Addendum #10

East Lake Community Center Renovations

CONTRACT NO. Y-17-005

Bid schedule per this Addendum

Pre-Bid Meeting	January 9 th , 2020 at 10:00am
Last Day for Questions	January 17 th , 2020
Bid Opening	January 30th, 2020 at 2:00 pm

Attachments:

DRAWINGS

<u>Mechanical</u>

Sheet M4.1 MECHANICAL ROOF PLAN (Revision 1 dated January 24, 2020)

• Added note detailing unit flow configuration and curb minimum height.

Sheet M8.1 MECHANICAL SCHEDULES & NOTES (Revision 1 dated January 24, 2020)

• RTU-6a/b Fan E.S.P. increased to account for static drop in curb. Note added describing new roof curb height restrictions.

END OF ADDENDUM #10









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ISSUE DATES INITIAL ISSUE 12/20/19 1 ADDENDUM 10 01/24/20

JOB NO. D'WN CK'D 18-072 BRF/HSW CJW IVI~. | MECHANICAL ROOF PLAN



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	Rooftop Unit Schedule - Gas Heat																			
				Air Flow		External		Cooling	_	Enerav	Gas H	eating			Elec	trical	-			
			Supply	Outo	oor Air	Static	Nominal			Efficiency					Number of			Operating	,	
Mark	Manufacturer	Model	Air	Minimum	Maximum	Pressure	Capacity	Net Total	Net Sensible	Rating	Input	Output	Filter	Voltage	Poles	MCA	MOCP	Weight	Notes	
RTU-1	Irane	YHC060E3	2,000 CFM	100 CFM	415 CFM	0.75 in-wg	5.0 ton	57,020 Btu/h	46,340 Btu/h	12.0	100,000 Btu/h	81,000 Btu/h	MERV 8	208 V	3	29 A	40 A	746 lb	1-9	
RTU-2	Trane /	YHC048F3	1,600 CFM	900 CFM	900 CFM	0.75 in-wg	4.0 ton	47,050 Btu/h	36,930 Btu/h	12.0	100,000 Btu/h	81,000 Btu/h	MERV 8	208 V	3	26 A	35 A	692 lb	1-9	
RTU-3	Trane	YHC048F3	1,6000 CFM	60 CFM	800 CFM	0.75 in-wg	4.0 ton	47,050 Btu/h	36,930 Btu/h	12.0	100,000 Btu/h	81,000 Btu/h	MERV 8	208 V	3	26 A	35 A	692 lb	1-9	
RTU-4	Trane	YHC048F3	1,600 CENT	60 CFM	915-CFM	0.75 in-wg	4.Q ton	47,050 Btu/h-	36,930 Btu/h	12.0	100,000 Btu/k	81,000 Btu/k	MER V 8	208 V	*	26A	35A	692 10	THR ~	K
RTU-5	Trane	YHC072F3	1, 920 CFM	100 CFM Y	460 CFM Y	0.75 M-wg	6.0 ton	69,0 7 0 Btu/h	49,3/10 Btu/h	18.1	20,000 Btu/h	97,200 Btu/h Y	MĚRV 8 Y	208 V Y	$3 \gamma^{\sim}$	37 A Y	50 A Y	1408	1-10	$ \downarrow$
RTU-6A	Trane	YHH210G3RL	6,000 CFM	500 CFM	1,505 CFM	1.75 in-wg	17.5 ton	199,920 Btu/h	152,450 Btu/h	11.8	350,000 Btu/h	280,000 Btu/h	MERV 8	208 V	3	83 A	110 A	2723 lb	1-5,7-11	1
RTU-6B	Trane	YHH210G3RL	6,000 CFM	500 CFM	1,500 CFM	1.75 in-wg	17.5 ton	199,920 Btu/h	152,450 Btu/h	11.8	350,000 Btu/h	280,000 Btu/h	MERV 8	208 V	3	83 A	110 A	2723 lb	1-5,7-11	
Notes: 1. Condense 2. Manufactu 3. Enthaply of 4. Unit mour 5. Convenier 6. Roof curb 7. Hot Gas F 8. VFD Fan 9. Unit mour 10. Dual Com 11. Roof curb Coordiant	INDEX ITARE IMPLZIUGSRL 6,000 CFM 1500 CFM 17.5 ton 149,920 Bturn 152,450 Bturn 11.8 350,000 Bturn MERV 8 208 V 3 183 A 110 A 27.23 to 15.7.11 Notes: 1. Condenser coil hail guard . . Manufacturer's 7-day programmable thermostal .																			

oproved Alternates: Carrier, Daikin, Johnson Controls (Any Alternate Must be Able to Meet Clearance of Low Roof RTVS)

			Supply Fan			Exhaust Air			Load Reduction			Electrical			Operating		
Mark	Manufacturer	Model	CFM	ESP	HP	CFM	ESP	HP	Cooling	Heating	Effectiveness	Voltage	Phase	MCA	MOCP	Weight	Notes
ERV-1	RenewAire	HE1.5JRTVS355STANTL	900 CFM	0.50 in-wg	1.0 hp	900 CFM	0.50 in-wg	1.0 W	24,393 Btu/h	46,335 Btu/h	59.5%	208 V	3	5 A	15 A	548 lb	1-5
Netoo																	

1. Provide w/Frost Protection

2. Provide w/Insulated Roof Curb Sloped to Meet Roof - Height TBD

3. Provide w/MERV 8 Filters (Supply and Exhaust) 4. Must Be Able to Operate in Exhaust Only Application (Only During RTU-2 Economizer Cycle)

5. Provide w/Non-Fused Disconnect

Approved Alternates: Ruskin, Greenheck, or Equivalent

	Electric Wall Heater Schedule									
ark	Manufacturer	Model	Watts	Voltage	Number of Poles	Operating Weight	Location	Control	Notes	
/H-1	Markel	E3321TD-RP	750 W	120 V	1	26 lb	Recessed	Integrated Thermostat	1-2	

1. Electric wall heater shall be provided with electrical disconnect, protective devices, sensors, and interlocks required for a complete, operable system. 2. Electric wall heater shall be hard wired, plugs are not acceptable.

Approved Alternates: QMark, Dayton

	High-Wall Ductless Split System Schedule																
	Outdoor Section Indoor Section																
			Nominal	Cooli	ng Coil	Ratings		Elec	trical								
			Cooling					Number of			Operating				Operating		
Mark	Model	Manufacturer	Capacity	Total	Sensible	SEER	Voltage	Poles	MCA	MOCP	Weight	Mark	Model	Air Flow	Weight	Notes	
OU-1	PUY-A12	Mitsubishi Electric	12,000 Btu/h	11,458 Btu/h	9,500 Btu/h	15.2	208 V	1	11 A	28 A	93 lb	DS-1	PKA-A12	425 CFM	55 lb	1-3	
Notes:																	

1. Provide w/Variable Speed Inverter Driven Compressor

2. Provide w/7-Day Programmable Digital Thermostat

3. Electrical Shall Provide Conduit Pull String for Low Power Wiring by Mechanical.

Approved Alternates: LG, Daikin, or Equivalent

Air Terminal Schedule

Mark	Manufacturer	Model	Description	Material	Size	Count
E1	Price	80	Ceiling Exhaust Grille	Steel	12"x12"	5
R1	Price	80	Ceiling Return Grille	Steel	12"x24"	1
R2	Price	80	Ceiling Return Grille	Steel	24"x24"	5
S1	Price	SCD	Rectangular Face Ceiling Supply Diffuser - 24"x24" Face	Steel	6"ø	1
S2	Price	SCD	Rectangular Face Ceiling Supply Diffuser - 24"x24" Face	Steel	8"ø	14
SW1	Price	520D	Sidewall Supply Register	Steel	12"x6"	18
SW2	Price	520D	Sidewall Supply Register	Steel	20"x8"	32
SWR1	Price	535	Sidewall Return Grille	Steel	24"x24"	1
SWR2	Price	535	Sidewall Return Grille	Steel	42"x20"	1
SWR3	Price	91	Sidewall Return Grille - Heavy Duty Gym Grille	Steel	30"x30"	5

1. Noise Criteria Shall Not Exceed 25

2. Contractor Shall Coordinate Border with Ceiling Type (Lay-In Or Gyp.) Refer to Mechanical Floor Plan(S) For CFM

4. Air Devices Are 4-Way Throw (Unless Noted Otherwise on Mechanical Floor Plans)

5. Supply Air Terminals Shall Be Supplied with Opposed Blade Damper 6. Provide Manual Volume Damper at Main Trunk Take-Off For Balancing; Supply and Return

7. Air Terminal Finishes Shall Be Per Architect

Approved Alternates: Metalaire, Titus

Energy Recovery Ventilator (ERV) Schedule

Mechanical Symbols Sections - Indicates Similar to Noted View When Present 1 SIM – View Number on Sheet <a>M301→ - Sheet on Which Detail Appears Air Terminals CD1 - Mark (See Air Terminal Schedule) 6"ø - Duct Connection Size 125 🛥 — Air Flow (cfm) Supply Air Duct Up Return / Outdoor Air Exhaust Air Duct Up — — Duct Centerline (Round Duct) Damper in Ductwork, if Damper is Unlabeled, Assume Balancing Damper, Manual (B) Damper Types: • **B** = Balancing Damper, Manual • **2-P** = 2-Position Damper, Motorized Actuator • M = Full Modulating Damper, Motorized Actuator F = Fire Damper • **FS** = Combination Fire / Smoke Damper Ceiling Diffuser with Flexible Duct Connection and 4-**⊐++**₩ Way Throw Direction Arrows, if Throw Indication Arrows Are Not Present, Assume 4-Way Throw _/\► Direction of Air Flow -∪-> Door Undercut (3/4" Unless Otherwise Indincated) Mitered Rectangular Duct Elbow with Turning Vanes (Provide Turning Vanes in All Rectangular Supply - 3. Ductwork Even if Vanes Are Not Indicated, Turning Vanes Not Required in Return Air, Outdoor Air, And Exhaust Air Ducts Unless Indicated) 18"x12" Rectangular Duct Round Duct with with Dimensions || Dimensions (T)+48" A.F.F. Thermostat - Wall Mounted with Unit Designation and Mounting Height to Bottom of Thermostat (Mounting <RTU-*> Height 48" A.F.F. Unless Noted Otherwise on Plans) \bigcirc Thermostat in Lockbox (H)+48" A.F.F Humidistat - Wall Mounted with Unit Designation and Mounting Height to Bottom of Thermostat (Mounting RTU-1 Height 48" A.F.F. Unless Noted Otherwise on Plans) (S) Remote Temperature Sensor R Thermostat Remote Display CO Carbon Dioxide Sensor ≻—CD—→ Condensate Drain Piping (CD)

- Relocate Existing — — — Ç Center Line
- Connection - New/Existing

Mechanical Controls Notes

Controls for Gas RTU's

- RTUs to Have Standard Thermostat Wiring Interface Supply Temp, Space Temperature, Return Air Humidity, and CO2 Sensors Provided by ECI
- 0-10VDC Outside Air and Return Air Economizer Dampers to be Provided by Unit Manufacture Controlled by ECI Units will be Connected to Existing City of Chattanooga City Wide
- Building Automation System. Controls to be Delta Controls by ECI – Contact Steve Green 423-629-4014 ext 104

Gas RTU's Sequence of Operations

- RTU-2 to Operate in Conjunction with ERV-1 at Design Outdoor Air Load During Occupied Hours During Economizer Mode, Wheel for ERV-1 to Deenergize, Fan to Continue Operating. Calls for Dehumidification Shall Override Economizer Cycle Until Design RH Has Been Met
- RTU-1/RTU-3/RTU-4/RTU-5/RTU-6a/b Outdoor Air Dampers to Modulate Open Upon a Call for CO2 as Needed up to Design Outdoor Air CFM
- For all RTUs, Upon a Call For Humidity Control Units to Enter Dehumidification Cycle.

Controls for Ductless Mini Splits

- Units to be Provided with Compatible PAC-US44CN-1 Thermostat Interface Supply Temp, Space Temperature, Sensors Provided by ECI
- Units will be Connected to Existing City of Chattanooga City Wide Building Automation System. Controls to be Delta Controls by ECI – Contact Steve Green
- 423-629-4014 ext 104 Ductless Mini Splits Sequence of Operations

HP-1 in Conjunction with FC-1 to Maintain Space Setpoint Temperature

Mechanical Project Notes

- All mechanical work shall be done in accordance with all state and local laws and ordinances and in a manner satisfactory to the authority having jurisdiction. It shall be the responsibility of the Mechanical contractor to obtain all required permits, inspections and pay all applicable fees.
- The mechanical contractor shall coordinate the routing of ductwork with other trades and ensure there is available space for all involved occupations before fabrication of ductwork begins. Ductwork sizes noted on mechanical plans are net clear inside dimensions. The mechanical contractor shall not pass ductwork, piping, or place
- mechanical equipment directly over any electrical panels or electrical equipment. Coordinate with the electrical contractor to maintain clearances as required by codes. Fire dampers are required where ductwork penetrates a one or more
- hour fire resistance rated assembly. [International Mechanical Code section 607 and International Building code 716.5]. Fire dampers may be omitted in 1-hour rated fire partitions where the duct penetrating the wall is not larger than 100 in², the duct does not terminate at a wall register, steel duct material is at least 0.0217 in. Thick, and the duct is located above a ceiling [International Building Code 716.5.4 and International Mechanical Code 607.5.3]. Fire dampers are also required where ducts pass through fire rated floor assemblies. Coordinate placement of all fire dampers with rated assemblies indicated on the architectural plans.
- Coordinate the location of all ceiling mounted air terminals with architectural reflected ceiling plans.
- The mechanical contractor shall furnish all labor, materials, equipment, services and incidentals required for a complete and operating facility. All mechanical equipment shall be provided complete with electrical starter, protective devices, and interlocks required for complete operable
- system Mechanical equipment placement shall allow for full
- service/maintenance as recommended by the equipment manufacturer. 9. Color and finish of air terminals, louvers, and wall caps shall be coordinated with the architect.
- 10. The mechanical contractor is responsible for the testing, adjusting and balancing of all air systems.
- 11. All ductwork shall be connected to mechanical equipment with flexible U.L. listed connectors. 12. Outdoor air intakes shall not be located within 10'-0" of exhaust/relief
- louvers, wall caps, plumbing vents, or roof caps. 13. Units with air flows above 2,000 cfm must have a duct mounted smoke detector mounted in the supply duct downstream of all filters [2002 NFPA 90a 6.4.2.1]. Smoke detectors are also required in the return air stream prior to any exhausting from the building or mixing with outdoor air unless all portions of the building served by the air distribution system are protected by area smoke detectors connected to a fire alarm system in accordance with the international fire code [International Mechanical Code 606.2.1 and exception]. These smoke detectors must be wired to a fire alarm system when one is provided in a constantly attended location for supervisory signals [International Mechanical Code 606.4.1 and 2002 NFPA 90a 6.4.4]. Local ordinances may have more stringent requirements. Coordinate with electrical contractor. See
- electrical drawings for locations. I. Insulating materials shall have a flame spread index not more than 25 and a smoke-developed index not exceeding 450 in accordance with ASTM E 84.
- 5. The mechanical contractor shall provide access panels in non-lay-in type ceiling (example gypsum ceilings) for all mechanical valves and dampers.
- 16. Where ductwork is visible through registers and grilles, the mechanical contractor shall prime and paint the interior of the ductwork black. 17. The mechanical contractor shall size refrigerant line sets in accordance
- with the equipment manufacturer's guidelines. 18. Furnish mechanical as-built drawings as well as Operations & Maintenance manuals for all mechanical systems to the owner within 90 days of system acceptance by the authority having jurisdiction.

HVAC Submittals The mechanical contractor shall provide the HVAC equipment submittals with an electrical summary sheet for use by the electrical engineer. The sheet shall indicate voltage, phase, MCA, and MOCP for all HVAC equipment submitted. Electrical values that conflict with information provided in the HVAC equipment submittals is sole responsibility of the mechanical contractor.

Mechanical Sheet List

Sheet Number	Sheet Name	Current Revision Description
M1.1	MECHANICAL FLOOR PLAN	
M3.1	MECHANICAL SECTIONS	
M4.1	MECHANICAL ROOF PLAN	ADDENDUM 10
M8.1	MECHANICAL SCHEDULES & NOTES	ADDENDUM 10
M8.2	MECHANICAL DETAILS	

Design Conditions							
Outdoor							
Design Data Location	Chattanooga, TN						
Heating db (99.6%)	19.6						
Cooling db (0.4%)	95.0						
Mean Coincident wb (0.4%)	74.5						
Weather Station	Chattanooga AP, TN, USA (WMO:723240						
Current Energy Code	2012 IECC						
Climate Zone	4A						
	Indoor						
Heating db	70						
Cooling db	74						
Cooling Relative Humidity	55% (Maximum)						
db: Dry Bulb °F wb: Wet Bulb °F							

Note: Outdoor conditions based upon ASHRAE Climatic Design Conditions 2017.

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ISSUE DATES INITIAL ISSUE 12/20/19 1 ADDENDUM 10 01/24/20







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