#### **DIVISION 00**

#### **SECTION 00 91 15: SUPPLEMENTAL SHEETS**

# Goldsboro High School – HVAC Renovations & Window Replacement Goldsboro, North Carolina

#### 00 91 13.01: GENERAL

- 1. These supplemental sheets are a part of the Specifications and are intended to give additional information on items which may or may not be noted in the specifications or on the drawings. It is suggested that the Contractor carefully read these sheets and note changes, additions, etc., in the corresponding section of these specifications.
- 2. The specifications are typical and only those parts applicable to this project will be considered.
- 3. All items in prior Addenda are still pertinent unless said item has been modified or changed in this Addendum.

### **00 91 15.02: MODIFICATION**

RESERVED FOR FUTURE MODIFICATIONS

#### 00 91 15.03: ADDITIONAL SPECIFICATION

Add the following:

- A. SECTION 00 91 15 SUPPLIMENTAL SHEETS Addendum #2 dates June 9, 2023
- B. SECTION 23 05 05 CHAIN LINK FENCE

#### 00 91 15.04: DRAWINGS

Add the following:

#### A. SHEET ME100 FIRST FLOOR PLAN - DEMOLITION-

- 1. Remove metal troughs associated with window AC unit piping and conduit. Block fill and paint to newly exposed wall to match existing.
- 2. Provide refrigerant cylinders as required to reclaim refrigerant and turn over to owner.

#### B. SHEET M200 FIRST FLOOR PLAN - AREA A -

- 1. Provide fire damper type A at outside air duct floor penetration.
- 2. Fan coil units FC-3-1, FC-3-2 and FC-3-6 are horizontal recessed. Provide supply duct and diffuser (similar to FC-3-4).
- 3. Provide space sensors for all fan coil units and unit ventilators.
- 4. Spill condensate drain to janitors sink.

# C. SHEET M201 FIRST FLOOR PLAN - AREA B -

- 1. Registers in Existing Library shall be 48X6 in lieu of 10X8.
- 2. Provide hot water coil for SSAH-1. Extend 1" HWS and R to boiler room and connect to DTS&R mains. Provide isolation valves in mechanical room for both supply and return pipe.
- 3. FC-1-1 through 1-12 in auditorium replace existing vertical recessed units. Remove existing units and install new. Replace existing panel as required.
- 4. Piping in auditorium and existing library runs in existing tunnel. Remove existing steam and chilled water piping to install new.
- 5. MSAH-1. Duct and grille sizes shall be 14X12. Extend unit condensate drain to spill to grade.
- 6. Fan coil units FC-3-6 in West Lobby is horizontal recessed. Provide supply duct and diffuser (similar to FC-3-4/sheet M200).
- D. <u>SHEET M202 FIRST FLOOR PLAN AREA C</u> Delete this Sheet in its entirety and replace with <u>SHEET M202 FIRST FLOOR PLAN AREA C</u> Addendum #2 dated June 9, 2023

#### E. SHEET M203 FIRST FLOOR PLAN - AREA D -

- SSAH-1G Replaces existing unit. Connect to existing ductwork as required.
- 2. Provide outside air to all UV-2. Refer to OA schematic for building on sheet M504.
- 3. Fan coil in Existing Office shall be type FC-2.

#### F. SHEET M204 2<sup>nd</sup> FLOOR PLAN – AREA A –

1. Delete requirement for fire damper at roof penetration. Damper required only at floor penetration.

#### G. SHEET M205 2<sup>nd</sup> FLOOR PLAN - AREA B -

- 1. Extend refrigerant piping to roof mounted heat pumps as shown. Pipe to be sized per manufacturer's recommendation. New heat pumps to be mounted on existing roof curbs. Provide adaptors as required.
- 2. Extend 3/4" HWS and R to boiler room and connect to DTS&R mains. Provide isolation valves in mechanical room for both supply and return pipe.
- 3. BC-3 through BC-5. Mechanical room is used as return and relief plenum to match existing condition. Provide mixing box for unit economizer. Extend 18X18 duct for OA from unit to exiting 40X40 roof hood.
- 4. Provide EWH-3 and EWH-4 in existing auditorium toilets.

### H. SHEET M206 2<sup>nd</sup> FLOOR PLAN - AREA C & D -

- 1. Fan coil units in prep rooms shall be type FC-3.
- 2. Route condensate piping to existing drain in Storage 21.
- 3. Provide roof hood (24X24 Neck Size) for outside air. Hood to be located at rectangle above Existing Storage 17. Continue duct down to lower level for Unit vents on that floor. Provide fire damper at floor penetration.

# I. SHEET M207 FIRST FLOOR PLAN - BOILER ROOM -

1. Provide UV-3 in Existing Building room. Refer to electrical plans for location. Extend 1 1-4" DTS&R from unit to DTS&R mains in boiler room. Spill 1" condensate drain to adjoining grade.

#### J. SHEET M501 MECHANICAL DETAILS -

1. Detail 6. Provide heat tape to maintain pipe at 40F at 0F ambient. Wattage shall be as recommended by the heat tape supplier for piping being protected.

#### K. SHEET M502 MECHANICAL DETAILS -

- 1. Detail 1. Delete Reference to CHW system. Change references for HW system to Dual Temp System. PRV Setpoint shall be 20 PSI. Relief valve shall be set at 50 PSI. Expansion tank shall be Amtrol AX-280V, floor mounted. Acceptance volume 84 gallon.
- 2. Detail 7. Motorized damper shall be closed through BAS during unoccupied time.

#### L. SHEET M503 MECHANICAL DETAILS -

1. Detail 2. Delete reference to Carnes L-33 Louver. Refer to louver specification 23 37 26 for louver requirements.

- M. <u>SHEET M504 MECHANICAL DETAILS</u> Delete this Sheet in its entirety and replace with SHEET M504 MECHANICAL DETAILS Addendum #2 dated June 9, 2023
- N. SHEET M600 MECHANICAL SCHEDULE -
  - 1. Air cooled chiller schedule. R410 machines will be considered as a substitution.
  - 2. Fan coil schedule. FC-1 units are vertical recessed in lieu of horizontal recessed.
- O. SHEET M601 MECHANICAL DETAILS Addendum #2 dated June 9, 2023
- P. SHEET E305 2<sup>nd</sup> FLOOR PLAN AREA B POWER
  - 1/E305 "SECOND FLOOR PLAN AREA B POWER" Add the following note to the two existing toilets plan east and plan west of "EXISTING STUDENT ACTIVITIES ROOM": IN SPACE AVAILABLE IN EXISTING PANEL HC3, PROVIDE TWO NEW 15/2 CIRCUIT BREAKERS AND CONNECT TO NEW 1500W ELECTRIC WALL HEATER IN EACH TOILET WITH 2#12,1#12G,1/2"C.

#### **00 91 15.05: PRIOR APPROVAL**

The following products/manufacturers are approved only if items supplied and submitted meet or exceed the Construction Documents:

- A. SECTION 23 21 23 Pumps
  - 1. Patterson
- B. SECTION 23 82 23 Unit Ventilators
  - 1. Daikin

End of Addendum #2 Issued June 9, 2023

#### **DIVISION 23**

#### **SECTION 23 05 05: CHAIN LINK FENCE**

#### 23 05 05.01 **GENERAL**

#### A. SCOPE

- 1. The provisions of Section 23 05 00 apply to all the work in this Section.
- 2. Furnish all labor, material, equipment as necessary for the proper installation of chain link fence. Fence shall be 7'-0" in height and shall be sized as indicated on drawing. Provide gate as indicated on drawing.

#### 23 05 05.02 PRODUCTS

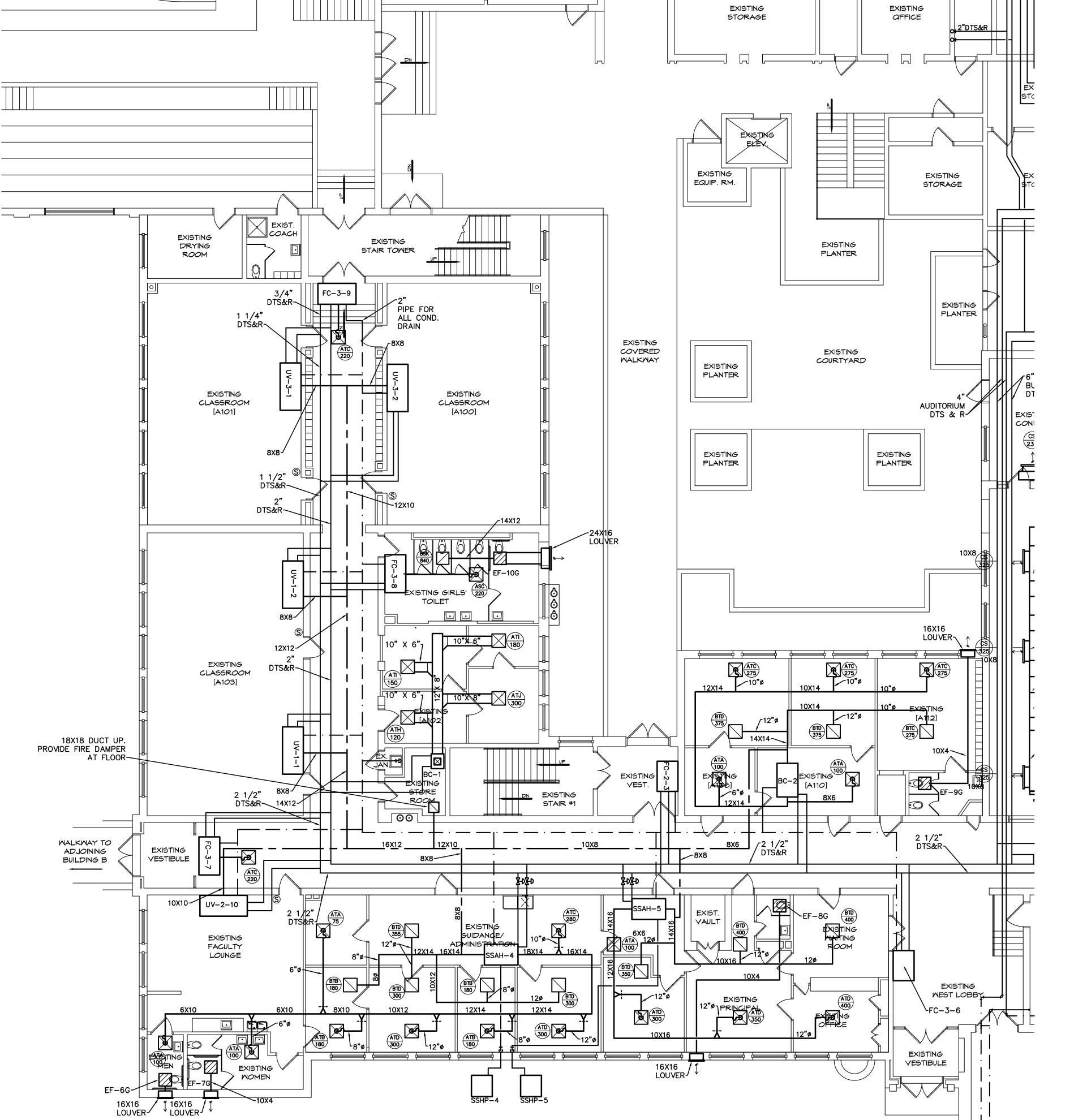
#### A. FENCE

- 1. Chain link fabric shall be aluminum coated conforming to ASTM-A491. Fabric shall be woven from not less than 9 gauge coated wire in 2" mesh. Fabric shall be knuckled at one selvage and twisted and barbed at the other selvage.
- 2. Line posts shall be C-Section roll formed from steel conforming to ASTM-A570, Grade 45, 1.875" X 1.625" coated with zinc aluminum alloy in accordance with ASTM-A525, or 2 3/8" O.D. standard weight galvanized pipe coated with hot dipped zinc in accordance with ASTM-A120.
- 3. Top and brace rails shall be formed section of 1 5/8" X 1 1/4" channel shaped rail coated with zinc-aluminum alloy in accordance with ASTM-A525 or 1.66" O.D. standard weight galvanized pipe coated with hot dipped zinc in accordance with ASTM-A120. Top rail couplings 6" minimum in length shall be spaced at maximum 21' centers. Fabric tie wire shall be spaced at 24" maximum centers.
- 4. All end, corner and pull posts shall be roll formed section 3.5" X 3.5" coated with hot dipped zinc or 2 7/8" O.D. galvanized standard weight pipe similarly coated.
- 5. Gate posts will be the same as end and corner posts provided gate leaf width does not exceed 6'0".
- 6. All fittings shall be pressed steel or malleable iron and shall be hot dipped galvanized conforming to ASTM-A153. Tie wires shall be minimum 9 gauge aluminum or 11 gauge galvanized steel. Line and terminal posts to be of sufficient length to allow for approximately 36" settings into concrete footing. Diameter of the footing to be 10" for line posts, and 12" for terminal posts. Maximum spacing of line posts to be 10'-0" unless noted on the drawings. Fence to follow ground line.

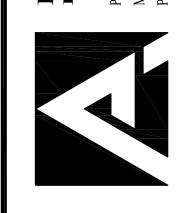
#### 23 05 05.03 EXECUTION

#### A. <u>EXPERIENCE</u>

1. Erector shall have a minimum of two years experience installing similar fencing.



CHITECTURE NACLE A FESSIONA

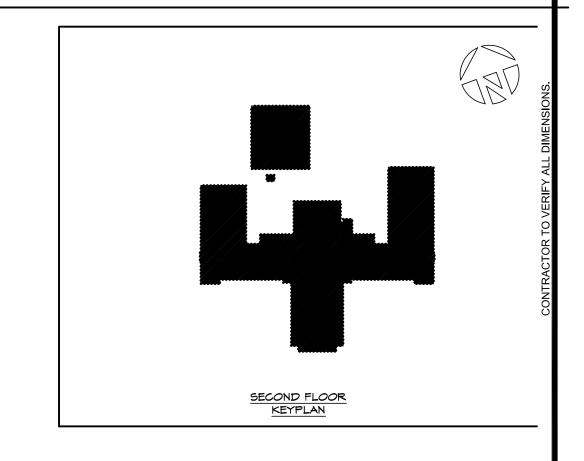


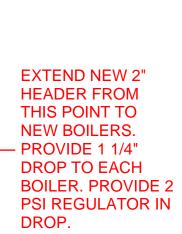
REVISION SCHEDULE

A DATE REFERENCE

6/8/23 ADDENDUM #2

M504





REVISION SCHEDULE

A DATE REFERENCE

6/8/23 ADDENDUM #2



M504

											PACKA	GED R	TU WIT	H GAS I	HEAT	SCHE	DULE												
		Nom.	EER	IEER	AFUE %	S.A.	O.A.	O.A.	ESP	Indoc	or Fan Motor	Соо	ling Perform	ance	Heati	ng Perfo	rmance					Ele	ctrical [	Data				Model	Remarks
Unit Tag	Area Served	Tons				Design	Min.	Мах.		HP	Volts/Ph.	EAT	МВН	MBH	EAT	INPUT	OUTPUT	Cor	nd. Fan		Comp	ressors	;	MCA	МОСР	Volts	Phase		
												DB/WB	Net Total	Net Sens.		MBH	MBH	No.	FLA	No.	RLA	No.	RLA						
RTU-1	GYMNASIUM	25	9.8	13	80	10000	1000	2000	1.5	4.6	208/3	80/67	264.0	200.0	70	250	202	2	4.3	1	49.5	1	29.6	122	150	208	3	TRANE YSJ300	1-12
RTU-2	GYMNASIUM	25	9.8	13	80	10000	1000	2000	1.5	4.6	208/3	80/67	264.0	200.0	70	250	202	2	4.3	1	49.5	1	29.6	122	150	208	3	TRANE YSJ300	1-12

- 1. REFER TO APPROVED MANUFACTURER LIST FOR ACCEPTABLE EQUAL MANUFACTURERS. FOR ALL SUBSTITUTIONS MECHANICAL CONTRACTOR SHALL COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR AND PHYSICAL DIMENSIONS WITH GENERAL CONTRACTOR PRIOR TO ORDERING.
- 2. SINGLE POINT ELECTRICAL CONNECTION. DISCONNECT BY ELECTRICAL CONTRACTOR.
- 3. MANUFACTURER FAN DATA BASED ON WET COIL AND CLEAN FILTERS. TSP = ESP + ECON HOOD PD.
- 4. CONSTANT AIR VOLUME WITH HOT GAS REHEAT FOR DEHUMIDIFICATION
- 5. PROVIDE UNIT WITH WATER LEVEL MONITORING DEVICE IN CONDENSATE DRAIN PAN TO SHUT UNIT DOWN IN ACCORDANCE WITH 2018 NCMC SECTION 307.2.3.1 WATER LEVEL MONITORING DEVICE. 6. ENTHALPY BASED OUTSIDE AIR ECONOMIZER WITH BAROMETRIC RELIEF.
- 7. UNIT SHALL BE TRUE HORIZONTAL DISCHARGE (3-10 TONS AND 27.5-50 TONS). HORIZONTAL DISCHARGE CURB IS NOT ALLOWED. PROVIDE MANUFACTURER'S MINIMUM 14" HIGH CURB. 8. 4" THICK MERV 14 DISPOSABLE FILTERS.
- 9. PROVIDE MANUFACTURER'S UNIT CONTROLLER AND INTEGRATE IN TO BUILDING AUTOMATION SYSTEM, INCLUDING MAPPING AND GRAPHICS. PROVIDE BACNET CARD. PROVIDE MANUFACTURER'S TEMPERATURE AND HUMIDITY SENSOR. UNIT CONTROLLER SHALL BE CAPABLE OF CONTROLLING HEATING, COOLING, DEHUMIDIFICATION, AND ECONOMIZER.
- 10. PROVIDE DEMAND CONTROLLED VENTILATION, CARBON DIOXIDE BASED. 11. PROVIDE GAS REGULATOR FOR 2-PSI GAS SERVICE AND DISTRIBUTION. PROPANE GAS SERVICE.

CARBON MONOXIDE DETECTOR SHALL BE WIRED TO FIRE ALARM FOR NOTIFICATION AND TO BAS FOR RTU SHUT DOWN.

12. COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE DUCT MOUNTED CARBON MONOXIDE DETECTOR IN EACH ROOFTOP UNIT SUPPLY DUCT AS REQUIRED TO MEET THE EXCEPTION TO 2018 NCMC, SECTION 313.4.1.3.

									SPLI	T SY	'STE	M HEAT I	PUM	P SC	HEDU	JLE								
Unit Tag	SEER	CFM	OA	ESP				Air Han	dling Ur	nit			DX C	oil Perfo	rmance			Hea	ating Pe	erformand	се			Remarks
	(EER)					Fan Mot	or	Hot Water I	Heating	Coil	MBH	Model	EAT	MBH	MBH	EAT	LAT	Capacity	Volts	Phase	MCA	MOCP	Model	1
					HP	Volts	Phase	GPM	EAT	EWT				Total	Sens.			MBH@47 F						
SSAH-1/SSHP-1	14	4000	800	1	3	230	3	4.5	70	180	87	TWE120	80/67	114	90	70	86.73	105	230	3	42	50	TWA120	1-5
SSAH-2/SSHP-2	14	1950	120	0.4	1	208	1	2.5	70	180	42	GAM5B0C60	80/67	59	42.3	70	86.73	52.5	460	3	10	15	4TWA4060	1-5
SSAH-3/SSHP-3	14	1950	120	0.4	1	208	1	2.5	70	180	42	GAM5B0C60	80/67	59	42.3	70	86.73	52.5	460	3	10	15	4TWA4060	1-5
SSAH-4/SSHP-4	14	1600	240	0.5	3/4	208	1	2	70	180	35	GAM5B0C48	80/67	47.5	35.1	70	85.8	48.2	460	3	8	15	4TWA4048	1-6
SSAH-5/SSHP-5	14	1200	180	0.4	1/2	208	1	1.5	70	180	26	GAM5B0B36	80/67	34	25.7	70	85.66	31.4	460	3	8	15	4TWA4036	1-6
1. MODEL NUMBE	RS BASE	<u> </u> Ed on ti	RANE. R	 REFER 1	<u> </u> ГО АРР	 PROVED	SUBSTIT	TUTION LIST	 FOR EC	UALS			5. PRC	     OVIDE H	 OT WATE	 ER COIL I	OR AUX	HEAT						

6. 3/4"HWS&R

- 1. MODEL NUMBERS BASED ON TRANE. REFER TO APPROVED SUBSTITUTION LIST FOR EQUALS
- 2. CONTRACTOR SHALL VERIFY SERVICE CLEARANCES FOR ALL SUBSTITUTIONS.
- 3. SINGLE POINT ELECTRICAL CONNECTION AT AIR HANDLING UNIT.
- 4. FOR LINE SETS BETWEEN 50 AND 175 FEET, INCLUDE THE FOLLOWING:
- CRANKCASE HEATER
- COMPRESSOR START ASSIST CAPACITOR AND RELAY

LIQUID - LINE SOLENOID VALVE OR HARD SHUTOFF TXV

							R	IINII CI	DI IT	CVCTE	M SCI	JED		<u> </u>			
Unit Tag	Unit Tag CFM CFM Fan Motor Cooling Performance Heating Performance Outdoor Unit															Model	
	High	Low	FLA	Volts	Phase	EAT	MBH Total	Efficiency SEER	EAT	Capacity MBH	Unit Tag	MCA	MOCP	Volts	Phase	Model (Outdoor Unit)	(Indoor Unit)
MSAH-1	380	240	0.9	208/230	1	80/67	12	19	70	18	MSHP-1	14	24	208/230	1	SUZ-KA12NAHZ	SEZ-KD12NA
MSAH-2	328	117	1	208/230	1	80/67	9	22	70	14	MSHP-2	10	15	208/230	1	MUZ-FS06NA	MSZ-FS06NA
MSAH-3	328	117	1	208/230	1	80/67	9	22	70	14	MSHP-3	10	15	208/230	1	MUZ-FS06NA	MSZ-FS06NA
MSAH-4	364	174	1	208/230	1	80/67	9	18	70	12	MSHP-4	12	15	208/230	1	MUZ-HM09NA	MSZ-HM09NA
MSAH-5	364	174	1	208/230	1	80/67	9	18	70	12	MSHP-5	12	15	208/230	1	MUZ-HM09NA	MSZ-HM09NA
MSAH-6	632	318	1	208/230	1	80/67	22.5	18	70	26	MSHP-6	14	15	208/230	1	MUZ-HM24NA	MSZ-HM24NA
MSAH-7	632	318	1	208/230	1	80/67	22.5	18	70	26	MSAC-1	14	15	208/230	1	MUZ-HM24NA	MSZ-HM24NA
MSAH-8	632	318	1	208/230	1	80/67	22.5	18	70	26	MSAC-2	14	15	208/230	1	MUZ-HM24NA	MSZ-HM24NA
MSAH-9	632	318	1	208/230	1	80/67	22.5	18	70	26	MSAC-9	14	15	208/230	1	MUZ-HM24NA	MSZ-HM24NA

- 1. MODELS BY MITSUBISHI. REFER TO APPROVED MANUFACTURERS LIST FOR EQUALS.
- 2. MOUNT INDOOR SECTION TIGHT TO BOTTOM OF CEILING AND WALL.
- 3. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT. M.C. SHALL COORDINATE POWER REQUIREMENTS FOR ALL SUBSTITUTIONS.
- 4. REFRIGERANT LINES AND ACCESSORIES PER SPECS AND AS RECOMMENDED BY UNIT MFG.
- 5. PROVIDE FACTORY MOUNTED CONDENSATE PUMP

	BLOWER COIL SCHEDULE																
Unit	Unit CFM ESP				Motor			Cooling	Performa	ance		Mount	H/	Pipe Si	zes (in)	Mfgr & Model No.	Remarks
Tag	Unit	Min.	1	HP	Volts	Phs	EAT	MBH	MBH	GPM	EWT		V	Coils	CD w/		
		OA					DB/WB	Total	Sens.		(F)				Trap		
BC-1	. 750	100	1	1	240	3	80/67	30	20	5	45	FLOOR	V	1-1/4"	1.00"	TRANE BCHE036	1-8
BC-2	1025	150	1	1	240	3	80/67	40	27	7	45	-	Н	1-1/2"	1.00"	TRANE BCVE090	1-8
BC-3	2915	350	1	3	240	3	80/67	115	79	20	45	FLOOR	V	2"	1.00"	TRANE BCVE090	1-9
BC-4	2915	350	1	3	240	3	80/67	115	79	20	45	FLOOR	V	2"	1.00"	TRANE BCVE090	1-9
BC-5	2915	350	1	3	240	3	80/67	115	79	20	45	FLOOR	V	2"	1.00"	TRANE BCVE090	1-9

- 1. REFER TO APPROVED MANUFACTURER'S LIST FOR EQUALS.
- COORDINATE POWER REQUIREMENTS FOR ALL SUBSTITUTIONS.
- 2. CONTROL VALVE MAX. PD = 12'. CONTROL VALVE TO SEAT AGAINST 100' OF PRESSURE UNLESS NOTED OTHERWISE.
- 3. WALL MOUNTED T'STAT.
- 4. 2" PLEATED MERV 8 FILTERS (INSIDE UNIT).
- 5. MFGR'S FAN DATA INCLUDES UNIT CASING, WET COIL & CLEAN FILTER.
- 6. PIPING CONNECTIONS TO UNIT: 1 1/4" CD W/ TRAP,
- ONE COIL DOES BOTH COOLING AND HEATING.
- 7. 2-WAY CONTROL VALVE.
- 8. PROVIDE WITH BAS COMPATIBLE DDC CONTROLLER WITH TEMPERATURE SENSOR.
- 9. ECONOMIZER CYCLE

Jnit Tag	CFM	Watts	Volts	Phase	Model	Remarks
EWH-1	175	1000	120	1	3320	1-4
EWH-2	175	1000	120	1	3320	1-4
EWH-3	175	1500	240	1	3320	1-4
EWH-4	175	1500	240	1	3320	1-4
ECH-1	250	5000	208	3	6300	1-4
ECH-2	250	5000	208	3	6300	1-4

- 1. MODEL NUMBERS BASED ON MARKEL. REFER TO APPROVED MANUFACTURER LIST FOR EQUALS
- 2. BUILT-IN (POSITIVE OFF) T'STAT BY MFG SHALL SERVE AS DISCONNECT.
- 3. PROVIDE SURFACE MOUNTING ADAPTER.
- 4. T-STAT SHALL BE USER-ADJUSTABLE WITHOUT TOOLS.

					FAN S	CHED	JLE				
Unit	CFM	ESP	Fan	Sones	Drive	HP	Volts	Phs	Туре	Model No.	Rmks.
Tag		(in.)	RPM	(dBA)		(WATTS)					
EF-1	840	.25	952	8.6	DIRECT	1/2	115	1	IN	SQ-120-VG	1-4
EF-2	490	.25	900	3.7	DIRECT	1/4	115	1	IN	SQ-100-VG	1-4
EF-3	490	.25	900	3.7	DIRECT	1/4	115	1	IN	SQ-100-VG	1-4
EF-4	840	.25	952	8.6	DIRECT	1/2	115	1	IN	SQ-120-VG	1-4
EF-5	840	.25	952	8.6	DIRECT	1/2	115	1	IN	SQ-120-VG	1-4
EF-1G	150	.25	1400	1.5	DIRECT	48	115	1	С	SP-A190	1-4
EF-2G	150	.25	1400	.4	DIRECT	(6)	115	1	С	SP-A190	1-4
EF-3G	200	.25	900	4.2	DIRECT	1/10	115	1	IN	SQ-90-VG	1-4
EF-4G	200	.25	900	4.2	DIRECT	1/10	115	1	IN	SQ-90-VG	1-4
EF-5G	430	.25	900	3.7	DIRECT	1/4	115	1	IN	SQ-100-VG	1-4
EF-6G	75	.25	935	.4	DIRECT	(6)	115	1	С	SP-80-VG	1-4
EF-7G	75	.25	935	.4	DIRECT	(6)	115	1	С	SP-80-VG	1-4
EF-8G	75	.25	935	.4	DIRECT	(6)	115	1	С	SP-80-VG	1-4
EF-9G	150	.25	1400	.4	DIRECT	(6)	115	1	С	SP-A190	1-4
EF-10G	840	.25	952	8.6	DIRECT	1/2	115	1	IN	SQ-120-VG	1-4

- 1. MODELS BY GREENHECK. EQUALS BY PENN, ILG, LOREN COOK.
- 2. TYPES: IN=INLINE, C=CEILING MOUNTED
- 3. DISCONNECT PROVIDED BY FAN MANUFACTURER
- 4. INTERLOCK CEILING MOUNTED FAN WITH LIGHT SWITCH. START/STOP INLINE FAN THROUGH BAS.