

**Addendum
No. 2**

Date: January 23, 2019

Project: CRSD Charlton School Renovations Phase 2B
Secured Entry & HVAC Renovations
SRS-18005-ChRen2 B

The work herein shall be considered part of the bid documents for the referenced project and carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Acknowledge receipt of addendum on the bid form as indicated.

General

1. Reminder that Bidders must acknowledge that each addendum is included in the bid. Each addendum must be enumerated by number.

RFI Responses

1. **Question:** What is the existing roof type/manufacture, is it still under warranty?
Answer: The existing roof is Armour Proof Coating System over EPDM. The coating system is under warranty. See clarification below for information on coating system.
2. **Question:** JCI is not listed as a manufacturer in spec section 23 74 13 – 1 but are listed on equipment schedule.
Answer: JCI is the basis of design as designated on the equipment schedule.
3. **Question:** Alternate 2 is to replace the VAV's, there is not VAV spec or installation detail. Please provide.
Answer: VAV typical removal and new work is shown in details 2/M8.5 and 2/M8.11. For additional information see sketch SK-M.1 – TYPICAL 2-WAY VALVE COIL CONNECTION, attached. See specification section 23 36 11 – AIR TERMINAL UNITS, attached.
4. **Question:** Is the school district moving any furniture.
Answer: The school district will move furniture from areas with overhead work. Contractor shall coordinate schedule with the school district.
5. **Question:** the HVAC bid from subcontractor list has Carpentry, Flooring, Glass and Glazing. There is no work for these subs on the HVAC project. Can we get an updated bid form?
Answer: See revised Bid Form, attached.
6. **Question:** With the alternate to replace the VAV Units, will the valves / hook-ups for each VAV unit be replaced as well? There is not details showing this.
Answer: VAV typical removal and new work is shown in details 2/M8.5 and 2/M8.11. For additional information see sketch SK-M.1 – TYPICAL 2-WAY VALVE COIL CONNECTION, attached.
7. **Question:** What is the district's contract number for this project?
Answer: SRS-18005ChRen2 B

8. **Question:** The wage rate included in the spec is for 2017. Should it be the one for 2018?

Answer: Yes. As noted in the pre-bid meeting, 2018 wage rates apply. See correct wage rate schedule, attached.

2. **Question:** Please verify the following:

- a. All new HVAC systems serving Allen Frear ES are to be an extension of the existing Johnson Controls Metasys (by MCI) building automation system located in Allen Frear ES.
- b. All new HVAC systems serving John S. Charlton School are to be an extension of the existing Johnson Controls FX (by MCI) building automation system located in John S. Charlton School.

Answer: Correct. The units located over Allen Frear should be tied into the existing JCI Metasys system, while the units located over the Charlton School should be tied into the recently installed JACE.

Clarifications

1. Patching, repairs, extensions required at existing roof coating system shall be utilized the Armour Proof Coating System to match existing. System is as follows:

- a. AP-1200 Cleaner
- b. AP-5100 Silver / AP-8105 40" Fabric / AP-5100 Silver
- c. AP-5100 Silver
- d. AP-5100W White

Product rep is:

Rich Kline
Product Manager
Armour Proof Coatings
609-820-4225 (cell)
www.armourproofcoatings.com

2. This Contract shall be responsible for final connection of mechanical equipment installed under the Secured Entry Project to the building control system and shall be responsible to complete programming for the equipment.

See attached drawing M8.1 – MECHANICAL LOBBY DEMOLITION & NEW PLANS from the Secured Entry Renovations project.

Changes to Specifications

1. 00 41 13 – BID FORM
Revise Subcontractor List to delete Carpentry, Flooring, Glass and Glazing and add Structural Steel.
See attached revised spec section 00 41 13.
2. 00 73 46 – PREVAILING WAGE DETERMINATION
Insert 2018 prevailing wage rate schedule.
See attached revised spec section 00 73 46.

3. 23 36 00 – AIR TERMINAL UNITS
Add specification section 23 36 00 – AIR TERMINAL UNITS.
See attached spec section 23 36 00.

Changes to Drawings

1. SECURE ENTRY RENOVATION PROJECT
M8.1 – MECHANICAL LOBBY DEMOLITION & NEW PLANS
Issued for coordination of HVAC equipment controls.

End

BID FORM

UNIT PRICES

Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

	<u>ADD</u>	<u>DEDUCT</u>
<u>UNIT PRICE No. 1:</u> None	\$ _____	\$ _____

ALLOWANCES

ALLOWANCE #1: None

BID FORM

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for thirty (30) days from the date of opening of bids (60 days for School Districts and Department of Education), and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within _____ calendar days of the Notice to Proceed.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

(State of Corporation)

Business Address: _____

Witness: _____ **By:** _____
(SEAL) (Authorized Signature)

(Title)
Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Affidavit(s) of Employee Drug Testing Program
Bid Security
Copy of Business License
(Others as Required by Project Manuals)

BID FORM

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, it is **required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work**. This form must be filled out completely with no additions or deletions. **Note that all subcontractors listed below must have a signed Affidavit of Employee Drug Testing Program included with this bid.**

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>	<u>Subcontractors tax payer ID # or Delaware Business license #</u>
1. MECHANICAL			
2. ELECTRICAL			
3. BUILDINGAUTOMATIONSYSTEM			
4. STRUCTURAL STEEL			

BID FORM
NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date (*to the Office of Management and Budget, Division of Facilities Management*).

All the terms and conditions of (*Project or Contract Number*) have been thoroughly examined and are understood.

NAME OF BIDDER: _____

**AUTHORIZED REPRESENTATIVE
(TYPED):** _____

**AUTHORIZED REPRESENTATIVE
(SIGNATURE):** _____

TITLE: _____

ADDRESS OF BIDDER: _____

E-MAIL: _____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

**AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM**

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

**PREVAILING WAGE DETERMINATION
BUILDING CONSTRUCTION**

Prevailing Wages for the project, as published by the State of Delaware, Department of Labor, are included on the following page.

Addendum 2 - January 23, 2019

STATE OF DELAWARE
DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL AFFAIRS
OFFICE OF LABOR LAW ENFORCEMENT
PHONE: (302) 761-8200

Mailing Address:
4425 North Market Street
3rd Floor
Wilmington, DE 19802

Located at:
4425 North Market Street
3rd Floor
Wilmington, DE 19802

PREVAILING WAGES FOR BUILDING CONSTRUCTION EFFECTIVE MARCH 15, 2018

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
ASBESTOS WORKERS	23.35	28.76	41.85
BOILERMAKERS	69.90	35.46	52.14
BRICKLAYERS	53.89	53.89	53.89
CARPENTERS	54.81	54.81	43.57
CEMENT FINISHERS	73.74	51.37	22.64
ELECTRICAL LINE WORKERS	46.44	39.82	30.36
ELECTRICIANS	68.70	68.70	68.70
ELEVATOR CONSTRUCTORS	93.23	65.86	32.62
GLAZIERS	73.10	73.10	57.87
INSULATORS	56.53	56.53	56.53
IRON WORKERS	63.70	63.70	63.70
LABORERS	46.20	46.20	46.20
MILLWRIGHTS	71.60	71.60	57.70
PAINTERS	51.55	51.55	51.55
PILEDRIVERS	76.77	40.19	32.51
PLASTERERS	30.48	30.48	22.59
PLUMBERS/PIPEFITTERS/STEAMFITTERS	70.05	53.97	58.81
POWER EQUIPMENT OPERATORS	69.29	69.29	64.96
ROOFERS-COMPOSITION	24.52	24.20	22.10
ROOFERS-SHINGLE/SLATE/TILE	18.78	22.33	17.56
SHEET METAL WORKERS	68.53	68.53	68.53
SOFT FLOOR LAYERS	52.52	52.52	52.52
SPRINKLER FITTERS	59.49	59.49	59.49
TERRAZZO/MARBLE/TILE FNRS	61.93	61.93	48.52
TERRAZZO/MARBLE/TILE STRS	68.52	68.52	56.19
TRUCK DRIVERS	29.36	28.02	21.39

CERTIFIED: 10/4/18

BY: Cheryl A. Smith on behalf of Julie Petroff

ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

NOTE: THESE RATES ARE PROMULGATED AND ENFORCED PURSUANT TO THE PREVAILING WAGE REGULATIONS ADOPTED BY THE DEPARTMENT OF LABOR ON APRIL 3, 1992.

CLASSIFICATIONS OF WORKERS ARE DETERMINED BY THE DEPARTMENT OF LABOR. FOR ASSISTANCE IN CLASSIFYING WORKERS, OR FOR A COPY OF THE REGULATIONS OR CLASSIFICATIONS, PHONE 302 761 8200.

NON-REGISTERED APPRENTICES MUST BE PAID THE MECHANIC'S RATE.

PROJECT: 15070 Caesar Rodney SD Charlton School Building Renovation, Kent County

SECTION 233600 – AIR TERMINAL UNITS

PART 1 – GENERAL

1.1 SUMMARY

A. Related Documents:

1. Drawings and general provisions of the Subcontract apply to this Section.
2. Review these documents for coordination with additional requirements and information that apply to work under this Section.

B. Section Includes:

1. Fan powered terminal units.
2. Constant volume terminal units.
3. Variable volume terminal units.
4. Dual duct terminal units.
5. Variable volume regulators.
6. Integral sound attenuator.
7. Integral heating coils.
8. Integral damper motor operators.
9. Integral controls.

C. Related Sections:

1. Division 01 Section "General Requirements."
2. Division 01 Section "Special Procedures."
3. Division 23 Section "Common Motor Requirements for HVAC Equipment".
4. Division 23 Section "Hydronic Piping" for connections to heating coils.
5. Division 23 Section "Hydronic Specialties" for connections to heating coils.
6. Division 23 Section "Metal Ducts".
7. Division 23 Section "Metal Ducts Fittings" for backdraft dampers.
8. Division 23 Section "Air Outlets and Inlets".
9. Division 23 Section "Instrumentation and Control Devices for HVAC" for thermostats and control components.

D. Products Furnished But Not Installed Under This Section:

1. Thermostats

1.2 REFERENCES

A. General:

1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
2. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.
3. Refer to Division 01 Section "General Requirements" for the list of applicable regulatory requirements.
4. Refer to Division 23 Section "Common Results for HVAC" for codes and standards, and other general requirements.

B. NFPA 90A - Installation of Air Conditioning and Ventilation Systems.

C. UL 181 - Factory-Made Air Ducts and Connectors.

- D. ADC 1062 - Air Distribution and Control Device Test Code.
- E. AHRI 880 – Performance Rating of Air Terminals
- F. UL 181, meets the Erosion Testing requirements
- G. ASTM B-117 – 125 Hour Salt Spray Test
- H. ASHRAE 130 Laboratory Methods of Testing Air Terminal Units

1.3 SUBMITTALS

- A. Submit under provisions of Division 23 Section "Common Results for HVAC, Review of Materials and Division 01 Section "General Requirements."
- B. Submit shop drawings indicating configuration, general assembly, and materials used in fabrication.
- C. Submit product data indicating configuration, general assembly, and materials used in fabrication. Include catalog performance ratings which indicate air flow, static pressure, and NC designation.
- D. Include schedules listing discharge and radiated sound power level for each of second through sixth octave bands at inlet static pressures of one to three inch wg (250 to 1000 Pa).
- E. Submit manufacturer's installation instructions.
- F. Operation and Maintenance Data:
 - 1. Include manufacturer's descriptive literature, operating instructions, maintenance and repair data, and parts lists.

1.4 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Company specializing in manufacturing the products specified in this Section with minimum 10 years documented experience.
- B. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1-2004, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."
- C. AHRI 880 – Performance Testing for Air Terminal Units
- D. Mockup: Provide mockup of typical [exterior] building module.
 - 1. If acceptable, mockup will demonstrate minimum standard for the Work. Mockup may [not] remain as part of the Work.

1.5 WARRANTY

- A. Provide 12 month after installation or 18 months after shipment, whichever comes first, part(s) only warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Johnson Controls
- B. Trane Corporation
- C. Approved Equal

2.2 MANUFACTURED UNITS

- A. Ceiling mounted variable air volume supply air control terminals for connection to single medium pressure duct, central air systems, with DDC controls and hot water reheat coil.

- B. Identify each airflow unit with clearly marked identification label and airflow indicator. Label shall include unit nominal air flow, maximum factory set air flow, minimum factory set air flow, and heat / coil type.

2.3 FABRICATION

- A. Casings: Terminals shall be constructed of not less than 22 gauge galvanized steel, able to withstand a 125 hour salt spray test per ASTM B-117. The terminal casing shall be mechanically assembled (spot welded casings are not acceptable). Casing shall have bottom access to gain access to the fan assembly. The opening shall be sufficiently large to allow complete removal of the fan if necessary
- B. Lining: Internally lined with 3/4" thick fiberglass insulation, rated for a maximum air velocity of 5000 f.p.m. In addition to using adhesive complying with NFPA 90A, the insulation shall incorporate a secondary mechanical fastener attached to the unit casing wall (clench nail). Adhesive as the only method of fastening the insulation to the casing is not acceptable. Maximum thermal conductivity shall be 0.24 (BTU • in) / (hr. • ft² • °F). Insulation must meet all requirements of ASTM C1071 (including C665), UL 181 for erosion, and carry a 25/50 rating for flame spread/ smoke developed per ASTM E-84, UL 723 and NFPA 90A. Raw insulation edges on the discharge of the unit must be covered with metal liner to eliminate flaking of insulation during field duct connections. Simple "buttering" of raw edges with an approved sealant is not acceptable.
- C. Alternate Liners:
 - 1. DOUBLE WALL CONSTRUCTION; The terminal casing shall be double wall construction using a 22 gauge galvanized metal liner with a chromate finish covering all insulation.
- D. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1-2004.
- E. Assembly: Air volume damper, fans, and controls in single cabinet shall not extend past the top or bottom of unit casing
- F. Plenum Air Inlets: Flange or S and drive connections for duct attachment.
- G. Plenum Air Outlets: S and drive connections
- H. Mixing Sections (Dual Duct): Multiple deflection baffles designed for mixing air with minimum pressure loss.

2.4 PRIMARY AIR VALVE

- A. Locate air volume damper [and automatic flow control] assembly inside unit casing. The primary air valve shall consist of a minimum 22 gauge cylindrical body that includes embossment rings for rigidity. The damper blade shall be connected to a solid shaft by means of an integral molded sleeve which does not require screw or bolt fasteners. Key damper blades into shaft with nylon fitted pivot points.
- B. The shaft shall be manufactured of a low thermal conducting composite material, and include a molded damper position indicator visible from the exterior of the unit Air volume control damper shall be factory calibrated assembly consisting of damper and damper shaft extension for connection to externally mounted control actuator.
- C. The damper shall pivot in self-lubricating bearings, and shall be mounted on the exterior of the terminal for ease of service
- D. The valve assembly shall include internal mechanical stops for both full open and closed positions.
- E. The damper blade seal shall be secured without use of adhesives.

- F. The air valve leakage shall not exceed 1% of maximum inlet rated airflow at 3" W.G. inlet pressure.

2.5 Primary airflow Sensor

- A. For inlet diameters 6" or greater, the differential pressure airflow sensor shall traverse the duct along two perpendicular diameters. Cylindrically shaped inlets shall utilize the equal cross sectional area or log-linear traverse method. Single axis sensor shall not be acceptable for duct diameters 6" or larger.
- B. A minimum of 12 total pressure sensing points shall be utilized. The total pressure inputs shall be averaged using a pressure chamber located at the center of the sensor. A sensor that delivers the differential pressure signal from one end of the sensor is not acceptable.
- C. The sensor shall output an amplified differential pressure signal that is at least 2.3 times the equivalent velocity pressure signal obtained from a conventional pitot tube. The sensor shall develop a differential pressure of 0.015" w.g. at an air velocity of ≤ 325 FPM. Documentation shall be submitted which substantiates this requirement. Balancing taps and airflow calibration charts shall be provided for field airflow measurements.

2.6 HEATING COILS

- A. Hot Water Heating Coil: 1/2 inch or 3/8 inch copper tube mechanically expanded into aluminum plate fins, leak tested under water shall be hydrostatically tested at a minimum of 450 PSIG under water, and rated for a maximum 300 PSIG working pressure at 200°F.
 - 1. Shall have 22 gauge galvanized sheet metal casing Coil to be constructed of pure aluminum fins with full fin collars to assure accurate fin spacing and maximum tube contact.
 - 2. Fins shall be spaced with a minimum of 10 per inch and mechanically fixed to seamless copper tubes for maximum heat transfer.

2.7 WIRING

- A. Factory mount and wire controls. Mount electrical components in control box with removable cover. Incorporate single point electrical connection to power source.
- B. Factory mount transformer for control voltage on electric and electronic control units. Provide terminal strip in control box for field wiring of thermostat and power source.
- C. Factory wire fan to terminal strip.
- D. Provide fused disconnect.

2.8 CONTROLS

- A. Automatic Damper Operator:
 - 1. Operate: Air volume damper
 - 2. Electric Actuator: 24 volt with high limit with remote temperature read and reset capability.
- E. Maximum Casing Leakage: 2 percent of design air flow at rated inlet static pressure.
- F. Maximum Damper Leakage: 1 percent of design air flow at [one inch] [rated] [] inlet static pressure.

PART 3 - EXECUTION

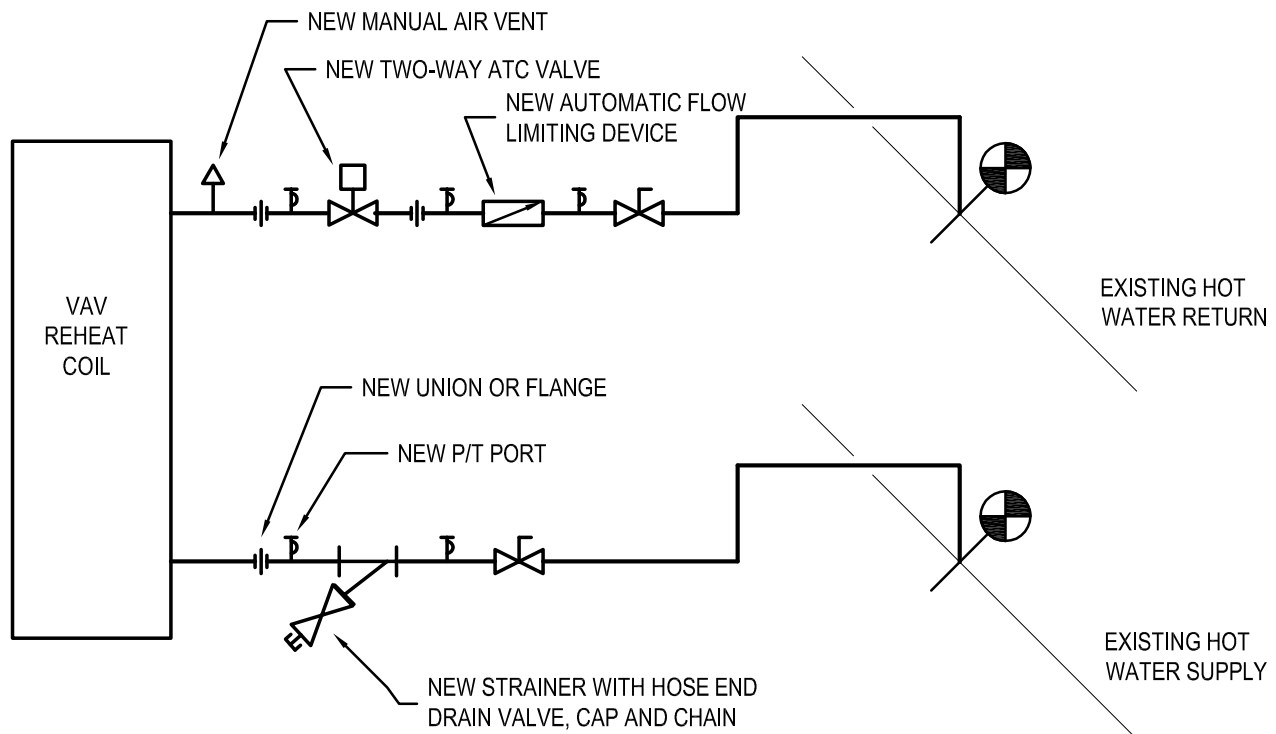
3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide ceiling access doors or locate units above easily removable ceiling components.
- C. Support units individually from structure. Do not support from adjacent ductwork.
- D. Connect to ductwork in accordance with Division 23 Section "Air Coils".
- E. Install heating coils in accordance with Division 23 Section "Air Coils".

3.2 ADJUSTING

- A. Reset volume with damper operator attached to assembly allowing flow range modulation from 100 percent of design flow to 10 percent full flow. See drawings for minimum flow requirements in heating mode.

END OF SECTION



NOTE:

1. PROVIDE AUTOMATIC FLOW LIMITING DEVICE PER UNIT FLOW REQUIREMENTS AS SHOWN IN EQUIPMENT SCHEDULES.
2. THIS ARRANGEMENT IS TYPICAL FOR BOTH HOT WATER COILS AND CHILLED WATER COILS. BOTH COIL CONNECTIONS ARE REQUIRED FOR ALL UNITS UNLESS NOTED.
3. PROVIDE COIL CONNECTIONS DESCRIBED ABOVE ALL UNITS EXCLUDING AIR HANDLING UNITS AND ROOF TOP AIR HANDLING UNITS.

TYPICAL 2-WAY VALVE COIL CONNECTION

SCALE: Not To Scale

