Trane Omnia Equipment and Controls Proposal

Willow Grove Elementary School

Proposal Prepared For:
North Rockland Central School District
65 Chapel St
Garnerville, NY 10923

Local Trane Office:
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Omnia Contract Number: B6-uZ0AAK-23-007

Date: November 09, 2023

Prepared For:
North Rockland CSD

Job Name:
North Rockland CSD Willow Grove ES Univent Replace

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

Date: November 09, 2023

Proposal Number: B6-240762-22693-3

Payment Terms: Net 30 Days

Trane U.S. Inc. is pleased to provide the following proposal for your review and approval.

This Scope of Work will be executed based on Trane's scope of work proposed herein, which is a clarification of the plans and specifications, and adheres to Trane's "Standard Contract Terms and Conditions" only; any other document and/or contract will not bind and/or supersede these conditions.

Building Automation System

This proposal has been developed from the following documentation:

- Plans and Specs prepared by: **Greenman Pederson, Inc.**
- Mechanical drawings dated 9/14/23
- Specification sections: 230993, 230924, 230923
- Additional drawings reviewed: No additional documents provided to Trane at the time of this bid. All additional work as a result of these documents that is not listed below is not included from this bid.

Trane's pricing accounts for the following considerations:

- **Straight Time Labor**
- Trane's Electrical field installation will be performed by: **Union Electrical Contractor**
- Electrical Installation: Refer to Electrical Clarification section below
- Trane has included our standard controls start-up and checkout labor practices for this project. In addition, Trane has included training, commissioning assistance, and balancing assistance hours stated below. Any time above and beyond must be purchased separately on a T&M basis upon request.
    - **Integration Assistance to Siemens Enterprise Level Building Management System [hours]: 40**
    - Training [hours]: **8**
    - Commissioning Assistance [hours]: **40**
    - Balancing Assistance [hours]: **4**
    - ***Assistance only: Trane Excludes provision of commissioning or balancing agents.**
- **1 Year** parts and labor warranty against defects in material and workmanship on all new, Trane provided, field installed, DDC controllers and components.
- Project to be completed by **August 31, 2024**; escalation costs incurred after this date are not included and will be in addition to the Total Net Price(s) stated below. Added costs will depend upon the remaining scope identified at that time.

The following is Trane's scope of work:

1) TRANE BUILDING AUTOMATION SYSTEM (BAS) FRONT-END EQUIPMENT:

a) **System Level Controller(s) (Trane Tracer SC+) -** Trane to furnish and install system level controller(s) for interaction with the BAS. They will be provided with a web-based communication interface for remote communications by the Owner or Trane field personnel. The Tracer SC+ provides the ability to access the BAS from any standard PC, laptop, or smartphone using standard Web browser software (i.e. Internet Explorer or Google Chrome) and is password protected to ensure authorized access. The Owner is to provide the Local

Area Network or internet connection within 10 feet of the Tracer SC+ panel(s), and a static IP address. **All charges for Internet use to be provided by the Owner and are not included in this proposal.**

NOTE: Siemens will need to provide pricing to the district to integrate this system into their Enterprise Level Building Management System.

b) **Wireless Network -** Trane to furnish and install Wireless Coordinator access points directly connected to the system level controller. WCIs will communicate BACnet wirelessly to individual Direct Digital Controllers throughout the building.

c) Trane to setup operator interface for proper interaction with the BAS. User workstation interface will be:
   i) **Owner furnished**

d) **New Graphics -** Operator interface graphics will be generated for each mechanical system identified below in our scope of work. Operator graphics shall include standard 3-D mechanical system and/or custom floor plan graphics for review of control variables, set points, and alarms. BAS floor plan graphic development is dependent upon Trane receiving completed floor plan drawings in either AutoCAD or PDF formats.

2) ASSOCIATED MECHANICAL EQUIPMENT:

a) (1) Field installed DDC controller to monitor and control Chilled Water System (CH-1). Field installation to include (Shown on mechanical drawing M-401):
   i. Trane Programmable DDC controller
   ii. (1) Chilled water supply temperature sensor
   iii. (1) Chilled water return temperature sensor
   iv. (2) Chilled water differential pressure sensor located 2/3 downstream
   v. (2) Chilled water pump (CHWP-1, 2) control, field installation to include:
      a. Enable/Disable
      b. Status
      c. VFD Speed control
      d. VFD Alarm status
   vi. Communication bus [wired – BACnet]

b) (1) Field installed DDC controller to monitor and control Chilled Water System (CH-2). Field installation to include (Shown on mechanical drawing M-401):
   i. Trane Programmable DDC controller
   ii. (1) Chilled water supply temperature sensor
   iii. (1) Chilled water return temperature sensor
   iv. (2) Chilled water differential pressure sensor located 2/3 downstream
   v. (2) Chilled water pump (CHWP – 3,4) control, field installation to include:
      a. Enable/Disable
      b. Status
      c. VFD Speed control
      d. VFD Alarm status
   vi. Communication bus [wired – BACnet]

c) (2) Interface to Air Cooled Chiller (CH-1, 2) with factory mounted DDC controls. BAS will provide monitoring, control, and alarming of points made available by manufacturer.

d) (1) Field installed DDC controller to monitor and control Boiler System. Field installation to include
   i. Trane programmable DDC Controller
   ii. Outside air humidity sensor
   iii. Outside air temperature sensor
   iv. (2) Heating water supply temperature sensor
   v. (3) Heating water return temperature sensor
   vi. (1) Heating water differential pressure sensor located 2/3 downstream
   vii. (2) Heating water mixing valve, 3-Way
   viii. (1) Unit heater control, to include:
      a. Space temperature sensor [wired]
      b. Fan Start/Stop
      c. Hot water control valve

ix. (1) Combustion air damper interlock wiring (damper to remain)
x. (8) Heating water pump control, to include:
   a. Start/Stop
   b. Status
   c. VFD Speed
   d. VFD General alarm
xi. Boilers control panel to include (Typical of (1) control panels)):
   a. Boiler panel enable
   b. Boiler status
   c. Boiler alarm
   d. Interlocking of Control panel to (2) Boilers
xii. Wiring of miscellaneous Boiler manufacturer furnished field installed control devices to Boiler Control Panel:
   a. Outside Air Temp
   b. (2) Hot Water Temperature Sensors
xiii. Communication bus [wired – BACnet]

a) (1) Air Handling Units (AHU-20) with factory mounted DDC controls. BAS will provide monitoring, control, and alarming of available points and field installation of the following devices:
   i. Space Temperature Sensor [wireless]
   ii. Return air temperature sensor
   iii. Discharge Air Temperature Sensor
   iv. Hot water control valve
   v. Chilled water control valve
   vi. Return smoke detector status (Furnishing and installation Smoke detectors is by others)
   vii. Communication bus [wired – BACnet]

e) (5) Air Handling Units (AHU-X, 1 (on lower level serving band room), 2 & 6 (in elevator machine room)) with field mounted DDC controls. BAS will provide monitoring, control, and alarming of available points and field installation of the following devices:
   i. Trane DDC Controller
   ii. Supply Fan Start/ stop & Status
   iii. Mixed Air Damper [reuse existing]
   iv. Room temperature sensor [wired]
   v. Discharge air temperature sensor
   vi. Return air temperature sensor
   vii. Return air humidity sensor
   viii. Hot water control valve
   ix. Return smoke detector status [reuse existing]
   x. Reterminate DX Condenser interlock
   xi. Communication bus [wired – BACnet]

f) **VRF System.** BAS will provide monitoring, control, and alarming of available points.
   i. Includes field installation of the following devices:
      a. CAT-6 Wiring to Centralized Controller. Trane will provide integration to the VRF Centralized Controller via BACnet/IP.
      b. Interlock to **(5)** Outdoor Air-Cooled Condensing Unit(s) (**Daisy chain Outdoor units to VRF Centralized controller)**

g) **(5) Cooling Coils**. BAS will provide monitoring, control, and alarming of available points in addition to all field installed devices listed below.
   i. (5) LEV Controller with Transformer
   ii. **(5)** LEVs Valves (On DX Coil)
   iii. **(4)** VRF sensors per LEV Control Box. Each sensor shall be wired back to the LEV Control Box.This includes:
      1) **(2)** Air Thermistors
      2) **(2)** Refrigerant sensors
   iv. Interlock between LEV Control Box & UC600 Controller **[AHU 3,4,5,7,8 DDC below]**
   v. Communication wiring from VRF Kit to Remote Condensing Unit (ACCU)

LEV Controllers to have communication daisy chained to VRF Centralized Controller

h) (5) Air Handling Units (AHU-3, 4, 5, 7, 8) with field mounted DDC controls. BAS will provide monitoring, control, and alarming of available points and field installation of the following devices:
   i. Trane DDC Controller
   ii. Supply Fan Start/ stop & Status
   iii. Mixed Air Damper [reuse existing]
   iv. Room temperature sensor [wired]
   v. Discharge air temperature sensor
   vi. Discharge air temperature sensor [downstream of external cooling coil]
   vii. Return air temperature sensor
   viii. Return air humidity sensor
   ix. Hot water control valve
   x. Return smoke detector status
   xi. Communication bus [wired – BACnet]

i) (2) Air Handling Units (AHU-1, 2) **[in hallways]** with field mounted DDC controls. BAS will provide monitoring, control, and alarming of available points and field installation of the following devices:
   i. Trane DDC Controller
   ii. Supply fan
      a. Start/ stop
      b. Status
      c. VFD Speed
   iii. Dirty Filter Switch
   iv. Discharge air temperature sensor
   v. Return air temperature sensor
   vi. Mixed air temperature sensor
   vii. Preheat air temperature sensor
   viii. Freezestat
   ix. Hot water control valve
   x. Chilled water control valve
   xi. Duct static pressure sensor
   xii. High Limit Static Shutdown
   xiii. Mixed Air Damper actuator
   xiv. Exhaust Air Damper actuator
   xv. Outside Air Damper actuator
   xvi. Supply, Return and Outdoor Air Flow Monitoring Station
   xvii. Return smoke detector status (Furnishing and installation Smoke detectors is by others)
   xviii. Communication bus [wired – BACnet]

j) (50) Unit Ventilators (UV-X) with factory mounted DDC controllers. BAS will provide monitoring, control, and alarming of available points and field installation of the following devices:
   i. Room temperature sensor [wireless] [stat guard]
   ii. Hot water control valve
   iii. Chilled water control valve
   iv. Communication bus [wireless – Factory installed WCI]

k) (8) Fan Coil Units (FCU) with field mounted DDC controllers. BAS will provide monitoring, control, and alarming of available points and field installation of the following devices:
   i. Trane DDC Controller
   ii. Room temperature sensor [wireless]
   iii. Supply Fan Start/ stop and Status
   iv. Hot water control valve
   v. Chilled water control valve
   vi. Discharge Air Temperature Sensor
   vii. (1 total) FTR Valve to FCU in Band Office
      a. (1) Wired Space Temperature Sensor
   viii. Communication bus [wireless – Field installed WCI]

l) (17) Terminal Reheat VAV Boxes units with factory mounted DDC controllers. BAS will provide monitoring, control, and alarming of available points, and field installation of the following devices:

i. Room temperature sensor [wireless]
ii. Discharge air temperature sensor
iii. Hot water control valve
iv. (16) Fin tube radiation control valve
    a. (1) Wired room temperature sensor to V-01
v. Communication bus [wireless – Factory installed WCI]
vi. Electrical 120 vac power provided by Project Electrical Contractor

m) (23) Cabinet Unit Heaters (CUH) and (1) Unit Heater (UH) with field retrofit installed DDC controller, BAS will provide monitoring, control, and alarming available points. Field installation of the following devices:
i. Trane DDC Controller
ii. Space sensor[wireless]
iii. Supply Fan Start/ stop and Status
iv. Hot water control valve
v. Discharge Air Temperature Sensor (not needed for UH)
vi. Communication bus [wireless – Field installed WCI]

n) (31) Exhaust fan (EF-x) control to include Start/Stop control and Status monitoring. Installation of the following
i. (7) Trane DDC Controller and enclosure
ii. (31) Exhaust fans
    a. Start/ stop
    b. Status
iii. Communication bus [wireless – Field installed WCI]

o) (4) Field DDC Controllers for (14) FTR Valves, field installation of:
i. (4) Trane DDC Controller
ii. (14) FTR Valves
iii. (4 [1 per DDC]) Space Sensors [Wireless]
iv. (10) Space Sensors [wired]
v. Communication bus [wireless – Field installed WCI]

p) BACnet / Modbus Interface / Integration to third party systems. **Communication bus wired to each for monitoring and alarming only. No control to be provided for these systems.**
i. Fuel Oil Transfer Unit
ii. Fuel Oil Tank Gauging System

3) PROJECT SPECIFIC NOT INCLUDED:

a) Existing Building Management System check out and testing. Testing to be provided by others.
b) Upgrade of existing control systems.
c) All work associated with existing building equipment that is not listed above.
d) All work associated with pneumatics, including demolition.
e) All work associated with demolition.
f) Integration into existing Building Management System. Work to be provided by Siemens.
g) Furnishing and installation of any devices and wiring for the Fuel Oil System. Trane believes that this is existing to remain and is only providing new communication wiring to the Fuel Oil Transfer Unit and Fuel Oil Tank Gauging System. Trane is providing monitoring and alarming only.

4) TRANE BUILDING AUTOMATION SYSTEM (BAS) CLARIFICATIONS:

a) **Project Management, Design Engineering, Field Engineering, and Operator Training Labor:**
i. Trane has included factory-trained BAS Project Management, Project Engineering, and Field Technician labor required to deliver a functional control system as qualified in this proposal. Mechanical startup in not included unless otherwise specified above.
ii. Trane to provide factory standard engineered control submittals including product data sheets, and associated mechanical system sequence of operations. Any additional modifications or formatting that is not in the plans and specification are not included in this proposal.
iii. Project Management and field installation labor will be provided based upon project schedule and mechanical equipment field readiness.
iv. Trane has included an allowance, as stated above, for a field technician to assist the Balancing Contractor (BC) to connect their laptop for hydronic and air systems testing. This assistance includes helping the BC review the site, connect to the network and discover all devices. This assistance **DOES**

NOT include a technician to work with the BC as they perform their work. The BC MUST possess their own laptop with a licensed copy of Trane balancing tool software. Contractor MUST provide Trane two weeks' notice for prior to scheduling. Trane will provide Time & Material billing based on published labor rates beyond the allotted allowance hours.

v. Trane to provide O&M manuals and as-built control submittal drawings upon completion of the project
vi. BAS Operator training allowance included as stated above. Additional training support hours are available on a T&M basis upon request. Training to be completed within (3) month of system acceptance.

b) **Electrical installation work clarifications:**

i. Trane has included 120 vac power wiring for **(0)** field mounted panels and electronic digital controllers in our scope of work. All other 120 vac end devices and panels are to be installed and wired by Division 26 Project Electrical Contractor, and **are not** included in this proposal.
ii. Trane is excluding power wiring of any kind (not listed above). Including but not limited to equipment, VAV boxes, DDC control panels and 120 vac control valve actuators
iii. BAS control wiring will be installed in EMT conduit in exposed mechanical spaces. For all other locations (i.e. ceilings and walls), wiring shall be installed with properly supported plenum rated cable outside of conduit.
iv. Outdoor control wiring shall be installed in galvanized rigid conduit or outdoor rated EMT that meets the National Electric Code requirements for the location of the project.
v. Trane has not included any labor associated with trenching required for underground conduits
vi. Trane electrical installation labor includes cleanup labor to ensure the work areas are clean of debris at the end of each working day. It has been assumed by Trane, the GC/CM for the project will be providing central collection areas for all project related debris.

c) **Warranty/Service Agreement**

i. Includes a one-year parts & labor warranty against defects in material & workmanship on all new, Trane provided, field-installed, DDC controllers and components. Warranty repair and replacement labor will occur during normal working hours.
ii. Warranty will end 18 months from shipment date or 12 months beginning with the date of beneficial use, whichever comes first.
iii. In the event of construction phasing of this project, each DDC system in a completed Phase will be warranted for 12 months, beginning with the date of beneficial use.
iv. BAS parts & labor warranty applies to field-installed controls only. Please refer to the equipment proposal for warranty coverage of the DDC controls factory supplied with the HVAC equipment.
v. Extended warranties are available upon specific requests
vi. Trane has not included an in-warranty service agreement within this proposal that includes Trane Intelligent Services, and/or Occupancy Adjustment visits to ensure proper operation during the warranty period described above.

d) **Clarifications:**

i. Trane is unable to release control submittals, order any materials or provide field labor until the tax determination for the project has been confirmed. If the project is exempt of taxes, Trane must be given appropriate state exempt forms at the onset of the project
ii. Trane will begin control submittals after the receipt of all approved Trane, non-Trane equipment submittals, and a detailed project schedule.
iii. Trane's BAS proposal and pricing is based upon Trane providing the HVAC equipment, with factory installed & tested controls, as described in this proposal. If non-Trane HVAC equipment is provided, Trane reserves the right to modify this proposal and subsequent pricing based upon the mechanical equipment being provided.
iv. Non-Trane systems being integrated to the BMS will come with the necessary material, labor and technical support to facilitate the integration to the BMS at no cost to Trane.
v. Trane has included our standard start-up and checkout labor practices for this project. Upon requiring coordination, documentation, and/or demonstration of systems performance to a designated Commissioning Agent Trane reserves the right to modify our pricing. A meeting is to be established to outline the method and documentation required for the commissioning work required.

e) **NOT Included:**

i. Providing, wiring, controlling or monitoring of any equipment/devices not included in the above scope
ii. Furnishing of PC or laptop computer for interface with BAS (refer to scope of work above).
iii. Electrical installation labor and material not included in the above scope.

iv. Interfacing to another BAS, to include any third party devices, software/hardware and any associated wiring and labor associated with integration
v. Startup, testing, troubleshooting or commissioning of equipment and devices not furnished by Trane. This includes miscellaneous control wiring provided by Trane for third party items
vi. Furnishing Variable Frequency Drives, starters, HOA switches, disconnects and/or associated electrical power wiring or integration.
vii. Installation of valves, dampers, pipe pressure taps, temperature sensor wells, pressure sensor/switch/transducer line sensor tubing and air flow measuring station
viii. Furnishing of control dampers
ix. Furnishing or installation of manufacturer supplied Boiler equipment, safeties, integral controls, gas train controls emergency shutoff switches, remote components and boiler circulating pumps control and associated wiring
x. Installation and furnishing of Boiler Safety Glass Shutdown and associated wiring
xi. Boiler combustion dampers, control and associated wiring
xii. Humidifier, Steam Generator, associated instruments, safety wiring and associated devices, utility piping, electrical power wiring, remote panel installation, or start-up labor
xiii. Stairwell pressurization control and any associated wiring
xiv. Air compressor and associated field devices with existing pneumatic system
xv. Sales Taxes
xvi. Alternate(s)/Add Alternate(s) are not included in the base scope
xvii. Fire, Smoke and/or Fire/Smoke dampers and any associated wiring
xviii. Exhaust Fans Dampers and associated wiring
xix. Smoke detectors; interface wiring with fire alarm system; smoke purge initiation
xx. Trenching required for underground conduit installation
xxi. Any cost associated with liquidated damages
xxii. Bid, Performance, or Payment Bonds
xxiii. Access doors
xxiv. Calibration certificates for any control devices
xxv. Demolition; excavation, roof penetrations; ceiling tile removal or replacement, cutting, patching and painting
xxvi. Checkout, repair, replacement or warranty of existing equipment
xxvii. Accelerated shipping costs
xxviii. Temporary, Standby or Overtime Labor; *All work figured to be done during normal working hours(7am to 3:30pm)*

Tag Data - Performance Climate Changer (CSAA) (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
A1	AHU-20	1	Performance Climate Changer (CSAA)	CSAA025UA

Product Data - Performance Climate Changer (CSAA)
Item: A1 Qty: 1 Tag(s): AHU-20

Unit level options
Indoor Unit
Unit size 25
All Unit Inner Panels – Galvanized
Doors – Both Sides
6 Inch Integral Base Frame
UL listed unit

Controls and VFD/starter
Variable Volume Control System
Symbio Microprocessor Controller
Supply fan VFD

Air mixing section (Pos #1)
Back Outside Air Damper
Bottom Return Air Damper

Filter section (Pos #2)
12 Inch Cartridge MERV 15 Filter (Field Installed by Contractor)
2 Inch Pleated MERV 8 Filter
Bag/Cartridge Filter Frame

Coil section (Pos #3)

Hot Water Heating Coil with Copper Tubes, Aluminum Fins, and Galvanized Steel Casing

Coil section (Pos #4)

Chilled Water Coil with Copper Tubes, Aluminum Fins, and Galvanized Steel Casing

Fan section (Pos #5)

Supply fan
Inverter balance with shaft grounding
VFD

Warranty

Startup & 1 Year Labor Warranty by NJ Trane Service

1. NOT Included: Disconnect, smoke detectors, valves, actuators, piping specialties, spare filters, external vibration isolation, seismic construction/accessories, rigging/receiving, installation, sheave changes, and spare parts.
2. Air handling unit is of modular construction and will ship in five sections.

Tag Data - Performance Climate Changer DX Coil Section (CSAA) (Qty: 5)

Item	Tag(s)	Qty	Description	Model Number
B1	CC-3	1	Performance Climate Changer (CSAA)	CSAA004UA
B2	CC-4	1	Performance Climate Changer (CSAA)	CSAA014UA
B3	CC-5	1	Performance Climate Changer (CSAA)	CSAA014UA
B4	CC-7	1	Performance Climate Changer (CSAA)	CSAA004UA
B5	CC-8	1	Performance Climate Changer (CSAA)	CSAA004UA

Product Data – Performance Climate Changer DX Coil Section Item

All Units

DX Duct Cooling Coil
LEV kits
R-410A Refrigerant
All Unit Inner Panels – Galvanized
2 Inch Double Wall Construction Foam Injected Panels
Galvanized Drain Pan
2.5 Inch Integral Base Frame
Doors – Both Sides Access
Controls/Sensors/End Devices – (Field Installed on Existing AHU by Trane Controls)

NOT Included: Heating section, fan section, filter section, duct connections, flanges, installation, rigging/receiving, refrigerant piping specialties, disconnect, bottom access, hanging accessories, unistrut, actuators, external vibration isolation, spare parts.

Tag Data - VUVE Unit Ventilator (UV) (Qty: 39)

Item	Tag(s)	Qty	Description	Model Number
C1	UV-750	4	Vertical Unit Ventilator	VUVE12500Z0
C2	UV-1000	2	Vertical Unit Ventilator	VUVE12500Z0
C3	UV-1250	28	Vertical Unit Ventilator	VUVE12500Z0
C4	UV-1500	5	Vertical Unit Ventilator	VUVE12500Z0

Product Data - VUVE Unit Ventilator (UV)

All Units

Vertical Unit Ventilator
115v/60hz/1ph
Return Air Front/Fresh Air Back
Chilled Water Cooling with Hot Water Heating
ECM
Non-Fused Disconnect Switch
2-Way Modulating Chilled Water Valve
3-Way Modulating Heating Valve
Double Deflection Discharge Grille
Modulating Outside Air Damper and Actuator
UC400-B with Air-Fi Sensor
21.25” Depth

Insulated Front Panel
Deluxe – Piping Package with Manual Circuit Setter Return
Auxiliary Drain Pan
1" MERV 13 Filter
Startup & 1st Year Labor by NJ Trane Service

NOT Included: Smoke detectors, crossover piping, wall sleeves, wall boxes, recessing flange, shelving, external vibration isolation, rigging/receiving, subbases, spare parts.

Tag Data - Horizontal Unit Ventilators (Qty: 10)

Item	Tag(s)	Qty	Description	Model Number
D1	UV-750	2	Horizontal Unit Ventilator	HUVC15010A
D2	UV-1250	2	Horizontal Unit Ventilator	HUVC15010A
D3	UV-1500	6	Horizontal Unit Ventilator	HUVC15010A

Product Data - Horizontal Unit Ventilators
All Units

Horizontal Unit Ventilator
120 Volt/60 Hertz/1 Phase Power Supply
Chilled Water Cooling and Hot Water Heating
UC400-B with Air-Fi Wireless Sensor
Modulating Outside Air Damper and Actuator
Fresh Air Ducted Upper Back, Return Air Bar Grille Bottom
Double Deflection Grille
Standard Access Panel with Safety Chain
Deluxe - Ball Valve Supply & Manual Circuit Setter Return
1" MERV 8 Filter
Non-Fused Disconnect Switch
2-Way Modulating Chilled Water Valve
3-Way Modulating Heating Valve
Startup & 1st Year Labor Warranty by NJ Trane Service

NOT Included: Smoke detectors, crossover piping, hanging accessories, wall sleeves, wall boxes, recessing flange, shelving, external vibration isolation, rigging/receiving, subbases, spare parts.

Tag Data - Variable Air Volume Single Duct Terminal Units (Qty: 18)

Item	Tag(s)	Qty	Description	Model Number
G1	V-12	8	Variable Air Volume Single Duct Terminal	VCCF12
G2	V-10	9	Variable Air Volume Single Duct Terminal	VCCF10
G3	V-08	1	Variable Air Volume Single Duct Terminal	VCCF08

Product Data - Variable Air Volume Single Duct Terminal Units
All Units

Single Duct VAV Cooling Only Terminal Unit
Foil Faced Insulation - 1" (25 mm)
UC400 DDC-Basic (cooling only)
MSTP Connection
Belimo Actuator
Air - Fi Wireless Sensor
Duct Temperature Sensor
120/24-Volt Transformer
Disconnect Switch
Power Fuse
Digital Display Zone Sensor (Field Installed)
1st Year Labor Warranty by NJ Trane Service

NOT Included: Attenuators, valves, hanging accessories, water piping specialties, external vibration isolation, rigging/receiving, spare parts, startup, service, additional warranty.

Tag Data - BRD – Acoustic Silencers (Qty: 3)

Item	Tag(s)	Qty	Description	Model Number
E1	CH-1	2	Hush Cover Removeable Acoustical Blankets	SC
E2	CH-2	1	Hush Guard/Duct Acoustical Silencers	SM-SB

Product Data – BRD – Acoustic Silencers

Item: E1 Qty: 1 Tag(s): CH-1

Hush Cover Removable Acoustical Blankets
Acoustical Barrier Cover
Complete Coverage of Screw Compressors and Extended Components
Cloth Straps Connection with D Ring and Velcro Fasteners
Stainless Steel Wire Tie Fastenings are Not Acceptable

Item: E2 Qty: 1 Tag(s): CH-2

Hush Guard Acoustical Panels
Hush Duct Acoustical Silencers

NOT Included: External vibration isolation, rails, seismic restraints, seismic certifications, spring deflection, installation, rigging/receiving, structural supports
NOTE: All assembly installation and rigging are done by the contractor. Trane is not including assembly and installation assistance whatsoever.

Tag Data - VRF Outdoor Unit (Qty: 5)

Item	Tag(s)	Qty	Description
F1	AC-3, AC-7, AC-8	3	VRF Outdoor Unit
F2	AC-4, AC-5	2	VRF Outdoor Unit

Product Data - VRF Outdoor Units

All Items

PAC-SPRFCS-118RCW – Filter Drier Kit (Field Installed by Contractor)
LAClg_KIT - Low Ambient Cooling Kit (Field Installed by Contractor)

Item: F1 Qty: 3 Tag(s): AC-3, AC-7, AC-8

TUHYE0963AN40AN - VRF Outdoor Unit

Item: F2 Qty: 2 Tag(s): AC-4, AC-5

TUHYE2403AN40AN - VRF Outdoor Unit

Tag Data - Linear Expansion Valve Kit (Qty: 7)

Item	Tag(s)	Qty	Description
E1	LEV-1	7	Linear Expansion Valve Kits

Product Data - Linear Expansion Valve Kit

Item: E1 Qty: 7 Tag(s): LEV-1

PAC-LV96AC-1 – 8-ton nominal LEV kit for DX Coil section (item B1-B5)
PAC-AH001-1 - LEV Controller
TE-200A – Central Controller

Proposal Clarifications and Exclusions:

- Proposal above does not include rigging and receiving of equipment. North Rockland CSD is responsible for receiving and unloading equipment.
- Proposal above does not include storage of equipment.
- Proposal above does not include extended warranties.
- Proposal above does not include cafeteria AHU installation, assembly or rigging of five modules. Contractor is responsible for full installation.
- Proposal above does not include installation, rigging or assembly of any of the acoustical chiller packages (Item E1-E2)
- Proposal above does not include stands, springs, rails, or pads for the VRF outdoor condensing units.
- Proposal above does not include shelving of any kind for the unit ventilators.
- Proposal above does not include VRF line sets.
- Proposal above does not include spare filters.
- Installation of all equipment is to be provided by others.
- Please refer to the complete scope for additional exclusions per product type.

Warranty Clarifications:

- 1-year warranty stated in the scope above is from startup which is not to exceed 30 months from shipment.
- 5-year warranty stated in the scope above is from startup which is not to exceed 66 months from shipment.

Not Included: Control integration/wiring, smoke detectors, refrigeration tees, filter boxes, wind baffles, hail/snow guards, flow switches, secondary drain pans, secondary condensate overflow sensors, external condensate pumps (unless otherwise noted), disconnects, refrigerant piping specialties, hangers, refrigerant piping, hose kits/valves, insulation, isolation valves, additional refrigerant, roof rails or curbs, condensing unit mounting brackets, humidity sensors, external vibration isolation, rigging/receiving, spare parts, service labor, installation labor, LEV installation, LEV sensor installation, extended warranty, labor warranty.

Ductless Warranty/Technical Installation Support

A. Site Review by Ductless Technical Specialist
   1. Pre-construction meeting with Trane Ductless Technical Specialist required to review site conditions, installation requirements, best practices, and pre-startup requirements.
   2. At least (1) jobsite review during installation with Trane Ductless Technical Specialist required.
   3. Installing Contractor must provide updated piping layout required to complete the Diamond System Builder design file.
   4. Owner-Training by Trane Service Department is not included unless otherwise noted.

B. VRF City-Multi Start-Up Assistance by Ductless Technical Specialist
   1. **No start-up assistance included on Nv&P-Series Mini-Splits unless otherwise noted.**
   2. Trane will provide Ductless Technical Specialist to supervise Installing Contractor's start-up efforts.
   3. Installing Contractor MUST have technicians on-site to perform mechanical start-up under the supervision of Trane.
   4. Installing Contractor must contact Ductless Technical Specialist to schedule VRF Start-Up Supervision no less than 2 weeks before requested start-up date.
   5. Installing contractor must submit completed Component Location Sheet and Prestart Checklist to Ductless Technical Specialist no later than 3-days prior to requested start-up date.
   6. Installing Contractor must verify system installations meet Trane-Mitsubishi requirements including but not limited to service clearances, pressure tests, vacuum tests, electrical power to units, wiring/piping connections, and refrigerant charge prior to start-up.
   7. No installation labor will be completed by Trane personnel unless otherwise noted.
   8. City Multi and Nv&P-Series Service/Maintenance Tools not included unless otherwise noted.
   9. Any additional labor required from Trane to complete start-up procedure will be billed separately.

   Responsibilities of DTS at Assisted Start-Up:
      1. Start-Up/Commissioning Assistance completed through Maintenance Tool with Installing Contractor
      2. Update Diamond System Builder per marked-up as-built provided by Installing Contractor
      3. Population of TE-200/TW-50 (if applicable)

   Responsibilities of Installing Contractor at Assisted Start-Up:
      1. Electrical Testing on outdoor units
      2. Physical inspection of the outdoor units
      3. Troubleshoot indoor units if there is an issue
      4. Handling of additional refrigerant and adding of trim charge
      5. Setting addresses on indoor unit
      6. Performing of vacuum and pressure tests

C. Warranty