IOWA DEPARTMENT OF NATURAL RESOURCES LAND & WATERS BUREAU WALLACE STATE OFFICE BUILDING

Lake Rathbun Law Enforcement Shop Appanoose County, IA PROJECT NUMBER: 23-05-04-01

January 13, 2023

This Addendum is issued to modify, explain or correct the original Drawings and Specifications, and is hereby made a part of the Contract Documents. Please attach this Addendum to the Project Manual in your possession. Insert the number and issue date of this Addendum in the blank space provided on the Proposal Form.

Substitutions:

- 1. The following Structural Insulated Panel manufacturers are approved to bid on this project:
 - a. EPS Buildings
 - b. Extreme Panel Technologies
 - c. Enercept
 - d. InsulSpan
 - e. ThermaFoam

Clarifications:

1. Structural Insulated Panels (SIP panels) shall only be for the vertical wall structure, the roof will not receive SIP panels. The attic space shall receive R-42 batt insulation laid on the liner panel, 2x blocking and structure required to support the insulation shall be incidental.

Specifications:

1. Specification Section 06121 – Structural Insulated Panels shall be superseded by the attached specification section attached. Please note that structural calcs and certification shall be for the entire building package and not separated out into separate components.

^{*}Additional Mechanical and Electrical Addenda has been prepared by KCL engineers (attached)



300 4th Street West Des Moines, IA 50265 515.724.7938

CONSULTING ENGINEERS

Mechanical Electrical

Plumbing Lighting

Technology

IDNR Rathbun Shop and Office Addendum #1 January 13, 2023

This addendum is issued to modify, clarify, or amend the original Project Drawings and Specifications and is hereby made part of the Contract Documents. The Contractor shall be responsible for incorporating items in this Addendum to the Work. The following shall take precedence over anything to the contrary in the Drawings or Specifications.

Mechanical Drawings:

M-300 - MECHANICAL SCHEDULES

a. REVISE Split System Unit and Condensing Unit Schedules as shown on attached drawing.

Electrical Drawings:

- 1. Drawing E-400 ELECTRICAL SCHEDULES:
 - a. **CLARIFY** specifications within Lighting Fixture Schedule.
 - b. Refer to attached full size sheet E-400

Electrical – Approved Manufacturers:

The following shall be added to specifications as approved manufacturers:

<u> Light Fixture Type</u>	<u> Manufacturer</u>
F1	LITHONIA
F2	PRESCOLITE, JUNO
F3	COLUMBIA LIGHTING
W1	LITHONIA

Drawings Attached: M-300, E-400.

End of Mechanical and Electrical Addendum.

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
- 1. Structural insulated panels for wall applications.
- B. Related Sections:

Section 06100 Rough Carpentry Section 06190 Wood Trusses

1.2 REFERENCES

- A. ASTM International (ASTM):
- 1. C578-06 Standard Specification for Preformed Cellular Polystyrene Thermal Insulation.
- 2. D2559-03 Standard Specification for Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet Use) Exposure Conditions.
- 3. E84-05 Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. National Institute of Standards and Technology (NIST):
- 1. Product Standard PS 1-95 Construction and Industrial Plywood.
- 2. Product Standard PS 2-04 Performance Standards for Wood-Based Structural Use Panels.
- 3. Product Standard PS 20-05 American Softwood Lumber Standard.
- C. Western Wood Products Association (WWPA) G-5 Western Lumber Grading Rules.

1.3 SYSTEM DESCRIPTION

- A. Design Requirements: Panel system design performed by or under direct supervision of professional Structural Engineer with experience in work of this Section.
- B. Performance Requirements; Design panel system to withstand:
- 1. Live and dead loads in accordance with applicable building code.

1.4 SUBMITTALS

- A. Provide submittals in accordance with Section 00812 and section 01300.
- B. Product Data: Submit manufacturer's product information, specifications and installation instructions for building components and accessories.
- C. Shop Drawings: Submit four complete sets of erection drawing showing post spacing, endwall, sidewalls, transverse cross sections, installation details to clearly indicate proper assembly of building components, and supporting engineering design calculation.

- D. Certification: Submit written certification prepared and signed by a professional engineer registered to practice in the state of Iowa, verifying that building design meets indicated loading requirements and codes of authorities having jurisdiction.
 - 1. Drawings and calculations shall be stamped and certified by a structural engineer registered in the state of Iowa. This Certification shall be for the entire building package and all structural components

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Minimum 2 years experience in work of this Section.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver panels to site with manifest drawings containing following information:
- 1. Manufacturer.
- 2. Product standard and type.
- 3. Flame spread/smoke developed rating.
- 4. Identification of quality assurance agency.
- B. Store panels flat, on level base, evenly supported.
- C. Cover panels during transportation and storage with waterproof coverings, properly vented.
- D. Protect panels from moisture absorption and exposure to sunlight.
- E. When lifting panels by crane, support panels with straps or I-bolts.

1.7 SEQUENCING

- A. Cover wall panels with moisture barrier or final wall cladding as soon as practical after erection.
- B. Cover roof panels with water-resistant paper or roofing underlayment immediately after erection.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Approved Manufacturers: Review by architect.
- B. Substitutions: Approval by architect

2.2 MATERIALS

- A. Insulation:
- 1. Expanded polystyrene, ASTM C578, Type I.
- 2. Minimum density: 0.90 pounds per cubic foot.

- 3. Maximum flame spread/smoke developed rating: 75/450, tested to ASTM E84.
- B. Facings:
- 1. Plywood/OSB conforming to NIST PS 1 and PS 2.
- 2. Bear trademark or certification of inspecting agency in accordance with NIST PS 2.
- C. Lumber Framing:
- 1. Species: Spruce-Pine-fir or equivalent.
- 2. Grade: WWPA No. 2.
- D. Panel Finish: By Contractor
- 2.3 ACCESSORIES
- A. Panel Adhesive: ASTM D2559, Type II, Class 2.
- B. Panel Sealant: Type recommended by panel manufacturer.
- C. Fasteners: Galvanized or corrosion resistant coated; types and sizes as recommended by panel manufacturer.

2.4 FABRICATION

- A. Fabricate panels with 7/16 to 3/4 inch thick plywood/OSB facings of thickness to meet design criteria pressure laminated to insulation core using adhesive.
- C. Panel Thickness: 8-1/4 inches.
- D. R-Value: 33.0

PART 3 - EXECUTION

3.1 INSTALLATION

Structural Insulated Panels 06 12 19-4 Energy Panel Structures 01/17/07

A. Install panel system in accordance with manufacturer's instructions and approved Shop Drawings.

- B. Install continuous double bottom plate of width equal to panel:
 - 1. Attach bottom plates at exterior walls to concrete foundation with anchor bolts spaced maximum 6 feet on center and within 12 inches of ends of pieces, with minimum of two anchors per piece, or with foundation anchor straps.
 - 2. Attach interior bottom plates to concrete foundation with approved anchors.
- C. Install continuous top plates of width equal to panel. Overlap plates at corners, intersections and splines.

- D. Drill 1-1/2 inch diameter access holes in splines to align with electrical chases.
- E. Apply panel sealant in continuous beads to wood-to-wood, wood-to-insulation, and insulation-to-insulation joints per manufacturer's recommendations.
- F. Fasten panels to framing through both facing surfaces unless otherwise indicated.
- G. Provide temporary bracing during erection and until final connections are complete.
- H. Do not install panels directly on concrete; use double plate sill detail or place sill sealer under panels.
- I. Do not place plumbing in panels without approval of panel manufacturer.
- J. Do not cut panel skins for electrical chases. Cut for electrical boxes as needed, but do not cut through to panel edges.

END OF SECTION

BRANCH PANEL: A

LOCATION: ELEC/MECH SUPPLY FROM: UTILITY

MOUNTING: SURFACE **ENCLOSURE**: TYPE 1

VOLTAGE: 120/240 SINGLE PHASES: 1

WIRES: 3

SCCR RATING: 22k A **MAINS TYPE**: MCB MAINS RATING: 200 A MCB RATING: 200 A

CIRCUIT DESCRIPTION	Р	AMP	CKT NO		A	ı	В	CKT NO	AMP	Р	CIRCUIT DESCRIPTION
LIGHTING	1	20 A	1	1108	100			2	20 A	1	EF-1
RCPT EXTERIOR	1	20 A	3			720	100	4	20 A	1	EF-2
RCPT KITCHENETTE	1	20 A	5	360	1020			6	20 A	1	GFS-1, RCP-1
RCPT GARAGE	1	20 A	7			900	510	8	20 A	1	CP-1
DOOR OPENER	1	20 A	9	920	500			10	20 A	1	B-1
DOOR OPENER	1	20 A	11			920	2250	12	25 A	2	WH-1
DOOR OPENER	1	20 A	13	920	2250			14	25 A	2	Wn-1
DOOR OPENER	1	20 A	15			920	1835	16	20 A		CU-1
CORD REELS	1	20 A	17	540	1835			18	20 A	2	CO-1
RCPT KITCHENETTE	1	20 A	19			900	100	20	20 A	1	MOD-1
RCPT MEZZ	1	20 A	21	720	1200			22	20 A G	1	RCPT REFRIGERATOR
MW	1	20 A	23			1600	1260	24	20 A	1	RCPT GARAGE
HAND DRYER	1	20 A	25	1500	180			26	20 A	1	RCPT DISPOSAL
SPARE	1	20 A	27			0	0	28	20 A	1	SPARE
SPARE	1	20 A	29	0	0			30	20 A	1	SPARE
	13153 VA			1201	15 VA			•			

"G" INDICATES GFCI TYPE BREAKER.

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL 1	TOTALS
LIGHTING	1108 VA	125.00%	1385 VA		
POWER	14720 VA	100.00%	14720 VA	TOTAL CONN. LOAD:	25168 VA
RECEPTACLE	9340 VA	100.00%	9340 VA	TOTAL EST. DEMAND:	25445 VA
				TOTAL CONN.:	105 A
				TOTAL EST. DEMAND:	106 A

100 A

110 A

EQUIPMENT CONNECTION SCHEDULE

INT INTEGRAL WITH EQUIPMENT FROM FACTORY

N... NON-FUSED DISCONNECT SWITCH, HEAVY...

M... MANUAL MOTOR STARTER WITH FUSES

R... RUN STATUS RELAY, NORMALLY OPEN

SSP START/STOP PUSHBUTTON WITH PILOT

RD RETURN AIR DUCT DETECTOR

SD SUPPLY AIR DUCT DETECTOR

SS START/STOP PUSHBUTTON

1. INCLUDE AUXILLIARY CONTACTS AND LOW-VOLTAGE WIRING TO AUXILLIARY EQUIPMENT THAT RUNS IN TANDEM WITH..

ST SHUNT TRIP

- 1 NEMA 1 ENCLOSURE
- 3R NEMA 3R ENCLOSURE 4 NEMA 4 ENCLOSURE
- 4X NEMA 4X ENCLOSURE
- BO PROVIDED BY OTHERS
- CB CIRCUIT BREAKER IN PANEL
- C... COMBINATION STARTER/DISCONNECT
- CP CORD AND PLUG PROVIDED WITH UNIT
- E... ENCLOSED CIRCUIT BREAKER
- FAR FIRE ALARM SHUTDOWN RELAY

- GF GROUND FAULT CIRCUIT INTERRUPTION
- T... TIME DELAY OFF RELAY
- FDS FUSED DISCONNECT SWITCH, HEAVY... TS TOGGLE SWITCH WITH PLUG FUSE VFD VARIABLE FREQUENCY DRIVE
- H... HAND-OFF-AUTO

	ELEC1	TRICAL CH	ARACTER	ISTICS	<u> </u>	DISCONNECT				
<u>TAG</u>	VOLTAGE	PHASE	MOTOR HP	<u>KW</u>	<u>MCA</u>	TYPE	SIZE (AMPS)	NEMA RATING	FUSE SIZE (AMPS)	<u>REMARKS</u>
B-1	120 V	1			15	СВ				
CP-1	120 V	1	0.08	-	-	СВ				PROVIDE DISCONNECT
CU-1	240 V	1			18	NFD	30	3R		PROVIDE AND INSTALL DISCONNECT
EF-1	120 V	1	FHP			INT				CONNECT TO LOCAL OCCUPANCY SENSOR WITH LIGHTS IN SPACE.
EF-2	120 V	1	1/4			HOA	20	1		POWER MOTORIZED DAMPER TO OPEN/CLOSE WITH FAN. INSTALL PROVIDED HOA.
GFS-1	120 V	1	FHP			СВ				
MOD-1	120 V	1								POWER MOTORIZED DAMPER TO OPEN/CLOSE WITH FAN.
RCP-1	120 V	1	1/8			СВ				
WH-1	240 V	1		4.5		СВ				

LIGHTING FIXTURE SCHEDULE

1. ALL FIXTURES SHALL BE U.L. OR SIMILARLY LISTED.

- 2. INCLUDE A MINIMUM 1 YEAR WARRANTY FOR LIGHTING FIXTURES, WHERE NOT OTHERWISE SPECIFIED.
- 3. REFER TO ARCHITECTURAL DOCUMENTS FOR EXACT MOUNTING LOCATIONS, DETAILS, AND CONFIGURATIONS OF ALL LUMINAIRES. IF ARCHITECTURAL DRAWINGS DO NOT CLARIFY EXACT MOUNTING LOCATION OR DETAIL, ISSUE AN RFI FOR ARCHITECT TO SPECIFICALLY CLARIFY PRIOR TO FIXTURE ROUGH-IN.
- 4. VERIFY COMPATIBILITY OF LIGHT FIXTURES WITH CEILING MATERIAL, ADJACENT CONSTRUCTION, AND ADJACENT FINISHES PRIOR TO SHOP DRAWINGS SUBMITTAL NOTIFY THE ARCHITECT OF ANY CONFLICTS WITH THE PROPOSED INSTALLATION.
- 5. CONTRACTOR IS RESPONSIBLE FOR ALL MISCELLANEOUS HARDWARE NECESSARY TO INSTALL AND SUPPORT THE LUMINAIRES. 6. AIM AND TARGET ADJUSTABLE INTERIOR AND EXTERIOR LIGHT FIXTURES UNDER THE OBSERVATION AND IN COMPLIANCE WITH RECOMMENDATIONS OF THE ARCHITECT.
- INCLUDE LABOR AND MATERIAL COSTS MADE NECESSARY BY THIS REQUIREMENT.

7. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND FILLING OUT ALL UTILITY REBATE FORMS FOR OWNER.

										DESIGNED DI	. DED
TYPE	MANUFACTURER	<u>MODEL</u>	DESCRIPTION	<u>FINISH</u>	<u>LUMENS</u>	<u>CRI</u>	DRIVER TYPE	SOURCE-CCT	VOLTAGE	LOAD-VA	APPROVED EQUALS
E1	LITHONIA	ELM2L-120/347-SDRT	EMERGENCY UNIT, WALL OR CEILING MOUNTED, 2 LED ADJUSTABLE LAMP HEADS, MAINTENANCE FREE BATTERY	WHITE	EM	N/A	N/A	LED	120 V	2 VA	EMERGI-LITE, DUAL-LITE
E1-W	LITHONIA	ELM2L-UVOLT-SORT / ELAWG1	EMERGENCY UNIT, WALL OR CEILING MOUNTED, 2 LED ADJUSTABLE LAMP HEADS, MAINTENANCE FREE BATTERY, WIRE GUARD	WHITE	EM	N/A	N/A	LED	120 V	2 VA	EMERGI-LITE, DUAL-LITE
F1	COLUMBIA LIGHTING	HEM-4'-40K-ML-RFA-E-U	CHAIN MOUNT VANDAL WRAP, ACRYLIC LENS, GENERAL DISTRIBUTION	WHITE	5000	80	NON-DIMMING	LED-4000K	120 V	50 VA	KENALL, FAIL-SAFE
F2	LIGHTOLIER	S5R-8-40K-7	SURFACE MOUNTED ROUND DOWNLIGHT NOMINAL 5" DIAMETER 1/2" THICK, GENERAL DISTRIBUTION, NON-CONDUCTIVE TRIM	WHITE	600	80	NON-DIMMING	LED-4000K	120 V	11 VA	AS APPROVED BY ENGINEER
F3	LITHONIA LIGHTING	BLWP4-20LHE-ADSM-LP840	CHAIN HUNG UTILITY FIXTURE 4' LENGTH, OURVED RIBBED LENS, GENERAL DISTRIBUTION	WHITE	2000 1	80	NON-DIMMING	LED-4000K	120 V	40 VA	AS APPROVED BY ENGINEER
W1	HUBBELL LIGHTING	TRP1-24L-15-3K8-4W-UNV-DBT-PC	BUILDING MOUNTED WALL PACK, TYPE 4 DISTRIBUTION, BUTTON PHOTOCONTROL	BRONZE	1700	80	NON-DIMMING	LED-3000K	120 V	20 VA	AS APPROVED BY ENGINEER
X1-W	LITHONIA	LQM-S-W-3-R-MVOLT-EL-N-SD / ELAWG1	BACK MOUNTED EXIT SIGN, SINGLE FACE, THERMOPLASTIC HOUSING, SELF-DIAGNOSTICS, WIRE GUARD	WHITE	N/A	N/A	N/A	RED LED	120 V	2 VA	EMERG-LITE, DUAL-LITE

LIGHTING CONTROLS SCHEDULE

- 1. ALL DEVICES SHALL BE U.L. OR SIMILARLY LISTED.
- 2 ALL DEVICES PROVIDED WITH MANUFACTURER LIMITED 5 YEAR WARRANTY.
- 3. PROVIDE LIGHTING CONTROLS WITH MANUFACTURER COMPLIANT POWER PACKS AND LOW VOLTAGE ROOM CONTROLLERS IN QUANTITY REQUIRED TO INSTALL A COMPLETE AND OPERATIONAL SYSTEM. MANUFACTURER OR MANUFACTURERS REP TO PROVIDE DEVICE QUANTITES LAYOUTS AND TYPICAL WIRING DETAILS DURING SHOP SUBMITTAL PROCESS. PROVIDE DIMMING COMPATIBLE DEVICES WHERE DIMMING TYPE WITH LIGHTING FIXTURES SHOWN. REFER TO LUMINAIRE SCHEDULE FOR FIXTURE DIMMING TYPE.
- 4. WHERE WIRELESS LIGHTING CONTROLS ARE PROVIDED. POWERPACKS SHALL BE PROVIDED AND INSTALLED WITHIN MANUFACTURER RECOMENDED DISTANCES TO ENSURE CONTROLLER OPERATION.
- 5. INSTALL LOW VOLTAGE POWER PACKS AND ROOM CONTROLLERS ABOVE NEARBY ACCESSIBLE CEILING TILES OR IN MECHANICAL/STORAGE SPACES ADJACENT TO CONTROLLED FIXTURES. DO NOT INSTALL POWERPACKS EXPOSED IN COMMON SPACES OR IN INACCESSIBLE LOCATIONS.
- 6. PROVIDE FACTORY AUTHORIZED REPRESENTATIVE TO DEMONSTRATE TYPICAL INSTALLATION AND COMMISSIONING OF EQUIPMENT.
- 7. WHERE APPROVED EQUAL MANUFACTURER PRODUCTS SENSOR COVERAGE OR LOAD RATINGS DIFFER FROM BASIS OF DESIGN, CONTRACTOR AND MANUFACTURER ARE RESPONSIBLE FOR PROVIDING ADDITIONAL DEVICES AS NECCESARY TO PROVIDE A COMPLETE AND OPERABLE
- 8. ETD'S AND ALL EMERGENCY LIGHTING CONTROLS COMPONENTS SHALL BE TESTED AND LISTED AS COMPATIBLE BY MANUFACTURER WITH NORMAL LIGHTING CONTROLS IN ALL AREAS.
- 9. UNLESS INDICATED OTHERWISE, LIGHTING CONTROL SCHEMES/OPERATION SHALL BE AS FOLLOWS:
- CORRIDORS, VESTIBULES, COMMON SENSORS PROGRAMMED FOR OCCUPANCY MODE, AUTOMATIC ON/OFF OPERATION, 20 MINUTES MINNIMUM, 30 MINUTES MAXIMUM. DIMMING CONTROL OF FIXTURES WITHIN DAYLIGHT ZONES SHALL BE BY ALWAYS ON DAYLIGHT SENSOR.

 SPACES:

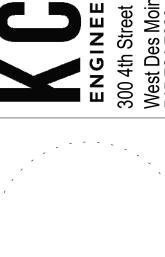
ALL OTHER SPACES

SENSORS PROGRAMMED FOR VACANCY MODE, MANUAL ON/AUTOMATIC OFF OPERATION 20 MINUTES MINNIMUM, 30 MINUTES MAXIMUM.DIMMING CONTROL OF FIXTURES WITHIN DAYLIGHT ZONES SHALL BE BY ALWAYS ON DAYLIGHT SENSOR.

DESIGNED BY: DEB

TYPE	<u>DESCRIPTION</u> <u>E</u>		MOUNTING	SENSOR TYPE	COVERAGE	APPROVED MANUFACTURERS
OS 1	WALL SWITCH OCCUPANCY SENSOR. DEVICE FINISH MATCHING WIRING DEVICES SPEC. RATED FOR MIN 1/6 HP MOTOR. INTEGRAL AUTOMATIC SELF-ADAPTIVE COVERAGE THRESHOLD AND FALSE ON/FALSE OFF CORRECTION. 8-30 MINUTE TIMER SETTINGS.	120V	WALL SWITCH / SINGLE GANG	PASSIVE INFRARED	I .	HUBBELL, CRESTRON, ACUITY, WATTSTOPPER, GREENGATE, AS APPROVED BY ENGINEER.
OS 2	CEILING MOUNTED OCCUPANCY/VACANCY SENSOR. WHITE FINISH. AUTOMATIC SELF-ADAPTIVE COVERAGE THRESHOLD AND FALSE ON/FALSE OFF CORRECTION. 8-30 MINUTE TIMER SETTINGS. INDOOR USE.	INTEGRAL BATTERY	CEILING / 8'-12' MH	PASSIVE INFRARED		LUTRON, ACUITY, CRESTRON, WATTSTOPPER, AS APPROVED BY ENGINEER.







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Ш NO. DATE REVISION DRAWN BY: PROJECT NUMBER: DEB 23-05-04-01

CHK'D BY: DATE:

JTL 12.20.2022

E-400

REFERENCE	SCHEDULE EF-1	EF-2		
REFERENCE	EF-1	EF-Z		
MANUFACTURER	GREENHECK	GREENHECK		
MODEL #	SP-B110	SE1-14-432-A4		
TYPE	IN-CEILING	PROPELLER		
SERVES	BATHROOM	SHOP		
СҒМ	75	1,900		
ESP (IN. W.C.)	0.30	0.25		
FAN RPM	950	1622		
BELT/DIRECT	DIRECT	DIRECT		
SPEED CONTROL (YES/NO)	YES	YES		
SONES	2	10		
DAMPER TYPE	GRAV. BACKDRAFT	M.O.D. (INSULATED LOW LEAK)		
ВНР	100 W	.20 HP		
MOTOR HP	100 W	1/4 HP		
VOLTAGE/PH	120/1	120/1		
NOTES	1,2,3	4,5,6,7,8		

NOTES:

- 1. PLUG DISCONNECT BY FAN MFR.
- 2. FAN TO INCLUDE LOW PROFILE
- 3. FAN TO BE CONNECTED TO ROOM OCCUPANCY SENSOR.
- 4. PROVIDE WITH POTENTIOMETER IAL, SPEED CONTROL TO BE LOCATED IN UNIT HOUSING.
- 5. PROVIDE WITH GREENHECK VCD-34-PB-16X16 (MOUNTED) DAMPER AND 115 VAC ACTUATOR WITH UNIT.
- 6. FAN TO OPERATE BY WALL SWITCH PROVIDED WITH UNIT AND LOCATED BELOW UNIT. WIRING BY E.C.
- 7. E.C. TO PROVIDE MOTORIZED DAMPER TO OPEN/CLOSE WITH FAN START OR STOP.
- 8. PROVIDE WITH DISCONNECT, 45 DEG. GALV. WEATHERHOOD WITH BIRDSCREEN AND LONG WALL HOUSING.

RADIANT FLOOR MANIFOLD SCHEDULE					
REFERENCE	RF-1	RF-2			
MANUFACTURER	ROTH RADIANT	ROTH RADIANT			
MODEL #	NP MANIFOLD SET	NP MANIFOLD SET			
SERVES	SHOP	CONFERENCE			
SUPPLY WATER TEMP (F)	120	120			
TUBE SPACING	12"	12"			
TUBE SIZE (NOMINAL)	1/2"	1/2"			
LOAD (BTUH/S.F.)	30	30			
APPROX. SQ. FT OF COVERAGE	2,450	450			
TOTAL LOAD (BTUH)	73,500	13,500			
AMBIANT ROOM TEMP (F)	68	68			
FLOOR COVERING	POLISHED CONCRETE	CARPET			
TOTAL MANIFOLD GPM	6.0	1.2			
MINIMUM LOOPS REQUIRED	9	2			
MAXIMUM LOOP LENGTH (FT)	300	300			
MAXIMUM TUBE & MANIFOLD PRESS. DROP (FT)	10	10			
SYSTEM FLUID	30% PROPYLENE GLYCOL	30% PROPYLENE GLYCOL			
NOTES	1	1			

1. MFR TO PROVIDE OPEN/CLOSE TYPE CONTROL VALVE WITH MANIFOLD AND ZONE THERMOSTAT.

SPLIT SYSTEM HEAT PUMP INDOOR UNIT SCHEDULE				
REFERENCE	SSI-1			
MANUFACTURER	MITSUBISHI			
MODEL#	TPLA0A0121EA70B			
TYPE	CEILING CASSETTE			
SERVES	BREAK ROOM			
NOMINAL TONS	1			
MAX UNIT CFM	390			
COOLING CAP. (RATED/MIN.) (BTU/H)	12,000/5,800			
HEATING CAP. (RATED/MIN.) (BTU/H)	14,000/5,500			
REFRIGERANT	R410A			
SEER	27.0			
VOLTAGE/PH	240/1			
MCA	1			
MOCP	SEE C.U. SCHEDULE			
NOTES	1, 2, 3, 4, 5, 6			

- 1. PROVIDE WITH REMOTE WALL MOUNTED THERMOSTAT.
- 2. INDOOR UNIT RECEIVES POWER FROM OUTDOOR UNIT BY INTERCONNECTED WIRING PROVIDED BY M.C. WIRING BY E.C.
- 3. COOLING RATED CAPACITY IS BASED ON THE FOLLOWING CONDITIONS. INDOOR: 80F/76F, OUTDOOR: 95F/75F 4. HEATING RATED CAPACITY IS BASED ON THE FOLLOWING CONDITIONS. INDOOR: 70F/60F, OUTDOOR: 47F/43F
- 5. HEATING MODE OF HEAT PUMP TO SERVE AS BACKUP FOR RADIANT FLOOR HEATING SYSTEM.
- 6. PROVIDE FILTER WITH UNIT AND PROVIDE UNIT WITH INTEGRAL CONDENSATE PUMP.

CONDENSING UNIT SCHEDULE			
REFERENCE	CU-1		
MANUFACTURER	MITSUBISHI		
MODEL#	TRUZA0121KA70NA		
SERVES	SSI-1		
NOMINAL TONS	1		
COOLING CAP. (RATED/MIN.) (BTU/H)	12,000 / 5,800		
HEATING CAP. (RATED/MIN.) (BTU/H)	14,000 / 5,500		
LOW TEMP. HEATING CAP. (AT 17F) (BTU/H)	12,200		
REFRIGERANT	R410A		
# COMPRESSORS	1		
SEER	27.0		
VOLTAGE/PH	240/1		
MCA	11		
OVERCURRENT PROTECTION (AMPS)	28		
NOTES	1, 2, 3, 4		

NOTES:

- 1. DISCONNECT SHALL BE PROVIDED / INSTALLED BY E.C.
- 2. UNIT TO BE MOUNTED TO BUILDING EXTERIOR WALL.
- 3. REFER TO SPLIT SYSTEM INDOOR UNIT SCHEDULE FOR CAP. RATING CONDITIONS.

- 4. HEATING MODE OF HEAT PUMP TO SERVE AS BACKUP FOR RADIANT FLOOR
- HEATING SYSTEM.

GLYCOL FEED STATION SCHEDULE					
REFERENCE	GFS-1				
MANUFACTURER	WESSELS				
MODEL#	GMP-6				
SERVES	RF-1 (RADIANT SYSTEM)				
TANK VOLUME	6 GALLONS				
UNIT DIMENSIONS	12" W X 12"D X 18" H				
FACTORY DISCH. PRESS. SETTING	12 PSIG				
VOLTAGE/PH	115/1				
NOTES	1, 2, 3				

NOTES:

- 1. DISCONNECT SHALL BE PROVIDED / INSTALLED BY E.C.
- 2. SYSTEM CONNECTION SIZE IS 1/2"NPT.
- 3. PROVIDE UNIT ABOVE, EQUIVALENT BY GENERAL TREATEMENT PRODUCTS OR PRE-APPROVED EQUAL.

MOTORIZED DAMPE	MOTORIZED DAMPERS	
REFERENCE	MOD-1	
MANUFACTURER	GREENHECK	
MODEL	VCD-34	
SIZE (W X H) (IN.)	36 X 24	
CFM	1,900	
BLADE STYLE	OPPOSED	
BLADE DIRECTION	HORIZONTAL	
INSULATED	YES	
ACTUATOR TYPE	ELECTRIC (120 V)	
ACTUATOR STYLE	2 POSITION	
POWER FAILURE POSITION	CLOSED	
NOTES	1,2,3	

NOTES:

- 1. EC TO POWER MOTORIZED DAMPER TO OPEN/CLOSE WITH
- FAN START OR STOP.
- 2. DAMPER SHOULD BE ULTRA LOW LEAK TYPE WITH GASKETED SEALS
- 3. PROVIDE UNIT OR PRE-APPROVED EQUAL.

GAS HOT WATER BOILER SCHEDULE	
B-1	
LAARS	
MFTHW140	
INSTANTANEOUS CONDENSING	
L. P.	
4.0" / 14" W.C.	
RADIANT FLOOR SYSTEM	
140	
129	
10:1	
19"W X 32"H X 17"D	
95	
95	
120	
3"	
120/1	
4	
15	
1,2,3,4,5,6	

NOTES:

- 1. 1 1/4" HWS/HWR CONNECTIONS
- 2. PROVIDE WITH PACKAGED BOILER CONTROLS.
- 3. PROVIDE CONDENSATE NEUTRALIZER FOR THE BOILER CONDENSATE DRAIN.
- 4. 3" EXHAUST VENT PIPE TO BE PVC/CPVC, PE, OR STAINLESS STEEL. 3" INTAKE CAN BE ABS, PVC, CPVC, OR GALVANIZED. INSTALL PER MFR RECOMMENDATIONS.
- 5. PROVIDE PRIMARY BOILER PUMP WITH BOILER THAT COMES INSTALLED AND WIRED TO THE BOILER FROM THE FACTORY.
- 6. BOILER TO BE INTERLOCKED WITH RADIANT CIRCULATION PUMP (RCP-1) SO THAT BOILER CAN ONLY BE ENABLED WHEN RCP-1 IS OPERATING.

PUMP SCHEDULE	
REFERENCE	RCP-1
MANUFACTURER	TACO
MODEL#	0026E
SERVES	RADIANT FLOOR SYSTEM
GPM	7.2
TOTAL DEVELOPED HEAD (FT)	23
HP	1/8
PUMP RPM	830-3800
VOLT/PHASE	120/1
NOTES	1, 2

NOTES:

- 1. E.C. TO PROVIDE DISCONNECT.
- 2. PUMP TO RUN TO MAINTAIN SPACE TEMP. REFER TO RADIANT MANIFOLD DETAILS.

LOUVER SCHEDULE		
REFERENCE	L-1	
MANUFACTURER	GREENHECK	
MODEL	ESD-403	
APPLICATION	INTAKE FOR SHOP	
MATERIAL	ALUMINUM	
SIZE (W X L X D) (IN.)	36 X 30 X 4	
CFM	1,900	
FREE AREA (SQ. FT.)	3.75	
PRESSURE DROP (IN. W.C.)	0.052	
FREE AREA VELOCITY (FPM)	546	
BLADE DIRECTION	HORIZONTAL	
INSTALLATION	S.I.P.S. METAL WALL	
DRAINABLE	YES	
NOTES	1,2,3,4	

- 1. PROVIDE COLOR CHARTS TO ARCHITECT FOR COLOR SELECTION. 2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- 3. PROVIDE WITH BIRDSCREEN
- 4. PROVIDE LOUVER ABOVE, EQUIVALENT BY NCA, UNITED ENERTECH OR ENGINEER PRE-APPROVED EQUAL

SCHEDULES

> DATE REVISION ADDENDUM 1

DRAWN BY: PROJECT NUMBER:

23-05-04-01 CHK'D BY: DATE:

12.20.2022