TOWN OF GLASTONBURY

GL-2019-16
AIR CONDITIONING INSTALLATION AT
GIDEON WELLES ELEMENTARY SCHOOL
ADDENDUM NO. 1
December 20, 2018

Bid Due Date: 01-10-19 @ 11:00 A.M.

The attention of bidders submitting proposals for the above-referenced project is called to the following Addendum to the specifications. The items set forth herein, whether of omission, addition, substitution or other change, are all to be included in and form a part of the proposed Contract Documents for the work. Bidders shall acknowledge this Addendum on the Bid Proposal Page (BP-1).

BID PROPOSAL

The Bid Proposal contained in the original bid solicitation is deleted and replaced with a **REVISED** Bid Proposal; a copy of which is attached to this addendum.

The following clarification is detailed for Alternate #1 and includes a NEW Alternate #2:

ADD ALTERNATE #1

Add Alternate #1 shall include all the work associated with providing Air Conditioning to the Music Room and The Media Center as shown on Drawings M0.2, MD1.1A, MD1.1B, M1.1A, M1.1B, ED1.1A, ED1.1B, E1.1A and E1.1B

ADD ALTERNATE #2

Add alternate #2 shall include all the work and equipment associated with the replacement of the existing Unit Ventilators in classrooms 201, 202, 203, 204, 205, 206, 207, 208, 209, 211, 212, 213, 214, 216, 217, 218, 221, 222, 225, 226.

The following drawings, specifications and information are included in this addendum:

MECHANICAL DEMOLITION DRAWINGS

1. DEMOLITION DRAWING KEYED NOTES (typical for all demolition drawings)
    a. Revise note 1 to read: Cut countertop to remove existing Unit Ventilator. Finish raw countertop edges to match existing. Clean and band the edge of the countertop using strips (color by owner).
    b. Revise note 3 to read: Clean and band the edge of the countertop using strips (color by owner).
    c. Revise note 4 to read: Cabinet to remain.
    d. Revise note 5 to read: Cabinet to remain.
    e. Revise note 7 to read: Piping chase to remain.
    f. Revise note 8 to read: Not used.
    g. Revise note 9 to read: Tall storage cabinet to remain.

h. Revise note 10 to read: wood panel to remain.
i. Revise note 11 to read: Tall storage cabinet to remain.
j. Revise note 15 to read: Existing D/X wall mounted indoor unit (EX-Dx-WIU) shall remain).
k. Revise note 17 to read: Existing Air-Cooled Condensing Unit (EX-ACCU) shall remain
l. Revise note 21 to read: Clean and disinfect existing Fin-tube radiation.

2. Replace drawing M0.2, dated 11/01/2018 with drawing M0.2 dated 12/17/2018.
3. Replace drawing M2.0, dated 11/01/2018 with drawing M2.0 dated 12/17/2018.
4. Replace drawing M3.1, dated 11/01/2018 with drawing M3.1 dated 12/17/2018.
5. Replace drawing M3.2, dated 11/01/2018 with drawing M3.2 dated 12/17/2018.

ELECTRICAL DRAWINGS

1. Drawing E0.1 – **Add:** Note #7 to Electrical Demolition Work Symbols to read: Existing DX-wall mounted unit (DC-WIU) power connection to remain.
2. Drawing ED1.2A – **Change:** Key note number on EX-DX-WIU-5(Computer Lab A211), EX-DX-WIU-6 (Classroom A217), EX-DX-WIU-7(in Classroom A221), EX-DX-WIU-8 (Classroom A222), EX-DX-WIU-9(Classroom A225), EX-DX-WIU-10(Classroom A226) from the number 2 to the number 7.
3. Drawing ED1.3A – **Change:** Key note number on EX-ACCU-5, EX-ACCU-6, EX-ACCU-7, EX-ACCU-8, EX-ACCU-9, EX-ACCU-10 from the number 3 to the number 5.
4. Drawing E1.1A – **Change:** Circuit designation in Classroom A118 from AP-12/6,8 to read AP-12/33,35.
5. Drawing E1.1A – **Change:** Circuit designation in Classroom A114A from AP-12/5,7 to read AP-12/29,31.
6. Drawing E1.1A – **Change:** Circuit designation in Classroom A113 from AP-12/1,3 to read AP-12/21,23.
7. Drawing E1.1A – **Change:** Circuit designation in Classroom A110 from AP-12/2,4 to read AP-12/25,27.
8. Drawing E1.2A – **Change:** Circuit designation in Classroom A218 from AP-12/10,12 to read AP-12/36,38.
9. Drawing E1.2A – **Change:** Circuit designation in Classroom A219 from AP-12/9,11 to read AP-12/37,39.
10. Drawing E1.2A – **Change:** Circuit designation in for FCU-A220B-04 in Classroom A220B from NP-2/5,7 to read AP-12/26,28.
11. Drawing E1.2A – **Change:** Circuit designation in for FCU-A220A-03 in Classroom A220A from NP-2/6,8 to read AP-12/30,32.
12. Drawing E1.3A – **Change:** Circuit designation in for ACCU-VRV-04 from AP-12/18,20,22 to read NP-2/22,24,26.
13. Drawing E1.3A – **Change:** Circuit designation in for ACCU-VRV-04 from AP-12/24,26,28 to read NP-2/16,18,20.
14. Drawing E1.3A – **Change:** Circuit designation in for ACCU-A220B-04 from NP-2/1,3 to read AP-12/18,20.
15. Drawing E1.3A – **Change:** Circuit designation in for ACCU-A220A-03 from NP-2/2,4 to read AP-12/22,24.

ELECTRICAL SPECIFICATIONS

1. Add Specification Section - 26 20 00 Service and Distribution

HAZARDOUS MATERIALS ADVISORY SCOPE SHEET

Attached is the hazardous materials scope sheet by Fuss & O'Neill

Note: This addendum consists of 17 pages including the above text and 4 drawings.

TOWN OF GLASTONBURY * 2155 MAIN STREET * GLASTONBURY * CT

BID / PROPOSAL NO: GL-2019-16 **DATE DUE:** 01-10-19

DATE ADVERTISED: 12-12-18 **TIME DUE:** 11:00 AM

NAME OF PROJECT: Air Conditioning Installation at Gideon Welles Elementary School

In compliance with this Invitation to Bid, the Bidder hereby proposes to provide goods and/or services as per this solicitation in strict accordance with the Bid Documents, within the time set forth therein, and at the prices submitted with their bid response.

It is the responsibility of the Bidder to clearly mark the outside of the bid envelope with the Company name and Address, Bid Number, Date and Time of Bid Opening, and it also THE RESPONSIBILITY OF THE BIDDER TO CHECK THE TOWN'S WEBSITE BEFORE SUBMITTING BID FOR ADDENDA POSTED PRIOR TO BID OPENING.

THE BIDDER ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDA AS REQUIRED:

Addendum #1 _____(Initial/Date) **Addendum #2** _____ (Initial/Date) **Addendum #3** _____(Initial/Date)

Other Items Required with Submission of Bid Proposal
The following bid checklist describes items required for inclusion with the above-referenced bid proposal package. It is provided for the convenience of the bidders and, therefore, should not be assumed to be a complete list.

_____ Bid Bond (10% of total bid amount).

_____ List of five (5) similar projects completed within last three (3) years.

_____ Acknowledgement of Addendums (as applicable).

_____ Acknowledgement of Code of Ethics on Bid Proposal page.

_____ Sealed bids, one original and one copy. Clearly marked envelope with Bid Number, Date, Time of opening, Bidder's Company Name and address.

_____ Disclosure of past and pending mediation, arbitration and litigation cases that the Bidder or its principals have been involved in for the most recent five years (if applicable).

_____ Copy of State of Connecticut HVAC contractor's license

_____ Included Affidavit in compliance with Town ordinance prohibiting natural gas waste & oil waste from natural gas extraction activities or oil extraction activities as per Section 23 of the Information for Bidders.

Name of Bidder: _____

LUMP SUM BASE BID:
Furnish and install Air Conditioning Gideon Welles School as specified in the Plans and Specifications for Bid No. GL-2019-16:

$_____
(Numeric Base Bid Amount)

_____
(Written Base Bid Amount)

MANUFACTURER: _____

ADD ALTERNATE #1:
Include all the work associated with providing Air Conditioning to the Music Room and The Media Center as shown on Drawings M0.2, MD1.1A, MD1.1B, M1.1A, M1.1B, ED1.1A, ED1.1B, E1.1A and E1.1B.

$_____
(Numeric Amount)

_____
(Written Amount)

ADD ALTERNATE #2:
Include all the work and equipment associated with the replacement of the existing Unit Ventilators in classrooms 201, 202, 203, 204, 205, 206, 207, 208, 209, 211, 212, 213, 214, 216, 217, 218, 221, 222, 225, 226.

$_____
(Numeric Amount)

_____
(Written Amount)

Please confirm your company has the resources to complete the project by August 1, 2019**:**

_____**Yes** _____**No**

NON-COLLUSION AFFIDAVIT:
By submission of this bid, the Bidder certifies, and in the case of a joint bid each party thereto certifies as to their own organization that this bid has been arrived at independently without consultation, communication, or agreement as to any matter relating to this bid with any other Bidder or with any competitor.

CODE OF ETHICS:
I / We have reviewed a copy of the Town of Glastonbury's Code of Ethics and agree to submit a Consultant Acknowledgement Form if I /We are selected. Yes _____ No _____ *

*Bidder is advised that effective August 1, 2003, the Town of Glastonbury cannot consider any bid or proposal where the bidder has not agreed to the above statement.

Print Name, Title of Individual	**Doing Business as (Trade Name)**
Signature of Individual	**Street Address**
Date	**City, State, Zip Code**
E:mail Address	**Telephone Number / Fax Number**

(Seal – If bid is by a Corporation)
Attest

VARIABLE REFRIGERANT VOLUME - AIR COOLED CONDENSING UNIT SCHEDULE

TAG	"BASIS OF DESIGN (DAIKIN)"	"NOMINAL TONNAGE"	COOLING CAPACITY		HEATING CAPACITY		REFRIGERANT CHARGE	ELECTRICAL					EFFICIENCY (NonDucted/Ducted)				NOTES
			BTU/h	AMBIENT DESIGN (°F DB)	BTU/h	"AMBIENT DESIGN (°F DB / WB)"	Factory Charge (lbs)	"VOLTAGE- PHASE"	MIN CIRCUIT AMPS (MCA)	MAX OVERCURRENT PROTECTION (MOP)	"RUNNING CURRENT(A)"	"WEIGHT (lbs)"	EER	IEER	COP 47	COP17	
ACCU-VRV-01	RXYQ264TATJU	22	254942	95.0	279252	43.0 / 40.8	41	208V - 3ph	55.1 / 36.3	60.0 / 45.0	33.4 / 26.2	694.5 / 526.9	10.8/9.9	20.3/19.6	3.33/3.27	2.43/2.3	REFER TO NOTES
ACCU-VRV-02	RXYQ288TATJU	24	281252	95.0	300562	43.0 / 40.8	36.2	208V - 3ph	55.1 / 55.1	60.0 / 60.0	33.4 / 33.4	694.5 / 694.5	10.5/10.1	20.1/19.6	3.25/3.3	2.07/2.13	REFER TO NOTES
ACCU-VRV-03	RXYQ312TATJU	26	306541	95.0	319698	43.0 / 40.8	35.3	208V - 3ph	55.1 / 55.1	60.0 / 60.0	37.6 / 33.4	694.5 / 694.5	9.8/9.6	19.9/18.8	3.3/3.21	2.32/2.2	REFER TO NOTES
ACCU-VRV-04	RXYQ336TATJU	28	325718	95.0	331349	43.0 / 40.8	34.4	208V - 3ph	55.1 / 55.1	60.0 / 60.0	37.6 / 37.6	694.5 / 694.5	9.5/9.5	20.6/18.5	3.22/3.2	2.38/2.27	REFER TO NOTES
ACCU-VRV-05	RXYQ192TATJU	16	187318	95.0	205789	43.0 / 40.8	35.9	208V - 3ph	36.3 / 27.6	45.0 / 35.0	26.2 / 15.7	526.9 / 436.5	11.5/11.6	22.2/21.2	3.68/3.29	2.27/2.23	REFER TO NOTES

NOTES:

1. MANUFACTURER MUST BE CERTIFIED, LISTED, AND LABELED PER AHRI 1230.
2. SYSTEM RATING DATA BASED ON DESIGN AMBIENT CONDITIONS FOR COOLING AND FOR HEATING.
3. SUBMITTED PERFORMANCE DATA MUST BE FULLY DE-RATED FOR ALL COMPONENTS AND ACCESSORIES, INCLUDING BUT NOT LIMITED TO, LINE LENGTH, VERTICAL SEPARATION, CONNECTION RATIO, DESIGN CONDITIONS, CONDENSER COIL COATING.
4. CONDENSING UNITS MUST HAVE FULLY MODULATING INVERTER COMPRESSORS.
5. CONDENSING UNITS MUST HAVE AUTO CHANGEOVER FUNCTIONS
6. DEMAND LIMITING RELAY CONTACT MUST BE PROVIDED.
7. EEV ACTUATORS MUST BE REMOVABLE FROM VALVE BODY WITHOUT DISTURBING THE REFRIGERANT SYSTEM.
8. UV THERMOSTATS MUST PROVIDE +/- 1 DEGREE DEAD-BAND SET-POINT AND CONTROL CAPABILITY.
9. CONTRACTOR SHALL FIELD VERIFY AND SUBMIT PIPING LAYOUT AND SIZING.
10. MANUFACTURER MUST PROVIDE 10 YEARS PARTS WARRANTY ON ALL UV, CONDENSING UNITS, MODE CHANGEOVER DEVICES AND ZONE CONTROLS.
11. CONDENSING UNITS MUST BE FURNISHED WITH PROTECTIVE COIL COATING TO WITHSTAND ASTM B117 SALT SPRAY TEST FOR A MINIMUM OF 979 HOURS.
12. MANUFACTURER MUST CERTIFY AND SUBMIT SYSTEM PERFORMANCE AT EXTREME CONDITIONS OF 122 DEGREES FDB AMBIENT IN COOLING MODE AND -4 DEGREES FWB IN HEATING MODE.
13. MANUFACTURER TO INSTALL VRV EKE EXPANSION VALVE AND CONTROLLER, NAVIGATOR THERMOSTAT AND ATC PROVIDED CONTROL BOARD IN FACTORY PRIOR TO SHIPMENT.
14. MANUFACTURER SHALL PROVIDE VRT TECHNOLOGY
15. PROVIDE UNIT WITH LOW AMBIENT CONTROL FOR COOLING DOWN TO 0°F OUTSIDE AIR TEMPERATURE.

UNIT VENTILATOR SCHEDULE

DAIKIN UNIT VENTILATORS		FAN			DAIKIN VRV HEAT PUMP REFRIGERATION COIL						HOT WATER COIL								NOTES
TAG	MODEL	AIRFLOW (CFM)	RATED FAN SPEED	MOTOR POWER (HP)	EAT		LAT		TOTAL COOLING CAPACITY (Btu/hr)	TOTAL HEATING CAPACITY (Btu/hr)	COIL ROWS	EAT	LAT	EWT (°F)	LWT (°F)	FLOW RATE (GPM)	WPD (ft H2O)	TOTAL CAPACITY (Btu/hr)	
					EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)				EDB (°F)	LDB (°F)						
UV2-A101-01	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV2-A102-02	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV2-A103-03	UAVS9V07	748	80%	0.33	80.0	67.0	53.5	53.5	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32000	REFER TO NOTES
UV2-A103-04	UAVS9V07	748	80%	0.33	80.0	67.0	53.5	53.5	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32000	REFER TO NOTES
UV2-A104-05	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV2-A106-06	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV1-A108-07	UAVS9V13	1213	80%	0.33	80.0	67.0	48.5	48.5	41,969	47,088	2	70.0	105.3	160.0	124.3	2.6	0.97	46,393	REFER TO NOTES
UV1-A109-08	UAVS9V13	1213	80%	0.33	80.0	67.0	48.5	48.5	41,969	47,088	2	70.0	105.3	160.0	124.3	2.6	0.97	46,393	REFER TO NOTES
UV1-A107B-09	UAVS9V07	748	80%	0.33	80.0	67.0	53.5	53.5	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32000	REFER TO NOTES
UV1-A107A-10	UAVS9V07	748	80%	0.33	80.0	67.0	53.5	53.5	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32000	REFER TO NOTES
UV1-A105-11	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV3-A110-12	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV3-A112-13	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV4-A118-14	UAVS9V13	1213	80%	0.33	80.0	67.0	48.5	48.5	41,969	47,088	2	70.0	105.3	160.0	124.3	2.6	0.97	46,393	REFER TO NOTES
UV4-A119-15	UAVS9V10	979	80%	0.33	80.0	67.0	49.0	49.0	33,780	37,875	2	70.0	111	160.0	130.8	3	1.93	43,762	REFER TO NOTES
UV4-A120-16	UAVS9V13	1213	80%	0.33	80.0	67.0	48.5	48.5	41,969	47,088	2	70.0	105.3	160.0	124.3	2.6	0.97	46,393	REFER TO NOTES
UV4-A116-17	UAVS9V10	979	80%	0.33	80.0	67.0	49.0	49.0	33,780	37,875	2	70.0	111	160.0	130.8	3	1.93	43,762	REFER TO NOTES
UV3-A115-18	UAVS9V10	979	80%	0.33	80.0	67.0	54.6	54.6	33,780	37,875	2	70.0	111	160.0	130.8	3	1.93	43,762	REFER TO NOTES
UV3-114B-19	UAVS9V07	748	80%	0.33	80.0	67.0	53.5	53.5	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32000	REFER TO NOTES
UV3-A114A-20	UAVS9V07	748	80%	0.33	80.0	67.0	53.5	53.5	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32000	REFER TO NOTES
UV3-A113-21	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV3-A111-22	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV2-A201-23	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV2-A202-24	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV2-A203-25	UAVS9V07	748	80%	0.33	80.0	67.0	53.5	53.5	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32000	REFER TO NOTES
UV2-A204-26	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV2-A206-27	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV1-A208-28	UAVS9V10	979	80%	0.33	80.0	67.0	49.0	49.0	33,780	37,875	2	70.0	111	160.0	130.8	3	1.93	43,762	REFER TO NOTES
UV1-A209-29	UAVS9V13	1213	80%	0.33	80.0	67.0	48.5	48.5	41,969	47,088	2	70.0	105.3	160.0	124.3	2.6	0.97	46,393	REFER TO NOTES
UV1-A207-30	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV1-A205-31	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV5-A212-32	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV5-A214-33	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV5-A216-34	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV3-A218-35	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV4-A224-36	UAVS9V13	1213	80%	0.33	80.0	67.0	48.5	48.5	41,969	47,088	2	70.0	105.3	160.0	124.3	2.6	0.97	46,393	REFER TO NOTES
UV4-A225-37	UAVS9V13	1213	80%	0.33	80.0	67.0	48.5	48.5	41,969	47,088	2	70.0	105.3	160.0	124.3	2.6	0.97	46,393	REFER TO NOTES
UV4-A226-38	UAVS9V10	979	80%	0.33	80.0	67.0	49.0	49.0	33,780	37,875	2	70.0	111	160.0	130.8	3	1.93	43,762	REFER TO NOTES
UV4-A227-39	UAVS9V13	1213	80%	0.33	80.0	67.0	48.5	48.5	41,969	47,088	2	70.0	105.3	160.0	124.3	2.6	0.97	46,393	REFER TO NOTES
UV4-A223-40	UAVS9V10	979	80%	0.33	80.0	67.0	49.0	49.0	33,780	37,875	2	70.0	111	160.0	130.8	3	1.93	43,762	REFER TO NOTES
UV3-A222-41	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV3-A221-42	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV3-A219-43	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV3-A217-44	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV5-A215-45	UAVS9V10	979	80%	0.33	80.0	67.0	49.0	49.0	33,780	37,875	2	70.0	111	160.0	130.8	3	1.93	43,762	REFER TO NOTES
UV5-A213-46	UAVS9V07	748	80%	0.33	80.0	67.0	50.7	50.7	26,615	30,027	2	70.0	109.6	160.0	127.9	2	1.21	32,000	REFER TO NOTES
UV5-A211-47	UAVS9V10	979	80%	0.33	80.0	67.0	49.0	49.0	33,780	37,875	2	70.0	111	160.0	130.8	3	1.93	43,762	REFER TO NOTES

NOTES:

1. ALL UNIT VENTILATORS ARE 208 VOLT / 1 PHASE, 3.8 AMPS AND REQUIRE 15 AMP MAX FUSE
2. DAKIN VRV ELECTRONIC EXPANSION VALVE SHALL BE FACTORY INSTALLED WITH VALVE AND CONTROLLER
3. FACTORY TO MAKE SPACE AND INSTALL ATC CONTROLLER AND WIRE TO FACTORY INSTALLED ACTUATORS
4. OUTSIDE AIR DAMPER ACTUATOR TO BE FACTORY INSTALLED
5. FACTORY INSTALLED HOT WATER COIL: 160°F EWT / FLUID: WATER
6. MANUFACTURER MUST PROVE THAT THE REFRIGERATION COIL HAS BEEN FACTORY SIZED TO MEET REFRIGERATION VOLUMES REQUIRED BY VRV MANUFACTURER
7. FURNISH DYNAMIC AIR QUALITY SOLUTIONS 1-INCH FILTERS FOR MERV-13 FILTRATION AND IMPROVED IAQ
8. DAIKIN VRV REFRIGERATION COIL TO BE SIZED FOR THE LOADS SCHEDULED AND THE FOLLOWING : 95°F AMBIENT COOLING, 43°F HEATING
9. INSULATED STAINLESS STEEL DRAIN PAN.
10. PROVIDE AUXILIARY DRAIN PAN FOR UNIT END COMPARTMENT
11. PROVIDE REFRIGERANT LINE SETS FOR EACH UNIT VENTILATOR.
12. PROVIDE WATER OVERFLOW SWITCH TO SHUT DOWN UNIT VENTILATOR

FAN COIL UNIT SCHEDULE

Unit										DX COOLING COIL							HOT WATER HEATING COIL								NOTES
TAG	MANUFACTURER	MODEL	ELECTRICAL			SUPPLY FAN				EAT		LAT		ROWS	TOTAL CAPACITY (BTU/HR)	SENSIBLE CAPACITY (BTU/HR)	EAT DB (°F)	LAT DB (°F)	ROWS	TOTAL CAPACITY (BTU/HR)	ENTERING WATER TEMP (°F)	LEAVING WATER TEMP (°F)	FLUID FLOW RATE (GPM)	WATER PRESSURE DROP (FT H2O)	
			VOLTAGE	PHASE	MCA	AIRFLOW (CFM)	ESP (inH2O)	Motor Power (HP)	FLA	DB (°F)	WB (°F)	DB (°F)	WB (°F)												
FCU-A210A-01	ENVIRO-TEC	HPP10	208	1	3.5	848	0.25	1/4	4.9	74.9	63.3	54.9	53.2	4	24791	18741	75	95.4	1	20349	160	130	1.3	0.32	REFER TO NOTES
FCU-A210B-02	ENVIRO-TEC	HPP10	208	1	3.5	848	0.25	1/4	4.9	74.9	63.3	54.9	53.2	4	24791	18741	75	95.4	1	20349	160	130	1.3	0.32	REFER TO NOTES
FCU-A220A-03	ENVIRO-TEC	HPP10	208	1	3.5	848	0.25	1/4	4.9	74.9	63.3	54.9	53.2	4	24791	18741	75	95.4	1	20349	160	130	1.3	0.32	REFER TO NOTES
FCU-A220B-04	ENVIRO-TEC	HPP10	208	1	3.5	848	0.25	1/4	4.9	74.9	63.3	54.9	53.2	4	24791	18741	75	95.4	1	20349	160	130	1.3	0.32	REFER TO NOTES

NOTES:

1. PROVIDE INSULATED STAINLESS STEEL DRAIN PAN.
2. 1/2" FOIL FACED FIBERGLASS INSULATION
3. HIGH EFFICIENCY EC MOTOR
4. UNIT MANUFACTURER SHALL PROVIDE 2" MERV 8 FILTER SECTION, FILTER BOTTOM ACCESS.
5. AUXILIARY DRAIN PAN WITH WATER OVERFLOW SWITCH TO SHUT DOWN FCU.
6. MANUFACTURER TO PROVIDE EXPANSION VALVE TO MEET THE REQUIREMENT.

ROUNDFLOW CASSETTE UNIT SCHEDULE

TAG	MANUFACTURER	SYSTEM PERF. DATA				INDOOR UNIT DATA						OUTDOOR UNIT DATA								NOTES
		COOLING MBH	EER	REF. CHARGE (LBS)	MODEL	CFM MI/HI	SOUND MI/HI (dBA)	TYPE	VOLTS	PHASE	MCA	TAG	MODEL	VOLTS	PHASE	MCA	MOCP	REF. TYPE	WEIGHT (LBS)	
IU-A117-01	DAIKIN	23.8	12	5.1	FCQ24PAVJU	620 / 780	32 / 36	CASSETTE	208	1	0.5	ACCU-A117-01	RZQ24PVJU8	208	1	16.5	20	R-410A	150	REFER TO NOTES
IU-B131-02 *	DAIKIN	41.5	10.2	8.8	FCQ42PAVJU	970 / 1220	40 / 45	CASSETTE	208	1	1.5	ACCU-B131-02	RZQ42PVJU8	208	1	27	30	R-410A	283	REFER TO NOTES

NOTES:

1. MANUFACTURER TO PROVIDE WIRED CONTROLLER WITH WALL MOUNTING HOLDER
2. PROVIDE REFRIGERATION LINE SETS FOR EACH UNIT WITH CONNECTIONS TO EVAPORATOR AND CONDENSING UNIT.
3. UNIT USING CFC BASED REFRIGERANTS WILL NOT BE ACCEPTED.
4. PROVIDE WITH INTEGRAL CONDENSATE PUMP, PROVIDE WATER OVERFLOW SWITCH TO SHUT DOWN THE UNIT.
5. PROVIDE WITH CONDENSATE LIFTING MECHANISM.

* ADD ALTERNATE

TRANSFER AIR REGISTER

TITUS CEILING MOUNTED REGISTER MODEL 355FL. 1/2"SPACING, 35 DEG. FIXED DEFLECTION. PROVIDE IN STEEL CONSTRUCTION. REFER TO DRAWINGS FOR LOCATION. 12"x12" NECK SIZE, AND 24"x24" CEILING MODULE SIZE. WHITE COLOR.

DIRECT EXPANSION COIL SCHEDULE (SELECTION BASED ON DAIKIN)

TAG	Model	FPI	Rows	Fin Height (in)	Fin Length (in)	Face Area (ft^2)	Airflow (CFM)	Face Velocity (ft/min)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	Total Capacity (Btu/hr)	Sensible Capacity (Btu/hr)	Air Pressure Drop (inH2O)	Refrig. Type	NOTES
DXC-AHU-01 *	CAC010GBAM	12	4	21	67	9.77	4500	461	78.1	64.9	56	53.9	147965	108908	0.56	R410A	REFER TO NOTES
DXC-AHU-04 *	CAC005GBAM	10	5	15	33	3.44	1500	436	79.4	65	55.9	53.8	50176	38577	0.57	R410A	REFER TO NOTES

NOTES:

1. MANUFACTURER TO PROVIDE EXPANSION VALVE TO MEET THE REQUIREMENT.
2. OUTER PANEL TO BE 24 GAUGE STANDARD G90 GALVANIZED STEEL
3. R-13 INJECTED FOAM INSULATION
4. 2" WALL THICKNESS
5. UNIT SHALL MEET THE REQUIREMENT OF ASHRAE 90.1
6. DXC-AHU-01 ENCLOSURE DIMENSIONS: L80"xW20"xH30"
7. DXC-AHU-04 ENCLOSURE DIMENSIONS: L46"xW20"xH30"
8. PROVIDE REFRIGERANT LINE SETS FOR EACH DX-COIL.
9. PROVIDE WITH CONDENSATE DRAIN AND DRAIN.
10. PROVIDE AUXILIARY DRAIN PAN WITH OVERFLOW SWITCH TO SHUT-DOWN THE UNIT

* ADD ALTERNATE

AIR COOLED CONDENSING UNIT SCHEDULE

TAG	"BASIS OF DESIGN (DAIKIN)"	COOLING CAPACITY		REFRIGERANT CHARGE	ELECTRICAL			"WEIGHT (LBS)"	EER	NOTES
		BTU/h	AMBIENT DESIGN (°F DB)	Factory Charge (lbs)	"VOLTAGE - PHASE"	MIN CIRCUIT AMPS (MCA)	MAX OVERCURRENT PROTECTION (MOP)			
ACCU-A210A-01	DX20VC0241	23000	95	3	208 - 1	15.2	20	241	14.5	REFER TO NOTES
ACCU-A210B-02	DX20VC0241	23000	95	3	208 - 1	15.2	20	241	14.5	REFER TO NOTES
ACCU-A220A-03	DX20VC0241	23000	95	3	208 - 1	15.2	20	241	14.5	REFER TO NOTES
ACCU-A220B-04	DX20VC0241	23000	95	3	208 - 1	15.2	20	241	14.5	REFER TO NOTES
ACCU-AHU-01 *	RCS12F150C	140660	95	23.6	208-3	56	70	650	12	REFER TO NOTES
ACCU-AHU-04 *	DX14SA0481	45500	95	6	208 - 1	26.2	45	220	11.7	REFER TO NOTES

NOTES:

1. MANUFACTURER MUST BE CERTIFIED, LISTED, AND LABELED PER AHRI 1230.
2. SYSTEM RATING DATA BASED ON DESIGN AMBIENT CONDITIONS FOR COOLING AND FOR HEATING.

* ADD ALTERNATE

REVISIONS

1 REVISION-1 12/17/2018

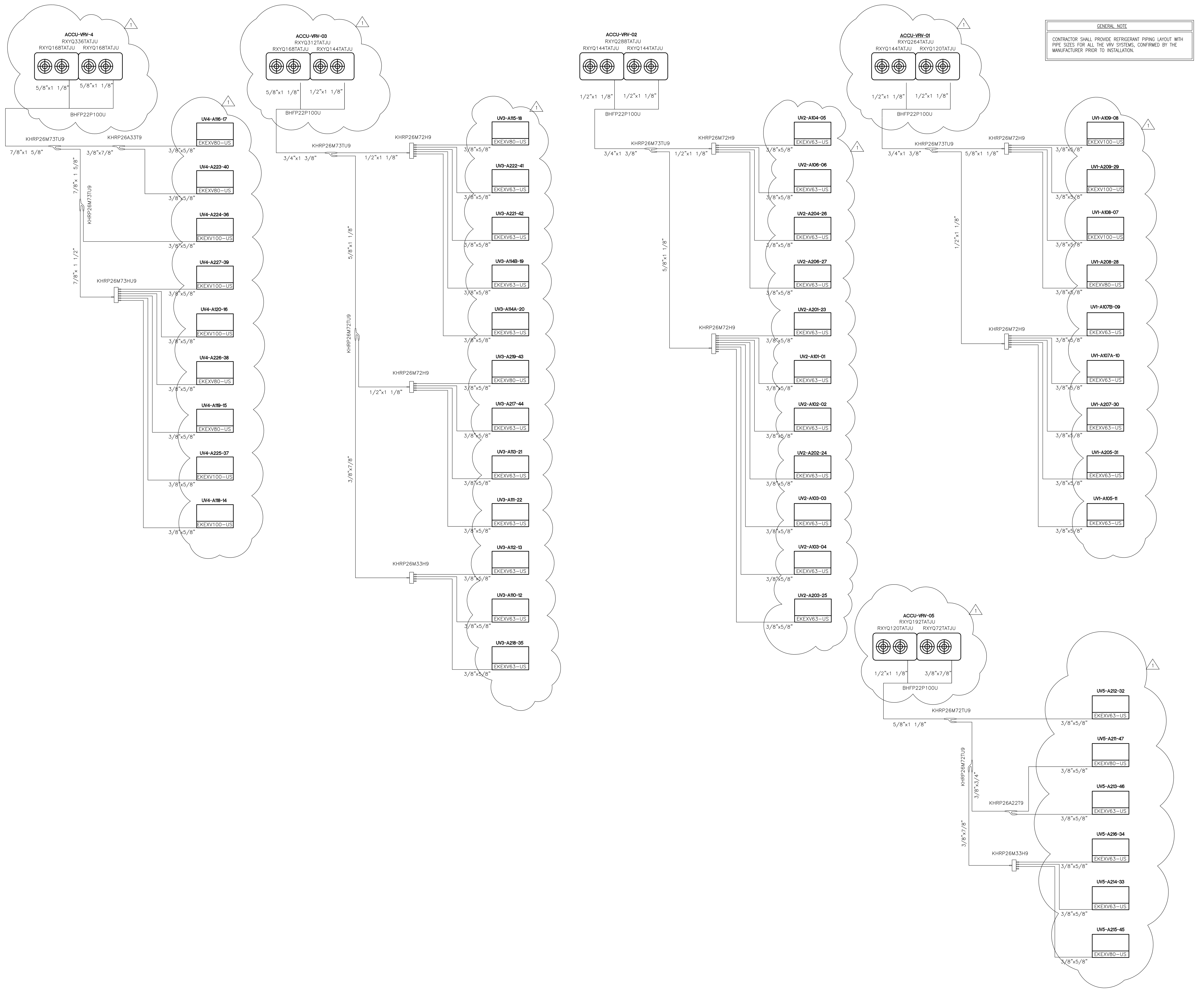
GIDEON WELLES SCHOOL
NEW AIR CONDITIONING SYSTEM
GLASTONBURY, CONNECTICUT

BEMIS ASSOCIATES, L.L.C.
Consulting Engineers
185 Main Street
Farmington, Ct 06032
(860) 667-3233
Fax: (860) 321-7070
www.bemisassociates.com

TITLE
MECHANICAL SCHEDULES

DATE 11/01/2018

DWG. NO.
M0.2



REVISIONS

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TITLE
VARIABLE REFRIGERANT VOLUME SYSTEM PIPING DIAGRAM

DATE 11/01/2018

DWG. NO.
M2.0

REVISIONS
1 REVISION-1 12/17/2018

GIDEON WELLES SCHOOL
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GLASTONBURY, CONNECTICUT

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TITLE
VARIABLE REFRIGERANT VOLUME SYSTEM WIRING DIAGRAM

DATE 11/01/2018

DWG. NO.
M3.1

REVISIONS
1 REVISION-1 12/17/2018

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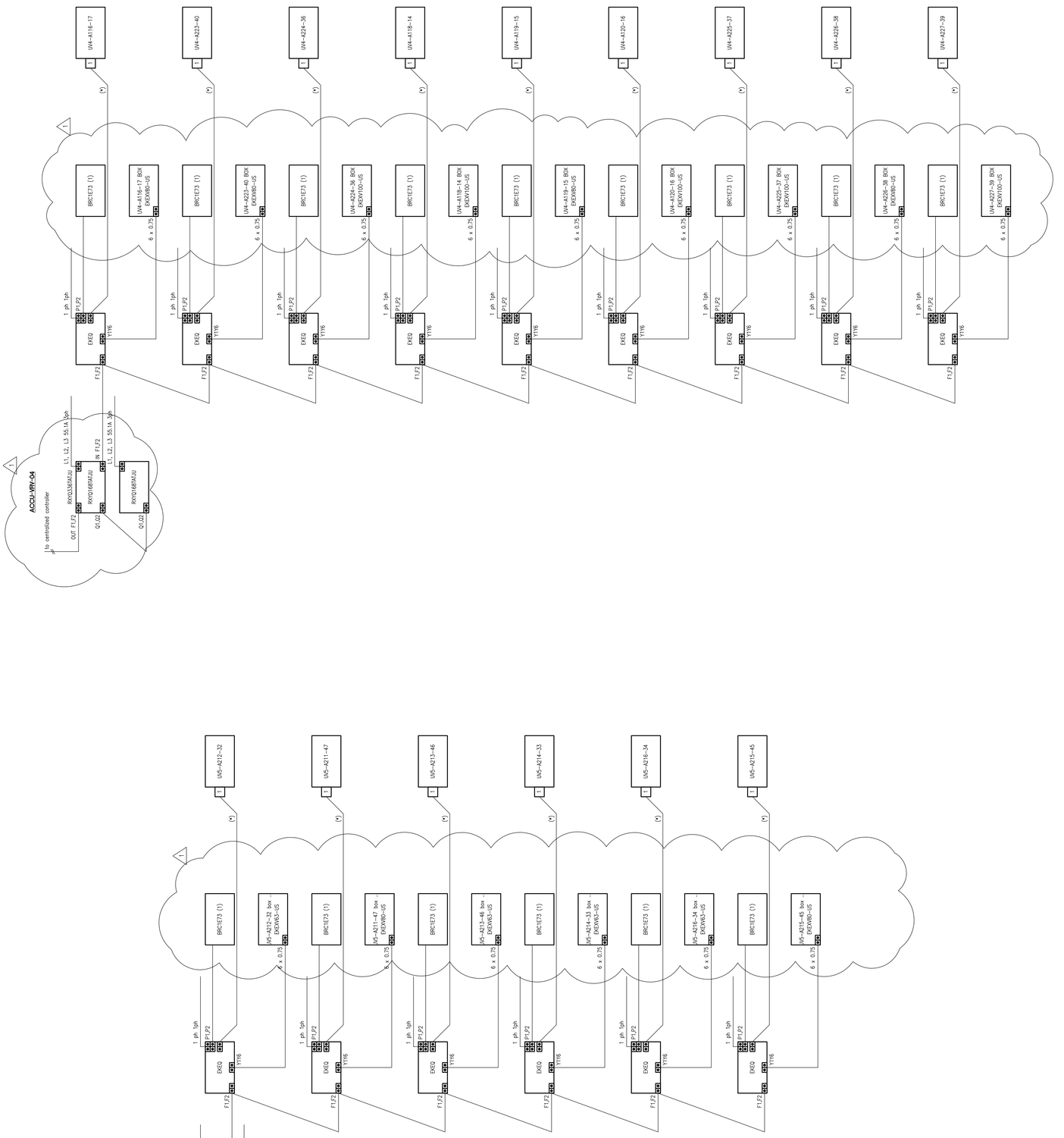
TITLE
VARIABLE REFRIGERANT VOLUME SYSTEM WIRING DIAGRAM

DATE 11/01/2018

DWG. NO.
M3.2



SECTION 262000 - SERVICE AND DISTRIBUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements. Apply to the work specified in this Section.

B. Section 260000, General Electrical, shall also govern the work under this Section.

C. Section 260500, Basic Electrical Materials & Methods, includes requirements that are binding on this Section.

D. Examine all drawings, data, and coordinate the work of this Section with all related and adjoining work.

1.2 DESCRIPTION OF WORK:

A. Includes but is not limited to:

1. Grounding.
2. Feeder distribution.
3. Panelboards.
4. Plywood Mounting Backboards.

1.3 QUALITY ASSURANCE:

A. Codes and Standards: Refer to Section 260000.

1.4 SUBMITTALS:

A. Shop Drawings: Submit for all items listed in paragraph 1.2, Description of Work.

PART 2 - PRODUCTS

2.1 PANELBOARDS:

A. Panelboards shall be furnished in G.E manufacturer.

B. Panelboards shall be equipped with the following features:

1. Bolt-on circuit breakers.
2. Symmetrical interiors.
3. Surface or flush trim as called for in schedule, door-in-door type.
4. Flush key catch lock.
5. Painted finish, ANSI-61 gray.
6. Metal frame/plastic cover index card holder.

7. Separate equipment ground bus.
8. Fast latch trim and jacking screw adjustment.
9. Split neutral.
10. Connection accessible from front.
11. Copper lugs (feeder cable connectors).
12. 1000 amps per square inch density rated silver-plated copper busses.
13. Copper ground bar.
14. Black face/white core engraved nameplate fixed to panel w/ two screws or rivets.

C. Indexing and Identification: After installations are complete, provide and mount under sturdy transparent shield in the directory frame of each panel door a neat, accurate and carefully typed directory properly identifying the lighting, receptacles, outlets, equipment and rooms which each branch circuit breaker controls.

D. All circuit breakers shall be 'HCAR' rated.

E. Circuit breakers shall be bolt-on type with short circuit interrupting rating as indicated in panel schedule.

F. Circuit breakers shall be provided with copper line and load lugs (cable connectors).

G. 20 Amp, 1-Pole circuit breakers shall be listed by the Manufacturer for use with #12AWG through #8AWG conductor sizes.

2.2 COMBINATION STARTER/DISCONNECTS:

A. Combination starter/disconnects shall be provided by each sub-contractor, supplying motorized equipment on the project. Combination starters for HVAC equipment shall be furnished under Division 23, but in accordance with the performance criteria described in Section 26 00 00.

1. The Electrical Contractor shall mount and wire any starters which are not integral with equipment.

2.3 FRACTIONAL HORSEPOWER STARTERS:

A. Furnish and install a manual disconnect switch and starter with thermal overload protection for each 120V, 1 phase fractional horsepower motor shown on plans.

2.4 BACKBOARDS:

A. Backboards shall be constructed of fire retardant plywood sheets 4’ x 8’ x 3/4”.

1. Paint backboards on all sides with two coats of light grey fire resistant paint prior to mounting equipment.

2. Mount backboards on unistrut channel supports.

B. Provide backboards for mounting all surface mounted electrical panelboards.

PART 3 - EXECUTION

3.1 INSTALLATION OF CONDUITS:

A. Conduit runs overhead in building shall be run in a neat and orderly manner, parallel with and at right angles to walls. Conduits shall be racked and properly supported.

B. Contractor shall coordinate the location of all conduit runs with existing conditions and other trades before proceeding with installation.

3.2 PANELBOARDS:

A. Mount panels 4'-0" to panel center but with maximum height of 6'-7" to handle of top most switching device when in its highest position.

B. Provide double locknuts and insulated throat grounding bushings on each metallic feeder conduit entering switchboard, panelboard, wireway, or pull box. Run No. 4 stranded bare copper ground wire through each grounding lug and connect to panel box grounding lug.

C. For each flush mounted panel install two spare 1 1/4" conduits from panel box to point above finished ceiling for future use.

3.3 START-UP, TESTING, AND TRAINING

A. The contractor shall engage the equipment manufacturer's service group to perform manufacturer's recommended start-up procedures for the panelboards including checking cable connector/lug torques and insulation resistance testing.

B. The equipment manufacturer's service group shall perform a thermal scan of all breaker to cable connections, breaker to bus connections, and cable to panel chassis connections. Scope is to include all new feeder connections and the new panelboards. Tests are to be done with the building normally loaded for a minimum of 2 hours, not with partial or unloaded condition.

Thermal scans temperatures shall be evaluated as follows (based on comparable size or adjacent phases and loaded breakers, bus connections, and terminations)

1. 1-3 degrees C rise, Investigate as to the cause of temp rise.
2. 4 – 15 degree C rise, Repair as soon as possible.
3. 16 or higher degree C rise, Repair immediately.

C. The contractor shall retain the equipment manufacturer's factory service group to provide one (1) separate 4-hour training session for the Owners personnel. The training session will be conducted at a time designated by the Owner.

END OF SECTION 262000

FUSS & O'NEILL

December 12, 2018

Mr. David Sacchitella
Town of Glastonbury
2155 Main Street
P.O. Box 6523
Glastonbury, CT 06033-6523

Re: Hazardous Materials Advisory Scope Sheet
Air Conditioning Installation Project
Gideon Welles Elementary School
1029 Neipsic Road, Glastonbury, CT
Fuss & O'Neill Project No. 20100782.A10

Dear Mr. Sacchitella:

Enclosed is the hazardous materials scope sheet for proposed renovations associated with the Air Conditioning Installation Project for the Gideon Welles Elementary School located at 1029 Neipsic Road in Glastonbury, Connecticut (the "Site"). The work was conducted for the Town of Glastonbury (the "Client").

If you should have any questions regarding the contents of this report, please do not hesitate to contact me at (860) 646-2469, extension 5574. Thank you for this opportunity to have served your environmental needs.

Sincerely,

Eduardo Miguel Marques
Senior Environmental Analyst

EMM/kr

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FUSS & O'NEILL

GIDEON WELLES ELEMENTARY SCHOOL
AIR CONDITIONING UPGRADE PROJECT
HAZARDOUS MATERIALS SCOPE SHEET

1.0 ASBESTOS ABATEMENT

A. The asbestos-containing materials (ACM) identified in the Limited Hazardous Building Materials Inspection report in support of the air conditioning upgrade project are listed for informational purposes in the case of potential impact incurred during proposed renovation activities. These material are not expected to be impacted. This scope sheet serves as disclosure of known hazards to assure appropriate precautions are exercised to avoid disturbance.

1.1 Summary of Work

A. Work outlined in this Section includes all work necessary for the removal, packaging, transporting, and disposing of ACM impacted during the renovation project (the "Work") at the Gideon Welles Elementary School located at 1029 Neipsic Road in Glastonbury, Connecticut (the "Site"), if required. Please refer to the Limited Hazardous Building Materials Inspection report dated December 12, 2018.

B. The base bid includes the removal, packaging, transporting, and disposing of all ACM as identified herein conducted by workers meeting the requirements of OSHA Title 29 CFR, Part 1926.1101.

C. The quantities are estimates only and should be verified by the Contractor.

D. The base bid includes the following ACM:

ASBESTOS-CONTAINING MATERIALS

Location	Material Type	Asbestos Content	Estimated Total Quantity	Comments
Section B - Mezzanine Mechanical Room AHU #4 and Section A – Mechanical Room	TSI - Mudded Elbow Insulation	2.0% Chrysotile	Section B Mechanical Room 6-8 mudded fittings Section A Mechanical Room 6-8 mudded fittings	6-8 Mudded fittings in each Mechanical Room Potential for impact.
Section B - 1st Floor Mechanical Room AHU #4	Gray Seam Sealant Caulk on Unit AHU #4	8.0% Chrysotile	20 LF	Potential for impact.
Section A – above unit ventilators	Dark Brown Tack Board Adhesive	6.0% Chrysotile	24 SF above each unit ventilator	Not anticipated to be impacted.

Location	Material Type	Asbestos Content	Estimated Total Quantity	Comments
Section A – 1st Floor Above suspended ceiling tiles, penetrations through walls	TSI - Mudded Elbow Insulation	2.0% Chrysotile	Undetermined	Not anticipated to be impacted.

SF = Square Feet
LF = Linear Feet

1.2 Regulations and Standards

A. The Contractor shall be solely responsible for conducting this project and supervising all work in a manner that will be in conformance with all federal, state, and local regulations and guidelines pertaining to asbestos abatement. Specifically, the Contractor shall comply with the requirements of the following:

1. Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) Regulations (Title 40 CFR, Part 61, Subpart M);
2. EPA Asbestos Hazard Emergency Response Act (AHERA) Regulations (Title 40 CFR, Part 763, Subpart E);
3. Occupational Safety and Health Administration (OSHA) Asbestos Regulations (Title 29 CFR, Parts 1910.1001 and 1926.1101);
4. Department of Transportation (DOT) Hazardous Waste Transportation Regulations (Title 49 CFR, Parts 170 – 180);
5. Connecticut Department of Energy and Environmental Protection (CTDEEP) Regulations (Section 22a-209-8(i) and Section 22a-220 of the Connecticut General Statutes);
6. Connecticut Department of Public Health (CTDPH) Standards for Asbestos Abatement (Sections 19a-332a-1 to 19a-332a-16);
7. CTDPH Licensing and Training Requirements for Persons Engaged in Asbestos Abatement and Asbestos Consultant Services (Sections 20-440-1 to 20-440-9 and Section 20-441);
8. 2003 International Building Code as adopted by the 2005 State of Connecticut Building Code including the 2009, 2011, 2013, 2016, and 2018 amendments;
9. Life Safety Code, National Fire Protection Association (NFPA); and
10. Local health and safety codes, ordinances, or regulations pertaining to asbestos remediation and all national codes and standards including American Society of Testing and Materials (ASTM), American National Standards Institute (ANSI), and Underwriter's Laboratories (UL).

B. After the visual inspection is completed and all surfaces in the abatement area have dried, the Consultant shall conduct final re-occupancy air clearance sampling. Aggressive air monitoring will be used. Selection of location and of samples shall be the responsibility of the Consultant. Air monitoring volumes shall be sufficient to provide a detection limit of 0.010 fibers/cc using Phase Contrast Microscopy (PCM) National Institute of Occupational Health (NIOSH) Method 7400.

C. Asbestos-containing and/or asbestos-contaminated material disposal must be in compliance with requirements of, and authorized by the EPA, CTDEEP, and the CTDPH.

2.0 LEAD PAINT AWARENESS

2.1 Summary of Work

A. Work includes requirements for worker protection and waste disposal related to work involving lead-based paint (LBP)-coated building components and surfaces associated with the renovation work at the Site. Please refer to the Limited Hazardous Building Materials Inspection report dated December 12, 2018 for results of the LBP determination. The LBP determination indicated consistent painting trends associated with representative building components that may be impacted by renovation work. The building components tested during this LBP determination were determined to not contain levels of lead (equal to or greater than 1.0 mg/cm^2). Paint containing lead at less than 1.0 mg/cm^2 was identified. OSHA recognizes any level of lead as a potential exposure to workers.

B. The renovation work impacting lead containing paint may result in dust and debris exposing workers to levels of lead above the Occupational Safety and Health Administration's (OSHA) Action Level. Worker protection, training, and engineering controls as may be required based on the work shall be strictly followed in accordance with 29 CFR 1926.62 for Lead in Construction. All contractors are responsible for their respective employees with respect to potential disturbance of lead containing paint during renovation work. Until completion of exposure assessment with results indicating exposures below the "Action Level". **This work does not involve lead abatement, but identifies worker protection requirements for trades involved in the renovation and demolition work specified elsewhere in the contract documents and disposal procedures if lead is involved in the demolition waste stream.**

C. Construction activities disturbing surfaces with lead-containing paint that are likely to be employed, such as demolition, sanding, grinding, welding, cutting, and burning. These activities have been known to expose workers to levels of lead in excess of the OSHA Permissible Exposure Limit (PEL). All work shall be in conformance with OSHA regulations including 29 CFR 1910.1025, 1910.1200, and 1926.62.

D. The Contractor's contractual liability shall be the proper disposal of all wastes generated at the Site in accordance with all applicable federal, state, and local regulations as referenced herein. Paint chips or other debris resulting from work may require special disposal. The Contractor shall be responsible for determining waste disposal requirements for expected wastes from their operations and include such costs in their bids.

END OF ADVISORY SCOPE SHEET