(Typical for 47)
NOT TO SCALE

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1	10-16-24	35% Design
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EQUIPMENT

M-12

GENERAL NOTES:

WORK SHALL BE IN COMPLETE ACCORDANCE WITH ALL CODES, RULES, OR ORDINANCES AND REGULATIONS OF ALL AUTHORITIES, BODIES, ASSOCIATIONS, GOVERNMENTS, ETC. HAVING PROPER AND/OR LEGAL JURISDICTION.

DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF PIPING AND DUCT SYSTEMS.

ALL SUBS AS PART OF CONTRACT TO VERIFY FIELD CONDITIONS PRIOR TO COMMENCING WORK.

ALL SUBS TO CONDUCT TESTS AND INSPECTIONS AS REQUIRED TO ASSURE PROPER INSTALLATION AND OPERATION OF SYSTEMS.

INSTALL SYSTEMS ABOVE ACCESSIBLE CEILINGS TO ALLOW SUFFICIENT SPACE FOR CEILING PANEL REMOVAL.

INSTALL PIPING AND DUCTWORK TO ALLOW APPLICATION OF INSULATION AND SERVICING OF VALVES AND EQUIPMENT.

PENETRATIONS THROUGH FLOOR, WALL AND ROOF STRUCTURE SHALL BE WATERTIGHT AND WITH AN APPROVED FIRE STOPPING MATERIAL.

ALL EQUIPMENT TO HAVE U.L. OR ETL LISTING.

SELECT SYSTEM COMPONENTS WITH PRESSURE RATING EQUAL TO OR GREATER THAN SYSTEM OPERATING PRESSURE.

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

PIPING GENERAL NOTES:

INSTALL PIPING INDICATED TO BE EXPOSED AND PIPING IN EQUIPMENT ROOMS AND SERVICE AREAS AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE PROHIBITED UNLESS SPECIFICALLY INDICATED OTHERWISE.

INSTALL PIPING FREE OF SAGS AND BENDS.

INSTALL DRAINS, CONSISTING OF 3/4" BALL VALVE, HOSE ADAPTER AND CAP, AT LOW POINTS IN PIPING SYSTEM MAINS AND ELSEWHERE AS REQUIRED FOR SYSTEM DRAINAGE.

INSTALL VENTS, CONSISTING OF 3/4" BALL VALVE, HOSE ADAPTER AND CAP, AT HIGH POINTS IN PIPING SYSTEM AND ELSEWHERE AS REQUIRED FOR PROPER SYSTEM AIR VENTING.

SUBJECT PIPING SYSTEM TO HYDROSTATIC TEST PRESSURE THAT IS NOT LESS THAN 1.5 TIMES THE SYSTEM'S WORKING PRESSURE. TEST PRESSURE SHALL NOT EXCEED MAXIMUM PRESSURE FOR ANY VESSEL, PUMP, VALVE, OR OTHER COMPONENT IN SYSTEM UNDER TEST.

INSTALL ISOLATION VALVES AT ANY PIPING SYSTEM PRIOR TO LEAVING THE MECHANICAL ROOM.

PROVIDE A DIELECTRIC CONNECTION WHEN JOINING TWO DISSIMILAR METALS.

PIPE & FITTINGS SCHEDULE

SERVICE	SIZE	PIPE	FITTINGS	BRANCH CONNECTIONS	VALVES (EQUAL TO...)
NATURAL GAS	2" & SMALLER	SCH 40 BLACK STEEL	BLACK, CLASS 150, MALLEABLE IRON THREADED	REDUCING TEES, OKAY TO BUSH ONE SIZE REDUCTION	MAINS & BRANCH SHUT OFF = APOLLO 80-100 SERIES; APPLIANCES = PRO CHANNEL VGV-2LH-B3PA
	2-1/2" & LARGER		STANDARD WEIGHT CARBON STEEL WELD FITTINGS	TOL/WOL UP TO TWO PIPE BELOW MAIN PIPE DIAMETER. REDUCING TEES FOR ONE OR TWO PIPE SIZE REDUCTIONS	SHUT OFF = RESUN FIG R 1431 200 PSI WOG, FLANGED END, LUBRICATED PLUG VALVE WITH LEVEL HANDLE
CONDENSATE (DX DRAIN)	ALL	PVC SCH 40 *		REDUCING TEES	
		TYPE M COPPER	PROPRESS FITTINGS AND CONNECTIONS	REDUCING TEES	
			WROUGHT COPPER DWV FITTINGS W/ 95/5 SWEAT CONNECTIONS OR PROPRESS	REDUCING TEES	

DUCTWORK NOTES:

ALL DUCTWORK TO BE GALVANIZED SHEET METAL.

SHEET METAL FABRICATION AND INSTALLATION SHALL MEET OR EXCEED THE STANDARDS SET IN THE DUCT MANUAL FOR VENTILATING AND AIR CONDITIONING SYSTEMS AS PUBLISHED BY SMACNA.

FLEXIBLE DUCT SHALL NOT EXCEED 5 FEET IN LENGTH AND SHALL BE THERMAFLEX TYPE MKE R6 INSULATED OR TYPE SLD UN-INSULATED.

ALL DUCT COVERING AND LINING SHALL HAVE A FLAME SPREAD RATING NOT TO EXCEED TWENTY-FIVE (25) AND A SMOKE SPREAD RATING NOT MORE THAN FIFTY (50).

DUCT SIZES SHOWN ARE FINISHED METAL SIZES.

OUTSIDE AIR INTAKES SHALL BE INSTALLED A MINIMUM OF 10'-0" AWAY FROM ALL FLUES, VENTS, TOILET EXHAUST AND ALL OTHER SOURCES OF CONTAMINATION.

ALL FLUES TO EXTEND 3'-0" ABOVE ROOF.

INSTALL ACCESS DOORS AS SHOWN ON DRAWINGS; 12"X12" OR 12" ROUND UNLESS NOTED OTHERWISE.

DUCT CONSTRUCTION SCHEDULE

DESCRIPTION	PRESSURE CLASS	SEAL CLASS	SEAM TYPE	CONNECTION TYPE
LOW PRESSURE RECTANGULAR EXHAUST, RETURN AND OUTSIDE AIR	+/-2"	A	DUCT = SNAPLOCK/PITTSBURGH FITTINGS = PITTSBURGH	PER SMACNA
LOW PRESSURE ROUND EXHAUST, RETURN AND OUTSIDE AIR	+/-2"	A	DUCT = SNAPLOCK FITTINGS = PITTSBURGH	PER SMACNA
MEDIUM PRESSURE RECTANGULAR SUPPLY	+4"	A	DUCT = SNAPLOCK/PITTSBURGH FITTINGS = PITTSBURGH	PER SMACNA
MEDIUM PRESSURE ROUND SUPPLY	+4"	A	SPIRAL	PER SMACNA
RECTANGULAR SUPPLY (DOWNSTREAM OF VAV BOXES)	+2"	A	DUCT = SNAPLOCK/PITTSBURGH FITTINGS = PITTSBURGH	PER SMACNA
ROUND SUPPLY (DOWNSTREAM OF VAV BOXES)	+1"	A	DUCT = SNAPLOCK FITTINGS = PITTSBURGH	PER SMACNA

DUCT INSULATION SCHEDULE

DESCRIPTION	INSULATION TYPE
WHEN LOCATED INDOORS IN AN UNCONDITIONED SPACE SUPPLY, RETURN, OUTSIDE AIR	1" X 1-1/2 LB MINERAL FIBER DUCT LINER + 1-1/2" X 3/4 LB FIBERGLASS DUCT WRAP
WHEN LOCATED INDOORS IN AN UNCONDITIONED SPACE SUPPLY, RETURN, OUTSIDE AIR	1-1/2" X 1-1/2 LB MINERAL FIBER DUCT LINER
WHEN LOCATED INDOORS IN AN UNCONDITIONED SPACE SUPPLY, RETURN, OUTSIDE AIR	2" X 1 LB FIBERGLASS DUCT WRAP
WHEN LOCATED INDOORS IN AN UNCONDITIONED SPACE SUPPLY, RETURN, OUTSIDE AIR	1-1/2" X 3 LB MINERAL FIBER INSULATION BOARD
WHEN LOCATED INDOORS IN AN UNCONDITIONED SPACE EXHAUST	UNINSULATED
WHEN LOCATED INDOORS IN AN INDIRECTLY CONDITIONED SPACE (i.e., A RA PLENUM) SUPPLY AIR	1-1/2" X 3/4 LB FIBERGLASS DUCT WRAP
WHEN LOCATED INDOORS IN AN INDIRECTLY CONDITIONED SPACE (i.e., A RA PLENUM) SUPPLY AIR	1" X 1-1/2 LB MINERAL FIBER DUCT LINER
WHEN LOCATED INDOORS IN AN INDIRECTLY CONDITIONED SPACE (i.e., A RA PLENUM) OUTSIDE AIR	1" X 1-1/2 LB MINERAL FIBER DUCT LINER + 1-1/2" X 3/4 LB FIBERGLASS DUCT WRAP
WHEN LOCATED INDOORS IN AN INDIRECTLY CONDITIONED SPACE (i.e., A RA PLENUM) OUTSIDE AIR	2" X 1 LB FIBERGLASS DUCT WRAP
WHEN LOCATED INDOORS IN AN INDIRECTLY CONDITIONED SPACE (i.e., A RA PLENUM) RETURN AND EXHAUST AIR	UNINSULATED
WHEN EXPOSED IN A CONDITIONED SPACE SUPPLY, RETURN AND EXHAUST AIR	UNINSULATED
WHEN EXPOSED IN A CONDITIONED SPACE OUTSIDE AIR	1" X 1-1/2 LB MINERAL FIBER DUCT LINER + 1-1/2" X 3/4 LB FIBERGLASS DUCT WRAP
WHEN EXPOSED IN A CONDITIONED SPACE OUTSIDE AIR	2" X 1 LB FIBERGLASS DUCT WRAP

ELECTRICAL GENERAL NOTES:

THE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO INCLUDE EVERY DETAIL OF REQUIRED CONSTRUCTION, EQUIPMENT, & MATERIALS. PROVIDE ALL MATERIALS AND WORK NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS BUT WHICH ARE NECESSARY TO FULLY COMPLETE THE WORK.

REVIEW THE CONTRACT DOCUMENTS OF OTHER DIVISIONS & COORDINATE ELECTRICAL DIVISION WORK WITH THE WORK OF OTHER DISCIPLINES TO AVOID CONFLICTS & INTERFERENCE.

UPON COMPLETION OF THE WORK REQUIRED UNDER THIS CONTRACT, PROVIDE TYPED UPDATED DIRECTORY WITHIN DOOR OF EACH AFFECTED PANELBOARD. LEAVE "SPARE" BREAKERS IN "OFF" POSITION.

PROVIDE LIGHTING FIXTURES COMPATIBLE WITH CEILING CONSTRUCTION. COORDINATE WITH ARCHITECTURAL ROOM FINISH SCHEDULES & COMPLY WITH SPECIFICATIONS.

IN AREAS HAVING FINISHED CEILINGS, LOCATE CEILING-MOUNTED ELECTRICAL DEVICES & FIXTURES ACCORDING TO ARCHITECTURAL REFLECTED CEILING PLAN. DO NOT INSTALL CEILING-MOUNTED SMOKE DETECTORS WITHIN 4 FEET OF HVAC SUPPLY DIFFUSERS.

IN ELECTRICAL & MECHANICAL EQUIPMENT SPACES, COORDINATE EXACT LOCATIONS OF LIGHTING FIXTURES WITH CONDUIT BANKS, DUCTWORK, PIPING, STRUCTURE, SUPPORTS, & OTHER OBSTRUCTIONS. LOCATE FIXTURES SUCH THAT DIALS, GAUGES, METERS, ETC. ARE PROPERLY ILLUMINATED.

ALL WIRING METHODS IN THIS PROJECT WILL BE AT MINIMUM PER THE NEC EDITION ACCEPTABLE TO THE AHJ.

MAINTAIN INTEGRITY OF VERTICAL FIRE RESISTIVE ASSEMBLIES CLASSIFIED AS SMOKE & FIRE/SMOKE PARTITIONS WITHOUT AFFECTING RATING PROVIDED THAT 1) SUCH OPENINGS OCCUR ON ONLY ONE SIDE IN EACH FRAMING SPACE, 2) AREA OF OPENINGS DOES NOT EXCEED 16 SQUARE INCHES, & 3) BOXES ON OPPOSITE FACES OF PARTITION ARE SEPARATED HORIZONTALLY BY NOT LESS THAN 23 INCHES. COMPLETELY FILL WITH APPROVED FIRE RESISTIVE COMPOUND ALL CLEARANCES BETWEEN OUTLET BOXES & DRYWALL. BUILD WALL AROUND BOXES HAVING AREA GREATER THAN 16 SQUARE INCHES.

DO NOT INSTALL OUTLET BOXES BACK-TO-BACK IN NON-RATED PARTITIONS. OFFSET & SEAL SIMILAR TO REQUIREMENTS FOR RATED PARTITIONS TO MINIMIZE SOUND TRANSMISSION.

COORDINATE ROUTING OF ALL LARGE CONDUITS (2" DIA. AND LARGER) AND PULL BOX LOCATION WITH MECHANICAL PIPING AND DUCTWORK PRIOR TO INSTALLATION TO AVOID CONFLICTS AND TO GUARANTEE REQUIRED CLEARANCE AND ACCESSIBILITY OF ELECTRICAL AND MECHANICAL SYSTEMS.

DO NOT ATTACH DISCONNECTS AND STARTERS NOT PROVIDED WITH EQUIPMENT DIRECTLY TO THE EQUIPMENT. MOUNT AND SUPPORT SEPARATELY. COORDINATE REQUIRED LOCATION WITH OTHER TRADES PRIOR TO INSTALLATION.

PROVIDE APPROPRIATE PULL WIRE IN EACH EMPTY SYSTEMS CONDUIT INCLUDED IN THIS PROJECT

INCLUDE GREEN-INSULATED GROUNDING CONDUCTOR SIZED PER 2020-NEC TABLE 250-122 WITH ALL BRANCH CIRCUIT CONDUCTORS SERVING LIGHTING FIXTURES, RECEPTACLES, MECHANICAL, OR OTHER DEVICES INSTALLED AT OR BELOW 8'-0"

MATCH A.I.C. RATINGS AND OTHER CHARACTERISTICS OF EXISTING DEVICES IN PANELBOARD WHEN ADDING BREAKERS TO EXISTING PANELBOARDS.

FURNISH AND INSTALL NEW NEMA 3R JUNCTION BOX ABOVE ROOF LINE FOR EACH NEW RTU WHERE NECESSARY

FURNISH AND INSTALL NEW NEMA 3R DISCONNECT ON EACH NEW RTU

FURNISH AND INSTALL NEW CONDUIT TO MATCH EXISTING PIPE AND WIRING SIZING FROM NEW

JUNCTION BOX TO NEW DISCONNECT AND FINAL CONNECTIONS TO RTU'S

INSTALL TRANE PROVIDED WCI BELOW ROOF DECK FOR THE WIRELESS CONTROLS. PROVIDE 24V POWER TO THE WCI

RECONNECT ANY AND ALL FIRE ALARM /LIFE SAFETY SYSTEMS TO NEW RTU'S

TESTING, ADJUSTING AND BALANCING - BALANCING THE SYSTEMS:

TEST, ADJUST AND BALANCE ALL AIR AND WATER SYSTEMS TO THE DESIGN CFM VALUES AS INDICATED ON PLANS WITH COMPARISON WITH THE ACTUAL CFM VALUES TESTED.

RECORD FAN SIZE, TYPE, RPM MOTOR, FULL LOAD CURRENT AND VOLTAGE, AND OUTDOOR AIR TEMPERATURE, DB AND WB.

BALANCE SUPPLY SYSTEMS WITH SPECIFIED OUTDOOR AIR QUANTITY.

TEST AND BALANCE REPORT: UPON COMPLETION OF THE WORK, ALL INFORMATION SHALL BE INSERTED ON A SHEET LISTING ALL ITEMS REQUIRED BY THESE SPECIFICATIONS AND BE INCLUDED IN A COMPLETE TEST AND BALANCE REPORT. ALL SHEETS SHALL BE NEATLY TYPED.

Responsibility Matrix

- Trane to provide the following equipment
  - 75 Ton Gas/DX RTU
  - 60 Ton Gas/DX RTU
  - 50 Ton Gas/DX RTU
  - 27.5 Ton Gas/DX RTU
  - 15 Ton Gas/DX RTU
  - (47) VAV Boxes with Electric Reheat wireless space temp/CO2 sensors
  - Equipment to be delivered to Bulldog for local release to jobsite
- Trane to subcontract the following disciplines
  - Mechanical
  - Electrical
  - Test and Balance
  - Crane
  - Structural Engineering
- Mechanical Sub Scope of Work
  - Demolition of Chiller, outdoor chilled water piping, AHUs, Gas Pipe/ Flues, ductwork in Mech room, VAV Boxes, and roof hoods where no longer in use
  - Demo (2) abandoned Kitchen MAUs
  - F&I structural reinforcement steel for new RTUs
  - Install (3) new RTUs with new curbs
  - Install (2) new RTUs with curb adapters
  - Install gas unit heater in mechanical room
  - Install mini split in Gear Room
  - Install VAV Boxes
  - New duct drops and transitions where required to connect to existing ductwork
  - Cap existing roof hood curbs after removal
  - Extend existing gas line to new RTUs
  - Install new condensate drain lines
  - Remove & Re-install ceiling tiles for VAV Boxes
  - F&I (3) ladders for rooftop access
- Electrical Sub Scope of Work
  - Demo make safe all demolished equipment
  - Replace existing disconnect with new 200A fused disconnect for RTU
  - Re-feed power wire to (3) new RTUs from MCC-2
  - Reconnect power to (2) new RTUs
  - Reconnect power to new VAV Boxes
  - Install wireless sensors
  - Provide BAS Wiring to RTUs, including reconnection of existing duct smoke detectors, & new Air-Fi wireless coordinators
- Test & Balance Sub Scope of Work
  - Pre testing of air flows of AHU supply, return, & outside air
  - Pre testing of VAV Box supply air flows
  - Post testing of RTU supply, return, outside air flows
  - Post testing and balancing of VAV Boxes air flow

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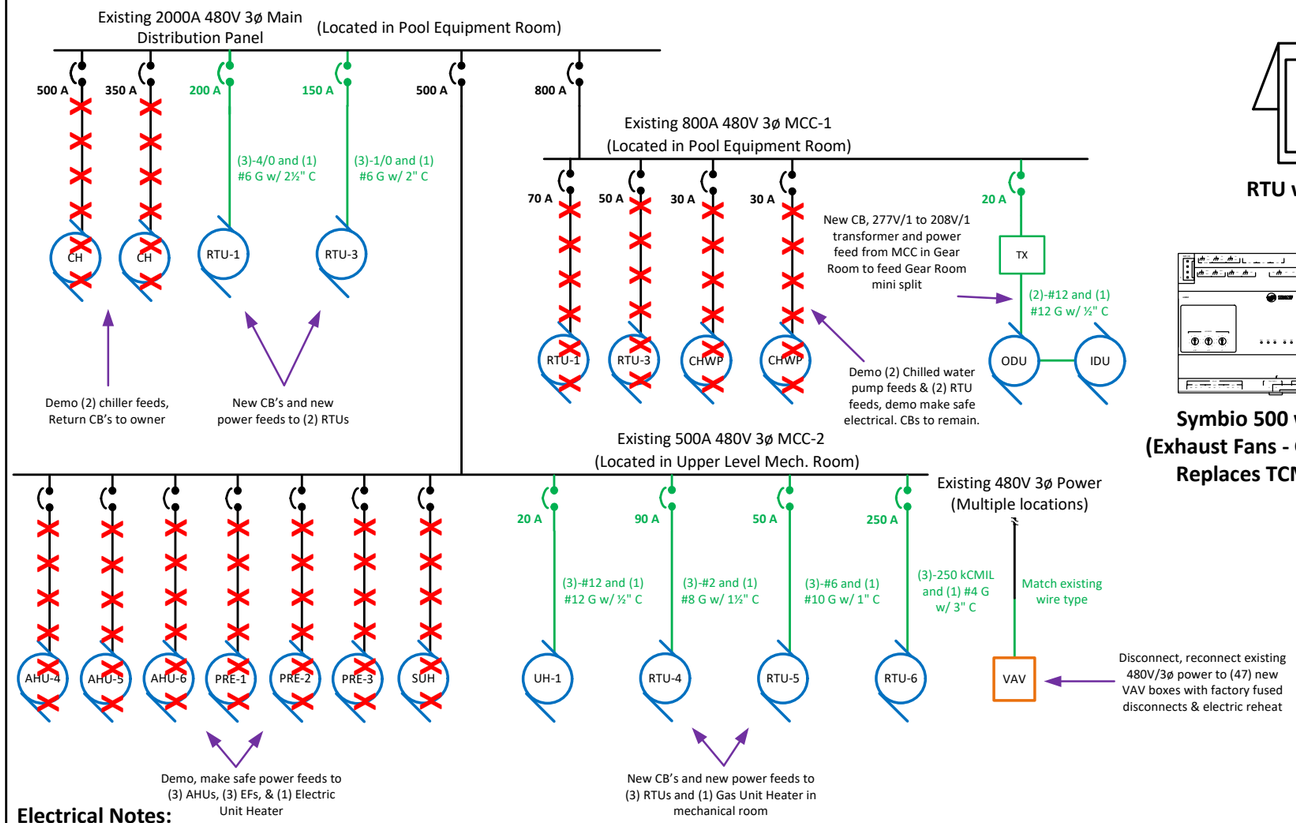
1	10-16-24	35% Design
2	11-5-24	Update

NOTES & DETAILS

M-13

Single Line Electrical Diagrams

WIRE COLOR KEY
GREEN = NEW WORK
BLACK = EXISTING



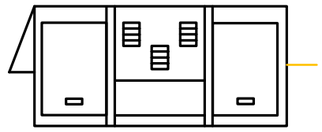
Electrical Notes:

- Demo make safe 460V/3ø power for (3) Indoor AHU-4, 5, & 6, Exhaust Fans PRE-1, PRE-2, & PRE-3, & Electric Unit Heater SUH-1
- Demo make safe 460V/3ø power for RTU-1 & RTU-3
- Disconnect & make safe 460V/3ø power to (47) VAVs w/ Electric Reheat, to be reused
- Demo make safe 460V/3ø power for (2) Chilled Water Pumps, (1) Gear Room FCU, and (1) Air Cooled Chiller
- New 20A CB and power feed for new Gas Unit Heater
- New 90A CB and power feed for RTU-4
- New 50A CB and power feed for RTU-5
- New 250A CB and power feed for RTU-6
- Reconnect (47) new VAV boxes to existing power feeds (VAVs have factory fusing)
- New 200A CB and power feed for RTU-1
- New 150A CB and power feed for RTU-3
- New 20A CB and 277V/1ø power feed for 1.5 Ton Mini Split in Gear Room, wire indoor unit to outdoor unit, install thermostat interface

BAS Notes:

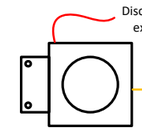
- Demo existing controls for AHU-1, 3, 4, 5, & 6 and associated relief fans
- Demo existing controls for VAV boxes
- Demo existing Comm ¾ Bridge
- Demo existing TCM-1, TCM-2, and Gear Room Fan coil controller, to be replaced
- Reconnect existing duct smoke detectors to (5) new RTUs
- Install (5) Air-Fi wireless coordinators with daisy-chain communication and 24VDC power back to existing Tracer SC+
- Install (1) new Symbio 500 w/ Air-Fi Exhaust Fan controller w/ Enclosure to replace TCM-1 & 2 in Gear Room
- Install (1) new Symbio 500 w/ Air-Fi w/ Enclosure, wire to thermostat interface on Gear Room mini split
- RTU-5 – Mount Air-Fi Space Temp/CO2 sensor
- RTU-6 - Space pressure control poly tubing to space and outdoor pickups & mount Air-Fi Space Temp/CO2 sensor
- Install (47) Air-Fi wireless space temperature/CO2 sensors for new VAVs

Building Automation System

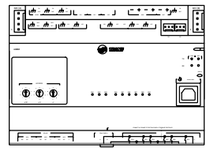


RTU with Factory Air-Fi Wireless (Typical for 5)

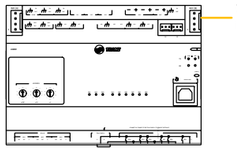
RTU-1 & 3 – Reconnect existing Duct Smoke Detectors
RTU-4 – Reconnect existing Duct Smoke Detectors
RTU-5 – Air-Fi Space Temp/CO2 Sensor, Reconnect existing Duct Smoke Detectors
RTU-6 – Air-Fi Space Temp/CO2 Sensor, Space Pressure Poly & Pickup to Weights Area & OA Pickup, Reconnect existing Duct Smoke Detectors



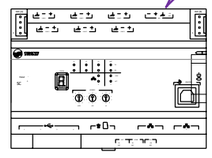
VAV with Factory Air-Fi Wireless (Typ. for 47)



Symbio 500 w/ Air-Fi (Exhaust Fans - Gear Room, Replaces TCM 1 & 2)



Symbio 500 w/ Air-Fi (Gear Room Mini Split)



Tracer SC+ (EXISTING)

Air-Fi Coordinator (Area D Main Level)
Air-Fi Coordinator (Area D Weights Area)
Air-Fi Coordinator (Area A)
Air-Fi Coordinator (Area B West)
Air-Fi Coordinator (Area B East)

******BAS Controls diagram on this page is concept only, see separate controls submittal by Trane Controls Engineering******

Standard BAS Sequences

- Duct Static Pressure Optimization
  - Trane Standard
- Scheduling
  - Optimal Start
  - Area layout
- Discharge Air Temperature Reset
- Economizers
  - Global Reference Dry Bulb Control (Default: <55°F)
- Ventilation Optimization
  - Demand Control Ventilation (CO2)
- Dual Maximum VAV Reheat Control (SCR)
- Building Pressurization

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SINGLE-LINE & BAS

E-1